MP1570A
SONET/SDH/PDH/ATM Analyzer
Operation Manual
Vol.2
Remote Control

11th Edition

- **Read this manual before using the equipment.**
- **To ensure that the equipment is used safely, read the "For Safety" in the MP1570A SONET/SDH/PDH/ATM Analyzer Operation Manual first.**
- **Keep this manual with the equipment.**

ANRITSU CORPORATION

Document No.: M-W1721AE-11.0

Safety Symbols

To prevent the risk of personal injury or loss related to equipment malfunction, Anritsu Corporation uses the following safety symbols to indicate safety-related information. Insure that you clearly understand the meanings of the symbols BEFORE using the equipment. Some or all of the following five symbols may not be used on all Anritsu equipment. In addition, there may be other labels attached to products which are not shown in the diagrams in this manual.

Symbols used in manual

DANGER This indicates a very dangerous procedure that could result in serious injury or death if not performed properly.

WARNING This indicates a hazardous procedure that could result in serious injury or death if not performed properly.

CAUTION This indicates a hazardous procedure or danger that could result in light-to-severe injury, or loss related to equipment malfunction, if proper precautions are not taken.

Safety Symbols Used on Equipment and in Manual

The following safety symbols are used inside or on the equipment near operation locations to provide information about safety items and operation precautions. Insure that you clearly understand the meanings of the symbols and take the necessary precautions BEFORE using the equipment.

This indicates a prohibited operation. The prohibited operation is indicated symbolically in or near the barred circle.

This indicates an obligatory safety precaution. The obligatory operation is indicated symbolically in or near the circle.

This indicates warning or caution. The contents are indicated symbolically in or near the triangle.

This indicates a note. The contents are described in the box.

These indicate that the marked part should be recycled.

MP1570A
SONET/SDH/PDH/ATM Analyzer
Operation Manual Vol.2 Remote Control

23 February 2000 (First Edition)
27 September 2005 (11th Edition)

Equipment Certificate

Anritsu Corporation certifies that this equipment was tested before shipment using calibrated measuring instruments with direct traceability to public testing organizations recognized by national research laboratories including the National Institute of Advanced Industrial Science and Technology, and the National Institute of Information and Communications Technology, and was found to meet the published specifications.

Anritsu Warranty

Anritsu Corporation will repair this equipment free-of-charge if a malfunction occurs within 1 year after shipment due to a manufacturing fault, provided that this warranty is rendered void under any or all of the following conditions.

- The fault is outside the scope of the warranty conditions described in the operation manual.
- The fault is due to mishandling, misuse, or unauthorized modification or repair of the equipment by the customer.
- The fault is due to severe usage clearly exceeding normal usage.
- The fault is due to improper or insufficient maintenance by the customer.
- The fault is due to natural disaster including fire, flooding, earthquake, etc.
- The fault is due to use of non-specified peripheral equipment, peripheral parts, consumables, etc.
- The fault is due to use of a non-specified power supply or in a non-specified installation location.

In addition, this warranty is valid only for the original equipment purchaser. It is not transferable if the equipment is resold.

Anritsu Corporation will not accept liability for equipment faults due to unforeseen and unusual circumstances, nor for faults due to mishandling by the customer.

Anritsu Corporation Contact

In the event that this equipment malfunctions, contact an Anritsu Service and Sales office. Contact information can be found on the last page of the printed version of this manual, and is available in a separate file on the CD version.

Notes On Export Management

This product and its manuals may require an Export License/Approval by the Government of the product's country of origin for re-export from your country.

Before re-exporting the product or manuals, please contact us to confirm whether they are export-controlled items or not.

When you dispose of export-controlled items, the products/manuals are needed to be broken/shredded so as not to be unlawfully used for military purpose.

Crossed-out Wheeled Bin Symbol

Equipment marked with the Crossed-out Wheeled Bin Symbol complies with council directive 2002/96/EC (the “WEEE Directive”) in European Union.

For Products placed on the EU market after August 13, 2005, please contact your local Anritsu representative at the end of the product's useful life to arrange disposal in accordance with your initial contract and the local law.

CE Conformity marking

Anritsu affixes the CE Conformity marking on the following product (s) in accordance with the Council Directive 93/68/EEC to indicate that they conform with the EMC and LVD directive of the European Union (EU).

CE marking

CE

1. Product Model

Model: MP1570A SONET/SDH/PDH/ATM ANALYZER
and
Plug-in Units: See Table 1.

2. Applied Directive

EMC: Council Directive 89/336/EEC
LVD: Council Directive 73/23/EEC

3. Applied Standards

- EMC: Emission: EN61326: 1997 / A2: 2001 (Class A)
  Immunity: EN61326: 1997 / A2: 2001 (Annex A)

	Performance Criteria*
IEC 61000-4-2 (ESD)	B
IEC 61000-4-3 (EMF)	A
IEC 61000-4-4 (Burst)	B
IEC 61000-4-5 (Surge)	B
IEC 61000-4-6 (CRF)	A
IEC 61000-4-8 (RPFMF)	A
IEC 61000-4-11 (V dip/short)	B

*: Performance Criteria
A: During testing normal performance within the specification limits
B: During testing, temporary degradation, or loss of function or performance which is self-recovering

Harmonic current emissions:
EN61000-3-2: 2000 (Class A equipment)

- LVD: EN61010-1: 2001 (Pollution Degree 2)

C-tick Conformity marking

Anritsu affixes the C-tick marking on the following product (s) in accordance with the regulation to indicate that they conform with the EMC framework of Australia/New Zealand.

C-tick marking

1. Product Model

Model: MP1570A SONET/SDH/PDH/ATM ANALYZER
and
Plug-in Units: See Table 1.

2. Applied Standards

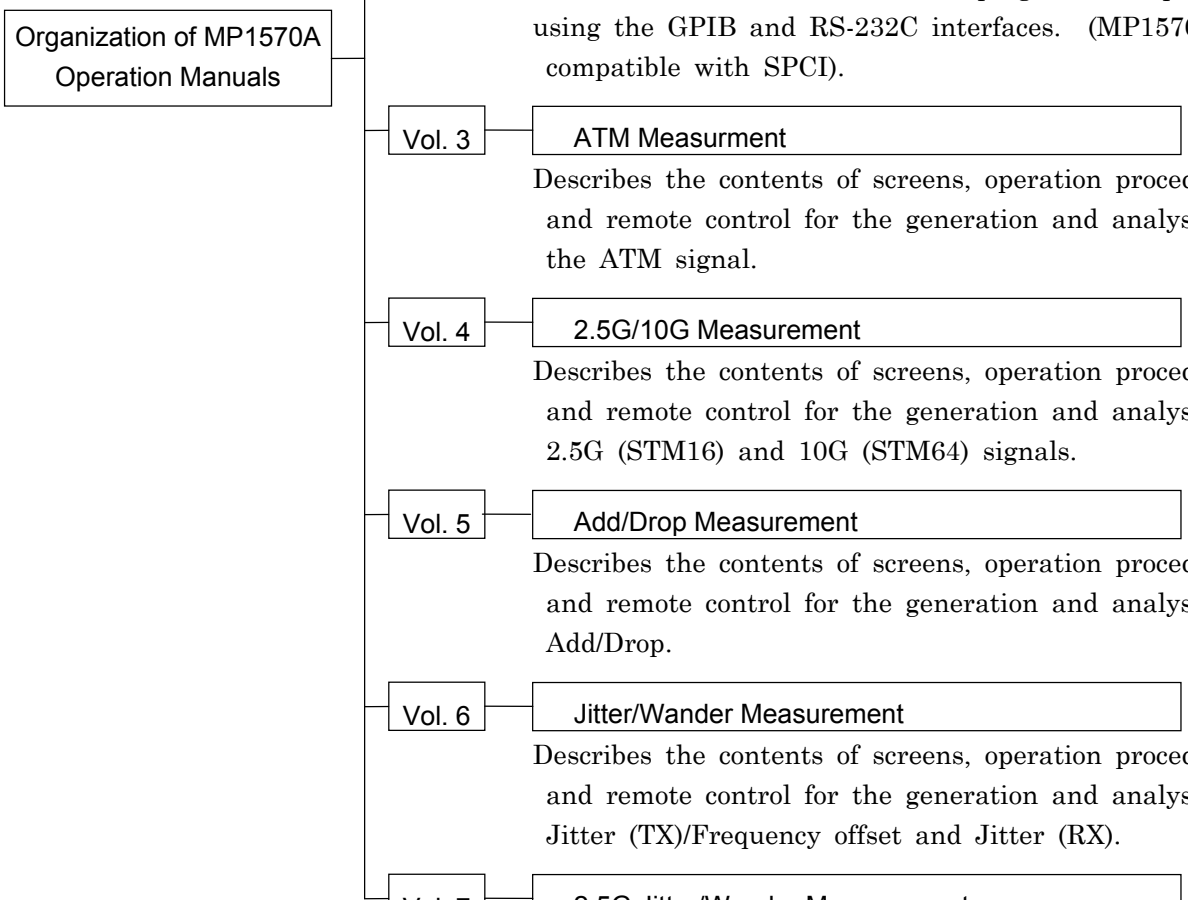
EMC: Emission:
AS/NZS 2064.1 / 2 (ISM, Group 1, Class A equipment)

Table 1 List of the Product Name and Model Name

Model Name	Product Name
Main Frame	
MP1570A	SONET/SDH/PDH/ATM ANALYZER
Plug in Units	
MP0105A	CMI UNIT
MP0108A	NRZ UNIT
MP0111A	Optical 156M/622M (1.31) UNIT
MP0112A	Optical 156M/622M (1.55) UNIT
MP0113A	Optical 156M/622M (1.31/1.55) UNIT
MP0121A	2/8/34/139/156M UNIT
MP0122A	1.5/45/52M UNIT
MP0122B	1.5/45/52/52M (1.31) UNIT
MP0123A	ATM UNIT
MP0124A	2/8/34/139M 156/622M Jitter UNIT
MP0125A	1.5/45/52M 156/622M Jitter UNIT
MP0126A	2/8/34/139M 1.5/45/52M 156/622M Jitter UNIT
MP0127A	2.5G (1.31) UNIT
MP0128A	2.5G (1.55) UNIT
MP0129A	2.5G (1.31/1.55) UNIT
MP0130A	2.5G Jitter UNIT
MP0131A	Add/Drop UNIT
MU150000A	2.5G/10G UNIT
MU150001A	Optical 10G Tx (1.55) UNIT
MU150001B	Optical 10G Tx (1.55) UNIT
MU150002A	Optical 10G Rx (narrow) UNIT
MU150005A	2/8/34/139M 156/622M Jitter UNIT
MU150006A	1.5/45/52M 156/622M Jitter UNIT
MU150007A	2/8/34/139M 1.5/45/52M 156/622M Jitter UNIT
MU150008A	2.5G (1.31) UNIT
MU150009A	2.5G (1.55) UNIT
MU150010A	2.5G (1.31/1.55) UNIT
MU150011A	2.5G Jitter UNIT
MU150017A	Optical 10G Rx (Wide) Unit
MU150017B	Optical 2.5G/10G Rx (Wide) Unit
MU150031A	Optical 10G (1.55) High Power Tx Unit
MU150031C	Optical 2.5G (1.55)/10G (1.55) High Power Tx Unit
MU150061A	Optical 10G (1.31) Tx Unit
MU150061B	Optical 2.5G (1.31)/10G (1.31) Tx Unit
MU154882A	GPIB/ETHERNET INTERFACE

About MP1570A Operation Manuals

MP1570A SONET/SDH/PDH/ATM Analyzer Operation Manuals comprise of the following eight documents. Use them properly according to the usage purpose.



Using This Operation Manual

This Operation Manual describes the following.

This manual (MP1570A Operation Manual　Vol.2 Remote Control) mainly describes the remote control and program examples used for GPIB, RS-232C, Ethernet interface. (The MP1570A complies with SCPI.)

Screen Names

MP1570A has 4 major screens, namely, 'Setup', 'Test menu', 'Result', and 'Analyze', and each major screen has its own subscreens. (For details, see ‘Section 4　Screens and Parameter Setting’).

If 'Setup' is selected as the main screen and 'Mapping' as the subscreen, see 'Setup: Mapping’ screen in the manual for the explanation.

CONTENTS

CONTENTS

Section1 General

MP1570A SONET/SDH/PDH/ATM Analyzer is capable of performing automatic measurements when combined with an external controller. For connection, the optional GPIB, RS-232C or Ethernet interface is used.

This section gives the information relating to interface functions and typical system up.

1.1 Interface Function

A remote control connector is provided on the rear panel of the MP1570A.

Remote control of the MP1570A and data printed out using an external printer can be realized by installing the GPIB, RS-232C or Ethernet interface option.

Which option, GPIB or RS-232C, is allocated for remote control is designated on the System subscreen of the Setup main screen.

GPIB interface: The GPIB interface of the 1570A conforms to the IEEE (Institute of Electrical and Electronic Engineers) standard 488.1-1987. The software specifications conform to the IEEE488.2 and SCPI (Standard Commands for Programmable Instruments which is explained in detail in SECTION 10).

RS-232C interface: The same commands as those of the GPIB interface may be used.

Ethernet interface:The same commands as those of the GPIB interface may be used.

Interface functions of the MP1570B include,

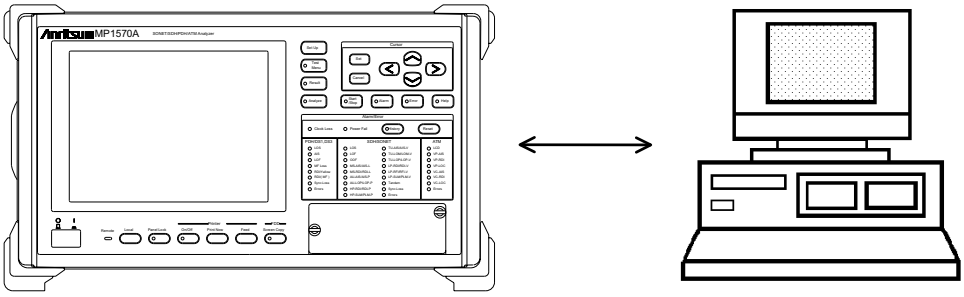
- control of almost all functions, excluding the power switch and Local key
- read of all setup conditions and menu contents
- output to an external printer

1.2 Typical System Up

System up examples using interfaces are shown below.

Controlling from a host computer

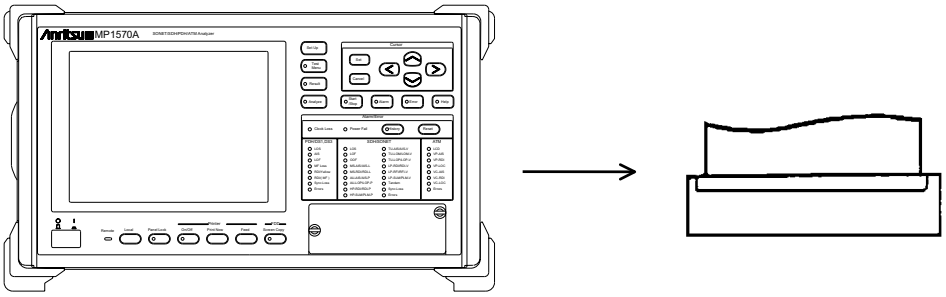
Connect a host computer to measure MP1570A automatically.



MP1570A Host computer

Data output to external printer

When a printer is connected, measurement data of the MP1570A can be output to the printer.



MP1570A Printer

Section 2 GPIB Interface

This section gives the information relating to GPIB interface functions and setting procedures when the GPIB interface is used as the option.

2.1 GPIB Interface Function

The MP1570A only has functions as the device and has no functions as a controller. For this reason, the interface functions provided are limited as listed in Table below.

Code	Interface function	IEEE488.2 standard
SH1	With all source handshake functions	All functions are standard equipped.
AH1	With all acceptor handshake functions	All functions are standard equipped.
T5	With basic talker functions With serial pole functions With talk only mode functions With talker clear by MLA function	Device must have T5, T6, TE5 or TE6 subset.
L4	With basic listener functions Without listen only mode function With listen clear by MTA function	Device must have L3, L4, LE3 or LE4 subset.
SR1	With all service request functions	All functions are standard equipped.
RL1	With all remote/local functions	RL0 (without function) or RL1 (all functions)
PP0	Without parallel pole function	PP0 (without function) or PP1 (all functions)
DC1	With all device clear functions	All functions are standard equipped.
DT1	With all device trigger functions	DT0 (without function) or DT1 (all function)
C0	Without system controller function	C0 (without function) or one of C4 and C5, or C7, C9 or C11

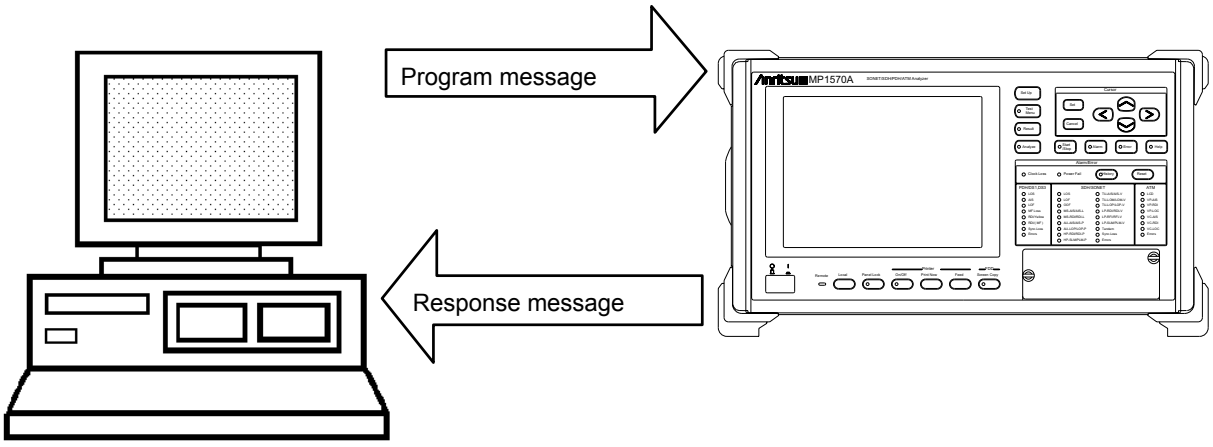
2.2 Device Message List

Device messages are the data messages communicated between the controller and device via the system interface when the bus mode is the data mode (the ATN line is "H"), and classified into the program and response messages.

The program message is the ASCII data message which is transmitted from the controller to the device. While the response message is the data message which is transmitted from the device to the controller.

The program and response messages have the messages listed in the following table.

Program message (detail in SECTION 5)	Response message (detail in SECTION 7)
Program command ・Equipment unique command(detail in SECTION 10) ・IEEE488.2 common command (detail in SECTION 7) Program query	Status message (detail in SECTION 8) Response message



Above messages are communicated via the I/O buffer of the device.

The I/O buffer is briefly explained.

Input buffer	Output queue
This is FIFO (First In First Out) type memory area which tentatively saves DAB (program and query messages) before conducting syntax analysis. Input buffer capacity of MP1570A is 256 bytes.	This is FIFO type queue memory area. All DABs (response messages) transmitted from device to controller are stored in this memory until read by controller is complete.

2.3 Bus Command

The bus command is the interface internal communications transmitted while the bus mode is the command mode (the ATN line is "L").
Table below lists the bus commands.

Bus command	Operation
DCL(Device clear)	Initializes all message communications for all units connected to the GPIB bus.
SDC(Selected Device Clear)	Initializes message communications for the addressed unit. Operation is the same as DCL.
GET(Group Execute Trigger)	Operation is the same as when Start/Stop key is pressed.
IFC(Interface Clear)	Initializes the interface.

2.4 GPIB Cable Connection

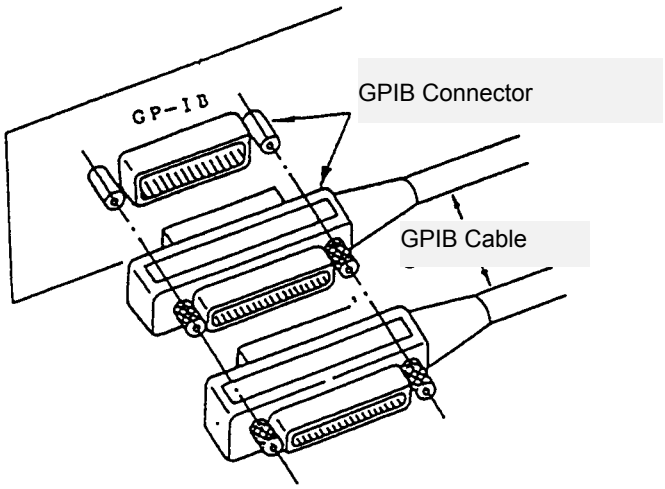
Connect the GPIB cable to the GPIB connector on the rear panel.

Connect the GPIB cable to the GPIB cnnector on the rear panel.Observe the following conditions for connection:

Number of devices connected <= 15

Total length of cable <= 2m × number of devices

(maximum 20 m)



2.5 GPIB Setting

When the GPIB is used as the remote interface, set the MP1570A to Local and enter settings listed in the table below using keys on the front panel. Enter the settings on the System subscreen of the Setup main screen.

Setting	Item	Setting value
Setting of interface used for remote control	Control select	GPIB :GPIB interface is used for remote control. (This setting is unnecessary when RS-232C is not installed.)
Setting of interface usage method	GPIB Interface	Control :Used for remote control Printer :Used for external printer
Address setting	Address	0 to 30

Setup procedure

1 (1) When the [Set Up] is pressed, the Setup main screen appears.

On the upper left corner of the Setup main screen, "Setup" is indicated.

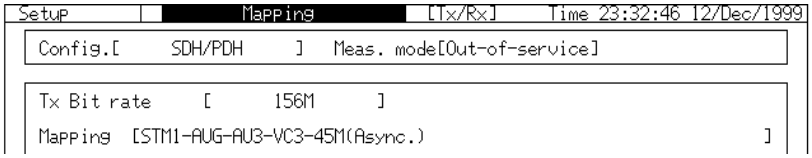


Fig.2-3 Setup main screen

(2) Shift the cursor to the netted area using [<] [>] [∧] [∨] and press [Set] to open a window shown below. Select the System subscreen.

To select the System subscreen, shift the cursor to System using the cursor key and press the [Set].

(1)

Mapping
Memory
Print
OH Present Data
System
Floppy disk
Selftest

(2)

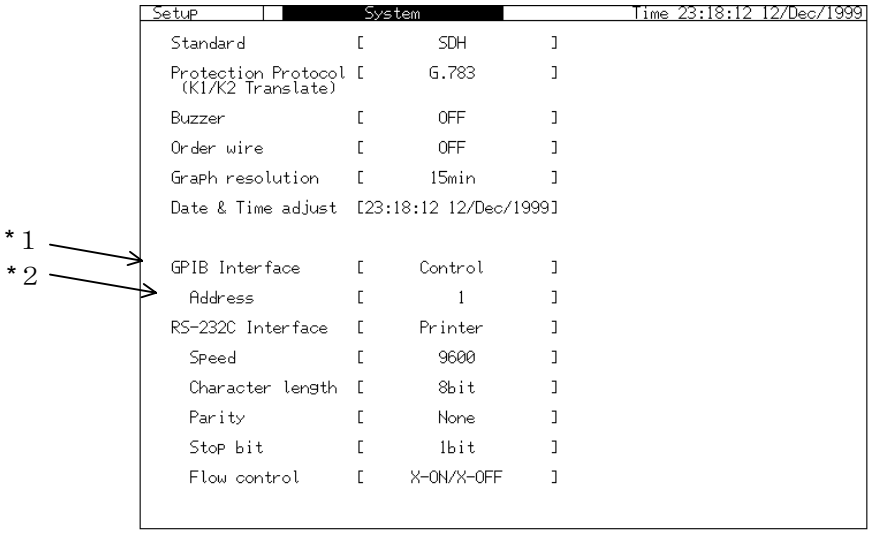
Mapping
Memory
Print
OH Present Data
System
Floppy disk
Selftest

Fig. 2-4 Subscreen Select Window

2 The System subscreen shown below appears after operations of 1.

Shift the highlight cursor to items *1 to *2 and enter the necessary settings.

For details on setting contents, refer to Operation Manual Vol.1 or Vol.3.



2.6 Device Initialization

The IEEE488.2 specifies the system initialization in three levels of the bus, message and device initialization.

Level	Initialization type	Description
1	Bus initialization	Initializes all interface functions connected to the bus by IFC message from controller.
2	Message initialization	Disables function to report the controller of completion of initialization or operation for message communications of all devices connected to GPIB by GPIB bus command DCL or designated device by bus command SDC.
3	Device initialization	Upon *RST, the device is returned to the unique, known condition regardless of the past operating conditions.

2.6.1 Bus initialization

IFC Bus initialization by IFC statement:

Function Interface functions of all devices connected to the GPIB bus line are initialized by setting the IFC line to active for approximately 100 μ s. Only the system controller can transmit the IFC.

2.6.2 Message initialization

DCL or SDC Initialization of message exchange by DCL or SDC bus command:

Function Data relating to message transfer is initialized for all devices on the GPIB

or

only specified devices.

Message exchange is initialized when the area inside a device (or devices) relating to the message exchange has become improper status for the controller to control because of execution of another program, although the panel setting status need not be changed.

The controller is able to transmit new commands by initializing message exchange

DCL: Initializes message exchange of all devices on the GPIB.

SDC: Initializes message exchange of designated devices only.

2.6.3 Device initialization

*RST Device initialization by *RST command:

Function This function initializes a function unique to the device to the known status, regardless of the past operating history. With the MP1570A, the status after initialization is the same as those upon power on.

2.6.4 Device status at power on

The MP1570A is set to the following conditions when power is turned on.

- The settings at the preceding power off are reproduced.
- The input buffer queue and output buffer queue are cleared.
- The syntax analysis, execution control and response generation sections are reset.

Section 3 RS-232C Interface

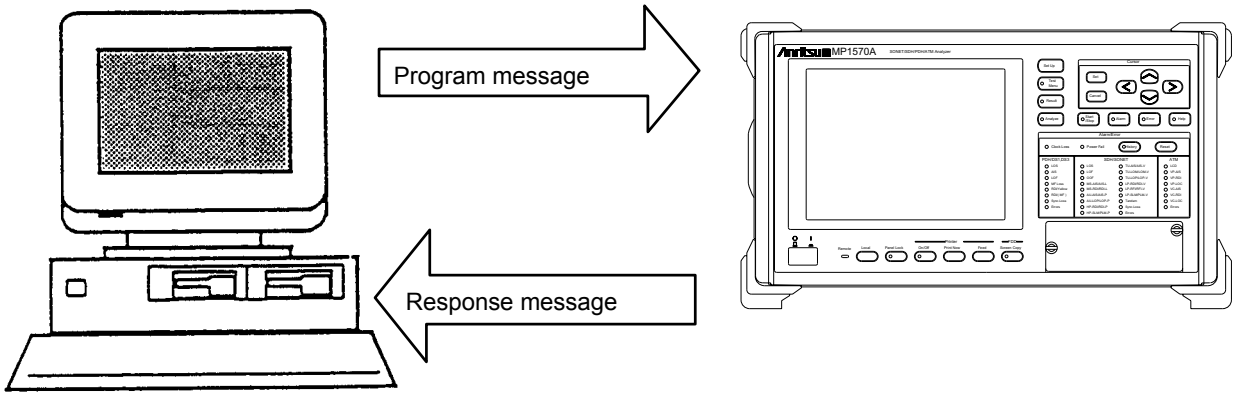
In this section, the setting procedures are explained when the RS-232C interface is used as the option.

3.1 Device Message List

Device messages are the data messages communicated between the controller and device via the system interface, and classified into the program and response messages. The program message is the ASCII data message which is transmitted from the controller to the device. While the response message is the data message which is transmitted from the device to the controller.

The program and response messages have the messages listed in the following table.

Program message (detail in Section 5)	Response message (detail in Section 6)
Program command ・Equipment unique command(detail in Section 10) ・IEEE488.2 common command (detail in Section 7) Program query	Status message (detail in Section 8) Response message



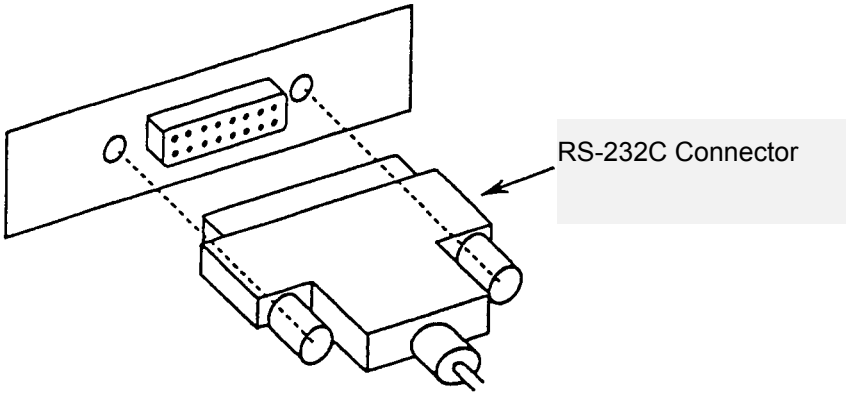
Controller MP1570A

Above messages are communicated via the I/O buffer of the device. The I/O buffer is briefly explained below.

Input buffer	Output queue
This is FIFO (First In First Out) type memory area which tentatively saves DAB (program and query messages) before conducting syntax analysis. Input buffer capacity of MP1570a is 256 bytes.	This is FIFO type queue memory area. All DABs (response messages) transmitted from device to controller are stored in this memory until read by controller is complete.

3.2 RS-232C Cable Connection

Connect the RS-232C cable to the RS-232C connector on the rear panel.



3.3 RS-232C Setting

When the RS-232C is used as the automatic control interface, set the MP1570A to Local and enter settings listed below using keys on the front panel. Enter the settings on the System subscreen of the Setup main screen.

Setting	Setting item	Setting range
Setting of interface usage method	RS-232C Interfac	Control:Used for remote contro Printer:Used for external printer
Setting of bit rate	Speed	19200bps,9600bps,4800bps,2400bps 1200bps,600bps,300bps
Character length setting	Character length	8bits,7bits
Parity setting	Parity	None:No parity Even:Even parity Odd :Odd parity
Stop bit length setting	Stop Bit	2bits,1bit
Setting of flow control method	Flow Control	Ready/Busy:RS-232C control line is used. XON/XOFF:XON/XOFF characters are used.

Enter the above settings on the System subscreen of the Setup main screen.

1 (1) When the Set Up is pressed, the Setup main screen appears.
On the upper left corner of the Setup main screen, Set Up is indicated.

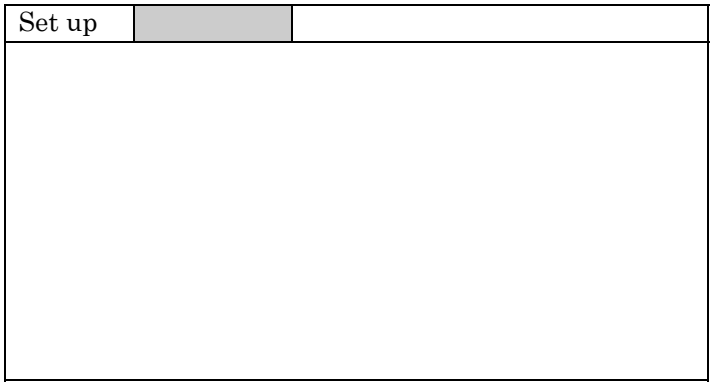


Fig. 3-3 Setup Main Screen

(2)Shift the cursor to the netted area shown in the figure above and press the Set to open a window shown below. Select the System subscreen.

To select the System subscreen, shift the cursor to System using the cursor key and press the Set.

(1)

Mapping
Memory
Print
OH Present Data
System
Floppy disk
Selftest

(2)

Mapping
Memory
Print
OH Present Data
System
Floppy disk
Selftest

Fig. 3-4 Subscreen Select Window

2 The System subscreen shown below appears after operations of 1. Shift the highlight cursor to items *1 to *6 and enter the necessary settings.

For details on setting contents, refer to the MP1570A Operation Manual.

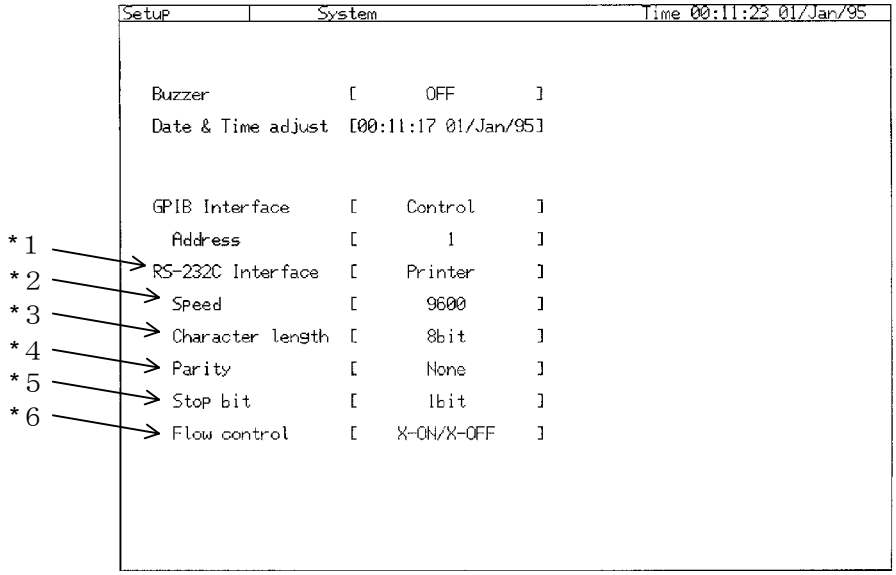


Fig. 3-5 System Subscreen (for RS-232C Interface)

3.4 Device Initialization

The *RST command is supported as the command for initializing the device using the RS-232C interface.

3.4.1 Device initialization

*RST Device initialization by *RST command:

Function This function initializes a function unique to the device to the known status, regardless of the past operating history.

With the MP1570A, the status after initialization is the same as those upon power on. (The status upon power on will be explained below.)

3.4.2 Device status at power on

The MP1570A is set to the following conditions when power is turned on.

- The settings at the preceding power off are reproduced.
- The input buffer queue and output buffer queue are cleared.
- The syntax analysis, execution control and response generation sections are reset.

Section 4 Ethernet Interface

This section explains how to setup the MP1570A in order to use the Ethernet interface as an option.

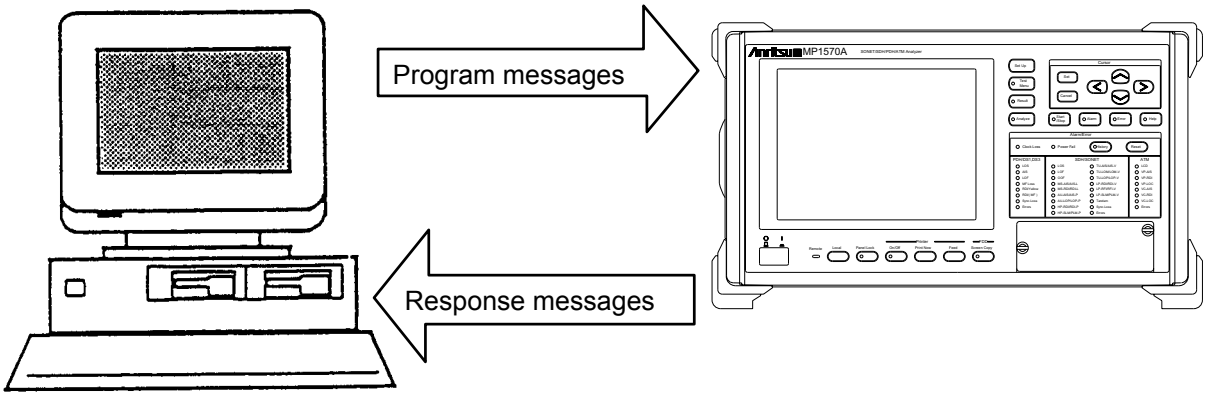
4.1 Device Message List

The device messages are data messages which are sent and received between a controller and the device via a system interface. There are two kinds of device messages, program messages and response messages.

The program messages are ASCII data messages transferred from a controller to the device, and the response messages are data messages which are transferred from the device to the controller.

The table below lists the types of the program messages and the response messages.

Program messages (Refer to Section 6 for the details)	Response messages (Refer to Section 7 for the details)
Program commands ・ Unique commands of the device (Refer to Section 11 for the details) ・ IEEE488.2 Common commands (Refer to Section 8 for the details) Program queries	Status messages (Refer to Section 9 for the details) Response messages



Those messages are transferred via the device I/O buffer. The table below briefly explains the I/O buffer.

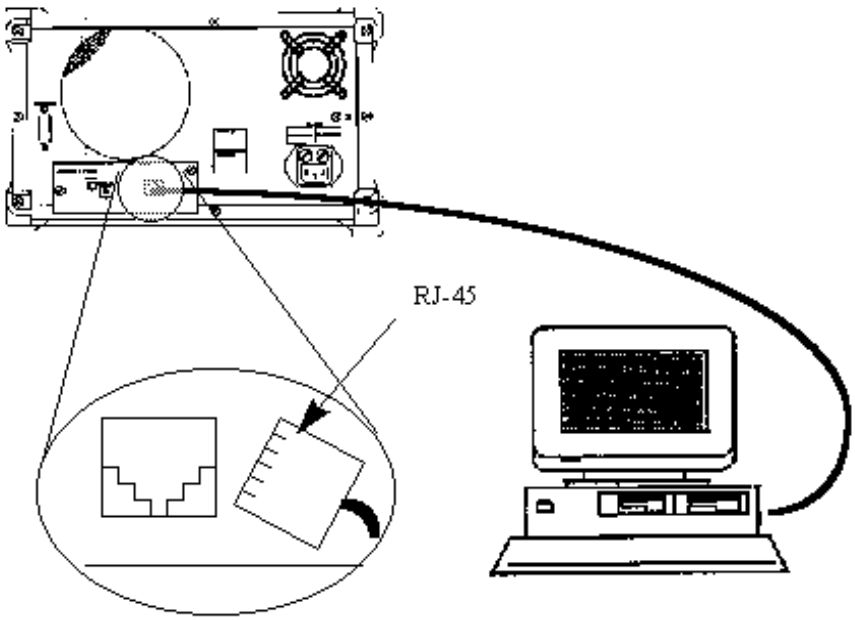
Input buffer	Output queue
First-in First-out (FIFO) type memory area to temporarily store the program messages and the query messages (DAB) before conducting parsing. The input buffer size for the MP170A is 256bytes.	FIFO type memory area for queuing. All the response messages (DAB) outputted from the device to the controller are stored in this memory until the controller finishes reading them.

The MP1570Amust be connected to a TCP/IP network when you use an Ethernet interface. In this case, the MP1570A works as a server.

4.2 Initialization of Ethernet Board

A terminal such as a Personal Computer (PC) is required to initialize an Ethernet interface. First connect the MP1570A to a terminal in order to build a local network, then conduct the initialization by following the procedure below. The terminal must be able to use the FTP function.

(1) Connect the Ethernet board of the MP1570A to the terminal in order to build a local network. The setup in the following figure shows that the terminal and the MP1570A are physically connected. However, the IP address preset for your terminal and that for the MP1570A to be activated to initialize the Ethernet board, are usually different in the network section. This means that these two can not be handled as the same network.
Therefore the IP address for the terminal must be set to the same as the address for initializing the MP1570A (128.128.128.XXX, where XXX is 1 to 256 except 128), before conducting any operation.



(2) Set the Ethernet board switch to 8 and turn on the power. In this case, the MP1570A is activated with the IP address of 128.128.128.128.

(3) Read the configuration file of the MP1570A using the FTP of the terminal, and edit them using an editor, then reload them to the MP1570A.
The operation example is shown below. Refer to the terminal operation manual for the information on the ETP activation at the terminal.

・ Operation example at the terminal

a. Connecting the terminal to the MP1570A

ftp>open 128.128.128.128

220 Setup Setup(vx.xx) service ready.

(username) → Press return key

230 User logged in.

b. Obtaining the setup file from the MP150A

ftp>get ta.cfg

220 Port set okay

150 File status okay;abut to open data connection.

226 Closing data connection,file transfer successful.

c. Editing the ta. cfg file using an editor

d. Loading the setup file to the MP1570A

ftp>put ta.cfg

220 Port set okay

150 File status okay;abut to open data connection.

226 Closing data connection,file transfer successful.

e. Closing the connection

ftp>close

(4) Set the Ethernet board switch to 1 again, and press the "Reset button" on the board.

The setup file (ta.cfg) format and the contents are shown below.
St up them according to your environment.
Consult with your network administrator about the settings.

File Format

```
NAME:TA-B40 MAC:00-A0-C2-04-9C-BF VER:1.07
RSP:speed=9600,data=8,stop=1,parity=NON,flow=XONXOFF
SSW:0 TIM:0
OIP:172.16.82.47 OPT:257
DIP:2.2.2.2 DPT:514
GIP:172.16.80.1 MSK:255.255.255.0
PRG:NON
```

Range of Setup Parameters

Item	Setting value	Explanation
RSP speed	9600	Set the default values listed in the left column.
data	8	
stop	1	
parity	NON	
flow	XONXOFF	
SSW	0 to 999	This is the timeout value for the GET command when the MP1570A works as the FTP server.
TIM	0 to 999	This item is not used. Set an arbitrary value.
OIP	000.000.000 to 255.255.255.255 Do not use 000.000.000.000 255.255.255.255	Set the IP address allocated for the MP1570A. Represent the IP address in decimal notation by delimiting every 3 digits with a period. Consult with your network administrator about the settings
OPT	0 to 65535	Set the port number for the MP1570A. This is the port number used for addressing the MP1570A when the MP1570A communicates with a terminal.
DIP	000.000.000 to 255.255.255.255 Do not use 000.000.000.000 255.255.255.255	Set the default gateway IP address. Consult with your administrator for the details.
DPT	0 to 65535	This item is not used. Set an arbitrary value.
GIP	000.000 to 255.255.255.255 Do not use 000.000.000.000 255.255.255.255	Set the default gateway IP address. Consult with your administrator for the details.
MASK	000.000.000 to 255.255.255.255 Do not use 000.000.000.000 255.255.255.255	Set the sub-net mask. Consult with your administrator for the details.
BID,MAC VER,PRG FILE	Do not change	Do not change the obtained data.

Additional Information

(1) IP Address

In the network using the TCP/IP, each device connected to the network is identified by its IP address. Therefore, each device must have the unique IP address. The IP address is a number consisting of 32 bits, and usually split by a dot into four 8-bit sections (This is called the dot notation.)

An IP address contains not only the device (host) information but also the network information. The data lengths for the network and host sections of IP address depend on the network class. In Class C, 24 bits for the network section, and 8 bits for the host section must be used, and the maximum 254 hosts can be connected to the network. There are classes from A to E, however the Class A to C are usually used.

Class	Length of the network	Data length for host section	Maximum number of hosts that can be connected
A	8 bits	24 bits	16,777,214 sets
B	16 bits	16 bits	65,534 sets
C	24 bits	8 bits	254 sets

(2) Sub-net mask

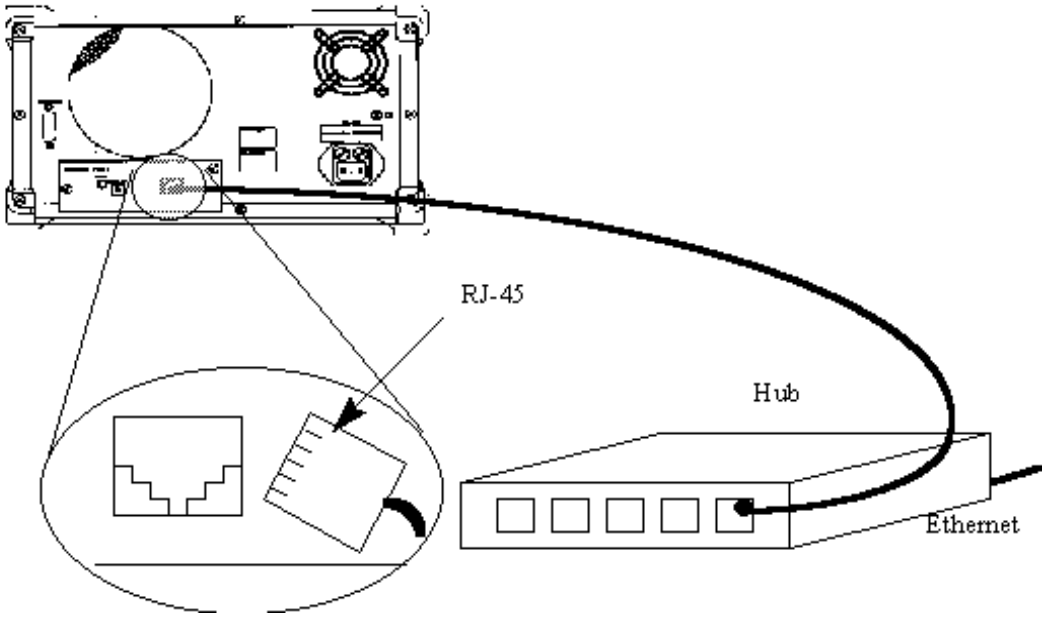
The sub-net mask is used to indicate which part of the IP address is for the network section when the network is being divided into sub-nets. This is defined by setting the above-mentioned IP address to '1' for network section (including the extended sub-net section) and '0' for the host section. If this setting is incorrect, then the IP packets cannot be sent and received properly when the network to be uses sub-nets.

(3) The gateway

The gateway device is used when connecting multiple networks. The gateway includes a dedicated device known as a router. In the TCP/IP networks, the IP packets are directly exchanged within the same network. However, between different networks (when terminals have different IP address network section), communication with a machine in other network must be established via the gateway to which the machine is connected.

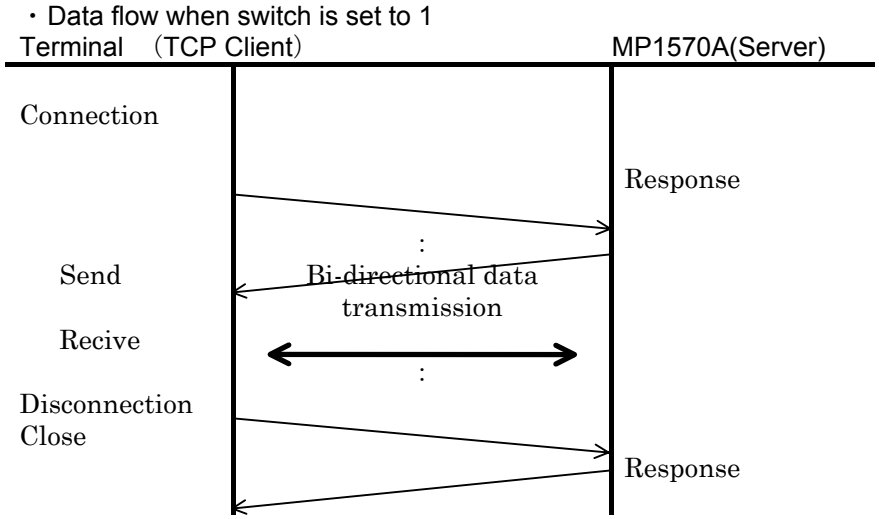
4.3 Network Connection and Data Flow

Connect an Ethernet cable to the MP1570A, then connect the MP1570A to a network. The network connection shown in the paragraph 4.2 can also be used.



Example for Ethernet Interface Connection

The connection to the MP1570A is a data communication using the TCP connection. The communication program (Socket client) must be created at the terminal for the communication. Refer to the related books sold at stores for the IP packets used in the data communication. For the socket interface used in the communication, refer to the books sold at stores and the operation manuals for the terminal, the attached network interface board and the driver software.



Note:

Comment on data communication

(1) The MP1570A saves the data from client at reception buffer.

When the internal buffer becomes full, TCP flow control occurs, and the response of client command level may not be returned. Then, the abnormal termination (such as timeout for any application software) may occurs.

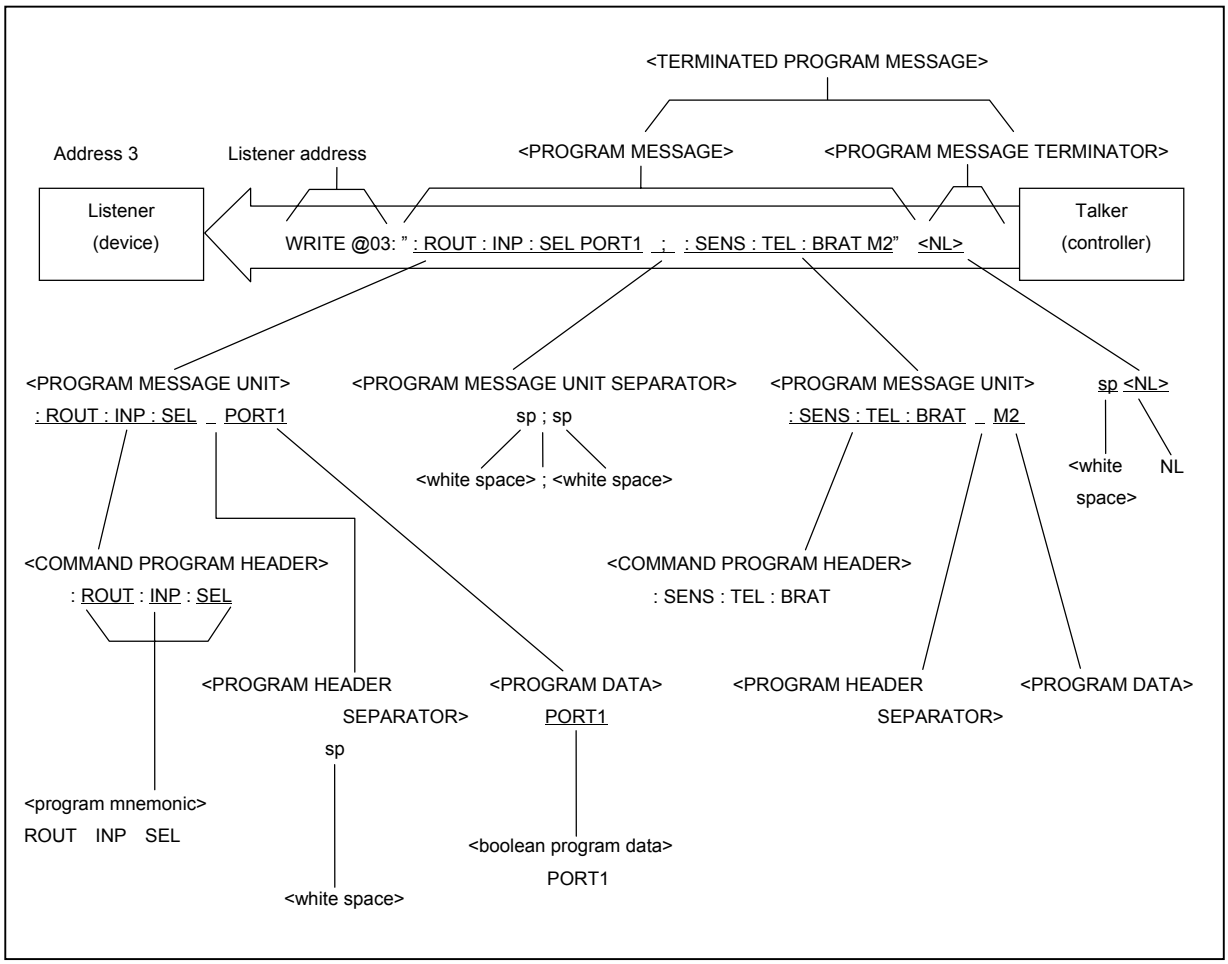
In that time, the connection with the client does not disconnected. Then, it may be occurs that the application operation must be protected by re-sending etc..

Section 5 Listener Input Format

This section describes the format of program messages received by the listener (MP1570A) from the talker (controller).
Since the equipment unique commands conform to the SCPI standards, examples are given using the SCPI commands.

5.1 Listener Input Program Message Format

As an example, the program message is shown below when the unbalance connector is selected as the input connector and the receive signal is set to 2M.



The program message format is composed of the functional element sequence, being broken down to the minimum level unit capable of expressing the function. Functional element examples are shown by capital characters in parentheses < > in the figure above. A functional element can be further broken down, which is called a coded element. Coded element examples are shown by small characters in parentheses < > in the figure above.

Program message formats will be explained on the following pages, using the function grammar and coded grammar diagrams.

- Function grammar diagram: Selection of a functional element of a

specific path is indicated by a diagram.

- Coded grammar diagram: Selection of a coded element of a specific path is indicated by a diagram.

Formats of WRITE and READ commands are as shown below.

WRITE @

Data is output to device

★Format

WRITE @Device No.:Data

Data→ Numerical expression

Character string expression

<Example> Same as that on the previous page.

WRITE @03: ” : ROUT : INP : SEL PORT1 ; : SENS : TEL : BRAT M2”

Listener address (when GPIB address of SDH/PDH analyzer is set to 3)

READ @

Data being input from device is substituted to variable.

★Format

READ @device No.:variable

<Example> Data being input from device (input connector setting) is substituted to variable A$.

WRITE @03: ” : ROUT : INP : SEL?” Queries input connector setting

READ @03: A$

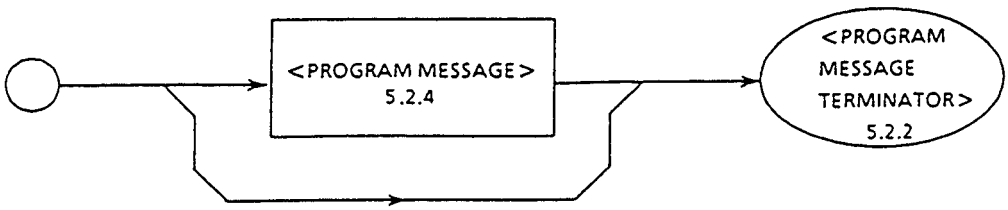
Listener address (when GPIB address of SDH/PDH analyzer is set to 3)

5.2 Functional Element of Program Message

The MP1570A accepts a program message when it detects a terminator located at the end of a program message. Functional elements of program messages are explained.

5.2.1 <TERMINATED PROGRAM MESSAGE>

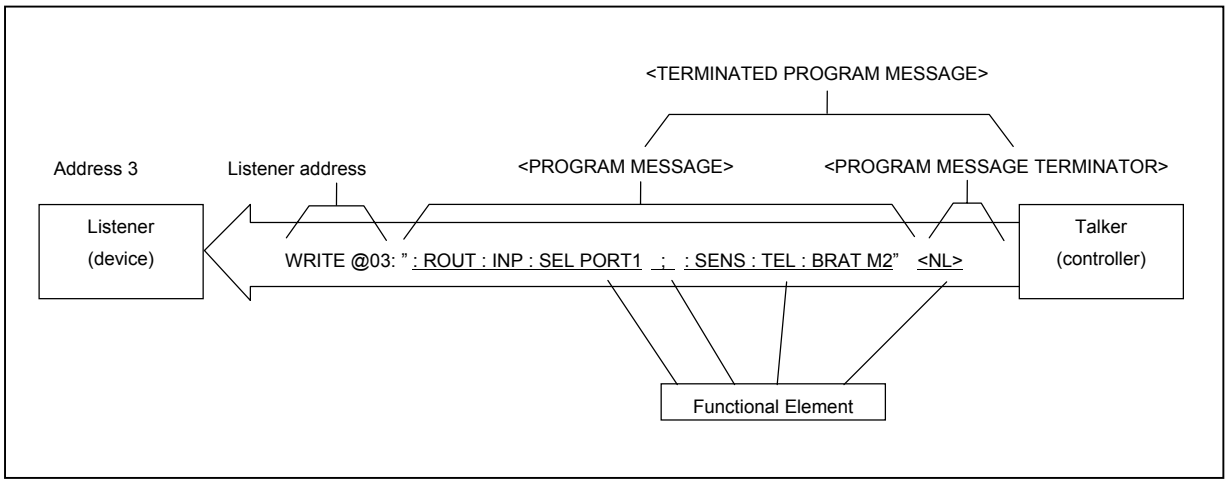
<TERMINATED PROGRAM MESSAGE> is defined as follows.



A <TERMINATED PROGRAM MESSAGE> is a data message containing all functional elements needed for transmission from the controller to the device (MP1570A).

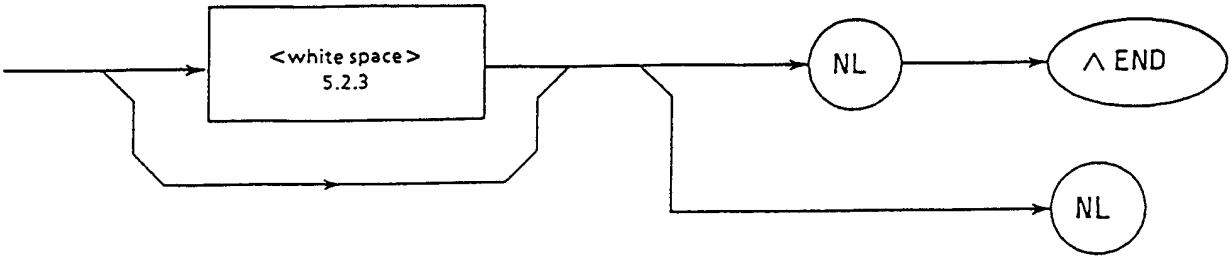
For completing a <PROGRAM MESSAGE> transmission, a <PROGRAM MESSAGETERMINATOR>is added at the end of a <PROGRAM MESSAGE>.

Example: A <TERMINATED PROGRAM MESSAGE> containing 2 commands

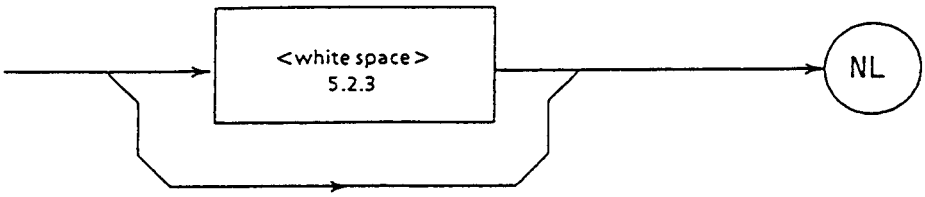


5.2.2 <PROGRAM MESSAGE TERMINATOR>

(1) The <PROGRAM MESSAGE TERMINATOR> is defined as shown below when the GPIB interface is used.



(2) The <PROGRAM MESSAGE TERMINATOR> is defined as shown below when the RS-232C interface is used.



<PROGRAM MESSAGE TERMINATOR> terminates one or more than one elements having a predetermined length.

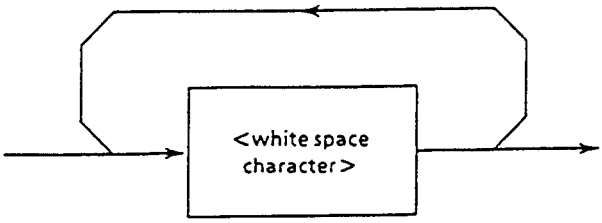
NL ..... Defined as a single ASCII code byte of 0A (10 in decimal notation). That is, it represents the line feed (LF) of ASCII control character which carries out the carriage return, returning the printing position to the same character position of the next line. It is called NL as printing of a new line (NL) is started.

END ..... An EOI can be generated by setting the EOI (End-or-Identify) line, one of GPIB control buses, to true (low level).

The EOI ON/OFF statement is one of the EOI lines controlling statements.

5.2.3 <white space>

The <white space> is defined as shown below.

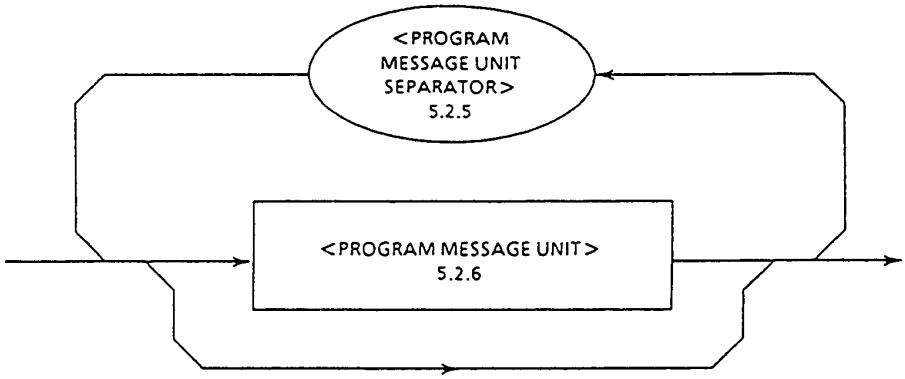


A <white space character> is defined as a single ASCII code byte within a range of ASCII code bytes between 00 and 09 or 0B to 20 (0 to 9 or 11 to 32 in decimal notation).

Although the range includes the ASCII control code and space signal, except the new line, the MP1570A handles it merely as a space or ignores without interpreting it as an ASCII control code.

5.2.4 <PROGRAM MESSAGE>

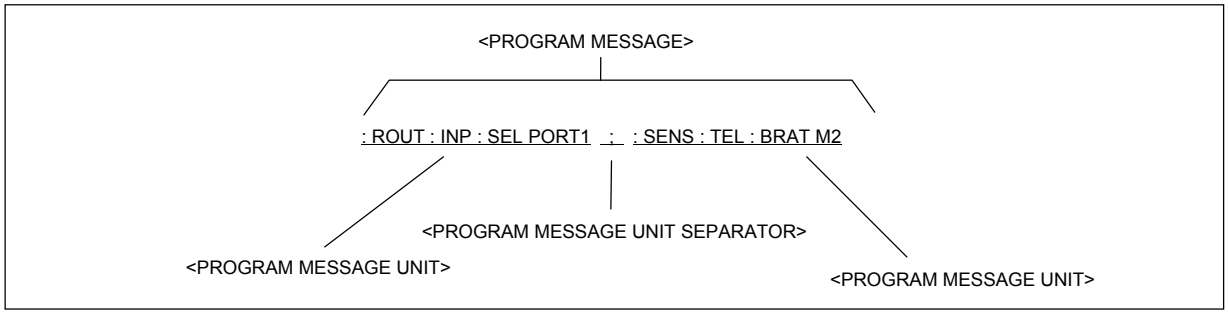
The <PROGRAM MESSAGE> is defined as shown below.



A <PROGRAM MESSAGE> is a sequence of zero, 1 or more <PROGRAM MESSAGE UNIT> elements.

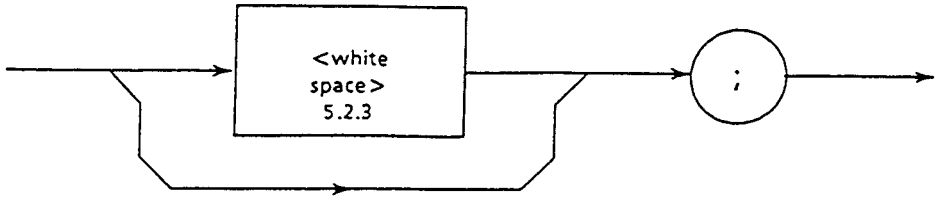
A <PROGRAM MESSAGE UNIT> is a programming command or data being transmitted from the controller to the device. The <PROGRAM MESSAGE UNIT SEPARATOR> is used to separate multiple <PROGRAM MESSAGE>.

Example: for selecting unbalanced connector and setting the receive signal to 2M

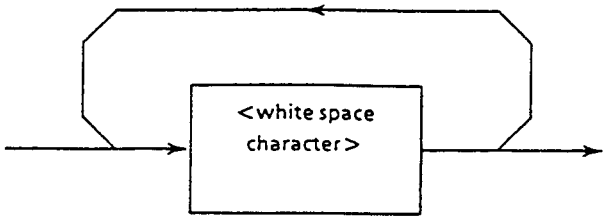


5.2.5 <PROGRAM MESSAGE UNIT SEPARATOR>

The <PROGRAM MESSAGE UNIT SEPARATOR> is defined as shown below.



The <white space> is defined as shown below.



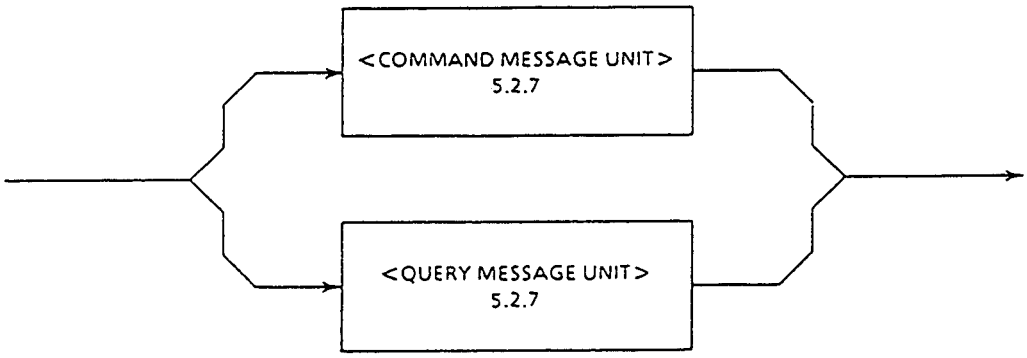
The <PROGRAM MESSAGE UNIT SEPARATOR> divides multiple <PROGRAM MESSAGE UNIT> element sequences within the <PROGRAM MESSAGE> range.

The MP1570A interprets the semicolon ";" as the <PROGRAM MESSAGE UNIT> separator.

Therefore, <white space character> before and after a semicolon ";" are ignored. The <white space character> is effective to make a program easy to read.

5.2.6 <PROGRAM MESSAGE UNIT>

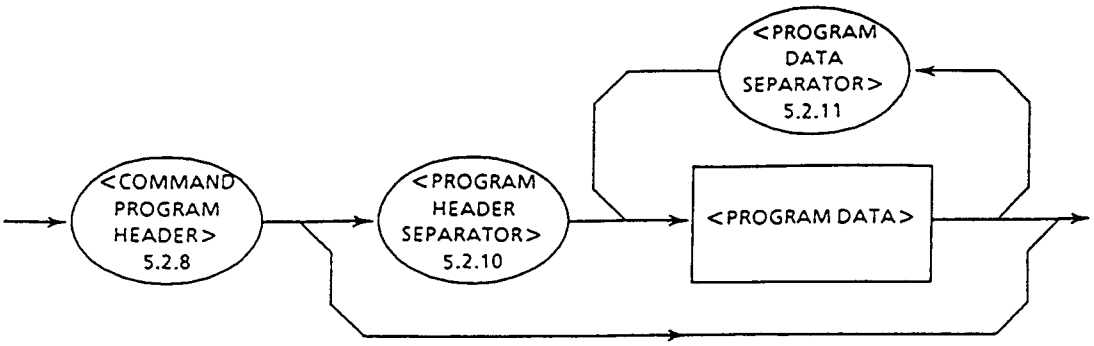
The <PROGRAM MESSAGE UNIT> is defined as shown below.



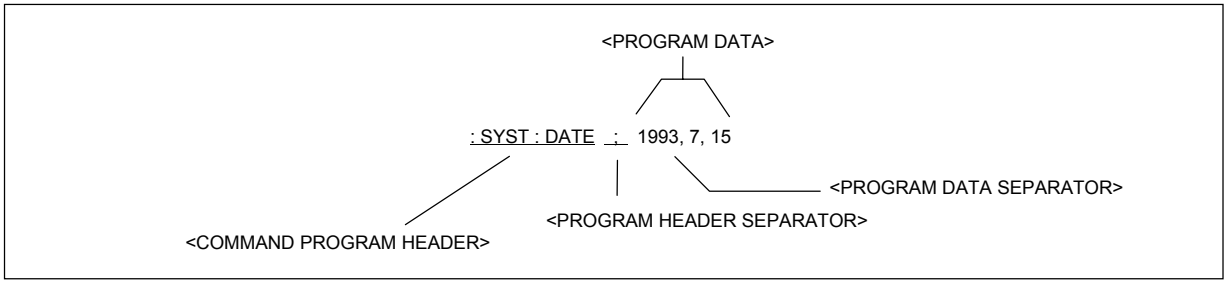
<PROGRAM A <PROGRAM MESSAGE UNIT> consists of a single command message, <PROGRAM MESSAGE UNIT>, or a single query message, <QUERY MESSAGE UNIT>, received by the MP1570A.

5.2.7 <COMMAND MESSAGE UNIT>/<QUERY MESSAGE UNIT>

(1) The <COMMAND MESSAGE UNIT> is defined as shown below.

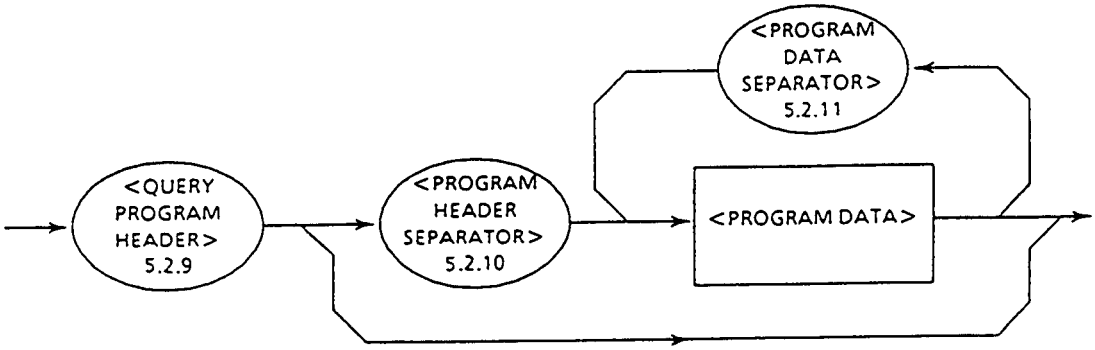


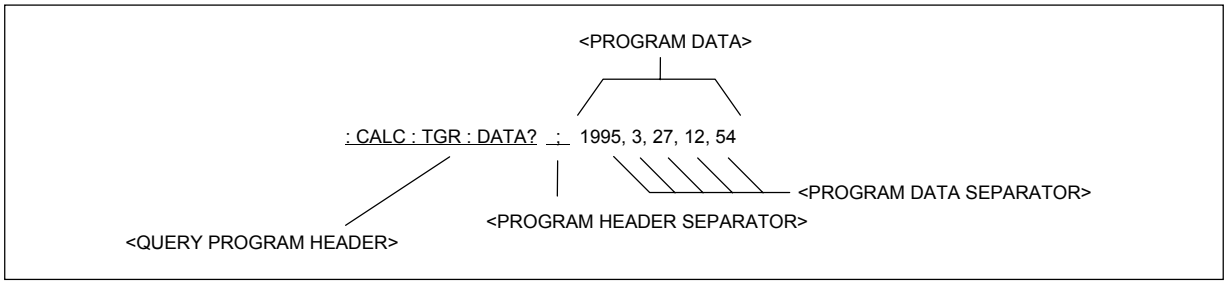
Example: Setting a date



(2) The <QUERY MESSAGE UNIT> is defined as shown below.

Example: Querying Error/Alarm analyze data



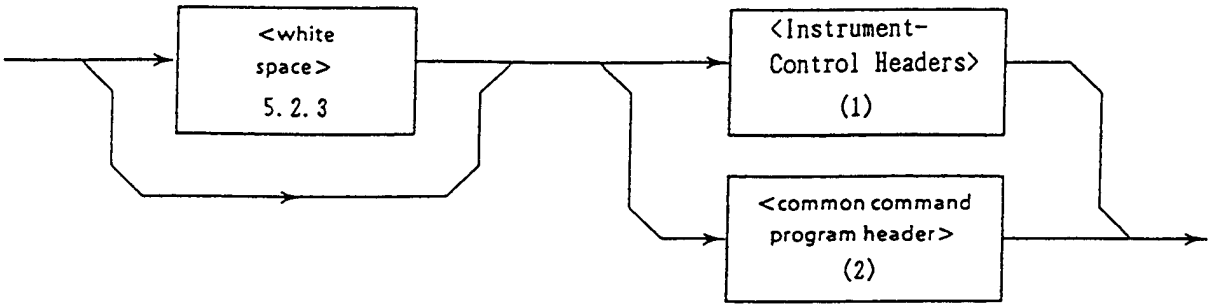


For the <COMMAND MESSAGE UNIT> or <QUERY MESSAGE UNIT>, a space is always inserted as a separator after the program header when program data follows after a program header. The program header identifies the application, function or operation of the program. When no program data are attached, a header identifies the application, function or operation to be executed inside the MP1570A. The <COMMAND PROGRAM HEADER> among program headers is used as the command for controller to control the MP1570A. The <QUERY PROGRAM HEADER> is a query command; the controller sends it to the MP1570A beforehand in order to receive a response message from the MP1570A. The feature of this header is that the query indicator "?" is always attached at the end of the header.

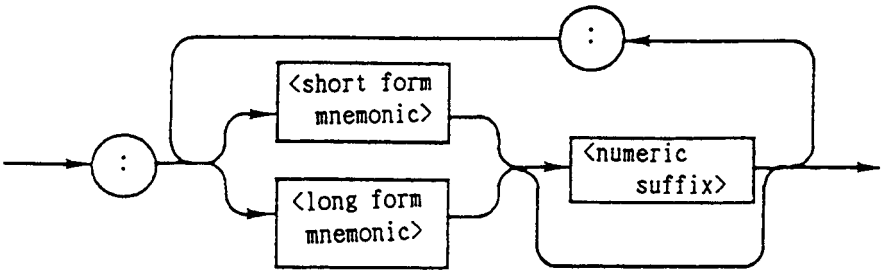
5.2.8 <COMMAND PROGRAM HEADER>

The <COMMAND PROGRAM HEADER>is defined as shown below.

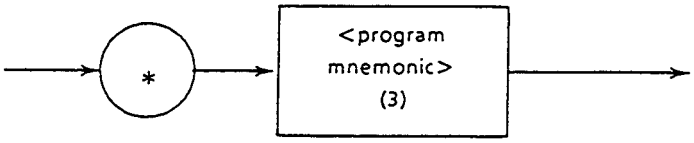
A <white space> may be located before each header.



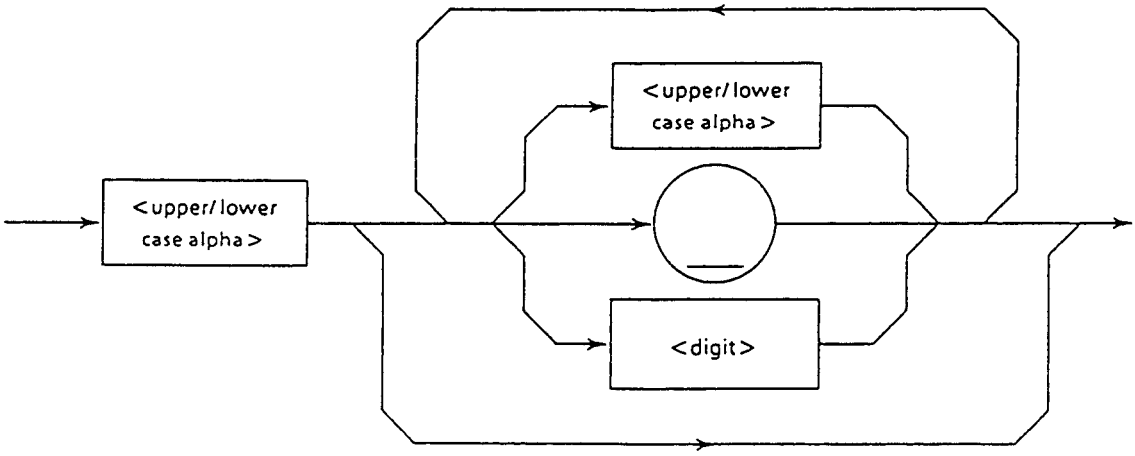
(1) The <Instrument-Control Headers> are defined as shown below.



(2) The <common command program header> is defined as shown below.



(3) The <program mnemonic> is defined as shown below.



■ <COMMAND PROGRAM HEADER>

This header identifies the application, function or operation of program data to be executed by the MP1570A. When no program data are attached, the header alone identifies an application, function or operation to be executed inside the MP1570A.

The <program mnemonic> indicates contents of headers in the ASCII code characters, which is generally called mnemonic.

■ <program mnemonic>

The mnemonic is always begun by a capital or small alphabet, followed by optional combinations of capital letters "A" to "Z", small letters "a" to "z", underline "_" and numerals "0" to "9". The maximum length of mnemonic is 12 characters and no spaces are inserted between characters.

● <upper/lower case alpha>

Defined as a single ASCII code byte within the range of ASCII code bytes between 41 to 5A or 61 to 7A (65 to 90 or 97 to 122 in decimal notation=capital alphabet characters A to Z or small alphabet characters a to z).

● <digit>

Defined as a single ASCII code byte within the range of ASCII code bytes 30 to 39 (48 to 57 in decimal notation=numerals of 0 to 9).

● (_)

Defined as a single ASCII code byte, representing ASCII code byte 5F (95 in decimal notation=underline).

■ <Instrument-Control Headers>

The <Instrument-Control Headers> is specified in the SCPI standard. Since the equipment unique commands of the MP1570A conform to the SCPI standard, the command formats also conform to the standard.

● <short form mnemonic>/<long form mnemonic>

These correspond to the short form and long form of SCPI commands. (For detail, see paragraph 9.3) As for contents of the mnemonic, those explained in <program mnemonic> apply as they are.

● <numeric suffix>

Defined as a single ASCII code byte within the range of ASCII code bytes 30 to 39 (48 to 57 in decimal notation = numerals of 0 to 9).

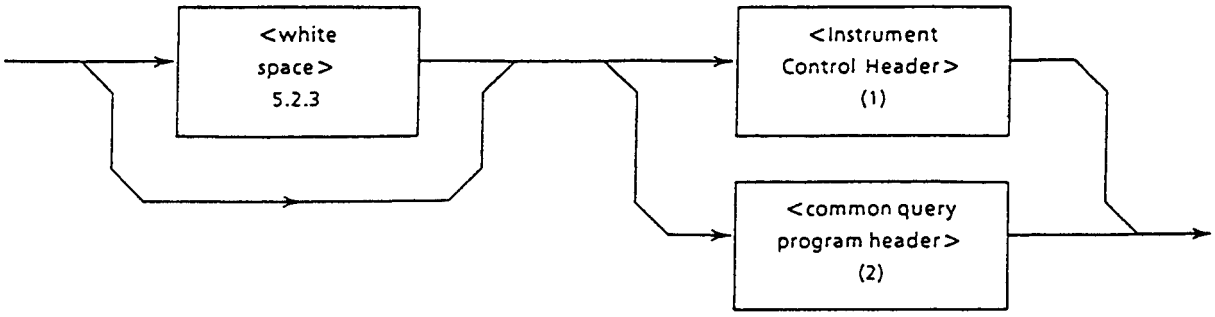
■ <common command program header>

As for the <common command program header>, an asterisk "*" is always attached before a <program mnemonic>.

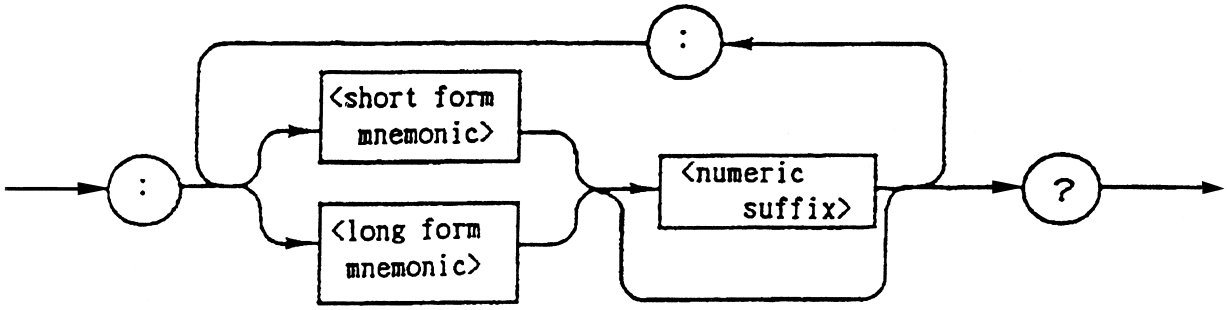
5.2.9 <QUERY PROGRAM HEADER>

The <QUERY PROGRAM HEADER> is defined as shown below.

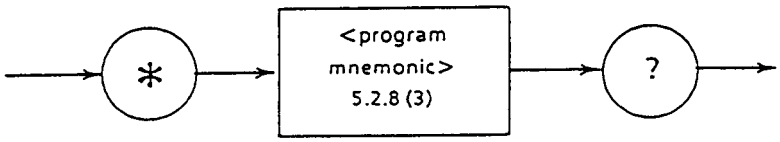
A <white space> may be located before each header.



(1) The <Instrument-Control Headers> is defined as shown below.



(2) The <common query program header> is defined as shown below.



■ <QUERY PROGRAM HEADER>

The <QUERY PROGRAM HEADER> is a query command; the controller sends it to the MP1570A beforehand in order to receive a response message from the MP1570A. The feature of this header is that the query indicator "?" is always attached at the end of the header.

The <QUERY PROGRAM HEADER> format explained above are identical to that of <COMMAND PROGRAM HEADER>, except a query indicator "?" is attached at the end of header. So, see 5.2.8 <COMMAND PROGRAM HEADER>.

5.2.10 <PROGRAM HEADER SEPARATOR>

The <PROGRAM HEADER SEPARATOR> is defined as shown below.

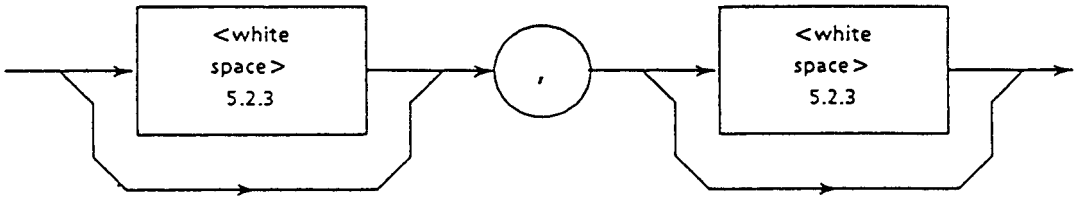
The <PROGRAM HEADER SEPARATOR> is used as the separator between a <COMMAND PROGRAM HEADER> or <QUERY PROGRAM HEADER> and <PROGRAM DATA>.

When more than 1 <white space characters> exist between a program header and program data, the first <white space character> is interpreted as the separator and the rest are ignored. The <white space characters>, however, are effective to make a program easy to read.

Always one header separator exists between a header and data, indicating the end of a program as well as beginning of a program.

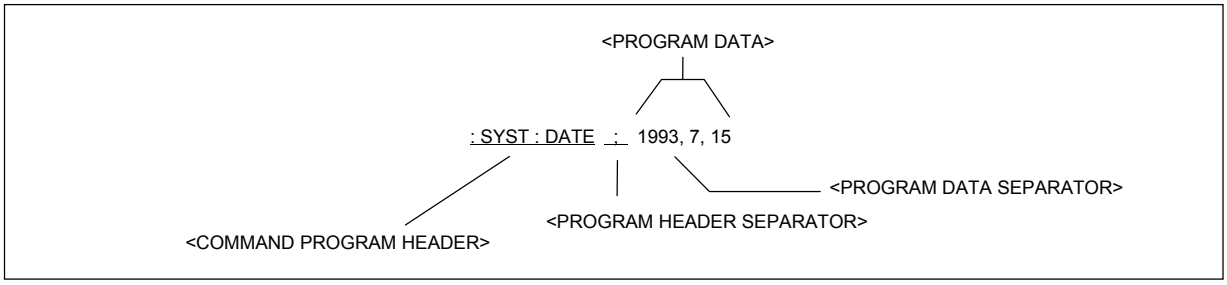
5.2.11 <PROGRAM DATA SEPARATOR>

The <PROGRAM DATA SEPARATOR> is defined as shown below.



The <PROGRAM DATA SEPARATOR> is used to separate parameters when a COMMAND PROGRAM HEADER> or <QUERY PROGRAM HEADER> has more than 1 parameters.

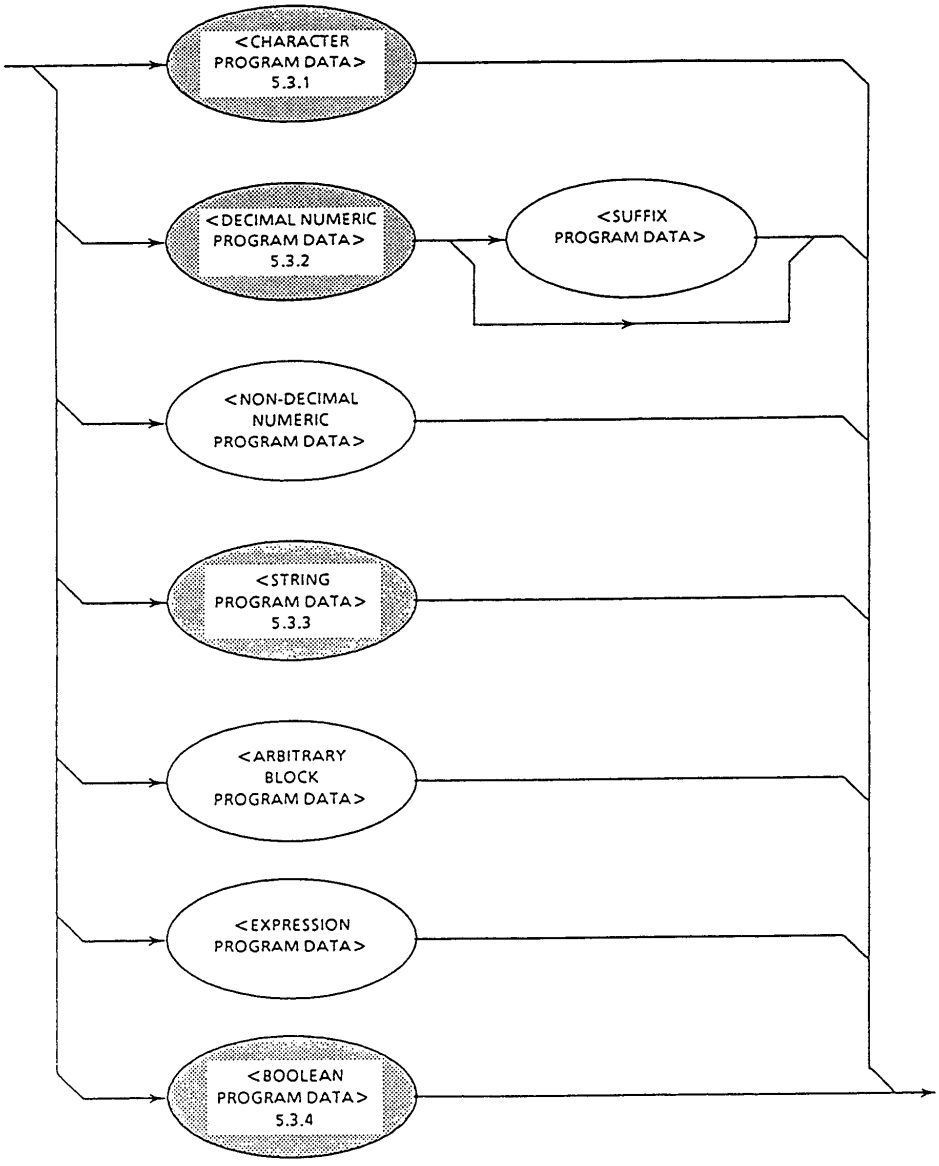
A comma is always needed when the data separated used, however, the <white space characters> is not necessarily needed. A <white space characters> before or after a comma is ignored. The <white space characters>, however, are effective to make a program easy to read.



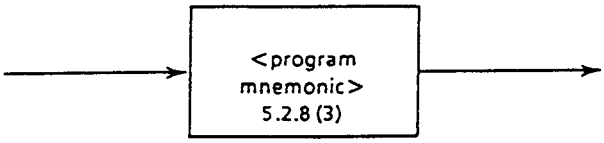
5.3 Program Data Format

Among the format system of program messages being terminated as explained before, the <PROGRAM DATA> format shown by the function grammar diagram in 5.2 is further explained.

The <PROGRAM DATA> function elements are used for transmitting various parameters relating to the program header. Program data shown in netted ovals in the figure below are used by the MP1570A.



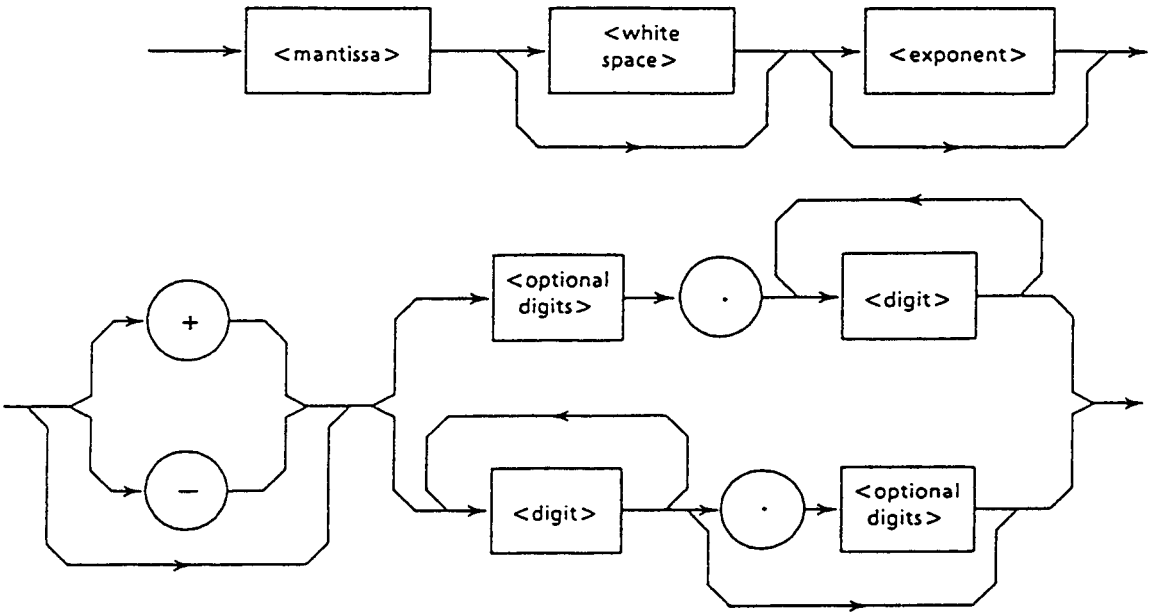
5.3.1 <CHARACTER PROGRAM DATA>



<example> : SENSe : TELecom : PATTern : TYPE PRBS11 (Mnemonic data representing PRBS2^{11}-1)
: SENSe : MEASure : TYPE SINGle（Mnemonic data representing a single measurement）

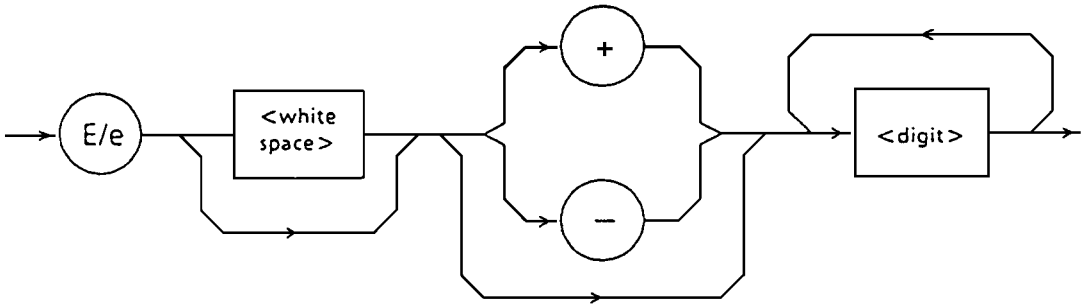
5.3.2 <DECIMAL NUMERIC PROGRAM DATA>

The <DECIMAL NUMERIC PROGRAM DATA> represents a decimal value and is defined as shown below.



<mantissa> is defined as shown below.

The <exponent> is defined as shown below.



Values used by the MP1570A are integers in decimal notation.

■ Integer format

Represents an integer in decimal notation.

- "0" may be inserted at the head. (005)
- No space is allowed between symbols and numerals. (+5 (○), +△5 (×))
- Spaces may be inserted after a numeral. (+5△△)
- The "+" symbol may or may not be attached. (+5, 5)
- No commas can be used to indicate digits. (1,234 (×))

```
<example>   : SOURce : TELecom : MUX : N 5
```

5.3.3 <BOOLEAN PROGRAM DATA>

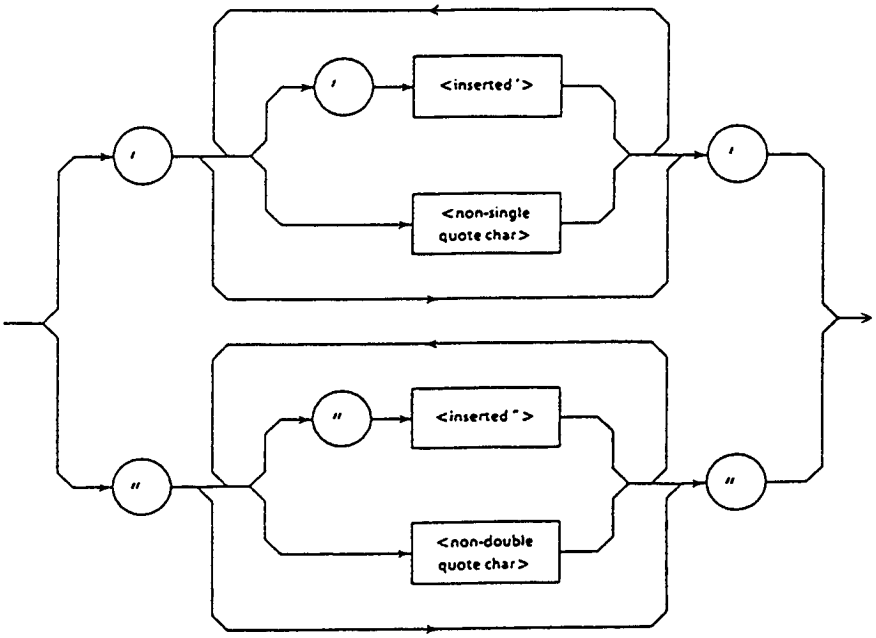
The <BOOLEAN PROGRAM DATA> is program data which is specified by the SCPI and represents a logical value.

As value corresponding to true and false, ON and OFF of <CHARACTER PROGRAM DATA> and 1 and 0 of <DECIMAL NUMERIC PROGRAM DATA> are defined.

```
<example>   : SOURce : TELecom : FRAMing ON
            : SOURce : TELecom : FRAMing 1
```

5.3.4 <STRING PROGRAM DATA>

The <STRING PROGRAM DATA> represents a character string surrounded by double or single quotation marks and is defined as shown below.



((1) The <inserted> is defined by a single ASCII symbol of value 27 (decimal, 39=').

(2) The <non-single quote char> is defined by a single ASCII symbol of a value other than 27 (decimal, 39').

(3) The <inserted> is defined by a single ASCII symbol of value 22 (decimal, 34=").

(4) The <non-double quote char> is defined by a single ASCII symbol of a value other than 22 (decimal, 34=")

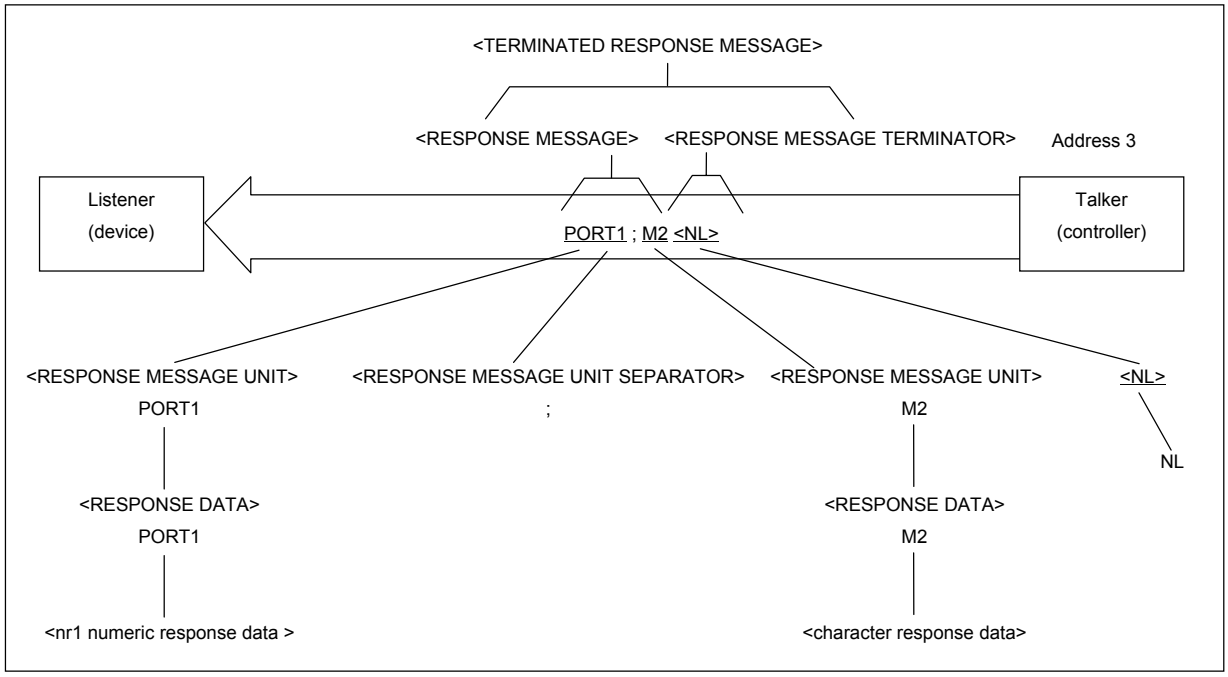
<example> : SENS : TEL : PATT : UWOR “1100110011001100”
(Character string expressing word data 1100110011001100)
: DISP : DSEL : NAME “SETup” (Character string expressing Setup main screen)
: CALC : DATA? “EC : BIT” (Character string expressing error count of error bits)

Section 6　Talker Output Format

This section describes formats of response messages returned from the talker (device) to the listener (controller).

6.1 Talker Output Response Message Format

Responses against the input connector selection query :ROUT:INP:SEL? and the receive signal bit rate query :SENS:TEL:BRAT? are shown below. Since no headers are attached to the SCPI response, only data are returned as responses.

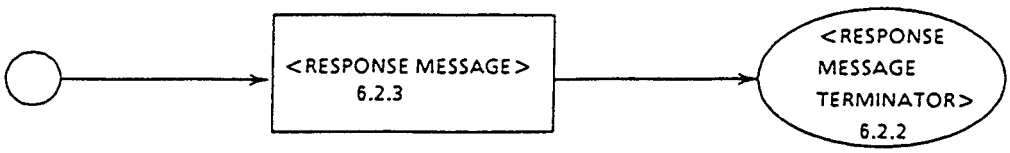


The response message format consists of the function element sequence broken down to the minimum level unit that can express a function, as in the case of the program message. Capital characters surrounded by parentheses < > are example functional elements in the figure above. A functional element can further be divided, which is called a coded element. Small characters surrounded by parentheses, < > are example coded elements. Consequently, the grammar expression method is the same for the talker and listener.

6.2 Functional Element of Response Message

6.2.1 ＜TERMINATED RESPONSE MESSAGE＞

<TERMINATED RESPONSE MESSAGE>は，次のように定義されます。

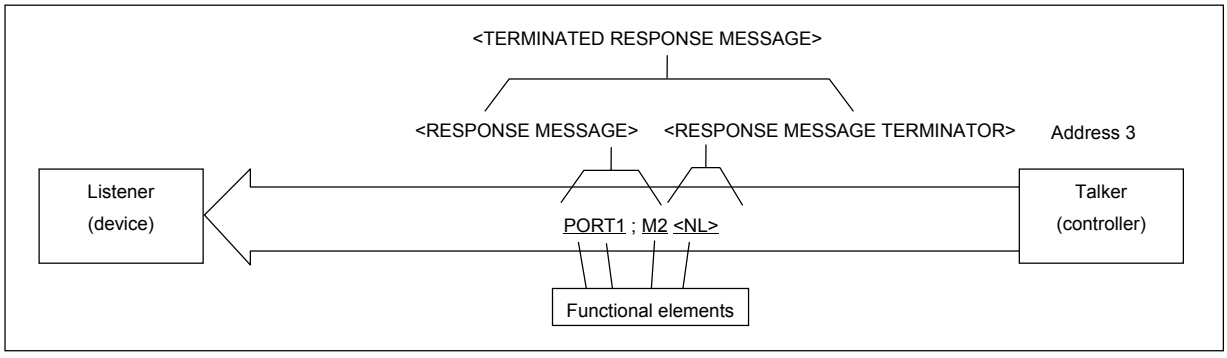


M

A <TERMINATED RESPONSE MESSAGE> is a data message containing all function elements necessary for transmitting the message from the talker device to the controller.

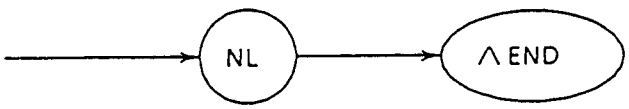
For completing a <RESPONSE MESSAGE> transmission, a <RESPONSE MESSAGE TERMINATOR> is added at the end of a <RESPONSE MESSAGE>.

Example: <TERMINATED RESPONSE MESSAGE> linking two message units

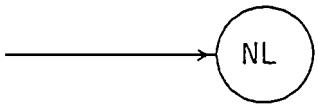


6.2.2 ＜RESPONSE MESSAGE TERMINATOR＞

(1) The <RESPONSE MESSAGE TERMINATOR>is defined as shown below when the GPIB interface is used.



(2) The <RESPONSE MESSAGE TERMINATOR> is defined as shown below when the RS-232C interface is used.



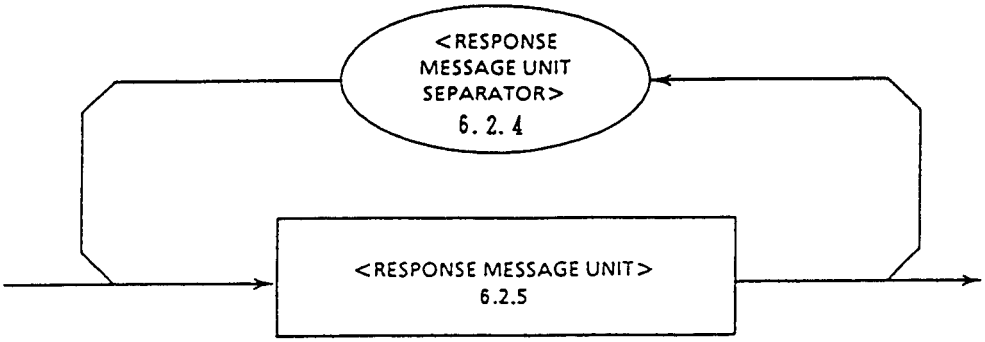
The <RESPONSE MESSAGE TERMINATOR> is located after the <RESPONSE MESSAGE UNIT> and terminates one or more <RESPONSE MESSAGE UNIT> element sequences with constant length.

A typical program which reads the input connector status currently being set is shown below.

```
10 WRITE @03:":ROUT:INP:SEL?"
20 READ @03:A$
30 PRINT A$
40 END
```

6.2.3 ＜RESPONSE MESSAGE＞

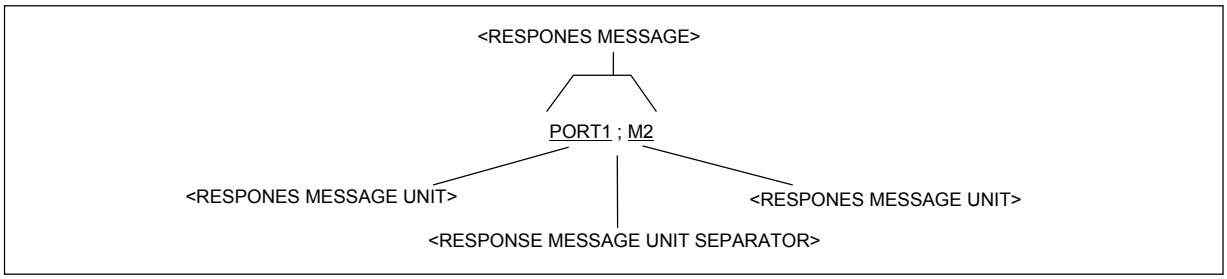
The <RESPONSE MESSAGE> is defined as shown below.



A <RESPONSE MESSAGE> is one or more <RESPONSE MESSAGE UNIT> element sequences.

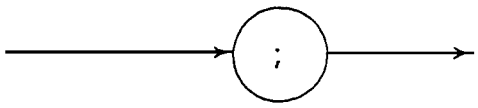
A <RESPONSE MESSAGE UNIT> element expresses a single message being sent from this instrument to the controller. The <RESPONSE MESSAGE UNIT SEPARATOR> element is used as a separator which separates multiple <RESPONSE MESSAGE UNITs>.

Example: An example response against input connection selection and receive signal bit rate query is shown below.



6.2.4 ＜RESPONSE MESSAGE UNIT SEPARATOR＞

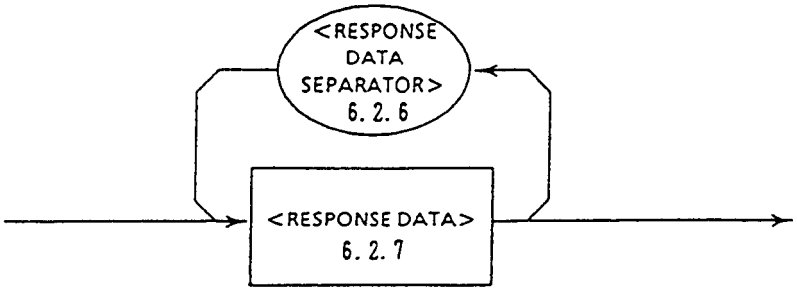
The <RESPONSE MESSAGE UNIT SEPARATOR> is defined as shown below.



The <RESPONSE MESSAGE UNIT SEPARATOR> separates elements when multiple <RESPONSE MESSAGE UNIT> element sequences are output as a single <RESPONSE MESSAGE> by the <UNIT SEPARATOR> semicolon ";".

6.2.5 ＜RESPONSE MESSAGE UNIT＞

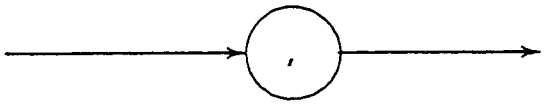
The <RESPONSE MESSAGE UNIT> is defined as shown below.



The <RESPONSE MESSAGE UNIT> used in the MP1570A is the response message unit without header, and only measured result data are responded.

6.2.6 ＜RESPONSE DATA SEPARATOR＞

The <RESPONSE DATA SEPARATOR> is defined as shown below.

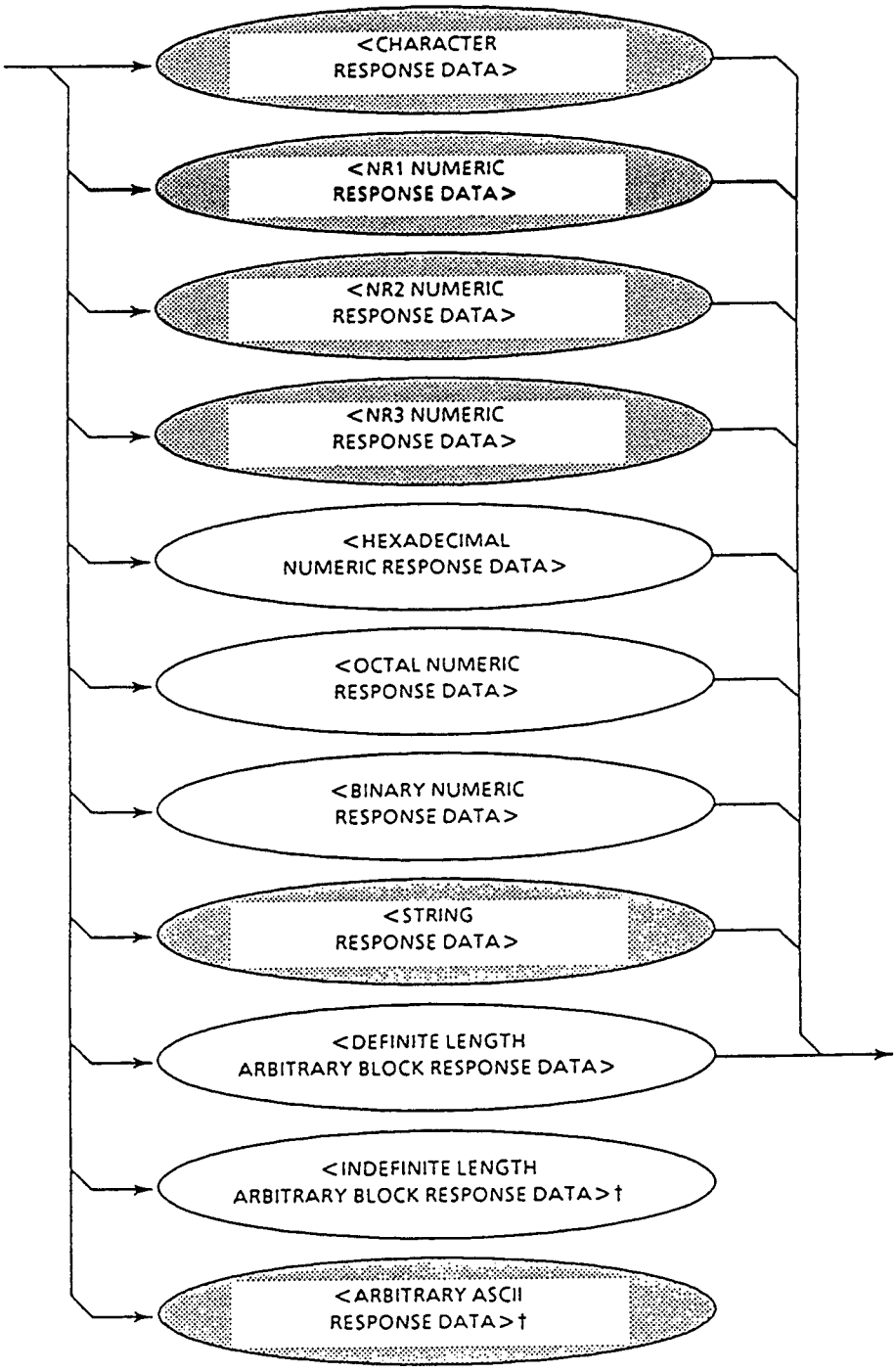


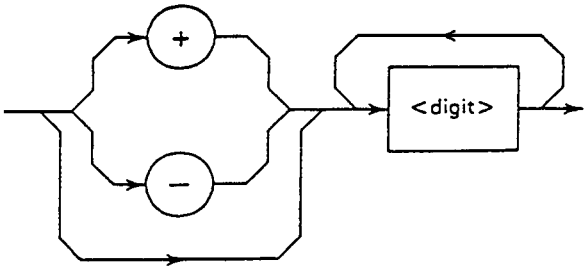
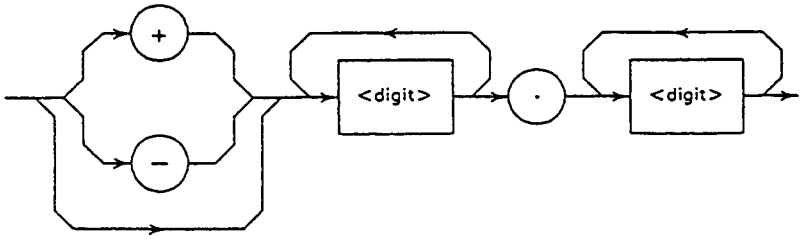
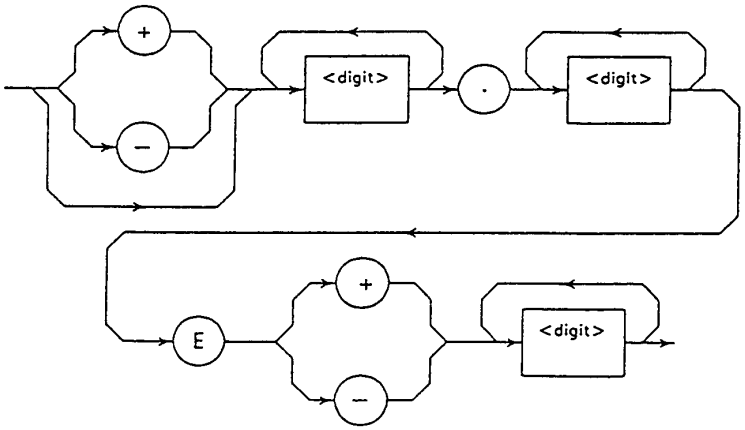
A <RESPONSE DATA SEPARATOR> is used to separate data when multiple are output.

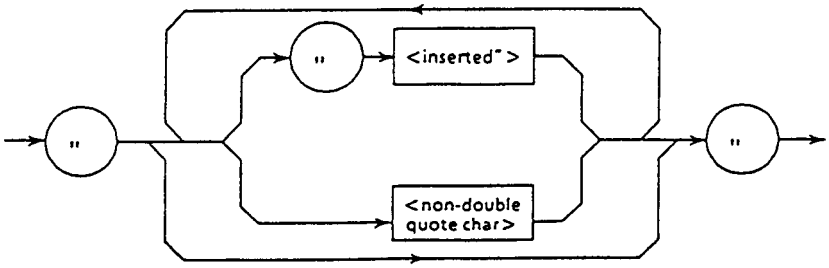
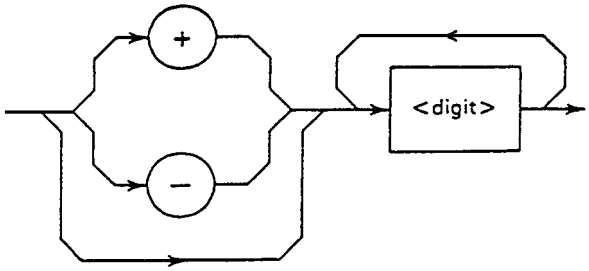
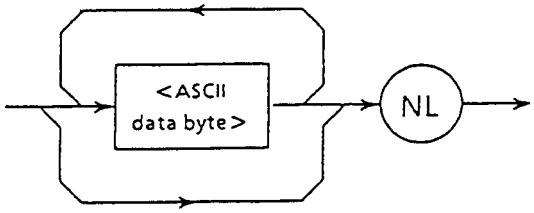
6.2.7 ＜RESPONSE DATA＞

Data shown in netted ovals are <RESPONSE DATA> used for the MP1570A.

Which response data is returned is determined depending on the query message.



Element	Function
(1) CHARACTER RESPONSE DATA <Example> ABC DEFG	Express a short mnemonic data. 
(2) NR1 NUMERIC RESPONSE DATA <Example> 123 +123 -1234	Express a decimal integer. 
(3) NR2 NUMERIC RESPONSE DATA <Example> 12.3 +12.34 -12.345	Express a value representing a fixed decimal point. 
(4) NR3 NUMERIC RESPONSE DATA <Example> 1.23E+45 -12.3E+45	Express an actual decimal value with affix. 

Element	Function
(4) STRING RESPONSE DATA <Example> “1234” “ABCD” “ 1234.5”	Express a character string quoted by double quotation marks. 
(5) ARBITARY ASCII RESPONSE DATA <Example> <ASCII Byte><ASCII Byte>NL＾END	ASCII data bytes are sent without separation, except NL characters. Since, NL^END (or NL only) is inserted at the end, the message is terminated without exit. 1)For GPIB interface  2)For RS-232C interface 

Section 7 IEEE488.2 Common Command

This section describes the IEEE488.2 common commands supported by the MP1570A.

The common commands can be used commonly for the GPIB or RS-232C interface.
All common commands supported by the MP1570A are sequential commands.

Table below lists the IEEE488.2 common commands supported by the MP1570A.

IEEE488.2 Common Command List

Mnemonic	Command's full spell
*IDN?	Identification Query
*RST	Reset Command
*TST?	Self Test Query
*OPC	Operation Complete Command
*OPC?	Operation Complete Query
*WAI	Wait Continue Command
*CLS	Clear Status Command
*ESE	Standard Event Status Enable Command
*ESE?	Standard Event Status Enable Query
*ESR?	Standard Event Status Register Query
*SRE	Service Request Enable Command
*SRE?	Service Request Enable Query
*STB?	Read Status Byte Query
*TRG	Trigger Command
*PSC	Power On Status Clear Command
*PSC?	Power On Status Clear Query
*SAV	Save Command
*RCL	Recall Command
*OPT?	Option Identification Query

∗IDN? Identification Query

Response <ARBITRARY ASCII RESPONSE DATA>
<Manufacturer>, <Model>, <Serial No.>, <Firmware revision No.>
For the MP1570A: ANRITSU, MP1570A, 0, 1 ANRITSU, MP1570A, 0, 1

Function Reports the manufacture name, model, etc.

Example use *IDN?

∗RST Reset Command

Parameter None

Function Resets the same settings as power on.
Although measured contents are cleared, the measurement is maintained.
To return to the factory settings, enter <0> (Initial) to the SCPI command :SYSTem:MEMory: RECall.

Example use *RST

∗TST? Self Test Query

Response <NR1 NUMERIC RESPONSE DATA>
0: No errors
1: Error detected

Function Queries results of the self test carried out upon power on (RAM check and LEDs/buzzer check).
The SCPI command :TEST:STARt is used for self tests of signals and offset (on the Selftest menu) and results are queried using :TEST:DATA?.

Example use *TST?

∗OPC Operation Complete Command

Parameter None

Function Sets bit 0 (operation complete bit) of the standard event status register, setting SRQ to ON, when execution of the preceding command is complete.

Example use *OPC

∗OPC? Operation Complete Query

Response <NR1 NUMERIC RESPONSE DATA>
1

Function when a preceding command is complete.

Example use *OPC?

∗WAI Wait to Continue Command

Parameter None

Function Makes execution of the succeeding commands wait until execution of the preceding command is complete.

Example use *WAI

∗CLS Clear Status Command

Parameter None

Function Clears all event registers and queues, except the output queues and their MAV summary messages.
Reset of the enable register and transition filter for the equipment unique status register is conducted using the SCPI command :STATus:PRESet.
When an *CLS is sent immediately after <PROGRAM MESSAGE TERMINATOR> and before <QUERY MESSAGE UNIT> element, the output queues and MAV bits are also cleared. Makes execution of the succeeding commands wait until execution of the preceding command is complete.

Example use *CLS

∗ESE Standard Event Status Enable Command

Parameter <DECIMAL NUMERIC PROGRAM DATA>
An integer between 0 and 255
The parameter represents the total of bit digit values when bits to be enabled are selected from bits of the standard event enable register. The digit value for a bit to be disabled is set to 0.
For the MP1570A, register settings are as listed below:

Bit 7 (27=128): Upon power on
Bit 6 (26=64): Execution of local control
Bit 5 (25=32): Command error
Bit 4 (24=16): Execution error
Bit 3 (23=8): Errors other than command, query and execution errors
Bit 2 (22=4): Query error
Bit 0 (20=1): Completion of operation

Function Sets or clears the standard event status enable register.

Example use Sets bit 2 and 4 of the enable register.
*ESE 20

∗ESE? Standard Event Status Enable Query

Parameter <NR1 NUMERIC RESPONSE DATA>
0 to 255

Function Queries current value of the standard event status enable register.

Example use "20" is returned when *ESE? is sent after execution of *ESE 20.

∗ESR? Standard Event Status Register Query

Response <NR1 NUMERIC RESPONSE DATA>
0 to 255
Total of digit values of standard status register bits is responded.
For bit settings of the standard status register, see the *ESE command parameter.

Function Queries current value of the standard status register.

Example use "32" is returned against the *ESR? Query when a command error exists.

∗SRE Service Request Enable Command

Parameter <DECIMAL NUMERIC PROGRAM DATA>
0 to 255
The parameter represents the total of bit digit values when bits to be enabled are selected from bits of the service request enable register. The digit value for a bit to be disabled is set to 0.
For the MP1570A, register settings are as listed below:
Bit 7 (27=128): Operation status register summary
Bit 5 (25=32): Event status register summary
Bit 4 (24=16): Indicates that the output queue is not empty.
Bit 3 (23=8): Questionable status register summary
Bit 2 (22=4): Indicates that the error and event queues are not empty.

Function Set bits of the service request enable register.

Example use To set bit 4 of the enable register
*SRE 16

*SRE? Service Request Enable Query

Response <NR1 NUMERIC RESPONSE DATA>

0 to 255

Function Queries current value of the service request enable register.

Example use "16" is returned when an *SRE? is sent after execution of *SRE 16.

*STB? Read Status Byte Command

Response <NR1 NUMERIC RESPONSE DATA>

0 to 255

The response is a total of digit values of status byte register bits.

For the MP1570A, register settings are as listed below:

Bit 7 (27=128): Operation status register summary

Bit 6 (26=64): MSS (Master Summary Status) summary message

Bit 5 (25=32): Event status register summary

Bit 4 (24=16): Indicates that the output queue is not empty.

Bit 3 (23=8): Questionable status register summary

Bit 2 (22=4): Indicates that the error and event queues are not empty.

Function Responses a current value including MSS (Master Summary Status) bit.

Example use When the event status register summary is true, 32 is returned against an *STB? query.

*TRG Trigger Command

Parameter None

Function Operation is the same as that of IEEE488.1 GET (Group Execute Trigger bus command). 12 *PSC

Example use *TRG

*PSC Power-on Status Clear Command

Parameter <DECIMAL NUMERIC PROGRAM DATA>

0: Sets power-on status clear flag to false.

Other than 0: Sets power-on status clear flag to true.

Function Determines if service request, standard event status and parallel pole enable registers of the status reporting section are cleared at power on or not.

Entering 0 does not clear enable registers and the device can issue SRQ upon power on.
Entering 1 clears enable registers and the device cannot issue SRQ upon power on.

Example use To issue SRQ without clearing power-on status flag:
*PSC 0;*SRE 32;*ESE 128

*PSC? Power-on Status Clear Query

Response <NR1 NUMERIC RESPONSE DATA>
0: Power-on status flag is false.
1: Power-on status flag is true.

Function Queries false/true of the power-on status flag.

Example use *PSC?

*SAV Save Command

Parameter <DECIMAL NUMERIC PROGRAM DATA>
1 to 10

Function Writes current equipment settings to the memory with the designated number.
The state range saved is the same as that being affected by the RST command.
The SCPI command :SYSTem:MEMory:STORe has the same function.

Example use To write the current setting to memory No.1:
*SAV 1

*RCL Recall Command

Parameter <DECIMAL NUMERIC PROGRAM DATA>
1 to 10

Function Recalls the memory of the designated number and sets the equipment to the previous settings accordingly.
The state range saved is the same as that being affected by the RST command.
The SCPI command :SYSTem:MEMory:RECall has the same function.

Example use To recall memory No.1 and sets the equipment:
*RCL 1

∗OPT? Option Identification Query

Response <ARBITRARY ASCII RESPONSE DATA>

Character corresponding to the option or unit

Option	Character
Non Option	0
Option 01	OPT01
Option 02	OPT02
Option 03	OPT03
Option 06	OPT06
Option 07	OPT07
Option 08	OPT08
Option 09	OPT09
Option 10	OPT10
Option 11	OPT11
Option 12	OPT12
Option 13	OPT13
Option 14	OPT14
Option 15	OPT15
Option 22	OPT22
MP0104B Optical 156/622M (1.31)Interface Unit	MP0104B
MP0106B Optical156/622M (1.55)Interface Unit	MP0106B
MP0104A Optical156M (1.31)Interface Unit	MP0104A
MP0105A CMIInterface Unit	MP0105A
MP0108A NRZInterface Unit	MP0108A
MP0108B NRZ (UTP-5) Interface Unit	MP0108B
MP0109A Optical156/622M (1.31)Interface Unit	MP0109A
MP0110A Optical156/622M (1.55)Interface Unit	MP0110A
MP0111A Optical156/622M (1.31)Interface Unit	MP0111A
MP0112AOptical156/622M (1.55)Interface Unit	MP0112A
MP0113A Optical156/622M (1.31/1.55)Interface Unit	MP0113A
2/8/34/139/156M(CMI)Unit	MP0121A
1.5/45/52M Unit	MP0122A
ATM Unit	MP0123A
2/8/34/139M 156/622MJitter Unit	MP0124A MU150005A
1.5/45/52M 156/622MJitter Unit	MP0125A MU150006A
2/8/34/139M 1.5/45/52M 156/622M Jitter Unit	MP0126A MU150007A
2.5G (1.31) Unit	MP0127A MU150008A
2.5G (1.55) Unit	MP0128A MU150009A
2.5G (1.31/1.55) Unit	MP0129A MU150010A
2.5G Jitter Unit	MP0130A MU150011A
Add/Drop Unit	MP0131A
2.5G/10G Unit	MU150000A

OPTICAL 10G TX (1.55) Unit	MU150001A
OPTICAL 10G TX (1.55) Unit	MU150001B
OPTICAL 10G TX (1.55) Unit	MU150001C
OPTICAL 10G TX (1.55) Unit	MU150001D
OPTICAL 10G RX (NARROW) Unit	MU150002A
OPTICAL 10G RX (Wide) Unit	MU150017A
OPTICAL 2.5G/10G RX (Wide) Unit	MU150017B
OPTICAL 10G TX (1.55) Unit	MU150031A
OPTICAL 2.5G/10G TX (1.55) Unit	MU150031C
OPTICAL 10G TX (1.31) Unit	MU150061A
OPTICAL 2.5G/10G TX (1.31) Unit	MU150061B

Function Reports the list of the installed options.

Each option number is reported, being separated by comma, after the unit model name, in the sequence of Main frame, interface, and each slot.

Example use When Options 01/06 and MP0113A/MP0121A/MP0122A units are installed.

> *OPT?

< OPT01, OPT06, MP0113A, MP0121A, MP0122A

Section 8 Status Report

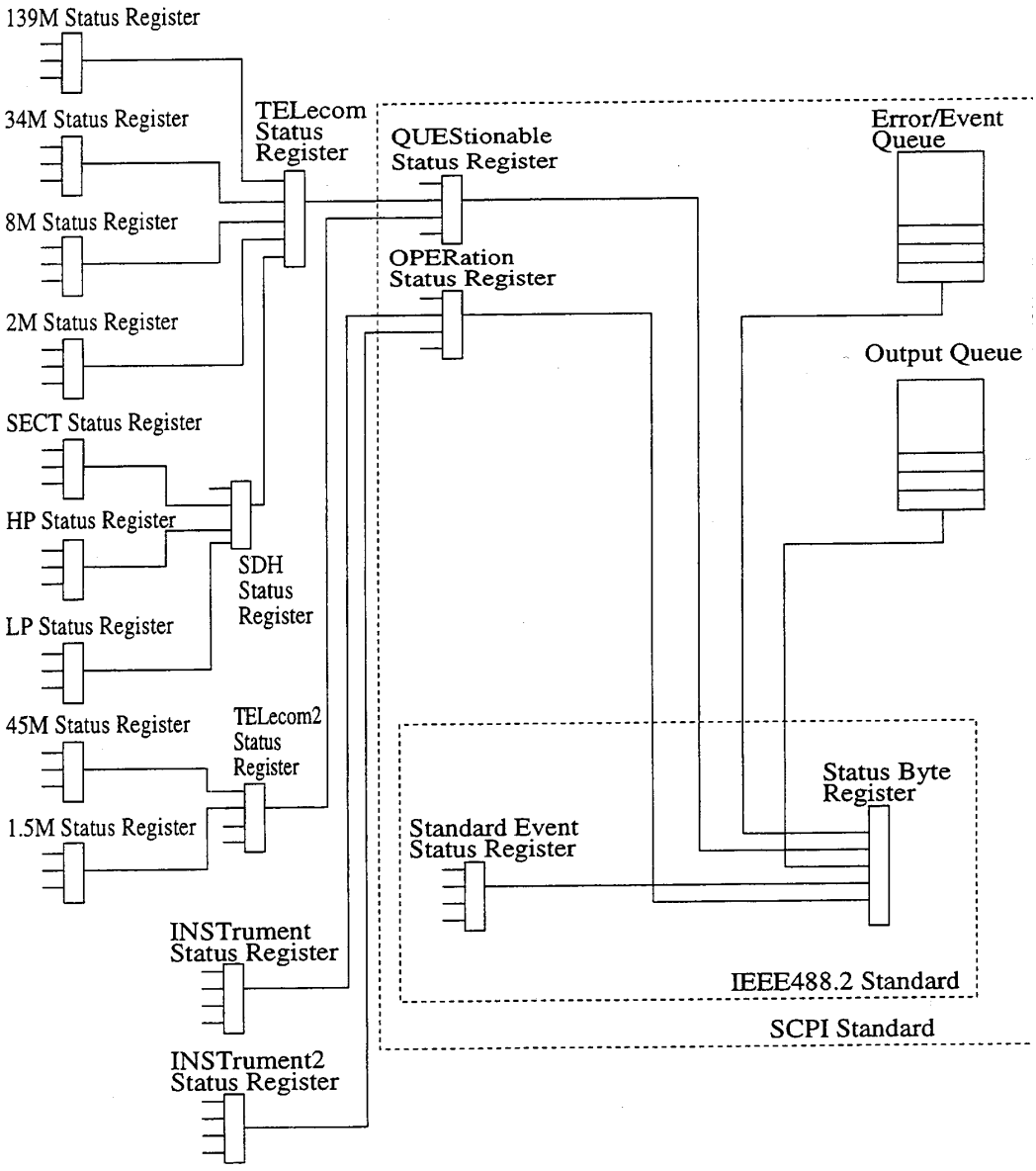
This section describes the status register configuration and definition of status register bits.

The configuration of MP1570A status registers conforms to the SCPI standard. (SCPI: Standard Command for Programmable Instruments For detail, see Section 9.)

8.1 MP1570A Status Register Configuration

The SCPI requires to configure status registers specified by the IEEE488.2 and SCPI unique OPERation and QUEStionalble status registers.

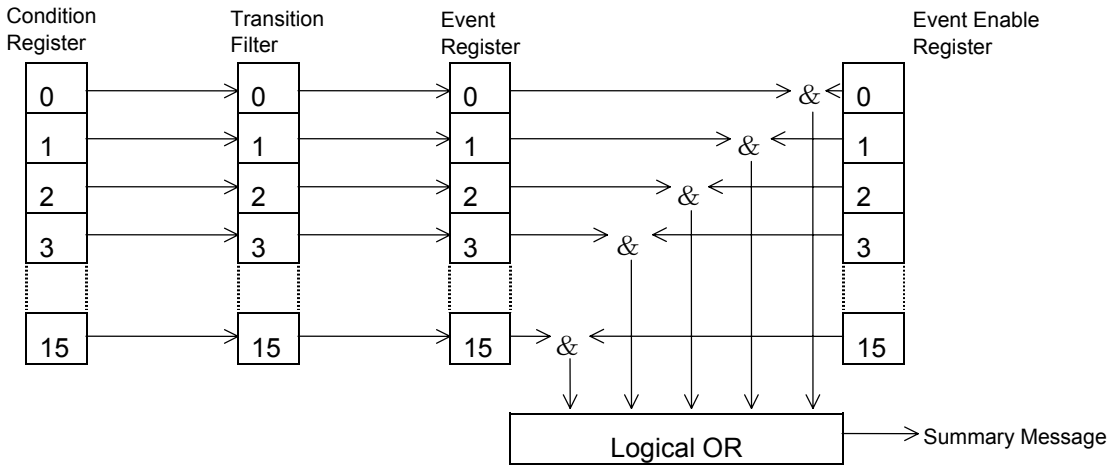
Brief schematic drawing of registers installed to the MP1570A is shown in the next page. (Bit position and width will be explained later.)



MP1570A Status Register Configuration

Registers specified by IEEE488.2 .....Standard event register, status byte register
Registers specified by SCPI .....QUEStionable status register, OPERation status register
Unit individual register TELecom,TELecom2,INSTrument,INSTrument2,
SDH/SONet,139M,34M,8M,2M,SECT/SLINe,HP/P,LP/V,TCOH(HP)/TCOH(P)TCO
H(LP)/ TCOH(V),OH,SIGNalling,45M,1.5M

SCPI specified status registers and equipment unique status registers are configured as shown below.



Status Register Configuration

Functions of Register and Filter

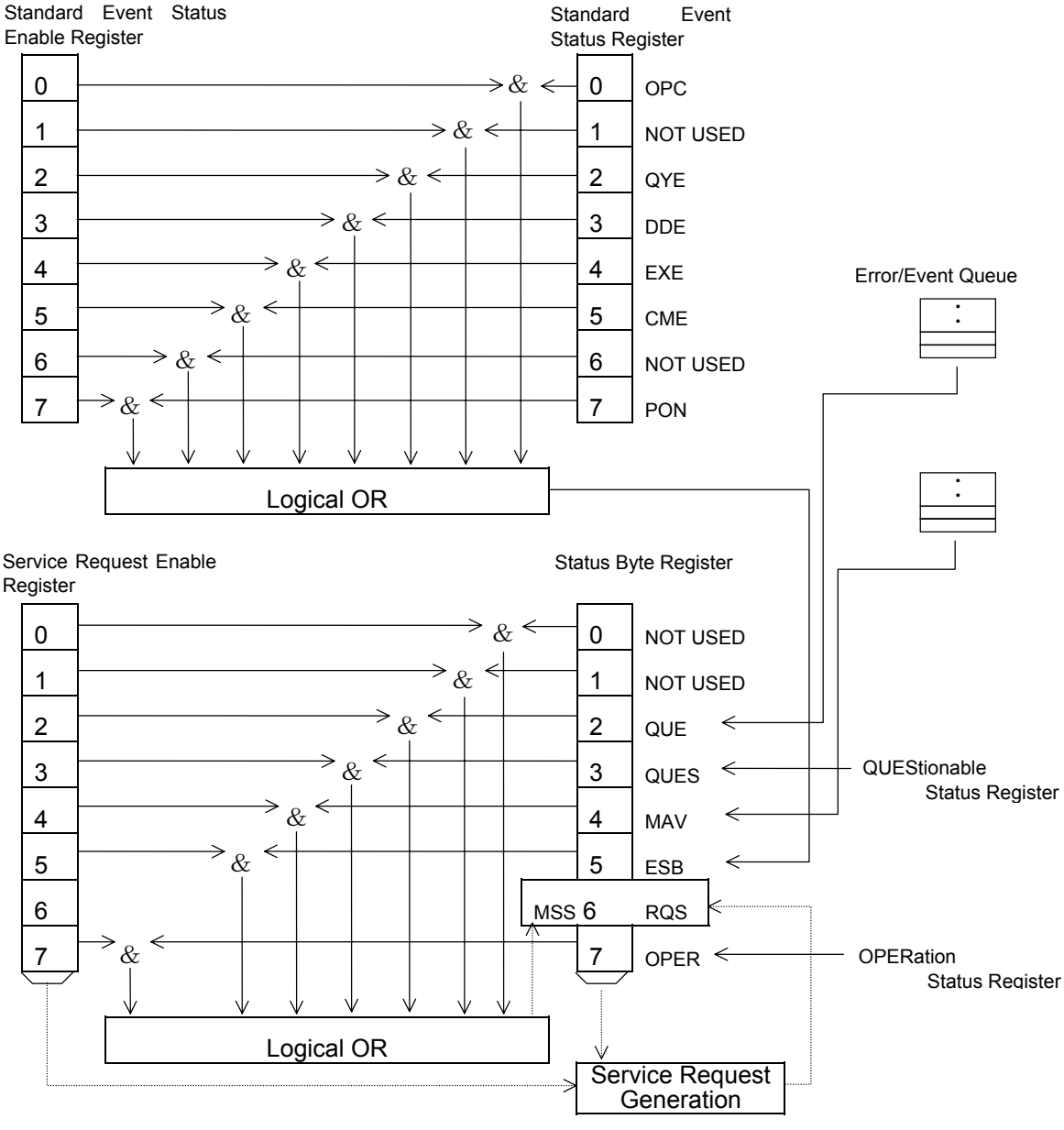
Register/filter	Function
Condition Register	Monitors device status and changes in real time according to device status. Thus, this register does not memorize status.
Transition Filter	Sets contents of Condition Register to Event Register. Transition Filter conducts one of the following 3 evaluations: Positive direction change: Event becomes true only when corresponding condition changes from false to true. Negative direction change: Event becomes true only when corresponding condition changes from true to false. Bi-directional change: Event becomes true when positive or negative direction change occurs.
Event Register	Memorizes the Transition Filter output.
Event Enable Register	Selects if summary message is set to true when which bit of the corresponding Event Register is set.

8.2 IEEE488.2 Specified Status Register

The IEEE488.2 specifies the following two status registers:

Functions of Status Registers Specified by IEEE488.2

Status Byte Register	Capable of setting RQS and 7 summary message bits. Used in combination with service request enable register and SRQ is set to ON when OR of both registers is not 0. System reserves bit 6 for RQS and reports service request the external controller using this bit.
Standard Event Status Register	Eight events the device encounters as standard events are registered at this register. Logical OR output bit is indicated at bits 5 of status byte register as ESB (Event Status Bit) summary message.



Bit Definition for Status Byte Register

DB2	QUE (Error/Event QUEue)	Indicates that error and event queues are not empty.
DB3	QUES (QUEStionable status register summary)	QUEStionable Status Register Summary
DB4	MAV (Message AVailable)	Indicates that output queue is not empty
DB5	ESB (Event Summary Bit)	Standard Event Status Register Summary
DB6	RQS (ReQuest Service) MSS (Master Summary Status)	RQS Message MSS (Master Summary Status) Indicates at least one cause requesting service exists in device.
DB7	OPER (OPERation status register summary)	OPERation Status Register Summary

Bit Definition for Standard Event Status Register

DB0	OPC (Operation Complete)	Indicates that all designated operations have completed.
DB2	QYE (Query Error)	Indicates that query error occurred.
DB3	DDE (Device-dependent Error)	Indicates that an error other than command, query and execution errors occurred.
DB4	EXE (Execution Error)	DB4 EXE (Execution Error) Indicates that an execution error occurred.
DB5	CME (Command Error)	Indicates that a command error occurred.
DB7	PON (Power on)	Indicates that power supply changed from OFF to ON.

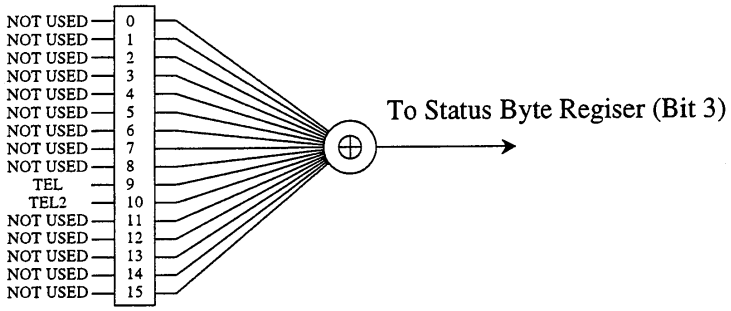
8.3 SCPI Specified Status Register

The SCPI requires that the following registers are installed in addition to those specified by the IEEE488.2.

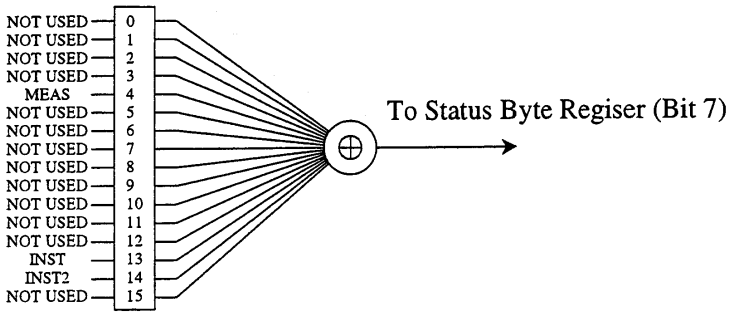
Functions of SCPI Specified Status Registers

OPERationStatus Register	Reports a part of the equipment status.
QUEStionableStatus Register	Status Register Reports the signal status.

QUEStionable Status Register



OPERation Status Register



Bit Definition of QUEStionable Status Register

DB9	TEL (TELecom status register summary)	TELecomStatus Register Summary
DB10	TEL2 (TELecom2 status register summary)	TELecom2Status Register Summary

Bit Definition of OPERation Status Register

DB4	MEAS (MEASuring)	Indicates that measurement is under-going.
DB13	INST (INSTrument status register summary)	INSTrument Status Register Summary
DB14	INST2 (INSTrument2 status register summary)	INSTrument2 Status Register Summary

8.4 MP1570A Unique Status Register

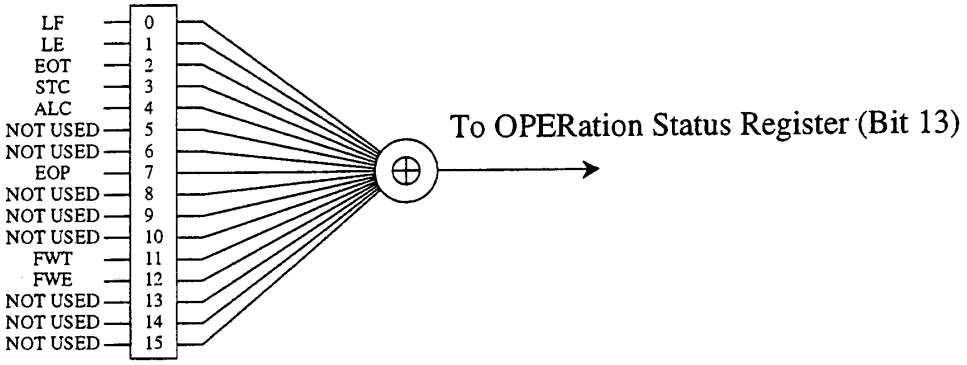
Table below lists status registers unique to the MP1570A.

Functions of MP1570A Unique Status Registers

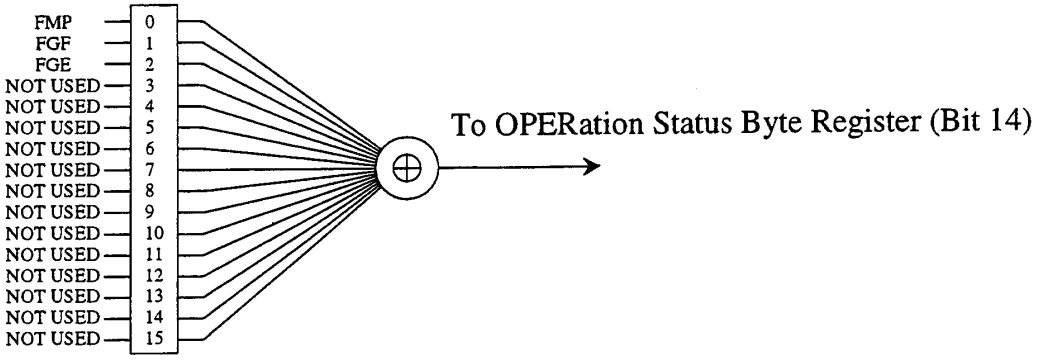
INSTrumentStatus Register	Reports the equipment and measurement status.
TELecomStatus Register	Reports the signal status and includes the lower layer summary message.
INSTrument2Status Register	Reports the equipment and measurement status.
TELecom2Status Register	Reports the signal status and includes the lower layer summary message.
139MStatus Register	Reports the 139M signal status.
34MStatus Register	Reports the 34M signal status.
8MStatus Register	Reports the 8M signal status.
2MStatus Register	Reports the 2M signal status.
SDH/SONetStatus Register	Reports the SDH signal status and includes the lower layer summary message.
SECT/SLINeStatus Register	Reports the SECT signal status.
HP/PStatus Register	Reports the AU signal status.
LP/VStatus Register	Reports the TU signal status.
TCOH(HP)/TCOH(P)Status Register	Reports the tandem connection (high path) status.
TCOH(LP)/TCOH(V)Status Register	Reports the tandem connection (low path) status.
OHStatus Register	Reports the OH status.
SIGNallingStatus Register	Reports the 384Ksignal status.
45MStatus Register	Reports the 45M signal status.
1.5MStatus Register	Reports the 1.5M signal status.

Configurations of the above listed registers are shown on the next page.

INSTrument Status Register



INSTrument2 Status Register

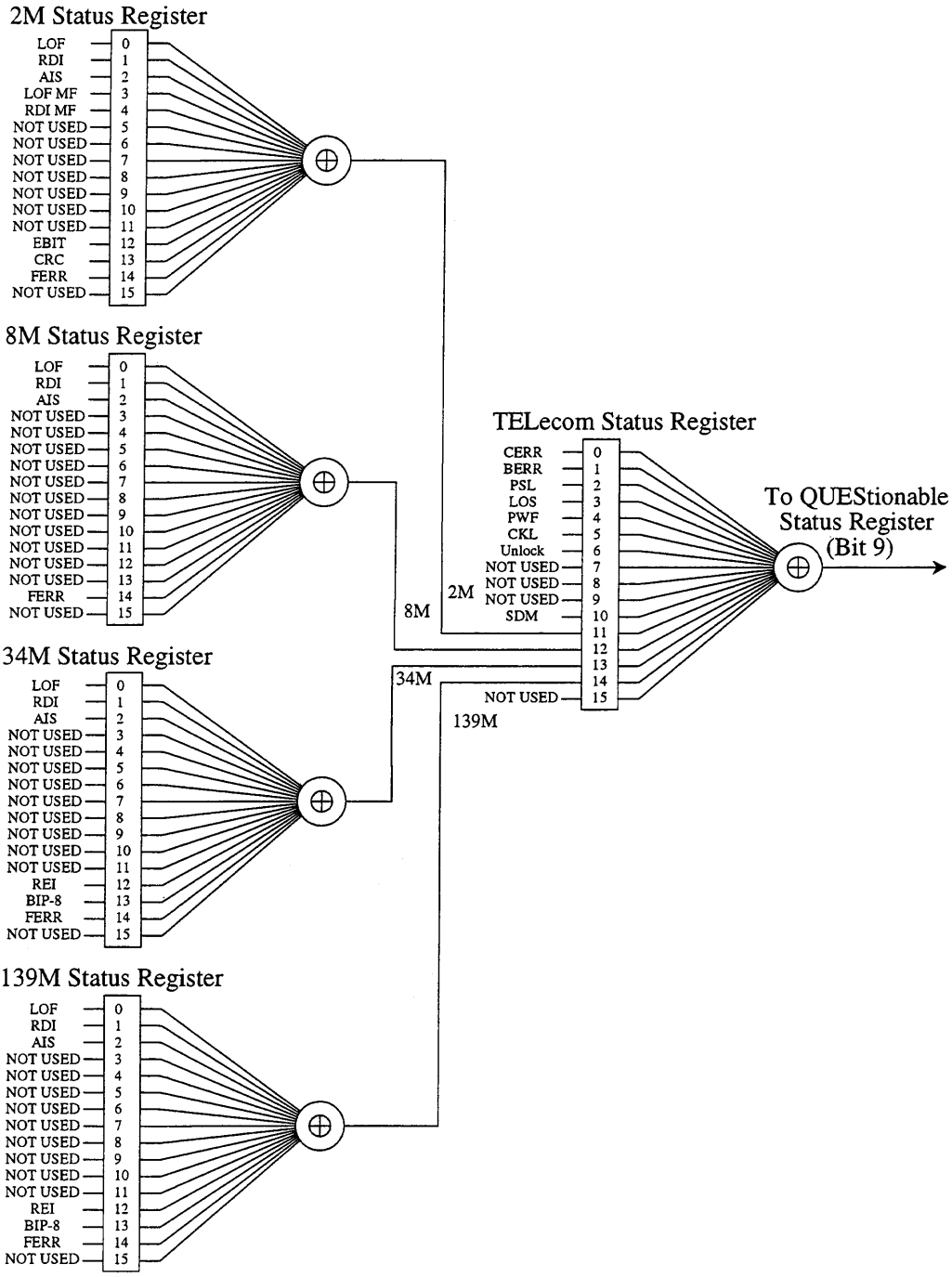


Bit Definition for INSTrument Status Register

DB0	LF (Log Full)	Indicates that the log is full.
DB1	LE (Log Empty)	Indicates that the log is empty.
DB2	EOT (End Of Test period)	Indicates that a test (measurement) has completed.
DB3	STC (Self Test Complete)	Indicates that the self test has completed.
DB4	ALC (ALarm Change)	Indicated that change has occurred to alarm
DB7	EOP (End Of Printer period)	Indicated the intermediate print timing of the printer.
DB11	FWT (64 Frame Wating for Trigger)	Indicated that there was SOH64 framed trigger wait
DB12	FWE (64 Frame Wating for Capture End)	Indicated that there was a wait for the end of SOH64 Frame.

Bit Definition for INSTrument2 Status Register

DB0	FMP (Freq. Monitor Period)	Indicates update timing of frequency monitor.
DB1	FGF (Freq. Graph Full)	Indicates Freq. graph data is full.
DB2	FGE (Freq. Graph Empty)	Indicates Freq. graph data is empty


2M Status Register
LOF 0
RDI 1
AIS 2
LOF MF 3
RDI MF 4
NOT USED 5
NOT USED 6
NOT USED 7
NOT USED 8
NOT USED 9
NOT USED 10
NOT USED 11
EBIT 12
CRC 13
FERR 14
NOT USED 15
8M Status Register
LOF 0
RDI 1
AIS 2
NOT USED 3
NOT USED 4
NOT USED 5
NOT USED 6
NOT USED 7
NOT USED 8
NOT USED 9
NOT USED 10
NOT USED 11
NOT USED 12
NOT USED 13
FERR 14
NOT USED 15
34M Status Register
LOF 0
RDI 1
AIS 2
NOT USED 3
NOT USED 4
NOT USED 5
NOT USED 6
NOT USED 7
NOT USED 8
NOT USED 9
NOT USED 10
NOT USED 11
REI 12
BIP-8 13
FERR 14
NOT USED 15
139M Status Register
LOF 0
RDI 1
AIS 2
NOT USED 3
NOT USED 4
NOT USED 5
NOT USED 6
NOT USED 7
NOT USED 8
NOT USED 9
NOT USED 10
NOT USED 11
REI 12
BIP-8 13
FERR 14
NOT USED 15
TELecom Status Register
CERR 0
BERR 1
PSL 2
LOS 3
PWF 4
CKL 5
Unlock 6
NOT USED 7
NOT USED 8
NOT USED 9
SDM 10
11
12
13
14
NOT USED 15
2M
8M
34M
139M
To QUEStionable Status Register (Bit 9)

Bit Definition for TELecom Status Register

DB0	CERR (Code ERRor)	Indicates existence of a code error.
DB1	BERR (Bit ERRor)	Indicates existence of a bit error.
DB2	PSL (Pattern Sync Loss)	Indicates that pattern sync loss occurred.
DB3	LOS (Loss Of Signal)	Indicates that signal loss occurred.
DB4	PWF (Power Fail)	Indicates occurrence of a power failure.
DB5	CKL (Clock Loss)	Indicates that clock loss occurred.
DB6	Unlock (Unlock)	Indicates that Unlock occurred.
DB10	SDH (SDH status register summary)	SDH Status Register Summary
DB11	2M (2M status register summary)	PDH:2MStatus Register Summary
DB12	8M (8M status register summary)	PDH:8MStatus Register Summary
DB13	34M (34M status register summary)	PDH:34MStatus Register Summary
DB14	139M (139M status register summary)	PDH:139MStatus Register Summary

Bit Definition for 139M/34M Status Register

(Bit definitions for 139M and 34M status registers are identical.)

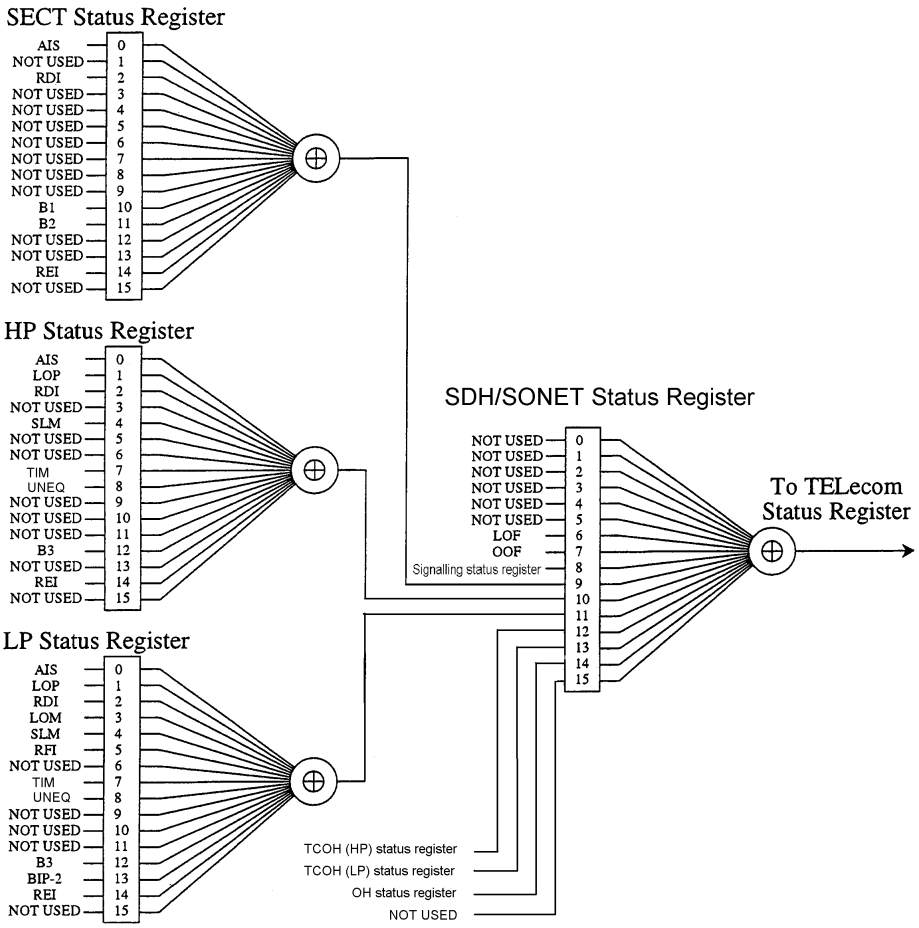
DB0	LOF (Loss Of Frame)	Indicates that LOF occurred.
DB1	RDI (Remote Defect Indication)	Indicates that RDI occurred.
DB2	AIS (Alarm Indication Signal)	Indicates that AIS occurred.
DB12	REI (Remote Error Indication)	Indicates that REI error occurred.
DB13	BIP-8 (BIP-8 error)	Indicates that BIP-8 error occurred.
DB14	FERR (Frame ERRor)	Indicates existence of a frame error.

Bit definition for 8M status register (Bit definition for 8M is the same.)

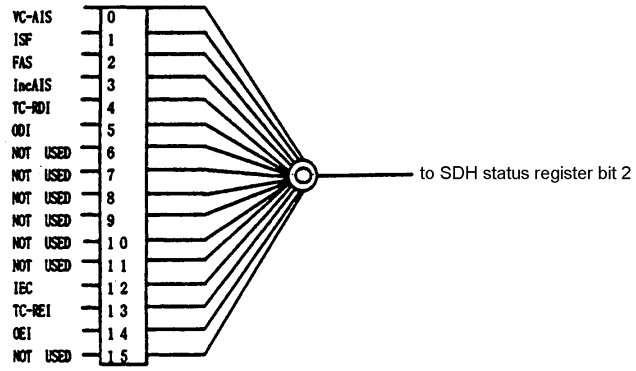
DB0	LOF (Loss Of Frame)	Indicates that LOF occurred
DB1	RDI (Remote Defct Indicatin)	Indicates that RDI occurred.
DB2	AIS (Alarm Indication Signal)	Indicates that AIS occurred.
DB14	FERR (Frame ERRor)	Indicates existence of a frame error.

Bit Definition for 2M Status Register

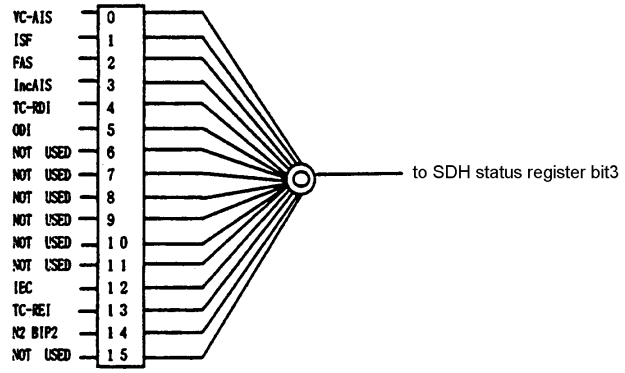
DB0	LOF (Los Of Frame)	Indicates that LOF occurred
DB1	RDI (Remote Defect Indication)	Indicates that RDI occurred.
DB2	AIS (Alarm Indication Signal)	Indicates that AIS occurred.
DB3	LOF MF(Loss Of Frame MultiFrame)	Indicates that LOF MF occurred.
DB4	RDI MF (Remote Defect Infication MultiFrame)	Indication Indicates that RDI MF occurred.
DB12	EBIT (E-Bit)	Indicates that E-Bit is set.
DB13	CRC (CRC error)	Indicates existence of a CRC error.
DB14	FERR (Frame ERRor)	Indicates existence of a frame error.


SECT Status Register
AIS 0
NOT USED 1
RDI 2
NOT USED 3
NOT USED 4
NOT USED 5
NOT USED 6
NOT USED 7
NOT USED 8
NOT USED 9
B1 10
B2 11
NOT USED 12
NOT USED 13
REI 14
NOT USED 15
HP Status Register
AIS 0
LOP 1
RDI 2
NOT USED 3
SLM 4
NOT USED 5
NOT USED 6
TIM 7
UNEQ 8
NOT USED 9
NOT USED 10
NOT USED 11
B3 12
NOT USED 13
REI 14
NOT USED 15
LP Status Register
AIS 0
LOP 1
RDI 2
LOM 3
SLM 4
RFI 5
NOT USED 6
TIM 7
UNEQ 8
NOT USED 9
NOT USED 10
NOT USED 11
B3 12
BIP-2 13
REI 14
NOT USED 15
SDH/SONET Status Register
NOT USED 0
NOT USED 1
NOT USED 2
NOT USED 3
NOT USED 4
NOT USED 5
LOF 6
OOF 7
Signalling status register 8
9
10
11
12
13
14
15
To TELecom Status Register
TCOH (HP) status register
TCOH (LP) status register
OH status register
NOT USED

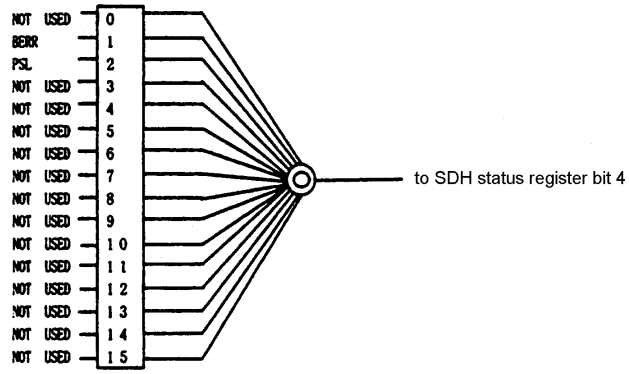
TCOH (HP) / TCOH (P) status register



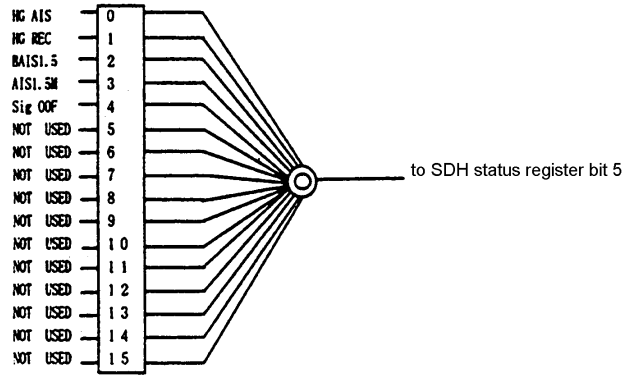
TCOH (LP) / TCOH (V) status register



OH status register



Signalling status register



Bit Definition for SDH/SONet Status Register

DB6	LOF (Loss Of Frame)	Indicates that LOF occurred.
DB7	OOF (Out Of Frame)	Indicates that LOF occurred.
DB8	SIGNalling	SIGNalling status summary
DB9	SECT(SLINE) (Section/Line pass)	SECT(SLINE) status summary
DB10	HP(STS) (HP/STS Path)	HP (STS) status summary
DB11	LP(VT) (LP/VT Path)	LP (VT) status summary
DB12	TCOH(HP)	TCOH(HP) status summary
DB13	TCOH(LP)	TCOH(LP) status summary
DB14	OH	OH status summary

Bit Definition for SECT/SLINe

DB0	AIS (Alarm Indication Signal)	Indicates that MS-AIS(AIS-L) occurred.
DB2	RDI (Remote Defect Indication)	Indicates that MS-RDI(RDI-L) occurred.
DB10	B1 (B1 error)	Indicates that there was a B1
DB11	B2 (B2 error)	Indicates that there was B2.
DB14	REI (Remote Error Indication)	Indicates that LOF occurred.

Bit Definition for HP/P

DB0	AIS (Alarm Indication Signal)	Indicates that AU-AIS(AIS-P) occurred.
DB1	LOP (Loss Of Pointer)	Indicates that AU-LOP(LOP-P) occurred.
DB2	RDI (Remote Defect Indication)	Indicates that HP-RDI(RDI-P) occurred.
DB4	SLM(PLM) (Signal Label Mismatch)	Indicates that HP-SLM(PLM-P) occurred.
DB7	TIM (Trace Identifier Mismatch)	Indicates that TIM occurred.
DB8	UNEQ (UnEquipped)	Indicates that UNEQ occurred.
DB12	B3 (B3 error)	Indicates that HP-B3 error occurred.
DB14	REI (Remote Error Indication)	Indicates that HP-REI(REI-P) occurred.

Bit Definition for LP/V

DB0	AIS (Alarm Indication Signal)	Indicates that TU-AIS(AIS-V) occurred.
DB1	LOP (Loss Of Pointer)	Indicates that TU-LOP(LOP-V) occurred.
DB2	RDI (Remote Defect Indication)	Indicates that LP-RDI(RDI-V) occurred.
DB3	LOM (Loss Of Multiframe)	Indicates that TU-LOM(LOM-V) occurred.
DB4	SLM(PLM) (Signal Label Mismatch)	Indicates that LP-SLM(PLM-V) occurred.
DB5	RFI (Remote Failure Indication)	Indicates that LP-RFI(RFI-V) occurred.
DB7	TIM (Trace Identifier Mismatch)	Indicates that TIM occurred.
DB8	UNEQ (UnEquipped)	Indicates that UNEQ occurred.
DB12	B3 (B3 error)	Indicates that LP-B3 error occurred.
DB13	BIP2 (BIP-2 error)	Indicates that BIP-2 error occurred.
DB14	REI (Remote Error Indication)	Indicates that LP-REI(REI-V) occurred.

Bit Definition for TCOH(HP)/TCOH(P) status register

DB0	VC-AIS(Virtual Container Alarm Indication Signal)	Indicates that VC-AIS occurred.
DB1	ISF (Incoming Signal Failure)	Indicates that ISF occurred.
DB2	FAS (Frame Alignment Signal)	Indicates that FAS occurred.
DB3	IncAIS (Incoming Alarm Indication Signal)	Indicates that IncAIS occurred.
DB4	TC-RDI(Tandem Connection Remote Defect Indication)	Indicates that TC-RDI occurred.
DB5	ODI (Outgoing Defect Indication)	Indicates that ODI occurred.
DB12	IEC (the Incoming Error Count)	Indicates that IEC error occurred.
DB13	TC-REI(Tandem Connection Remote Error Indication)	Indicates that TC-REI error occurred.
DB14	OEI (Outgoing Error Indication)	Indicates that OEI error occurred.

Bit Definition for TCOH(LP)/TCOH(V) status register

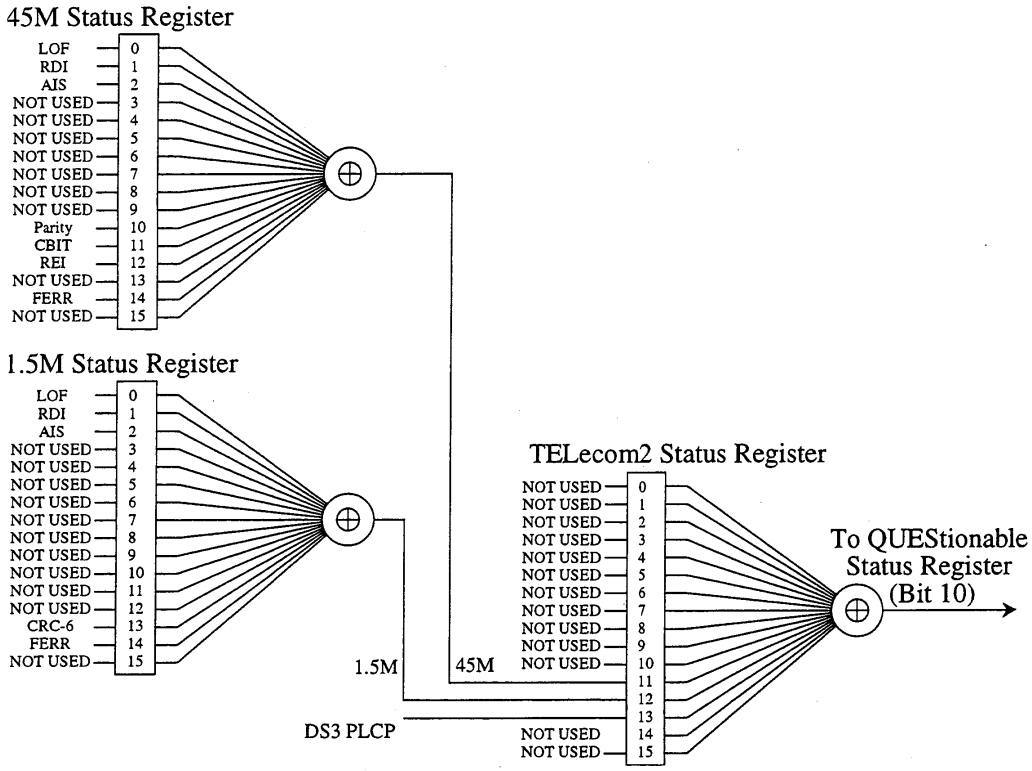
DB0	VC-AIS(Virtual Container Alarm Indication Signal)	Indicates that VC-AIS occurred.
DB1	ISF(Incoming Signal Failure)	Indicates that ISF occurred.
DB2	FAS(Frame Alignment Signal)	Indicates that FAS occurred.
DB3	IncAIS(Incoming Alarm Indication Signal)	Indicates that IncAIS occurred.
DB4	TC-RDI(Tandem Connection Remote Defect Indication)	Indicates that TC-RDI occurred.
DB5	ODI(Outgoing Defect Indication)	Indicates that ODI occurred.
DB12	IEC(the Incoming Error Count)	Indicates that IEC error occurred.
DB13	TC-REI(Tandem Connection Remote Error Indication)	Indicates that TC-REI error occurred.
DB14	N2 BIP2 (N2 Bit Interleaved Parity 2)	Indicates that N2 BIP error occurred.

Bit Definition for OH status register

DB1	BERR	Indicates that Sync occurred.
DB2	PSL	Indicates that Bit error occurred.

Bit Definition for SIGNalling status register

DB0	HG AIS(Handling Group Alarm Indication Signal)	Indicates that HG AIS occurred.
DB1	HG REC(Handling Group Receive)	Indicates that HG REC occurred.
DB2	BAIS1.5(Backward Alarm Indication Signal)	Indicates that BAIS1.5 occurred.
DB3	AIS1.5M(Alarm Indication Signal 1.5M)	Indicates that AIS1.5M occurred.
DB4	Sig.OOF(Signal Out of Frame)	Indicates that Sig.OOF occurred.



Bit Definition for TELcom2 Status Register

DB11	45M (45M Status Register summary)	45M status register summary
DB12	1.5M (1.5M Status Register summary)	1.5M status register summary

Bit Definition for 45M Status Register

DB0	LOF (Loss Of Frame)	Indicates that LOF occurred.
DB1	RDI (Remote Defect Indication)	Indicates that RDI occurred.
DB2	AIS (Alarm Indication Signal)	Indicates that AIS occurred.
DB10	Parity(Parity)	Indicates that there was a parity error.
DB11	C-bit(C-bit)	Indicates that there was a C-bit error.
DB12	REI (Remote Error Indication)	Indicates that there was a 45M REI error.
DB14	FERR (Frame Error)	Indicates that a frame error occurred.

Bit Definition for 1.5M Status Register

DB0	LOF (Loss Of Frame)	Indicates that LOF occurred.
DB1	RDI (Remote Defect Indication)	Indicates that RDI occurred.
DB2	AIS (Alarm Indication Signal)	Indicates that AIS occurred.
DB13	CRC-6(CRC-6 error)	Indicates that CRC6 occurred.
DB14	FERR (Frame Error)	Indicates that a frame error occurred.

8.5 Status Register Read, Write and Clear

(1) Read and Write Procedures

Table below lists the read and write procedures for each status register.

Read/Write Procedures for Status Registers

Register	Read procedure	Write procedure
Status Byte Register	Serial pole: 7-bit status byte and RQS message bit are responded. At this time, status byte value is unchanged.	Disable
Service Request Enable Register	*SRE? common query	*SRE common command
Standard Event Status Register	*ESR? common query After read, contents of register are cleared.	Disable
Standard Event Status Enable Registe	*ESE? common query At this time, contents of register are unchanged.	ESE common command
SCPI Event Register	SCPI command (STATus subsystem) :STATus:...:EVENt? At this time, contents of register are cleared.	Disable
SCPI Enable Register	SCPI command (STATus subsystem) :STATus:...:ENABle? At this time, contents of register are unchanged.	SCPI command (STATus subsystem) :STATus:...:ENABle
SCPI Transition Filter	SCPI command (STATus subsystem) :STATus:...:PTRansition? :STATus:...:NTRansition At this time, contents of register are unchanged.	SCPI command (STATus subsystem) :STATus:...:PTRansition? :STATus:...:NTRansition
Error/Event Queue	SCPI command :SYSTem:ERRor?	Disable

NOTE: ・ The SCPI event register, SCPI enable register and SCPI Transition filter represent the SCPI specified status register, and event

register, enable register and transition filter of the equipment unique status registers.

・ For details of ? common commands and queries, see SECTION 7, and SCPI commands, see SECTION 10, respectively.

(2) Clear and Reset Procedures

Table below lists the clear and reset procedures for status registers and affecting ranges.

Clear/Rest Procedures for Status Registers

Register	*RST	*CLS	#Power ON	STATus:PRESet	Other clear procedure
Status Byte Register	Unchanged	Unchanged	Clear	Unchanged	
Service Request	Unchanged	Unchanged	Clear	Unchanged	Performing "*SRE 0"
Standard Event Status Register	Unchanged	Clear	Clear	Unchanged	It is cleared when the event is read by "*ESR?" .
Standard Event Status Enable Register	Unchanged	Unchanged	Clear	Unchanged	Performing "*ESE 0"
SCPI Event Register	Unchanged	Clear	Clear	Unchanged	It is cleared when the event is read by ":STATus:...:EVENt?".
SCPI Enable Register	Unchanged	Unchanged	Reset	Reset	Performing ":STATus:...:ENABle 0".
SCPI Transition Filter	Unchanged	Unchanged	Reset	Reset	Performing ":STATus:..:PTRansition 0" or ":STATus:..:NTRansition"
Error/Event Queue	Unchanged	Clear	Clear	Unchanged	All events are read by ":SYSTem:ERRor?".

NOTE: ・ The SCPI event register, SCPI enable register and SCPI Transition filter represent the SCPI specified status register, and event register, enable register and transition filter of the equipment unique status registers.

*# Cleared (or reset) when power is turned on by the *PSC common command with the PSC (Power-ON Status Clear) flag being true.*

The table below lists values of registers, being affected by the :STATus:PRESet command, after reset.

Register 0	Enable/Filter	Values after reset
OPERational Status Register QUEStionabl Status Register	Enable Register PTRansitionFilter NTRansitionFilter	All 0 All 1 All 0
INSTrument Status Register	Enable Register PTRansitionFilter NTRansitionFilter	ALL 1 ALL 1 ALL 0
Other Status Register	Enable Register PTRansitionFilter NTRansitionFilter	All 1 All 1 All 1

Section 9 SCPI Overview

This section describes overview of the SCPI and the command system. The MP1570A adopts commands specified by the SCPI (Standard Commands for Programmable Instruments) as the commands for remote control.

The following symbols are used in this and following sections for explaining command usage and response examples:

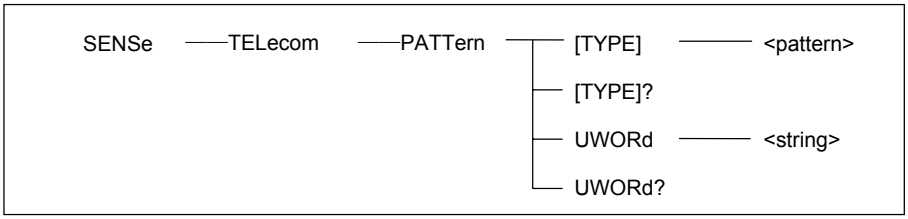
> Program message (program command or query command)
< Response

9.1 SCPI Overview

The SCPI is the equipment command language which does not dependent upon the hardware defined by the SCPI Consortium.

Purpose of the SCPI lies in shortening the program development period for automatic measuring equipment (ATE) by unifying the programming environment including the equipment control and data handling. It also features in that the identical control can be used when controlling an equipment having the same functions, since interchangeability is ensured between the same models or with a different model having the same functions.

9.2 Command Configuration



Example SCPI Command Tree

The SCPI commands are constructed by the layer composition. Commands are grouped by related functions and each group forms a layer construction called a subsystem.

In this manual, a subsystem is expressed by a command tree like the example shown above. In a tree, the same header is often used. However, the same header corresponds to different functions by positions it is located. For this reason, a header needs to be described by the full path to the header used.

Example: SENSe subsystem

SENSe is the highest node.

TELecom is the 2nd level node.

PATTern is the 3rd level node.

TYPE, TYPE?, UWORd and UWORd? are the 4th level nodes.

The<pattern> and <string> are TYPE and UWORd parameter types, respectively.

9.3 Command Description Method

```
:SENSe:TELecom:PATTern[:TYPE]<pattern>      <pattern> = PRBS11,PRBS15,PRBS20,PRBS23,
:SENSe:TELecom:PATTern[:TYPE]?                          UWORd16,AZERo,AONE
:SENSe:TELecom:PATTern:UWORd<string>        <string> = "00..00" ～ "11..11"
:SENSe:TELecom:PATTern:UWORd?
```

Example SCPI commands

The command trees shown on the previous page are actually expressed as the above commands.
Rules on command expression are explained below.

<Command Format>
A command always begin by ":".
A command is constructed by combining headers by ":".

<Header Informative Form>
The header is classified into the short and long forms.
The short form is the informative form of the long form and only contains the portion of capital characters.
The same function expressed by a command, whichever the short or long form is used, is interpreted as the same command. (The short and long forms may also be mixed.)
Although capital and small characters are used for the command reference for identifying the short and long forms, in the actual use, capital and small characters are not identified.
(SENSE, Sense and sense are interpreted as the identical header.)

Example: Long form >
Short form >
Long + short >

<Option Node>
The [ ] represents an option node. The header surrounded by [ ] may be omitted. A command with or without omission is received as the

identical command.

Example: When header is not omitted: > :SENSe:TELecom:PATTern:TYPE PRBS11

When header is omitted:> :SENSe:TELecom:PATTern PRBS11

<Command Separator>

At least one space is necessary between a command and a parameter. Two parameters or more need to be separated by ",".

9.4 Command Combination

Commands may be combined using ';' as shown below.

The second command is referred to as the same level of the lower-most layer of the first command. For this reason, the second command may be described in full path or with the header upper than the TYPE omitted as shown in Example 2.

Example:

1>:SENSe:TELecom:PATTern:TYPE UWORd16;:SENS:TELecom:PATTer:UWORd "1100110011001100"

2>:SENSe:TELecom:PATTern:TYPE UWORd16;UWORd "1100110011001100"

9.5 Parameter

Table 9-1 lists the parameter types used for the MP1570A.

The parameter types are shown by small characters surrounded by parentheses < > as shown in Table 9-1. The <PROGRAM DATA> types specified by IEEE488.2 (or SCPI) AND corresponding to parameter types are indicated by capital characters.

Correspondence between each parameter type and IEEE488.2 (or SCPI) specified <PROGRAM DATA> type is described for each command.

Functions of Parameter Types

Parameter type	Function
<numeric> <DECIMAL NUMERIC PROGRAM DATA>	Denotes a decimal value. <CHARACTER POGRAM DATA> of MINimum and MAXimum are also included as special numeric types. Values used by MP1570A are mainly the integer type. Fractions are rounded to the nearest whole number.
<boolean> <BOOLEAN PROGRAM DATA> (Defined by SPCI)	Denotes the logical value. OFF or 0 corresponds to false while, ON or 1, true. Either 0 or 1 and OFF or ON can be used for setting, however, 0 or 1 is used for response against query.
<string> <STRING PROGRAM DATA>	Denotes a character string, which contains a string of ASCII characters surrounded by single or double quotation marks. Either the long form or short form may be used. Example: 'LOF:M139' or "LOF:M139"
<brate>, <type>..etc <CHARACTER PROGRAM DATA>	Denotes character data, which is expressed by a short character string according to the setting content. Either long form or short form may be used.

Section 10 Detailed Device Message

This section describes details on device messages supported by the MP1570A.

- The following symbols are used in this section to describe the command and response usage examples:
  > *Program message (program command and query command)*
  < *Response*

10.1 Response Format

The response formats against query commands are explained here.

Formats are as specified in the following tables.

Response Format (by Response Type)

Response type	Format
<numeric>,<year>,... (<NR1 NUMERIC RESPONSE DATA>)	The number of response digits is made variable and the maximum number of digits of numeric range is matched with the maximum number of response digits. No spaces are inserted between symbols and numerals. > :SYSTem:DATE? < 2000,7,14
<numeric>,<year>,... (<NR2 NUMERIC RESPONSE DATA>)	The number of response digits is made variable and the maximum number of digits of numeric range is matched with the maximum number of response digits. No spaces are inserted between symbols and numerals. > :CALCulate:DATA?"ER:BIT" < :"1.0E-05"
<brate>,<type>..etc (<CHARACTER RESPONSE DATA>)	Short form characters are responded. Example: > :SOURce:TELecom:CLOCk:SOURce? < INT
<string>,<display>..etc (<STRING RESPONSE DATA>)	String surrounded by " " is responded. Short form string is responded when both long and short forms exist for contents of string corresponding to the program command. > :DISPlay:DSELect:NAME? < "SET" (Short form of "SETup") As for response formats Form1 to Form4, see the following table.

Response Formats (Form 1 to Form 15)

Type	Format	Description
Form1 Integer type	" XXXXXX"	When 0 <=value <= 999.999, 6 among 8 characters with right justification Example: > :CALCulate:DATA? "EC:BIT" < " 892"
	" X.XXE+XX"	When 1.00E+06 <=value <=9.99E+15, 7 of 8 characters with right justification Example: > :CALCulate:DATA? "EC:BIT" < " 1.25E+07"
	">9.9E+15"	When 1.00E+16 <=value
	"---------"	When no data are available against a query Example: When 139M measurement result is queried while the input signal is 8M
Form2 Fraction type	" 0.0E-XX"	When value=0, 7 among 8 characters with right justification
	"<1.0E-15"	When value <= 9.9E-16
	" X.XE-XX"	1.When 1.00E-15 <= value <=9.99E-01, 7 among 8 characters with right justification Example: > :CALCulate:DATA? "EC:BIT" < " 1.0E-05"
	" 1.0E-00"	When value=1, 7 among 8 characters with right justification
	"--------"	When no corresponding data are available against a query
Form3 Percentage type	"XXX.XXXX"	0.0000 to 100.0000 Example: > :CALCulate:DATA? "G821:ES" < " 1.0010"
	"--------"	When no corresponding data are available against a query
Form4 Judgment type	" Acceptable" " Degraded" "Unacceptable"	Expressed by up to 12 characters with right justification
	"----------"	When no corresponding data are available against a query
Form7	" X.X"	7 characters with right justification > :CALCulate:DATA? "APSTest:Switchtime" < " 1234.5"
	">2000.0"	Value >2000.0 at Switch time measurement
Form15	"XXX,XXX,XXX,XXX,XXX,XXX"	15 characters with right justification excluding comma Example: > :CALCulate:DATA? "IPSend:PACket3" < "123,456,789,012,345"
	"----------"	When no corresponding data are available against a query

10.2 Buffer Size

Responses with the formats described above are responded from the device to the controller. So, the controller must have buffers sufficient to receive responses.

A maximum of 255 bytes is sufficed when commands defined for the MP1570A are used.

10.3 Equipment Unique Command

This section explains the details of equipment unique commands.

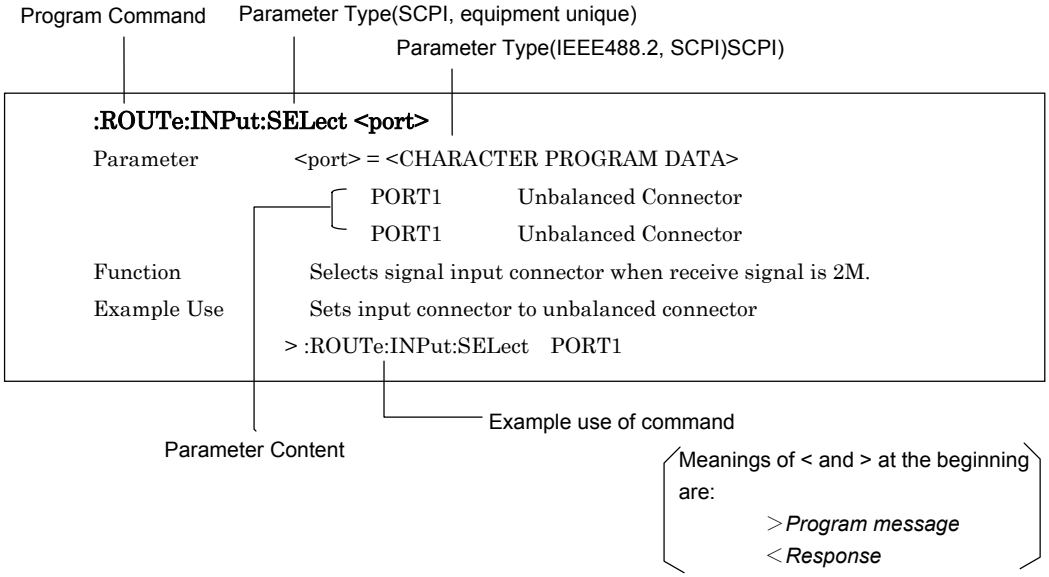
Note

- The explanations of the commands are classified according to subsystems.
- Equipment unique commands, except some, are sequential commands. Commands other than sequential commands are explained as needed.
- When the set value of another item becomes out of allowable range because of the set value of a program command, the former is changed to a value within the allowable range.
- When a setting is changed during a course of measurement, the measurement is resumed.
- As for condition to change set values of other items and resume condition, refer to Detailed Operation Procedure of the MP1570A Operation Manual.

Examples of command expression are shown below.

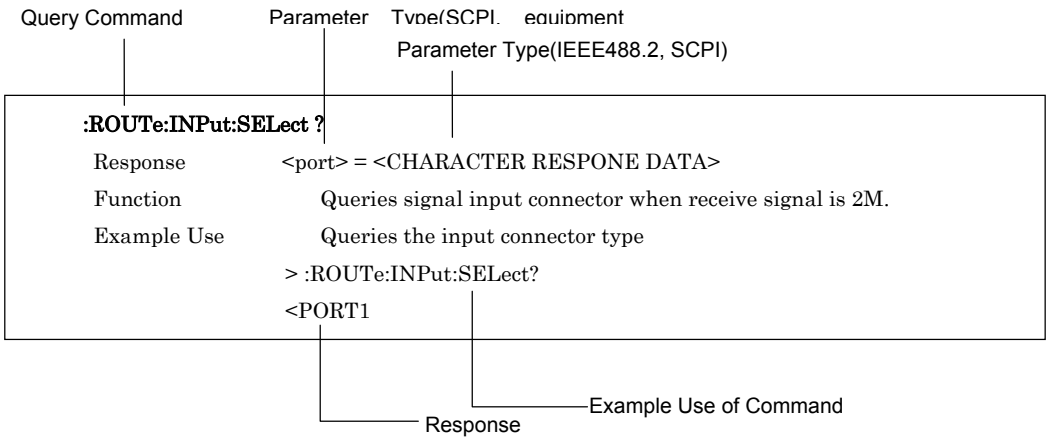
Program Command

When any restrictions apply for usage of a command, a ” Restriction” item is added to items listed below.



Program Query Command

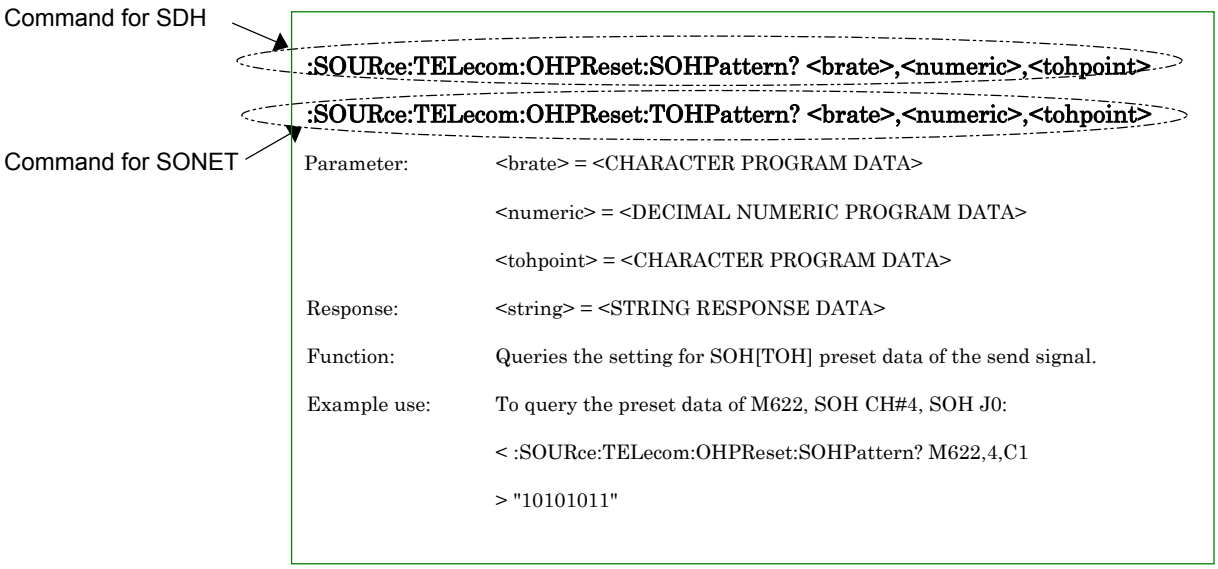
The response content is omitted when a program command corresponding to a query exists. (The response content is the same as the parameter content of the program command.)



Commands Listed in Two Lines

When commands are listed in two lines without notes, the first command is for SDH and the second is for SONET. These commands have same function and parameters. Refer to an example shown below.

Example:



10.3.1 INSTrument subsystem

The INSTrument subsystem selects whether identical or independent settings are used for send and receive. The following table shows functions, commands, and parameters.

Function	Command	Parameter
Page 10-8		
Perform settings for send and receive.	:INSTrument:COUPle	mode
Queries if identical settings apply or not.	:INSTrument:COUPle?	
Selects the configuration of measurement.	:INSTrument:CONFig	type
Queries the configuration.	:INSTrument:CONFig?	
Page 10-9		
Select SDH/SONET switching	:INSTrument:STANdard	type
Queries of SDH/SONET switching	:INSTrument:STANdard?	

:INSTrument:COUPle <mode>

Parameter <mode> = <CHARACTER PROGRAM DATA>

ALL	Tx&Rx
NONE	Independent

Function Sets whether identical or independent settings apply for send and receive.

Example use To set to identical settings

> :INSTrument:COUPle ALL

:INSTrument:COUPle?

Response <mode> = <CHARACTER RESPONSE DATA>

Function Queries if identical settings apply or not.

Example use > :INSTrument:COUPle?

< ALL

:INSTrument:CONFig <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

SDH_PDH	Send/receive function of SDH/PDH signal.
SONET_PDH	Send/receive function of SONET/PDH signal.
CID	Send/receive function of CID pattern.
NON	Send/receive function of a signal without SDH frame.
ATM	Send/receive function of the cell signal while payloading SDH(SONET)/PDH.

Function Selects the configuration of measurement.

Example use To select SDH/PDH function.

> INSTrument: CONFig SDH_PDH

:INSTrument:CONFig?

Response <type> = <CHARACTER RESPONSE DATA>

SDH_PDH	Send/receive function of SDH/PDH signal.
SONET_PDH	Send/receive function of SONET/PDH signal.
CID	Send/receive function of CID pattern.
NON	Send/receive function of a signal without SDH frame(52M,156M).
ATM	Send/receive function of the cell signal while payloading SDH(SONET)/PDH.

Function Queries the configuration.

Example use > :INSTrument: CONFig?

< SDH_PDH

:INSTrument:STANdard<type>

Parameter	<type> = <CHARACTER PROGRAM DATA> SDH SONET
Function	Select SDH/SONET switching.
Example use	To set SDH setting: > :INSTrument:STANdard SDH

:INSTrument:STANdard ?

Response	<type> = <CHARACTER RESPONSE DATA> SDH SONET
Function	Queries of SDH/SONET switching.
Example use	> :INSTrument:STANdard ? < :SDH

10.3.2 SOURce subsystem

The SOURce subsystem sets settings of the sender. The following table shows functions, commands, and parameters.

Function	Command	Parameter
Page 10-36		
Sets a bit rate for send signals.	:SOURce:TELecom:BRATe	brate
Queries the bit rate for send signals.	:SOURce:TELecom:BRATe?	
Page 10-36		
Sets the insertion of STM4, 1, 0 (STS12,3,1) signals.	:SOURce:TELecom:INSert:MODE	boolean
Queries the insertion setting of STM4, 1, 0 (STS12,3,1) signals.	:SOURce:TELecom:INSert:MODE?	
Sets the rate (interface) to perform Insert.	:SOURce:TELecom:INSert:RATE	rate
Queries the rate (interface) to perform Insert.	:SOURce:TELecom:INSert:RATE?	
Sets the channel of the Insert signal input.	:SOURce:TELecom:INSert:CH	ch
Queries the channel of the Insert signal input.	:SOURce:TELecom:INSert:CH?	
Sets the wavelength switch of the Insert signal input.	:SOURce:TELecom:INSert:INTerface	optical
Queries the wavelength switch of the Insert signal input:	:SOURce:TELecom:INSert:INTerface?	
Page 10-39		
Sets the SDH/SONET mapping route for send signals.	:SOURce:TELecom:MAPPing:TYPE	mtype
Queries the SDH/SONET mapping route for send signals.	:SOURce:TELecom:MAPPing:TYPE?	
Selects the AU route of the SDH mapping route of the send signals.	:SOURce:TELecom:MAPPing:AU	atype
Queries the AU route selection of the SDH mapping route for the send signals.	:SOURce:TELecom:MAPPing:AU?	
Selects the STS route of the SONET mapping route of the send signals.	:SOURce:TELecom:MAPPing:STS	stype
Queries the STS route selection of the SONET mapping route for the send signal.	:SOURce:TELecom:MAPPing:STS?	
Selects the TU route of the SDH mapping route for the send signal.	:SOURce:TELecom:MAPPing:TU	ttype
Queries the TU route selection of the SDH mapping route for the send signal.	:SOURce:TELecom:MAPPing:TU?	
Selects the VT route of the SONET mapping route for the send signal.	:SOURce:TELecom:MAPPing:VT	vtype
Queries the VT route selection of the SONET mapping route for the send signal.	:SOURce:TELecom:MAPPing:VT?	
Sets a channel for each SDH/SONET point.	:SOURce:TELecom:MAPPing:ROUTe	route numeric
Queries a channel at each SDH/SONET point.	:SOURce:TELecom:MAPPing:ROUTe?	route

Specifies the number of concatenated channels of VC2/VT6SPE.	:SOURce:TELecom:MAPPing:MC	numeric
Queries the setting for VC2/VT6SPE concatenated channel numbers.	:SOURce:TELecom:MAPPing:MC?	
Specifies the number of channels for the send signaling frames.	:SOURce:TELecom:MAPPing:SIG	sig
Queries the number of channels for the send signaling frames.	:SOURce:TELecom:MAPPing:SIG?	
Sets the Mixed Payload.	:SOURce:TELecom:MAPPing:MPAYload:MODE	boolean
Queries the Mixed Payload setting.	:SOURce:TELecom:MAPPing:MPAYload:MODE?	
Sets the SDH/SONET mapping route of the Mixed Payload1 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload1:TYPE	ptype
Queries the SDH/SONET mapping route selection of the Mixed Payload1 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload1:TYPE?	
Selects the SDH mapping route TU route of the Mixed Payload1 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload1:TU	ttype
Queries the SDH mapping route TU route selection of the Mixed Payload1 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload1:TU?	
Selects the SONET mapping route VT route of the Mixed Payload1 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload1:VT	vtype
Queries the SONET mapping route VT route selection of the Mixed Payload1 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload1:VT?	
Sets the SDH/SONET mapping route of the Mixed Payload2 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload2:TYPE	ptype
Queries the SDH/SONET mapping route selection of the Mixed Payload2 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload2:TYPE?	
Selects the SDH mapping route TU route of the Mixed Payload2 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload2:TU	ttype
Queries the SDH mapping route TU route selection of the Mixed Payload2 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload2:TU?	
Selects the SONET mapping route VT route of the Mixed Payload2 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload2:VT	vtype
Queries the SONET mapping route VT route selection of the Mixed Payload2 send signal.	:SOURce:TELecom:MAPPing:MPAYload:PAYload2:VT?	
Sets whether to use a scramble function for payloads when IP over SONET is set.	:SOURce:TELecom:MAPPing:PAYLoad:SCRamble	scr
Queries the state of the scramble function for the payloads when IP over SONET is set.	:SOURce:TELecom:MAPPing:PAYLoad:SCRamble?	
Sets whether to use the main channel Copy or the Dummy setting data for the payload data.	:SOURce:TELecom:MAPPing:DUMMy	dummy
Queries whether the main channel Copy is or the Dummy setting data are in use for the payload data.	:SOURce:TELecom:MAPPing:DUMMy?	

Page 10-51

Sets whether or not to send the error and alarm data in the tandem connection.	:SOURce:TELecom:TANDem:Condition:N1HP:MODE	mode
	:SOURce:TELecom:TANDem:Condition:N1LP:MODE	mode
	:SOURce:TELecom:TANDem:Condition:N2:MODE	mode
	:SOURce:TELecom:TANDem:Condition:Z5HP:MODE	mode
	:SOURce:TELecom:TANDem:Condition:Z5LP:MODE	mode
	:SOURce:TELecom:TANDem:Condition:Z6:MODE	mode
Queries whether or not to send the error and alarm data in the tandem connection.	:SOURce:TELecom:TANDem:Condition:N1HP:MODE	
	:SOURce:TELecom:TANDem:Condition:N1LP:MODE	
	:SOURce:TELecom:TANDem:Condition:N2:MODE	
	:SOURce:TELecom:TANDem:Condition:Z5HP:MODE	
	:SOURce:TELecom:TANDem:Condition:Z5LP:MODE	
	:SOURce:TELecom:TANDem:Condition:Z6:MODE	
Sets the trace data type for the tandem connection.	:SOURce:TELecom:TANDem:Condition:N1HP:TYPE	type
	:SOURce:TELecom:TANDem:Condition:N1LP:TYPE	type
	:SOURce:TELecom:TANDem:Condition:Z5HP:TYPE	type
	:SOURce:TELecom:TANDem:Condition:Z5LP:TYPE	type
Queries the trace data type for the tandem connection.	:SOURce:TELecom:TANDem:Condition:N1HP:TYPE?	
	:SOURce:TELecom:TANDem:Condition:N1LP:TYPE?	
	:SOURce:TELecom:TANDem:Condition:Z5HP:TYPE?	
	:SOURce:TELecom:TANDem:Condition:Z5LP:TYPE?	
Initializes the LAPD message.	:SOURce:TELecom:TANDem:DEFault	
Sets the Type1 data of N1 byte (N1-HP)	:SOURce:TELecom:TANDem:N1HP:TYPE1	tapoint string
Sets the Type1 data of Z5 byte (Z5-HP)	:SOURce:TELecom:TANDem:Z5HP:TYPE1	tapoint string
Queries the Type1 data of N1 byte (N1-HP).	:SOURce:TELecom:TANDem:N1HP:TYPE1?	tapoint
Queries the Type1 data of Z5 byte (Z5-HP).	:SOURce:TELecom:TANDem:Z5HP:TYPE1?	tapoint
Sets the Type2 data of N1 byte (N1-HP).	:SOURce:TELecom:TANDem:N1HP:TYPE2	tapoint string
Sets the Type2 data of Z5 byte (Z5-HP).	:SOURce:TELecom:TANDem:Z5HP:TYPE2	tapoint string
Queries the Type2 data of N1 byte (N1-HP).	:SOURce:TELecom:TANDem:N1HP:TYPE2?	tapoint
Queries the Type2 data of Z5 byte (Z5-HP).	:SOURce:TELecom:TANDem:Z5HP:TYPE2?	tapoint
Sets the Type2 data of N1 byte (N1-LP).	:SOURce:TELecom:TANDem:N1LP:TYPE2	tapoint string
Sets the Type2 data of Z5 byte (Z5-LP).	:SOURce:TELecom:TANDem:Z5LP:TYPE2	tapoint string
Queries the Type2 data of N1 byte (N1-LP).	:SOURce:TELecom:TANDem:N1LP:TYPE2?	Tapoint
Queries the Type2 data of Z5 byte (Z5-LP).	:SOURce:TELecom:TANDem:Z5LP:TYPE2?	tapoint
Sets the data of N2 byte.	:SOURce:TELecom:TANDem:N2	tapoint string
Sets the data of Z6 byte.	:SOURce:TELecom:TANDem:Z6	tapoint string
Queries the data of N2 byte.	:SOURce:TELecom:TANDem:N2?	tapoint
Queries the data of Z6 byte.	:SOURce:TELecom:TANDem:Z6?	tapoint

Page 10-56

Sets a bit rate for the MUX last Tributary.	:SOURce:TELecom:MUX:MRATe	mrate

Queries the MUX last Tributary bit rate.	:SOURce:TELecom:MUX:MRATe?	
Specifies the channel setting for each MUX step.	:SOURce:TELecom:MUX:ROUTe	mrate numeric
Specifies the channel setting for each MUX step.	:SOURce:TELecom:MUX:ROUTe?	mrate
Sets 64 kbit/s continuous channels.	:SOURce:TELecom:MUX:N	numeric
Queries 64 kbit/s continuous channels.	:SOURce:TELecom:MUX:N?	

Page 10-60

Sets the test signal frame for send signals.	:SOURce:TELecom:FRAMing	boolean
Queries the test signal frame for send signals.	:SOURce:TELecom:FRAMing?	

Page 10-61

Sets with or without CRC addition at 2M.	:SOURce:TELecom:M2:CRC	boolean
Queries with or without CRC addition at 2M.	:SOURce:TELecom:M2:CRC?	
Sets the maximum number of channels for transmission 2M signals.	:SOURce:TELecom:M2:MCHannel	numeric
Queries the maximum number of channels for transmission 2M signals.	:SOURce:TELecom:M2:MCHannel?	

Page 10-63

Specifies the frame setting of the1.5M signal.	:SOURce:TELecom:M1_5:FRAMed	fram
Queries the frames for the 1.5M signal.	:SOURce:TELecom:M1_5:FRAMed?	
Specifies the code setting for the1.5M signal.	:SOURce:TELecom:M1_5:CODE	code
Queries the 1.5M signal code.	:SOURce:TELecom:M1_5:CODE?	

Page 10-64

Specifies the frame setting for the 45M signal.	:SOURce:TELecom:M45:FRAMed	fram
Queries the frames for the 45M signal.	:SOURce:TELecom:M45:FRAMed?	
Specifies the XBit setting for the 45M signal.	:SOURce:TELecom:M45:XBIT	string
Queries the XBit of the 45M signal.	:SOURce:TELecom:M45:XBIT?	

Page 10-65

Specifies the DSX cable length in the send signal.	:SOURce:TELecom:DSX	numeric
Queries the DSX cable length in the send signals.	:SOURce:TELecom:DSX?	

Page 10-65

Inversion setting for test pattern (transmission)	:SOURce:TELecom:INVert	boolean
Querying of setting of test pattern inversion	:SOURce:TELecom:INVert?	

Page 10-67

Specifies the alarm types to be entered for the send signals.	:SOURce:TELecom:ALARm:TYPE	type
Queries the alarm type inserted against send signals.	:SOURce:TELecom:ALARm:TYPE?	
Inserts an alarm against send signals.	:SOURce:TELecom:ALARm:STARt	

Clears alarm insertion against send signals.	:SOURce:TELecom:ALARm:STOP	
Queries alarm insertion status against send signals.	:SOURce:TELecom:ALARm:STATe?	
Sets alarm addition timing.	:SOURce:TELecom:ALARm:TIMing:TYPE	type
Queries the setting for alarm addition timing.	:SOURce:TELecom:ALARm:TIMing:TYPE?	
Sets the alarm insertion timing value and the unit.	:SOURce:TELecom:ALARm:TIMing:BURSt	timing unit
Queries the alarm insertion timing value and the unit setting.	:SOURce:TELecom:ALARm:TIMing:BURSt?	
Sets the number of alarm addition frames at Alternate.	:SOURce:TELecom:ALARm:TIMing:ALARm	alarm
Queries the setting for number of alarm addition frames at Alternate.	:SOURce:TELecom:ALARm:TIMing:ALARm?	
Sets the number of Normal addition frames at Alternate.	:SOURce:TELecom:ALARm:TIMing:NORMal	normal
Queries the setting for number of Normal addition frames at Alternate.	:SOURce:TELecom:ALARm:TIMing:NORMal?	
Setting of alarm insertion unit	:SOURce:TELecom:ALARm:TIMing:ALTErnate	unit
Querying of alarm insertion unit	:SOURce:TELecom:ALARm:TIMing:ALTErnate?	

Page 10-73

Sets the type of error to be inserted against send signals.	:SOURce:TELecom:ERRor:TYPE	etype
Queries the type of error inserted against send signals.	:SOURce:TELecom:ERRor:TYPE?	
Sets an error insertion rate.	:SOURce:TELecom:ERRor:ERATe	erate
Queries the error insertion rate.	:SOURce:TELecom:ERRor:ERATe?	
Inserts errors against send signals.	:SOURce:TELecom:ERRor:STARt	
Clears error insertion against send signals.	:SOURce:TELecom:ERRor:STOP	
Queries the error insertion status against the send signal.	:SOURce:TELecom:ERRor:STATe?	
Set the rate of error insertion.	:SOURce:TELecom:ERRor:TIMing:TYPE	erate
Queries the error insertion rate.	:SOURce:TELecom:ERRor:TIMing:TYPE?	
Sets the number of error insertion bits.	:SOURce:TELecom:ERRor:TIMing:BURSt:BIT	bit
Queries the number of error insertion bits.	:SOURce:TELecom:ERRor:TIMing:BURSt:BIT?	
Sets the addition value for the Programmable rate error.	:SOURce:TELecom:ERRor:TIMing:PROGrate	error
Queries the addition value for the Prog.rate error addition.	:SOURce:TELecom:ERRor:TIMing:PROGrate?	
Sets the number of error addition frames at Alternate.	:SOURce:TELecom:ERRor:TIMing:ERRor	error
Queries the setting for number of error addition frames at Alternate.	:SOURce:TELecom:ERRor:TIMing:ERRor?	
Sets the number of normal addition frames at Alternate.	:SOURce:TELecom:ERRor:TIMing:NORMal	normal
Queries the setting for number of normal addition frames at Alternate.	:SOURce:TELecom:ERRor:TIMing:NORMal?	

Page 10-80

Sets the clock source for the send signal.	:SOURce:TELecom:CLOCK:SOURce	csource
Queries the clock source for the send signal.	:SOURce:TELecom:CLOCK:SOURce?	

Page 10-81

Sets type of the pointer sequence measurement.	:SOURce:TELecom:PSEQuence:TYPE	pstype
Queries the pointer sequence measurement type.	:SOURce:TELecom:PSEQuence:TYPE?	
Sets the objective pointer for pointer sequence measurements.	:SOURce:TELecom:PSEQuence:POINter	ptype
Queries the objective points for pointer sequence measurement.	:SOURce:TELecom:PSEQuence:POINter?	
Sets a justification polarity for pointer sequence measurement.	:SOURce:TELecom:PSEQuence:POLarity	polarity
Queries the justification polarity of pointer Sequence measurement.	:SOURce:TELecom:PSEQuence:POLarity?	
Sets the T1 parameter for pointer sequence measurement.	:SOURce:TELecom:PSEQuence:TIMing:T1	numeric
Queries the T1 parameter of pointer sequence measurement.	:SOURce:TELecom:PSEQuence:TIMing:T1?	
Sets the T2 parameter for pointer sequence measurement.	:SOURce:TELecom:PSEQuence:TIMing:T2	numeric
Queries the T2 parameter of pointer sequence measurement.	:SOURce:TELecom:PSEQuence:TIMing:T2?	
Specifies the T-parameter setting for pointer sequence measurements.	:SOURce:TELecom:PSEQuence:TIMing:T	numeric
Queries the T-parameter for pointer sequence measurement.	:SOURce:TELecom:PSEQuence:TIMing:T?	
Specifies the Added point intervals for pointer sequence measurement.	:SOURce:TELecom:PSEQuence:AINTerval	interval
Queries the Added point intervals in the pointer sequence measurement.	:SOURce:TELecom:PSEQuence:AINTerval?	
Specifies the Cancel point interval for pointer sequence measurement.	:SOURce:TELecom:PSEQuence:CINTerval	interval
Queries the Cancel point interval for pointer sequence measurement.	:SOURce:TELecom:PSEQuence:CINTerval?	
Sets Payload offset.	:SOURce:TELecom:PSEQuence:POFFset	offset
Queries the Payload offset setting.	:SOURce:TELecom:PSEQuence:POFFset?	
Sets ON/OFF of the initialization time.	:SOURce:TELecom:PSEQuence:INItial:MODE	mode
Queries the on/off setting of initialization time.	:SOURce:TELecom:PSEQuence:INItial:MODE?	
Sets the time period for initialization.	:SOURce:TELecom:PSEQuence:INItial:TIME	s
Queries the setting for the time period of initialization.	:SOURce:TELecom:PSEQuence:INItial:TIME?	
Sets the time period for initialization.	:SOURce:TELecom:PSEQuence:INItial:TI	ms
Queries the setting for the time period of initialization.	:SOURce:TELecom:PSEQuence:INItial:TI?	
Sets ON/OFF of the process time to wait stabilization.	:SOURce:TELecom:PSEQuence:CDOWn:MODE	mode
Queries the ON/OFF setting of process time to wait stabilization.	:SOURce:TELecom:PSEQuence:CDOWn:MODE?	
Set the time to the Cool Down for pointer.	:SOURce:TELecom:PSEQuence:CDOWn:TIME	s
Queries the setting for the time period of initialization.	:SOURce:TELecom:PSEQuence:CDOWn:TIME?	

Page 10-89

Sets Dummy preset POH data of send signals	:SOURce:TELecom:DPReset:POHPattern	Pohtype Pohpoint String
Queries the Dummy preset POH data of send signals.	:SOURce:TELecom:DPReset:POHPattern?	
Specifies C2 data setting of Dummy preset POH data for the send signal.	:SOURce:TELecom:DPReset:SLABel	pohtype string
	:SOURce:TELecom:DPReset:PLABel	pohtype string
Queries the C2 plain language data of Dummy preset POH data for the send signal.	:SOURce:TELecom:DPReset:SLABel?	
	:SOURce:TELecom:DPReset:PLABel?	
Specifies V5 data (bit 5 to 7) setting of Dummy preset POH data for the send signal. (plain language type)	:SOURce:TELecom:DPReset:VLABel	string
Queries the V5 (bit 5 to 7) plain language data of Dummy preset POH data for the send signal.	:SOURce:TELecom:DPReset:VLABel?	
Sets the G1 data of Dummy preset POH data for the send signal.	:SOURce:TELecom:DPReset:GLABel	pohtype string
Queries the G1 plain language data of Dummy preset POH data for the send signal.	:SOURce:TELecom:DPReset:GLABel?	
Sets the K4 (SDH) data of Dummy preset POH data for the send signal.	:SOURce:TELecom:DPReset:KLABel	string
Sets the Z7 (SONET) data of Dummy preset POH data for the send signal.	:SOURce:TELecom:DPReset:ZLABel	string
Queries the K4 (SDH) plain language data of Dummy preset POH data for the send signal.	:SOURce:TELecom:DPReset:KLABel?	
Queries the Z7 (SONET) plain language data of Dummy preset POH data for the send signal.	:SOURce:TELecom:DPReset:ZLABel?	
Initialize the preset data of the Dummy preset screen.	:SOURce:TELecom:DPReset:DEFault	deftype
Sets whether or not to send the data for tandem connection in the Dummy preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:MODE	mode
	:SOURce:TELecom:DPReset:TANDem:CONDition:N1LP:MODE	mode
	:SOURce:TELecom:DPReset:TANDem:CONDition:N2:MODE	mode
	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5HP:MODE	mode
	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5LP:MODE	mode
	:SOURce:TELecom:DPReset:TANDem:CONDition:Z6:MODE	mode
Queries the condition for tandem connection in the Dummy preset screen whether or not to send the data.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:MODE?	
	:SOURce:TELecom:DPReset:TANDem:CONDition:N1LP:MODE	
	:SOURce:TELecom:DPReset:TANDem:CONDition:N2:MODE?	
	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5HP:MODE?	

	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 LP:MODE	
	:SOURce:TELecom:DPReset:TANDem:CONDition:Z6: MODE?	
Sets the type of trace data for tandem connection in the Dummy preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 HP:TYPE	type
	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 LP:TYPE	type
	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 HP:TYPE	type
	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 LP:TYPE	type
Queries the type of trace data for N1-HP tandem connection in the Dummy preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 HP:TYPE?	
	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 LP:TYPE?	
	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 HP:TYPE?	
	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 LP:TYPE?	
Sets the Type1 data of edit N1-HP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 HP:TYPE1	tapoint string
Sets the Type1 data of edit Z5- HP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 HP:TYPE1	tapoint string
Queries the Type1 data of edit N1-HP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 HP:TYPE1?	
Queries the Type1 data of edit Z5-HP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 HP:TYPE1?	
Sets the Type2 data of edit N1-HP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 HP:TYPE2	tapoint string
Sets the Type2 data of edit Z5-HP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 HP:TYPE2	tapoint string
Sets the Type2 data of edit N1-LP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 LP:TYPE2	tapoint string
Sets the Type2 data of edit Z5-LP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 LP:TYPE2	tapoint string
Queries the Type2 data of edit N1-HP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 HP:TYPE2?	
Queries the Type2 data of edit Z5-HP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5 HP:TYPE2?	
Queries the Type2 data of edit N1-LP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:N1 LP:TYPE2?	

Queries the Type2 data of edit Z5-LP for the tandem connection in the Dummy Preset screen.	:SOURce:TELecom:DPReset:TANDem:CONDition:Z5LP:TYPE2?	
Sets the edit N2 data for the tandem connection in the Dummy Preset screen..	:SOURce:TELecom:DPReset:TANDem:N2	tapoint string
Sets the edit Z6 data for the tandem connection.	:SOURce:TELecom:DPReset:TANDem:Z6	tapoint string
Queries the N2 data for the tandem connection.	:SOURce:TELecom:DPReset:TANDem:N2?	
Queries the Z6 data for the tandem connection.	:SOURce:TELecom:DPReset:TANDem:Z6?	
Sets the path trace condition for Dummy channel.	:SOURce:TELecom:DPReset:PTCondition	pttype trace crc
Queries the setting for path trace condition for Dummy channel.	:SOURce:TELecom:DPReset:PTCondition?	
Sets the path trace data for Dummy channel.	:SOURce:TELecom:DPReset:PTData	Pttype string
Queries the setting for path trace data for Dummy channel.	:SOURce:TELecom:DPReset:PTData?	
Sets the path trace data. (in hexadecimal)	:SOURce:TELecom:DPReset:PTData2	pttype string
Queries the path trace data. (in hexadecimal)	:SOURce:TELecom:DPReset:PTData2?	pttype
Sets the payload pattern except for measurement channel.	:SOURce:TELecom:DPReset:MPAYLoad:PAYLoad1	data
	:SOURce:TELecom:DPReset:MPAYLoad:PAYLoad2	data
Sets the payload pattern for Dummy channel.	:SOURce:TELecom:DPReset:DUMMy	data
Queries the payload pattern except for measurement channel.	:SOURce:TELecom:DPReset:MPAYLoad:PAYLoad1?	
	:SOURce:TELecom:DPReset:MPAYLoad:PAYLoad2?	
Queries the payload pattern for Dummy channel	:SOURce:TELecom:DPReset:DUMMy?	

Page 10-102

Initializes the APS program data.	:SOURce:TELecom:APRogram:DEFault	
Loads the Capture data of the Analyze screen.	:SOURce:TELecom:APRogram:CAPTured	
Copies the localized edit data (data related to No.) of the APS program data.	:SOURce:TELecom:APRogram:COPY	destno sourcel1 sourcel2
Sets K1 (1 - 4 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:REQuest	no,request
Queries K1 (1 - 4 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:REQuest?	
Sets K1 (5 - 8 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:CHANnel	no mspch
Queries K1 (5 - 8 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:CHANnel?	
Sets K2 (1 - 4 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:BRIDge	no bridge
Queries K2 (1 - 4 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:BRIDge?	
Sets K2 (5 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:ARCHitect	no arch
Queries K2 (5 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:ARCHitect?	

Sets K2 (6 - 8 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:REServed	no res
Queries K2 (6 - 8 bit). (Plain language type)	:SOURce:TELecom:APRogram:MSPMessages:REServed?	
Sets K1(1-4bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:REQuest	no request
Queries K1 (1 - 4 bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:REQuest?	
Sets K1(5-8bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:CHANnel	no mspch
Queries K1 (5 – 8 bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:CHANnel?	
Sets K2 (1 - 4 bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:BRIDge	no bridge
Queries K2 (1 – 4 bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:BRIDge?	
Sets K2 (5 bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:ARCHitect	no arch
Queries the setting for K2 (5 bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:ARCHitect?	
Sets K2 (6 - 8 bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:REServed	no res
Queries K2 (6 - 8 bit). (Bit type)	:SOURce:TELecom:APRogram:MSPBits:REServed?	
Sets the counts of frame.	:SOURce:TELecom:APRogram:FRAMe	no frame
Queries the setting for Frame.	:SOURce:TELecom:APRogram:FRAMe?	no
Sets K1 and K2 bytes and the count of frame at the same time.	:SOURce:TELecom:APRogram:PROGram	no K1 K2 frame
Queries the setting K1 and K2 bytes and the count of frame.	:SOURce:TELecom:APRogram:PROGram?	no

Page 10-111

Sets the SOH preset data of the send signal.	:SOURce:TELecom:OHPReset:SOHPattern	brate numeric tohpoint string
Sets the TOH preset data of the send signal.	:SOURce:TELecom:OHPReset:TOHPattern	brate numeric tohpoint string
Queries the setting for SOH preset data of the send signal.	:SOURce:TELecom:OHPReset:SOHPattern?	brate numeric tohpoint
Queries the setting for TOH preset data of the send signal.	:SOURce:TELecom:OHPReset:TOHPattern?	brate numeric tohpoint
Sets the S1 data of SOH preset data for the send signal. (Plain language type)	:SOURce:TELecom:OHPReset:SSMessage	brate string
Queries the S1 plain language data of SOH preset data for the send signal.	:SOURce:TELecom:OHPReset:SSMessage?	brate
Sets the POH preset data of the send signal.	:SOURce:TELecom:OHPReset:POHPattern	pohtype pohpoint string

Queries the setting for POH preset data of the send signal.	:SOURce:TELecom:OHPReset:POHPattern?	pohtype pohpoint
Sets the C2 data of POH preset data for the send signal. (Plain language type)	:SOURce:TELecom:OHPReset:SLABel	pohtype string
Sets the C2 data of POH preset data for the send signal. (Plain language type)	:SOURce:TELecom:OHPReset:PLABel	pohtype string
Queries the C2 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:SLABel?	pohtype
Queries the C2 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:PLABel?	pohtype
Sets the V5 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:VLABel	string
Queries the V5 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:VLABel?	
Sets the G1 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:GLABel	pohtype string
Queries the G1 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:GLABel?	
Sets the K4 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:KLABel	string
Sets the Z7 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:ZLABel	string
Queries the K4 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:KLABel?	
Queries the Z7 data of POH preset data for the send signal.	:SOURce:TELecom:OHPReset:ZLABel?	
Initializes the OH preset data of the send signal.	:SOURce:TELecom:OHPReset:DEFault	
Sets the path trace condition.	:SOURce:TELecom:OHPReset:PTCondition	pttype trace crc
Queries the setting for path trace condition.	:SOURce:TELecom:OHPReset:PTCondition?	pttype
Sets the path trace data.	:SOURce:TELecom:OHPReset:PTData	pttype string
Queries the setting for path trace data.	:SOURce:TELecom:OHPReset:PTData?	pttype
Sets the path trace data. (in hexadecimal)	:SOURce:TELecom:OHPReset:PTData2	pttype string
Queries the path trace data. (in hexadecimal)	:SOURce:TELecom:OHPReset:PTData2?	pttype
Sets the external input DCC.	:SOURce:TELecom:OHPReset:DEXTernal	dcctype
Queries the external input DCC.	:SOURce:TELecom:OHPReset:DEXTernal?	

Page 10-121

Sets the S1 plain language data of SOH (TOH) preset data for the send signal.	:SOURce:TELecom:OHCHange:SSMessage	type select
Queries the S1 plain language data of SOH (TOH) preset data for the send signal.	:SOURce:TELecom:OHCHange:SSMessage?	
Sets the C2 plain language of POH preset data for the send signal.	:SOURce:TELecom:OHCHange:SLABel	type select no pohtype data

	:SOURce:TELecom:OHCHange:PLABel	type select no pohtype data
Queries the C2 plain language of POH preset data for the send signal.	:SOURce:TELecom:OHCHange:SLABel?	
	:SOURce:TELecom:OHCHange:PLABel?	
Sets the V5 data in plain language of POH preset data for the send signal.	:SOURce:TELecom:OHCHange:VLABel	type select no data
Queries the V5 plain language data of POH preset data for the send signal.	:SOURce:TELecom:OHCHange:VLABel?	
Sets the G1 (Bit 5 to 7) plain language data of POH preset data for the send signal.	:SOURce:TELecom:OHCHange:GLABel	type select no pohtype data
Queries the G1 (Bit 5 to 7) plain language data of POH preset data for the send signal.	:SOURce:TELecom:OHCHange:GLABel?	
Sets the K4 (Bit 5 to 7) plain language data of POH preset data for the send signal.	:SOURce:TELecom:OHCHange:KLABel	type select no data
	:SOURce:TELecom:OHCHangeZLABel	type select no data
Queries the K4 (Bit 5 to 7) plain language data of POH preset data for the send signal.	:SOURce:TELecom:OHCHange:KLABel?	
	:SOURce:TELecom:OHCHange:ZLABel?	
Initialize the OH preset data (STM or STS) of the send signal.	:SOURce:TELecom:OHCHange:RECall:DEFault	type select no
Overwrites the value selected by the Bit rate and the channel of the SOH preset data (set by Setup:OH preset) on the numbers from one set by From to one set by To.	:SOURce:TELecom:OHCHange:RECall:PRESet	brate # type select from,to
Sets the SOH preset data of the send signal.	:SOURce:TELecom:OHCHange:SOHPattern	type select no tohpoint data
Queries the set value of SOH preset data for the send signal.	:SOURce:TELecom:OHCHange:SOHPattern?	type select no tohpoint
Sets the TOH preset data of the send signal.	:SOURce:TELecom:OHCHange:TOHPattern	type select no tohpoint data
Queries the set value of SOH preset data for the send signal.	:SOURce:TELecom:OHCHange:TOHPattern?	type select no tohpoint

Sets the POH data of STM (STS) frame.	:SOURce:TELecom:OHCHange:POHPattern	type select no pohtype pohpoint data
Queries the POH data of STM (STS) frame.	:SOURce:TELecom:OHCHange:POHPattern?	type select no pohtype pohpoint

Page 10-132

Overwrites the edited packet to the initialized data.	:SOURce:TELecom:IPPacket:RECall:DEFault	
Copies the setting of the edited packet to the currently edited packet.	:SOURce:TELecom:IPPacket:RECall:COPY	no1 no2
Sets the protocol field value of PPP packet	:SOURce:TELecom:IPPacket:PPACket:PROTocol	protocol
Queries the protocol field value of PPP packet.	:SOURce:TELecom:IPPacket:PPACket:PROTocol?	
Sets the FCS field value of PPP packet.	:SOURce:TELecom:IPPacket:PPACket:FCS	fcs
Queries the FCS field value of PPP packet.	:SOURce:TELecom:IPPacket:PPACket:FCS?	
Edits PPP packet data.	:SOURce:TELecom:IPPacket:PPACket:DATA	flag1 adr control protocol info flag2
Queries the PPP packet data.	:SOURce:TELecom:IPPacket:PPACket:DATA?	
Edit a header to be inserted into the send PPP packet (when IP ver.4 is set).	:SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:HEADer	VER IHL, TOS TL ID FLAG TTL OFFSET PLOTOCOL
Queries the set value of IP packet header to be inserted into the send PPP packet (when IP ver.4 is set).	:SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:HEADer?	
Sets Source Address or Destination Address of the send IP packet (when IP ver.4 is set).	:SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess	type adr1 adr2 adr3 adr4
Queries the address setting of the send IP packet (when IP ver.4 is set).	:SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess?	type
Edits the header of IP packet to be inserted into the send PPP packet (when IP ver.6 is set).	:SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:HEADer	VER PRI, FL PL, NH HL

Queries the set value of IP packet to be inserted into the send PPP packet (when IP ver.6 is set).	:SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:HEADer?	
Sets Source Address or Destination Address of the send IP packet (when IP ver.6 is set).	:SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess	type adr1
Queries the address setting of the send IP packet (when IP ver.6 is set).	:SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess?	type
Sets the information type of PPP packet.	:SOURce:TELecom:IPPacket:IPPacket:INFormation:USERprogram	type
Queries the information type of PPP packet.	:SOURce:TELecom:IPPacket:IPPacket:INFormation:USERprogram?	
Sets 65535 bytes payload pattern when Information type is set to User program.	:SOURce:TELecom:IPPacket:IPPacket:INFormation:PATTern	start, string
Queries 65535 bytes payload pattern.	:SOURce:TELecom:IPPacket:IPPacket:INFormation:PATTern?	start, stop

Page 10-140

Determines the frame format set by the Frame memory.	:SOURce:TELecom:FMEMory:BRATe	brate
Queries the frame format set by the Frame memory.	:SOURce:TELecom:FMEMory:BRATe?	
Sets whether or not to perform the automatic addition (hardware) of B3.	:SOURce:TELecom:FMEMory:B3Adition	mode
Queries the setting value whether or not to perform the automatic addition (hardware) of B3.	:SOURce:TELecom:FMEMory:B3Adition?	
Sets the selection of pointer value for the frame.	:SOURce:TELecom:FMEMory:POINter	pointer
Queries the selection setting value of pointer value for the frame.	:SOURce:TELecom:FMEMory:POINter?	
Sets the frame No. to edit.	:SOURce:TELecom:FMEMory:FRAMe	frame
Queries the setting value of frame No. to edit.	:SOURce:TELecom:FMEMory:FRAMe?	
Sets the frame data by appointing the line and column.	:SOURce:TELecom:FMEMory:PATTern	Column row string
<start2> column to the <stop1> line the <stop2> column.	:SOURce:TELecom:FMEMory:PATTern?	colum1 row1 row2 Colum2
Initialize the setting of Frame memory.	:SOURce:TELecom:FMEMory:RECall	mode
Queries the initialization type of the Frame memory.	:SOURce:TELecom:FMEMory:RECall?	
Sets the print range.	:SOURce:TELecom:FMEMory:PRINt	From,to
Queries the print range.	:SOURce:TELecom:FMEMory:PRINt?	

Page 10-144

Sets K1 (1 - 4 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:REQuest	Request
Queries K1 (1 - 4 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:REQuest?	
Sets K1 (5 - 8 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:CHANnel	mspch
Queries the setting of K1 (5 - 8 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:CHANnel?	

Sets K2 (1 to 4 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:BRIDge	Bridge
Queries the setting for K2 (1 to 4 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:BRIDge?	
Sets K2 (5 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:ARCHitect	Arch
Queries the setting for K2 (5 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:ARCHitect?	
Sets K2 (6 to 8 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:REServed	res
Queries K2 (6 to 8 bit). (Plain language type)	:SOURce:TELecom:MSPMessages:REServed?	no

Page 10-149

Sets K1 (1 to 4 bit) byte. (Bit type)	:SOURce:TELecom:MSPBits:REQuest	string
Queries K1 (1 to 4 bit) byte. (Bit type)	:SOURce:TELecom:MSPBits:REQuest?	
Sets K1 (5 to 8 bit) byte. (Bit type)	:SOURce:TELecom:MSPBits:CHANnel	string
Queries the setting of K1 (5 to 8 bit) byte. (Bit type)	:SOURce:TELecom:MSPBits:CHANnel?	
Sets K2 (1 to 4 bit). (Bit type)	:SOURce:TELecom:MSPBits:BRIDge	string
Queries K2 (1 - 4 bit). (Bit type)	:SOURce:TELecom:MSPBits:BRIDge?	
Sets K2 (5 bit). (Bit type)	:SOURce:TELecom:MSPBits:ARCHitect	string
Queries the setting of K2 (5 bit). (Bit type)	:SOURce:TELecom:MSPBits:ARCHitect?	
Sets K2 (6 - 8 bit). (Bit type)	:SOURce:TELecom:MSPBits:REServed	string
Queries the setting of K2 (6 - 8 bit). (Bit type)	:SOURce:TELecom:MSPBits:REServed?	

Page 10-151

Sets the pointer value(NDF).	:SOURce:TELecom:PSETting:NDFSet	ptype string
Queries the setting of pointer value (NDF).	:SOURce:TELecom:PSETting:NDFSet?	ptype
Sets the pointer value (SS).	:SOURce:TELecom:PSETting:SSSet	ptype string
Queries the setting of pointer value (SS).	:SOURce:TELecom:PSETting:SSSet?	ptype
Sets the pointer value (ID).	:SOURce:TELecom:PSETting:IDSet	ptype numeric
Queries the setting of pointer value (ID).	:SOURce:TELecom:PSETting:IDSet?	ptype
Inserts +PJC in the send signal for one time.	:SOURce:TELecom:PSETting:PPJC	ptype
Inserts - PJC in the send signal for one time.	:SOURce:TELecom:PSETting:NPJC	ptype

Page 10-154

Sets the Payload offset.	SOURce:TELecom:POFFset	
Queries the setting of Payload offset.	SOURce:TELecom:POFFset?	

Page 10-154

Initializes the setting of the S1 program edit data.	:SOURce:TELecom:SPRogram:DEFault	
Overwrites data to the specified S1 program data.	:SOURce:TELecom:SPRogram:COPY	Destno source1 source2
Sets S1(bit5-bit8) in plain language.	:SOURce:TELecom:SPRogram:SSMessages:REQuest	no request

Queries the setting of S1(bit5-bit8) in plain language.	:SOURce:TELecom:SPRogram:SSMessages:REQuest?	no
Sets S1(1-4bit, 5-8bit) in binary.	:SOURce:TELecom:SPRogram:SSBits:REQuest	No request1
Queries the setting of S1(1-4bit, 5-8bit) in binary.	:SOURce:TELecom:SPRogram:SSBits:REQuest?	no
Sets the frame of the S1 program edit data.	:SOURce:TELecom:SPRogram:FRAMe	no frame
Queries the frame setting.	:SOURce:TELecom:SPRogram:FRAMe?	no,
Sets the S1 bit and its frame simultaneously.	:SOURce:TELecom:SPRogram:PROGram	no S1,frame
Queries the setting of S1 bit and its frame simultaneously.	:SOURce:TELecom:SPRogram:PROGram?	no

Page 10-158

Selects the frame configuration of data that are set to the signaling byte of VC11 when the mapping is BYTE.	:SOURce:SIGPreset:TX	type
Queries the frame configuration of data that are set to the signaling byte of VC11 when the mapping is BYTE.	:SOURce:SIGPreset:TX?	

Page 10-159

Sets the 8-multiframe signaling data.	:SOURce:SIGPreset:MULTi8:TS	type ts sp_d
Queries the 8-multiframe signaling data.	:SOURce:SIGPreset:MULTi8:TS?	type
Sets the 8-multiframe signaling data.	:SOURce:SIGPreset:MULTi8:SP	
Queries the 8-multiframe signaling data.	:SOURce:SIGPreset:MULTi8:SP?	

Page 10-160

Sets the signaling data AIS of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:AIS	ais
Queries the signaling data AIS of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:AIS?	
Sets the signaling data BAIS of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:BAIS	bais
Queries the signaling data BAIS of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:BAIS?	
Sets the signaling data PTY of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:PTY	pty
Queries the signaling data PTY of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:PTY?	
Sets the signaling data BERR of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:BERR	berr
Queries the signaling data BERR of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:BERR?	
Sets the signaling data TRACE of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:TRACe	trace
Queries the signaling data TRACE of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:TRACe?	
Sets the signaling data Reserved (S) of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:S	s
Queries the setting of signaling data Reserved (S) of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:S?	
Sets the signaling data Reserved (UNR) of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:UNR	unr

Queries the setting of signaling data Reserved (UNR) of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:UNR?	
Sets the signaling data LOOP2 of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:LOOP2	loop2
Queries the setting of signaling data LOOP2 of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:LOOP2?	
Sets the signaling data LP of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:LP	lp
Queries the setting of signaling data LP of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:LP?	
Sets the signaling data 1.5M BASIS of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:M15Bais	m15
Queries the setting of signaling data 1.5M BASIS of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:M15Bais?	
Sets the signaling data kx of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:KX	kx
Queries the setting of signaling data kx of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:KX?	
Sets the signaling data ky of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:KY	ky
Queries the setting of signaling data ky of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:KY?	
Sets the signaling data kz of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:KZ	kz
Queries the setting of signaling data kz of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:KZ?	
Sets the signaling data LOOP-OCU of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:OCULoop	ocu
Queries the setting of signaling data LOOP-OCU of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:OCULoop?	
Sets the signaling data LOOP-1.5M of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:M15Loop	m15
Queries the setting of signaling data LOOP-1.5M of the 64-multiframe.	:SOURce:SIGPreset:MULTi64:M15Loop?	

Page 10-166

Initializes the 8/64-multiframe signaling data.	:SOURce:SIGPreset:DEFault	

Page 10-166

Sets the sequence data (for 64 frames) of programmable PTR.	:SOURce:PTR64:DATA	Mode no type ptr ndf ss id
Queries the programmable PTR sequence data.	:SOURce:PTR64:DATA?	Mode no

Page 10-167

Initializes the PTR program data (64 pieces).	:SOURce:PTR64:DEFault	point

Page 10-167

Sets the recommendation type to perform the Performance check.	:SOURce:PCHeck:TYPE	type

Queries the setting of recommendation type to perform the Performance check.	:SOURce:PCHeck:TYPE?	

Page 10-168

Sets the PDH frame type.	:SOURce:PCHeck:PDHFrame	frm
Queries the setting of PDH frame type.	:SOURce:PCHeck:PDHFrame?	

Page 10-168

Sets the relative number of addition times for Error/Alarm reflected on the Performance result.	:SOURce:PCHeck:REPeat	repeat
Queries the relative number of addition times for Error/Alarm reflected on the Performance result.	:SOURce:PCHeck:REPeat?	

Page 10-169

Sets the Performance item.	:SOURce:PCHeck:ITEM	item
Queries the setting of Performance item.	:SOURce:PCHeck:ITEM?	

Page 10-170

Sets the Performance type, the alarm addition item, and the Threshold over for the performance item.	:SOURce:PCHeck:CONDition	Condit erralm threchold
Queries the settings of Performance type, the alarm addition item, and the Threshold over for the performance item.	:SOURce:PCHeck:CONDition?	

Page 10-174

Starts the Performance check.	:SOURce:PCHeck:STARt	

Page 10-174

Releases the Performance check.	:SOURce:PCHeck:STOP	

Page 10-174

Queries the Performance check status.	:SOURce:PCHeck:STATe?	

Page 10-175

Sets the number of send frames of the Frame memory A pattern.	:SOURce:FMEMory:SEQuence:A:FRAMe	frame
Queries the setting for the number of send frames of the Frame memory A pattern.	:SOURce:FMEMory:SEQuence:A:FRAMe?	
Sets the number of send times of the Frame memory A pattern.	:SOURce:FMEMory:SEQuence:A:TIME	times
Queries the setting for the number of send times of the Frame memory A pattern.	:SOURce:FMEMory:SEQuence:A:TIME?	
Sets the number of send frames of the Frame memory B pattern.	:SOURce:FMEMory:SEQuence:B:FRAMe	frame
Queries the setting for the number of send frames of the Frame memory B pattern.	:SOURce:FMEMory:SEQuence:B:FRAMe?	
Sets the number of send times of the Frame memory B pattern.	:SOURce:FMEMory:SEQuence:B:TIME	times
Queries the setting for the number of send times of the Frame memory B pattern.	:SOURce:FMEMory:SEQuence:B:TIME?	

Page 10-177

Sets the alarm type to insert in the send signal.	:SOURce:FMEMory:ALARm:TYPE	atype
Queries the alarm type to insert in the send signal.	:SOURce:FMEMory:ALARm:TYPE?	
Sets the alarm addition timing.	:SOURce:FMEMory:ALARm:TIMing:TYPE	type
Queries the setting of alarm addition timing.	:SOURce:FMEMory:ALARm:TIMing:TYPE?	
Sets the number of alarm addition frames when using Alternate.	:SOURce:FMEMory:ALARm:TIMing:ALARm	error
Queries the number of alarm addition frames when using Alternate.	:SOURce:FMEMory:ALARm:TIMing:ALARm?	
Sets the number of normal addition frames when using Alternate.	:SOURce:FMEMory:ALARm:TIMing:NORMal	normal
Queries the setting for number of normal addition frames when using Alternate.	:SOURce:FMEMory:ALARm:TIMing:NORMal?	
Sets the alarm insertion timing value and the unit.	:SOURce:FMEMory:ALARm:TIMing:BURSt	Timing unit
Queries the setting for the alarm insertion timing value and the unit.	:SOURce:FMEMory:ALARm:TIMing:BURSt?	

Page 10-180

Sets the error type to insert in the send signal.	:SOURce:FMEMory:ERRor:TYPE	etype
Queries the error type to insert in the send signal.	:SOURce:FMEMory:ERRor:TYPE?	
Sets the error addition timing.	:SOURce:FMEMory:ERRor:TIMing:TYPE	timing
Queries the setting for error addition timing.	:SOURce:FMEMory:ERRor:TIMing:TYPE?	
Sets the number of error addition frames when using Alternate.	:SOURce:FMEMory:ERRor:TIMing:ERRor	error
Queries the number of error addition frames when using Alternate.	:SOURce:FMEMory:ERRor:TIMing:ERRor?	
Sets the addition value for the Prog. Rate error addition.	:SOURce:FMEMory:ERRor:TIMing:PROGrate	error
Queries the setting for addition value for the Prog. Rate error addition.	:SOURce:FMEMory:ERRor:TIMing:PROGrate?	
Sets the number of normal addition frames when using Alternate.	:SOURce:FMEMory:ERRor:TIMing:NORMal	normal
Queries the number of normal addition frames when using Alternate.	:SOURce:FMEMory:ERRor:TIMing:NORMal?	
Sets the number of error insertion bits.	:SOURce:FMEMory:ERRor:TIMing:BURSt:BIT	bit
Queries the number of error insertion bits.	:SOURce:FMEMory:ERRor:TIMing:BURSt:BIT?	

Page 10-184

Switches according to the OH test item.	:SOURce:OHTest:TYPE	type
Queries the OH test item.	:SOURce:OHTest:TYPE?	

Page 10-184

Starts OHTest.	:SOURce:OHTest:STARt	

Page 10-184

Releases OHTest.	:SOURce:OHTest:STOP	

Page 10-184

Queries the OHTest status.	:SOURce:OHTest:STATe?	

Page 10-185

Sets the change type of OH change in the OH test.	:SOURce:OHTest:OHCHange:TYPE	type
Queries the change type of OH change in the OH test.	:SOURce:OHTest:OHCHange:TYPE?	
Sets the change byte position of OH change SOH 1byte.	:SOURce:OHTest:OHCHange:POSition:SOH	posi
Sets the change byte position of OH change TOH 1byte.	:SOURce:OHTest:OHCHange:POSition:TOH	posi
Queries the change byte position of OH change SOH 1byte.	:SOURce:OHTest:OHCHange:POSition:SOH?	
Queries the change byte position of OH change TOH 1byte.	:SOURce:OHTest:OHCHange:POSition:TOH?	
Sets the change byte position of OH change POH 1byte.	:SOURce:OHTest:OHCHange:POSition:POH	Vctype posi
Queries the change byte position of OH change.	:SOURce:OHTest:OHCHange:POSition:POH?	
Sets the change channel position of OH change SOH 1byte [TOH 1byte], RSOH [RTOH], MSOH [MTOH], and SOH [TOH].	:SOURce:OHTest:OHCHange:CHANel	ch
Queries the change channel position of OH change SOH 1byte [TOH 1byte], RSOH [RTOH], MSOH [MTOH], and SOH [TOH].	:SOURce:OHTest:OHCHange:CHANel?	
Sets the number of send frames of OH change A pattern.	:SOURce:OHTest:OHCHange:SEQuence:A:FRAMe	frame
Queries the setting for number of send frames of OH change A pattern.	:SOURce:OHTest:OHCHange:SEQuence:A:FRAMe?	
Sets the number of send times of OH change A pattern.	:SOURce:OHTest:OHCHange:SEQuence:A:TIME	count
Queries the setting for number of send times of OH change A pattern.	:SOURce:OHTest:OHCHange:SEQuence:A:TIME?	
Sets the number of send frames of OH change B pattern.	:SOURce:OHTest:OHCHange:SEQuence:B:FRAMe	frame
Queries the setting for number of send frames of OH change B pattern.	:SOURce:OHTest:OHCHange:SEQuence:B:FRAMe?	
Sets the number of send times of OH change B pattern.	:SOURce:OHTest:OHCHange:SEQuence:B:TIME	count
Queries the setting for number of send times of OH change B pattern.	:SOURce:OHTest:OHCHange:SEQuence:B:TIME?	

Page 10-190

Sets the change type of OH BERT in the OH test.	:SOURce:OHTest:OHBert:TYPE	type
Queries the change type of OH BERT in the OH test.	:SOURce:OHTest:OHBert:TYPE?	
Sets the change byte position of SOH 1byte in OH Bert.	:SOURce:OHTest:OHBert:POSition:SOH	posi
Sets the change byte position of TOH 1byte in OH Bert.	:SOURce:OHTest:OHBert:POSition:TOH	posi
Queries the change byte position of OH Bert.	:SOURce:OHTest:OHBert:POSition:SOH?	
	:SOURce:OHTest:OHBert:POSition:TOH?	
Sets the change byte position of POH 1byte in OH Bert.	:SOURce:OHTest:OHBert:POSition:POH	Vctype posi
Queries the change byte position of POH 1byte OH Bert.	:SOURce:OHTest:OHBert:POSition:POH?	

Sets the change channel position of OH Bert SOH 1byte [TOH 1byte].	:SOURce:OHTest:OHBert:CHANel	ch
Queries the change channel position when OH Bert is SOH 1byte[TOH 1byte].	:SOURce:OHTest:OHBert:CHANel?	

Page 10-195

Sets the OH Add type in the OH test.	:SOURce:OHTest:ADRop:TYPE	type
Queries the OH Add type in the OH test.	:SOURce:OHTest:ADRop:TYPE?	
Sets the change byte position of OH Add SOH 1byte.	:SOURce:OHTest:ADRop:POSition:SOH	posi
Sets the change byte position of OH Add TOH 1byte.	:SOURce:OHTest:ADRop:POSition:TOH	posi
Queries the setting for change byte position of OH Add.	:SOURce:OHTest:ADRop:POSition:SOH?	
	:SOURce:OHTest:ADRop:POSition:TOH?	
Sets the change byte position of OH Add POH 1byte.	:SOURce:OHTest:ADRop:POSition:POH	Vctype posi
Queries the change byte position of OH Add POH 1byte.	:SOURce:OHTest:ADRop:POSition:POH?	
Sets the change channel position of OH Add SOH 1byte [TOH 1byte].	:SOURce:OHTest:ADRop:CHANel	ch
Queries the change channel position when OH Add is SOH 1byte [TOH 1byte].	:SOURce:OHTest:ADRop:CHANel?	

Page 10-198

Sets the number of send frames of PTR64 frame in the OH test.	:SOURce:OHTest:PTR64:SEQuence:FRAMe	frame
Queries the setting for number of send frames of PTR64 frame in the OH test.	:SOURce:OHTest:PTR64:SEQuence:FRAMe?	
Sets the send mode of PTR64 frame in the OH test.	:SOURce:OHTest:PTR64:SEQuence:MODE	mode
Queries the setting for send mode of PTR64 frame in the OH test.	:SOURce:OHTest:PTR64:SEQuence:MODE?	
Sets the PTR64 frame pointer in the OH test.	:SOURce:OHTest:PTR64:PTR	point
Queries the setting of PTR64 frame pointer in the OH test.	:SOURce:OHTest:PTR64:PTR?	

Page 10-200

Starts to send packets of IP test.	:SOURce:IPTest:STARt	

Page 10-200

Stops to send the packets of IP test.	:SOURce:IPTest:STOP	

Page 10-200

Queries the packet send state of IP test.	:SOURce:IPTest:STATe?	

Page 10-200

Set the measurement mode and measurement time of IP test.	:SOURce:IPTest:SEQuence:MODE	mode
Queries the measurement mode of IP test.	:SOURce:IPTest:SEQuence:MODE?	

Page 10-201

Sets a state in which IP test can start.	:SOURce:IPTest:PACKset	
Sets the number of Idle pattern (L) bytes inserted into PPP packets in IP test.	:SOURce:IPTest:PACKet:LBYTe	L

Queries the number of Idle pattern (L) bytes.	:SOURce:IPTest:PACKet:LBYTe?	
Sets the number of Idle pattern (M) bytes inserted into PPP packets in IP test.	:SOURce:IPTest:PACKet:MBYTe	M
Queries the number of Idle pattern (M) bytes.	:SOURce:IPTest:PACKet:MBYTe?	
Sets the number of Idle pattern (N) bytes inserted into PPP packets in IP test.	:SOURce:IPTest:PACKet:NBYTe	N
Queries the number of Idle pattern (N) bytes.	:SOURce:IPTest:PACKet:NBYTe?	
Sets the type of PPP packet (between Idle NL) to be sent in IP test.	:SOURce:IPTest:PACKet:NL	no
Queries the type of PPP packet (between Idle NL) to be sent in IP test.	:SOURce:IPTest:PACKet:NL?	
Sets the type of PPP packet (between Idle LM) to be sent in IP test.	:SOURce:IPTest:PACKet:LM	no
Queries the type of PPP packet (between Idle LM) to be sent in IP test.	:SOURce:IPTest:PACKet:LM?	
Sets the type of PPP packet (between Idle MN) to be sent in IP test.	:SOURce:IPTest:PACKet:MN	no
Queries the type of PPP packet (between Idle NL) to be sent in IP test.	:SOURce:IPTest:PACKet:MN?	

Page 10-203

Set an additional alarm item for IP test.	:SOURce:IPTest:ALARm:TYPE	alarm
Queries the additional alarm item.	:SOURce:IPTest:ALARm:TYPE?	
Sets a timing to add an alarm.	:SOURce:IPTest:ALARm:TIMing:TYPE	timing
Queries the timing to add the alarm.	:SOURce:IPTest:ALARm:TIMing:TYPE?	

Page 10-205

Sets an additional error item for IP test.	:SOURce:IPTest:ERRor:TYPE	type
Queries the additional error item.	:SOURce:IPTest:ERRor:TYPE?	
Sets an error addition timing.	:SOURce:IPTest:ERRor:TIMing:TYPE	timing
Queries the error addition timing.	:SOURce:IPTest:ERRor:TIMing:TYPE?	
Sets the number of error addition frames when the timing is set to Alternate.	:SOURce:IPTest:ERRor:TIMing:ERRor	error
Queries the number of the error addition frames when Alternate is set.	:SOURce:IPTest:ERRor:TIMing:ERRor?	
Sets an error addition value when the timing is set to Programmable rate.	:SOURce:IPTest:ERRor:TIMing:PROGrate	error
Queries the error addition value when Programmable rate is set.	:SOURce:IPTest:ERRor:TIMing:PROGrate?	
Sets the number of normal frames (alarms are not added) when the timing is set to Alternate.	:SOURce:IPTest:ERRor:TIMing:NORMal	normal
Queries the number of normal frames (alarms are not added) when the timing is set to Alternate.	:SOURce:IPTest:ERRor:TIMing:NORMal?	
Sets the number of bit to insert errors when the timing is set to Burst.	:SOURce:IPTest:ERRor:TIMing:BURSt:BIT	bit
Queries the number of the bits to insert the errors.	:SOURce:IPTest:ERRor:TIMing:BURSt:BIT?	

Page 10-208

Sets the number of send patterns for APS test.	:SOURce:APSTest:SEQuence:FRAMe	frame
Queries the setting for number of send pattern of APS test.	:SOURce:APSTest:SEQuence:FRAMe?	
Sets the send mode of APS test.	:SOURce:APSTest:SEQuence:MODE	mode
Queries the setting for send mode of APS test.	:SOURce:APSTest:SEQuence:MODE?	
Starts the APS test.	:SOURce:APSTest:STARt	
Stops the APS test.	:SOURce:APSTest:STOP	

Page 10-210

Sets the alarm type to insert in the APS test.	:SOURce:APSTest:ALARm:TYPE	atype
Queries the alarm type to insert in the APS test.	:SOURce:APSTest:ALARm:TYPE?	
Sets the alarm addition timing in the APS test.	:SOURce:APSTest:ALARm:TIMing:TYPE	type
Queries the setting of alarm addition timing in the APS test.	:SOURce:APSTest:ALARm:TIMing:TYPE?	
Sets the number of alarm addition frames when using Alternate in the APS test.	:SOURce:APSTest:ALARm:TIMing:ALARm	error
Queries the number of alarm addition frames when using Alternate in the APS test.	:SOURce:APSTest:ALARm:TIMing:ALARm?	
Sets the number of normal addition frames when using Alternate in the APS test.	:SOURce:APSTest:ALARm:TIMing:NORMal	normal
Queries the number of normal addition frames when using Alternate in the APS test.	:SOURce:APSTest:ALARm:TIMing:NORMal?	
Setting of alarm insertion unit	:SOURce:APSTest:ALARm:TIMing:ALTErnate	unit
Querying of alarm insertion unit	:SOURce:APSTest:ALARm:TIMing:ALTErnate?	
Sets the alarm insertion timing value and the unit in the APS test.	:SOURce:APSTest:ALARm:TIMing:BURSt	timing, unit
Queries the setting for alarm insertion timing value and the unit in the APS test.	:SOURce:APSTest:ALARm:TIMing:BURSt?	

Page 10-215

Sets the error type to insert in the APS test.	:SOURce:APSTest:ERRor:TYPE	etype
Queries the error type to insert in the APS test.	:SOURce:APSTest:ERRor:TYPE?	
Sets the error addition timing in the APS test.	:SOURce:APSTest:ERRor:TIMing:TYPE	timing
Queries the setting for error addition timing in the APS test.	:SOURce:APSTest:ERRor:TIMing:TYPE?	
Sets the number of error addition frames when using Alternate in the APS test.	:SOURce:APSTest:ERRor:TIMing:ERRor	error
Queries the number of error addition frames when using Alternate in the APS test.	:SOURce:APSTest:ERRor:TIMing:ERRor?	
Sets the addition value for the Prog. Rate error addition in the APS test.	:SOURce:APSTest:ERRor:TIMing:PROGrate	error

Queries the setting for addition value of Prog. Rate error addition in the APS test.	:SOURce:APSTest:ERRor:TIMing:PROGrate?	
Sets the number of normal addition frames when using Alternate in the APS test.	:SOURce:APSTest:ERRor:TIMing:NORMal	normal
Queries the number of normal addition frames when using Alternate in the APS test.	:SOURce:APSTest:ERRor:TIMing:NORMal?	
Sets the number of error insertion bits in the APS test.	:SOURce:APSTest:ERRor:TIMing:BURSt:BIT	bit
Queries the number of error Insertion bits in the APS test.	:SOURce:APSTest:ERRor:TIMing:BURSt:BIT?	

Page 10-219

Starts the S1 test.	:SOURce:STEst:STARt	

Page 10-220

Stops the S1 test.	:SOURce:STEst:STOP	

Page 10-220

Queries the state of the S1 test.	:SOURce:STEst:STATe?	

Page 10-220

Sets the pattern numbe in the S1 test.	:SOURce:STEst:SEQuence:FRAMe	frame
Queries the pattern number to be sent in the S1 test.	:SOURce:STEst:SEQuence:FRAMe?	
Sets the send method of the S1 test.	:SOURce:STEst:SEQuence:MODE	mode
Queries the state of the S1 test send method.	:SOURce:STEst:SEQuence:MODE?	

Page 10-221

Sets the type of alarm to be inserted into the S1 test.	:SOURce:STEst:ALARm:TYPE	atype
Queries the type of the error inserted into the S1 test.	:SOURce:STEst:ALARm:TYPE?	
Sets the timing to add the error to the S1 test.	:SOURce:STEst:ALARm:TIMing:TYPE	type
Queries the alarm addition timing.	:SOURce:STEst:ALARm:TIMing:TYPE?	

Page 10-222

Sets the type of the error inserted into the S1 test.	:SOURce:STEst:ERRor:TYPE	etype
Queries the type of the error inserted into the S1 test.	:SOURce:STEst:ERRor:TYPE?	
Sets the timing to add the error to the S1 test.	:SOURce:STEst:ERRor:TIMing:TYPE	timing
Queries the state of the error addition timing of the S1 test.	:SOURce:STEst:ERRor:TIMing:TYPE?	
Sets the number of the error frames when the error addition timing is “Alternate”	:SOURce:STEst:ERRor:TIMing:ERRor	error
Queries the number of the error frames when the error addition timing is “Alternate”	:SOURce:STEst:ERRor:TIMing:ERRor?	
Sets the number of the frames to which errors are added when the error addition timing is “Alternate”	:SOURce:STEst:ERRor:TIMing:NORMal	normal
Queries the number of the frames to which errors are added when the error addition timing is “Alternate”.	:SOURce:STEst:ERRor:TIMing:NORMal?	

Sets the error addition timing when Prog. Rate is set.	:SOURce:STEst:ERRor:TIMing:PROGrate	error
Sets the error addition timing when Prog. Rate is set.	:SOURce:STEst:ERRor:TIMing:PROGrate?	
Queries the error addition timing when Prog. Rate is On.	:SOURce:STEst:ERRor:TIMing:BURSt:BIT	bit
Queries the number of the bits to which errors are added when the error addition timing is “Burst”.	:SOURce:STEst:ERRor:TIMing:BURSt:BIT?	

:SOURce:TELecom:BRATe <brate>

Parameter: <brate> = <CHARACTER PROGRAM DATA>

M9953	9953Mbit/s
M2488	2488Mbit/s
M622	622Mbit/s
M156	156Mbit/s
M156CMI	156Mbit/s CMI
M52	52Mbit/s
M52B3ZS	52Mbit/s B3ZS
M139	139Mbit/s
M45	45Mbit/s
M34	34Mbit/s
M8	8Mbit/s
M2	2Mbit/s
M1_5	1.5Mbit/s

Function: Sets a bit rate for send signals.

Restriction: Invalid in the following case:

- When 9953M is selected:
  2.5G/10G unit is not installed.
- When 2488M is selected while 2.5G unit is not installed.
- When 622M is selected while 622M-type interface unit is not installed.
- When 156M is selected while 156M-type interface unit is not installed.
- When 156M CMI/139M/34M/8M/2M is selected while E1-E4/STM selected while 1.5/45/52M (MP0122B) unit is not installed.
- When 52M B3ZS/45M/1.5M is selected while DS1 or DS3/STS1 unit is not installed.

Example use: To set the bit rate for send signals to 622 Mbit/s:

```
> :SOURce:TELecom:BRATe    M622
```

:SOURce:TELecom:BRATe?

Response: <brate> = <CHARACTER RESPONSE DATA>

Function: Queries the bit rate for send signals.

Example use:

```
> :SOURce:TELecom:BRATe?
< M622
```

:SOURce:TELecom:INSert:MODE <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF	or 0
ON	or 1

Function: Sets the insertion of STM4, 1, 0 (STS12, 3,1)signals.

Restriction: Invalid in the following case:

- Valid only when inserting (valid) the combination of the interface that allows the use of 622M, 156M (light and electricity) and 52M (light and electricity) and the units of 2488M and 9953M.

The light and the electricity mentioned here indicate the interface containing 1.31 and 1.55 μ m and the unit having the CMI, NRZ, and UTP signal formats.

- When :INSTrument:CONFig <type> is NON or CID while M2488 and M9953 are not selected for :SOURce:TELecom:BRATe <brate>.
- When M52, M52B3ZS, M156, M156 CMI, and M622 cannot be set for :SOURce:TELecom:BRATe <brate>.

Example use: To set the insertion of STM4, 1, 0 signals to OFF:
> :SOURce:TELecom:INSert:MODE OFF

:SOURce:TELecom:INSert:MODE?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries the insertion setting of STM4, 1, 0 (STS12, 3,1)signals.

Example use: > :SOURce:TELecom:INSert:MODE?
< 0

:SOURce:TELecom:INSert:RATE <rate>

Parameter: <rate> = <CHARACTER PROGRAM DATA>

M622	622M
M156	156M
M156CMI	156M CMI
M52	52M
M52B3ZS	52M B3ZS

Function: Sets the rate (interface) to perform Insert.

Restriction: Invalid in the following case:
- When :INSTrument:CONFig <type> is NON or CID.
- When M52, M52B3ZS, M156, M156 CMI, and M622 cannot be set for :SOURce:TELecom:BRATe <brate>
- When :SOURce:TELecom:INSert:MODE <boolean> is other than ON.

Example use: To set 622M for the rate (interface) to perform Insert:
> :SOURce:TELecom:RATE:TYPE M622

:SOURce:TELecom:INSert:RATE ?

Response: <rate> = <CHARACTER RESPONSE DATA>

Function: Queries the rate (interface) to perform Insert.

Example use: To query the rate (interface) to perform Insert:
> :SOURce:TELecom:RATE:TYPE?
< M622

:SOURce:TELecom:INSert:CH <ch>

Parameter: <ch> = < DECIMAL NUMERIC PROGRAM DATA >
1 to 64 Step value: 1

Function: Sets the channel of the Insert signal input.
Restriction: Invalid in the following case:
- When :INSTrument:CONFig <type> is NON or CID.
・ When :SOURce:TELecom:BRATe <brate> is not be able to set M52,M52B3ZS,M156,M156 CMI, or M622.
- :SOURce:TELecom:INSert:MODE <boolean> is other than ON.

Example use: To set the channel 4:
> :SOURce:TELecom:INSert:CH 4

:SOURce:TELecom:INSert:CH?

Response: <ch> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the channel of the Insert signal input.
Example use: To query the channel.
> :SOURce:TELecom:INSert:CH?
< 4

:SOURce:TELecom:INSert:INTerface <optical>

Parameter: <optical> = <CHARACTER PROGRAM DATA>
1.31 1.31 μ m
1.55 1.55 μ m

Function: Sets the wavelength switch of the Insert signal input.
Restriction: Invalid in the following case:
- When MP0122B are not installed or when MU150008A, MU150009A, and MU150010A are not installed.
- When MU150000A is not installed or MU150000A is installed while the MU150001A and MU150002A units are not installed.
- When light wavelength range of insertion unit as follows is not set:
MP0122B,MP0127A ,MU150008A : 1.31
MP0128A, MU150009A : 1.55
MU150010A : 1.31/1.55
MU150001A , MU150002A : 1.31/1.55
- When :SOURce:TELecom:INSert:MODE <boolean> is other than ON.

Example use: To set the input wavelength switch at 1.31 μ m:
> :SOURce:TELecom:INSert:INTerface 1.31

:SOURce:TELecom:INSert:INTerface?

Response: <optical> = <CHARACTER RESPONSE DATA>
Function: Queries the wavelength switch of the Insert signal input:
Example use: To query the wavelength switch of the input:
> :SOURce:TELecom:INSert:INTerface?
< 1.31

:SOURce:TELecom:MAPPing:TYPE <mtype>

Parameter: <mtype> = <CHARACTER PROGRAM DATA>

(SDH)

VC4_ASY	139M(Async.)
VC4_BLK	VC4(Bulk)
VC3_ASY	34M(Async.)
VC3_SYN	34M(Sync.)
VC3_45MASY	45M(Async.)
VC3_BLK	VC3(Bulk)
VC2_6MASY	6M(Async.)
VC2_6MBIT	6M(Bitsync.)
VC2_BLK	VC2(Bulk)
VC2_MC	VC2(mc)
VC12_ASY	2M(Async.)
VC12_BIF	2M(Bitsync.F)
VC12_BIL	2M(Bitsync.L)
VC12_BYF	2M(Bytesync.F)
VC12_BYL	2M(Bytesync.L)
VC12_BLK	VC12(Bulk)
VC11_ASY	1.5M(Async.)
VC11_BIF	1.5M(Bitsync.F)
VC11_BIL	1.5M(Bitsync.L)
VC11_BYF	1.5M(Bitsync.L)
VC11_BYL	1.5M(Bytesync.L)
VC11_BLK	VC11(Bulk)
VC11_BYD[*1]	Byte(Data)
VC11_BYV[*1]	Byte(Voice)
VC11_384D[*1]	384K(Data)
VC11_384V[*1]	384K(Voice)
VC4_64CBLK[*2]	VC4*64C(Bulk)
VC4_16CBLK[*2]	VC4*16C(Bulk)
VC4_4CBLK[*2]	VC4*4C(Bulk)
VC4_4CBLK[*2]	VC4C(Bulk)

(SONET)

ST3_ASY	139M(Async.)
ST3_BLK	ST3cSPE(Bulk)
VC3_ASY	34M(Async.)
VC3_SYN	34M(Sync.)
STS1_45MASY	45M(Async.)
STS1_BLK	STS1 SPE(Bulk)
VT6_ASY	6M(Async.)
VT6_BIT	6M(Bitsync.)
VT6_BLK	VT6 SPE(Bulk)
VT6_MC	VT6 SPE(mc)
VT2_ASY	2M(Async.)
VT2_BIF	2M(Bitsync.F)
VT2_BIL	2M(Bitsync.L)
VT2_BYF	2M(Bytesync.F)
VT2_BYL	2M(Bytesync.L)
VT2_BLK	VT2 SPE(Bulk)
VT15_ASY	1.5M(Async.)
VT15_BIF	1.5M(Bitsync.F)
VT15_BIL	1.5M(Bitsync.L)
VT15_BYF	1.5M(Bitsync.L)
VT15_BYL	1.5M(Bytesync.L)
VT15_BLK	VT1.5 SPE(Bulk)
VT15_BYD*1	Byte(Data)
VT15_BYV*1	Byte(Voice)
VT15_384D[*1]	384K(Data)
VT15_384V[*1]	384K(Voice)
STS3_64CBLK[*2]	STS3SPE*64C(Bulk), STS192C(Bulk)
STS3_16CBLK[*2]	STS3SPE*16C(Bulk), STS48C(Bulk)
STS3_4CBLK[*2]	STS3SPE*4C(Bulk), STS12C(Bulk)
STS3_CBLK[*2]	STS3SPEC(Bulk), STS3C(Bulk)

Valid when [*1] option 09 is installed.

[*2]concatenation mapping

Function: Sets the SDH/SONET mapping route for send signals.

Restriction: Invalid in the following case:

- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
  - ・ When <VC4_ASY>, < VC4_BLK>, < VC3_ASY>, or <VC3_SYN> is set while :SOURce:TELecom:BRATe is <M52B3ZS>.
  - ・ When <VC_384D>, <VC_384V>, <VT15_BYD>, <VT15_BYV> is selected while Option 09(Japan mapping)is not installed and 1.5/45/52M unit is not installed.
  - ・ When concatenation mapping is selected while option is not installed.

Example use: To set the SDH mapping route for send signals to VC12 (Bulk):

> :SOURce:TELecom:MAPPing:TYPE VC12_BLK

:SOURce:TELecom:MAPPing:TYPE?

Response: <mtype> = <CHARACTER RESPONSE DATA>
Function: Queries the SDH/SONET mapping route for send signals.
Example use: > :SOURce:TELecom:MAPPing:TYPE?
< VC12_BLK

:SOURce:TELecom:MAPPing:AU <atype>

Parameter: <atype> = <CHARACTER PROGRAM DATA>
AU4
AU3
Function: Selects the AU route of the SDH mapping route of the send signals.
Restriction: Invalid in the following case:
・When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
・When <AU4> is selected while :SOURce:TELecom:BRATe is <N52B3ZS>.
Example use: > :SOURce:TELecom:MAPPing:AU AU4
< :AU4

:SOURce:TELecom:MAPPing:AU?

Response: <atype> = <CHARACTER RESPONSE DATA>
Function: Queries the AU route selection of the SDH mapping route for the send signals.
Example use: > :SOURce:TELecom:MAPPing:AU?
< AU4

:SOURce:TELecom:MAPPing:STS <stype>

Parameter: <stype> = <CHARACTER PROGRAM DATA>
STS3
STS1
Function: Selects the STS route of the SONET mapping route of the send signals.
Example use: To set the SONET mapping route of the send signal to STS1:
> :SOURce:TELecom:MAPPing:STS STS1

:SOURce:TELecom:MAPPing:STS?

Response: <atype> = <CHARACTER RESPONSE DATA>
Function: Queries the STS route selection of the SONET mapping route for the send signal.
Example use: > :SOURce:TELecom:MAPPing:STS?
< STS1

:SOURce:TELecom:MAPPing:TU <ttype>

Parameter: <ttype> = <CHARACTER PROGRAM DATA>
TU12
TU11

Function: Selects the TU route of the SDH mapping route for the send signal.

Restriction: Invalid in the following case:
・ When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.

Example use: > :SOURce:TELecom:MAPPing:TU TU12

:SOURce:TELecom:MAPPing:TU?

Response: <ttype> = <CHARACTER RESPONSE DATA>

Function: Queries the TU route selection of the SDH mapping route for the send signal.

Example use: > :SOURce:TELecom:MAPPing:TU?
< TU12

:SOURce:TELecom:MAPPing:VT <vtype>

Parameter: <vtype> = <CHARACTER PROGRAM DATA>
VT2
VT15

Function: Selects the VT route of the SONET mapping route for the send signal.

Example use: To set the SONET mapping route of the send signal to VT15:
> :SOURce:TELecom:MAPPing:VT VT15

:SOURce:TELecom:MAPPing:VT?

Response: <atype> = <CHARACTER RESPONSE DATA>

Function: Queries the VT route selection of the SONET mapping route for the send signal.

Example use: > :SOURce:TELecom:MAPPing:VT?
< VT15

:SOURce:TELecom:MAPPing:ROUTe <route>, <numeric>

Parameter: <route> = <CHARACTER PROGRAM DATA>
(SDH)

AUG	AUG channel
AU3	AU3 channel
TUG3	TUG3 channel
TUG2	TUG2 channel
TU11	TU11 channel
TU12	TU12 channel
K384	384K channel
VC416C	VC4-16c channel
VC44C	VC4-4c channel
VC4C	VC4c channel

(SONET)

STS3	STS3 channel
STS1	STS1 channel
TUG3	TUG3 channel
VTG	VTG channel
VT2	VT2 channel
VT15	VT15 channel
K384	384K channel
STS316C	STS3cSPE*16c channel, STS48c channel
STS34C	STS3cSPE*4c channel, STS12c channel
STS3C	STS3cSPEc channel, STS3c channel

<numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 4	When <route> is AUG,	step value: 1.
1 to 3	When <route> is AU3,	step value: 1.
1 to 3	When <route> is TUG3,	step value: 1.
1 to 7	When <route> is TUG2,	step value: 1.
1 to 4	When <route> is TU11,	step value: 1.
1 to 3	When <route> is TU12,	step value: 1.
1 to 4	When <route> is K384,	step value: 1.
1 to 4	When <route> is VC416C and STS3cSPE*16C,	step value: 1.
1 to 16	When <route> is VC44C and STS3cSPE*4C,	step value: 1.
1 to 64	When <route> is VC4C and STS3cSPE*4C,	step value: 1.

Function: Sets a channel for each SDH/SONET point.

Restriction: Invalid in the following case::

- When the channel is not applicable to the mapping set at :SOURce:TELecom:MAPPing:TYPE.
  - ・When <AUG> is set while the 622M-type interface unit and 156M-type interface unit are not installed.
  - ・When <TU11> is set while the 2/8/34/139/156M(CMI) unit is installed.
  - ・When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- For cases in the following table

<route>	Restriction conditions
AUG	When :SENSe:TELecom:BRATe is <M52B3ZS>.
AU3	When :SOURce:TELecom:MAPPing:AU is <AU4>.
TUG3	When :SENSe:TELecom:BRATe is <M52B3ZS>. When :SOURce:TELecom:MAPPing:AU is <AU3>. When :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY> or <VC4_BLK>.
TUG2	When :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_45MASY>, <VC3_BLK>.
TU12	When :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_45MASY>, <VC3_BLK>, <VC2_BLK>, or <VC2_MC>. When :SOURce:TELecom:MAPPing:TU is <TU11>.
TU11	When :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_45MASY>, <VC3_BLK>, <VC2_BLK>, or <VC2_MC>. When :SOURce:TELecom:MAPPing:TU is <TU12>.
K384	When :SOURce:TELecom:MAPPing:TYPE is <VC11_384D> or <VC11_384V>. When Japan mapping option 09 is not installed.
VC416C	When the setting of :SOURce:TELecom:MAPPing:TYPE is other than concatenation mapping.
VC44C	
VC4C	
STS316C	
STS34C	
STS3C	

Example use: To set AUG channel to 4:

> :SOURce:TELecom:MAPPing:ROUTe AUG,4

:SOURce:TELecom:MAPPing:ROUTe? <route>

Parameter: <route> = <CHARACTER PROGRAM DATA>
Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries a channel at each SDH/SONET point.
Example use: > :SOURce:TELecom:MAPPing:ROUTe? AUG
< 4

:SOURce:TELecom:MAPPing:MC <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 7 Step value: 1
Function: Specifies the number of concatenated channels of VC2/VT6SPE.
Restriction: Invalid in the following case:
・When :SOURce:TELecom:MAPPing:TYPE is other than <VC2_MC> and <VT6_MC>.
When <numeric> > (7 - TUG2 + 1).
* TUG2 = :SENSe:TELecom:MAPPing:ROUTe? TUG2
Example use: > :SOURce:TELecom:MAPPing:MC 5

:SOURce:TELecom:MAPPing:MC?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for VC2/VT6SPE concatenated channel numbers.
Example use: > :SOURce:TELecom:MAPPing:MC?
< 5

:SOURce:TELecom:MAPPing:SIG <sig>

Parameter: <sig> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 4
Function: Specifies the number of channels for the send signaling frames.
Restriction: Invalid in the following case:
When :INSTrument:CONFig <type> is NON or CID.
:SOURce:TELecom:MAPPing:TYPE <mtype> is VC11_BIF.
Valid when VC11_BIF, VC11_BLK, VC11BYD, VC11384D, VC11384V is selected at :SOURce:TELecom:MAPPing:TYPE<mtype>.
Invalid When option 9 is not installed.
:Valid at each polarity when:SOURce:SIGPreset:TX<type>, :SENSe:SIGPreset:RX<type> is other than OFF. The number cannot be set when it is OFF.
Example use: To set send Signaling frame channel to 3:
➢ :SOURce:TELecom:MAPPing:SIG 3

:SOURce:TELecom:MAPPing:SIG?

Response: <sig> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the number of channels for the send signaling frames.

Example use: To query the number of channels for the send signaling frames:
> :SOURce:TELecom:MAPPing:SIG?
< 3

:SOURce:TELecom:MAPPing:MPAYload:MODE <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF	or	0
ON	or	1

Function: Sets the Mixed Payload.

Restriction: Invalid in the following case:
When :INSTrument:CONFig <type> is NON or CID.
When :SOURce:TELecom:MAPPing:ROUTe <route> is TUG3 or when :SOURce:TELecom:MAPPing:AU <atype> is not AU3.

Example use: To set the Mixed Payload to OFF:
> :SOURce:TELecom:MAPPing:MPAYload:MODE OFF

:SOURce:TELecom:MAPPing:MPAYload:MODE?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries the Mixed Payload setting.

Example use: To query the Mixed Payload setting:
> :SOURce:TELecom:MAPPing:MPAYload:MODE?
< 0

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:TYPE <ptype>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>
(SDH)

VC3_BLK	VC3(Bulk)
VC2_BLK	VC2(Bulk)
VC12_BLK	VC12(Bulk)
VC11_BLK	VC11(Bulk)

(SONET)

STS1_BLK	STS1 SPE(Bulk)
VT6_BLK	VT6 SPE(Bulk)
VT2_BLK	VT2 SPE(Bulk)
VT15_BLK	VT1.5 SPE

Function: Sets the SDH/SONET mapping route of the Mixed Payload1 send signal.

Restriction: Invalid in the following case:
When :INSTrument:CONFig <type> is NON or CID.
When :SOURce:TELecom:MAPPing:ROUTe <route> is TUG3 or when :SOURce:TELecom:MAPPing:AU <atype> is not AU3.

Example use: To set the SDH mapping route of the Mixed Payload1 send signal to VC3 (Bulk):
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:TYPE VC3_BLK

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:TYPE?

Response: <ptype> = <CHARACTER RESPONSE DATA>
Function: Queries the SDH/SONET mapping route selection of the Mixed Payload1 send signal.
Example use: To query the SDH/SONET mapping route selection of the Mixed Payload1 send signal:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:TYPE?
< VC3_BLK

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:TU <ttype>

Parameter: <ttype> = <CHARACTER PROGRAM DATA>
(SDH) TU12 (SONET) VT2
TU11 VT15
Function: Selects the SDH mapping route TU route of the Mixed Payload1 send signal.
Restriction: Invalid in the following case:
When :SOURce:TELecom:MAPPing:ROUTe <route> is TUG3 or when :SOURce:TELecom:MAPPing:AU <atype> is not AU3.
When :SOURce:TELecom:MAPPing:MPAYload:MODE <boolean> is OFF.
Example use: To set the SDH mapping route of the Mixed Payload1 send signal to TU12:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:TU TU12

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:TU?

Response: <ttype> = <CHARACTER RESPONSE DATA>
Function: Queries the SDH mapping route TU route selection of the Mixed Payload1 send signal.
Example use: To query the SDH mapping route TU route selection of the Mixed Payload1 send signal:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:TU?
< TU12

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:VT <vtype>

Parameter: <vtype> = <CHARACTER PROGRAM DATA>
(SDH) TU12 (SONET) VT2
TU11 VT15
Function: Selects the SONET mapping route VT route of the Mixed Payload1 send signal.

Restriction: Invalid in the following case:
When :SOURce:TELecom:MAPPing:ROUTe <route> is TUG3 or
when :SOURce:TELecom:MAPPing:AU <atype> is not AU3.
When :SOURce:TELecom:MAPPing:MPAYload:MODE <boolean> is OFF.

Example use: To set the SONET mapping route of the Mixed Payload1 send signal to VT15:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:VT VT15

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:VT?

Response: <vtype> = <CHARACTER RESPONSE DATA>

Function: Queries the SONET mapping route VT route selection of the Mixed Payload1 send signal.

Example use: To query the SONET mapping route VT route selection of the Mixed Payload1 send signal:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad1:VT?
< VT15

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:TYPE <ptype>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>
(SDH)

VC3_BLK	VC3(Bulk)
VC2_BLK	VC2(Bulk)
VC12_BLK	VC12(Bulk)
VC11_BLK	VC11(Bulk)

(SONET)

STS1_BLK	STS1 SPE(Bulk)
VT6_BLK	VT6 SPE(Bulk)
VT2_BLK	VT2 SPE(Bulk)
VT15_BLK	VT1.5 SPE

Function: Sets the SDH/SONET mapping route of the Mixed Payload2 send signal.

Restriction: Invalid in the following case:
When :SOURce:TELecom:MAPPing:ROUTe <route> is TUG3 or
when :SOURce:TELecom:MAPPing:AU <atype> is not AU3.
When :SOURce:TELecom:MAPPing:MPAYload:MODE <boolean> is OFF.

Example use: To set the SDH mapping route of the Mixed Payload2 send signal to VC3 (Bulk):
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:TYPE VC3_BLK

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:TYPE?

Response: <ptype> = <CHARACTER RESPONSE DATA>

Function: Queries the SDH/SONET mapping route selection of the Mixed Payload2 send signal.

Example use: To query the SDH/SONET mapping route selection of the Mixed Payload2 send signal:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:TYPE?
< VC3_BLK

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:TU <ttype>

Parameter: <ttype> = <CHARACTER PROGRAM DATA>

(SDH)	TU12	(SONET)	VT2
	TU11		VT15

Function: Selects the SDH mapping route TU route of the Mixed Payload2 send signal.

Restriction: Invalid in the following case:
When :SOURce:TELecom:MAPPing:ROUTe <route> is TUG3 or when :SOURce:TELecom:MAPPing:AU <atype> is not AU3.
When :SOURce:TELecom:MAPPing:MPAYload:MODE <boolean> is OFF.

Example use: To set the SDH mapping route of the Mixed Payload2 send signal to TU12:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:TU TU12

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:TU?

Response: <ttype> = <CHARACTER RESPONSE DATA>

Function: Queries the SDH mapping route TU route selection of the Mixed Payload2 send signal.

Example use: To query the SDH mapping route TU route selection of the Mixed Payload2 send signal:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:TU?
< TU12

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:VT <vtype>

Parameter: <vtype> = <CHARACTER PROGRAM DATA>

(SDH)	TU12	(SONET)	VT2
	TU11		VT15

Function: Selects the SONET mapping route VT route of the Mixed Payload2 send signal.

Restriction: Invalid in the following case:
When :SOURce:TELecom:MAPPing:ROUTe <route> is TUG3 or when :SOURce:TELecom:MAPPing:AU <atype> is not AU3.
When :SOURce:TELecom:MAPPing:MPAYload:MODE <boolean> is OFF.

Example use: To set the SONET mapping route of the Mixed Payload2 send signal to VT15:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:VT VT15

:SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:VT?

Response: <vtype> = <CHARACTER RESPONSE DATA>
Function: Queries the SONET mapping route VT route selection of the Mixed Payload2 send signal.
Example use: To query the SONET mapping route VT route selection of the Mixed Payload2 send signal:
> :SOURce:TELecom:MAPPing:MPAYload:PAYLoad2:VT?
< VT15

:SOURce:TELecom:MAPPing:PAYLoad:SCRamble <scr>

Parameter: <scr> = <BOOLEAN PROGRAM DATA>

OFF	or	0
ON	or	1

Function: Sets whether to use a scramble function for payloads when IP over SONET is set.
Restriction: Invalid in the followin case.
– :INSTrument:CONFig is other than <IP_SONET>.
Example use: To use the scramble function.
> :SOURce:TELecom:MAPPing:PAYLoad:SCRamble ON

:SOURce:TELecom:MAPPing:PAYLoad:SCRamble?

Response: <scr> = <NR1 NUMERIC RESPONSE DATA>
0
1
Function: Queries the state of the scramble function for the payloads when IP over SONET is set.
Example use: > :SOURce:TELecom:MAPPing:PAYLoad:SCRamble?
< 1

:SOURce:TELecom:MAPPing:DUMMy <dummy>

Parameter: <dummy> = <CHARACTER PROGRAM DATA>
COPY
DUMMY
Function: Sets whether to use the main channel Copy or the Dummy setting data for the payload data.
Restriction: Invalid in the following case:
- When :INSTrument:CONFig <type> is NON or CID while :SOURce:TELecom:BRATe <brate> is M1.5, M2, M6, M8, M34, M45, or M139.

- When M52 is used while :SOURce:TELecom:MAPPing:ROUTe <route> is other than TUG2. (45M Async, Bulk).
- When M156 is used while :SOURce:TELecom:MAPPing:AU is AU4 and :SOURce:TELecom:MAPPing:TYPE <mtype> is VC4_ASY or VC4_BLK.
- When :SOURce:TELecom:MAPPing:TYPE <mtype> is not set to ***_BLK.
- When :SOURce:TELecom:MAPPing:TYPE <mtype> is a concatenated mapping.
- When Bulk is set as same as the Bit rate setting of :SOURce:TELecom:BRATe <brate>.
  9953M STM64-VC4*64C-Bulk, STS192-STS192C-Bulk
  2488M STM16-VC4*16C-Bulk, STS48-STS48C-Bulk
  622M STM4-VC4*4c-Bulk, STS12-STS12C-Bulk
  156M STM1-VC4C-Bulk, STS3-STS3C-Bulk

Example use: To set to use the main channel Copy for the payload data:
> :SOURce:TELecom:MAPPing:DUMMy COPY

:SOURce:TELecom:MAPPing:DUMMy?

Response: <dummy> = <CHARACTER RESPONSE DATA>

Function: Queries whether the main channel Copy is or the Dummy setting data are in use for the payload data.

Example use: To query whether the main channel Copy is or the Dummy setting data are in use for the payload data:
> :SOURce:TELecom:MAPPing:DUMMy?
< COPY

(for SDH)

:SOURce:TELecom:TANDem:CONDition:N1HP:MODE <mode>
:SOURce:TELecom:TANDem:CONDition:N1LP:MODE <mode>
:SOURce:TELecom:TANDem:CONDition:N2:MODE <mode>

(for SONET)

:SOURce:TELecom:TANDem:CONDition:Z5HP:MODE <mode>
:SOURce:TELecom:TANDem:CONDition:Z5LP:MODE <mode>
:SOURce:TELecom:TANDem:CONDition:Z6:MODE <mode>

Parameter: <mode> = <BOOLEAN PROGRAM DATA>

OFF	or	0
ON	or	1

Function: Sets whether or not to send the error and alarm data in the tandem connection.

Restriction: Invalid in the following case:
When ATM is selected for :INSTrument:CONFig <type> while the MP0123A unit is installed.

Example use: To set to send N1-HP:
> :SOURce:TELecom: TANDem:CONDition:N1HP:MODE ON

(for SDH)
:SOURce:TELecom:TANDem:CONDition:N1HP:MODE?
:SOURce:TELecom:TANDem:CONDition:N1LP:MODE?
:SOURce:TELecom:TANDem:CONDition:N2:MODE?
(for SONET)
:SOURce:TELecom:TANDem:CONDition:Z5HP:MODE?
:SOURce:TELecom:TANDem:CONDition:Z5LP:MODE?
:SOURce:TELecom:TANDem:CONDition:Z6:MODE?
Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1
Function: Queries whether or not to send the error and alarm data in the tandem connection.
Example use: To query the N1-HP setting:
> :SOURce:TELecom:TANDem:CONDition:N1HP:MODE?
< 1

(for SDH)
:SOURce:TELecom:TANDem:CONDition:N1HP:TYPE <type>
:SOURce:TELecom:TANDem:CONDition:N1LP:TYPE <type>
(for SONET)
:SOURce:TELecom:TANDem:CONDition:Z5HP:TYPE <type>
:SOURce:TELecom:TANDem:CONDition:Z5LP:TYPE <type>
Parameter: <type> = <CHARACTER PROGRAM DATA>
* <type> is absent when using N2.
TYPE1
TYPE2
Function: Sets the trace data type for the tandem connection.
Restriction: Invalid in the following case:
When ATM is selected for :INSTrument:CONFig <type> while the MP0123A unit is installed.
When OFF is selected for the following commands:
:SOURce:TELecom:TANDem:CONDition:N1HP:MODE <mode>
:SOURce:TELecom:TANDem:CONDition:N1LP:MODE <mode>
:SOURce:TELecom:TANDem:CONDition:Z5HP:MODE <mode>
:SOURce:TELecom:TANDem:CONDition:Z5LP:MODE <mode>
Example use: To set the trace data type of N1-HP to TYPE2:
> :SOURce:TELecom: TANDem:CONDition:N1HP:TYPE TYPE2

(for SDH)

:SOURce:TELecom:TANDem:CONDition:N1HP:TYPE?

:SOURce:TELecom:TANDem:CONDition:N1LP:TYPE?

(for SONET)

:SOURce:TELecom:TANDem:CONDition:Z5HP:TYPE?

:SOURce:TELecom:TANDem:CONDition:Z5LP:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
* <type> is absent when using N2.

Function: Queries the trace data type for the tandem connection.

Example use: To query the trace data type for N1-HP:
> :SOURce:TELecom:TANDem:CONDition:N1HP:TYPE?
< TYPE2

:SOURce:TELecom:TANDem:DEFault

Parameter: None

Function: Initializes the LAPD message.

Restriction: Invalid in the following case:
When ATM is selected for :INSTrument:CONFig <type> while the MP0123A unit is installed.

Example use: To initialize the LAPD message:
> :SOURce:TELecom:TANDem:DEFault

:SOURce:TELecom:TANDem:N1HP:TYPE1 <tapoint>,<string>

:SOURce:TELecom:TANDem:Z5HP:TYPE1 <tapoint>,<string>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
FLAG, SAPI, CR, EA2, TEI, EA3, CNTR, TYPE, EIC, LIC, FIC, UNIT, FI, PORT, GEN
<string> = <STRING PROGRAM DATA>

"00000000" to "11111111"	(Binary type)	When <tapoint> is FLAG, CNTR, or TYPE.
"000000" to "111111"	(Binary type)	When <tapoint> is SAPI.
"0"to"1"	(Binary type)	When <tapoint> is CR, EA2, or EA3.
"0000000"to"1111111"	(Binary type)	When <tapoint> is TEI.
String length: 1 to 10 character(s)	(ASCII type)	When <tapoint> is EIC or FIC.
String length: 1 to 11 character(s)	(ASCII type)	When <tapoint> is LIC.
String length: 1 to 6 character(s)	(ASCII type)	When <tapoint> is UNIT.
String length: 1 to 38 character(s)	(ASCII type)	When <tapoint> is FI, PORT, or GEN.

Pad out the string with spaces when its length is smaller than corresponding maximum value.

Function: Sets the Type1 data of N1 byte (N1-HP) and Z5 byte (Z5-HP).

Restriction: Invalid in the following case:
Sets the Type1 data of N1 byte (N1-HP) and Z5 byte (Z5-HP).

Example use: To set the Type1 data of N1 byte (N1-HP) to "00110010":
> :SOURce:TELecom:TANDem:N1HP:TYPE1 TYPE, "00110010"

:SOURce:TELecom:TANDem:N1HP:TYPE1? <tapoint>
:SOURce:TELecom:TANDem:Z5HP:TYPE1? <tapoint>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the Type1 data of N1 byte (N1-HP) and Z5 byte (Z5-HP).
Data are displayed in the ASCII character string when <tapoint> is EIC, FIC, LIC, UNIT, FI, PORT, or GEN.
Character is converted to '?' when character data is got other than 0x20 to 0x7e.
Example use: To query the TYPE data of Type1 for N1 byte (N1-HP):
> :SOURce:TELecom:TANDem:N1HP:TYPE1? TYPE
< "00110010"

:SOURce:TELecom:TANDem:N1HP:TYPE2 <tapoint>,<string>
:SOURce:TELecom:TANDem:Z5HP:TYPE2 <tapoint>,<string>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
TCREI, OEI, FAS, PATT, RES1 to 6, TCRDI, ODI
<string> = <STRING PROGRAM DATA>

"0" to "1"	(Binary type)	When <tapoint> is TCREI, OEI, RES1 to 6, TCRDI or ODI.
"0000" to "FFFF"	(Hexadecimal type)	When <tapoint> is FAS.
String length: 1 to 16 character(s)	(ASCII type)	When <tapoint> is PATT.

Pad out the string with spaces when its length is less than 16 characters.
Function: Sets the Type2 data of N1 byte (N1-HP) and Z5 byte (Z5-HP).
Restriction: Invalid in the following case:
When ATM is selected for :INSTrument:CONFig <type> while the MP0123A unit is installed.
Example use: To set the FAS data of Type2 for N1 byte (N1-HP) to "00FF":
> :SOURce:TELecom:TANDem:N1HP:TYPE2 FAS, "00FF"

:SOURce:TELecom:TANDem:N1HP:TYPE2? <tapoint>
:SOURce:TELecom:TANDem:Z5HP:TYPE2? <tapoint>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the Type2 data of N1 byte (N1-HP) and Z5 byte (Z5-HP).
Example use: To query the FAS data of Type2 for N1 byte (N1-HP):
> :SOURce:TELecom: TANDem:N1HP:TYPE2? FAS
< "00FF"

:SOURce:TELecom:TANDem:N1LP:TYPE2 <tapoint>,<string>
:SOURce:TELecom:TANDem:Z5LP:TYPE2 <tapoint>,<string>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
TCREI, OEI, FAS, PATT, RES1 to 6, TCRDI, ODI
<string> = <STRING PROGRAM DATA>

"0" to "1"	(Binary type)	When <tapoint> is TCREI, OEI, RES1 to 6, TCRDI or ODI.
"0000" to "FFFF"	(Hexadecimal type)	When <tapoint> is FAS.
String length: 1 to 16 character(s)	(ASCII type)	When <tapoint> is PATT.

Pad out the string with spaces when its length is less than 16 characters.

Function: Sets the Type2 data of N1 byte (N1-LP) and Z5 byte (Z5-LP).

Restriction: Invalid in the following case:
When ATM is selected for :INSTrument:CONFig <type> while the MP0123A unit is installed.

Example use: To set the FAS data of Type2 for N1 byte (N1-LP) to "00FF":
> :SOURce:TELecom:TANDem:N1LP:TYPE2 FAS, "00FF"

:SOURce:TELecom:TANDem:N1LP:TYPE2? <tapoint>
:SOURce:TELecom:TANDem:Z5LP:TYPE2? <tapoint>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the Type2 data of N1 byte (N1-LP) and Z5 byte (Z5-LP).

Example use: To query the FAS data of Type2 for N1 byte (N1-LP):
> :SOURce:TELecom: TANDem:N1LP:TYPE2? FAS
< "00FF"

:SOURce:TELecom:TANDem:N2 <tapoint>,<string>
:SOURce:TELecom:TANDem:Z6 <tapoint>,<string>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
B3, AIS, TCREI, OEI, FAS, PATT, RES1 to 6, TCRDI, ODI
<string> = <STRING PROGRAM DATA>

"0" to "1"	(BIN type)	When <tapoint> is B3, AIS, TCREI, OEI, RES 1 to 6, TCRDI, ODI.
"0000" to "FFFF"	(HEX type)	When <tapoint> is FAS.
String length is 1 to 16 character(s)	(ASCII type)	When <tapoint> is PATT

String is padded out with spaces when it is less than 16 characters.

Function: Sets the data of N2 and Z6 byte.

Restriction: Invalid in the following case:
When INSTrument:CONFig <type> is ATM while MP0123A unit is installed.
Example use: To set OEI data of N2 byte to "1".
> :SOURce:TELecom:TANDem:N2 OEI, “1”

:SOURce:TELecom:TANDem:N2? <tapoint>
:SOURce:TELecom:TANDem:Z6? <tapoint>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the data of N2 and Z6 byte.
Example use: To Query the data of N2 byte.
> :SOURce:TELecom:TANDem:N2? OEI
< “1”

:SOURce:TELecom:MUX:MRATe <mrate>

Parameter: <mrate> = <CHARACTER PROGRAM DATA>

OFF	MUX function is not used.
M34	34Mbit/s
M8	8Mbit/s
M2	2Mbit/s
M1_5	1.5Mbit/s
K64	64 k bit/s
K64_M2	Settable only when the 2/8/34/139/156M (CMI) unit, 1.5/45/52M unit, and 45M-2M option are installed with bit rate 45M.

Function: Sets a bit rate for the MUX last Tributary.
Restriction: Invalid in the following case:
・When concatenation mapping, 6M, mc, or 384k is selected at the setting of :SOURce:TELecom:Mapping:TYPE.
・When <M34>, <M8>, or <M2> is set while the 2/8/34/139/156M (CMI) unit is not installed.
・When <M34>, <M8>, or <M2> is set while the MUX/DEMUX (2/8/34/139M) option is not installed.
- When <M1_5> is set while the 1.5/45/52M unit is not installed.
・When <M1_5> is set while the MUX/DEMUX (1.5/45M) option is not installed.
- When <K64> is set while the 2/8/34/139/156M (CMI)unit and 1.5/45/52M unit are not installed.
・When <OFF>, <K64> or <K64-M2> is set while the MUX/DEMUX(2/8/34/139M) option, the MUX/DEMUX (1.5/45M) option, and 45M-2M option are not installed.

・For cases in the following table

<route>	Restriction conditions
M34	When :SOURce:TELecom:BRATe is <M52B3ZS>, <M45>, <M34>, <M8>, <M2> or <M1_5>. - When :SOURce:TELecom:Mapping:TYPE is other than <VC4_ASY>.
M8	When :SOURce:TELecom:BRATe is <M52B3ZS>, <M45>, <M8>, <M2> or <M1_5>. When :SOURce:TELecom:Mapping:TYPE is other than <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>.
M2	When :SOURce:TELecom:BRATe is <M52B3ZS>, <M45>, <M2> or <M1_5> while 45M-2M option is not installed. When :SOURce:TELecom:BRATe is <M2> or <M1_5>. When :SOURce:TELecom:Mapping:TYPE is other than <M52B3ZS>, <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>.
M1_5	When :SOURce:TELecom:BRATe is <M139>, <M34>, <M8>, <M2> or <M1_5>. :SOURce:TELecom:MAPPing:TYPE is other than <VC3_45MASY>.
K64, K64_M2	Case:s in which all the following conditions are satisfied (1) For non-2M selection (2) For non-1.5M selection (3) When :SOURce:TELecom:Mapping:TYPE is other than <VC12_ASY>, <VC12_BIF>, <VC12_BIL>, <VC12_BYF>, <VC12_BYL>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>, <VC11_BYL>. (4) :SOURce:TELecom:BRATe is other than <M2> or <M1_5>.

Example use: To set the MUX last Tributary baud rate to 2 Mbit/s:
> :SOURce:TELecom:MUX:MRATe M2

:SOURce:TELecom:MUX:MRATe?

Response: <mrate> = <CHARACTER RESPONSE DATA>
Function: Queries the MUX last Tributary bit rate.
Example use: > :SOURce:TELecom:MUX:MRATe?
< M2

:SOURce:TELecom:MUX:ROUTe <mrate>, <numeric>

Parameter: <mrate> = <CHARACTER PROGRAM DATA>

M34	34Mbit/s
M8	8Mbit/s
M2	2Mbit/s
M1_5	1.5Mbit/s
K64	64 k bit/s

<numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 4	When <mrate> is M34, M8, or M2,	step value: 1
1 to 28	When <mrate> is M1.5,	step value: 1
1 to 31	When <mrate> is K64,	step value: 1

Function: Specifies the channel setting for each MUX step.

Restriction: Invalid in the following case:

- When <M34>, <M8>, or <M2> is set while the 2/8/34/139/156M (CMI) unit is not installed.
- When <M34>, <M8>, or <M2> is specified while the MUX/DEMUX (2/8/34/139M) option is not installed.
- When <M1_5> is set while the 1.5/45/52M unit is not installed.
- When <M1_5> is set while the MUX/DEMUX (1.5/45M) option is not installed.
- When <K64> is set while the 2/8/34/139/156M (CMI) unit and 1.5/45/52M unit are not installed.
- When <K64> is set while the MUX/DEMUX (2/8/34/139M) option, MUX/DEMUX (1.5/45M) option, and 45M-2M option are not installed.

- For cases in the following table.

<mrate>	Restriction conditions
M34	When :SOURce:TELecom:BRATe is <M52B3ZS>, <M45>, <M34>, <M8>, <M2> or <M1_5>. When :SOURce:TELecom:DEMUX:MRATe is <OFF>. When :SOURce:TELecom:Mapping:TYPE is other than <VC4_ASY>.
M8	When :SOURce:TELecom:BRATe is <M52B3ZS>, <M45>, <M8>, <M2> or <M1_5>. When :SOURce:TELecom:DEMUX:MRATe is <OFF> or <M34>. When :SOURce:TELecom:Mapping:TYPE is other than <VC4_ASY>, <VC3_ASY>, <VC3_SYN>.
M2	When :SOURce:TELecom:BRATe is <M52B3ZS>, <M2> or <M1_5> while 45M-2M option is not installed. When :SOURce:TELecom:BRATe is <M2> or <M1_5>. When :SOURce:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>. When :SOURce:TELecom:Mapping:TYPE is other than <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>. When :SOURce:TELecom:Mapping:TYPE is <VC3_45MASY> while 45M-2M option is not installed.
M1_5	When :SOURce:TELecom:BRATe is <M139>, <M34>, <M8>, <M2> or <M1_5>. When :SOURce:TELecom:DEMUX:MRATe is <OFF>. When :SOURce:TELecom:Mapping:TYPE is other than <VC3_45MASY>. When :SOURce:TELecom:MUX:MRATe is <M2> or <K64_M2> while :SOURce:TELecom:Mapping:TYPE is <VC3_45MASY>.
K64	: When :SOURce:TELecom:DEMUX:MRATe is <OFF>, <M34>, <M8>, <M2>, or <M1_5>. For Performing DEMUX with 2M when numeric = <31> is set while :SOURce:TELecom:M2:MCHannel is <30>. When other than 1 to 28 is set for performing DEMUX with 1.5M.

Example use: 8 Mbit/s channel is set to channel 4.

> :SOURce:TELecom:MUX:ROUTe M8,4

:SOURce:TELecom:MUX:ROUTe? <mrate>

Parameter: <mrate> = <CHARACTER PROGRAM DATA>
Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the MUX channels.
Example use: Queries the 8 Mbit/s channel.
> :SOURce:TELecom:MUX:ROUTe? M8
< 4

:SOURce:TELecom:MUX:N <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 31 step value: 1
Function: Sets 64 kbit/s continuous channels.
Test signals are inserted to consecutive N channels from the 64 kbit/s channel designated by :SOURce:TELecom:MUX:ROUTe.
Restriction: Invalid in the following case:
- When the 2/8/34/139/156M (CMI) unit and 1.5/45/52M unit are not installed.
- When the MUX/DEMUX (2/8/34/139M) option, MUX/DEMUX (1.5/45M) option, and 45M-2M option are not installed.
- When :SOURce:TELecom:DEMUX:MRATe is <OFF>, <M34>, <M8>, <M2>, or <M1_5>.
- Upper limit when 2M is DEMUXed.
When <numeric> is greater than (2Mch-Route +1)
2Mch = :SOURce:TELecom:M2:MCHannel
Route = :SOURce:TELecom:DEMUX:ROUTe? M2
- Upper limit when 1.5M is DEMUXed.
When <numeric> is greater than (24 -Route +1)
Route = :SOURce:TELecom:DEMUX:ROUTe? M1_5
Example use: To set the number of consecutive channels to 5:
> :SOURce:TELecom:MUX:N 5

:SOURce:TELecom:MUX:N?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries 64 kbit/s continuous channels.
Example use: > :SOURce:TELecom:MUX:N?
< 5

:SOURce:TELecom:FRAMing <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Without frame
ON or 1 With frame
Function: Sets the test signal frame for send signals.
Sets the last Tributary signal frame when MUX (option) is ON.

Restriction: Invalid in the following case:
- When the bit rate of the final tributary is set to 64kbit/s.
- When :SOURce:TELecom:MAPPing TYPE is <VC4_BLK>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_BLK>, <VC11_BLK>, <VC11_384D> or <VC11_384V>.
- When :SOURce:TELecom:MUX:MRATe is <64>.

Example use: To set the test signal frame to ON:
> :SOURce:TELecom:FRAMing ON

:SOURce:TELecom:FRAMing?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries the test signal frame for send signals.

Example use: > :SOURce:TELecom:FRAMing?
< 1

:SOURce:TELecom:M2:CRC <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Without CRC addition
ON or 1 With CRC addition

Function: Sets with or without CRC addition at 2M.

Restriction: Invalid in the following case:
- When the 2/8/34/139/156M (CMI) unit is not installed.
- When :SOURce:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS>, and, :SOURce:TELecom:MAPPing TYPE is <VC4_BLK>, <VC3_45MASY>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_BLK>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>, <VC11_BYL>, <VC11_BLK>, <VC11_384D>, or <VC11_384V>.
- When :SOURce:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS>; :SENSe:TELecom:MAPPing TYPE is <VC4_ASY>, <VC3_ASY>, <VC3_SYN>; and :SOURce:TELecom:MUX:MRATe is <OFF>, <M34>, or <M8>.
- When :SOURce:TELecom:BRATe is <M139>, <M34>, <M8>, and :SOURce:TELecom:MUX:MRATe is <OFF>, <M34>, or <M8>.
- When :SOURce:TELecom:BRATe is <M1_5>.
- When :SOURce:TELecom:BRATe is <M45> while 45M-2M option is not installed.
- When setting <ON> while :SOURce:TELecom:FRAMing is <OFF>.

Example use: To set the CRC addition to ON:
> :SOURce:TELecom:M2:CRC ON

:SOURce:TELecom:M2:CRC?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries with or without CRC addition at 2M.

Example use: > :SOURce:TELecom:M2:CRC?
< 1

:SOURce:TELecom:M2:MCHannel <numeric>

Parameter: <numeric> = <DECIMALNUMERIC PROGRAM DATA>
30 30 channels
31 31 channels

Function: Sets the maximum number of channels for transmission 2M signals.

Restriction: Invalid in the following case:

- When the 2/8/34/139/156M (CMI) unit is not installed.
- When :SOURce:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS>, and, :SOURce:TELecom:MAPPing TYPE is <VC4_BLK>, <VC3_45MASY>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_BLK>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>, <VC11_BYL>, <VC11_BLK>, <VC11_384D> or <VC11_384V> while 45M-2M option is not installed.>, <M156CMI>,
- When :SOURce:TELecom:BRATe is <VC3_45MASY> while 45M-2M option is not installed.
- When :SOURce:TELecom:BRATe is <M622>, <M156>, <M156CMI> or <M52B3ZS>, and :SOURce:TELecom:MAPPing TYPE is <VC4_ASY>, <VC3_ASY>, <VC3_SYN>, and :SOURce:TELecom:MUX:MRATe is <OFF>, <M34>, or <M8>.
- When :SOURce:TELecom:BRATe is <M139>, <M34>, or <M8> and :SOURce:TELecom:MUX:MRATe is <OFF>, <M34>, or <M8>.
- When :SOURce:TELecom:BRATe is <M1_5>.
- When :SOURce:TELecom:BRATe is <M45> while 45M-2M option is not installed.

Example use: To set the maximum number of channels to 30:
> :SOURce:TELecom:M2:MCHannel 30

:SOURce:TELecom:M2:MCHannel?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the maximum number of channels for transmission 2M signals.

Example use: > :SOURce:TELecom:M2:MCHannel?
< 30

:SOURce:TELecom:M1_5:FRAMed <frame>

Parameter: <frame> = <CHARACTER PROGRAM DATA>
D4
ESF
JESF Japan ESF

Function: Specifies the frame setting of the1.5M signal.

Restriction: Invalid in the following case:
- When 1.5/45/52M unit is not installed.
- : When :SOURce:TELecom:BRATe is <M622>, <M156>, <M156CMI> or <M52B3ZS>, and :SOURCe:TELecom:MAPPing TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_BLK>, <VC2_BLK>, < VC2_MC>, <VC11_BLK>, <VC12_ASY>, <VC12_BIF>, <VC12_BIL>, <VC12_BYF>, <VC12_BYL>, <VC12_BLK>, <VC11_384D>, or <VC11_384V>.
- When :SOURce:TELecom:BRATe is <M622>, <M156>, <M156CMI> or <M52B3ZS>, and :SOURCe:TELecom:MAPPing TYPE is <VC3_45MASY>, and :SOURce:TELecom:MUX:MRATe is <OFF>.
- When :SOURce:TELecom:BRATe: is <M2> or <K64-M2> while 45M-2M option is not installed.
- When :SOURce:TELecom:BRATe: is <M45> while 45M-2M option is not installed.
- When :SOURce:TELecom:BRATe is <M139>, <M34>, <M8>, or <M2>.
- When :SOURce:TELecom:BRATe is <M45>, and :SOURCe:TELecom:MUX:MRATe is <OFF>.
- When <JESF> is set while Option 09 is not installed.

Example use: > :SOURce:TELecom:M1_5:FRAMed D4

:SOURce:TELecom:M1_5:FRAMed?

Response: <frame> = <CHARACTER RESPONSE DATA>

Function: Queries the frames for the 1.5M signal.

Example use: > :SOURce:TELecom:M1_5:FRAMed?
< D4

:SOURce:TELecom:M1_5:CODE <code>

Parameter: <code> = <CHARACTER PROGRAM DATA>
AMI
B8ZS

Function: Specifies the code setting for the1.5M signal.

Restriction: Invalid when bit rate is other than 1.5M.

Example use: > :SOURce:TELecom:M1_5:CODE AMI

:SOURce:TELecom:M1_5:CODE?

Response: <code> = <CHARACTER RESPONSE DATA>
Function: Queries the 1.5M signal code.
Example use: > :SOURce:TELecom:M1_5:CODE?
< AMI

:SOURce:TELecom:M45:FRAMed <frame>

Parameter: <frame> = <CHARACTER PROGRAM DATA>
M13
CBIT
Function: Specifies the frame setting for the 45M signal.
Restriction: Invalid in the following case:
- When the 1.5/45/52M unit is not installed.
・When :SOURce:TELecom:BRATe is <M622>, <M156>, <M156CMI> or <M52B3ZS>, and :SOURCe:TELecom:MAPPing TYPE is other than <VC3_45MASY>.
・When :SOURce:TELecom:BRATe is <M139>, <M34>, <M8>, <M2>, or <M1_5>.
Example use: > :SOURce:TELecom:M45:FRAMed M13

:SOURce:TELecom:M45:FRAMed?

Response: <frame> = <CHARACTER RESPONSE DATA>
Function: Queries the frames for the 45M signal.
Example use: > :SOURce:TELecom:M45:FRAMed?
< M13

:SOURce:TELecom:M45:XBIT <string>

Parameter: <string> = <STRING PROGRAM DATA>
"00"
"01"
"10"
"11"
Function: Specifies the XBit setting for the 45M signal.
Restriction: Invalid in the following case:
- When the 1.5/45/52M unit is not installed.
・When :SOURce:TELecom:BRATe is <M622>, <M156>, <M156CMI> or <M52B3ZS>, and :SOURCe:TELecom:MAPPing TYPE is other than
・When :SOURce:TELecom:BRATe is <M139>, <M34>, <M8>, <M2>, or <M1_5>.
Example use: > :SOURce:TELecom:M45:XBIT "01"

:SOURce:TELecom:M45:XBIT?

Response: <string> = <STRING RESPONSE DATA>
Function: Queries the XBit of the 45M signal.
Example use: > :SOURce:TELecom:M45:XBIT?
< "01"

:SOURce:TELecom:DSX <numeric>

Parameter: <numeric> = <DECIMAL NUMERICPROGRAM DATA>

0	0ft
450	450ft
655	655f
900	900f

Function: Specifies the DSX cable length in the send signal.
Restriction: Invalid in the following case:
- When 1.5/45/52M unit is not installed.
・When :SOURce:TELecom:BRATe is <M622>, <M156>, <M156CMI>, <M139>, <M34>, <M8>, or <M2>.
・When the <655> is set while :SOURce:TELecom:BRATe is <M52B3ZS> or <M45>.
・When <450> or <900> is set while :SOURce:TELecom:BRATe is <M1_5>.

Example use: > :SOURce:TELecom:DSX 450

:SOURce:TELecom:DSX?

Response: <numeric> = <DECIMAL NUMERICPROGRAM DATA>

0	0ft
450	450ft
655	655f
900	900f

Function: Queries the DSX cable length in the send signals.
Example use: > :SOURce:TELecom:DSX?
< 450

:SOURce:TELecom:INVert <type>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	No PRBS inversion
ON or 1	PRBS inversion

Function: Sets inversion of test pattern (transmission).
Restriction: Invalid when,
- <CID>, <ATM>, <IP_SDH>, <IP_SONET> or <JITTER> is set for :INSTrument:CONFig.
- SENSe:TELecom:PATTern[:TYPE] is other than PRBS.

Example of use: To set test pattern (PRBS) to invert
> :SOURce:TELecom:INVert ON

:SOURce:TELecom:INVert?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0 No PRBS inversion

1 PRBS inversion

Function: Queries the setting of test pattern inversing.

Example of use: > :SOURce:TELecom:INVert?

< 1

:SOURce:TELecom:ALARm:TYPE <type>

Parameter: <type> = <STRING PROGRAM DATA>
(SDH/PDH)

OFF	Alarms are not entered.
LOS	Enters LOS.
LOF	Enters LOF.
MAIS	Enters MS-AIS.
MRDI	Enters MS-RDI.
AAIS	Enters AU-AIS.
ALOP	Enters AU-LOP.
HRDI	Enters HP-RDI.
HSLM	Enters HP-HSLM.
HTIM	Enters HP-HTIM.
HUNEQ	Enters HP-HUNEQ.
HVAIS	Enters HP-VC-AIS.
HISF	Enters HP-ISF.
HFAS	Enters HP-FAS.
HIAIS	Enters HP-IncAIS.
HTRDI	Enters HP-TC-RDI.
HODI	Enters HP-ODI.
TAIS	Enters TU-AIS.
TLOP	Enters TU-LOP.
LRDI	Enters LP-RDI.
LRFI	Enters LP-RFI.
LSLM	Enters LP-SLM.
LTIM	Enters LP-TIM.
LUNEQ	Enters LP-UNEQ.
TLOM	Enters TU-LOM.
LVAIS	Enters LP-VC-AIS.
LFAS	Enters LP-FAS.
LIAIS	Enters LP-InAIS.
LTRDI	Enters LP-TC-RDI.
LODI	Enters LP-ODI.
AIS139	Enters AIS to 139 Mbit/s signal.
AIS45	Enters AIS to 45 Mbit/s signal.
AIS34	Enters AIS to 34 Mbit/s signal.
AIS8	Enters AIS to 8 Mbit/s signal.
AIS2	Enters AIS to 2 Mbit/s signal.
AIS1_5	Enters AIS to 1.5 Mbit/s signal.
LOF139	Enters LOF to 139 Mbit/s signal.
LOF45	Enters LOF to 45 Mbit/s signal.
LOF34	Enters LOF to 34 Mbit/s signal.
LOF8	Enters LOF to 8 Mbit/s signal.
LOF2	Enters LOF to 2 Mbit/s signal.
LOF1_5	Enters LOF to 1.5 Mbit/s signal.
RDI139	Enters RDI to 139 Mbit/s signal.
RDI45	Enters RDI to 45 Mbit/s signal.

RDI34	Enters RDI to 34 Mbit/s signal.
RDI8	Enters RDI to 8 Mbit/s signal.
RDI2	Enters RDI to 2 Mbit/s signal.
RDI1_5	Enters RDI to 1.5 Mbit/s signal.
RDIMF	Enters MF-RDI to 2 Mbit/s signal.
HGAIS	Enters HG-AIS.
HGREC	Enters HG-REC.
SIGAIS15	Enters SigAIS 1.5.
SIGOOF	Enters SigOOF.
BAIS1_5	Enters BAIS 1.5.

(SONET)

OFF	Alarms are not entered.
LOS	Enters LOS.
LOF	Enters LOF.
AISL	Enters AIS-L.
RDIL	Enters RDI-L.
AISP	Enters AIS-P.
LOPP	Enters LOP-P.
RDIP	Enters RDI-P.
SLMP	Enters SLM-P.
TIMP	Enters TIM-P.
UNEQP	Enters UNEQ-P.
HVAIS	Enters HP-VC-AIS.
HISF	Enters HP-ISF.
HFAS	Enters HP-FAS.
HIAIS	HP-IncAIS.
HTRDI	Enters HP-TC-RDI.
AISV	Enters AIS-V.
LOPV	Enters LOP-V.
RDIV	Enters RDI-V.
RFIV	Enters RFI-V.
SLMV	Enters SLM-V.
TIMV	Enters TIM-V.
UNEQV	Enters UNEQ-V.
LOMV	Enters LOM-V.
LVAIS	Enters LP-VC-AIS.
LFAS	Enters LP-FAS.
LIAIS	Enters LP-InAIS.
LTRDI	Enters LP-TC-RDI.
LODI	Enters LP-ODI.
AIS139	Enters AIS to 139 Mbit/s signal.
AIS45	Enters AIS to 45 Mbit/s signal.
AIS34	Enters AIS to 34 Mbit/s signal.
AIS8	Enters AIS to 8 Mbit/s signal.
AIS2	Enters AIS to 2 Mbit/s signal.
AIS1_5	Enters AIS to 1.5 Mbit/s signal.

LOF139	Enters LOF to 139 Mbit/s signal.
LOF45	Enters LOF to 45 Mbit/s signal.
LOF45	Enters LOF to 45 Mbit/s signal.
LOF34	Enters LOF to 34 Mbit/s signal.
LOF8	Enters LOF to 8 Mbit/s signal .
LOF2	Enters LOF to 2 Mbit/s signal .
LOF1_5	Enters LOF to 1.5 Mbit/s signal.
RDI139	Enters RDI to 139 Mbit/s signal.
RDI45	Enters RDI to 45 Mbit/s signal.
RDI34	Enters RDI to 34 Mbit/s signal.
RDI8	Enters RDI to 8 Mbit/s signal.
RDI2	Enters RDI to 2 Mbit/s signal.
RDI1_5	Enters RDI to 1.5 Mbit/s signal.
RDIMF	Enters MF-RDI to 2 Mbit/s signal.
HGAIS	Enters HG-AIS.
HGREC	Enters HG-REC.
SIGAIS15	Enters SigAIS 1.5.
SIGOOF	Enters SigOOF.
BAIS1_5	Enters BAIS 1.5.

Function: Specifies the alarm types to be entered for the send signals.

Restriction: Invalid in the following case:

- When tandem connection alarm is set while the settings to send data for tandem connection are not performed.

Example use: > :SOURce:TELecom:ALARm:TYPE AIS8

:SOURce:TELecom:ALARm:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the alarm type inserted against send signals.

Example use: > :SOURce:TELecom:ALARm:TYPE?
< AIS8

:SOURce:TELecom:ALARm:STARt

Parameter: None

Function: Inserts an alarm against send signals.

Restriction: Invalid in the following case:

・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: > :SOURce:TELecom:ALARm:STARt

:SOURce:TELecom:ALARm:STOP

Parameter: None

Function: Clears alarm insertion against send signals.

Restriction: Invalid in the following case:

- When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: > :SOURce:TELecom:ALARm:STOP

:SOURce:TELecom:ALARm:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

0	Stopping alarm insertion
1	Inserting alarm

Function: Queries alarm insertion status against send signals.

Example use:
> :SOURce:TELecom:ALARm:STATe?
< 0

:SOURce:TELecom:ALARm:TIMing:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

SINGle	Single
BURSt	Burst
ALTernate	Alternate
ALL	All

Function: Sets alarm addition timing.

Restriction: Invalid in the following case:
- When parameter is BUST, or ALTERNATAE, M139, M45,M34, M8, M2, or M1.5 is selected at :SOURce:TELecom:BRATe<brate>

Example use: To set alarm addition timing to BURST
> :SOURce:TELecom:ALARm:TIMing:TYPE BURST

:SOURce:TELecom:ALARm:TIMing:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the setting for alarm addition timing.

Example use: To query the setting for alarm addition timing:
> :SOURce:TELecom:ALARm:TIMing:TYPE?
< BURST

:SOURce:TELecom:ALARm:TIMing:BURSt<timing>, <unit>

Parameter: <timing> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 8000	When unit is frame:	Step value: 1
125 to 1000000	When unit is μs:	Step value: 125

<unit> = <CHARACTER PROGRAM DATA>

FRAME	frame
US	μs

Function: Sets the alarm insertion timing value and the unit.

Restriction: Invalid in the following case:
When M139, M45, M34, M8, M2, or M1.5 is selected for :SOURce:TELecom:BRATe <brate>.

Example use: To set the alarm insertion timing at the 5000th frame:
> :SOURce:TELecom:ALARm:TIMing:BURSt 5000, FRAME

:SOURce:TELecom:ALARm:TIMing:BURSt?

Response: <timing> = <NR1 NUMERIC RESPONSE DATA>
As same as :SOURce:TELecom:ALARm:TIMing.
<unit> = <CHARACTER RESPONSE DATA>
As same as :SOURce:TELecom:ALARm:TIMing.

Function: Queries the alarm insertion timing value and the unit setting.

Example use: To query the alarm insertion timing value and the unit setting:
> :SOURce:TELecom:ALARm:TIMing:BURSt?
< 5000, FRAME

:SOURce:TELecom:ALARm:TIMing:ALARm<alarm>

Parameter: <error> = <DECIMAL NUMERIC PROGRAM DATA>

0 to 8000	When unit is frame:	Step value: 1
0 to 1000000	When unit is μs:	Step value: 125

Function: Sets the number of alarm addition frames at Alternate.

Restriction: Invalid in the following case:
When M139, M45, M34, M8, M2, or M1.5 is selected
for :SOURce:TELecom:BRATe <brate>.

Example use: To set the number of alarm addition frames at Alternate to 3000:
> :SOURce:TELecom:ALARm:TIMing:ALARm 3000

:SOURce:TELecom:ALARm:TIMing:ALARm?

Response: <error> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting for number of alarm addition frames at Alternate.

Example use: To query the setting for number of alarm addition frames at Alternate:
> :SOURce:TELecom:ALARm:TIMing:ALARm?
< 3000

:SOURce:TELecom:ALARm:TIMing:NORMal<normal>

Parameter: <normal> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 8000	When unit is frame:	Step value: 1
125 to 1000000	When unit is μs:	Step value: 125

Function: Sets the number of Normal addition frames at Alternate.

Restriction: Invalid in the following case:
When M139, M45, M34, M8, M2, or M1.5 is selected
for :SOURce:TELecom:BRATe <brate>.

Example use: To set the number of Normal addition frames at Alternate to 1700:
> :SOURce:TELecom:ALARm:TIMing:NORMal 1700

:SOURce:TELecom:ALARm:TIMing:NORMal?

Response: <normal> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for number of Normal addition frames at Alternate.
Example use: To query the setting for number of Normal addition frames at Alternate:
> :SOURce:TELecom:ALARm:TIMing:NORMal?
< 1700

:SOURce:TELecom:ALARm:TIMing:ALTErnate <unit>

Parameter: <unit>=<CHARACTER PROGRAM DATA>
FRAME frame
US μs
Function: Sets alarm insertion units
Restriction: Invalid when,
M139, M45, M34, M8, M2, M1_5 is selected
for :SOURce:TELecomBRATe<brate>
Example of use: To change alarm insertion units to frame
> SOURce:TELecom:ALARm:TIMing:ALTErnate FRAME

:SOURce:TELecom:ALARm:TIMing:ALTErnate?

Response: <unit>=<CHARACTER RESPONSE DATA>
Function: Queries alarm insertion unit setting.
Example of use: > SOURce:TELecom:ALARm:TIMing:ALTErnate?
<FRAME

:SOURce:TELecom:ERRor:TYPE <etype>

Parameter: <etype> = <CHARACTER PROGRAM DATA>

(SDH)

OFF	No errors are inserted.
B1	Enters an error data to B1.
B2	Enters an error data to B2.
HB3	Enters an error to HP-B3.
LB3	Enters an error to LP-B3.
BIP2	Enters an error to BIP-2.
MREI	Enters an MS-REI error.
HREI	Enters an HP-REI error.
HIEC	Enters HP-IEC.
HTREI	Enters HP-TC-REI.
HOEI	Enters HP-OEI.
LREI	Enters an LP-REI error.
LIEC	Enters LP-IEC.
LTREI	Enters LP-TC-REI.
LOEI	Enters LP-OEI.
N2BIP2	Enters N2_BIP2.
FAS	Enters an (SDH)FAS error.
BALL	Enters the Bit all error.
BIT139	Enters a bit error to 139 Mbit/s signal.
BIT45	Enters a bit error to 45 Mbit/s signal.
BIT34	Enters a bit error to 34 Mbit/s signal.
BIT8	Enters a bit error to 8 Mbit/s signal.
BIT2	Enters a bit error to 2 Mbit/s signal.
BIT1_5	Enters a bit error to 1.5 Mbit/s signal.
BINF	Bit info.
CODE	Enters a code error.
EBIT	Enters an E-bit error.
FAS139	Enters an FAS error to 139 Mbit/s signal.
FAS45	Enters an FAS error to 45 Mbit/s signal.
FAS34	Enters an FAS error to 34 Mbit/s signal.
FAS8	Enters an FAS error to 8 Mbit/s signal.
FAS2	Enters an FAS error to 2 Mbit/s signal.
FAS1_5	Enters an FAS error to 1.5 Mbit/s signal.
REI139	Enters an REI error to 139 Mbit/s signal.
REI45	Enters an REI error to 45 Mbit/s signal.
REI34	Enters an REI error to 34 Mbit/s signal.
PARITY	Enters a Parity error.
CRC6	Enters a CRC-6 error.
CBIT	Enters a Cbit error.

(SONET)

OFF	No errors are inserted.
B1	Enters an error data to B1.
B2	Enters an error data to B2.
HB3	Enters an error to HP-B3.
LB3	Enters an error to LP-B3.
BIP2	Enters an error to BIP-2.
REIL	Enters REI-L.
REIP	Enters REI-P.
HIEC	Enters HP-IEC.
HTREI	Enters HP-TC-REI.
HOEI	Enters HP-OEI.
REIV	Enters an LP-REI error.
LIEC	Enters LP-IEC.
LTREI	Enters LP-TC-REI.
LOEI	Enters LP-OEI.
N2BIP2	Enters N2_BIP2.
FAS	Enters an (SDH) FAS error.
BALL	Enters the Bit all error.
BIT139	Enters a bit error to 139 Mbit/s signal.
BIT45	Enters a bit error to 45 Mbit/s signal.
BIT34	Enters a bit error to 34 Mbit/s signal.
BIT8	Enters a bit error to 8 Mbit/s signal.
BIT2	Enters a bit error to 2 Mbit/s signal.
BIT1_5	Enters a bit error to 1.5 Mbit/s signal.
BINF	Bit info.
CODE	Enters a code error.
EBIT	Enters an E-bit error.
FAS139	Enters a FAS error to 139 Mbit/s signal.
FAS45	Enters a FAS error to 45 Mbit/s signal.
FAS34	Enters a FAS error to 34 Mbit/s signal.
FAS8	Enters a FAS error to 8 Mbit/s signal.
FAS2	Enters a FAS error to 2 Mbit/s signal.
FAS1_5	Enters a FAS error to 1.5 Mbit/s signal.
REI139	Enters an REI error to 139 Mbit/s signal.
REI45	Enters an REI error to 45 Mbit/s signal.
REI34	Enters an REI error to 34 Mbit/s signal.
PARITY	Enters a Parity error.
CRC6	Enters a CRC-6 error.
CBIT	Enters a Cbit error.
PLCPFAS	Enters FAS PLCP.

Function: Sets the type of error to be inserted against send signals.

Restriction: Invalid in the following case:

- Error to a bit rate lower than the MUX last Tributary is inserted,
- Error to a bit rate higher than the interface is inserted,

- Invalid error insertion is set against the SDH route designated by :SOURce:TELecom:MAPPing:TYPE, or
- Tandem connection error is set while the settings to send data for tandem connection are not performed.

Example use: To insert a bit error to 34 Mbit/s signal:
> :SOURce:TELecom:ERRor:TYPE BIT34

:SOURce:TELecom:ERRor:TYPE?

Response: <etype> = <CHARACTER RESPONSE DATA>
Function: Queries the type of error inserted against send signals.
Example use: > :SOURce:TELecom:ERRor:TYPE?
< BIT34

:SOURce:TELecom:ERRor:ERATe <erate>

Parameter: <erate> = <CHARACTER PROGRAM DATA>

ONCE	Single error
R1E_3	1E-3
R1E_4	1E-4
R1E_5	1E-5
R1E_6	1E-6
R1E_7	1E-7
R1E_8	1E-8
R1E_9	1E-9
R1IN16	1 in 16
R2IN16	2 in 16
R3IN16	3 in 16
R4IN16	4 in 16
ALL	All
BURSt	Burst
R5E_3	5E-3
R5E_4	5E-4
R5E_5	5E-5
R5E_6	5E-6
R5E_7	5E-7
R5E_8	5E-8
R5E_9	5E-9
ALTernate	Alternate
PROGRATE	Programable rate

Function: Sets an error insertion rate.

Restriction: Invalid in the following case.
- :SOURce:TELecom:ERRor:TYPE is <OFF> or <FAS>.
- :SOURce:TELecom:ERRor:TYPE is <CODE>, <EBIT>, <BIT139>, <BIT45>, <BIT34>, <BIT8>, <BIT2>, <BIT1_5>, or <BINF>; and <R1E_8> or <R1E_9> is set.
- :SOURce:TELecom:ERRor:TYPE is <B1>, <B2>, <HB3>, <LB3>, <BIP2>, <MREI>, <HREI>, <LREI>, or <EBIT>; and <R1E_3> is set.
- :SOURce:TELecom:ERRor:TYPE is other than <FAS139>, <FAS45>, <FAS34>, <FAS8>, <FAS2>, <FAS1_5>; and <R1IN16>, <R2IN16>, <R3IN16>, or <R4IN16> is set.
- :SOURce:TELecom:ERRor:TYPE is <FAS139>, <FAS45>, <FAS34>, <FAS8>, <FAS2>, or <FAS1_5>; and other than <R1IN16>, <R2IN16>, <R3IN16>, or <R4IN16> is set.
- :SOURce:TELecom:ERRor:TYPE is <FAS>, <BALL>, <BIT139>, <BIT45>, <BIT34>, <BIT8>, <BIT2>, <BIT1_5>, or <BINF>; and <ALL> is set.
- BURST, ALTERNATE, or PROGRATE is set; and :SOURce:TELecom:BRATe <brate> is set to M139, M45, M34, M8, M2, or M1.5.

Example use: To set the error rate to 1E-3.
> :SOURce:TELecom:ERRor:ERATe R1E_3

:SOURce:TELecom:ERRor:ERATe?

Response: <erate> = <CHARACTER RESPONSE DATA>
Function: Queries the error insertion rate.
Example use: > :SOURce:TELecom:ERRor:ERATe?
< R1E_3

:SOURce:TELecom:ERRor:STARt

Parameter: None
Function: Inserts errors against send signals.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: > :SOURce:TELecom:ERRor:STARt

:SOURce:TELecom:ERRor:STOP

Parameter: None
Function: Clears error insertion against send signals.
Restriction: Invalid in the following case:
When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: > :SOURce:TELecom:ERRor:STOP

:SOURce:TELecom:ERRor:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

0	Stopping error insertion
1	Inserting error

Function: Queries the error insertion status against the send signal.

Example use: > :SOURce:TELecom:ERRor:STATe?
< 0

:SOURce:TELecom:ERRor:TIMing:TYPE <erate>

Parameter: <erate> = <CHARACTER PROGRAM DATA>

ONCE	Single error
R1E_3	1E-3
R1E_4	1E-4
R1E_5	1E-5
R1E_6	1E-6
R1E_7	1E-7
R1E_8	1E-8
R1E_9	1E-9
R1IN16	1 in 16
R2IN16	2 in 16
R3IN16	3 in 16
R4IN16	4 in 16
ALL	All
BURSt	Burst
R5E_3	5E-3
R5E_4	5E-4
R5E_5	5E-5
R5E_6	5E-6
R5E_7	5E-7
R5E_8	5E-8
R5E_9	5E-9
ALTernate	Alternate
PROGRATE	Programable rate

Function: Set the rate of error insertion.

Restriction: Invalid in the following case:

- When :SOURce:TELecom:ERRor:TYPE is <OFF> or <FAS>.
- When <R1E_8> or <R1E_9> is set while :SOURce:TELecom:ERRor:TYPE is <CODE>, <EBIT>,
- <BIT139>, <BIT45>, <BIT34>, <BIT8>, <BIT2>, <BIT1_5> or <BINF>.
- When <R1E_3> is set while :SOURce:TELecom:ERRor:TYPE is <B1>, <B2>, <HB3>, <LB3>, <BIP2>, <MREI>, <HREI>, <LREI>, or <EBIT>.

- When <R1IN16>, <R2IN16>, <R3IN16>, or <R4IN16> is set while :SOURce:TELecom:ERRor:TYPE is <FAS139>, <FAS45>, <FAS34>, <FAS8>, <FAS2>, or <FAS1_5>.
- When :SOURce:TELecom:ERRor:TYPE is <FAS139>, <FAS45>, <FAS34>, <FAS8>, <FAS2> or <FAS1_5>, the rate is set other than <R1IN16>, <R2IN16>, <R3IN16>, <R4IN16>.
- When <ALL> is set while :SOURce:TELecom:ERRor:TYPE is <FAS>, <BALL>, <BIT139>, <BIT45>, <BIT34>, <BIT8>, <BIT2>, <BIT1_5>, or <BINF>.
- When <BURST>, < ALTERNATE>, or <PROGRATE> is set while :SOURce:TELecom:BRATe is M139,M45,M34,M8,M2,M1.5.

Example use: To insert errors at the 1E-3 interval:
> :SOURce:TELecom:ERRor:TIMing:TYPE R1E_3

:SOURce:TELecom:ERRor:TIMing:TYPE?

Response: <erate> = <CHARACTER RESPONSE DATA>
Function: Queries the error insertion rate.
Example use: > :SOURce:TELecom:ERRor:TIMing:TYPE?
< R1E_3

:SOURce:TELecom:ERRor:TIMing:BURSt:BIT <bit>

Parameter: <bit> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64000 Step value: 1
Function: Sets the number of error insertion bits.
Restriction: Invalid in the following case:
- When M139, M45, M34, M8, M2, or M1.5 is selected for :SOURce:TELecom:BRATe <brate>.
- When :SOURce:TELecom:ERRor:TIMing:TYPE is <BURST>.

Example use: To set the number of error insertion bits to 1000:
> :SOURce:TELecom:ERRor:TIMing:BURSt:BIT 1000

:SOURce:TELecom:ERRor:TIMing:BURSt:BIT?

Response: <bit> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the number of error insertion bits.
Example use: To query the number of error insertion bits.
> :SOURce:TELecom:ERRor:TIMing:BURSt:BIT?
< 1000

:SOURce:TELecom:ERRor:TIMing:PROGrate <error>

Parameter: <error> = <STRING PROGRAM DATA>

"1.0E-2" to "9.9E-10" Mantissa portion 1.0 to 9.9 Step value 0.1

Exponent portion 1 to 10 Step value 1

"1.0E-2" can also be "1E-2".

Function: Sets the addition value for the Programmable rate error.

Restriction: Invalid in the following case:

- When M139, M45, M34, M8, M2, or M1.5 is selected for :SOURce:TELecom:BRATe <brate>.
- When :SOURce:TELecom:ERRor:TIMing:TYPE is < PROGRATE >.

Example use: To set the addition value for the Prog.rate error addition to 1.0E-5:

> :SOURce:TELecom:ERRor:TIMing:PROGrate "1.0E-5"

:SOURce:TELecom:ERRor:TIMing:PROGrate?

Response: <error> = <STRING RESPONSE DATA>

Function: Queries the addition value for the Prog.rate error addition.

Example use: To query the addition value for the Prog.rate error addition:

> :SOURce:TELecom:ERRor:TIMing:PROGrate?

< "1.0E-5"

:SOURce:TELecom:ERRor:TIMing:ERRor <error>

Parameter: <error> = <DECIMAL NUMERIC PROGRAM DATA>

0 to 8000 Step value: 1

Function: Sets the number of error addition frames at Alternate.

Restriction: Invalid in the following case:

- When M139, M45, M34, M8, M2, or M1.5 is selected for :SOURce:TELecom:BRATe <brate>.

Example use: To set the number of error addition frames to 3000.

> :SOURce:TELecom:ERRor:TIMing:ERRor 3000

:SOURce:TELecom:ERRor:TIMing:ERRor?

Response: <error> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting for number of error addition frames at Alternate.

Example use: To query the setting for number of error addition frames at Alternate:

> :SOURce:TELecom:ERRor:TIMing:ERRor?

< 3000

:SOURce:TELecom:ERRor:TIMing:NORMal <normal>

Parameter: <normal> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Step value: 1

Function: Sets the number of normal addition frames at Alternate.

Restriction: Invalid in the following case:
When M139, M45, M34, M8, M2, or M1.5 is selected
for :SOURce:TELecom:BRATe <brate>.

Example use: To set the number of normal addition frames to 1700:
> :SOURce:TELecom:ERRor:TIMing:NORMal 1700

:SOURce:TELecom:ERRor:TIMing:NORMal?

Response: <normal> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting for number of normal addition frames at Alternate.

Example use: To query the setting for number of normal addition frames at Alternate:
> :SOURce:TELecom:ERRor:TIMing:NORMal?
< 1700

:SOURce:TELecom:CLOCk:SOURce <csource>

Parameter: <csource> = <CHARACTER PROGRAM DATA>

INTernal	Internal
EXTernal	External
LUNBalanced	Look 2MHz Unbalanced
LBALanced	Look 2MHz Balanced
LUNB_2MHZ	Look 2MHz Unbalanced
LBAL_2MHZ	Look 2MHz Balanced
LUNB_2MBPS	Look 2Mbps Unbalanced
LBAL_2MBPS	Look 2Mbps Balanced
LBAL_1_5MHZ	Look 1.5MHz Balanced
LBAL_1_5MBPS	Look 1.5Mbps Balanced
LBAL_64K	Look 64k+8kHz
L10M	Look 10M
RECeive	Receive
L5M	Look 5M

Function: Sets the clock source for the send signal.

Restriction: Invalid in the following case:
When <RECeive> is set while :INSTrument:COUPled is <NONE>.

Example use: Sets the internal clock source for the send signal:
> :SOURce:TELecom:CLOCk:SOURce INTernal

:SOURce:TELecom:CLOCk:SOURce?

Response: <csource> = <CHARACTER RESPONSE DATA>

INT	Internal
EXT	External
LUNB_2MHZ	Lock 2MHz Unbalanced
LBAL_2MHZ	Lock 2MHz Balanced
LUNB_2MBPS	Lock 2Mbps Unbalanced
LBAL_2MBPS	Lock 2Mbps Balanced
LBAL_1_5MHZ	Lock 1.5MHz Balanced
LBAL_1_5MBPS	Look 1.5Mbps Balanced
LBAL_64K	Lock 64k+8kHz
L10M	Look 10M
REC	Receive
L5M	Look 5M

Function: Queries the clock source for the send signal.

Example use: > :SOURce:TELecom:CLOCk:SOURce?
< INT

:SOURce:TELecom:PSEQuence:TYPE <pstype>

Parameter: <pstype> = <CHARACTER PROGRAM DATA>

OFF	OFF
SOOPolarity	Single of opposite polarity
RWDouble	Regular with double
RWMissing	Regular with missing
DOOPolarity	Double of opposite polarity
NORMa187_3	87-3/26-1 Normal
ADD87_3	87-3/26-1 Add
CANCe187_3	87-3/26-1 Cancel
CPNormal	Continuous pattern Normal
CPADd	Continuous pattern Add
CPCancel	Continuous pattern Cancel
SPADjustment	G.783:Single pointer adjustment
MRPBurst	G.783:Maximum rate pointer burst
PTPBurst	G.783:Phase transient pointer burst

Function: Sets type of the pointer sequence measurement.

Restriction: Invalid in the following case:

- When <SPADjustment>, <MRPBurst>, or <PTPBurst> is specified while INSTrument:STANdard is <SDH>.

Example use: To set the pointer sequence measurement type to Single of opposite polarity:
> :SOURce:TELecom:PSEQuence:TYPE SOOPolarity

:SOURce:TELecom:PSEQuence:TYPE?

Response: <pstype> = <CHARACTER RESPONSE DATA>

OFF	OFF
SOOP	Single of opposite polarity
RWD	Regular with double
RWM	Regular with missing
DOOP	Double of opposite polarity
NORM87_3	87-3/26-1 Normal
ADD87_3	87-3/26-1 Add
CANC87_3	87-3/26-1 Cancel
CPN	Continuous pattern Normal
CPAD	Continuous pattern Add
CPC	Continuous pattern Cancel
SPAD	G.783:Single pointer adjustment
MRPB	G.783:Maximum rate pointer burst
PTPB	G.783:Phase transient pointer burst

Function: Queries the pointer sequence measurement type.

Example use:
> :SOURce:TELecom:PSEQuence:TYPE?
< SOOP

:SOURce:TELecom:PSEQuence:POINter <ptype>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>

AU	AU-PTR
TU	TU-PTR

Function: Sets the objective pointer for pointer sequence measurements.

Restriction: Invalid in the following case:

- When :SOURce:TELecom:PSEQuence:TYPE is <OFF>.
- When <TU> is specified while :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC12_BIL>, <VC12_BYL>, <VC11_BIL>, <VC11_BYL>, or <TU>.
- When <TU> is specified while :SOURce:TELecom:MAPPing:TYPE is <VC3_45MASY>, <VC3_BLK>, and
- :SOURce:TELecom:MAPPing:AU is <AU3>.
- When :DISPlay:TMENu[:NAME] is other than <"PSEQuence[:JOFF]">.

Example use: Measures pointer sequence for AU pointer.
> :SOURce:TELecom:PSEQuence:POINter AU

:SOURce:TELecom:PSEQuence:POINter?

Response: <ptype> = <CHARACTER RESPONSE DATA>

Function: Queries the objective points for pointer sequence measurement.

Example use:
> :SOURce:TELecom:PSEQuence:POINter?
< AU

:SOURce:TELecom:PSEQuence:POLarity <polarity>

Parameter: <polarity> = <CHARACTER PROGRAM DATA>
PPJC +Just
NPJC -Just

Function: Sets a justification polarity for pointer sequence measurement.

Restriction: Invalid in the following case:
- When :SOURce:TELecom:PSEQuence:TYPE is <OFF>, <SOOPolarity>, or <DOOPolarity>.
- When the :DISPlay:TMENu[:NAME] is other than <"PSEQuence[:JOFF]">.

Example use: Specifies the justification polarity to +Just.
> :SOURce:TELecom:PSEQuence:POLarity PPJC

:SOURce:TELecom:PSEQuence:POLarity?

Response: <polarity> = <CHARACTER RESPONSE DATA>

Function: Queries the justification polarity of pointer sequence measurement.

Example use: > :SOURce:TELecom:PSEQuence:POLarity?
< PPJC

:SOURce:TELecom:PSEQuence:TIMing:T1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 60000 in the ms unit

Function: Sets the T1 parameter for pointer sequence measurement.

Restriction: Invalid in the following case:
- When the :DISPlay:TMENu[:NAME] is other than <"PSEQuence[:JOFF]">.
- When :SOURce:TELecom:PSEQuence:TYPE is <OFF>, <NORMal87_3>, <ADD87_3>, <CANCel87_3>, <CPNormal>, <SPADjustment>, <MRPBurst>, or <PTPBurst>.

- Cases outside the range in the table below:

<Type>	C3 and C4 mapping	C11, C12, and C2 mapping
Single of opposite polarity	1 to 60000ms	4 to 60000ms
Regular with double	8 to 60000ms T1 > T2 × 2	8 to 60000ms T1 > T2 × 2
Regular with missing	2 to 60000ms T1 > T2 × 2	8 to 60000ms T1 > T2 × 2
Double of opposite polarity	4 to 60000ms	4 to 60000ms
Continuous pattern add	8 to 60000ms T1 > T2 × 2	8 to 60000ms T1 > T2 × 2
Continuous pattern cancel	2 to 60000ms T1 > T2 × 2	8 to 60000ms T1 > T2 × 2

Example use: To set the T1 parameter for pointer sequence measurement to 300 msec:
> :SOURce:TELecom:PSEQuence:TIMing:T1 300

:SOURce:TELecom:PSEQuence:TIMing:T1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the T1 parameter of pointer sequence measurement.
Example use: > :SOURce:TELecom:PSEQuence:TIMing:T1?
< 300

:SOURce:TELecom:PSEQuence:TIMing:T2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 30000 in the msec unit
Function: Sets the T2 parameter for pointer sequence measurement.
Restriction: Invalid in the following case:

- When :SOURce:TELecom:PSEQuence:TYPE is <OFF>, <SOOPolarity>, <DOOPolarity>, <NORMal87_3>, <ADD87_3>, <CANCel87_3>, <SPADjustment>, <MRPBurst>, <PTPBurst>, <SPADjustment>, <MRPBurst>, or <PTPBurst>.
- When the :DISPlay:TMENu[:NAME] is other than <"PSEQuence[:JOFF]">.

- Cases outside the range in the table below:

<Type>	C3 and C4 mapping	C11, C12, and C2 mapping
Regular with double	4 to 30000ms	4 to 30000ms
Regular with missing	1 to 30000ms	4 to 30000ms
Continuous pattern normal	4 to 30000ms	4 to 30000ms
Continuous pattern add	4 to 30000ms	4 to 30000ms
Continuous pattern cancel	1 to 30000ms	4 to 30000ms

Example use: To set the T2 parameter for pointer sequence measurement to 300 msec:
> :SOURce:TELecom:PSEQuence:TIMing:T2 300

:SOURce:TELecom:PSEQuence:TIMing:T2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the T2 parameter of pointer sequence measurement.
Example use: > :SOURce:TELecom:PSEQuence:TIMing:T2?
< 300

:SOURce:TELecom:PSEQuence:TIMing:T <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 30000 in the msec unit

Function: Specifies the T-parameter setting for pointer sequence measurements.

Restriction: Invalid in the following case:
- When :SOURce:TELecom:PSEQuence:TYPE is <OFF>, <SOOPolarity>, <RWDouble>, <RWMissing>, <DOOPolarity>, <CPNormal>, <CPADd>, or <CPCancel>.
- When the :DISPlay:TMENu[:NAME] is other than <"PSEQuence[:JOFF]">.

- Cases outside the range in the table below:

<Type>	C3 and C4 mapping	C11, C12, C2 mapping
87-3/26-1 normal	1 to 30000ms	4 to 30000ms
87-3/26-1 add	1 to 30000ms	4 to 30000ms
87-3/26-1 cancel	1 to 30000ms	4 to 30000ms
Single pointer adjustment	1 to 30000ms	1 to 30000ms
Maximum rate pointer burst	1 to 30000ms	1 to 30000ms
Phase transient pointer burst	1 to 30000ms	1 to 30000ms

Example use: When setting the T-parameter to 300msec for pointer sequence measurement.
> :SOURce:TELecom:PSEQuence:TIMing:T 300

:SOURce:TELecom:PSEQuence:TIMing:T?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the T-parameter for pointer sequence measurement.

Example use: > :SOURce:TELecom:PSEQuence:TIMing:T?
< 300

:SOURce:TELecom:PSEQuence:AINTerval <interval>

Parameter: <interval> = <CHARACTER PROGRAM DATA>

R1IN1	1in1
R1IN2	1in2
R1IN3	1in3
R1IN4	1in4
R1IN5	1in5
R1IN6	1in6
R1IN7	1in7
R1IN8	1in8
R1IN9	1in9
R1IN10	1in10

Function: Specifies the Added point intervals for pointer sequence measurement.

Restriction: Invalid in the following case:
- When :SOURce:TELecom:PSEQuence:TYPE is other than <ADD87_3>.

・When the :DISPlay:TMENu[:NAME] is other than <"PSEQuence[:JOFF]">.

Example use: > :SOURce:TELecom:PSEQuence:AINTerval 100

:SOURce:TELecom:PSEQuence:AINTerval?

Response: <interval> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the Added point intervals in the pointer sequence measurement.

Example use: > :SOURce:TELecom:PSEQuence:AINTerval?
< 100

:SOURce:TELecom:PSEQuence:CINTerval <interval>

Parameter: <interval> = <CHARACTER PROGRAM DATA>

R1IN1	1in1
R1IN2	1in2
R1IN3	1in3
R1IN4	1in4
R1IN5	1in5
R1IN6	1in6
R1IN7	1in7
R1IN8	1in8
R1IN9	1in9
R1IN10	1in10

Function: Specifies the Cancel point interval for pointer sequence measurement.

Restriction: Invalid in the following case:

・When :SOURce:TELecom:PSEQuence:TYPE is other than <CANCel87_3>.

・When the :DISPlay:TMENu[:NAME] is other than<"PSEQuence[:JOFF]">.

Example use: > :SOURce:TELecom:PSEQuence:CINTerval 100

:SOURce:TELecom:PSEQuence:CINTerval?

Response: <interval> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the Cancel point interval for pointer sequence measurement.

Example use: > :SOURce:TELecom:PSEQuence:CINTerval?
< 100

:SOURce:TELecom:PSEQuence:POFFset <offset>

Parameter: <offset> = <NON-DECIMAL NUMERIC PROGRAM DATA>

-100.0 to 100.0 Step value: 0.1

Function: Sets Payload offset.

Restriction: Invalid in the following case:
:SOURce:TELecom:MAPPing:TYPE <mtype> is set to other than 139M (Async.), 34M (Async.), 45M (Async.), 6M (Async.), 2M (Async.), or 1.5M (Async.).
Example use: To set Payload offset to -60.0.
> :SOURce:TELecom:PSEQuence:POFFset –60.0

:SOURce:TELecom:PSEQuence:POFFset?

Response: <offset> = <NR2 NUMERIC RESPONSE DATA>
Function: Queries the Payload offset setting.
Example use: To query the Payload offset setting.
> :SOURce:TELecom:PSEQuence:POFFset?
< -60.0

:SOURce:TELecom:PSEQuence:INItial:MODE <mode>

Parameter: <mode> = <BOOLEAN PROGRAM DATA>

OFF	or	0
ON	or	1

Function: Sets ON/OFF of the initialization time.
Restriction: Invalid in the following case:
When :SOURce:TELecom:PSEQuence:TYPE <pstype> is set as follows:
<pstype> = <CHARACTER PROGRAM DATA>

OFF	OFF
SOOPolarity	Single of opposite polarity
RWDouble	Regular with double
RWMissing	Regular with missing
DOOPolarity	Double of opposite polarity

Example use: To set the initialization time to on:
> :SOURce:TELecom:PSEQuence:INItial:MODE ON

:SOURce:TELecom:PSEQuence:INItial:MODE?

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1
Function: Queries the on/off setting of initialization time.
Example use: To query the on/off setting of initialization time:
> :SOURce:TELecom:PSEQuence: INItial:MODE?
< 1

:SOURce:TELecom:PSEQuence:INItial:TIME <s>

Parameter: <s> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 99	s	Step value: 1

Function: Sets the time period for initialization.

Restriction: Invalid in the following case:
When :SOURce:TELecom:PSEQuence:TYPE <pstype> is set to OFF.
Example use: To set the initialization time to 1 s 500 msec:
> :SOURce:TELecom:PSEQuence:INItial:TIME 1

:SOURce:TELecom:PSEQuence:INItial:TIME?

Response: <s> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for the time period of initialization.
Example use: To query the setting for the time period of initialization:
> :SOURce:TELecom:PSEQuence:INItial:TIME?
< 1

:SOURce:TELecom:PSEQuence:INItial:TI <ms>

Parameter: <ms> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 30000	ms	Step value: 1

Function: Sets the time period for initialization.
Restriction: Invalid in the following case:
When :SOURce:TELecom:PSEQuence:TYPE <pstype> is set to off.
Example use: To set the initialization time to 500 msec:
> :SOURce:TELecom:PSEQuence:INItial:TI 500

:SOURce:TELecom:PSEQuence:INItial:TI?

Response: <ms> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for the time period of initialization.
Example use: To query the setting for the time period of initialization:
> :SOURce:TELecom:PSEQuence:INItial:TI?
< 500

:SOURce:TELecom:PSEQuence:COOLdown:MODE <mode>

Parameter: <mode> = <BOOLEAN PROGRAM DATA>

OFF	or	0
ON	or	1

Function: Sets ON/OFF of the process time to wait stabilization.
Restriction: Invalid in the following case:
When :SOURce:TELecom:PSEQuence:TYPE <pstype> is set as follows:
<pstype> = <CHARACTER PROGRAM DATA>

OFF	OFF
SOOPolarity	Single of opposite polarity
RWDouble	Regular with double
RWMissing	Regular with missing
DOOPolarity	Double of opposite polarity

Example use: To set the process time to wait stabilization to off:
> :SOURce:TELecom:PSEQuence:COOLdown:MODE OFF

:SOURce:TELecom:PSEQuence:COOLdown:MODE?

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries the ON/OFF setting of process time to wait stabilization.

Example use: To query the ON/OFF setting of process time to wait stabilization.
> :SOURce:TELecom:PSEQuence:COOLdown:MODE?
< 0

:SOURce:TELecom:PSEQuence:COOLdown:TIME <s>

Parameter: <s> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 99	s	Step value: 1

Function: Set the initialization time to the Cool Down for pointer.

Restriction: Invalid in the following case:
When :SOURce:TELecom:PSEQuence:TYPE <pstype> is as follows:
<pstype> = <CHARACTER PROGRAM DATA>

OFF	OFF
SOOPolarity	Single of opposite polarity
RWDouble	Regular with double
RWMissing	Regular with missing
DOOPolarity	Double of opposite polarity

Example use: To set the initialization time to 1 s 500 msec:
> :SOURce:TELecom:PSEQuence:COOLdown:TIME 1

:SOURce:TELecom:PSEQuence:COOLdown:TIME?

Response: <s> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting for the time period of initialization.

Example use: To query the setting for the time period of initialization:
> :SOURce:TELecom:PSEQuence:COOLdown:TIME?
< 1

:SOURce:TELecom:DPReset:POHPattern <pohtype>,<pohpoint>,<string>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>
(SDH)

VC4	POH VC4 pattern
VC3	POH VC3 pattern
VC1	POH VC2/1 pattern

(SONET)

STS3	POH STS3 pattern
STS1	POH STS1 pattern
VT	POH VT pattern

<pohpoint> = <CHARACTER PROGRAM DATA>

(SDH)	J1	C2	G1	F2	H4	F3	K3	N1	V5	J2	N2	K4
(SONET)	J1	C2	G1	F2	H4	Z3	Z4	Z5	V5	J2	Z6	Z7

<string> = <STRING PROGRAM DATA>
"**", "00" to "FF" (hexadecimal type)

Function: Sets Dummy preset POH data of send signals

Restriction: Invalid in the following case:
The setting is performance error when parameter is set to "**" for other than <pohpoint>=V5.

Example use: To set preset data of POH V3 to "EF"
> :SOURce:TELecom:DPReset:POHPattern VC3, F2, "EF"

:SOURce:TELecom:DPReset:POHPattern? <pohtype>,<pohpoint>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>
<pohpoint> = <CHARACTER PROGRAM DATA>

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the Dummy preset POH data of send signals.

Example use: To query F2 preset data of POH VC3.
> :SOURce:TELecom:DPReset:POHPattern? VC3, F2
< "EF"

(for SDH)

:SOURce:TELecom:DPReset:SLABel <pohtype>,<string>

(for SONET)

:SOURce:TELecom:DPReset:PLABel <pohtype>,<string>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>

(SDH)

VC4	POH VC4 pattern
VC3	POH VC3 pattern

(SONET)

STS3	POH STS3 pattern
STS1	POH STS1 pattern

<string> = <STRING PROGRAM DATA>

Plain language can be specified for C2 (bit1 to 8).

(at SDH)

"Unequipped"	"UNEQ"	(0000 0000)
"Equipped-non-specific"	"non-specific"	(0000 0001)
"TUG structure"	"TUG"	(0000 0010)
"Locked TU"	"Locked TU"	(0000 0011)
"Async. 34M or 45M(C-3)"	"34M" or "45M"	(0000 0100)
"Async. 139M(C-4)"	"139M"	(0001 0010)
"ATM mapping"	"ATM"	(0001 0011)
"MAN(DQDB)mapping"	"MAN" or "DQDB"	(0001 0100)
"FDDI mapping"	"FDDI	(0001 0101)
"O.181 mapping"	"O.181	(1111 1110)
"VC-AIS"	"VC-AIS"	(1111 1111)

(at SONET)

"Unequipped"	"UNEQ"	(0000 0000)
"Equipped-non-specific"	"non-specific"	(0000 0001)
"VT structure"	"VT"	(0000 0010)
"Locked VT"	"Locked VT"	(0000 0011)
"Async. Mapping DS3"	"DS3"	(0000 0100)
"Async. Mapping DS4NA"	"DS4NA"	(0001 0010)
"Mapping for ATM"	"ATM"	(0001 0011)
"Mapping for DQDB"	"MAN" or "DQDB"	(0001 0100)
"Async. Mapping FDDI"	"FDDI	(0001 0101)
"Unused"	"UNUSED	(1111 1110)
"AIS-P"	"AIS-P"	(1111 1111)

Function: Specifies C2 data setting of Dummy preset POH data for the send signal.

Example use: To set Dummy preset data of POH VC3 C2 to "Unequipped"

> :SOURce:TELecom:DPReset:SLABel VC3, “Unequipped”

(for SDH)

:SOURce:TELecom:DPReset:SLABel? <pohtype>

(for SONET)

:SOURce:TELecom:DPReset:PLABel? <pohtype>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the C2 plain language data of Dummy preset POH data for the send signal.

Example use: When querying the plain language data of Dummy preset data of POH VC3 C2:
> :SOURce:TELecom:DPReset:SLABel? VC3
< “Unequipped”

:SOURce:TELecom:DPReset:VLABel <string>

Parameter: <string> = <STRING PROGRAM DATA>
Plain language can be specified for V5 (b5-7).
(SDH)

"Unequipped"	"UNEQ"	(000)
“Unequipped-non-specific”	"non-specific"	(001)
“Asynchronous”	“Async”	(010)
“Bitsynchronous”	“Bitsync”	(011)
“Bytesynchronous”	“Bytesync”	(100)
“Reserved101”	“Reserved”	(101)
“O.181 mapping”	“O.181”	(110)
“VC-AIS”	“VC-AIS”	(111)

(SONET)

"Unequipped"	"UNEQ"	(000)
“Unequipped-non-specific”	"non-specific"	(001)
“Asynchronous”	“Async”	(010)
“Bitsynchronous”	“Bitsync”	(011)
“Bytesynchronous”	“Bytesync”	(100)
“Reserved101”	“Reserved101”	(101)
“Reserved110”	“Reserved110”	(110)
“AIS-V”	“AIS-V”	(111)

* abbreviated form at right

Function: Specifies V5 data (bit 5 to 7) setting of Dummy preset POH data for the send signal. (plain language type)

Example use: To set Dummy preset data of POH V5 to "Unequipped"
> :SOURce:TELecom:DPReset:VLABel “Unequipped”

:SOURce:TELecom:DPReset:VLABel?

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the V5 (bit 5 to 7) plain language data of Dummy preset POH data for the send signal.

Example use: To query the plain language preset data of POH V5:
> :SOURce:TELecom:DPReset:VLABel?
< “Unequipped”

:SOURce:TELecom:DPReset:GLABel <pohtype>,<string>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>
(SDH)
VC4 POH VC4 pattern
VC3 POH VC3 pattern
(SONET)
STS3 POH STS3 pattern
STS1 POH STS1 pattern
<string> = <STRING PROGRAM DATA>
Plain language can be set for G1 (b5 to 7).

“No remote defect000”	(000)
“No remote defect001”	(001)
“Remote payload defect”	(010)
“No remote defect011”	(011)
“Remote defect100”	(100)
“Remote server defect”	(101)
“Remote connectivity defect”	(110)
“Remote defect111”	(111)

Function: Sets the G1 data of Dummy preset POH data for the send signal.
Example use: To set the Dummy preset data of POH VC3 G1
to "No remote defect 000":
> :SOURce:TELecom:DPReset:GLABel VC3, “No remote defect 000”

:SOURce:TELecom:DPReset:GLABel? <pohtype>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the G1 plain language data of Dummy preset
POH data for the send signal.
Example use: To query the plain language data of Dummy preset data
for POH VC3 G1:
> :SOURce:TELecom:DPReset:GLABel? VC3
< “No remote defect 000”

(for SDH)

:SOURce:TELecom:DPReset:KLABel <string>

(for SONET)

:SOURce:TELecom:DPReset:ZLABel <string>

Parameter: <string> = <STRING PROGRAM DATA>
Plain language can be set for K4 (b5 to 7) and Z7 (b5 to 7).

"No remote defect000"	(000)
"No remote defect001"	(001)
"Remote payload defect"	(010)
"No remote defect011"	(011)
"Remote defect100"	(100)
"Remote server defect"	(101)
"Remote connectivity defect"	(110)
"Remote defect111"	(111)

Function: Sets the K4 (SDH) and Z7 (SONET) data of Dummy preset POH data for the send signal.

Example use: To set the Dummy preset data of POH K4 to "No remote defect 000":
> :SOURce:TELecom:DPReset:KLABel "No remote defect 000"

(for SDH)

:SOURce:TELecom:DPReset:KLABel?

(for SONET)

:SOURce:TELecom:DPReset:ZLABel?

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the K4 (SDH) and Z7 (SONET) plain language data of Dummy preset POH data for the send signal.

Example use: To query the plain language data of Dummy preset data for POH K4:
> :SOURce:TELecom:DPReset:KLABel?
< "No remote defect 000"

:SOURce:TELecom:DPReset:DEFault <deftype>

Parameter: <deftype> = <CHARACTER PROGRAM DATA>

ALLPOH	All POH
LAPD	LAPD massage N1 and N2

Function: Initialize the preset data of the Dummy preset screen.

Example use: To initialize all the POH of the Dummy preset screen.
> :SOURce:TELecom:DPReset:DEFault ALLPOH

(for SDH)

:SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:MODE <mode>
:SOURce:TELecom:DPReset:TANDem:CONDition:N1LP:MODE <mode>
:SOURce:TELecom:DPReset:TANDem:CONDition:N2:MODE <mode>

(for SONET)

:SOURce:TELecom:DPReset:TANDem:CONDition:Z5HP:MODE <mode>
:SOURce:TELecom:DPReset:TANDem:CONDition:Z5LP:MODE <mode>
:SOURce:TELecom:DPReset:TANDem:CONDition:Z6:MODE <mode>

Parameter: <mode> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1

Function: Specifies whether to send the data for tandem connection in the Dummy preset screen.

Example use: To set to send the data for tandem connection of N1-HP ON:
> :SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:MODE ON

(for SDH)

:SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:MODE?
:SOURce:TELecom:DPReset:TANDem:CONDition:N1LP:MODE?
:SOURce:TELecom:DPReset:TANDem:CONDition:N2:MODE?

(for SONET)

:SOURce:TELecom:DPReset:TANDem:CONDition:Z5HP:MODE?
:SOURce:TELecom:DPReset:TANDem:CONDition:Z5LP:MODE?
:SOURce:TELecom:DPReset:TANDem:CONDition:Z6:MODE?

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries the condition for tandem connection in the Dummy preset screen whether or not to send the data.

Example use: To query whether or not to send the data for N1-HP tandem connection:
> :SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:MODE?
< 1

(for SDH)

:SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:TYPE <type>
:SOURce:TELecom:DPReset:TANDem:CONDition:N1LP:TYPE <type>

(for SONET)

:SOURce:TELecom:DPReset:TANDem:CONDition:Z5HP:TYPE <type>
:SOURce:TELecom:DPReset:TANDem:CONDition:Z5LP:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
TYPE1
TYPE2

Function: Sets the type of trace data for tandem connection in the Dummy preset screen.

Restriction: Invalid in the following case:
When the following commands are set to OFF:
:SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:MODE <mode>
:SOURce:TELecom:DPReset:TANDem:CONDition:N1LP:MODE <mode>
:SOURce:TELecom:DPReset:TANDem:CONDition:Z5HP:MODE <mode>
:SOURce:TELecom:DPReset:TANDem:CONDition:Z5LP:MODE <mode>

Example use: To set the type of trace data for tandem connection of N1-HP to Type2:
> :SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:
TYPE TYPE2

(for SDH)

:SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:TYPE?
:SOURce:TELecom:DPReset:TANDem:CONDition:N1LP:TYPE?

(for SONET)

:SOURce:TELecom:DPReset:TANDem:CONDition:Z5HP:TYPE?
:SOURce:TELecom:DPReset:TANDem:CONDition:Z5LP:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the type of trace data for tandem connection in the Dummy preset screen.

Example use: To query the type of trace data for N1-HP tandem connection:
> :SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:TYPE?
< TYPE2

:SOURce:TELecom:DPReset:TANDem:N1HP:TYPE1 <tapoint>,<string>
:SOURce:TELecom:DPReset:TANDem:Z5HP:TYPE1 <tapoint>,<string>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
IEC, D_LINK
<string> = <STRING PROGRAM DATA>
"0000" to "1111"(Binary type)
When <tapoint> is IEC or D_LINK.

Function: Sets the Type1 data of edit N1-HP (Z5-HP) for the tandem connection in the Dummy Preset screen.

Restriction: Invalid in the following case:
When :SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:TYPE <type> or :SOURce:TELecom:DPReset:TANDem:CONDition:Z5HP:TYPE <type> is other than TYPE1:

Example use: To set the IEC data of Type1 for Dummy Preset tandem connection to "1010":
> :SOURce:TELecom:DPReset:TANDem:N1HP:TYPE1 IEC, "1010"

:SOURce:TELecom:TANDem:N1HP:TYPE1? <tapoint>
:SOURce:TELecom:TANDem:Z5HP:TYPE1? <tapoint>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the Type1 data of edit N1-HP(Z5-HP) for the tandem connection in the Dummy Preset screen.
Example use: To query the IEC data of N1-HP Type1 for tandem connection:
> :SOURce:TELecom:DPReset:TANDem:N1HP:TYPE1 IEC
< "1010"

(for SDH)
:SOURce:TELecom:DPReset:TANDem:N1HP:TYPE2 <tapoint>,<string>
:SOURce:TELecom:DPReset:TANDem:N1LP:TYPE2 <tapoint>,<string>
(for SONET)
:SOURce:TELecom:DPReset:TANDem:Z5HP:TYPE2 <tapoint>,<string>
:SOURce:TELecom:DPReset:TANDem:Z5LP:TYPE2 <tapoint>,<string>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
IEC, TCREI, OEI, BIT7_8
<string> = <STRING PROGRAM DATA>

"0" to "1"	(Binary type)	When <tapoint> is TCREI or OEI.
"00" to "11"	(Binary type)	When <tapoint> is BIT7_8.
"0000" to "1111"	(Binary type)	When <tapoint> is IEC.

Function: Sets the Type2 data of edit N1-LP for the tandem connection in the Dummy Preset screen.
Restriction: Invalid in the following case:
When the setting
for :SOURce:TELecom:DPReset:TANDem:CONDition:N1HP:TYPE <type>, :SOURce:TELecom:DPReset:TANDem:CONDition:N1LP:TYPE <type>, :SOURce:TELecom:DPReset:TANDem:CONDition:Z5HP:TYPE <type>,
or :SOURce:TELecom:DPReset:TANDem:CONDition:Z5LP:TYPE <type> is other than TYPE2.
Example use: To set the OEI data of N1 Type2 for Dummy Preset tandem connection to "1":
> :SOURce:TELecom:DPReset:TANDem:N1HP:TYPE2 OEI, "1"

(for SDH)
:SOURce:TELecom:DPReset:TANDem:N1HP:TYPE2? <tapoint>
:SOURce:TELecom:DPReset:TANDem: N1LP:TYPE2? <tapoint>
(for SONET)
:SOURce:TELecom:DPReset:TANDem: Z5HP:TYPE2? <tapoint>
:SOURce:TELecom:DPReset:TANDem:Z5LP:TYPE2? <tapoint>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>

Response: <string> = <STRING RESPONSE DATA>
Function: Queries the Type2 data of edit N1-HP(Z5-HP) or N1-LP (Z5-LP) for the tandem connection in the Dummy Preset screen.
Example use: To query the OEI data of Type2 for Dummy Preset tandem connection:
> :SOURce:TELecom:DPReset:TANDem:N1HP:TYPE2? OEI
< “1”

:SOURce:TELecom:DPReset:TANDem:N2 <tapoint>,<string>
:SOURce:TELecom:DPReset:TANDem:Z6 <tapoint>,<string>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
B3, AIS, TCREI, OEI, BIT7_8
<string> = <STRING PROGRAM DATA>

“0” to “1”	(Binary type)	When <tapoint> is B3, AIS, TCREI or OEI.
“00” to “11”	(Binary type)	When <tapoint> is BIT7_8.

Function: Sets the edit N2 data for the tandem connection in the Dummy Preset screen.
Restriction: Invalid in the following case:
When the setting for
:SOURce:TELecom:DPReset:TANDem:CONDition:N2:MODE <mode>
or :SOURce:TELecom:DPReset:TANDem:CONDition:Z6:MODE <mode> is OFF.
Example use: To set the N2 OEI data of Dummy Preset tandem connection to "1":
> :SOURce:TELecom:DPReset:TANDem:N2 OEI, “1”

:SOURce:TELecom:DPReset:TANDem:N2? <tapoint>
:SOURce:TELecom:DPReset:TANDem:Z6? <tapoint>

Parameter: <tapoint> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the N2 data for the tandem connection in the Dummy Preset screen.
Example use: To query the N2 OEI data for the tandem connection:
> :SOURce:TELecom:DPReset:TANDem:N2? OEI
< “1”

:SOURce:TELecom:DPReset:PTCondition <pttype>,<trace>,<crc>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>

J1H	J1-HP path trace
J1L	J1-LP path trace
J2	J2 path trace

<trace> = <BOOLEAN PROGRAM DATA>

OFF or 0	Path trace OFF
ON or 1	Path trace ON

<crc> = <BOOLEAN PROGRAM DATA>

OFF or 0	CRC-7 OFF
ON or 1	CRC-7 ON

Function: Sets the path trace condition for Dummy channel.

Example use: To set the path trace condition of J1-HP to ON, CRC-7 OFF:

> :SOURce:TELecom:DPReset: PTCondition J1H, ON, OFF

SOURce:TELecom:DPReset:PTCondition? <pttype>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>

Response: <trace> = <NR1 NUMERIC RESPONSE DATA>

0	Path trace OFF
1	Path trace ON

<crc> = <NR1 NUMERIC RESPONSE DATA>

0	CRC-7 OFF
1	CRC-7 ON

Function: Queries the setting for path trace condition for Dummy channel.

Example use: To query the path trace condition of J1-HP:

> :SOURce:TELecom:DPReset:PTCondition? J1H

< 1, 0

:SOURce:TELecom:DPReset:PTData <pttype>,<string>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>

J1H	J1-HP path trace
J1L	J1-LP path trace
J2	J2 path trace

<string> = <STRING PROGRAM DATA>

"ABCDEFG01234abc…"

The string length is 0 to 16 characters when CRC-7 is set to ON for :SOURce:TELecom:DPReset:PTCondition. However, it is 0 to 64 characters and "" is enabled when CRC-7 is set to OFF. All characters are deemed as spaces when "" is set. String is padded out with spaces when it is less than 16 and 64 characters when CRC-7 is set to ON and OFF, respectively.

Function: Sets the path trace data for Dummy channel.

Data are displayed in ASCII character string.

Example use: To set the path trace data of J1-HP to "ABc...XYZ":
> :SOURce:TELecom:DPReset:PTData J1H, “ABc … XYZ”

:SOURce:TELecom:DPReset:PTData? <pttype>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the setting for path trace data for Dummy channel.
Data are displayed in ASCII character string.
Character is converted to '?' when character data is got other than 0x20 to 0x7e.
Total 16 characters are output by prefixed with '*' at the first character when CRC is set to ON.
64 characters are output when CRC is set to OFF.
Example use: To query the path trace data of J1-HP:
> :SOURce:TELecom:DPReset:PTData? J1H
< “ABc … XYZ”

:SOURce:TELecom:DPReset:PTData2 <pttype>,<string>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>
J1H J1-HP path trace
J1L J1-LP path trace
J2 J2 path trace
<string> = < STRING PROGRAM DATA >
When CRC is set to On: “<str1>,<str2>,···,<str16>”
(2 digits in hexadecimal: 00 to FF)
When CRC is set to Off: “<str1>,<str2>, ···,<str64>”
(2 digits in hexadecimal: 00 to FF)
Example use: "41,42,43,44,45,46,47,48,49,4A"
The number of input characters is a maximum of 16 bytes as 2 digits a 1 byte in hexadecimal when CRC is set to On, while, a maximum of 64 bytes when CRC is set to Off. The input characters are valid for both alphabetical capital and small characters. When CRC is set to On, the first 1-byte is converted into CRC code, displayed * on the screen.
Function: Sets the path trace data. Sending data is output in the converted format of ASII code into 2 digits in hexadecimal.
Example use: To set J2 path trace data to “ABCDEFGHIJ”:
>:SOURce:TELecom:DPReset:PTData2 J2,"41,42,43,44,45,46,47,48,49,4A"

:SOURce:TELecom:DPReset:PTData2? <pttype>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>
J1H J1-HP path trace
J1L J1-LP path trace
J2 J2 path trace

Response: <string> = < STRING RESPONSE DATA >
When CRC is set to On: "<str1>,<str2>,···,<str16>"
(2 digits in hexadecimal: 00 to FF)
When CRC is set to Off: "<str1>,<str2>,···,<str64>"
(2 digits in hexadecimal: 00 to FF)

Function: Queries the setting for path trace data. Data is output in the converted format of ASCII code into 2 digits in hexadecimal. When CRC is set to On, the first 1-byte character is output ** and the remaining 15 bytes ones are output in 2 digits format of hexadecimal. When CRC is set to Off, 64-byte amount in hexadecimal is output.

Example use: To query J2 path trace data of the MP1570A in setting status of "ABCDEFGHIJ":
When CRC is set to Off:
>:SOURce:TELecom:DPReset:PTData2? J2
<"41,42,43,44,45,46,47,48,49,4A,20,20,20,20,20,20,···,20"
.....Spaces on the screen: 54-byte amount
When CRC is set to On:
>:SOURce:TELecom:DPReset:PTData2? J2
<"**,42,43,44,45,46,47,48,49,4A,20,20,20,20,20,20"
..... Spaces on the screen

:SOURce:TELecom:DPReset:MPAYload:PAYLoad1 <data>

Parameter: <data> = <CHARACTER PROGRAM DATA>
PRBS11
PRBS15
ALL0
ALL1

Function: Sets the first payload pattern except for measurement channel (Mixed channel).

Example use: To set the payload pattern of Mixed Payload1 to ALL0:
> :SOURce:TELecom:DPReset:MPAYload:PAYLoad1 ALL0

:SOURce:TELecom:DPReset:MPAYload:PAYLoad1?

Response: <data> = <CHARACTER RESPONSE DATA>

Function: Queries the first payload pattern except for measurement channel (Mixed channel).

Example use: To query the payload pattern of Mixed Payload1:
> :SOURce:TELecom:DPReset:MPAYLoad:PAYLoad1?
< ALL0

:SOURce:TELecom:DPReset:MPAYload:PAYLoad2 <data>

Parameter: <data> = <CHARACTER PROGRAM DATA>
PRBS11
PRBS15
ALL0
ALL1

Function: Sets the second payload pattern except for measurement channel (Mixed channel).

Example use: To set the payload pattern of Mixed Payload2 to ALL0:
> :SOURce:TELecom:DPReset:MPAYload:PAYLoad2 ALL0

:SOURce:TELecom:DPReset:MPAYload:PAYLoad2?

Response: <data> = <CHARACTER RESPONSE DATA>

Function: Queries the second payload pattern except for measurement channel (Mixed channel).

Example use: To query the payload pattern of Mixed Payload2:
> :SOURce:TELecom:DPReset:MPAYload:PAYLoad2?
< ALL0

:SOURce:TELecom:DPReset:DUMMy <data>

Parameter: <data> = <CHARACTER PROGRAM DATA>
PRBS11
PRBS15
ALL0
ALL1

Function: Sets the payload pattern for Dummy channel.

Example use: To set the payload pattern of Mixed Payload2 to ALL0:
> :SOURce:TELecom:DPReset:MPAYLoad:DUMMy ALL0

:SOURce:TELecom:DPReset:DUMMy?

Response: <data> = <CHARACTER RESPONSE DATA>

Function: Queries the payload pattern for Dummy channel.

Example use: To query the payload pattern of Dummy channel:
> :SOURce:TELecom:DPReset:MPAYLoad:DUMMy?
< ALL0

:SOURce:TELecom:APRogram:DEFault

Parameter: None

Function: Initializes the APS program data.

Example use: To initialize the APS program data:
> :SOURce:TELecom: APRogram:DEFault

:SOURce:TELecom:APRogram:CAPTured

Parameter: None
Function: Loads the Capture data of the Analyze screen.
Example use: To load the Capture data of the Analyze screen:
> :SOURce:TELecom:APRogram:CAPTured

:SOURce:TELecom:APRogram:COPY <destno>,<source1>,<source2>

Parameter: <destno> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Copy from No.
<source1> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Starting copy to No.
<source2> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Ending copy to No.
Function: Copies the localized edit data (data related to No.) of the APS program data.
Example use: To copy the APS program data in the No60 line on the screen from No5 to No1017 to
> :SOURce:TELecom:APRogram:COPY 60, 5, 10

:SOURce:TELecom:APRogram:MSPMessages:REQuest <no>,<request>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 64 No.

<request> = <CHARACTER PROGRAM DATA>

(G.783)

NREQ	No request	(0000)
DNR	Do not revert	(0001)
RREQ	Reverse request	(0010)
UUS3	Unused	(0011)
EXER	Exercise	(0100)
UUS5	Unused	(0101)
WTR	Wait to restore	(0110)
UUS7	Unused	(0111)
MSW	Manual switch	(1000)
UUS9	Unused	(1001)
SDLP	Signal degrade low priority	(1010)
SDHP	Signal degrade high priority	(1011)
SFLP	Signal fall low priority	(1100)
SFHP	Signal fall high priority	(1101)
FSW	Forced switch	(1110)
LOPR	Locked of protection	(1111)

(G.841)

NR	NR	(0000)
RRR	RR-R	(0001)
RRS	RR-S	(0010)
EXERR	EXER-R	(0011)
EXERS	EXER-S	(0100)
WTR	WTR	(0101)
MSR	MS-R	(0110)
MSS	MS-S	(0111)
SDR	SD-R	(1000)
SDS	SD-S	(1001)
SDP	SD-P	(1010)
SFR	SF-R	(1011)
SFS	SF-S	(1100)
FSR	FS-R	(1101)
FSS	FS-S	(1110)
LPS	LP-S	(1111)
SFP	SF-P	(1111)

Function: Sets K1 (1 to 4 bit) byte. (Plain language type)

Example use: To set No. 2 K1 (1 to 4 bit) to ".1011".

> :SOURce:TELecom:APRogram:MSPMessages:REQuest 2, SF-R

:SOURce:TELecom:APRogram:MSPMessages:REQuest? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>

Response: <request> = <CHARACTER RESPONSE DATA>

* The response mnemonic differs between G. 783 and G. 841 recommendations.

(G.783)

1 1 1 1 LOPR

(G.841)

1 1 1 1 LPS or SFP

Function: Queries K1 (1 to 4 bit) byte. (Plain language type)

Example use: To query the plain language of No. 2 K1 (1 to 4 bit).

> :SOURce:TELecom:APRogram:MSPMessages:REQuest? 2

< SF-R

:SOURce:TELecom:APRogram:MSPMessages:CHANnel <no>,<mspch>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 64 No.

<mspch> = <CHARACTER PROGRAM DATA>

(G.783)

NCH	Null channel	(0000)
WC1	Working channel1	(0001)
WC2	Working channel2	(0010)
WC3	Working channel3	(0011)
WC4	Working channel4	(0100)
WC5	Working channel5	(0101)
WC6	Working channel6	(0110)
WC7	Working channel7	(0111)
WC8	Working channel8	(1000)
WC9	Working channel9	(1001)
WC10	Working channel10	(1010)
WC11	Working channel11	(1011)
WC12	Working channel12	(1100)
WC13	Working channel13	(1101)
WC14	Working channel14	(1110)
ETCH	Extra trafic channel	(1111)

(G.841)

0 to 15

Function: Sets K1 (5 to 8 bit) byte. (Plain language type)

Example use: To set No. 5 K1 (5 to 8 bit) to "1110".

> :SOURce:TELecom:APRogram:MSPMessages:CHANnel 5, WC14

:SOURce:TELecom:APRogram:MSPMessages:CHANnel? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <mspch> = <CHARACTER RESPONSE DATA>
* Recommendation
The plain language of response varies by the ITU-T G.783 or G.841.
Function: Queries K1 (5 to 8 bit) byte. (Plain language type)
Example use: To query the plain language of No. 5 K1 (5 to 8 bit).
> :SOURce:TELecom:APRogram:MSPMessages:CHANnel? 5
< WC14

:SOURce:TELecom:APRogram:MSPMessages:BRIDge <no>,<bridge>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<bridge> = <CHARACTER PROGRAM DATA>
(G.783)

NCH	Null channel	(0000)
WC1	Working channel1	(0001)
WC2	Working channel2	(0010)
WC3	Working channel3	(0011)
WC4	Working channel4	(0100)
WC5	Working channel5	(0101)
WC6	Working channel6	(0110)
WC7	Working channel7	(0111)
WC8	Working channel8	(1000)
WC9	Working channel9	(1001)
WC10	Working channel10	(1010)
WC11	Working channel11	(1011)
WC12	Working channel12	(1100)
WC13	Working channel13	(1101)
WC14	Working channel14	(1110)
ETCH	Extra traffic channel	(1111)

(G.841)
0 to 15
Function: Sets K2 (1 to 4 bit) byte. (Plain language type)
Example use: To set No. 18 K2 (1 to 4 bit) to "0010".
> :SOURce:TELecom:APRogram:MSPMessages:BRIDge 18, WC2

:SOURce:TELecom:APRogram:MSPMessages:BRIDge? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <bridge> = <CHARACTER RESPONSE DATA>
* Recommendation
The plain language of response varies by the ITU-T G.783 or G.841.
Function: Queries K2 (1 to 4 bit)byte. (Plain language type)

Example use: To query the plain language of No. 18 K2 (1 to 4 bit).
> :SOURce:TELecom:APRogram:MSPMessages:BRIDge? 18
< WC2

:SOURce:TELecom:APRogram:MSPMessages:ARCHitect <no>,<arch>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<arch> = <CHARCTER PROGRAM DATA>
(G.783)

OPOA	1+1 architecture(0)
OCNA	1:n architecture(1)

(G.841)

SHORT	0
LONG	1

Function: Sets K2 (5 bit)byte. (Plain language type)
Example use: To set No. 63 K2 (5 bit) to "1".
> :SOURce:TELecom:APRogram:MSPMessages:ARCHitect 63, LONG

:SOURce:TELecom:APRogram:MSPMessages:ARCHitect? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <arch> = <CHARACTER RESPONSE DATA>
* Recommendation
The plain language of response varies by the ITU-T G.783 or G.841.
Function: Queries K2 (5 bit) byte. (Plain language type)
Example use: To query the plain language of No. 63 K2 (5 bit).
> :SOURce:TELecom:APRogram:MSPMessages:ARCHitect? 63
< LONG

:SOURce:TELecom:APRogram:MSPMessages:REServed <no>,<res>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<res> = <CHARCTER PROGRAM DATA>

Idle	000
Bridged	001
Br&Sw	010
Reserved011	011
Reserved100	100
Reserved101	101
MS-RDI	110
MS-AIS	111

Function: Sets K2 (6 to 8 bit) byte. (Plain language type)
Example use: To set No. 8 K2 (6 to 8 bit) to MS-AIS.
> :SOURce:TELecom:APRogram:MSPMessages:REServed 8, MS-AIS

:SOURce:TELecom:APRogram:MSPMessages:REServed? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <arch> = <CHARACTER RESPONSE DATA>
Function: Queries K2 (6 to 8 bit) byte. (Plain language type)
Example use: To query the plain language of No. 8 K2 (6 to 8 bit).
> :SOURce:TELecom:APRogram:MSPMessages:REServed? 8
< MS-AIS

:SOURce:TELecom:APRogram:MSPBits:REQuest <no>,<request>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<request> = <STRING PROGRAM DATA>
“0000”to“1111”
Function: Sets K1 (1 to 4 bit) byte. (Bit type)
Example use: To set No. 2 K1 (1 to 4 bit) to "1011".
> :SOURce:TELecom:APRogram:MSPBits:REQuest 2, "1011"

:SOURce:TELecom:APRogram:MSPBits:REQuest? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <request> = <STRING RESPONSE DATA>
Function: Queries K1 (1 to 4 bit) byte. (Bit type)
Example use: To query the bit of No. 2 K1 (1 to 4 bit).
> :SOURce:TELecom:APRogram:MSPBits:REQuest? 2
< "1011"

:SOURce:TELecom:APRogram:MSPBits:CHANnel <no>,<mspch>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<mspch> = <STRING PROGRAM DATA>
“0000” to “1111”
Function: Sets K1 (5 to 8 bit) byte. (Bit type)
Example use: To set No. 5 K1 (5 to 8 bit) to "1110".
> :SOURce:TELecom:APRogram:MSPBits:CHANnel 5, “1110”

:SOURce:TELecom:APRogram:MSPBits:CHANnel? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <mspch> = <STRING RESPONSE DATA>
Function: Queries K1 (5 to 8 bit) byte. (Bit type)
Example use: To query the bit of No. 5 K1 (5 to 8 bit).
> :SOURce:TELecom:APRogram:MSPBits:CHANnel? 5
< “1110”

:SOURce:TELecom:APRogram:MSPBits:BRIDge <no>,<bridge>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1to64 No.
<bridge> = <STRING PROGRAM DATA>
"0000" to "1111"
Function: Sets K2 (1 to 4 bit) byte. (Bit type)
Example use: To set No. 18 K2 (1 to 4 bit) to "0010".
> :SOURce:TELecom:APRogram:MSPBits:BRIDge 18, "0010"

:SOURce:TELecom:APRogram:MSPBits:BRIDge? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <bridge> = <STRING RESPONSE DATA>
Function: Queries K2 (1 to 4 bit) byte. (Bit type)
Example use: To query the bit of No. 18 K2 (1 to 4 bit).
> :SOURce:TELecom:APRogram:MSPBits:BRIDge? 18
< "0010"

:SOURce:TELecom:APRogram:MSPBits:ARCHitect <no>,<arch>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<arch> = <STRING PROGRAM DATA>
"0"to"1"
Function: Sets K2 (5 bit) byte. (Bit type)
Example use: To set No. 63 K2 (5 bit) to "1".
> :SOURce:TELecom:APRogram:MSPBits:ARCHitect 63, "1"

:SOURce:TELecom:APRogram:MSPBits:ARCHitect? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <arch> = <STRING RESPONSE DATA>
Function: Queries the setting for K2 (5 bit) byte. (Bit type)
Example use: To query the bit of No. 63 K2 (5 bit).
> :SOURce:TELecom:APRogram:MSPBits:ARCHitect? 63
< "1"

:SOURce:TELecom:APRogram:MSPBits:REServed <no>,<res>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<res> = <STRING PROGRAM DATA>
"000" to "111"
Function: Sets K2 (6 to 8 bit) byte. (Bit type)
Example use: To set No. 32 k2 (6 to 8 bit) to "101".
> :SOURce:TELecom:APRogram:MSPBits:REServed 32, "101"

:SOURce:TELecom:APRogram:MSPBits:REServed? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <res> = <STRING RESPONSE DATA>
Function: Queries K2 (6 to 8 bit) byte. (Bit type)
Example use: To query the bit of No. 32 K2 (6 to 8 bit).
> :SOURce:TELecom:APRogram:MSPBits:REServed? 32
< "101"

:SOURce:TELecom:APRogram:FRAMe <no>,<frame>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1to64 No.
<frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Frame
Function: Sets the counts of frame.
Example use: To set No. 20 Frame to 5000.
> :SOURce:TELecom:APRogram:FRAMe 20, 5000

:SOURce:TELecom:APRogram:FRAMe? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <frame> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for Frame.
Example use: To query the No. 20 Frame.
> :SOURce:TELecom:APRogram:FRAMe? 20
< 5000

:SOURce:TELecom:APRogram:PROGram <no>,<K1>,<K2>,<frame>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<K1> = <STRING PROGRAM DATA>
“00” to “FF”
<K2> = <STRING PROGRAM DATA>
“00” to “FF”
<frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Frame
Function: Sets K1, K2 byte and the count of frame at the same time.
Example use: To set No. 20 Frame to 5000.
> :SOURce:TELecom:APRogram:PROGram 20, “01”, ”02”, 5000

:SOURce:TELecom:APRogram:PROGram? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <K1> = <STRING PROGRAM DATA>
<K2> = <STRING PROGRAM DATA>
<frame> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting K1,K2 byte and the count of frame.

Example use: To query the No. 20 Frame.
> :SOURce:TELecom:APRogram:PROGram? 20
< “01”, “02”, 5000

:SOURce:TELecom:OHPReset:SOHPattern <brate>,<numeric>,<sohpoint>, string>
:SOURce:TELecom:OHPReset:TOHPattern <brate>,<numeric>,<tohpoint>,<string>

Parameter: <brate> = <CHARACTER PROGRAM DATA>

M9953	9953Mbit/s
M2488	2488Mbit/s
M622	622Mbit/s
M156	156Mbit/s
M52	52Mbit/s

<numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 64	Step value: 1 (at 9953M)
1 to 16	Step value: 1 (at 2488M)
1 to 4	Step value: 1 (at 622M)
1	Step value: 1 (other than above)

<tohpoint> = <CHARACTER PROGRAM DATA>
(SDH)

A11	A12	A13	A21	A22	A23	J01 Z0	X18	X19
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

(SONET)

A11	A12	A13	A21	A22	A23	J0 Z01	Z02	Z03
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

(Refer to Appendix D of MP1570A operation manual Vol.1.)

<string> = <STRING PROGRAM DATA>

"00000000" to "11111111" (Binary type)

Function: Sets the SOH (TOH) preset data of the send signal.

Restriction: Invalid in the following case:

- When <M9953> is set while the 2.5G/10G unit is not installed.
- When <M2488> is set while the 2.5G unit is not installed.
- When <M622> is set while the 622M type interface unit is not installed.
- When both the 156M type interface unit and the 2/8/34/139/156M (CMI) unit are not installed.
- When <M156> is set:
- When <M52> is set while the 1.5/45/52M unit is not installed.
- When <brate> is M622, <numeric> is other than 3, while <M1> is set.
- When <brate> is M622, <numeric> is 3, while <Z23> is set.

Example use: To set the preset data of 622M, SOH CH#4, SOH as follows:

All= 10101011

> :SOURce:TELecom:OHPReset:SOHPattern M622,4,All,"10101011"

:SOURce:TELecom:OHPReset:SOHPattern? <brate>, <numeric>, <tohpoint>
:SOURce:TELecom:OHPReset:TOHPattern? <brate>, <numeric>, <tohpoint>

Parameter: <brate> = <CHARACTER PROGRAM DATA>

<numeric> = <DECIMAL NUMERIC PROGRAM DATA>

<tohpoint> = <CHARACTER PROGRAM DATA>

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the setting for SOH[TOH] preset data of the send signal.

Example use: To query the preset data of M622, SOH CH#4, SOH All:
< :SOURce:TELecom:OHPReset:SOHPattern? M622,4,All
> "10101011"

:SOURce:TELecom:OHPReset:SSMessage <brate>, <string>

Parameter: <brate> = <CHARACTER PROGRAM DATA>

M9953	9953Mbit/s
M2488	2488Mbit/s
M622	622Mbit/s
M156	156Mbit/s
M52	52Mbit/s

<string> = <STRING PROGRAM DATA>
Plain language can be set for S1 (b5 - 8).
(SDH)

"Quality unknown"	(0000)
"G.811"	(0010)
"G.812 transit"	(0100)
"G.812 local"	(1000)
"SETS"	(1011)
"Don not use for Sync."	(1111)

(SONET)

"Synchronized Traceability Unknown"	(0000)
"STU"	(0000)
"Stratum 1 Traceable"	(0001)
"PRS"	(0001)
"Stratum 2 Traceable"	(0111)
"ST2"	(0111)
"Stratum 3 Traceable"	(1010)
"ST3"	(1010)
"SONET Minimum Clock Traceable	(1100)
"SMC"	(1100)
"Reserved"	(1110)
"RES"	(1110)
"Don't USE for Synchronization"	(1111)
"DUS"	(1111)

The above strings cannot be abbreviated.

Function: Sets the S1 data of SOH preset data for the send signal.
(Plain language type)

Restriction: Invalid in the following case:
- When <M9953> is set while the 2.5G/10G unit is not installed.
- When <M2488> is set while the 2.5G unit is not installed.
- When <M622> is set while the 622M type interface unit is not installed.

- When both the 156M type interface unit and the 2/8/34/139/156M (CMI) unit are not installed. When <M156> is set:
- When <M52> is set while the 1.5/45/52M unit is not installed.

Example use: To set the S1 preset data of 622M to "Quality unknown"
in plain language:
> :SOURce:TELecom:OHPReset:SSMessage M622,"Quality unknown"

:SOURce:TELecom:OHPReset:SSMessage? <brate>

Parameter: <brate> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the S1 plain language data of SOH preset data for the send signal.
Example use: To query the S1 preset data of 622M:
> :SOURce:TELecom:OHPReset:SSMessage? M622
< "Quality unknown"

:SOURce:TELecom:OHPReset:POHPattern <pohtype>, <pohpoint>, <string>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>
(SDH)
VC4 POH VC4 pattern
VC3 POH VC3 pattern
VC1 POH VC1 pattern
(SONET)
STS3 POH STS3 pattern
STS1 POH STS1 pattern
VT POH VT pattern
<pohpoint> = <CHARACTER PROGRAM DATA>
(SDH) J1,C2,G1,F2,H4,F3,K3,N1,V5,J2,N2,K4
(SONET) J1,C2,G1,F2,H4,Z3,Z4,Z5,V5,J2,Z6,Z7
<string> = <STRING PROGRAM DATA>
"00"to"FF","**"
Function: Sets the POH preset data of the send signal.
Restriction: Invalid in the following case:
- When <"**"> is set while <pohpoint> = <V5> is false.
Example use: The preset data of POH VC4 is set as follows:
G1 byte is “AB”. (Hex)
> :SOURce:TELecom:OHPReset:POHPattern VC3,G1,"AB"

:SOURce:TELecom:OHPReset:POHPattern? <pohtype>, <pohpoint>

Parameter: <type> = <CHARACTER PROGRAM DATA>
<point> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>

Function: Queries the setting for POH preset data of the send signal.
<string> is displayed in hexadecimal.
"_" is displayed if the combination is illegal.

Example use: Queries the preset data of G1 for POH VC3.
< :SOURce:TELecom:OHPReset:POHPattern? VC3,G1
> "AB"

:SOURce:TELecom:OHPReset:SLABel <pohtype>, <string>
:SOURce:TELecom:OHPReset:PLABel <pohtype>, <string>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>
(SDH)

VC4	POH VC4 pattern
VC3	POH VC3 pattern

(SONET)

STS3	POH STS3 pattern
STS1	POH STS1 pattern

<string> = <STRING PROGRAM DATA>
Plain language can be set for C2 (b1 - 8).
(SDH)

"Unequipped"	"UNEQ"	(0000 0000)
"Equipped-non-specific"	"non-specific"	(0000 0001)
"TUG structure"	"TUG"	(0000 0010)
"Locked TU"	"Locked TU"	(0000 0011)
"Async. 34M or 45M(C-3)"	"34M" or "45M"	(0000 0100)
"Async. 139M(C-4)"	"139M"	(0001 0010)
"ATM mapping"	"ATM"	(0001 0011)
"MAN(DQDB)mapping"	"MAN" or "DQDB"	(0001 0100)
"FDDI mapping"	"FDDI"	(0001 0101)
"O.181 mapping"	"O.181"	(1111 1110)
"VC-AIS"	"VC-AIS"	(1111 1111)

(SONET)

"Unequipped"	"UNEQ"	(0000 0000)
"Equipped-non-specific"	"non-specific"	(0000 0001)
"VT structure"	"VT"	(0000 0010)
"Locked VT"	"Locked VT"	(0000 0011)
"Async. Mapping DS3"	"DS3"	(0000 0100)
"Async. Mapping DS4NA"	"DS4NA"	(0001 0010)
"Mapping for ATM"	"ATM"	(0001 0011)
"Mapping for DQDB"	"MAN" or "DQDB"	(0001 0100)
"Async. Mapping FDDI"	"FDDI"	(0001 0101)
"Unused"	"UNUSED"	(1111 1110)
"AIS-P"	"AIS-P"	(1111 1111)

* abbreviated form at right

Function: Sets the C2 data of POH preset data for the send signal.
(Plain language type)
Example use: To set the preset data of POH VC3 C2 as follows:
> :SOURce:TELecom:OHPReset:SLABel VC3,"Unequipped"

:SOURce:TELecom:OHPReset:SLABel? <pohtype>
:SOURce:TELecom:OHPReset:PLABel? <pohtype>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the C2 plain language data of POH preset data for the send signal.
Example use: To query the C2 plain language data of POH VC3:
> :SOURce:TELecom:OHPReset:SLABel? VC3
< "Unequipped"

:SOURce:TELecom:OHPReset:VLABel <string>

Parameter: <string> = <STRING PROGRAM DATA>
Plain language can be set for V5 (b6 - 8).
(SDH)

"Unequipped"	"UNEQ"	(000)
"Unequipped-non-specific"	"non-specific"	(001)
"Asynchronous"	"Aysnc"	(010)
"Bitsynchronous"	"Bitsync"	(011)
"Bytesynchronous"	"Bytesync"	(100)
"Reserved"	"Reserved"	(101)
"O.181 mapping"	"O.181	(110)
"VC-AIS"	"VC-AIS"	(111)

(SONET)

"Unequipped"	"UNEQ"	(000)
"Unequipped-non-specific"	"Nonspecific"	(001)
"Asynchronous"	"Aysnc"	(010)
"Bitsynchronous"	"Bitsync"	(011)
"Bytesynchronous"	"Bytesync"	(100)
"Reserved"	"Reserved101"	(101)
"Reserved"	"Reserved110"	(110)
"VC-AIS"	"VC-AIS"	(111)

Function: Sets the V5 data of POH preset data for the send signal.
Example use: To set the preset data of POH V5 to "Unequipped":
> :SOURce:TELecom:OHPReset:VLABel "Unequipped"

:SOURce:TELecom:OHPReset:VLABel?

Response: <string> = <STRING RESPONSE DATA>
Function: Queries the print data in plain language of POH V5.
Example use: > :SOURce:TELecom:OHPReset:VLABel?
< "Unequipped"

:SOURce:TELecom:OHPReset:GLABel <pohtype>, <string>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>

(SDH)

VC4	POH VC4 pattern
VC3	POH VC3 pattern

(SONET)

STS3	POH STS3 pattern
STS1	POH STS1 pattern

<string> = <STRING PROGRAM DATA>

Plain language can be set for G1 (b5 - 7).

"No remote defect000"	(000)
"No remote defect001"	(001)
"Remote payload defect"	(010)
"No remote defect011"	(011)
"Remote defect100"	(100)
"Remote server defect"	(101)
"Remote connectivity defect"	(110)
"Remote defect111"	(111)

Function: Sets the G1 data of POH preset data for the send signal. (Plain language type)

Example use: To set the preset data of POH VC3 G1 to 101:

> :SOURce:TELecom:OHPReset:GLABel VC3,"Remote server defect"

:SOURce:TELecom:OHPReset:GLABel? <pohtype>

Parameter: <pohtype> = <CHARACTER PROGRAM DATA>

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the plain language data of G1 (bit 5 to 7) of POH preset data for the send signal.

Example use: To query the preset data in plain language of G1 for POH VC3:

> :SOURce:TELecom:OHPReset:GLABel? VC3

< "Remote server defect"

:SOURce:TELecom:OHPReset:KLABel <string>
:SOURce:TELecom:OHPReset:ZLABel <string>

Parameter: <string> = <STRING PROGRAM DATA>

Plain language can be set for K4 (b5 - 7) and Z7 (b 5 - 7).

"No remote defect000"	(000)
"No remote defect001"	(001)
"Remote payload defect"	(010)
"No remote defect011"	(011)
"Remote defect100"	(100)
"Remote server defect"	(101)
"Remote connectivity defect"	(110)
"Remote defect111"	(111)

Function: Sets the K4 and Z7 data of POH preset data for the send signal. (Plain language type)
Example use: To set the preset data of POH K4 to 110:
> :SOURce:TELecom:OHPReset:KLABel "Remote connentivity defect"

:SOURce:TELecom:OHPReset:KLABel?
:SOURce:TELecom:OHPReset:ZLABel?

Response: <string> = <STRING RESPONSE DATA>
Function: Queries the plain language data of K4 and Z7 of POH preset data for the send signal.
Example use: To query the preset data in plain language of POH K4:
> :SOURce:TELecom:OHPReset:KLABel?
< "Remote connentivity defect"

:SOURce:TELecom:OHPReset:DEFault

Parameter: None
Function: Initialize the OH preset data of the send signal.
Example use: > :SOURce:TELecom:OHPReset:DEFault

:SOURce:TELecom:OHPReset:PTCondition <pttype>, <trace>, <crc>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>

J0	J0 path trace
J1H	J1-HP path trace
J1L	J1-LP path trace
J2	J2 path trace

<trace> = <BOOLEAN PROGRAM DATA>

OFF or 0	Path trace OFF
ON or 1	Path trace ON

<crc> = <BOOLEAN PROGRAM DATA>

OFF or 0	CRC-7 OFF
ON or 1	CRC-7 ON

Function: Sets the path trace condition.
Example use: To set the path trace condition of J0 as follows:
Path trace ON, CRC-7 OFF
> :SOURce:TELecom:OHPReset:PTCondition J0,ON,OFF

:SOURce:TELecom:OHPReset:PTCondition? <pttype>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>
Response: <trace> = <NR1 NUMERIC RESPONSE DATA>
0 or 1
<crc> = <NR1 NUMERIC RESPONSE DATA>
0 or 1
Function: Queries the setting for path trace condition.

Example use: To query the path trace condition of J0:
> :SOURce:TELecom:OHPReset:PTCondition? J0
< 1,0

:SOURce:TELecom:OHPReset:PTData <pttype>, <string>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>
J0 J0 path trace
J1H J1-HP path trace
J1L J1-LP path trace
J2 J2 path trace
<string> = <STRING PROGRAM DATA>
<pttype> is 16 characters when CRC-7 is set to ON for :SOURce:TELecom:OHPReset:PTCondition. However, <pttype> is 64 characters when CRC-7 is set to OFF. The first character is converted to the CRC code when CRC-7 is set to ON.

Function: Sets the path trace data. Data are displayed in ASCII character string.

Example use: To set the path trace data of J0 as follows:
"ABc ・・・ XYZ"
> :SOURce:TELecom:OHPReset:PTData J0,"ABc ・・・ XYZ"

:SOURce:TELecom:OHPReset:PTData? <pttype>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the setting for path trace data.
Total 16 characters are output by prefixed with '*' at the first character when CRC is set to ON.
Character is converted to '?' when character data is got other than 0x20 to 0x7e.
64 characters are output when CRC is set to OFF.

Example use: To query the path trace data of J0:
> :SOURce:TELecom:OHPReset:PTData? J0
< "ABc ・・・ XYZ"

:SOURce:TELecom:OHPReset:PTData2 <pttype>,<string>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>
J0 J0 path trace
J1H J1-HP path trace
J1L J1-LP path trace
J2 J2 path trace
<string> = < STRING PROGRAM DATA >
When CRC is set to On: “<str1>,<str2>,…,<str16>”
(2 digits in hexadecimal: 00 to FF)
When CRC is set to Off: “<str1>,<str2>, …,<str64>”
(2 digits in hexadecimal: 00 to FF)

Example use: "41,42,43,44,45,46,47,48,49,4A"
The number of input characters is a maximum of 16 bytes as 2 digits a 1 byte in hexadecimal when CRC is set to On, while, a maximum of 64 bytes when CRC is set to Off. The input characters are valid for both alphabetical capital and small characters. When CRC is set to On, the first 1-byte is converted into CRC code, displayed * on the screen.

Function: Sets the path trace data. Sending data is output in the converted format of ASII code into 2 digits in hexadecimal.

Example use: To set J0 path trace data to "ABCDEFGHIJ":
>:SOURce:TELecom:OHPReset:PTData2 J0,"41,42,43,44,45,46,47,48,49,4A"

:SOURce:TELecom:OHPReset:PTData2? <pttype>

Parameter: <pttype> = <CHARACTER PROGRAM DATA>

J0	J0 path trace
J1H	J1-HP path trace
J1L	J1-LP path trace
J2	J2 path trace

Response: <string> = < STRING RESPONSE DATA >

When CRC is set to On:	"<str1>,<str2>,···,<str16>" (2 digits in hexadecimal: 00 to FF)
When CRC is set to Off:	"<str1>,<str2>,···,<str64>" (2 digits in hexadecimal: 00 to FF)

Function: Queries the setting for path trace data. Data is output in the converted format of ASCII code into 2 digits in hexadecimal. When CRC is set to On, the first 1-byte character is output ** and the remaining 15 bytes ones are output in 2 digits format of hexadecimal. When CRC is set to Off, 64-byte amount in hexadecimal is output.

Example use: To query J0 path trace data of the MP1570A in setting status of "ABCDEFGHIJ":
When CRC is set to Off:
>:SOURce:TELecom:OHPReset:PTData2? J0
<"41,42,43,44,45,46,47,48,49,4A,20,20,20,20,20,20,···,20"
.....Spaces on the screen: 54-byte amount
When CRC is set to On:
>:SOURce:TELecom:OHPReset:PTData2? J0
<"**,42,43,44,45,46,47,48,49,4A,20,20,20,20,20,20"
.....Spaces on the screen

:SOURce:TELecom:OHPReset:DEXTernal <dcctype>

Parameter: <dcctype> = <CHARACTER PROGRAM DATA>

OFF	OFF
DRSect	D1-D3
DMSect	D4-D12

Function: Sets the external input DCC.

Example use: To set not to perform the external input DCC:
> :SOURce:TELecom:OHPReset:DEXTernal OFF

:SOURce:TELecom:OHPReset:DEXTernal?

Response: <dcctype> = <CHARACTER RESPONSE DATA>
Function: Queries the external input DCC.
Example use: > :SOURce:TELecom:OHPReset:DEXTernal?
< OFF

:SOURce:TELecom:OHCHange:SSMessage <type>,<select>,<no>,<data>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
STM1
STM0
(SONET)
STS3
STS1
<select> = <CHARACTER PROGRAM DATA>
PATTERNA PatternA (Pattern type to edit)
PATTERNB PatternB
<no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
<data> = <STRING PROGRAM DATA>
S1(bit 5 to 8)
(SDH)

“Quality unknown”	0000
“Reserved0001”	0001
“G.811”	0010
“Reserved0011”	0011
“G.812 transit”	0100
“Reserved0101”	0101
“Reserved0110”	0110
“Reserved0111”	0111
“G.812 local”	1000
“Reserved1001”	1001
“Reserved1010”	1010
“Synchronous Equipment Timing Source”	1011
“Reserved1100”	1100
“Reserved1101”	1101
“Reserved1110”	1110
“Do not use for synchronization”	1111

(SONET)

“Synchronized Traceability Unknown“	0000
“Stratum 1 Traceable“	0001
“Unused0010“	0010
“Unused0011“	0011
“Unused0100“	0100
“Unused0101“	0101
“Unused0110“	0110
“Stratum 2 Traceable“	0111
“Unused1000“	1000
“Unused1001“	1001
“Stratum 3 Traceable“	1010
“Unused1011“	1011
“SONET Minimum Clock Traceable“	1100
“Unused1101“	1101
“Reserved1110“	1110
“Do not use for synchronization“	1111

Function: Sets the S1 byte plain language data of SOH (TOH) preset data for the send signal.

Restriction: Invalid in the following case:

- When <M9953> is set while the 2.5G/10G unit is not installed.
- When <M2488> is set while the 2.5G unit is not installed.
- When <M622> is set while the 622M type interface unit is not installed.
- When both the 156M type interface unit and the 2/8/34/139/156M (CMI) unit are not installed. When <M156> is set:
- When <M52> is set while the 1.5/45/52M unit is not installed.

Example use: To set the S1 preset data in plain language of STM0 Frame Pattern B, No. 4 to "Reserved1101":

> :SOURce:TELecom:OHCHange:SSMessage STM0, PATTERNB, 4, “Reserved1101”

:SOURce:TELecom:OHCHange:SSMessage? <type>,<select>,<no>

Parameter: <type> = <CHARACTER PROGRAM DATA>
<select> = <CHARACTER PROGRAM DATA>
<no> = <DECIMAL NUMERIC PROGRAM DATA>

Response: <data> = <STRING RESPONSE DATA>

Function: Queries the S1 plain language data of SOH (TOH) preset data for the send signal.

Example use: To query the PatternB, No. 4 S1 plain language data of the STM0 frame:

> :SOURce:TELecom:OHCHange:SSMessage? STM0, PATTERNB, 4
< “Reserved1101”

:SOURce:TELecom:OHCHange:SLABel <type>,<select>,<no>,<pohtype>,<data>
:SOURce:TELecom:OHCHange:PLABel <type>,<select>,<no>,<pohtype>,<data>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
STM1
STM0
(SONET)
STS3
STS1
<select> = <CHARACTER PROGRAM DATA>
PATTERNA PatternA (Pattern type to edit)
PATTERNB PatternB
<no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
<pohtype> = <CHARACTER PROGRAM DATA>
(SDH)
VC4
VC3
(SONET)
STS3
STS1
<data> = <STRING PROGRAM DATA>
C2(bit 1 to 8)

"Unequipped"	0000 0000
"Equipped-non-specific"	0000 0001
"TUG structure"	0000 0010
"Locked TU"	0000 0011
"Async. 34M or 45M(C-3)"	0000 0100
"Async. 139M(C-4)"	0001 0010
"ATM mapping"	0001 0011
"MAN(DQDB)mapping"	0001 0100
"FDDI mapping"	0001 0101
"O.181 mapping"	1111 1110
"VC-AIS"	1111 1111

Note) All plain languages other than the above are Unused.

Function: Sets the C2 byte plain language of POH preset data for the send signal.

Example use: To set the PatternB, No. 4, VC3, C2 preset data in plain language of the STM0 frame to "Locked TU":
> :SOURce:TELecom:OHCHange:PLABel STM0, PATTERNB, 4, VC3, "Locked TU"

:SOURce:TELecom:OHCHange:SLABel? <type>,<select>,<no>,<pohtype>
:SOURce:TELecom:OHCHange:PLABel? <type>,<select>,<no>,<pohtype>

Parameter: <type> = <CHARACTER PROGRAM DATA>
<select> = <CHARACTER PROGRAM DATA>
<no> = <DECIMAL NUMERIC PROGRAM DATA>
<pohtype> = <CHARACTER PROGRAM DATA>

Response: <data> = <STRING RESPONSE DATA>

Function: Queries the C2 plain language of POH preset data for the send signal.

Example use: To query the PatternB, No. 4, VC3, C2 plain language data of the STM0 frame:
> :SOURce:TELecom:OHCHange:PLABel? STM0, PATTERNB, 4, VC3
< "Locked TU"

:SOURce:TELecom:OHCHange:VLABel <type>,<select>,<no>,<data>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
STM1
STM0
(SONET)
STS3
STS1
<select> = <CHARACTER PROGRAM DATA>

PATTERNA	PatternA	(Pattern type to edit)
PATTERNB	PatternB	

<no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
<data> = <STRING PROGRAM DATA>
V5(b5-7)

SDH	SONET	
"Unequipped"	"Unequipped"	000
"Unequipped-non-specific"	"Unequipped-non-specific"	001
"Asynchronous"	"Asynchronous"	010
"Bit synchronous"	"Bit synchronous"	011
"Byte synchronous"	"Byte synchronous"	100
"Reserved101"	"Reserved101"	101
"O.181 mapping"	"Reserved110"	110
"VC-AIS"	"AIS-V"	111

Function: Sets the V5 byte data in plain language of POH preset data for the send signal.

Example use: To set the PatternB, No. 4, V5 preset data in plain language of the STS1 frame to "AIS-V":
> :SOURce:TELecom:OHCHange:VLABel STS1, PATTERNB, 4, "AIS-V"

:SOURce:TELecom:OHCHange:VLABel? <type>,<select>,<no>

Parameter: <type> = <CHARACTER PROGRAM DATA>
<select> = <CHARACTER PROGRAM DATA>
<no> = <DECIMAL NUMERIC PROGRAM DATA>

Response: <data> = <STRING RESPONSE DATA>

Function: Queries the V5 byte plain language data of POH preset data for the send signal.

Example use: To query the PatternB, No. 4, V5 data in plain language of the STS1 frame:
> :SOURce:TELecom:OHCHange:VLABel? STS1, PATTERNB, 4
< "AIS-V"

:SOURce:TELecom:OHCHange:GLABel <type>,<select>,<no>,<pohtype>,<data>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
STM1
STM0
(SONET)
STS3
STS1
<select> = <CHARACTER PROGRAM DATA>
PATTERNA PatternA (Pattern type to edit)
PATTERNB PatternB
<no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
<pohtype> = <CHARACTER PROGRAM DATA>
(SDH)
VC4
VC3
(SONET)
STS3
STS1
<data> = <STRING PROGRAM DATA>
Plain language can be set for G1 (b5 to 7).

"No remote defect000"	(000)
"No remote defect001"	(001)
"Remote payload defect"	(010)
"No remote defect011"	(011)
"Remote defect100"	(100)
"Remote server defect"	(101)
"Remote connectivity defect"	(110)
"Remote defect111"	(111)

Note : All plain languages other than the above are Unused.

Function: Sets the G1 (Bit 5 to 7) plain language data of POH preset data for the send signal.

Example use: To set the PatternB, No. 4, VC3, G1 preset data in plain language of the STM0 frame to 101:
> :SOURce:TELecom:OHCHange:GLABel STM0, PATTERNB, 4, VC3, "Remote server defect"

:SOURce:TELecom:OHCHange:GLABel? <type>,<select>,<no>,<pohtype>

Parameter: <type> = <CHARACTER PROGRAM DATA>
<select> = <CHARACTER PROGRAM DATA>
<no> = <DECIMAL NUMERIC PROGRAM DATA>
<pohtype> = <CHARACTER PROGRAM DATA>

Response: <data> = <STRING RESPONSE DATA>

Function: Queries the G1byte (Bit 5 to 7) plain language data of POH preset data for the send signal.

Example use: To query the PatternB, No. 4, VC3, G1 plain language data of the STM0 frame:
> :SOURce:TELecom:OHCHange:GLABel? STM0, PATTERNB, 4, VC3
< "Remote server defect"

:SOURce:TELecom:OHCHange:KLABel <type>,<select>,<no>,<data>
:SOURce:TELecom:OHCHange:ZLABel <type>,<select>,<no>,<data>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
STM1
STM0
(SONET)
STS3
STS1
<select> = <CHARACTER PROGRAM DATA>

PATTERNA	PatternA	(Pattern type to edit)
PATTERNB	PatternB	

<no> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 64	Step value: 1

<data> = <STRING PROGRAM DATA>
Plain language can be set for K4 (b5 to 7).

“No remote defect000”	(000)
“No remote defect001”	(001)
“Remote payload defect”	(010)
“No remote defect011”	(011)
“Remote defect100”	(100)
“Remote server defect”	(101)
“Remote connectivity defect”	(110)
“Remote defect111”	(111)

Function: Sets the K4 byte (Bit 5 to 7) plain language data of POH preset data for the send signal.

Example use: To set the PatternB, No. 4, K4 preset data in plain language of the STS1 frame to 010:
> :SOURce:TELecom:OHCHange:KLABel STS1, PATTERNB, 4, "Remote payload defect"

:SOURce:TELecom:OHCHange:KLABel? <type>,<select>,<no>
:SOURce:TELecom:OHCHange:ZLABel? <type>,<select>,<no>

Parameter: <type> = <CHARACTER PROGRAM DATA>
<select> = <CHARACTER PROGRAM DATA>
<no> = <DECIMAL NUMERIC PROGRAM DATA>

Response: <data> = <STRING RESPONSE DATA>

Function: Queries the K4 byte (Bit 5 to 7) plain language data of POH preset data for the send signal.

Example use: To query the PatternB, No. 4, K4 plain language data of the STS1 frame:
> :SOURce:TELecom:OHCHange:KLABel? STS1, PATTERNB, 4
< "Remote payload defect"

:SOURce:TELecom:OHCHange:RECall:DEFault <type>,<select>,<no>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
STM1
STM0
(SONET)
STS3
STS1
<select> = <CHARACTER PROGRAM DATA>
PATTERNA PatternA (Pattern type to edit)
PATTERNB PatternB
<no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1

Function: Initialize the OH preset data (STM or STS) of the send signal.

Example use: To initialize the PatternA, No. 5, OH preset data of the STS3 frame:
> :SOURce:TELecom:OHCHange:RECall:DEFault STS3, PATTERNA, 5

:SOURce:TELecom:OHCHange:RECall:PRESet <brate>,<#>,<type>,<select>,<from>,<to>

Parameter: <brate> = <CHARACTER PROGRAM DATA>
M9953, M2488, M622, M156, M52
<#> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1(for 9953M)
1 to 16 Step value: 1(for 2488M)
1 to 4 Step value: 1(for 622M)
1 Step value: 1(other than the above)
<type> = <CHARACTER PROGRAM DATA>
(SDH)
STM1
STM0
(SONET)
STS3
STS1
<select> = <CHARACTER PROGRAM DATA>
PATTERNA PatternA (Pattern type to edit)
PATTERNB PatternB
<from> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
<to> = <DECIMAL NUMERIC PROGRAM DATA>
<from> to 64 Step value: 1

Function: Overwrites the value selected by the Bit rate and the channel of the SOH[TOH] preset data (set by Setup:OH preset) on the numbers from one set by From to one set by to.

Restriction: Invalid in the following case:
- When other than the preset data of 52M is written in STM0 (STS1).
- <#> cannot be set when using 52M, 156M.
- When the <to> setting exceeds <From>.
- Setting STM0 for <Type> is disabled when the Bit rate is other than 52M.
- Setting 52M for the Bit rate is disabled when <Type> is STM1.

Example use: To overwrite Bit rate 2448M, #=16 of the SOH preset data on the PatternA 5 to 15 of the STS1 frame:
> :SOURce:TELecom:OHCHange:RECall:PRESet M2448, 16, STS1, PATTERNA, 5, 15

:SOURce:TELecom:OHCHange:SOHPattern <type>, <select>,<no>,<tohpoint>, <data>

Parameter: <type> = <CHARACTER PROGRAM DATA>
STM1
STM0

<select> = <CHARACTER PROGRAM DATA>

PATTERNA	PatternA	(Pattern type to edit)
PATTERNB	PatternB	

<no> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 64 Step value: 1

<tohpoint> = <CHARACTER PROGRAM DATA>

(STM1)

A11	A12	A13	A21	A22	A23	J0	X18	X19
	X22	X23	E1	X25	X26	F1	X28	X29
D1	X32	X33	D2	X35	X36	D3	X38	X39
			K1	X55	X56	K2	X58	X59
D4	X62	X63	D5	X65	X66	D6	X68	X69
D7	X72	X73	D8	X75	X76	D9	X78	X79
D10	X82	X83	D11	X85	X86	D12	X88	X89
S1	Z11	Z12	Z21	Z22	M1	E2	X98	X99

(STM0)

A11	A21	J0
B1	E1	F1
D1	D2	D3
	K1	K2
D4	D5	D6
D7	D8	D9
D10	D11	D12
S1	Z21	E2

<data> = <STRING PROGRAM DATA>

"00000000" to "11111111"

(set in binary, displayed in hexadecimal)

Function: Sets the SOH preset data of the send signal.
<data> is displayed in binary.

Restriction: Invalid in the following case:

- <#> cannot be set when using 52M, 156M.
- When the <to> setting exceeds <From>.
- Setting STM0 for <Type> is disabled when the Bit rate is other than 52M.
- Setting 52M for the Bit rate is disabled when <Type> is STM1.

Example use: To set the A11 preset data of PatternB No. 4 for the STS1 frame to "AB":

> :SOURce:TELecom:OHCHange:SOHPattern STM1,PATTERNB, 4, A11, "10101011"

:SOURce:TELecom:OHCHange:SOHPattern? <type>, <select>,<no>,<tohpoint>

Parameter: <type> = <CHARACTER PROGRAM DATA>
<select> = <CHARACTER PROGRAM DATA>
<no> = <DECIMAL NUMERIC PROGRAM DATA>
<tohpoint> = <CHARACTER PROGRAM DATA>

Response: <data> = <STRING RESPONSE DATA>

Function: Queries the set value of SOH preset data for the send signal.

Example use: To query the setting for A11 preset data PatternB, No. 4 of STM1 frame:

> :SOURce:TELecom:OHCHange:SOHPattern? STM1,PATTERNB, 4, A11
< "10101011"

:SOURce:TELecom:OHCHange:TOHPattern <type>,<select>,<no>,<tohpoint>,<data>

Parameter: <type> = <CHARACTER PROGRAM DATA>

STS3
STS1

<select> = <CHARACTER PROGRAM DATA>

PATTERNA PatternA (Pattern type to edit
PATTERNB PatternB

<no> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 64 Step value: 1

<tohpoint> = <CHARACTER PROGRAM DATA>

(STS3)

A11	A12	A13	A21	A22	A23	J0	Z01	Z02
	X22	X23	E1	X25	X26	F1	X28	X29
D1	X32	X33	D2	X35	X36	D3	X38	X39
			K1	X55	X56	K2	X58	X59
D4	X62	X63	D5	X65	X66	D6	X68	X69
D7	X72	X73	D8	X75	X76	D9	X78	X79
D10	X82	X83	D11	X85	X86	D12	X88	X89
S1	Z11	Z12	Z21	Z22	M1	E2	X98	X99

(STS1)

A11	A21	J0
B1	E1	F1
D1	D2	D3
	K1	K2
D4	D5	D6
D7	D8	D9
D10	D11	D12
S1	Z21	E2

<data> = <STRING PROGRAM DATA>
"00000000" to "11111111"
(set in binary, displayed in hexadecimal)

Function: Sets the TOH preset data of the send signal.
<data> is displayed in binary.

Restriction: Invalid in the following case:
- <#> cannot be set when using 52M, 156M.
- When <to> setting exceeds <From>.
- Setting STM0 for <Type> is disabled when the Bit rate is other than 52M.
- Setting 52M for the Bit rate is disabled when <Type> is STM1.

Example use: To set the A11 preset data of PatternB No. 4 for the STS3 frame to "AB":
> :SOURce:TELecom:OHCHange:TOHPattern STS3, PATTERNB, 4, A11, "10101011"

:SOURce:TELecom:OHCHange:TOHPattern? <type>,<select>,<no>,<tohpoint>

Parameter: <type> = <CHARACTER PROGRAM DATA>
<select> = <CHARACTER PROGRAM DATA>
<no> = <DECIMAL NUMERIC PROGRAM DATA>
<tohpoint> = <CHARACTER PROGRAM DATA>

Response: <data> = <STRING RESPONSE DATA>

Function: Queries the set value of SOH preset data for the send signal.

Example use: To query the setting for A11 preset data PatternB, No. 4 of STS3 frame:
> :SOURce:TELecom:OHCHange:TOHPattern? STS3, PATTERNB, 4, A11
< "10101011"

:SOURce:TELecom:OHCHange:POHPattern <type>,<select>, <no>, <pohtype>, <pohpoint>, <data>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
STM1
STM0
(SONET)
STS3
STS1
<select> = <CHARACTER PROGRAM DATA>
PATTERNA PatternA (Pattern type to edit)
PATTERNB PatternB
<no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
<pohtype> = <CHARACTER PROGRAM DATA>

(SDH)

VC4	POH VC4 pattern
VC3	POH VC3 pattern
VC1	POH VC2/1 pattern

(SONET)

STS3	POH STS3 pattern
STS1	POH STS1 pattern
VT	POH VT pattern

<pohpoint> = <CHARACTER PROGRAM DATA>

(SDH)	J1	C2	G1	F2	H4	F3	K3	N1	J2	N2	K4
(SONET)	J1	C2	G1	F2	H4	Z3	Z4	Z5	J2	Z6	Z7

<data> = <STRING PROGRAM DATA>
"00"to"FF","**"

Function: Sets the POH data of STM(STS) frame.
<data> is displayed in hexadecimal.

Example use: To set the J1 preset data of PatternB, No. 4, VC4 for the STM0 frame to "AB": 9 to
> :SOURce:TELecom:OHCHange:POHPattern PATTERNB, 4, VC4, J1, "AB"

:SOURce:TELecom:OHCHange:POHPattern? <type>,<select>,<no>,<pohtype>,<pohpoint>

Parameter: <type> = <CHARACTER PROGRAM DATA>
<select> = <CHARACTER PROGRAM DATA>
<no> = <DECIMAL NUMERIC PROGRAM DATA>
<pohtype> = <CHARACTER PROGRAM DATA>
<pohpoint> = <CHARACTER PROGRAM DATA>

Response: <data> = <STRING RESPONSE DATA>

Function: Queries the POH data of STM(STS) frame.
<data> is displayed in hexadecimal.

Example use: To query the J1 preset data of PatternB, No. 4, VC4 for the STM0 frame:
> :SOURce:TELecom:OHCHange:POHPattern? STM0, PATTERNB, 4, VC4, J1
< "AB"

:SOURce:TELecom:IPPacket:RECall:DEFault

Parameter: None

Function: Overwrites the edited packet to the initialized data.

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To initialize the edited packet No.1.
> :SOURce:TELecom:IPPacket:RECall:DEFault 1

:SOURce:TELecom:IPPacket:RECall:COPY <no1>,<no2>

Parameter: <no1> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 3 Step value : 1
<no2> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 3 Step value : 1

Function: Copies the setting of the edited packet to the currently edited packet.

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.
- When the currently edited packet is specified.

Example use: To copy the setting of the packet No.2 to the packet No.3.
> :SOURce:TELecom:IPPacket:RECall:COPY 2,3

:SOURce:TELecom:IPPacket:PPACket:PROTocol <protocol>

Parameter: <protocol> = <CHARACTER PROGRAM DATA>
BIT8 8bit
BIT16 16bit

Function: Sets the protocol field value of PPP packet.

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To set the protocol field value of PPP packet to 16bit.
> :SOURce:TELecom:IPPacket:PPACket:PROTocol BIT16

:SOURce:TELecom:IPPacket:PPACket:PROTocol?

Response: <protocol> = <CHARACTER PROGRAM DATA>
Same as :SOURce:TELecom:IPPacket:PPACket:PROTocol.

Function: Queries the protocol field value of PPP packet.

Example use: > :SOURce:TELecom:IPPacket:PPACket:PROTocol?
< BIT16

:SOURce:TELecom:IPPacket:PPACket:FCS <fcs>

Parameter: <fcs> = <CHARACTER PROGRAM DATA>
BIT16 16bit
BIT32 32bit

Function: Sets the FCS field value of PPP packet.

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To set the FCS field value of PPP packet to 16bit.
> :SOURce:TELecom:IPPacket:PPACket:FCS BIT16

:SOURce:TELecom:IPPacket:PPACket:FCS?

Response: <fcs> = <CHARACTER PROGRAM DATA>
Same as :SOURce:TELecom:IPPacket:PPACket:FCS.

Function: Queries the FCS field value of PPP packet.

Example use: > :SOURce:TELecom:IPPacket:PPACket:FCS?
< BIT16

:SOURce:TELecom:IPPacket:PPACket:DATA “[<flag1>],[<adr>],[<control>],[<protocol>],[<info>],[<flag2>]”

Parameter: <flag1> = < BINARY NUMERIC PROGRAM DATA >
00000000 to 11111111 (Binary format)
<adr> = < BINARY NUMERIC PROGRAM DATA >
00000000 to 11111111 (Binary format)
<control> = < BINARY NUMERIC PROGRAM DATA >
00000000 to 11111111 (Binary format)
<protocol> = < HEX NUMERIC PROGRAM DATA>
0000 to FFFF, or 0000000 to FFFFFFFF (Hexadecimal format)
<info> = <STRING PROGRAM DATA>
IPv4 or IPv6 (ASCII format)
<flag2> = < BINARY NUMERIC PROGRAM DATA >
00000000 to 11111111 (Binary format)

* When all characters following one value are abbreviated, a comma can be omitted. Besides, when all parameters are omitted ("Parameter not allowed"), the comma can be omitted.

Function: Edits PPP packet data.
IP Packet is set to this data (information).

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To set the PPP packet data to “Control 00000011, Protocol 0021”.
> :SOURce:TELecom:IPPacket:PPACket:DATA “,,00000011,0021,,”

:SOURce:TELecom:IPPacket:PPACket:DATA?

Response: <pattern> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:PPACket:DATA.

Function: Queries the PPP packet data.

Example use: > :SOURce:TELecom:IPPacket:PPACket:DATA?
< “01111110,11111111,00000011,0021,IPv4,01111110”

:SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:HEADer [<VER>],[<IHL>],[<TOS>],[<TL>],[<ID>],[<FLAG>],[<OFFSET>],[<TTL>],[<PLOTOCOL>]”

Parameter: <STRING PROGRAM DATA>
<VER> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 15 Step value : 1
<IHL> = < DECIMAL NUMERIC PROGRAM DATA>
5 (fixed)
<TOS> = <BINARY NUMERIC PROGRAM DATA >
00000000 to 11111111 (Binary format)
<TL> = <DECIMAL NUMERIC PROGRAM DATA>
20 to 65535
<ID> =<DECIMAL NUMERIC PROGRAM DATA>
0 to 65535

<FLAG> = < BINARY NUMERIC PROGRAM DATA >
000 to 111 (Binary format)
<OFFSET> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 8191
<TTL> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 255
<PLOTOCOL> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 255

* When all characters following one value are abbreviated, a comma can be omitted.

Function: Edit a header to be inserted into the send PPP packet (when IP ver.4 is set).

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To edit the IP packet to be inserted into PPP packet to "VER 1, TOS 00000111, OFFSET 100".
> :SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:HEADer
"1,,00000111,,,,100,,"

:SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:HEADer?

Response: <VER> = <NR1 NUMERIC RESPONSE DATA>
<IHL> = <NR1 NUMERIC RESPONSE DATA>
<TOS> = < BINARY NUMERIC PROGRAM DATA >
<TL> = <NR1 NUMERIC RESPONSE DATA>
<ID> = <NR1 NUMERIC RESPONSE DATA>
<FLAG> = < BINARY NUMERIC PROGRAM DATA >
<OFFSET> = <NR1 NUMERIC RESPONSE DATA>
<TTL> = <NR1 NUMERIC RESPONSE DATA>
<PLOTOCOL> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the set value of IP packet header to be inserted into the send PPP packet. (when IP ver.4 is set.)

Example use: To query the header pattern.
> :SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:HEADer?
< "1,5,00000111,532,0,000,100,127,6"

:SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess <type>, "<adr1>, <adr2>,<adr3>,<adr4>"

Parameter: <type> = <CHARACTER PROGRAM DATA>
SOURCE
DESTIN
<adr1> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 255
<adr2> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 255

<adr3> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 255
<adr4> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 255

Function: Sets Source Address or Destination Address of the send IP packet (when IP ver.4 is set).

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To set Source Address of the send IP packet to “123.0.123.0” (when IP ver.4 is set).
> :SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess SOURCE, “123,0,123,0”

:SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess.

Response: <adr1> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess.
<adr2> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess.
<adr3> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess.
<adr4> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess.

Function: Queries the address setting of the send IP packet (when IP ver.4 is set).

Example use: To query the set value of Source Address of the send IP packet (when IP ver.4 is set).
> :SOURce:TELecom:IPPacket:IPPacket:HEADer:V4:ADDRess? SOURCE
< “123,0,123,0”

:SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:HEADer “[<VER>],[<PRI>],[<FL>],[<PL>],[<NH>],[<HL>]”

Parameter: <STRING PROGRAM DATA>
<VER> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 15
<PRI> = < BINARY NUMERIC PROGRAM DATA >
0000 to 1111 (Binary format)
<FL> = < BINARY NUMERIC PROGRAM DATA>
00000000000000000000000 to 11111111111111111111111 (Binary format)
<PL> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 65535

<NH> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 255
<HL> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 255
* When all characters following one value are abbreviated, a comma can be omitted.

Function: Edits the header of IP packet to be inserted into the send PPP packet (when IP ver.6 is set).

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To set the IP packet to be inserted into the PPP packet to "Priority 0100, Hop Limit 120".
> :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:HEADer
",0100,,,,120"

:SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:HEADer?
<pattern> = <STRING RESPONSE DATA>

Response: <VER> = <NR1 NUMERIC RESPONSE DATA>
<PRI> = < BINARY NUMERIC PROGRAM DATA >
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:HEADer.
<FL> = < BINARY NUMERIC PROGRAM DATA >
<PL> = <NR1 NUMERIC RESPONSE DATA>
<NH> = <NR1 NUMERIC RESPONSE DATA>
<HL> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the set value of IP packet to be inserted into the send PPP packet (when IP ver.6 is set).

Example use: To query the header pattern.
> :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:HEADer?
< "6,0100,000000000000000000000000,512,6,120"

:SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess
<type>, "<adr1>,<adr2>,<adr3>,<adr4>,<adr5>,<adr6>,<adr7>,<adr8>"

Parameter: <type> = <CHARACTER PROGRAM DATA>
SOURCE
DESTIN
<adr1> = <STRING PROGRAM DATA>
0000 to FFFF (Hexadecimal format)
<adr2> = <STRING PROGRAM DATA>
0000 to FFFF (Hexadecimal format)
<adr3> = <STRING PROGRAM DATA>
0000 to FFFF (Hexadecimal format)
<adr4> = <STRING PROGRAM DATA>
0000 to FFFF (Hexadecimal format)

<adr5> = <STRING PROGRAM DATA>
0000 to FFFF (Hexadecimal format)
<adr6> = <STRING PROGRAM DATA>
0000 to FFFF (Hexadecimal format)
<adr7> = <STRING PROGRAM DATA>
0000 to FFFF (Hexadecimal format)
<adr8> = <STRING PROGRAM DATA>
0000 to FFFF (Hexadecimal format)

Function: Sets Source Address or Destination Address of the send IP packet (when IP ver.6 is set).

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To set Source Address of the send IP packet to "0.0.0.0.0.0.0.1" (when IP ver.6 is set).

```
> :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess
    SOURCE, "0000,0000,0000,0000,0000,0000,0000,0001"
```

:SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess.

Response: <adr1> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess.
<adr2> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess.
<adr3> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess.
<adr4> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess.
<adr5> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess.
<adr6> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess.
<adr7> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess.
<adr8> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess.

Function: Queries the address setting of the send IP packet (when IP ver.6 is set).

Example use: To query the set value of Source Address of the send IP packet (when IP ver.6 is set).

```
> :SOURce:TELecom:IPPacket:IPPacket:HEADer:V6:ADDRess?
    SOURCE
<   "0000,0000,0000,0000,0000,0000,0000,0001"
```

:SOURce:TELecom:IPPacket:IPPacket:INFormation:USERprogram <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

USER	User program
ALL1	All 1
ALL0	All 0
SPRBS7	Single PRBS7

Function: Sets the information type of PPP packet.

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To set the information type of PPP packet to All 0.
> :SOURce:TELecom:IPPacket:IPPacket:INFormation:USERprogram ALL0

:SOURce:TELecom:IPPacket:IPPacket:INFormation:USERprogram?

Response: <type> = <CHARACTER RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:INFormation:USERprogram.

Function: Queries the information type of PPP packet.

Example use: To query the information type of PPP packet.
> :SOURce:TELecom:IPPacket:IPPacket:INFormation:USERprogram?
< ALL0

:SOURce:TELecom:IPPacket:IPPacket:INFormation:PATTern <start>,<string>

Parameter: <start> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 65535 (setting start position (byte))
<string> = <STRING PROGRAM DATA>
"00, 00, ⋯, 00" in range of "00" to "FF"
(Specify the number of the bytes to be set in hexadecimal. Up to 64 bytes can be set.)

Function: Sets 65535 bytes payload pattern when Information type is set to User program.

Restriction: Invalid in the following case:
- When the options 13 and 14 of MP1570A are not installed.

Example use: To set four bytes from payload No.3 to "10, 01, 01, 10".
> :SOURce:TELecom:IPPacket:IPPacket:INFormation:PATTern 3, "10, 01, 01, 10"

:SOURce:TELecom:IPPacket:IPPacket:INFormation:PATTern? <start>,<stop>

Parameter: <start>, <stop>= <DECIMAL NUMERIC PROGRAM DATA>
1 to 65535 (output start position (byte))
Output start position to 65535 (output end position (byte))

Response: <string> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:IPPacket:IPPacket:INFormation:PATTern.

Function: Queries 65535 bytes payload pattern.

Example use: > :SOURce:TELecom:IPPacket:IPPacket:INFormation:PATTern? 3, 10
< "10,01,01,10,00,00,00,00"
* The response of a byte which was not set is 0x00 (initial value).

:SOURce:TELecom:FMEMory:BRATe <brate>

Parameter: <brate> = <CHARACTER PROGRAM DATA>

M9953	9953M
M2488	2488M
M622	622M
M156	156M
M52	52M

Function: Determines the frame format set by the Frame memory.
Restriction: Invalid in the following case:
- When the Option 13 is not installed.
・When the unit option 01Frame memory/capture exists while the option is not installed.
・When the bit rate that correspond to the setting is not set.

Example use: To set the frame format to 9953M:
> :SOURce:TELecom:FMEMory:BRATe M9953

:SOURce:TELecom:FMEMory:BRATe?

Response: <brate> = <CHARACTER RESPONSE DATA>
Function: Queries the frame format set by the Frame memory.
Example use: To query the frame format set by the Frame memory:
> :SOURce:TELecom:FMEMory:BRATe?
< M9953

:SOURce:TELecom:FMEMory:B3ADdition <mode>

Parameter: <mode> = <BOOLEAN PROGRAM DATA>

OFF or 0	B3 automatic addition OFF
ON or 1	B3 automatic addition ON

Function: Sets whether or not to perform the automatic addition (hardware) of B3.
Restriction: Invalid in the following case:
- When the Option 13 is not installed.
- When the unit option 01Frame memory/capture exists while the option is not installed.
- OFF cannot be set when any one of settings of <trace> of :SOURce:TELecom:OHPReset:PTCondition is set to ON.

Example use: To set to perform the automatic addition of B3:
> :SOURce:TELecom:FMEMory:B3ADdition ON

:SOURce:TELecom:FMEMory:B3ADdition?

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0 B3 automatic addition OFF
1 B3 automatic addition ON

Function: Queries the setting value whether or not to perform the automatic addition (hardware) of B3.

Example use: To query the setting value whether or not to perform the automatic addition (hardware) of B3:
> :SOURce:TELecom:FMEMory:B3ADdition?
< 1

:SOURce:TELecom:FMEMory:POINter <pointer>

Parameter: <pointer> = <CHARACTER PROGRAM DATA>
0
522

Function: Sets the selection of pointer value for the frame.

Restriction: Invalid in the following case:
- When the Option 13 is not installed.
- When the unit option 01Frame memory/capture exists while the option is not installed.

Example use: To set the pointer value of the frame to 0.
> :SOURce:TELecom:FMEMory:POINter 0

:SOURce:TELecom:FMEMory:POINter?

Response: <pointer> = <CHARACTER RESPONSE DATA>

Function: Queries the selection setting value of pointer value for the frame.

Example use: To query the selection setting value of pointer value for the frame:
> :SOURce:TELecom:FMEMory:POINter?
< 0

:SOURce:TELecom:FMEMory:FRAMe <frame>

Parameter: <frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1

Function: Sets the frame No. to edit.

Restriction: Invalid in the following case:
- When Option13 is not installed.
- When no option is installed while the unit option 01 Frame memory/capture exists.

Example use: To set 7 for the frame No. to edit:
> :SOURce:TELecom:FMEMory:FRAMe 7

:SOURce:TELecom:FMEMory:FRAMe?

Response: <frame> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting value of frame No. to edit.

Example use: To query the setting value of frame No. to edit.
> :SOURce:TELecom:FMEMory:FRAMe?
< 7

:SOURce:TELecom:FMEMory:PATTern <row>,<column>,<string>

Parameter: <row> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 9 Line number Step value: 1
<column> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 90 when using 52M
1 to 270 when using 156M
1 to 1080 when using 622M
Column number Step value: 1
<string> = <STRING PROGRAM DATA>
"00" to "FF" (hexadecimal type) * Maximum 18 bytes can be set.

Function: Sets the frame data by appointing the line and column.

Restriction: Invalid in the following case:
- When Option13 is not installed.
- When no option is installed while the unit option 01Frame memory/capture exists.

Example use: To set "AB, BC, CD, DE, EF" for the frame data from the third line the seventh column to the third line the eleventh column.
> :SOURce:TELecom:FMEMory:PATTern 3, 7,"AB, BC, CD, DE, EF"

:SOURce:TELecom:FMEMory:PATTern? <row1>, <column1>,<row2>,<column2>

Parameter: <row1>, <row2> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 9 Line number Step value: 1
<column1>, <column2> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 90 when using 52M
1 to 270 when using 156M
1 to 1080 when using 622M Column number Step value: 1

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the frame data from the <start1> line the <start2> column to the <stop1> line the <stop2> column.

Example use: To query the frame data from the third line the seventh column to the third line the eleventh column.
> :SOURce:TELecom:FMEMory:PATTern 3, 7, 3, 11
< "AB, BC, CD, DE, EF"

:SOURce:TELecom:FMEMory:RECall <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>

DEFault	Default
OHPRESET	OH preset
ALL1	Payload all1
ALL0	Payload all0
CAPTURED	Captured

Function: Initialize the setting of Frame memory.

Default	Sets the Default value.
OH preset	Copies the setting data (of which Bit rate match) of OH preset.
Payload all0/1	Initializes the Payload section to 0 or 1.

Restriction: Invalid in the following case:

- When Option13 is not installed.
- When no option is installed while the unit option 01Frame memory/capture exists.
- <CAPTURED> cannot be selected when no data exist.
- Those (B1, B2, K1, and K2) that have no data are not changed when <OHPRESET> is selected.

Example use: To set the payload data to all 0:

> :SOURce:TELecom:FMEMory:RECall ALL0

:SOURce:TELecom:FMEMory:RECall?

Response: <mode> = <CHARACTER RESPONSE DATA>

Function: Queries the initialization type of the Frame memory.

Example use: To query the initialization type of the Frame memory.

> :SOURce:TELecom:FMEMory:RECall?

< ALL0

:SOURce:TELecom:FMEMory:PRINt <from>, <to>

Parameter: <from> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 17280 Step value: 1

<to> = <DECIMAL NUMERIC PROGRAM DATA>

from to 17280 Step value: 1

Function: Sets the print range.

Restriction: Invalid in the following case:

- When Option13 is not installed.
- When no option is installed while the unit option 01Frame memory/capture exists.
- When <from > value is greater than <to> value.
- The upper limit varies by the set Bit rate:
  9953M:270 * 64
  2488M:270 * 16
  622M:270 * 4

156M:270
52M:90

Example use: To print the seventh line only:
> :SOURce:TELecom:FMEMory:PRINt 7,7

:SOURce:TELecom:FMEMory:PRINt?

Response: <from> = <NR1 NUMERIC RESPONSE DATA>
<to> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the print range.
Example use: > :SOURce:TELecom:FMEMory:PRINt?
< 7,7

:SOURce:TELecom:MSPMessages:REQuest <request>

Parameter: <request> = <CHARCTER PROGRAM DATA>
(G.783)

NREQ	No request(0000)
DNR	Do not revert(0001)
RREQ	Reverse request(0010)
UUS3	Unused(0011)
EXER	Exercise(0100)
UUS5	Unused(0101)
WTR	Wait to restore(0110)
UUS7	Unused(0111)
MSW	Manual switch(1000)
UUS9	Unused(1001)
SDLP	Signal degrade low priority(1010)
SDHP	Signal degrade high priority(1011)
SFLP	Signal fall low priority(1100)
SFHP	Signal fall high priority(1101)
FSW	Forced switch(1110)
LOPR	Lockout of protection(1111)

(G.841)

NR	NR(0000)
RRR	RR-R(0001)
RRS	RR-S(0010)
EXERR	EXER-R(0011)
EXERS	EXER-S(0100)
WTR	WTR(0101)
MSR	MS-R(0110)
MSS	MS-S(0111)
SDR	SD-R(1000)
SDS	SD-S(1001)
SDP	SD-P(1010)
SFR	SF-R(1011)
SFS	SF-S(1100)
FSR	FS-R(1101)
FSS	FS-S(1110)
LPS	LP-S(1111)
SFP	SF-P(1111)

Function: Sets K1 (1 to 4 bit) byte. (Plain language type)

Restriction: Invalid in the following case:

- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the 1 to 4 bit of K1 to "1011".

> :SOURce:TELecom:MSPMessages:REQuest SDHP

:SOURce:TELecom:MSPMessages:REQuest?

Response: <request> = <CHARACTER RESPONSE DATA>

* The response mnemonic differs between G. 783 and G. 841 recommendations.

(G.783)

1 1 1 1 LOPR

(G.841)

1 1 1 1 LPS or SFP

Function: Queries K1 (1 to 4 bit) byte. (Plain language type)

Example use: > :SOURce:TELecom:MSPMessages:REQuest?

< SDHP

:SOURce:TELecom:MSPMessages:CHANnel <mspch>

Parameter: <mspch> = <CHARCTER PROGRAM DATA>

(G.783)

NCH	Null channel(0000)
WC1	Working channel1(0001)
WC2	Working channel2(0010)
WC3	Working channel3(0011)
WC4	Working channel4(0100)
WC5	Working channel5(0101)
WC6	Working channel6(0110)
WC7	Working channel7(0111)
WC8	Working channel8(1000)
WC9	Working channel9(1001)
WC10	Working channel10(1010)
WC11	Working channel11(1011)
WC12	Working channel12(1100)
WC13	Working channel13(1101)
WC14	Working channel14(1110)
ETCH	Extra traffic channel(1111)

(G.841)

0 to 15

Function: Sets K1 (5 to 8 bit) byte. (Plain language type)

Restriction: Invalid in the following case:

- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the 5 to 8 bit of K1 to "1110".

> :SOURce:TELecom:MSPMessages:CHANnel WC14

:SOURce:TELecom:MSPMessages:CHANnel?

Response: <mspch> = <CHARACTER RESPONSE DATA>

Function: Queries the setting of K1 (5 to 8 bit) byte. (Plain language type)

Example use: > :SOURce:TELecom:MSPMessages:CHANnel?

< WC14

:SOURce:TELecom:MSPMessages:BRIDge <bridge>

Parameter: <bridge> = <CHARCTER PROGRAM DATA>

(G.783)

NCH	Null channel(0000)
WC1	Working channel1(0001)
WC2	Working channel2(0010)
WC3	Working channel3(0011)
WC4	Working channel4(0100)
WC5	Working channel5(0101)
WC6	Working channel6(0110)
WC7	Working channel7(0111)
WC8	Working channel8(1000)
WC9	Working channel9(1001)
WC10	Working channel10(1010)
WC11	Working channel11(1011)
WC12	Working channel12(1100)
WC13	Working channel13(1101)
WC14	Working channel14(1110)
ETCH	Extra traffic channel(1111)

(G.841)

0 to 15

Function: Sets K2 (1 to 4 bit). (Plain language type)

Restriction: Invalid in the following case:

- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the 1 to 4 bit of K2 to "1110":

> :SOURce:TELecom:MSPMessages:BRIDge WC14

:SOURce:TELecom:MSPMessages:BRIDge?

Response: <bridge> = <CHARACTER RESPONSE DATA>

Function: Queries the setting for K2 (1 to 4 bit). (Plain language type)

Example use: > :SOURce:TELecom:MSPMessages:BRIDge?

< WC14

:SOURce:TELecom:MSPMessages:ARCHitect <arch>

Parameter: <arch> = <CHARCTER PROGRAM DATA>
(G.783)

OPOA	1+1 architecture(0)
OCNA	1:n architecture(1)

(G.841)

SHORT	0
LONG	1

Function: Sets K2 (5 bit). (Plain language type)

Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the 5 bit of K2 to "1":
> :SOURce:TELecom:MSPMessages:ARCHitect OCNA

:SOURce:TELecom:MSPMessages:ARCHitect?

Response: <arch> = <CHARACTER RESPONSE DATA>

Function: Queries the setting for K2 (5 bit). (Plain language type)

Example use: > :SOURce:TELecom:MSPMessages:ARCHitect?
< OCNA

:SOURce:TELecom:MSPMessages:REServed <res>

Parameter: <res> = <CHARCTER PROGRAM DATA>

Idle	000
Bridged	001
Br&Sw	010
Reserved011	011
Reserved100	100
Reserved101	101
MS-RDI	110
MS-AIS	111

Function: Sets K2 (6 to 8 bit). (Plain language type)

Restriction: Invalid in the following case:
- When :INSTrument:CONFig <type> is NON, CID.
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the No. 8 K2 (6 to 8 bit) to MS-AIS:
> :SOURce:TELecom:MSPMessages:REServed MS-AIS

:SOURce:TELecom:MSPMessages:REServed?

Response: <arch> = <CHARACTER RESPONSE DATA>
Function: Queries K2 (6 to 8 bit). (Plain language type)
Example use: To query the plain language type of No. 8 K2 (6 to 8 bit):
> :SOURce:TELecom:MSPMessages:REServed? 8
< MS-AIS

:SOURce:TELecom:MSPBits:REQuest <string>

Parameter: <string> = <STRING PROGRAM DATA>
"0000"to"1111"
Function: Sets K1 (1 to 4 bit) byte. (Bit type)
Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the 1 to 4 bit of K1 to "1011":
> :SOURce:TELecom:MSPBits:REQuest "1011"

:SOURce:TELecom:MSPBits:REQuest?

Response: <string> = <STRING RESPONSE DATA>
Function: Queries K1 (1 to 4 bit) byte. (Bit type)
Example use: > :SOURce:TELecom:MSPBits:REQuest?
< "1011"

:SOURce:TELecom:MSPBits:CHANnel <string>

Parameter: <string> = <STRING PROGRAM DATA>
"0000" to "1111"
Function: Sets K1 (5 to 8 bit) byte. (Bit type)
Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the 5 to 8 bit of K1 to "1110":
> :SOURce:TELecom:MSPBits:CHANnel "1110"

:SOURce:TELecom:MSPBits:CHANnel?

Response: <string> = <STRING RESPONSE DATA>
Function: Queries the setting of K1 (5 to 8 bit) byte. (Bit type)
Example use: > :SOURce:TELecom:MSPBits:CHANnel?
< "1110"

:SOURce:TELecom:MSPBits:BRIDge <string>

Parameter: <string> = <STRING PROGRAM DATA>
"0000" to "1111"
Function: Sets K2 (1 to 4 bit). (Bit type)
Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the 1 to 4 bit of K2 to "1110":
> :SOURce:TELecom:MSPBits:BRIDge "1110"

:SOURce:TELecom:MSPBits:BRIDge?

Response: <string> = <STRING RESPONSE DATA>
Function: Queries K2 (1 to 4 bit). (Bit type)
Example use: > :SOURce:TELecom:MSPBits:BRIDge?
< "1110"

:SOURce:TELecom:MSPBits:ARCHitect <string>

Parameter: <string> = <STRING PROGRAM DATA>
"0"to"1"
Function: Sets K2 (5 bit). (Bit type)
Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the 5 bit of K2 to "1":
> :SOURce:TELecom:MSPBits:ARCHitect "1"

:SOURce:TELecom:MSPBits:ARCHitect?

Response: <string> = <STRING RESPONSE DATA>
Function: Queries the setting of K2 (5 bit). (Bit type)
Example use: > :SOURce:TELecom:MSPBits:ARCHitect?
< "1"

:SOURce:TELecom:MSPBits:REServed <string>

Parameter: <string> = <STRING PROGRAM DATA>
"000" to "101"
Function: Sets K2 (6 to 8 bit). (Bit type)

Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- :When :ROUTe:THRough is <ON>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the 6 to 8 bit of K2 to "101":
> :SOURce:TELecom:MSPBits:REServed "101"

:SOURce:TELecom:MSPBits:REServed?

Response: <string> = <STRING RESPONSE DATA>
Function: Queries the setting of K2 (6 to 8 bit). (Bit type)
Example use: > :SOURce:TELecom:MSPBits:REServed?
< "101"

:SOURce:TELecom:PSETting:NDFSet <ptype>, <string>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>
AU AU-PTR
TU TU-PTR
<string> = <STRING PROGRAM DATA>
"0000" to "1111"
Function: Sets the pointer value (NDF).
Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC12_BIL>, <VC12_BYL>, <VC11_BIL>, or <VC11_BYL>.
- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC3_45MASY> or <VC3_BLK> and :SOURce:TELecom:MAPPing:AU is <AU3>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set AU PTR NDF to "1011":
> :SOURce:TELecom:PSETting:NDFSet AU,"1011"

:SOURce:TELecom:PSETting:NDFSet? <ptype>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>
Response: <string> = <STRING RESPONSE DATA>
Function: Queries the setting of pointer value (NDF).
Example use: To query the setting of AU PTR NDF:
> :SOURce:TELecom:PSETting:NDFSet? AU
< "1011"

:SOURce:TELecom:PSETting:SSSet <ptype>, <string>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>
AU AU-PTR
TU TU-PTR
<string> = <STRING PROGRAM DATA>
"00" to "11"

Function: Sets the pointer value (SS).

Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC12_BIL>, <VC12_BYL>, <VC11_BIL>, or <VC11_BYL>.
- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC3_45MASY> or <VC3_BLK> and :SOURce:TELecom:MAPPing:AU is <AU3>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set AU PTR SS to "10":
> :SOURce:TELecom:PSETting:SSSet AU,"10"

:SOURce:TELecom:PSETting:SSSet? <ptype>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>

Response: <string> = <STRING RESPONSE DATA>

Function: Queries the setting of pointer value (SS).

Example use: To query the setting of AU PTR SS:
> :SOURce:TELecom:PSETting:SSSet? AU
< "10"

:SOURce:TELecom:PSETting:IDSet <ptype>, <numeric>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>
AU AU-PTR
TU TU-PTR
<numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 1023 Step value: 1

Function: Sets the pointer value (ID).

Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC12_BIL>, <VC12_BYL>, <VC11_BIL>, or <VC11_BYL>.

- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC3_45MASY> or <VC3_BLK> and :SOURce:TELecom:MAPPing:AU is <AU3>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set AU PTR ID to 10 (decimal number):
> :SOURce:TELecom:PSETting:IDSet AU,10

:SOURce:TELecom:PSETting:IDSet? <ptype>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>
Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting of pointer value (ID).
Example use: To query the setting of AU PTR ID:
> :SOURce:TELecom:PSETting:IDSet? AU
< 10

:SOURce:TELecom:PSETting:PPJC <ptype>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>

AU	AU-PTR
TU	TU-PTR

Function: Inserts + PJC in the send signal for one time.
Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :ROUTe:THRough is <ON>.
- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC12_BIL>, <VC12_BYL>, <VC11_BIL>, or <VC11_BYL>.
- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC3_45MASY> or <VC3_BLK> and :SOURce:TELecom:MAPPing:AU is <AU3>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To insert + PJC in the AU pointer for one time:
> :SOURce:TELecom:PSETting:PPJC AU

:SOURce:TELecom:PSETting:NPJC <ptype>

Parameter: <ptype> = <CHARACTER PROGRAM DATA>

AU	AU-PTR
TU	TU-PTR

Function: Inserts - PJC in the send signal for one time.
Restriction: Invalid in the following case:
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.

- When :ROUTe:THRough is <ON>.
- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC12_BIL>, <VC12_BYL>, <VC11_BIL>, or <VC11_BYL>.
- When <TU> is set while :SOURce:TELecom:MAPPing:TYPE is <VC3_45MASY> or <VC3_BLK> and :SOURce:TELecom:MAPPing:AU is <AU3>.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To insert - PJC in the AU pointer for one time:
> :SOURce:TELecom:PSETting:NPJC AU

:SOURce:TELecom:POFFset <offset>

Parameter: <offset> = <NON-DECIMAL NUMERIC PROGRAM DATA>
-100.0 to 100.0 Step value 0.1

Function: Sets the Payload offset.

Restriction: Invalid in the following case:
- When :INSTrument:CONFig <type> is NON, CID, or ATM.
- When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When :SOURce:TELecom:MAPPing:TYPE is set to other than Ansyc.
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the Payload offset to - 60.0:
> :SOURce:TELecom:POFFset –60.0

:SOURce:TELecom:POFFset?

Response: <offset> = <NR2 NUMERIC RESPONSE DATA>

Function: Queries the setting of Payload offset.

Example use: To query the setting of Payload offset:
> :SOURce:TELecom:POFFset?
< -60.0

:SOURce:TELecom:SPRogram:DEFault

Parameter: None

Function: Initilized the setting of the S1 program edit data.

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH> or <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.

- Option-22 is not installed.

Example use: To intialize the S1 program data.
> :SOURce:TELecom:SPRogram:DEFault

:SOURce:TELecom:SPRogram:COPY <destno>,<source1>,<source2>

Parameter: <destno> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Number of the source data to overwrite.
<source1> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Number to start overwrite.
<source2> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Number to end overwrite.

Function: Overwrites data to the specified S1 program data.

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH> or <SONET_PDH>.
- :ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.
- The specified number of <source1> exceeds that of <source2>.

Example use: To copy the data of No.60 to No.5, 6, 7, 8, and 10.
> :SOURce:TELecom:SPRogram:COPY 60, 5, 10

:SOURce:TELecom:SPRogram:SSMessages:REQuest <no>,<request>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<request> = <STRING PROGRAM DATA>
(bit5-bit8)

(SDH)	
"Quality unknown"	(0000)
"G.811"	(0010)
"G.812 transit"	(0100)
"G.812 local"	(1000)
"SETS"	(1011)
"DON'T USE for Sync."	(1111)
(SONET)	
"Synchronized Traceability Unknown"	(0000)
"STU"	(0000)
"Stratum 1 Traceable"	(0001)
"PRS"	(0001)
"Stratum 2 Traceable"	(0111)
"ST2"	(0111)
"Stratum 3 Traceable"	(1010)
"ST3"	(1010)

"SONET Minimum Clock Traceable" (1100)
"SMC" (1100)
"Reserved" (1110)
"RES" (1110)
"DON'T USE for Synchronization" (1111)
"DUS" (1111)

Function: Sets S1(bit5-bit8) in plain language.

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH> or <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: To set No.2 S1(5-8bit) to “1011”.
> :SOURce:TELecom:SPRogram:SSMessages:REQuest 2, “SETS”

:SOURce:TELecom:SPRogram:SSMessages:REQuest? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Same as :SOURce:TELecom:SPRogram:SSMessages:REQuest.

Response: <request> = <CHARACTER RESPONSE DATA>
Same as :SOURce:TELecom:SPRogram:SSMessages:REQuest.
* The response varies depending on SDH and SONET mode.
* “Reserved” is retured in any other case shown above.

Function: Queries the setting of S1(bit5-bit8) in plain language.

Example use: To query No.2 S1(5-8bit) in plain language.
> :SOURce:TELecom:SPRogram:SSMessages:REQuest? 2
< “SETS”

:SOURce:TELecom:SPRogram:SSBits:REQuest <no>,<request1>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<request1> = <STRING PROGRAM DATA>
(bit1-4)
“0000” to ”1111”
<request2> = <STRING PROGRAM DATA>
(bit5-8)
“0000” to ”1111”

Function: Sets S1(1-4bit, 5-8bit) in binary.

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH> or <SONET_PDH>.
- Measurement mode is other than “In-service”.

- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: To set No.2 S1 to "1011", "0000".
> :SOURce:TELecom:SPRogram:SSBits:REQuest 2, "1011","0000"

:SOURce:TELecom:SPRogram:SSBits:REQuest? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Same as :SOURce:TELecom:SPRogram:SSBits:REQuest.
Response: <request1> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:SPRogram:SSBits:REQuest.
<request2> = <STRING RESPONSE DATA>
Same as :SOURce:TELecom:SPRogram:SSBits:REQuest.
Function: Queries the setting of S1(1-4bit, 5-8bit) in binary.
Example use: To query No.2 S1 in binary.
> :SOURce:TELecom:SPRogram:SSBits:REQuest? 2
< "1011","0000"

:SOURce:TELecom:SPRogram:FRAMe <no>,<frame>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Frame
Function: Sets the frame of the S1 program edit data.
Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH> or <SONET_PDH>.
- Measurement mode is other than "In-service".
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: To set No.20 frame to 5000.
> :SOURce:TELecom:SPRogram:FRAMe 20, 5000

:SOURce:TELecom:SPRogram:FRAMe? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Same as :SOURce:TELecom:SPRogram:FRAMe.
Response: <frame> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:TELecom:SPRogram:FRAMe.
Function: Queries the frame setting.
Example use: To query the No.20 frame.
> :SOURce:TELecom:SPRogram:FRAMe? 20
< 5000

:SOURce:TELecom:SPRogram:PROGram <no>,<S1>,<frame>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 No.
<S1> = <STRING PROGRAM DATA>
"00" to "FF"
<frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Frame

Function: Sets the S1 bit and its frame simultaneously.

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH> or <SONET_PDH>.
- Measurement mode is other than "In-service".
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: To set No.20 frame to 5000.
> :SOURce:TELecom:SPRogram:PROGram 20,"01",5000

:SOURce:TELecom:SPRogram:PROGram? <no>

Parameter: <no> = <DECIMAL NUMERIC PROGRAM DATA>
Same as :SOURce:TELecom:SPRogram:PROGram.

Response: <S1> = <STRING PROGRAM DATA>
Same as :SOURce:TELecom:SPRogram:PROGram.
<frame> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:TELecom:SPRogram:PROGram.

Function: Queries the setting of S1 bit and its frame simultaneously.

Example use: To query No.20 frame.
> :SOURce:TELecom:SPRogram:PROGram? 20
< "01",5000

:SOURce:SIGPreset:TX <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
OFF
MULTI64
MULTI8

Function: Selects the frame configuration of data that are set to the signaling byte (usually called as Wbyte) of VC11 (V5byte) when the mapping is BYTE (Data, Voice).

Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.

Example use: To set the 64-multiframe to the send signaling byte:
> :SOURce:SIGPreset:TX MULTI64

:SOURce:SIGPreset:TX?

Response: <type> = <CHARACTER RESPONSE DATA>
Function: Queries the frame configuration of data that are set to the signaling byte (usually called as Wbyte) of VC11 (V5byte) when the mapping is BYTE (Data, Voice).
Example use: To query the frame configuration of send signaling byte:
> :SOURce:SIGPreset:TX?
< MULTI64

:SOURce:SIGPreset:MULTi8:TS <type>,<ts>, <sp_d>

Parameter: <type> = <CHARACTER PROGRAM DATA>
TS1
TS2
TS3
TS4
<ts> = <STRING PROGRAM DATA>
"000000" to "111111" (BIN type)
Function: Sets the 8-multiframe signaling data.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.
Example use: To set the TS1 to 21 bits of 8-multiframe signaling data to "010101":
> :SOURce:SIGPreset:MULTi8:TS TS1,"010101"

:SOURce:SIGPreset:MULTi8:TS? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
Response: <ts> = <STRING RESPONSE DATA>
Function: Queries the 8-multiframe signaling data.
Example use: To query TS1 of the 8-multiframe signaling data:
> :SOURce:SIGPreset:MULTi8:TS? TS1
< "010101"

:SOURce:SIGPreset:MULTi8:SP <sp>

Parameter: <sp> = <STRING PROGRAM DATA>
"0" to "1" (BIN type)
Function: Sets the 8-multiframe signaling data.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.
Example use: To set the SP bit of 8-multiframe signaling data to "0":
> :SOURce:SIGPreset:MULTi8:SP "0"

:SOURce:SIGPreset:MULTi8:SP?

Response: <sp> = <STRING RESPONSE DATA>
Function: Queries the 8-multiframe signaling data.
Example use: To query the SP bit of 8-multiframe signaling data:
> :SOURce:SIGPreset:MULTi8:SP?
< “0”

:SOURce:SIGPreset:MULTi64:AIS <ais>

Parameter: <ais> = <STRING PROGRAM DATA>
“000000000000000000000000” to “111111111111111111111111”
(BIN type)
Function: Sets the signaling data AIS of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.
Example use: To set the signaling data AIS to
"000000000000111111111111":
> :SOURce:SIGPreset:MULTi64:AIS “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:AIS?

Response: <ais> = <STRING RESPONSE DATA>
Function: Queries the signaling data AIS of the 64-multiframe.
Example use: To query the signaling data AIS:
> :SOURce:SIGPreset:MULTi64:AIS?
< “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:BAIS <bais>

Parameter: <bais> = <STRING PROGRAM DATA>
“000000000000000000000000” to “111111111111111111111111”
(BIN type)
Function: Sets the signaling data BAIS of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.
Example use: To set the signaling data BAIS to
"000000000000111111111111":
:SOURce:SIGPreset:MULTi64:BAIS “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:BAIS?

Response: <bais> = <STRING RESPONSE DATA>
Function: Queries the signaling data BAIS of the 64-multiframe.
Example use: To query the signaling data BAIS:
> :SOURce:SIGPreset:MULTi64:BAIS?
< “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:PTY <pty>

Parameter: <pty> = <STRING PROGRAM DATA>
"000000000000000000000000" to "111111111111111111111111"
(BIN type)

Function: Sets the signaling data PTY of the 64-multiframe.

Restriction: Invalid in the following case:
When the option 09 Japan mapping is not installed.

Example use: To set the signaling data PTY to
"000000000000111111111111":
> :SOURce:SIGPreset:MULTi64:PTY "000000000000111111111111"

:SOURce:SIGPreset:MULTi64:PTY?

Response: <pty> = <STRING RESPONSE DATA>

Function: Queries the signaling data PTY of the 64-multiframe.

Example use: To query the signaling data PTY:
> :SOURce:SIGPreset:MULTi64:PTY?
< "000000000000111111111111"

:SOURce:SIGPreset:MULTi64:BERR <berr>

Parameter: <berr> = <STRING PROGRAM DATA>
"000000000000000000000000" to "111111111111111111111111"
(BIN type)

Function: Sets the signaling data BERR of the 64-multiframe.

Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.

Example use: To set the signaling data BERR to
"000000000000111111111111":
> :SOURce:SIGPreset:MULTi64:BERR "000000000000111111111111"

:SOURce:SIGPreset:MULTi64:BERR?

Response: <berr> = <STRING RESPONSE DATA>

Function: Queries the signaling data BERR of the 64-multiframe.

Example use: To query the signaling data BERR:
> :SOURce:SIGPreset:MULTi64:BERR?
< "000000000000111111111111"

:SOURce:SIGPreset:MULTi64:TRACe <trace>

Parameter: <trace> = <STRING PROGRAM DATA>
"000000000000000000000000" to "111111111111111111111111"
(BIN type)

Function: Sets the signaling data TRACE of the 64-multiframe.

Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.

Example use: To set the signaling data TRACE to "000000000000111111111111":
> :SOURce:SIGPreset:MULTi64:TRAce “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:TRACe?

Response: <trace> = <STRING RESPONSE DATA>
Function: Queries the signaling data TRACE of the 64-multiframe.
Example use: To query the signaling data TRACE:
> :SOURce:SIGPreset:MULTi64:TRAce?
< “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:S <s>

Parameter: <s> = <STRING PROGRAM DATA>
“000000000000000000000000” to “111111111111111111111111”
(BIN type)
Function: Sets the signaling data Reserved (S) of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.

Example use: To set the signaling data Reserved (S) to "000000000000111111111111":
> :SOURce:SIGPreset:MULTi64:S “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:S?

Response: <s> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data Reserved (S) of the 64-multiframe.
Example use: To query the setting of signaling data Reserved (S):
> :SOURce:SIGPreset:MULTi64:S?
< “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:UNR <unr>

Parameter: <unr> = <STRING PROGRAM DATA>
“000000000000000000000000” to “111111111111111111111111”
(BIN type)
Function: Sets the signaling data Reserved (UNR) of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.

Example use: To set the signaling data Reserved (UNR) to "000000000000111111111111":
> :SOURce:SIGPreset:MULTi64:UNR “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:UNR?

Response: <unr> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data Reserved (UNR) of the 64-multiframe.

Example use: To query the setting of signaling data Reserved (UNR):
> :SOURce:SIGPreset:MULTi64:UNR?
< “000000000000111111111111”

:SOURce:SIGPreset:MULTi64:LOOP2 <loop2>

Parameter: <loop2> = <STRING PROGRAM DATA>
“000” to “111” (BIN type)
Function: Sets the signaling data LOOP2 of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.

Example use: To set the signaling data LOOP2 to "111":
> :SOURce:SIGPreset:MULTi64:LOOP2 “111”

:SOURce:SIGPreset:MULTi64:LOOP2?

Response: <loop2> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data LOOP2 of the 64-multiframe.
Example use: To query the setting of signaling data LOOP2:
> :SOURce:SIGPreset:MULTi64:LOOP2?
< “111”

:SOURce:SIGPreset:MULTi64:LP <lp>

Parameter: <lp> = <STRING PROGRAM DATA>
“00000000000000000000” to “11111111111111111111”
(BIN type)
Function: Sets the signaling data LP of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.

Example use: To set the signaling data LP to
"11100000000000000000":
> :SOURce:SIGPreset:MULTi64:LP “11100000000000000000”

:SOURce:SIGPreset:MULTi64:LP?

Response: <lp> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data LP of the 64-multiframe.
Example use: To query the setting of signaling data LP:
> :SOURce:SIGPreset:MULTi64:LP?
< “11100000000000000000”

:SOURce:SIGPreset:MULTi64:M15Bais <m15>

Parameter: <m15> = <STRING PROGRAM DATA>
“0” to “1” (BIN type)
Function: Sets the signaling data 1.5M BASIS of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.

Example use: To set the signaling data 1.5M BASIS to "1":
> :SOURce:SIGPreset:MULTi64:M15Basis “1”

:SOURce:SIGPreset:MULTi64:M15Bais?

Response: <m15> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data 1.5M BASIS of the 64-multiframe.
Example use: To query the setting of signaling data 1.5M BASIS:
> :SOURce:SIGPreset:MULTi64:M15Basis?
< “1”

:SOURce:SIGPreset:MULTi64:KX <kx>

Parameter: <kx> = <STRING PROGRAM DATA>
“0” to “1” (BIN type)
Function: Sets the signaling data kx of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.
Example use: To set the signaling data kx to "0":
> :SOURce:SIGPreset:MULTi64:KX “0”

:SOURce:SIGPreset:MULTi64:KX?

Response: <kx> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data kx of the 64-multiframe.
Example use: To query the setting of signaling data kx:
> :SOURce:SIGPreset:MULTi64:KX?
< “0”

:SOURce:SIGPreset:MULTi64:KY <ky>

Parameter: <ky> = <STRING PROGRAM DATA>
“0” to “1” (BIN type)
Function: Sets the signaling data ky of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.
Example use: To set the signaling data ky to "1":
> :SOURce:SIGPreset:MULTi64:KY “1”

:SOURce:SIGPreset:MULTi64:KY?

Response: <ky> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data ky of the 64-multiframe.
Example use: To query the setting of signaling data ky:
> :SOURce:SIGPreset:MULTi64:KY?
< “1”

:SOURce:SIGPreset:MULTi64:KZ <kz>

Parameter: <kz> = <STRING PROGRAM DATA>
"0" to "1" (BIN type)
Function: Sets the signaling data kz of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.
Example use: To set the signaling data kz to "1":
> :SOURce:SIGPreset:MULTi64:KZ "1"

:SOURce:SIGPreset:MULTi64:KZ?

Response: <kz> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data kz of the 64-multiframe.
Example use: To query the setting of signaling data kz:
> :SOURce:SIGPreset:MULTi64:KZ?
< "1"

:SOURce:SIGPreset:MULTi64:OCULoop <ocu>

Parameter: <ocu> = <STRING PROGRAM DATA>
"0" to "1" (BIN type)
Function: Sets the signaling data LOOP-OCU of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.
Example use: To set the signaling data LOOP-OCU to "1":
> :SOURce:SIGPreset:MULTi64:OCULoop "1"

:SOURce:SIGPreset:MULTi64:OCULoop?

Response: <ocu> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data LOOP-OCU of the 64-multiframe.
Example use: To query the setting of signaling data LOOP-OCU:
> :SOURce:SIGPreset:MULTi64:OCULoop?
< "1"

:SOURce:SIGPreset:MULTi64:M15Loop <m15>

Parameter: <m15> = <STRING PROGRAM DATA>
"0" to "1" (BIN type)
Function: Sets the signaling data LOOP-1.5M of the 64-multiframe.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed.
Example use: To set the signaling data LOOP-1.5M to "0":
> :SOURce:SIGPreset:MULTi64:M15Loop "0"

:SOURce:SIGPreset:MULTi64:M15Loop?

Response: <m15> = <STRING RESPONSE DATA>
Function: Queries the setting of signaling data LOOP-1.5M of the 64-multiframe.

Example use: To query the setting of signaling data LOOP-1.5M:
> :SOURce:SIGPreset:MULTi64:M15Loop?
< “0”

:SOURce:SIGPreset:DEFault

Parameter: None.
Function: Initializes the 8/64-multiframe signaling data.
Restriction: Invalid in the following case:
- When the option 09 Japan mapping is not installed

Example use: To initialize the 8/64-multiframe signaling data:
> :SOURce:SIGPreset:DEFault

:SOURce:PTR64:DATA <mode>,<no>,<type>,<ptr>,<ndf>,<ss>,<id>

Parameter: <mode> = <CHARACTER PROGRAM DATA>
(SDH)
AUPTR
TUPTR
(SONET)
STSPTR
VTPTR
<no> = <DECIMAL NUMERIC PROGRAM DATA>
1to64 No.
<type> = <CHARACTER PROGRAM DATA>
NDF, PTR, +PJC, -PJC, CONTinue
* CONTinue indicates the previous No. continuation.
<ptr> = <CHARACTER PROGRAM DATA>
0to1023,
<ndf> = <STRING PROGRAM DATA>
“0000” to “1111”
<ss> = <STRING PROGRAM DATA>
“00” to “11”
<id> = <STRING PROGRAM DATA>
“0000000000” to “1111111111”

Function: Sets the sequence data (for 64 frames) of programmable PTR.
Restriction: Invalid in the following case:
- When <type> = NDF while other than <ndf>, <ss>, and <ptr> is set.
- When <type> = PTR while other than <ptr> is set.
- When <type> = + PJC or - PJC while other than <id> is set.

Example use: To set the AUPTR sequence data No. 6 frame to type NDF, PTR 8, NDF "0000", ss "01", ID "0000100000":
> :SOURce:PTR64:DATA AUPTR, 6, NDF, 8, “0000”, “01”, “000100000”

:SOURce:PTR64:DATA? <mode>,<no>

Parameter: <mode> = <CHARACTER PROGRAM DATA>
<no> = <DECIMAL NUMERIC PROGRAM DATA>
Response: <type> = <CHARACTER RESPONSE DATA>
<ptr> = <CHARACTER RESPONSE DATA>
<ndf> = <STRING RESPONSE DATA>
<ss> = <STRING RESPONSE DATA>
<id> = <STRING RESPONSE DATA>
Function: Queries the programmable PTR sequence data.
Example use: To query the AUPTR sequence data No. 6 frame:
> :SOURce:PTR64:DATA? AUPTR, 6
> NDF, 8, “0000”, “01”, “0000100000”

:SOURce:PTR64:DEFault <point>

Parameter: <point> = <CHARACTER PROGRAM DATA>
(SDH)
AUPTR
TUPTR
(SONET)
STSPTR
VTPTR
Function: Initializes the PTR program data (64 pieces).
Example use: To initialize the TUPTR program data:
> :SOURce:PTR64:FRAMe:DEFault TUPTR

:SOURce:PCHeck:TYPE <type> [, <mode>]

Parameter: <type> = <CHARACTER PROGRAM DATA>
OFF
G821
G826
M2100
M2101
M2110
M2120
<mode> = <CHARACTER PROGRAM DATA>
(Only when using M.2110, M.2120)
(SDH)
PDH
SDH
(SONET)
DSn
SONET
Function: Sets the recommendation type to perform the Performance check.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"PERFormance">.

Example use: To set the recommendation type to M.2110, SDH:
> :SOURce:PCHeck:TYPE M2110,SDH

:SOURce:PCHeck:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
<mode> = <CHARACTER RESPONSE DATA> (Only when using M.2110, M.2120)

Function: Queries the setting of recommendation type to perform the Performance check.

Example use: To query the setting of recommendation type to perform the Performance check:
> :SOURce:PCHeck:TYPE?
< M2110,SDH

:SOURce:PCHeck:PDHFrame <frm>

Parameter: <frm> = <CHARACTER PROGRAM DATA>

M139	139M
M45	45M
M34	34M
M8	8M
M2	2M
M1_5	1.5M

Function: Sets the PDH frame type.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"PERFormance">.

Example use: To set the PDH frame type to 45M:
> :SOURce:PCHeck:PDHFrame M45

:SOURce:PCHeck:PDHFrame?

Response: <frm> = <CHARACTER RESPONSE DATA>

Function: Queries the setting of PDH frame type.

Example use: To query the setting of PDH frame type:
> :SOURce:PCHeck:PDHFrame?
< M45

:SOURce:PCHeck:REPeat <repeat>

Parameter: <repeat> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 99998

Function: Sets the relative number of addition times for Error/Alarm reflected on the Performance result.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"PERFormance">.

Example use: To set the number of addition times to 7:
> :SOURce:PCHeck:REPeat 7

:SOURce:PCHeck:REPeat?

Response: <repeat> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the relative number of addition times for specified Error/Alarm.
Example use: To query the relative number of addition times:
> :SOURce:PCHeck:REPeat?
< 7

:SOURce:PCHeck:ITEM <item>

Parameter: <item> = <CHARACTER PROGRAM DATA>
(When using G.821)

EC	EC
ES	ES
SES	SES
US	US
DM	DM
CES	Code ES

(When using G.826)

ES	ES
SES	SES
BBE	BBE
SDP	SDP
US	US

(When using M.2100, M2101, M.2110, or M.2120)

RES	Rx-ES
RSES	Rx-SES
TES	Tx-ES
TSES	Tx-SES
US	US

Function: Sets the Performance item.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"PERFormance">.
- When an item other than complying with :SOURce:PCHeck:TYPE is set.
- When CES is selected in the condition that Code cannot be added for :SOURce:PCHeck:TYPE G.821.

Example use: To set the Performance item to Code ES:
> :SOURce:PCHeck:ITEM CES

:SOURce:PCHeck:ITEM?

Response: <item> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of Performance item.

Example use: To query the setting of Performance item:
> :SOURce:PCHeck:ITEM?
< CES

:SOURce:PCHeck:CONDition <condit>, <erralm>, <threshold>

Parameter: <condit> = <CHARACTER PROGRAM DATA>
(G.821,M2100)
NON No parameter
(G.826)

FAS	FAS/CRC
PAR	Parity
BIT	Bit
B1	B1
B2	B2
HB3	HP-B3
LB3	LP-B3
BIP2	BIP-2
MREI	MS-REI（REI-L）
HREI	HP-REI（REI-P）
LREI	LP-REI（REI-V）

(M.2101, M.2110, M2120)

SECT	Section（Sect/Line）
AU	AU-path（STS-path）
TU	TU-path（VT-path）

<erralm> = <CHARACTER PROGRAM DATA>

(SDH)	OFF	No alram is inserted.
	LOS	LOS is inserted.
	LOF	LOF is inserted.
	MAIS	MS-AIS is inserted.
	MRDI	MS-RDI is inserted.
	AAIS	AU-AIS is inserted.
	ALOP	AU-LOP is inserted.
	HRDI	HP-RDI is inserted.
	TAIS	TU-AIS is inserted.
	TLOP	TU-LOP is inserted.
	LRDI	LP-RDI is inserted.
	TLOM	TU-LOM is inserted.
	LTRDI	LP-TC-RDI is inserted.
	AIS139	AIS is inserted into 139Mbit/s signal.
	AIS45	AIS is inserted into .45Mbit/s signal.
	AIS34	AIS is inserted into .34Mbit/s signal.
	AIS8	AIS is inserted into .8Mbit/s signal.
	AIS2	AIS is inserted into .2Mbit/s signal.
	AIS1_5	AIS is inserted into .1.5Mbit/s signal.
	LOF139	LOF is inserted into .139Mbit/s signal.
	LOF45	LOF is inserted into .45Mbit/s signal.
	LOF34	LOF is inserted into .34Mbit/s signal.
	LOF8	LOF is inserted into .8Mbit/s signal.
	LOF2	LOF is inserted into .2Mbit/s signal.
	LOF1_5	LOF is inserted into .1.5Mbit/s signal.
	RDI139	RDI is inserted into .139Mbit/s signal.
	RDI45	RDI is inserted into .45Mbit/s signal.
	RDI34	RDI is inserted into .34Mbit/s signal.
	RDI8	RDI is inserted into .8Mbit/s signal.
	RDI2	RDI is inserted into .2Mbit/s signal.
	RDI1_5	RDI is inserted into .1.5Mbit/s signal.
	RDIMF	MF-RDI is inserted into .2Mbit/s signal.
	B1	B1 is inserted.
	B2	B2 is inserted.
	HB3	HB3 is inserted.
	LB3	LB3 is inserted.
	BIP2	BIP2 is inserted.
	MREI	MS-REI is inserted.
	HREI	HP-REI is inserted.
	HTREI	HP-TC-REI is inserted.
	N2BIP2	N2_BIP2 is inserted.
	FAS	FAS is inserted.
	BALL	Bit all is inserted.

(SDH)	BIT139	Bit 139M is inserted.
	BIT45	Bit 45M is inserted.
	BIT34	Bit 34M is inserted.
	BIT8	Bit 8M is inserted.
	BIT2	Bit 2M is inserted.
	BIT1_5	Bit 1.5M is inserted.
	CODE	Code is inserted.
	EBIT	Ebit is inserted.
	FAS139	FAS 139M is inserted.
	FAS45	FAS 45M is inserted.
	FAS34	FAS 34M is inserted.
	FAS8	FAS 8M is inserted.
	FAS2	FAS 2M is inserted.
	FAS1_5	FAS 1.5M is inserted.
	REI139	REM 139M is inserted.
	REI45	REM 45M is inserted.
	REI34	REM 34M is inserted.
	PLCPREI	REI PLCP is inserted.
	PARITY	Parity is inserted.
	CRC6	CRC-6 is inserted.
	CBIT	Cbit is inserted.
	BIP8	BIP8 is inserted.
(SONET)	OFF	No alarm is inserted.
	LOS	LOS is inserted.
	LOF	LOF is inserted.
	AISL	MS-AIS is inserted.
	RDIL	MS-RDI is inserted.
	AISP	AU-AIS is inserted.
	LOPP	AU-LOP is inserted.
	RDIP	HP-RDI is inserted.
	AISV	TU-AIS is inserted.
	LOPV	TU-LOP is inserted.
	RDIV	LP-RDI is inserted.
	LOMV	TU-LOM is inserted.
	AIS139	AIS is inserted into .139Mbit/s signal.
	AIS45	AIS is inserted into .45Mbit/s signal.
	AIS34	AIS is inserted into .34Mbit/s signal.
	AIS8	AIS is inserted into .8Mbit/s signal.
	AIS2	AIS is inserted into .2Mbit/s signal.
	AIS1_5	AIS is inserted into .1.5Mbit/s signal.
	LOF139	LOF is inserted into .139Mbit/s signal.
	LOF45	LOF is inserted into .45Mbit/s signal.
	LOF34	LOF is inserted into .34Mbit/s signal.

LOF8	LOF is inserted into .8Mbit/s signal.
LOF2	LOF is inserted into .2Mbit/s signal.
LOF1_5	LOF is inserted into .1.5Mbit/s signal.
RDI139	RDI is inserted into .139Mbit/s signal.
RDI45	RDI is inserted into .45Mbit/s signal.
RDI34	RDI is inserted into .34Mbit/s signal.
RDI8	RDI is inserted into .8Mbit/s signal.
RDI2	RDI is inserted into .2Mbit/s signal.
RDI1_5	RDI is inserted into .1.5Mbit/s signal.
RDIMF	MF-RDI is inserted into .2Mbit/s signal.
B1	B1 is inserted.
B2	B2 is inserted.
HB3	HB3 is inserted.
LB3	LB3 is inserted.
BIP2	BIP2 is inserted.
REIL	MS-REI is inserted.
REIP	HP-REI is inserted.
HTREI	HP-TC-REI is inserted.
REIV	LP-REI is inserted.
LTREI	LP-TC-REI is inserted.
N2BIP2	N2_BIP2 is inserted.
FAS	FAS is inserted.
BALL	Bit all is inserted.
BIT139	Bit 139M is inserted.
BIT45	Bit 45M is inserted.
BIT34	Bit 34M is inserted.
BIT8	Bit 8M is inserted.
BIT2	Bit 2M is inserted.
BIT1_5	Bit 1.5M is inserted.
CODE	Code is inserted.
EBIT	Ebit is inserted.
FAS139	FAS 139M is inserted.
FAS45	FAS 45M is inserted.
FAS34	FAS 34M is inserted.
FAS8	FAS 8M is inserted.
FAS2	FAS 2M is inserted.
FAS1_5	FAS 1.5M is inserted.
REI139	REM 139M is inserted.
REI45	REM 45M is inserted.
REI34	REM 34M is inserted.
PARITY	Parity is inserted.
CRC6	CRC-6 is inserted.
CBIT	Cbit is inserted.
BIP8	BIP8 is inserted.

<threshold> = <BOOLEAN PROGRAM DATA>
ON or 1
OFF or 0

Function: Sets an item for the performance test, an alarm additional item, and threshold over.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <" PERFormance ">.
- When “Threshold over” is set; and :SOURce:PCHeck:TYPE <type> specifies nothing.

Example use: To set FAS/CRC for the performance, parity as the alarm additional item, and sets threshold over to ON.
> :SOURce:PCHeck:CONDition FAS, PARITY, ON

:SOURce:PCHeck:CONDition?

Response: <condit> = <CHARACTER RESPONSE DATA>
<erralm> = <CHARACTER PROGRAM DATA>
<threshold> = <BOOLEAN PROGRAM DATA>

Function: Queris an item for the performance test, an alarm additional item, and threshold over.

Example use: To queris an item for the performance test, an alarm additional item, and threshold over.
> :SOURce:PCHeck:CONDition?
< FAS, PARITY, ON

:SOURce:PCHeck:STARt

Parameter: None.

Function: Starts the Performance check.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"PERFormance">.

Example use: > :SOURce:PCHeck:STARt

:SOURce:PCHeck:STOP

Parameter: None.

Function: Releases the Performance check.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"PERFormance">.

Example use: > :SOURce:PCHeck:STOP

:SOURce:PCHeck:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
0 Stopping the alarm insertion
1 Inserting an alarm

Function: Queries the Performance check status.

Example use: > :SOURce:PCHeck:STATe?
< 0

:SOURce:FMEMory:SEQuence:A:FRAMe <frame>

Parameter: <frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Number of send frames Step value: 1
Function: Sets the number of send frames of the Frame memory A pattern.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
Example use: To set the number of send frames of the Frame memory A pattern to 2:
> :SOURce:FMEMory:SEQuence:A:FRAMe 2

:SOURce:FMEMory:SEQuence:A:FRAMe?

Response: <frame> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for the number of send frames of the Frame memory A pattern.
Example use: To query the setting for the number of send frames of the Frame memory A pattern:
> :SOURce:FMEMory:SEQuence:A:FRAMe?
< 2

:SOURce:FMEMory:SEQuence:A:TIME <times>

Parameter: <times> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Numbers of sends times Step value: 1
Function: Sets the number of send times of the Frame memory A pattern.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE is <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
Example use: To set the number of send times of the Frame memory A pattern to 50:
> :SOURce:FMEMory:SEQuence:A:TIME 50

:SOURce:FMEMory:SEQuence:A:TIME?

Response: <times> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for the number of send times of the Frame memory A pattern.
Example use: To query the setting for the number of send times of the Frame memory A pattern:
> :SOURce:FMEMory:SEQuence:A:TIME?
< 50

:SOURce:FMEMory:SEQuence:B:FRAMe <frame>

Parameter: <frame> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 63 Number of send frames Step value: 1
Function: Sets the number of send frames of the Frame memory B pattern.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.

Example use: To set the number of send frames of the Frame memory B pattern to 2:
> :SOURce:FMEMory:SEQuence:B:FRAMe 2

:SOURce:FMEMory:SEQuence:B:FRAMe?

Response: <frame> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting for the number of send frames of the Frame memory B pattern.

Example use: To query the setting for the number of send frames of the Frame memory B pattern:
> :SOURce:FMEMory:SEQuence:B:FRAMe?
< 2

:SOURce:FMEMory:SEQuence:B:TIME <times>

Parameter: <times> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Number of send times Step value: 1

Function: Sets the number of send times of the Frame memory B pattern.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- When <0> is set for :SOURce:FMEMory:SEQuence:B:FRAMe.

Example use: To set the number of send times of the Frame memory B pattern to 50:
> :SOURce:FMEMory:SEQuence:B:TIME 50

:SOURce:FMEMory:SEQuence:B:TIME?

Response: <times> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting for the number of send times of the Frame memory B pattern.

Example use: To query the setting for the number of send times of the Frame memory B pattern:
> :SOURce:FMEMory:SEQuence:B:TIME?
< 50

:SOURce:FMEMory:ALARm:TYPE <atype>

Parameter: <atype> = <CHARACTER PROGRAM DATA>

(SDH)

OFF	OFF
LOS	LOS
LOF	LOF
MAIS	MS-AIS
MRDI	MS-RDI
AAIS	AU-AIS
ALOP	AU-LOP
HRDI	HP-RDI
HSLM	HP-HSLM
HTIM	HP-HTIM
HUNEQ	HP-UNEQ

(SONET)

OFF	OFF
LOS	LOS
LOF	LOF
AISL	AIS-L
RDIL	RDI-L
AISP	AIS-P
LOPP	LOP-P
RDIP	RDI-P
SLMP	SLM-P
TIMP	TIM-P
UNEQP	UNEQ-P

Function: Sets the alarm type to insert in the send signal.

Restriction: Invalid in the following case:

- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.

Example use: To insert MS-AIS in the send signal:

> :SOURce:FMEMory:ALARm:TYPE MAIS

:SOURce:FMEMory:ALARm:TYPE?

Response: <atype> = <CHARACTER RESPONSE DATA>

Function: Queries the alarm type to insert in the send signal.

Example use: To query the alarm type to insert in the send signal:

> :SOURce:FMEMory:ALARm:TYPE?

< MAIS

:SOURce:FMEMory:ALARm:TIMing:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
SINGLE
BURST
ALTERNATE
ALL

Function: Sets the alarm addition timing.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- When :SOURce:FMEMory:ALARm:TYPE is set to <OFF>.
- When other than ALL is set while :SOURce:FMEMory:ALARm:TYPE
- <LOS> or <HTIM> is set.

Example use: To set the alarm addition timing to BURST:
> :SOURce:FMEMory:ALARm:TIMing:TYPE BURST

:SOURce:FMEMory:ALARm:TIMing:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the setting of alarm addition timing.

Example use: To query the setting of alarm addition timing:
> :SOURce:FMEMory:ALARm:TIMing:TYPE?
< BURST

:SOURce:FMEMory:ALARm:TIMing:ALARm <error>

Parameter: <error> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 8000 Step value: 1

Function: Sets the number of alarm addition frames when using Alternate.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- When :SOURce:FMEMory:ALARm:TYPE is set to <OFF>.
- When other than :SOURce:FMEMory:ALARm:TIMing:TYPE<ALTERNATE> is set.

Example use: To set the number of alarm addition frames to 3000 frame:
> :SOURce:FMEMory:ALARm:TIMing:ALARm 3000

:SOURce:FMEMory:ALARm:TIMing:ALARm?

Response: <error> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of alarm addition frames when using Alternate.

Example use: To query the number of alarm addition frames when using Alternate:
> :SOURce:FMEMory:ALARm:TIMing:ALARm?
< 3000

:SOURce:FMEMory:ALARm:TIMing:NORMal <normal>

Parameter: <normal> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Step value: 1
Function: Sets the number of normal addition frames when using Alternate.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- When :SOURce:FMEMory:ALARm:TYPE is <OFF>
- When :SOURce:FMEMory:ALARm:TIMing:TYPE<ALTERNATE> is not set.

Example use: To set the number of normal addition frames to 1700:
> :SOURce:FMEMory:ALARm:TIMing:NORMal 1700

:SOURce:FMEMory:ALARm:TIMing:NORMal?

Response: <normal> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for number of normal addition frames when using Alternate.
Example use: To query the setting for number of normal addition frames when using Alternate.
> :SOURce:FMEMory:ALARm:TIMing:NORMal?
< 1700

:SOURce:FMEMory:ALARm:TIMing:BURSt <timing>,<unit>

Parameter: <timing> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 When unit is frame: Step value: 1
1 to 1000000 When unit is us: Step value: 125
<unit> = <CHARACTER PROGRAM DATA>
FRAME frame
US μs
Function: Sets the alarm insertion timing value and the unit.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- When :SOURce:FMEMory:ALARm:TYPE is set to <OFF>.
- When other than :SOURce:FMEMory:ALARm:TIMing:TYPE <BURST>is set.

Example use: To set the alarm insertion timing to 5000:
> :SOURce:FMEMory:ALARm:TIMing:BURSt 5000, FRAME

:SOURce:FMEMory:ALARm:TIMing:BURSt?

Response: <timing> = <NR1 NUMERIC RESPONSE DATA>
<unit> = <CHARACTER RESPONSE DATA>
Function: Queries the setting for the alarm insertion timing value and the unit.
Example use: To query the setting for the alarm insertion timing value and the unit:
> :SOURce:FMEMory:ALARm:TIMing:BURSt?
< 5000, FRAME

:SOURce:FMEMory:ERRor:TYPE <etype>

Parameter: <etype> = <CHARACTER PROGRAM DATA>
(SDH)

OFF	OFF
B1	B1
B2	B2
HB3	HP-B3
HREI	HP-REI
MREI	MS-REI
FAS	FAS
BALL	Bit all

(SONET)

OFF	OFF
B1	B1
B2	B2
HB3	HP-B3
REIL	REI-L
REIP	REI-P
FAS	FAS
BALL	Bit all

Function: Sets the error type to insert in the send signal.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
  When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.

Example use: To insert B1 in the send signal:
> :SOURce:FMEMory:ERRor:TYPE B1

:SOURce:FMEMory:ERRor:TYPE?

Response: <etype> = <CHARACTER RESPONSE DATA>
Function: Queries the error type to insert in the send signal.

Example use: To query the error type to insert in the send signal:
> :SOURce:FMEMory:ERRor:TYPE?
< B1

:SOURce:FMEMory:ERRor:TIMing:TYPE <timing>

Parameter: <timing> = <CHARACTER PROGRAM DATA>

ONCE	Single error
R1E_3	1E-3
R1E_4	1E-4
R1E_5	1E-5
R1E_6	1E-6
R1E_7	1E-7
R1E_8	1E-8
R1E_9	1E-9
ALL	All
BURST	Burs
R5E_3	5E-3
R5E_4	5E-4
R5E_5	5E-5
R5E_6	5E-6
R5E_7	5E-7
R5E_8	5E-8
R5E_9	5E-9
ALTERNATE	Alternate
PROGRATE	Programmable rate

Function: Sets the error addition timing.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- : When :SOURce:FMEMory:ERRor:TYPE is set to <OFF>.

Example use: To set the error addition timing to All:
> :SOURce:FMEMory:ERRor:TIMing:TYPE ALL

:SOURce:FMEMory:ERRor:TIMing:TYPE?

Response: <timing> = <CHARACTER RESPONSE DATA>

Function: Queries the setting for error addition timing.

Example use: To query the setting for error addition timing:
> :SOURce:FMEMory:ERRor:TIMing:TYPE?
< ALL

:SOURce:FMEMory:ERRor:TIMing:ERRor <error>

Parameter: <error> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 8000 Step value: 1

Function: Sets the number of error addition frames when using Alternate.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- When other than :SOURce:FMEMory:ERRor:TIMing:TYPE<ALTERNATE> is set.

Example use: To set the number of error addition frames to 3000 when using Alternate:
> :SOURce:FMEMory:ERRor:TIMing:ERRor 3000

:SOURce:FMEMory:ERRor:TIMing:ERRor?

Response: <error> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of error addition frames when using Alternate.

Example use: To query the number of error addition frames when using Alternate:
> :SOURce:FMEMory:ERRor:TIMing:ERRor?
< 3000

:SOURce:FMEMory:ERRor:TIMing:PROGrate <error>

Parameter: <error> = <STRING PROGRAM DATA>
"1.0E-2" to "9.9E-10" Mantissa portion 1.0 to 9.9Step value:0.1
Exponent portion 1 to 10 Step value: 1
Supplement:"1E-2" is set as "1.0E-2".

Function: Sets the addition value for the Prog. Rate error addition.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- When :SOURce:FMEMory:ERRor:TIMing:TYPE<PROGRATE> is not set.

Example use: To set the addition value for the Prog. Rate error addition to "1.0E-5":
> :SOURce:FMEMory:ERRor:TIMing:PROGrate "1.0E-5"

:SOURce:FMEMory:ERRor:TIMing:PROGrate?

Response: <error> = <STRING RESPONSE DATA>

Function: Queries the setting for addition value for the Prog. Rate error addition.

Example use: To query the setting for addition value for the Prog. Rate error addition:
> :SOURce:FMEMory:ERRor:TIMing:PROGrate?
< "1.0E-5"

:SOURce:FMEMory:ERRor:TIMing:NORMal <normal>

Parameter: <normal> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Step value: 1

Function: Sets the number of normal addition frames when using Alternate.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- When other than :SOURce:FMEMory:ERRor:TIMing:TYPE <ALTERNATE> is set.

Example use: To set the number of normal addition frames to 1700:
> :SOURce:FMEMory:ERRor:TIMing:NORMal 1700

:SOURce:FMEMory:ERRor:TIMing:NORMal?

Response: <normal> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of normal addition frames when using Alternate.

Example use: To query the number of normal addition frames when using Alternate:
> :SOURce:FMEMory:ERRor:TIMing:NORMal?
< 1700

:SOURce:FMEMory:ERRor:TIMing:BURSt:BIT <bit>

Parameter: <bit> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64000 Step value: 1

Function: Sets the number of error insertion bits.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"FMEMory">.
- :SOURce:TELecom:MAPPing:TYPE <mtype>
- When other than :SOURce:TELecom:MAPPing:TYPE <mtype> concatenation mapping route is selected.
- When SOURce:FMEMory:ERRor:TIMing:TYPE<BURST> is not set.

Example use: To set the number of error insertion bits to 1000:
> :SOURce:FMEMory:ERRor:TIMing:BURSt:BIT 1000

:SOURce:FMEMory:ERRor:TIMing:BURSt:BIT?

Response: <bit> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of error insertion bits.

Example use: To query the number of error insertion bits:
> :SOURce:FMEMory:ERRor:TIMing:BURSt:BIT?
< 1000

:SOURce:OHTest:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

OHC	OH change
OHB	OH BERT
PTR64	PTR64frame
ADROP	OH Add/Drop

Function: Switches according to the OH test item.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.

Example use: To set the OH test item to OH change:
> :SOURce:OHTest:TYPE OHC

:SOURce:OHTest:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the OH test item.

Example use: To query the OH test item:
> :SOURce:OHTest:TYPE?
< OHC

:SOURce:OHTest:STARt

Parameter: None

Function: Starts OHTest.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE<OHC> is set.

Example use: > :SOURce:OHTest:STARt

:SOURce:OHTest:STOP

Parameter: None

Function: Releases OHTest.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHC> is set.

Example use: > :SOURce:OHTest:STOP

:SOURce:OHTest:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

0	Stopping the OH pattern insertion.
1	Inserting the OH pattern.

Function: Queries the OHTest status.

Example use: > :SOURce:OHTest:STATe?
< 0

:SOURce:OHTest:OHCHange:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

(SDH)

SOH1B	SOH 1byte
POH1B	POH 1byte
K1K2	K1/K2
RSOH	RSOH
MSOH	MSOH
SOH	SOH
POH	POH

(SONET)

TOH1B	TOH 1byte
POH1B	POH 1byte
K1K2	K1/K2
RTOH	RTOH
MTOH	MTOH
TOH	TOH
POH	POH

Function: Sets the change type of OH change in the OH test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHC> is set.

Example use: To set the change type of OH change to POH 1byte:
> :SOURce:OHTest:OHCHange:TYPE POH1B

:SOURce:OHTest:OHCHange:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the change type of OH change in the OH test.

Example use: To query the change type of OH change:
> :SOURce:OHTest:OHCHange:TYPE?
< POH1B

:SOURce:OHTest:OHCHange:POSition:SOH <posi>
:SOURce:OHTest:OHCHange:POSition:TOH <posi>

Parameter: <posi> = <CHARACTER PROGRAM DATA>

(SDH)

A11	A12	A13	A21	A22	A23	J0 Z01	X18	X19
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

(SONET)

A11	A12	A13	A21	A22	A23	J0 Z01	Z02	Z03
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

(Refer to Appendix D of MP1570A operation manual Vol.1.)

Function: Sets the change byte position of OH change SOH 1byte [TOH 1byte].

Restriction: Invalid in the following case:

- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When :SOURce:OHTest:TYPE <OHC> is not set.
- When :SOURce:OHTest:OHCHange:TYPE <SOH1B> or <TOH1B> is not set.

Example use: To set the change position of OH change to Z12:
> :SOURce:OHTest:OHCHange:POSition:SOH Z12

:SOURce:OHTest:OHCHange:POSition:SOH?
:SOURce:OHTest:OHCHange:POSition:TOH?

Response: <posi> = <CHARACTER RESPONSE DATA>
Function: Queries the change byte position of OH change.
Example use: To query the setting for change byte position of OH change:
> :SOURce:OHTest:OHCHange:POSition:SOH?
< Z12

:SOURce:OHTest:OHCHange:POSition:POH <vctype>, <posi>

Parameter: <vctype> = <CHARACTER PROGRAM DATA>
(SDH)

VC4	POH VC4 pattern
VC3	POH VC3 pattern
VC1	POH VC2/1 pattern

(SONET)

STS3	POH STS3 pattern
STS1	POH STS1 pattern
VT	POH VT pattern

<posi> = <CHARACTER PROGRAM DATA>

(SDH)	J1	C2	G1	F2	H4	F3	K3	N1	J2	N2	K4
(SONET)	J1	C2	G1	F2	H4	Z3	Z4	Z5	J2	Z6	Z7

Function: Sets the change byte position of OH change POH 1byte, POH.
Restriction: Invalid in the following case:

- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHC> is set.
- When other than :SOURce:OHTest:OHCHange:TYPE <POH1B> is set.
- VC4[STS3] is invalid when the setting of :SOURce:TELecom:MAPPing:AU is <AU3>.
- VC3[STS1] is invalid when :SOURce:TELecom:MAPPing:TYPE <VC4_ASY>, <VC4_BLK>, or <ST3_ASY>, <ST3_BLK> are selected.
- VC3[STS1] is invalid when the setting of :SOURce:TELecom:MAPPing:AU is <AU4> and the setting of :SOURce:TELecom:MAPPing:TYPE <mtype> is the following mapping selection:
  6M(Async.), 6M(Bitsync.), VC2-mc, VC2-Bulk, 2M(Async.), 2M(Bitsync.F), 2M(Bitsync.L), 2M(Bytesync.F), 2M(Bytesync.L), VC12-Bulk, 1.5M(Async.), 1.5M(Bitsync.F), 1.5M(Bitsync.L), 1.5M(Bytesync.F), 1.5M(Bytesync.L), VC11-Bulk, Byte(Data), Byte(Voice), 384k(Data), 384k(Voice)

- VC2/1[VT] is invalid when the setting of :SOURce:TELecom:MAPPing:TYPE <mtype> is the following mapping selection:
  139M(Async.), VC4-Bulk, 34M(Async.), 34M(Sync.), 45M(Async.) VC3-Bulk, 2M(Bitsync.L), 2M(Bytesync.L), 1.5M(Bitsync.L), 1.5M(Bytesync.L)

Example use: To set the change position to J1 of VC4 when the change type of OH change is POH 1byte:
> :SOURce:OHTest:OHCHange:POSition:POH VC4,J1

:SOURce:OHTest:OHCHange:POSition:POH?

Response: <vctype> = <CHARACTER RESPONSE DATA>
<posi> = <CHARACTER RESPONSE DATA>
Function: Queries the change byte position of OH change.
Example use: To query the setting for change byte position of OH change:
> :SOURce:OHTest:OHCHange:POSition:POH?
< VC4, J1

:SOURce:OHTest:OHCHange:CHANel <ch>

Parameter: <ch> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
Function: Sets the change channel position of OH change SOH 1byte [TOH 1byte], RSOH [RTOH], MSOH [MTOH], and SOH [TOH].
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHC> is set.
- When the setting of :SOURce:OHTest:OHCHange:TYPE is other than <SOH1B>, <TOH1B>, <POH1B>, <RSOH>, <RTOH>, <MSOH>, <MTOH>, <SOH>, and <TOH>.

Example use: To set the change channel position to 7 when the change type of OH change is RSOH:
> :SOURce:OHTest:OHCHange:CHANel 7

:SOURce:OHTest:OHCHange:CHANel?

Response: <ch> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the change channel position of OH change SOH 1byte [TOH 1byte], RSOH [RTOH], MSOH [MTOH], and SOH [TOH].
Example use: To query the change channel position when the change type of OH change is RSOH:
> :SOURce:OHTest:OHCHange:CHANel?
< 7

:SOURce:OHTest:OHCHange:SEQuence:A:FRAMe <frame>

Parameter: <frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Number of send frames Step value: 1
Function: Sets the number of send frames of OH change A pattern.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHC> is set.
Example use: To set the number of send frames of OH change A pattern to 2:
> :SOURce:OHTest:OHCHange:SEQuence:A:FRAMe 2

:SOURce:OHTest:OHCHange:SEQuence:A:FRAMe?

Response: <frame> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for number of send frames of OH change A pattern.
Example use: To query the setting for number of send frames of OH change A pattern:
> :SOURce:OHTest:OHCHange:SEQuence:A:FRAMe?
< 2

:SOURce:OHTest:OHCHange:SEQuence:A:TIME <count>

Parameter: <count> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Number of send times Step value: 1
Function: Sets the number of send times of OH change A pattern.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHC> is set.
Example use: To set the number of send times of OH change A pattern to 50:
> :SOURce:OHTest:OHCHange:SEQuence:A:TIME 50

:SOURce:OHTest:OHCHange:SEQuence:A:TIME?

Response: <count> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for number of send times of OH change A pattern.
Example use: To query the setting for number of send times of OH change A pattern:
> :SOURce:OHTest:OHCHange:SEQuence:A:TIME?
< 50

:SOURce:OHTest:OHCHange:SEQuence:B:FRAMe <frame>

Parameter: <frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Number of send frames Step value: 1
Function: Sets the number of send frames of OH change B pattern.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHC> is set.
Example use: To set the number of send frames of OH change B pattern to 2:
> :SOURce:OHTest:OHCHange:SEQuence:B:FRAMe 2

:SOURce:OHTest:OHCHange:SEQuence:B:FRAMe?

Response: <frame> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for number of send frames of OH change B pattern.
Example use: To query the setting for number of send frames of OH change B pattern:
> :SOURce:OHTest:OHCHange:SEQuence:B:FRAMe?
< 2

:SOURce:OHTest:OHCHange:SEQuence:B:TIME <count>

Parameter: <count> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Number of send times Step value: 1
Function: Sets the number of send times of OH change B pattern.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHC> is set.
Example use: To set the number of send times of OH change B pattern to 50:
> :SOURce:OHTest:OHCHange:SEQuence:B:TIME 50

:SOURce:OHTest:OHCHange:SEQuence:B:TIME?

Response: <count> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for number of send times of OH change B pattern.
Example use: To query the setting for number of send times of OH change B pattern:
> :SOURce:OHTest:OHCHange:SEQuence:B:TIME?
< 50

:SOURce:OHTest:OHBert:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)

OFF	OFF
SOH1B	SOH 1byte
POH1B	POH 1byte
DRSect	D1-D3
DMSect	D4-D12

(SONET)

OFF	OFF
TOH1B	TOH 1byte
POH1B	POH 1byte
DRSect	D1-D3
DMSect	D4-D12

Function: Sets the change type of OH BERT in the OH test.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHB> is set.
Example use: To set the change type of OH BERT to POH 1byte:
> :SOURce:OHTest:OHBert:TYPE POH1B

:SOURce:OHTest:OHBert:TYPE?

Response:	<type> = <CHARACTER RESPONSE DATA>
Function:	Queries the change type of OH BERT in the OH test.
Example use:	To query the change type of OH BERT: > :SOURce:OHTest:OHBert:TYPE? < POH1B

:SOURce:OHTest:OHBert:POSition:SOH <posi>
:SOURce:OHTest:OHBert:POSition:TOH <posi>

Parameter: <posi> = <CHARACTER PROGRAM DATA>

(SDH)

A11	A12	A13	A21	A22	A23	J0 Z01	X18	X19
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

(SONET)

A11	A12	A13	A21	A22	A23	J0 Z01	Z02	Z03
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

(Refer to Appendix D of MP1570A operation manual Vol.1.)

Function: Sets the change byte position of SOH 1byte [TOH 1byte] in OH Bert.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHB> is set.
- When other than :SOURce:OHTest:OHBert:TYPE <SOH1B> and <TOH1B> is set.

Example use: To set the change position of OH Bert to Z12:
> :SOURce:OHTest:OHBert:POSition:SOH Z12

:SOURce:OHTest:OHBert:POSition:SOH?
:SOURce:OHTest:OHBert:POSition:TOH?

Response: <posi> = <CHARACTER RESPONSE DATA>
Function: Queries the change byte position of OH Bert.
Example use: To query the setting for change byte position of OH Bert:
> :SOURce:OHTest:OHBert:POSition:SOH?
< Z12

:SOURce:OHTest:OHBert:POSition:POH <vctype>, <posi>

Parameter: < vctype> = <CHARACTER PROGRAM DATA>
(SDH)

VC4	POH VC4pattern
VC3	POH VC3pattern
VC1	POH VC2/1pattern

(SONET)

STS3	POH STS3pattern
STS1	POH STS1pattern
VT	POH VTpattern

<posi> = <CHARACTER PROGRAM DATA>

(SDH)	J1	C2	G1	F2	H4	F3	K3	N1	J2	N2	K4
(SONET)	J1	C2	G1	F2	H4	Z3	Z4	Z5	J2	Z6	Z7

Function: Sets the change byte position of POH 1byte in OH Bert.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHB> is set.
- When other than :SOURce:OHTest:OHBert:TYPE <POH1B> is set.
- VC4[STS3] is invalid when the setting of :SOURce:TELecom:MAPPing:AU is <AU3>.
- VC3[STS1] is invalid when :SOURce:TELecom:MAPPing:TYPE <VC4_ASY>, <VC4_BLK>, or <ST3_ASY>, <ST3_BLK> are selected.
- VC3[STS1] is invalid when the setting of :SOURce:TELecom:MAPPing:AU is <AU4> and the setting of :SOURce:TELecom:MAPPing:TYPE <mtype> is the following Mapping selection:
  6M(Async.), 6M(Bitsync.), VC2-mc, VC2-Bulk, 2M(Async.), 2M(Bitsync.F), 2M(Bitsync.L), 2M(Bytesync.F), 2M(Bytesync.L), VC12-Bulk, 1.5M(Async.), 1.5M(Bitsync.F), 1.5M(Bitsync.L), 1.5M(Bytesync.F), 1.5M(Bytesync.L), VC11-Bulk, Byte(Data), Byte(Voice), 384k(Data), 384k(Voice)

- VC2/1[VT] is invalid when the setting of :SOURce:TELecom:MAPPing:TYPE <mtype> is the following Mapping selection:
  139M(Async.), VC4-Bulk, 34M(Async.), 34M(Sync.), 45M(Async.) VC3-Bulk, 2M(Bitsync.L), 2M(Bytesync.L), 1.5M(Bitsync.L), 1.5M(Bytesync.L)

Example use: To set the change position to J1 of VC4 when the change type of OH Bert is POH 1byte:
> :SOURce:OHTest:OHBert:POSition:POH VC4,J1

:SOURce:OHTest:OHBert:POSition:POH?

Response: <vctype> = <CHARACTER RESPONSE DATA>
<posi> = <CHARACTER RESPONSE DATA>

Function: Queries the change byte position of POH 1byte in OH Bert.

Example use: To query the setting for change byte position of OH Bert.
> :SOURce:OHTest:OHBert:POSition:POH?
< VC4, J1

:SOURce:OHTest:OHBert:CHANel <ch>

Parameter: <ch> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1

Function: Sets the change channel position of OH Bert SOH 1byte[TOH 1byte].

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <OHB> is set.
- When other than :SOURce:OHTest:OHBert:TYPE <SOH1B> and <TOH1B> is set.

Example use: To set the change channel position to 7 when OH Bert is SOH 1byte:
> :SOURce:OHTest:OHBert:CHANel 7

:SOURce:OHTest:OHBert:CHANel?

Response: <ch> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the change channel position when OH Bert is SOH 1byte [TOH 1byte].

Example use: To query the change channel position when OH Bert is SOH 1byte:
> :SOURce:OHTest:OHBert:CHANel?
< 7

:SOURce:OHTest:ADRop:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

(SDH)

OFF	OFF
SOH1B	SOH 1byte
POH1B	POH 1byte
DRSect	D1-D3
DMSect	D4-D12

(SONET)

OFF	OFF
TOH1B	TOH 1byte
POH1B	POH 1byte
DRSect	D1-D3
DMSect	D4-D12

Function: Sets the OH Add type in the OH test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <ADROP> is set.

Example use: To set the OH Add type to POH 1byte:
> :SOURce:OHTest:ADRop:TYPe POH1B

:SOURce:OHTest:ADRop:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the OH Add type in the OH test.

Example use: To query the OH Add type:
> :SOURce:OHTest:ADRop:TYPE?
< POH1B

:SOURce:OHTest:ADRop:POSition:SOH <posi>
:SOURce:OHTest:ADRop:POSition:TOH <posi>

Parameter: <posi> = <CHARACTER PROGRAM DATA>

(SDH)

A11	A12	A13	A21	A22	A23	J0 Z01	X18	X19
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

(SONET)

A11	A12	A13	A21	A22	A23	J0 Z01	Z02	Z03
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

(Refer to Appendix D of MP1570A operation manual Vol.1.)

Function: Sets the change byte position of OH Add SOH 1byte [TOH 1byte].

Restriction: Invalid in the following case:

- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <ADROP> is set.
- When the setting of :SOURce:OHTest:ADRop:TYPE is other than <SOH1B> and <TOH1B>.

Example use: To set the change position to X85 when the change type of OH Add is SOH 1byte:
> :SOURce:OHTest:ADRop:POSition:SOH X85

:SOURce:OHTest:ADRop:POSition:SOH?
:SOURce:OHTest:ADRop:POSition:TOH?

Response: <posi> = <CHARACTER RESPONSE DATA>
Function: Queries the setting for change byte position of OH Add.
Example use: To query the setting for change byte position of OH Add:
> :SOURce:OHTest:ADRop:POSition:SOH?
< X85

:SOURce:OHTest:ADRop:POSition:POH <vctype>, <posi>

Parameter: < vctype > = <CHARACTER PROGRAM DATA>
(SDH)

VC4	POH VC4pattern
VC3	POH VC3pattern
VC1	POH VC2/1pattern

(SONET)

STS3	POH STS3pattern
STS1	POH STS1pattern
VT	POH VTpattern

<posi> = <CHARACTER PROGRAM DATA>

(SDH)	J1	C2	G1	F2	H4	F3	K3	N1	J2	N2	K4
(SONET)	J1	C2	G1	F2	H4	Z3	Z4	Z5	J2	Z6	Z7

Function: Sets the change byte position of OH Add POH 1byte.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.

- When other than :SOURce:OHTest:TYPE <ADROP> is set.
- When the setting of :SOURce:OHTest:ADRop:TYPE is other than <POH1B>.
- VC4[STS3] is invalid when the setting of :SOURce:TELecom:MAPPing:AU is <AU3>.
- VC3[STS1] is invalid when :SOURce:TELecom:MAPPing:TYPE <VC4_ASY>, <VC4_BLK>, or <ST3_ASY>, <ST3_BLK> are selected.
- VC3[STS1] is invalid when the setting of :SOURce:TELecom:MAPPing:AU is <AU4> and the setting of :SOURce:TELecom:MAPPing:TYPE <mtype> is the following Mapping selection:
  6M(Async.), 6M(Bitsync.), VC2-mc, VC2-Bulk, 2M(Async.), 2M(Bitsync.F), 2M(Bitsync.L), 2M(Bytesync.F), 2M(Bytesync.L), VC12-Bulk, 1.5M(Async.), 1.5M(Bitsync.F), 1.5M(Bitsync.L), 1.5M(Bytesync.F), 1.5M(Bytesync.L), VC11-Bulk, Byte(Data), Byte(Voice), 384k(Data), 384k(Voice)

- VC2/1[VT] is invalid when the setting
of :SOURce:TELecom:MAPPing:TYPE <mtype> is the following
Mapping selection:
139M(Async.), VC4-Bulk, 34M(Async.), 34M(Sync.), 45M(Async.)
VC3-Bulk, 2M(Bitsync.L), 2M(Bytesync.L), 1.5M(Bitsync.L),
1.5M(Bytesync.L)

Example use: To set the change position to J1 of VC4 when the change type of OH Add is POH 1byte:
> :SOURce:OHTest:ADRop:POSition:POH VC4,J1

:SOURce:OHTest:ADRop:POSition:POH?

Response: <vctype> = <CHARACTER RESPONSE DATA>
<posi> = <CHARACTER RESPONSE DATA>

Function: Queries the change byte position of OH Add POH 1byte.

Example use: To query the setting for change byte position of OH Add:
> :SOURce:OHTest:ADRop:POSition:POH?
< VC4, J1

:SOURce:OHTest:ADRop:CHANel <ch>

Parameter: <ch> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1

Function: Sets the change channel position of OH Add SOH 1byte [TOH 1byte].

Restriction: Invalid in the following case:
- When DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <ADROP> is set.
- When the setting of :SOURce:OHTest:ADRop:TYPE is other than <SOH1B> and <TOH1B> is set.

Example use: To set the change channel position to 7 when OH Add is SOH 1byte:
> :SOURce:OHTest:ADRop:CHANel 7

:SOURce:OHTest:ADRop:CHANel?

Response: <ch> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the change channel position when OH Add is SOH 1byte.

Example use: To query the change channel position when OH Add is SOH 1byte:
> :SOURce:OHTest:ADRop:CHANel?
< 7

:SOURce:OHTest:PTR64:SEQuence:FRAMe <frame>

Parameter: <frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Number of send frames Step value: 1

Function: Sets the number of send frames of PTR64 frame in the OH test.

Restriction: Invalid in the following case:
- When DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <PTR64> is set.

Example use: To set PTR64 frame to 2 frames:
> :SOURce:OHTest:PTR64:SEQuence:FRAMe 2

:SOURce:OHTest:PTR64:SEQuence:FRAMe?

Response: <frame> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for number of send frames of PTR64 frame in the OH test.
Example use: To query the setting for number of send frames of PTR64 frame:
> :SOURce:OHTest:PTR64:SEQuence:FRAMe?
< 2

:SOURce:OHTest:PTR64:SEQuence:MODE <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>
SINGLE Single
REPEAT Repeat
Function: Sets the send mode of PTR64 frame in the OH test.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <PTR64> is set.
Example use: To set the send mode of PTR64 frame to Single:
> :SOURce:OHTest:PTR64:SEQuence:MODE SINGLE

:SOURce:OHTest:PTR64:SEQuence:MODE?

Response: <mode> = <CHARACTER RESPONSE DATA>
Function: Queries the setting for send mode of PTR64 frame in the OH test.
Example use: To query the setting for send mode of PTR64 frame:
> :SOURce:OHTest:FRAMe64:SEQuence:MODE?
< SINGLE

:SOURce:OHTest:PTR64:PTR <point>

Parameter: <point> = <CHARACTER PROGRAM DATA>
(SDH)
AU
TU
(SONET)
STS
VT
Function: Sets the PTR64 frame pointer in the OH test.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When other than :SOURce:OHTest:TYPE <PTR64> is set.
- The setting of TU[VT] is invalid when:
The setting of :SOURce:TELecom:MAPPing:TYPE <mtype> is the following Mapping selection:

VC4-139M(Async.) , VC4-Bulk, 2M(Bitsync.L), 2M(Bytesync.L)
1.5M(Bitsync.L) ,1.5M(Bytesync.L) AU3-VC3-45M(Async.)
AU3-VC3-VC3_Bulk

Example use: To set PTR64 frame pointer to TU:
> :SOURce:OHTest:PTR64:PTR TU

:SOURce:OHTest:PTR64:PTR?

Response: <point> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of PTR64 frame pointer in the OH test.
Example use: To query the setting of PTR64 frame pointer:
> :SOURce:OHTest:FRAMe64:PTR?
< TU

:SOURce:IPTest:STARt

Parameter: None
Function: Starts sending packets of IP test.
Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <“IPTest”>.
Example use: To start to send packets.
> :SOURce:IPTest:SEQuence:STARt

:SOURce:IPTest:STOP

Parameter: None
Function: Stops sending the packets of IP test.
Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <“IPTest”>.
Example use: To stop to send packets.
> :SOURce:IPTest:SEQuence:STOP

:SOURce:IPTest:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
0 indicates that alarms are not inserted.
1 indicates that alarms are inserted.
Function: Queries the packet send state of IP test.
Example use: > :SOURce:IPTest:STATe?
< 0

:SOURce:IPTest:SEQuence:MODE <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>
SINGLE Single
REPEAT Repeat
Function: Set the measurement mode and measurement time of IP test.
Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <“IPTest”>.

Example use: To set the measurement mode to Single.
> :SOURce:IPTest:SEQuence:MODE SINGLE

:SOURce:IPTest:SEQuence:MODE?

Response: <mode> = <CHARACTER RESPONSE DATA>
Function: Queries the measurement mode of IP test.
Example use: > :SOURce:IPTest:SEQuence:MODE?
< SINGLE

:SOURce:IPTest:PACKset

Parameter: None
Function: Sets a state in which IP test can start.
Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.
Example use: To set the state in which IP test can start.
> :SOURce:IPTest:PACKset

:SOURce:IPTest:PACKet:LBYTe <L>

Parameter: <L> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 100000 Step value : 1byte
Function: Sets the number of Idle pattern (L) bytes inserted into PPP packets in IP test.
Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.
Example use: To set the Idle pattern (L) to 5,000 bytes.
> :SOURce:IPTest:PACKet:LBYTe 5000

:SOURce:IPTest:PACKet:LBYTe?

Response: <L> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the number of Idle pattern (L) bytes.
Example use: > :SOURce:IPTest:PACKet:LBYTe?
< 5000

:SOURce:IPTest:PACKet:MBYTe <M>

Parameter: <M> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 100000 Step value : 1 byte
Function: Sets the number of Idle pattern (M) bytes inserted into PPP packets in IP test.
Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.
Example use: To set the Idle pattern (M) to 5,000 bytes.
> :SOURce:IPTest:PACKet:MBYTe 5000

:SOURce:IPTest:PACKet:MBYTe?

Response: <M> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the number of Idle pattern (M) bytes.
Example use: > :SOURce:IPTest:PACKet:MBYTe?
< 5000

:SOURce:IPTest:PACKet:NBYTe <N>

Parameter: <N> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 100000 Step value: 1 byte
Function: Sets the number of Idle pattern (N) bytes inserted into PPP packets in IP test.
Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.
Example use: To set the Idle pattern (N) to 5,000 bytes.
> :SOURce:IPTest:PACKet:NBYTe 5000

:SOURce:IPTest:PACKet:NBYTe?

Response: <N> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the number of Idle pattern (N) bytes.
Example use: > :SOURce:IPTest:PACKet:NBYTe?
< 5000

:SOURce:IPTest:PACKet:NL <no>

Parameter: <no> = <CHARACTER PROGRAM DATA>
1 IP packet preset No.1
2 IP packet preset No.2
3 IP packet preset No.3
Function: Sets the type of PPP packet (between Idle NL) to be sent in IP test.
The details of packet are set on the Setup:IP packet screen.
Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.
Example use: To set the type of packet to No.1.
> :SOURce:IPTest:PACKet:NL 1

:SOURce:IPTest:PACKet:NL?

Response: <no> = <CHARACTER RESPONSE DATA>
Function: Queries the type of PPP packet (between Idle NL) to be sent in IP test.
Example use: > :SOURce:IPTest:PACKet:NL?
< 1

:SOURce:IPTest:PACKet:LM <no>

Parameter: <no> = <CHARACTER PROGRAM DATA>

NON	No setting
1	IP packet preset No.1
2	IP packet preset No.2
3	IP packet preset No.3

Function: Sets the type of PPP packet (between Idle LM) to be sent in IP test.
The details of packet are set on the Setup:IP packet screen.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.

Example use: To set the type of packet to 3.
> :SOURce:IPTest:PACKet:LM 3

:SOURce:IPTest:PACKet:LM?

Response: <no> = <CHARACTER RESPONSE DATA>

Function: Queries the type of PPP packet (between Idle LM) to be sent in IP test.

Example use: > :SOURce:IPTest:PACKet:LM?
< 3

:SOURce:IPTest:PACKet:MN <no>

Parameter: <no> = <CHARACTER PROGRAM DATA>

NON	No setting
1	IP packet preset No.1
2	IP packet preset No.2
3	IP packet preset No.3

Function: Sets the type of PPP packet (between Idle MN) to be sent in IP test.
The details of packet are set on the Setup:IP packet screen.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.

Example use: To set the type of packet to NON.
> :SOURce:IPTest:PACKet:MN NON

:SOURce:IPTest:PACKet:MN?

Response: <no> = <CHARACTER RESPONSE DATA>

Function: Queries the type of PPP packet (between Idle NL) to be sent in IP test.

Example use: > :SOURce:IPTest:PACKet:MN?
< NON

:SOURce:IPTest:ALARm:TYPE <alarm>

Parameter: <alarm> = <CHARACTER PROGRAM DATA>
(SDH)

OFF	OFF
LOS	LOS

(SONET)

OFF	OFF
LOS	LOS

Function: Set an additional alarm item for IP test.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <“IPTest”>.

Example use: To set the additional alarm item to LOS.
> :SOURce:IPTest:ALARm:TYPE LOS

:SOURce:IPTest:ALARm:TYPE?

Response: <alarm> = <CHARACTER RESPONSE DATA>

Function: Queries the additional alarm item.

Example use: > :SOURce:IPTest:ALARm:TYPE?
< LOS

:SOURce:IPTest:ALARm:TIMing:TYPE <timing>

Parameter: <timing> = <CHARACTER PROGRAM DATA>

ALL	All

Function: Sets a timing to add an alarm.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <“IPTest”>.
- :SOURce:IPTest:ALARm:TYPE is <OFF>.

* There is a case when only “ALL” can be set as the timing according to the additional alarm item.

Example use: To set the timing to add the alarm to All.
> :SOURce:IPTest:ALARm:TIMing:TYPE ALL

:SOURce:IPTest:ALARm:TIMing:TYPE?

Response: <timing> = <CHARACTER RESPONSE DATA>

Function: Queries the timing to add the alarm.

Example use: > :SOURce:IPTest:ALARm:TIMing:TYPE?
< SINGLE

:SOURce:IPTest:ERRor:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

(SDH)

OFF	OFF
B1	B1
B2	B2
HB3	HP-B3
LB3	LP-B3
BIP2	BIP2
MREI	MS-REI
HREI	HP-REI
FCS	FCS

(SONET)

OFF	OFF
B1	B1
B2	B2
HB3	HP-B3
LB3	LP-B3
BIP2	BIP2
REIL	REI-L
REIP	REI-P
FCS	FCS

Function: Sets an additional error item for IP test.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <“IPTest”>.

Example use: To set the additional error item to B1.
> :SOURce:IPTest:ERRor:TYPE B1

:SOURce:IPTest:ERRor:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the additional error item.

Example use: > :SOURce:IPTest:ERRor:TYPE?
< B1

:SOURce:IPTest:ERRor:TIMing:TYPE <timing>

Parameter: <timing> = <CHARACTER PROGRAM DATA>

ONCE	Single error
R1E_3	1E-3
R1E_4	1E-4
R1E_5	1E-5
R1E_6	1E-6
R1E_7	1E-7
R1E_8	1E-8
R1E_9	1E-9
R1IN16	1 in 16
R2IN16	2 in 16
R3IN16	3 in 16
R4IN16	4 in 16
ALL	All
BURST	Burst
R5E_3	5E-3
R5E_4	5E-4
R5E_5	5E-5
R5E_6	5E-6
R5E_7	5E-7
R5E_8	5E-8
R5E_9	5E-9
ALTERNATE	Alternate
PROGRATE	Programmable rate

Function: Sets an error addition timing.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <“IPTest”>.
- :SOURce:IPTest:ERRor:TYPE is <OFF>.

Example use: To set the error addition timing to All.
> :SOURce:IPTest:ERRor:TIMing:TYPE ALL

:SOURce:IPTest:ERRor:TIMing:TYPE?

Response: <timing> = <CHARACTER RESPONSE DATA>

Function: Queries the error addition timing.

Example use: > :SOURce:IPTest:ERRor:TIMing:TYPE?
< ALL

:SOURce:IPTest:ERRor:TIMing:ERRor <error>

Parameter: <error> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 8000 Step value : 1

Function: Sets the number of error addition frames when the timing is set to Alternate.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.
- :SOURce:IPTest:ERRor:TYPE is <OFF>.
- :SOURce:IPTest:ERRor:TIMing:TYPE is other than <ALTERNATE>.

Example use: To set the number of the error addition frames to 3,000.
> :SOURce:IPTest:ERRor:TIMing:ERRor 3000

:SOURce:IPTest:ERRor:TIMing:ERRor?

Response: <error> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the number of the error addition frames when Alternate is set.
Example use: > :SOURce:IPTest:ERRor:TIMing:ERRor?
< 3000

:SOURce:IPTest:ERRor:TIMing:PROGrate <error>

Parameter: <error> = <STRING PROGRAM DATA>
"1.0E-2" to "9.9E-10"
Mantissa portion 1.0 to 9.9 Step value : 0.1
Exponent portion 1 to 10 Step value : 1
Both "1.0E-2" and "1E-2" are acceptable.

Function: Sets an error addition value when the timing is set to Programmable rate.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.
- :SOURce:IPTest:ERRor:TYPE is <OFF>.
- :SOURce:IPTest:ERRor:TIMing:TYPE is other than <PROGRATE>.

Example use: To set the additional value for Prog. Rate error addition to 1.0E-5.
> :SOURce:IPTest:ERRor:TIMing:PROGrate "1.0E-5"

:SOURce:IPTest:ERRor:TIMing:PROGrate?

Response: <error> = <STRING RESPONSE DATA>
Function: Queries the error addition value when Programmable rate is set.
Example use: > :SOURce:IPTest:ERRor:TIMing:PROGrate?
< "1.0E-5"

:SOURce:IPTest:ERRor:TIMing:NORMal <normal>

Parameter: <normal> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Step value: 1

Function: Sets the number of normal frames (alarms are not added) when the timing is set to Alternate.

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.
- :SOURce:IPTest:ERRor:TYPE is <OFF>.
- :SOURce:IPTest:ERRor:TIMing:TYPE is other than <ALTERNATE>.

Example use: To set the number of the normal frames to 1,700.
> :SOURce:IPTest:ERRor:TIMing:NORMal 1700

:SOURce:IPTest:ERRor:TIMing:NORMal?

Response: <normal> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the number of normal frames (alarms are not added) when the timing is set to Alternate.
Example use: > :SOURce:IPTest:ERRor:TIMing:NORMal?
< 1700

:SOURce:IPTest:ERRor:TIMing:BURSt:BIT <bit>

Parameter: <bit> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64000 Step value : 1 (bit)
Function: Sets the number of bit to insert errors when the timing is set to Burst.
Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is other than <“IPTest”>.
- :SOURce:IPTest:ERRor:TYPE is <OFF>.
- :SOURce:IPTest:ERRor:TIMing:TYPE is other than <BURST>.
Example use: To set the number of the bits to insert the errors to 1,000.
> :SOURce:IPTest:ERRor:TIMing:BURSt:BIT 1000

:SOURce:IPTest:ERRor:TIMing:BURSt:BIT?

Response: <bit> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the number of the bits to insert the errors.
Example use: > :SOURce:IPTest:ERRor:TIMing:BURSt:BIT?
< 1000

:SOURce:APSTest:SEQuence:FRAMe <frame>

Parameter: <frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Number of send frames Step value: 1
Function: Sets the number of send patterns for APS test.
Restriction: Invalid in the following case:
- When other than :DISPlay:TMENu[:NAME] <"APSTest"> is set.
Example use: To set the APS test to 2 patterns:
> :SOURce:APSTest:SEQuence:FRAMe 2

:SOURce:APSTest:SEQuence:FRAMe?

Response: <frame> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for number of send pattern of APS test.
Example use: To query the setting for number of send pattern of APS test:
> :SOURce:APSTest:SEQuence:FRAMe?
< 2

:SOURce:APSTest:SEQuence:MODE <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>

SINGLE	Single
REPEAT	Repeat

Function: Sets the send mode of APS test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.

Example use: To set the send mode of APS test to Single:
> :SOURce:APSTest:SEQuence:MODE SINGLE

:SOURce:APSTest:SEQuence:MODE?

Response: <mode> = <CHARACTER RESPONSE DATA>

Function: Queries the setting for send mode of APS test.

Example use: To query the setting for send mode of APS test:
> :SOURce:APSTest:SEQuence:MODE?
< SINGLE

:SOURce:APSTest:STARt

Parameter: None

Function: Starts the APS test.
(starts outputting the data set on the Setup:APS programmable data screen.)

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is set to other than <“APSTest”>.

Example use: > :SOURce:APSTEst:STARt

:SOURce:APSTest:STOP

Parameter: None

Function: Stops the APS test.
(stops outputting the data set on the Setup:APS programmable data screen.)

Restriction: Invalid in the following case:
- :DISPlay:TMENu[:NAME] is set to other than <“APSTest”>.

Example use: > :SOURce:APSTEst:STOP

:SOURce:APSTest:ALARm:TYPE <atype>

Parameter: <atype> = <CHARACTER PROGRAM DATA>

(SDH)	OFF	Enters no alarm.
	LOS	Enters LOS.
	LOF	Enters LOF.
	MAIS	Enters MS-AIS.
	MRDI	Enters MS-RDI.
	AAIS	Enters AU-AIS.
	ALOP	Enters AU-LOP.
	HRDI	Enters HP-RDI.
	HSLM	Enters HP-HSLM.
	HTIM	Enters HP-HTIM.
	HUNEQ	Enters HP-UNEQ.
	HVAIS	Enters HP-VC-AIS.
	HISF	Enters HP-ISF.
	HFAS	Enters HP-FAS.
	HIAIS	Enters HP-IncAIS.
	HTRDI	Enters HP-TC-RDI.
	HODI	Enters HP-ODI.
	TAIS	Enters TU-AIS.
	TLOP	Enters TU-LOP.
	LRDI	Enters LP-RDI.
	LRFI	Enters LP-RFI.
	LSLM	Enters LP-SLM.
	LTIM	Enters LP-TIM.
	LUNEQ	Enters LP-UNEQ.
	TLOM	Enters TU-LOM.
	LVAIS	Enters LP-VC-AIS.
	LFAS	Enters LP-FAS.
	LIAIS	Enters LP-IncAIS.
	LTRDI	Enters LP-TC-RDI.
	LODI	Enters LP-ODI.

(SONET)	OFF	Enters no alarm.
	LOS	Enters LOS.
	LOF	Enters LOF.
	AISL	Enters AIS-L.
	RDIL	Enters RDI-L.
	AISP	Enters AIS-P.
	LOPP	Enters LOP-P.
	RDIP	Enters RDI-P.
	SLMP	Enters SLM-P.
	TIMP	Enters TIM-P.
	UNEQP	Enters UNEQ-P.
	HVAIS	Enters HP-VC-AIS.
	HISF	Enters HP-ISF.
	HFAS	Enters HP-FAS.
	HIAIS	Enters HP-IncAIS.
	HTRDI	Enters HP-TC-RDI.
	HODI	Enters HP-ODI.
	AISV	Enters AIS-V.
	LOPV	Enters LOP-V.
	RDIV	Enters RDI-V.
	RFIV	Enters RFI-V.
	SLMV	Enters SLM-V.
	TIMV	Enters TIM-V.
	UNEQV	Enters UNEQ-V.
	LOMV	Enters LOM-V.
	LVAIS	Enters LP-VC-AIS.
	LFAS	Enters LP-FAS.
	LIAIS	Enters LP-IncAIS.
	LTRDI	Enters LP-TC-RDI.
	LODI	Enters LP-ODI.

Function: Sets the alarm type to insert in the APS test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.

Example use: To insert LOS in the APS test:
> :SOURce:APSTest:ALARm:TYPE LOS

:SOURce:APSTest:ALARm:TYPE?

Response: <atype> = <CHARACTER RESPONSE DATA>

Function: Queries the alarm type to insert in the APS test.

Example use: To query the alarm type to insert in the APS test:
> :SOURce:APSTest:ALARm:TYPE?
< LOS

:SOURce:APSTest:ALARm:TIMing:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
SINGLE
BURST
ALTERNATE
ALL

Function: Sets the alarm addition timing in the APS test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
- When :SOURce:APSTest:ALARm:TYPE is set to <OFF>
- When other than <type> ALL is selected while the setting of :SOURce:APSTest:ALARm:TYPE is <HTRDI>, <HODI>, <LTRDI>, or <LODI>.

Example use: To set the alarm addition timing to BURST:
> :SOURce:APSTest:ALARm:TIMing:TYPE BURST

:SOURce:APSTest:ALARm:TIMing:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the setting of alarm addition timing in the APS test.

Example use: To query the setting of alarm addition timing:
> :SOURce:APSTest:ALARm:TIMing:TYPE?
< BURST

:SOURce:APSTest:ALARm:TIMing:ALARm <error>

Parameter: <error> = <DECIMAL NUMERIC PROGRAM DATA>

0 to 8000	When unit is frame:	Step value: 1
0 to 1000000	When unit is μs:	Step value: 125

Function: Sets the number of alarm addition frames when using Alternate in the APS test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
- When :SOURce:APSTest:ALARm:TYPE is set to <OFF>
- When other than :SOURce:APSTest:ALARm:TIMing:TYPE <ALTERNATE> is selected.

Example use: To set the number of alarm addition frames to 3000:
> :SOURce:APSTest:ALARm:TIMing:ALARm 3000

:SOURce:APSTest:ALARm:TIMing:ALARm?

Response: <error> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of alarm addition frames when using Alternate in the APS test.

Example use: To query the number of alarm addition frames when using Alternate:
> :SOURce:APSTest:ALARm:TIMing:ALARm?
< 3000

:SOURce:APSTest:ALARm:TIMing:NORMal <normal>

Parameter: <normal> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 8000	When unit is frame:	Step value: 1
125 to 1000000	When unit is μs:	Step value: 125

Function: Sets the number of normal addition frames when using Alternate in the APS test.

Restriction: Invalid in the following case:

- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
- When :SOURce:APSTest:ALARm:TYPE is set to <OFF>.
- When other than :SOURce:APSTest:ALARm:TIMing:TYPE <ALTERNATE> is selected.

Example use: To set the number of normal addition frames to 1700:

> :SOURce:APSTest:ALARm:TIMing:NORMal 1700

:SOURce:APSTest:ALARm:TIMing:NORMal?

Response: <normal> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of normal addition frames when using Alternate in the APS test.

Example use: To query the number of normal addition frames when using Alternate:

> :SOURce:APSTest:ALARm:TIMing:NORMal?

< 1700

:SOURce:APSTest:ALARm:TIMing:ALTErnate <unit>

Parameter: <unit> = <CHARACTER PROGRAM DATA>

FRAME	frame
US	μs

Function: Sets alarm insertion units

Restriction: Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"APSTest">.
- :SOURce:APSTest:ALARm:TYPE,OFF> is set.
- When other than :SOURce:APSTest:ALARm:TIMing:TYPE <ALTERNATE> is set.

Example of use: To change alarm insertion units to frame

> :SOURce:APSTest:ALARm:TIMing:ALTErnate FRAME

SOURce:APSTest:ALARm:TIMing:ALTErnate?

Response: <unit>=<CHARACTER RESPONSE DATA>

Function: Queries alarm insertion unit setting

Example of use: > :SOURce:APSTest:ALARm:TIMing:ALTErnate?

< FRAME

:SOURce:APSTest:ALARm:TIMing:BURSt <timing>,<unit>

Parameter: <timing> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 8000	When unit is frame:	Step value: 1
1 to 1000000	When unit is μs :	Step value: 125

<unit> = <CHARACTER PROGRAM DATA>

FRAME	frame
US	μs

Function: Sets the alarm insertion timing value and the unit in the APS test.

Restriction: Invalid in the following case:

- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
- When :SOURce:APSTest:ALARm:TYPE is set to <OFF>.
- When other than :SOURce:APSTest:ALARm:TIMing:TYPE <BURST> is selected.

Example use: To set the alarm insertion timing at the 5000th frame:

> :SOURce:APSTest:ALARm:TIMing:BURSt 5000, FRAME

:SOURce:APSTest:ALARm:TIMing:BURSt?

Response: <timing> = <NR1 NUMERIC RESPONSE DATA>

<unit> = <CHARACTER RESPONSE DATA>

Function: Queries the setting for alarm insertion timing value and the unit in the APS test.

Example use: To query the setting for alarm insertion timing value and the unit:

> :SOURce:APSTest:ALARm:TIMing:BURSt?

< 5000, FRAME

:SOURce:APSTest:ERRor:TYPE <etype>

Parameter: <etype> = <CHARACTER PROGRAM DATA>

(SDH)	OFF	Enters no error.
	B1	Enters B1.
	B2	Enters B2.
	HB3	Enters HB3.
	LB3	Enters LB3.
	BIP2	Enters BIP2.
	MREI	Enters MS-REI.
	HREI	Enters HP-REI.
	HIEC	Enters HP-IEC.
	HTREI	Enters HP-TC-REI.
	HOEI	Enters HP-OEI.
	LREI	Enters LP-REI.
	LIEC	Enters LP-IEC.
	LTREI	Enters LP-TC-REI.
	LOEI	Enters LP-OEI.
	N2BIP2	Enters N2_BIP2.
	FAS	Enters FAS.
	BALL	Enters Bit all.
	BIT139	Enters Bit 139M.
	BIT45	Enters Bit 45M.
	BIT34	Enters Bit 34M.
	BIT8	Enters Bit 8M.
	BIT2	Enters Bit 2M.
	BIT1_5	Enters Bit 1.5M.
	BINF	Enters Bit info.
	CODE	Enters Code.
	EBIT	Enters Ebit.
	FAS139	Enters FAS 139M.
	FAS45	Enters FAS 45M.
	FAS34	Enters FAS 34M.
	FAS8	Enters FAS 8M.
	FAS2	Enters FAS 2M.
	FAS1_5	Enters FAS 1.5M.
	REI139	Enters REM 139M.
	REI45	Enters REM 45M.
	REI34	Enters REM 34M.
	PLCPREI	Enters REI PLCP.
	PARITY	Enters Parity.
	CRC6	Enters CRC-6.
	CBIT	Enters Cbit.
	BIP8	Enters BIP8.

(SONET)	OFF	Enters no error.
	B1	Enters B1.
	B2	Enters B2.
	HB3	Enters HB3.
	LB3	Enters LB3.
	BIP2	Enters BIP2.
	REIL	Enters MS-REI.
	REIP	Enters HP-REI.
	HIEC	Enters HP-IEC.
	HTREI	Enters HP-TC-REI.
	HOEI	Enters HP-OEI.
	REIV	Enters LP-REI.
	LIEC	Enters LP-IEC.
	LTREI	Enters LP-TC-REI.
	LOEI	Enters LP-OEI.
	N2BIP2	Enters N2_BIP2.
	FAS	Enters FAS.
	BALL	Enters Bit all.
	BIT139	Enters Bit 139M.
	BIT45	Enters Bit 45M.
	BIT34	Enters Bit 34M.
	BIT8	Enters Bit 8M.
	BIT2	Enters Bit 2M.
	BIT1_5	Enters Bit 1.5M.
	BINF	Enters Bit info.
	CODE	Enters Code.
	EBIT	Enters Ebit.
	FAS139	Enters FAS 139M.
	FAS45	Enters FAS 45M.
	FAS34	Enters FAS 34M.
	FAS8	Enters FAS 8M.
	FAS2	Enters FAS 2M.
	FAS1_5	Enters FAS 1.5M.
	REI139	Enters REM 139M.
	REI45	Enters REM 45M.
	REI34	Enters REM 34M.
	PARITY	Enters Parity.
	CRC6	Enters CRC-6.
	CBIT	Enters Cbit.
	BIP8	Enters BIP8.

Function: Sets the error type to insert in the APS test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.

Example use: To insert a bit error in the 34-M bit/s signal:
> :SOURce:APSTest:ERRor:TYPE BIT34

:SOURce:APSTest:ERRor:TYPE?

Response: <etype> = <CHARACTER RESPONSE DATA>
Function: Queries the error type to insert in the APS test.
Example use: To query the error type to insert in the APS test:
> :SOURce:APSTest:ERRor:TYPE?
< BIT34

:SOURce:APSTest:ERRor:TIMing:TYPE <timing>

Parameter: <timing> = <CHARACTER PROGRAM DATA>

ONCE	Single error
R1E_3	1E-3
R1E_4	1E-4
R1E_5	1E-5
R1E_6	1E-6
R1E_7	1E-7
R1E_8	1E-8
R1E_9	1E-9
R1IN16	1 in 16
R2IN16	2 in 16
R3IN16	3 in 16
R4IN16	4 in 16
ALL	All
BURST	Burst
R5E_3	5E-3
R5E_4	5E-4
R5E_5	5E-5
R5E_6	5E-6
R5E_7	5E-7
R5E_8	5E-8
R5E_9	5E-9
ALTERNATE	Alternate
PROGRATE	Programable rate

Function: Sets the error addition timing in the APS test.
Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
- When :SOURce:APSTest:ERRor:TYPE is set to <OFF>.

Example use: To set the error addition timing to All:
> :SOURce:APSTest:ERRor:TIMing:TYPE ALL

:SOURce:APSTest:ERRor:TIMing:TYPE?

Response: <timing> = <CHARACTER RESPONSE DATA>
Function: Queries the setting for error addition timing in the APS test.
Example use: To query the setting for error addition timing:
> :SOURce:APSTest:ERRor:TIMing:TYPE?
< ALL

:SOURce:APSTest:ERRor:TIMing:ERRor <error>

Parameter: <error> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 8000 Step value: 1

Function: Sets the number of error addition frames when using Alternate in the APS test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
- When :SOURce:APSTest:ERRor:TYPE is set to <OFF>.
- When :SOURce:APSTest:ERRor:TIMing:TYPE is set to other than <ALTERNATE>.

Example use: To set the number of error addition frames to 3000:
> :SOURce:APSTest:ERRor:TIMing:ERRor 3000

:SOURce:APSTest:ERRor:TIMing:ERRor?

Response: <error> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of error addition frames when using Alternate in the APS test.

Example use: To query the number of error addition frames when using Alternate:
> :SOURce:APSTest:ERRor:TIMing:ERRor?
< 3000

:SOURce:APSTest:ERRor:TIMing:PROGrate <error>

Parameter: <error> = <STRING PROGRAM DATA>
"0.1E-10" to "1.9E-1" Mantissa portion 0.1 to 9.9 Step value: 0.1
Exponent portion 1 to 10 Step value: 1
"1.0E-2" can also be "1E-2".

Function: Sets the addition value for the Prog. Rate error addition in the APS test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
- When :SOURce:APSTest:ERRor:TYPE is set to <OFF>.
- When :SOURce:APSTest:ERRor:TIMing:TYPE is set to other than <PROGRATE>.

Example use: To set the addition value to 1.0E-5 for the Prog. Rate error addition:
> :SOURce:APSTest:ERRor:TIMing:PROGrate "1.0E-5"

:SOURce:APSTest:ERRor:TIMing:PROGrate?

Response: <error> = <STRING RESPONSE DATA>

Function: Queries the setting for addition value of Prog. Rate error addition in the APS test.

Example use: To query the setting for addition value of Prog. Rate error addition:
> :SOURce:APSTest:ERRor:TIMing:PROGrate?
< "1.0E-5"

:SOURce:APSTest:ERRor:TIMing:NORMal <normal>

Parameter: <normal> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Step value: 1

Function: Sets the number of normal addition frames when using Alternate in the APS test.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
- When :SOURce:APSTest:ERRor:TYPE is set to <OFF>.
- When :SOURce:APSTest:ERRor:TIMing:TYPE is set to other than <ALTERNATE>.

Example use: To set the number of normal addition frames to 1700:
> :SOURce:APSTest:ERRor:TIMing:NORMal 1700

:SOURce:APSTest:ERRor:TIMing:NORMal?

Response: <normal> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of normal addition frames when using Alternate.

Example use: To query the number of normal addition frames when using Alternate:
> :SOURce:APSTest:ERRor:TIMing:NORMal?
< 1700

:SOURce:APSTest:ERRor:TIMing:BURSt:BIT <bit>

Parameter: <bit> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64000 Step value: 1

Function: Sets the number of error insertion bits.

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
- When :SOURce:APSTest:ERRor:TYPE is set to <OFF>.
- When :SOURce:APSTest:ERRor:TIMing:TYPE is set to other than <BURST>.

Example use: To set the number of error insertion bits to 1000:
> :SOURce:APSTest:ERRor:TIMing:BURSt:BIT 1000

:SOURce:APSTest:ERRor:TIMing:BURSt:BIT?

Response: <bit> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of error insertion bits.

Example use: To query the number of error insertion bits:
> :SOURce:APSTest:ERRor:TIMing:BURSt:BIT?
< 1000

:SOURce:STEst:STARt

Parameter: None

Function: Starts the S1 test.
(starts outputting the data set on the Setup:S1 program data screen.)

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.
- Measurement mode is other than “In-service”.
- :ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: > :SOURce:STEst:STARt

:SOURce:STEst:STOP

Parameter: None

Function: Stops the S1 test.
(stops outputting the data set on the Setup:S1 program data screen.)

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: > :SOURce:STEst:STOP

:SOURce:STEst:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
0 S1 Program data is not inserted.
1 S1 Program data is inserted.

Function: Queries the state of the S1 test.
(queries the state of the data output set on the Setup:S1 programscreen.)

Example use: > :SOURce:STEst:STATe?
< 0

:SOURce:STEst:SEQuence:FRAMe <frame>

Parameter: <frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Send Frame Number Step value: 1

Function: Sets the pattern numbe in the S1 test.

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.

- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: To the send pattern in the S1 test to two patterns.
> :SOURce:STEst:SEQuence:FRAMe 2

:SOURce:STEst:SEQuence:FRAMe?

Response: <frame> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:STEst:SEQuence:FRAMe.
Function: Queries the pattern number to be sent in the S1 test.
Example use: > :SOURce:STEst:SEQuence:FRAMe?
< 2

:SOURce:STEst:SEQuence:MODE <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>

SINGle	Single
REPEat	Repeat

Function: Sets the send method of the S1 test.
Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: To set the S1 send method to “Single”.
> :SOURce:STEst:SEQuence:MODE SING

:SOURce:STEst:SEQuence:MODE?

Response: <mode> = <CHARACTER RESPONSE DATA>
Same as :SOURce:STEst:SEQuence:MODE.
Function: Queries the state of the S1 test send method.
Example use: > :SOURce:STEst:SEQuence:MODE?
< SING

:SOURce:STEst:ALARm:TYPE <atype>

Parameter: <atype> = <CHARACTER PROGRAM DATA>

OFF	No alarm is inserted.
LOS	LOS is inserted.

Function: Sets the type of alarm to be inserted into the S1 test.
Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.

- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: To insert LOS into the S1 test.
> :SOURce:STEst:ALARm:TYPE LOS

:SOURce:STEst:ALARm:TYPE?

Response: <atype> = <CHARACTER RESPONSE DATA>
Same as :SOURce:STEst:ALARm:TYPE.
Function: Queries the type of alarm inserted into the S1 test.
Example use: > :SOURce:STEst:ALARm:TYPE?
< LOS

:SOURce:STEst:ALARm:TIMing:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
ALL
Function: Sets the alarm addition timing for the S1 test.
Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>,
- <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.
- :SOURce:STEst:ALARm:TYPE is set to <OFF>.

Example use: To set the additional timing to “ALL”.
> :SOURce:STEst:ALARm:TIMing:TYPE ALL

:SOURce:STEst:ALARm:TIMing:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
Same as :SOURce:STEst:ALARm:TIMing:TYPE.
Function: Queries the alarm addition timing.
Example use: > :SOURce:STEst:ALARm:TIMing:TYPE?
< ALL

:SOURce:STEst:ERRor:TYPE <etype>

Parameter: <etype> = <CHARACTER PROGRAM DATA>

OFF	No alarm is inserted.
B1	B1 is inserted.
B2	B2 is inserted.
BALL	Bit all is inserted.

Function: Sets the type of the error inserted into the S1 test.
Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.
- Measurement mode is other than "In-service".
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.

Example use: To insert B1 error.
> :SOURce:STEst:ERRor:TYPE B1

:SOURce:STEst:ERRor:TYPE?

Response: <etype> = <CHARACTER RESPONSE DATA>
Same as :SOURce:STEst:ERRor:TYPE.
Function: Queries the type of the error inserted into the S1 test.
Example use: > :SOURce:STEst:ERRor:TYPE?

:SOURce:STEst:ERRor:TIMing:TYPE <timing>

Parameter: <timing> = <CHARACTER PROGRAM DATA>

ONCE	Single error
R1E_3	1E-3
R1E_4	1E-4
R1E_5	1E-5
R1E_6	1E-6
R1E_7	1E-7
R1E_8	1E-8
R1E_9	1E-9
ALL	All
BURST	Burst
R5E_3	5E-3
R5E_4	5E-4
R5E_5	5E-5
R5E_6	5E-6
R5E_7	5E-7
R5E_8	5E-8
R5E_9	5E-9
ALTERNATE	Alternate
PROGRATE	Programable rate

Function: Sets the timing to add the error to the S1 test.
Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.

- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.
- :SOURce:STEst:ERRor:TYPE is set to <OFF>.

Example use: To set the error addition timing to “ALL”.
> :SOURce:STEst:ERRor:TIMing:TYPE ALL

:SOURce:STEst:ERRor:TIMing:TYPE?

Response: <timing> = <CHARACTER RESPONSE DATA>
Same as :SOURce:STEst:ERRor:TIMing:TYPE.
Function: Queries the state of the error addition timing of the S1 test.
Example use: > :SOURce:STEst:ERRor:TIMing:TYPE?
< ALL

:SOURce:STEst:ERRor:TIMing:ERRor <error>

Parameter: <error> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 8000 Step value: 1
Function: Sets the number of the error frames when the error addition timing is “Alternate”
Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.
- :SOURce:STEst:ERRor:TYPE is set to <OFF>.
- :SOURce:STEst:ERRor:TIMing:TYPE is set to other than <ALTERNATE>.

Example use: To set the error additional frame numbe to 3000.
> :SOURce:STEst:ERRor:TIMing:ERRor 3000

:SOURce:STEst:ERRor:TIMing:ERRor?

Response: <error> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:STEst:ERRor:TIMing:ERRor.
Function: Queries the number of the error frames when the error addition timing is “Alternate”
Example use: > :SOURce:STEst:ERRor:TIMing:ERRor?
< 3000

:SOURce:STEst:ERRor:TIMing:NORMal <normal>

Parameter: <normal> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8000 Step value: 1

Function: Sets the number of the frames to which errors are added when the error addition timing is “Alternate”

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.
- :SOURce:STEst:ERRor:TYPE is set to <OFF>.
- :SOURce:STEst:ERRor:TIMing:TYPE is set to other than <ALTERNATE>.

Example use: Sets the number of the normal additional frames to 1,700
> :SOURce:STEst:ERRor:TIMing:NORMal 1700

:SOURce:STEst:ERRor:TIMing:NORMal?

Response: <normal> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:STEst:ERRor:TIMing:NORMal.

Function: Queries the number of the frames to which errors are added when the error addition timing is “Alternate”.

Example use: > :SOURce:STEst:ERRor:TIMing:NORMal?
< 1700

:SOURce:STEst:ERRor:TIMing:PROGrate <error>

Parameter: <error> = <STRING PROGRAM DATA>
“1.0E-3” to “9.9E-10”
Mantissa portion 1.0 to 9.9 Step value : 0.1
Exponent portion 1 to 10 Step value : 1
Both “1.0E-3” and “1E-3” are acceptable.

Function: Sets the error addition timing when Prog. Rate is set.

Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.
- :SOURce:STEst:ERRor:TYPE is set to <OFF>.
- :SOURce:STEst:ERRor:TIMing:TYPE is set to other than <PROGRATE>.

Example use: To set the error addition timing to 1.0E-5.
> :SOURce:STEst:ERRor:TIMing:PROGrate “1.0E-5”

:SOURce:STEst:ERRor:TIMing:PROGrate?

Response: <error> = <STRING RESPONSE DATA>
Same as :SOURce:STEst:ERRor:TIMing:PROGrate.
Function: Queries the error addition timing when Prog. Rate is On.
Example use: > :SOURce:STEst:ERRor:TIMing:PROGrate?
< “1.0E-5”

:SOURce:STEst:ERRor:TIMing:BURSt:BIT <bit>

Parameter: <bit> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64000 Step value: 1
Function: Set the number of the bits to which errors are add when the error addition timing is “Burst”.
Restriction: Invalid in the following case:
- :INSTrument:CONFig <type> is set to other than <SDH_PDH>, <SONET_PDH>.
- Measurement mode is other than “In-service”.
- ROUTe:THRough[:TYPE] is set to <OFF>.
- :ROUTe:THRough:MODE is set to other than <OH>.
- :ROUTe:THRough:OH is other than <S1>.
- Option-22 is not installed.
- :SOURce:STEst:ERRor:TYPE is set to <OFF>.
- :SOURce:STEst:ERRor:TIMing:TYPE is set to other than <BURST>.

Example use: To set the error additional bit number to 1,000.
> :SOURce:STEst:ERRor:TIMing:BURSt:BIT 1000

:SOURce:STEst:ERRor:TIMing:BURSt:BIT?

Response: <bit> = <NR1 NUMERIC RESPONSE DATA>
Same as :SOURce:STEst:ERRor:TIMing:BURSt:BIT.
Function: Queries the number of the bits to which errors are add when the error addition timing is “Burst”.
Example use: > :SOURce:STEst:ERRor:TIMing:BURSt:BIT?
< 1000

10.3.3 SENSe subsystem

The SENSe subsystem sets the receiver and measurement conditions. The following table shows functions, commands, and parameters.

Function	Command	Parameter
Page 10-238		
Specifies bit rates for receive signals.	:SENSe:TELecom:BRATe	brate
Queries the receive signal bit rate.	:SENSe:TELecom:BRATe?	
Page 10-239		
Sets the extraction of STM4, 1, and 0(STS12, 3 and 1) signals.	:SENSe:TELecom:EXTRact:MODE	boolean
Queries the extraction setting of STM4, 1, and 0(STS12,3 and 1) signals.	:SENSe:TELecom:EXTRact:MODE?	
Sets the rate (interface) to perform extract.	:SENSe:TELecom:EXTRact:RATE	rate
Queries the rate (interface) to perform extract.	:SENSe:TELecom:EXTRact:RATE ?	
Sets the wavelength switch of the extract signal input.	:SENSe:TELecom:EXTRact:INTerface	optical
Queries the wavelength switch of the extract signal input.	:SENSe:TELecom:EXTRact:INTerface?	
Page 10-241		
Sets the receive signal SDH/SONET mapping route.	:SENSe:TELecom:MAPPing:TYPE	mtype
Queries the receive signal for SDH/SONET mapping route.	:SENSe:TELecom:MAPPing:TYPE?	
Selects the AU route of the SDH mapping route for receive signals.	:SENSe:TELecom:MAPPing:AU	atype
Queries AU route selection of the SDH mapping route for receive signals.	:SENSe:TELecom:MAPPing:AU?	
Selects the STS route of the SONET mapping route for receive signals.	: SENSe:TELecom:MAPPing:STS	stype
Queries the STS route selection of the SONET mapping route for receive signals.	:SENSe:TELecom:MAPPing:STS?	
Selects the TU route of the SDH mapping route for receive signals.	:SENSe:TELecom:MAPPing:TU	ttype
Queries the TU route of the SDH mapping route for receive signals.	:SENSe:TELecom:MAPPing:TU?	
Selects the VT route of the SONET mapping route for receive signals.	SENSe:TELecom:MAPPing:VT	vtype
Queries the TU route selection of the SDH mapping route for receive signals.	SENSe:TELecom:MAPPing:VT?	
Sets a channel at each SDH/SONET point.	:SENSe:TELecom:MAPPing:ROUTe	route numeric
Queries the channel at each SDH/SONET point.	:SENSe:TELecom:MAPPing:ROUTe?	route
Specifies VC2/VT6SPE concatenated channel numbers (mc).	:SENSe:TELecom:MAPPing:MC	numeric
Queries the setting of the VC2 concatenated channel numbers (mc)	:SENSe:TELecom:MAPPing:MC?	

Sets the descramble of the payload of frame memory to used for IP over SONET.	:SENSe:TELecom:MAPPing:PAYLoad:DESCramble	descr
Queries the descramble of the payload of frame memory to used for IP over SONET.	:SENSe:TELecom:MAPPing:PAYLoad:DESCramble?	
Set the number of channel for receive Signaling frame.	:SENSe:TELecom:MAPPing:SIG	sig
Queries the number of channel for receive Signaling frame.	:SENSe:TELecom:MAPPing:SIG?	

Page 10-248

Sets a bit rate for the last stage of DEMUX.	:SENSe:TELecom:DEMUX:MRATe	mrate
Queries the bit rate of the last stage of DEMUX.	:SENSe:TELecom:DEMUX:MRATe?	
Specifies the channel setting for each MUX step.	:SENSe:TELecom:DEMUX:ROUTe	mrate numeric
Queries the channel setting for each DMUX step.	:SENSe:TELecom:DEMUX:ROUTe?	mrate
Sets 64 kbit/s continuous channels.	:SENSe:TELecom:DEMUX:N	numeric
Queries the 64 kbit/s consecutive channel setting.	:SENSe:TELecom:DEMUX:N?	

Page 10-252

Sets the test pattern (send and receive).	:SENSe:TELecom:PATTern[:TYPE]	pattern
Queries the test pattern (send and receive) setting.	:SENSe:TELecom:PATTern[:TYPE]?	
Sets the test pattern (send and receive) word data.	:SENSe:TELecom:PATTern:UWORd	string
Queries the test pattern (send and receive) word data.	:SENSe:TELecom:PATTern:UWORd?	

Page 10-254

Inversion setting for test pattern (reception)	:SENse:TELecom:INVert	boolean
Querying of setting of test pattern inversion	:SENSe:TELecom:INVert?	

Page 10-254

Set the number of CID pattern.	:SENSe:TELecom:CIDPattern	byte
Queries the number of CID pattern setting.	:SENSe:TELecom:CIDPattern?	

Page 10-255

Sets the frame of test signal for receive signal.	:SENSe:TELecom:FRAMing	boolean
Queries the test signal frame of receive signal.	:SENSe:TELecom:FRAMing?	

Page 10-255

Selects the measurement mode.	:SENSe:TELecom:MMODe	service
Queries the measurement mode.	:SENSe:TELecom:MMODe?	

Page 10-255

Selects with or without CRC check for 2M.	:SENSe:TELecom:M2:CRC	boolean
Queries the CRC check setting for 2M.	:SENSe:TELecom:M2:CRC?	
Sets the signaling frame setting.	:SENSe:TELecom:M2:SIGNaling	boolean
Queries the signaling multi-frame setting.	:SENSe:TELecom:M2:SIGNaling?	

Sets the maximum number of channels for the receive 2M signal.	:SENSe:TELecom:M2:MCHannel	numeric
Queries the maximum number of channels for receive 2M signal.	:SENSe:TELecom:M2:MCHannel?	

Page 10-258

Specifies setting for the 1.5M signal frame.	:SENSe:TELecom:M1_5:FRAMed	frame
Queries the 1.5M signal frame.	:SENSe:TELecom:M1_5:FRAMed?	
Specifies the 1.5M signal code.	:SENSe:TELecom:M1_5:CODE	code
Queries the 1.5M signal code.	:SENSe:TELecom:M1_5:CODE?	

Page 10-259

Specifies the 45M signal frame.	:SENSe:TELecom:M45:FRAMed	frame
Queries the 45M signal frame.	:SENSe:TELecom:M45:FRAMed?	

Page 10-260

Sets the input signal level.	:SENSe:TELecom:IMODe	imode
Queries the input signal level.	:SENSe:TELecom:IMODe?	

Page 10-260

Specifies the DSX cable length in the receive signals.	:SENSe:TELecom:DSX	dsx
Queries the DSX cable length in the receive signals.	:SENSe:TELecom:DSX?	

Page 10-261

Selects a measurement mode.	:SENSe:MEASure:TYPE	mmode
Queries the measurement mode.	:SENSe:MEASure:TYPE?	

Page 10-261

Sets the measurement period setting.	:SENSe:MEASure:PERiod	numeric suffix
Queries the measurement period.	:SENSe:MEASure:PERiod?	

Page 10-262

Sets ON/OFF of the measurement starting time setting function.	:SENSe:MEASure:BTIMe:SET	boolean
Queries ON/OFF of the measurement starting time setting function.	:SENSe:MEASure:BTIMe:SET?	
Sets the measurement starting time of the measurement starting time setting function.	:SENSe:MEASure:BTIMe:STARt	year,month day,hour minute second
Queries the measurement starting time of the measurement starting time setting function.	:SENSe:MEASure:BTIMe:STARt?	

Page 10-263

Sets ON/OFF of the bit error measurement.	:SENSe:MEASure:BERRor	boolean
Queries ON/OFF of the bit error measurement.	:SENSe:MEASure:BERRor?	

Page 10-263

Queries the measurement status.	:SENSe:MEASure:STATe?	

Page 10-264

Initiates the measurement designated by :DISPlay:TMENu[:NAME].	:SENSe:MEASure:STARt	

Page 10-264

Stops the on-going measurement.	:SENSe:MEASure:STOP	

Page 10-264

Queries the measurement starting time.	:SENSe:MEASure:STIMe?	[type]

Page 10-264

Queries the time elapsed from start of measurement.	:SENSe:MEASure:ELAPsed?	[type]

Page 10-264

Sets the wait time for trouble search.	:SENSe:MEASure:TSEarch:WTIMe	wtime
Queries the wait time for trouble search.	:SENSe:MEASure:TSEarch:WTIMe?	
Sets ON/OFF upon Mixed payload function for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:MODE	boolean
Queries the setting of Mixed payload function for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:MODE?	
Sets the measurement mapping route of Mixed payload1 for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TYPE	ptype
Queries the measurement mapping route of Mixed payload1 for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TYPE?	
Sets the measurement mapping route TU route of Mixed payload1 for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TU	ttype
	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:VT	ttype
Queries the measurement mapping route TU route of Mixed payload1 for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TU?	
	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:VT?	
Sets the measurement mapping route of Mixed payload2 for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TYPE	ptype
Queries the measurement mapping route of Mixed payload2 for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TYPE?	
Sets the measurement mapping route TU route of Mixed payload2 for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TU	ttype
	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:VT	ttype
Queries the measurement mapping route TU route of Mixed payload2 for trouble search.	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TU?	
	:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:VT?	

Page 10-268

Sets the measurement period for delay measurement.	:SENSe:MEASure:DELay:PERiod	period
Queries the measurement period of delay measurement.	:SENSe:MEASure:DELay:PERiod?	

Page 10-269

Sets the time base resolution for analysis graph.	:SENSe:MEASure:GRESolution	gres
Queries the time base resolution setting for analysis graph.	:SENSe:MEASure:GRESolution?	

Page 10-269

Sets whether or not to use the Alarm detection and removal condition of the Error/Alarm measurement in Section.	:SENSe:MEASure:ALARm:SECTion:MEAS	type,mode
Queries whether or not to use the Alarm detection and removal condition for the Error/Alarm measurement in Section.	:SENSe:MEASure:ALARm:SECTion:MEAS?	type

Sets the Alarm detection condition of the Error/Alarm measurement.	:SENSe:MEASure:ALARm:SECTion:DETection	type,mode
Queries the setting value of Alarm detection condition for the Error/Alarm measurement.	:SENSe:MEASure:ALARm:SECTion:DETection?	type
Sets the Alarm detection and removal condition of the Error/Alarm measurement.	:SENSe:MEASure:ALARm:SECTion:REMove	type,mode
Queries the setting value of Alarm removal condition for the Error/Alarm measurement.	:SENSe:MEASure:ALARm:SECTion:REMove?	type
Sets whether or not to use the Alarm detection and removal condition of the Error/Alarm measurement in High order path.	:SENSe:MEASure:ALARm:HP:MEAS	type,mode
Queries whether or not to use the Alarm detection and removal condition for the Error/Alarm measurement in High order path.	:SENSe:MEASure:ALARm:HP:MEAS?	type
Sets the Alarm detection and removal condition of the Error/Alarm measurement.	:SENSe:MEASure:ALARm:HP:DETection	type,mode
Queries the setting value of Alarm detection condition for the Error/Alarm measurement.	:SENSe:MEASure:ALARm:HP:DETection?	type
Sets the Alarm removal condition of the Error/Alarm measurement.	:SENSe:MEASure:ALARm:HP:REMove	type,mode
Queries the setting value of Alarm removal condition for the Error/Alarm measurement.	:SENSe:MEASure:ALARm:HP:REMove?	type
Sets whether or not to use the Alarm detection and removal condition of The Error/Alarm measurement in Low order path.	:SENSe:MEASure:ALARm:LP:MEAS	type,mode
Queries whether or not to use the Alarm detection and removal condition for the Error/Alarm measurement in Low order path.	:SENSe:MEASure:ALARm:LP:MEAS?	type
Sets the Alarm detection condition of the Error/Alarm measurement.	:SENSe:MEASure:ALARm:LP:DETection	type,mode
Queries the setting value of Alarm detection condition for the Error/Alarm measurement.	:SENSe:MEASure:ALARm:LP:DETection?	type
Sets the Alarm removal condition of the Error/Alarm measurement.	:SENSe:MEASure:ALARm:LP:REMove	type,mode
Queries the setting value of Alarm detection condition for the Error/Alarm measurement.	:SENSe:MEASure:ALARm:LP:REMove?	type
Sets whether or not to mask the lower alarm occurrence when the higher alarm occurs.	:SENSe:MEASure:ALARm:MASK	mask
Queries the setting value whether or not to mask the lower alarm occurrence if the higher alarm occurs.	:SENSe:MEASure:ALARm:MASK?	

Page 10-276

Sets the status to receive errors and alarms of the tandem connection	:SENSe:MEASure:TANDem:N1HP:MODE	mode
	:SENSe:MEASure:TANDem:N1LP:MODE	mode
	:SENSe:MEASure:TANDem:N2:MODE	mode
	:SENSe:MEASure:TANDem:Z5HP:MODE	mode

	:SENSe:MEASure:TANDem:Z5LP:MODE	mode
	:SENSe:MEASure:TANDem:Z6:MODE	mode
Queries the status whether or not to receive errors and alarms of the tandem connection.	:SENSe:MEASure:TANDem:N1HP:MODE?	
	:SENSe:MEASure:TANDem:N1LP:MODE?	
	:SENSe:MEASure:TANDem:N2:MODE?	
	:SENSe:MEASure:TANDem:Z5HP:MODE?	
	:SENSe:MEASure:TANDem:Z5LP:MODE?	
	:SENSe:MEASure:TANDem:Z6:MODE?	
Sets the type of N1/Z5 bytes for the tandem connection	:SENSe:MEASure:TANDem:N1HP:TYPE	type
	:SENSe:MEASure:TANDem:N1LP:TYPE	type
	:SENSe:MEASure:TANDem:Z5HP:TYPE	type
	:SENSe:MEASure:TANDem:Z5LP:TYPE	type
Queries the type of N1/Z5 bytes for the tandem connection	:SENSe:MEASure:TANDem:N1HP:TYPE?	
	:SENSe:MEASure:TANDem:N1LP:TYPE?	
	:SENSe:MEASure:TANDem:Z5HP:TYPE?	
	:SENSe:MEASure:TANDem:Z5LP:TYPE?	
Sets whether or not to use the Alarm detection and removal condition of The Error/Alarm measurement for tandem connection in High order path.	:SENSe:MEASure:TANDem:HP:MEAS	type,mode
Queries whether or not to use the Alarm detection and Removal condition of the Error/Alarm measurement in tandem connection in High order path.	:SENSe:MEASure:TANDem:HP:MEAS?	type
Sets the condition to detect of errors and alarms for the tandem connection in High order path.	:SENSe:MEASure:TANDem:HP:DETection	type,mode
Queries the condition to Detect of tandem errors and Alarms for the tandem connection in High order path.	:SENSe:MEASure:TANDem:HP:DETection?	type
Sets the condition to remove of errors and alarms for the tandem connection in High order path.	:SENSe:MEASure:TANDem:HP:REMove	type,mode
Queries the condition to detect of tandem errors and alarms for the tandem connection in High order path.	:SENSe:MEASure:TANDem:HP:REMove?	type
Sets whether or not to use the Alarm detection and removal condition of The Error/Alarm measurement for tandem connection in Low order path.	:SENSe:MEASure:TANDem:LP:MEAS	type,mode
Queries whether or not to use the Alarm detection and removal condition of the Error/Alarm measurement in tandem connection in Low order path.	:SENSe:MEASure:TANDem:LP:MEAS?	type
Sets the condition to detect of errors and alarms for the tandem connection in Low order path.	:SENSe:MEASure:TANDem:LP:DETection	type,mode
Queries the condition to detect of tandem errors and alarms for the tandem connection in Low order path.	:SENSe:MEASure:TANDem:LP:DETection?	type
Sets the condition to remove of errors and alarms for the tandem connection in Low order path.	:SENSe:MEASure:TANDem:LP:REMove	type,mode
Queries the condition to detect of tandem errors and alarms for the tandem connection in Low order path.	:SENSe:MEASure:TANDem:LP:REMove?	type

Page 10-282

Select whether auto or manual to set the SLM.	:SENSe:MEASure:SLM:DETection:HP:MODE	mode
	:SENSe:MEASure:SLM:DETection:LP:MODE	mode
	:SENSe:MEASure:PLM:DETection:HP:MODE	mode
	:SENSe:MEASure:PLM:DETection:LP:MODE	mode
Queries whether auto or manual to set the SLM.	:SENSe:MEASure:SLM:DETection:HP:MODE?	
	:SENSe:MEASure:SLM:DETection:LP:MODE?	
	:SENSe:MEASure:PLM:DETection:HP:MODE?	
	:SENSe:MEASure:PLM:DETection:LP:MODE?	
Sets the value of C2 byte when the selection of SLM(PLM) is Manual.	:SENSe:MEASure:SLM:DETection:HP:PATTern	pattern
	:SENSe:MEASure:SLM:DETection:LP:PATTern	pattern
	:SENSe:MEASure:PLM:DETection:HP:PATTern	pattern
	:SENSe:MEASure:PLM:DETection:LP:PATTern	pattern
Queries the value of C2 byte when the selection of SLM (PLM) is Manual.	:SENSe:MEASure:SLM:DETection:HP:PATTern?	
	:SENSe:MEASure:SLM:DETection:LP:PATTern?	
	:SENSe:MEASure:PLM:DETection:HP:PATTern?	
	:SENSe:MEASure:PLM:DETection:LP:PATTern?	

Page 10-283

Setting of LOP detection condition	:SENSe:MEASure:LOPDetection	type
Querying of LOP detection condition	:SENSe:MEASure:LOPDetection?	

Page 10-283

Selects the frame configuration of data to set to the signaling byte of VC11 when the mapping is BYTE (Data or Voice).	:SENSe:SIGPreset:RX	type
Queries the frame configuration of data to set to the signaling byte of VC11 when the mapping is BYTE (Data or Voice).	:SENSe:SIGPreset:RX?	

Page 10-284

Sets the Performance check measurement mode.	:SENSe:PCHeck:MODE	mode
Queries the setting of Performance check measurement mode.	:SENSe:PCHeck:MODE?	

Page 10-284

Sets the IP test measurement mode.	:SENSe:IPTest:MEASuer:TYPE	mmode
Queries the IP test measurement mode.	:SENSe:IPTest:MEASuer:TYPE?	
Sets time and unit of the measurement gating period.	:SENSe:IPTest:MEASuer:PERiod	numeric suffix
Queries time and unit of the measurement gating period.	:SENSe:IPTest:MEASuer:PERiod?	

Page 10-285

Selects the pattern to send of OH Bert in the OH test.	:SENSe:OHTest:OHBert:PATTern	pattern
Queries the pattern to send of OH Bert in the OH test.	:SENSe:OHTest:OHBert:PATTern?	
Set the receive type of OH Bert in the OH test.	:SENSe:OHTest:OHBert:TYPE	type
Queries the change byte of OH Bert.	:SENSe:OHTest:OHBert:TYPE?	
Sets the change byte position of SOH 1byte in OH Bert.	:SENSe:OHTest:OHBert:POSition:SOH	posi
Sets the change byte position of TOH 1byte in OH Bert.	:SENSe:OHTest:OHBert:POSition:TOH	posi
Queries the change byte position of OH Bert.	:SENSe:OHTest:OHBert:POSition:SOH?	

	:SENSe:OHTest:OHBert:POSition:TOH?	
Sets the change byte position of POH 1byte in OH Bert.	:SENSe:OHTest:OHBert:POSition:POH	vctype,posi
Queries the change byte position of POH 1byte in OH Bert.	:SENSe:OHTest:OHBert:POSition:POH?	
Sets the receive change channel position to SOH 1byte or TOH 1byte in OH Bert.	:SENSe:OHTest:OHBert:CHANel	ch
Queries the receive change channel position to SOH 1byte or TOH 1byte in OH Bert.	:SENSe:OHTest:OHBert:CHANel?	
Sets the OH Drop type.	:SENSe:OHTest:ADRop:TYPE	type
Queries the OH Drop type.	:SENSe:OHTest:ADRop:TYPE?	
Sets the change byte position for OH Drop SOH 1 byte [TOH 1byte].	:SENSe:OHTest:ADRop:POSition:SOH :SENSe:OHTest:ADRop:POSition:TOH	posi
Queries the change byte position setting for OH Drop.	:SENSe:OHTest:ADRop:POSition:SOH? :SENSe:OHTest:ADRop:POSition:TOH?	
Sets the change byte position for OH Drop POH 1 byte, POH.	:SENSe:OHTest:ADRop:POSition:POH	vctype, posi
Queries the OH Drop change byte position.	:SENSe:OHTest:ADRop:POSition:POH?	
Sets the change channel position for OH Drop SOH 1 byte.	:SENSe:OHTest:ADRop:CHANel	ch
Queries the change channel position setting for OH Drop SOH 1 byte.	:SENSe:OHTest:ADRop:CHANel?	

Page 10-293

Sets the measurement mode.	:SENSe:OHTest:MEASure:TYPE	mode
Queries the setting measurement mode.	:SENSe:OHTest:MEASure:TYPE?	
Sets the time and the unit of OH test measurement mode.	:SENSe:OHTest:MEASure:PERiod	time,suffix
Queries the time and the unit of OH test measurement mode.	:SENSe:OHTest:MEASure:PERiod?	

Page 10-294

Sets the trigger type in the APS test.	:SENSe:APSTest:TRIGger:TYPE	trig
Queries the setting of the trigger type in the APS test.	:SENSe:APSTest:TRIGger:TYPE?	

Page 10-295

Sets the detection range of Threshold rate for the APS test.	:SENSe:APSTest:THReshold	thresh
Queries the detection range of Threshold rate for the APS test.	:SENSe:APSTest:THReshold?	

Page 10-296

Sets measurement mode in the APS test.	:SENSe:APSTest:MEASure:TYPE	mode
Queries the setting measurement mode in the APS test.	:SENSe:APSTest:MEASure:TYPE?	
Sets the time and unit of measurement gating period in the APS test.	:SENSe:APSTest:MEASure:PERiod	time,suffix
Queries the setting of time and unit of measurement gating period in the APS test.	:SENSe:APSTest:MEASure:PERiod?	

Page 10-297		
Starts the Switch time measurement.	:SENSe:APSTest:STARt	
Page 10-297		
Stops the Switch time measurement.	:SENSe:APSTest:STOP	
Page 10-297		
Queries the status of the Switch time measurement.	:SENSe:APSTest:STATe?	
Page 10-297		
Starts APS Capture.	:SENSe:APSCapture:STARt	
Page 10-297		
Stops APS Capture.	:SENSe:APSCapture:STOP	
Page 10-297		
Queries the status of APS Capture.	:SENSe:APSCapture:STATe?	
Page 10-298		
Sets the Trigger item in the APS capture.	:SENSe:APSCapture:TRIGger:TYPE	trig
Queries the setting of Trigger item in the APS capture.	:SENSe:APSCapture:TRIGger:TYPE?	
Sets the Trigger position in the APS capture.	:SENSe:APSCapture:TRIGger:POSition	position
Queries the setting of Trigger position in the APS capture.	:SENSe:APSCapture:TRIGger:POSition?	
Sets the trigger pattern for APS capture.	:SENSe:APSCapture:TRIGger:PATTern	pattern
Queries the trigger pattern for APS capture.	:SENSe:APSCapture:TRIGger:PATTern?	
Sets the mask pattern for APS capture.	:SENSe:APSCapture:TRIGger:MASK	mask
Queries the pattern mask.	:SENSe:APSCapture:TRIGger:MASK?	
Page 10-300		
Starts Frame capture.	:SENSe:FRAMecapture:STARt	
Page 10-301		
Stops Frame capture.	:SENSe:FRAMecapture:STOP	
Page 10-301		
Queries the status of Frame capture.	:SENSe:FRAMecapture:STATe?	
Page 10-302		
Sets the Trigger item of Frame capture.	:SENSe:FRAMecapture:TRIGger:TYPE	type, position
Queries the setting Trigger item of Frame capture.	:SENSe:FRAMecapture:TRIGger:TYPE?	
Sets the trigger pattern for Frame capture.	:SENSe:FRAMecapture:TRIGger:PATTern	pattern
Queries the trigger pattern for Frame capture.	:SENSe:FRAMecapture:TRIGger:PATTern?	
Sets the trigger pattern to mask of Frame capture.	:SENSe:FRAMecapture:TRIGger:MASK	mask
Queries the trigger pattern to mask of Frame capture.	:SENSe:FRAMecapture:TRIGger:MASK?	
Page 10-304		
Sets the item to capture of overhead.	:SENSe:OHCapture:TYPE	type
Queries the setting of item to capture of overhead.	:SENSe:OHCapture:TYPE?	

Page 10-305

Sets the Trigger item to capture of overhead.	:SENSe:OHCapture:TRIGger:TYPE	trig
Queries the setting of Trigger item to capture.	:SENSe:OHCapture:TRIGger:TYPE?	
Sets the Trigger position to capture of overhead.	:SENSe:OHCapture:TRIGger:POSition	numeric
Queries the Trigger position to capture.	:SENSe:OHCapture:TRIGger:POSition?	
Sets the Trigger pattern to capture of overhead.	:SENSe:OHCapture:TRIGger:PATTern	pattern
Queries the trigger pattern to capture of overhead.	:SENSe:OHCapture:TRIGger:PATTern?	
Sets the mask pattern to capture of overhead.	:SENSe:OHCapture:TRIGger:MASK	mask
Queries the mask pattern to capture of overhead.	:SENSe:OHCapture:TRIGger:MASK?	

Page 10-309

Starts OH Capture.	:SENSe:OHCapture:STARt	

Page 10-309

Stops OH Capture.	:SENSe:OHCapture:STOP	

Page 10-309

Queries the status of OH Capture.	:SENSe:OHCapture:STATe?	

Page 10-309

Sets the byte position to capture when using Type:SOH 1byte.	:SENSe:OHCapture:POSition:SOH	posi
Sets the byte position to capture when using Type:TOH 1byte.	:SENSe:OHCapture:POSition:TOH	posi
Queries the byte position to capture when using Type:SOH 1byte.	:SENSe:OHCapture:POSition:SOH?	
Queries the byte position to capture when using Type:TOH 1byte.	:SENSe:OHCapture:POSition:TOH?	
Sets the byte position to capture when using Type:POH 1byte.	:SENSe:OHCapture:POSition:POH	vctype,posi
Queries the byte position to capture when using Type:POH 1byte.	:SENSe:OHCapture:POSition:POH?	

Page 10-311

Sets the channel position to capture of overhead when using Type:SOH 1byte [TOH 1byte].	:SENSe:OHCapture:CHANel	ch
Queries the channel position to capture of overhead when using Type:SOH 1byte [TOH 1byte].	:SENSe:OHCapture:CHANel?	

Page 10-311

Sets the S1 test measurement mode.	:SENSe:STEst:MEASure:TYPE	mode
Queries the state of the S1 test measurement mode.	:SENSe:STEst:MEASure:TYPE?	

Page 10-312

Starts IP capture.	:SENSe:IPCapture:STARt	

Page 10-312

Queries the state of IP capture.	:SENSe:IPCapture:STOP	

Page 10-312

Queries the state of IP capture.	:SENSe:IPCapture:STATe?	

Page 10-312

Sets the trigger type of IP capture.	:SENSe:IPCapture:TRIGger:TYPE	type
Queries the trigger type of IP capture.	:SENSe:IPCapture:TRIGger:TYPE?	

Page 10-312

Sets the mask of IP address to be captured (for IP ver.4).	:SENSe:IPCapture:IPV4adr	sadr1 sadr2 sadr3 sadr4 dadr1 dadr2 dadr3 dadr4
Queries the mask setting of IP address to be captured (for IP ver.4).	:SENSe:IPCapture:IPV4adr?	

Page 10-313

Sets the mask of IP address to be captured (for IP ver.6).	:SENSe:IPCapture:IPV6adr	sadr1 sadr2 sadr3 sadr4 sadr5 sadr6 sadr7 sadr8 dadr1 dadr2 dadr3 dadr4 dadr5 dadr6 dadr7 dadr8
Queries the mask setting of IP address to be captured (for IP ver.6).	:SENSe:IPCapture:IPV6adr?	

:SENSe:TELecom:BRATe <brate>

Parameter: <brate> = <CHARACTER PROGRAM DATA>

M9953	9953Mbit/s
M2488	2488Mbit/s
M622	622Mbit/s
M156	156Mbit/s
M156CMI	156Mbit/s (Built-in CMI option)
M52B3ZS	52Mbit/sB3ZS
M139	139Mbit/s
M52	52Mbit/s
M45	45Mbit/s
M34	34Mbit/s
M8	8Mbit/s
M2	2Mbit/s
M1_5	1.5Kbit/s

Function: Specifies bit rates for receive signals.

Restriction: Invalid in the following case:

- When 9953M is selected:
  2.5G/10G unit is not installed.
- When 2488M is selected while 2.5G unit is not installed.
- When 622M is selected while 622M-type interface unit is not installed.
- When 156M is selected while 156M-type interface unit is not installed.
- When 156M CMI/139M/34M/8M/2M is selected while E1-E4/STM selected while 1.5/45/52M (MP0122B) unit is not installed.
- When 52M B3ZS/45M/1.5M is selected while DS1 or DS3/STS1 unit is not installed.

Example use: To set the receive signal bit rate to 139 Mbit/s:

> :SENSe:TELecom:BRATe M139

:SENSe:TELecom:BRATe?

Response: <brate> = <CHARACTER RESPONSE DATA>

Function Queries the receive signal bit rate.

Example use: > :SENSe:TELecom:BRATe?

< M139

:SENSe:TELecom:EXTRact:MODE <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1

Function: Sets the extraction of STM4, 1, and 0 (STS12, 3 and 1) signals.

Restriction: Invalid in the following cases:
- Valid setting is only when inserting (valid) the combination of the interface that allows the use of 622M, 156M (light and electricity) and 52M (light and electricity) and the units of 2488M and 9953M. The light and the electricity mentioned here indicate the interface containing 1.31 and 1.55 μm and the unit having the CMI, NRZ, and UTP signal formats.
- When :INSTrument:CONFig <type> is NON or CID while M2488 and M9953 are not selected for :SENSe:TELecom:BRATe <brate>.
- When M52, M52B3ZS, M156, M156 CMI, and M622 cannot be set for :SENSe:TELecom:BRATe <brate>.

Example use: To set the extraction of STM4, 1, and 0 signals to OFF:
> :SENSe:TELecom:EXTRact:MODE OFF

:SENSe:TELecom:EXTRact:MODE?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries the extraction setting of STM4, 1, and 0 (STS12,3 and 1)signals.

Example use: > :SENSe:TELecom:EXTRact:MODE?
< 0

:SENSe:TELecom:EXTRact:RATE <rate>

Parameter: <rate> = <CHARACTER PROGRAM DATA>

M622	622M
M156	156M
M156CMI	156M CMI
M52	52M
M52B3ZS	52M B3ZS

Function: Sets the rate (interface) to perform EXTRact.

Restriction: Invalid in the following cases:
- When :INSTrument:CONFig <type> is NON or CID.
- When M52, M52B3ZS, M156, M156 CMI, and M622 cannot be set for :SENSe:TELecom:BRATe <brate>
- When :SENSe:TELecom:EXTRact:MODE <boolean> is other than ON.

Example use: To set 622M for the rate (interface) to perform EXTRact:
> :SENSe:TELecom:EXTRact:RATE M622

:SENSe:TELecom:EXTRact:RATE ?

Response: <rate> = <CHARACTER RESPONSE DATA>

Function: Queries the rate (interface) to perform EXTRact.

Example use: To query the rate (interface) to perform EXTRact:
> :SENSe:TELecom:EXTRact:RATE?
< M622

:SENSe:TELecom:EXTRact:INTerface <optical>

Parameter: <optical> = <CHARACTER PROGRAM DATA>

1.31	1.31 μ m
1.55	1.55 μ m

Function: Sets the wavelength switch of the extract signal input.

Restriction: Invalid in the following cases:

- When MP0122B are not installed or when MU150008A, MU150009A, and MU150010A are not installed.
- When MU150000A is not installed or MU150000A is installed while the MU150001A and MU150002A units are not installed.
- When light wavelength range of insertion unit as follows is not set:
  MP0122B,MP0127A ,MU150008A 1.31
  MP0128A, MU150009A 1.55
  MU150010A 1.31/1.55
  MU150001A , MU150002A 1.31/1.55
- When :SENSe:TELecom:EXTRact:MODE <boolean> is other than ON.

Example use: To set the input wavelength switch at 1.31 μ m:
> :SENSe:TELecom:EXTRact:INTerface 1.31

SENSe:TELecom:EXTRact:INTerface?

Response: <optical> = <CHARACTER RESPONSE DATA>

Function: Queries the wavelength switch of the extract signal input

Example use: To query the switching wavelength of input.
> :SENSe:TELecom:EXTRact:INTerface?
< 1.31

:SENSe:TELecom:MAPPing:TYPE <mtype>

Parameter: <mtype> = <CHARACTER PROGRAM DATA>

(SDH)

VC4_ASY	139M(Async.)
VC4_BLK	VC4(Bulk)
VC3_ASY	34M(Async.)
VC3_SYN	34M(Sync.)
VC3_45MASY	45M(Async.)
VC3_BLK	VC3(Bulk)
VC2_6MASY	6M(Async.)
VC2_6MBIT	6M(Bitsync.)
VC2_BLK	VC2(Bulk)
VC2_MC	VC2(mc)
VC12_ASY	2M(Async.)
VC12_BIF	2M(Bitsync.F)
VC12_BIL	2M(Bitsync.L)
VC12_BYF	2M(Bytesync.F)
VC12_BYL	2M(Bytesync.L)
VC12_BLK	VC12(Bulk)
VC11_ASY	1.5M(Async.)
VC11_BIF	1.5M(Bitsync.F)
VC11_BIL	1.5M(Bitsync.L)
VC11_BYF	1.5M(Bytesync.F)
VC11_BYL	1.5M(Bytesync.L)
VC11_BLK	VC11(Bulk)
VC11_BYD*1	Byte(Data)
VC11_BYV*1	Byte(Voice)
VC11_384D*1	384K(Data)
VC11_384V*1	384K(Voice)
VC4_64CBLK*2	VC4*64C(Bulk)
VC4_16CBLK*2	VC4*16C(Bulk)
VC4_4CBLK*2	VC4*4C(Bulk)
VC4_CBLK*2	VC4C(Bulk)

(SONET)

STS3_ASY	139M(Async.)
STS3_BLK	STS3cSPE(Bulk)
VC3_ASY	34M(Async.)
VC3_SYN	34M(Sync.)
STS1_45MASY	45M(Async.)
STS1_BLK	STS1 SPE(Bulk)
VT6_ASY	6M(Async.)
VT6_BIT	6M(Bitsync.)
VT6_BLK	VT6 SPE(Bulk)
VT6_MC	VT6 SPE(mc)
VT2_ASY	2M(Async.)
VT2_BIF	2M(Bytesync.F)
VT2_BIL	2M(Bitsync.L)
VT2_BYF	2M(Bytesync.F)
VT2_BYL	2M(Bytesync.L)
VT2_BLK	VT2 SPE(Bulk)
VT15_ASY	1.5M(Async.)
VT15_BIF	1.5M(Bitsync.F)
VT15_BIL	1.5M(Bitsync.L)
VT15_BYF	1.5M(Bytesync.F)
VT15_BYL	1.5M(Bytesync.L)
VT15_BLK	VT1.5 SPE(Bulk)
VT15_BYD[*1]	Byte(Data)
VT15_BYV[*1]	Byte(Voice)
VT15_384D[*1]	384k(Data)
VT15_384V[*1]	384k(Voice)
STS3_64CBLK[*2]	STS3CSPE*64C(Bulk), STS192C(Bulk)
STS3_16CBLK[*2]	STS3CSPE*16C(Bulk), STS48C(Bulk)
STS3_4CBLK[*2]	STS3CSPE*4C(Bulk), STS12C(Bulk)
STS3_CBLK[*2]	STS3CSPEC(Bulk), STS3C(Bulk)

[*1] Valid when option 09 is installed.

[*2] Concatenation mapping

Function: Sets the receive signal SDH/SONET mapping route.

Restriction: Invalid in the following cases:

- When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, or <VC3_SYN> is specified while :SENSe:TELecom:BRATe is <M52B3ZS>.
- When <VC_384D>,<VC_384V>,<VT15_BYD>,<VT15_BYV> is selected while Option 09(Japan mapping)is not installed and 1.5/45/52M unit is not installed.
- When concatenation mapping is selected while option is not installed.

Example use: To set the receive signal SDH mapping route to VC12 (Bulk):

>:SENSe:TELecom:MAPPing:TYPE VC12_BLK

:SENSe:TELecom:MAPPing:TYPE?

Response: <mtype> = <CHARACTER RESPONSE DATA>
Function: Queries the receive signal for SDH/SONET mapping route.
Example use: > :SENSe:TELecom:MAPPing:TYPE?
< VC12_BLK

:SENSe:TELecom:MAPPing:AU <atype>

Parameter: <atype> = <CHARACTER PROGRAM DATA>
AU4
AU3
Function: Selects the AU route of the SDH mapping route for receive signals.
Restriction: Invalid in the following cases:
When :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
When <AU4> is selected while :SOURce:TELecom:BRATe is <M52B3ZS>.
Example use: When the SDH mapping route is set to AU4 for the receive signals.
> :SENSe:TELecom:MAPPing:AU AU4

:SENSe:TELecom:MAPPing:AU?

Response: <atype> = <CHARACTER RESPONSE DATA>
Function: Queries AU route selection of the SDH mapping route for receive signals.
Example use: > :SENSe:TELecom:MAPPing:AU?
< AU4

:SENSe:TELecom:MAPPing:STS <stype>

Parameter: <stype> = <CHARACTER PROGRAM DATA>
STS3
STS1
Function: Selects the STS route of the SONET mapping route for receive signals.
Example use: When the SONET mapping route is set to STS1 for the receive signals.
> :SENSe:TELecom:MAPPing:STS STS1

:SENSe:TELecom:MAPPing:STS?

Response: <atype> = <CHARACTER RESPONSE DATA>
Function: Queries the STS route selection of the SONET mapping route for receive signals.
Example use: > :SENSe:TELecom:MAPPing:STS?
< STS1

:SENSe:TELecom:MAPPing:TU <ttype>

Parameter: <ttype> = <CHARACTER PROGRAM DATA>
TU12
TU11

Function: Selects the TU route of the SDH mapping route for receive signals.

Restriction: Invalid in the following cases:
・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.

Example use: When the SDH mapping route is set to TU12 for the receive signals.
> :SENSe:TELecom:MAPPing:TU TU12

:SENSe:TELecom:MAPPing:TU?

Response: <ttype> = <CHARACTER RESPONSE DATA>

Function: Queries the TU route selection of the SDH mapping route for receive signals.

Example use: > :SENSe:TELecom:MAPPing:TU?
< TU12

:SENSe:TELecom:MAPPing:VT <vtype>

Parameter: <vtype> = <CHARACTER PROGRAM DATA>
VT2
VT15

Function: Selects the VT route of the SONET mapping route for send signals.

Example use: When the SONET mapping route is set to VT15 for the receive signals.
> :SENSe:TELecom:MAPPing:VT VT15

:SENSe:TELecom:MAPPing:VT?

Response: <atype> = <CHARACTER RESPONSE DATA>

Function: Queries the VT route selection of the SONET mapping route selection for send signals.

Example use: > :SENSe:TELecom:MAPPing:VT?
< VT15

:SENSe:TELecom:MAPPing:ROUTe <route>,<numeric>

Parameter: <route> = <CHARACTER PROGRAM DATA>

(SDH)

AUG	AUG channel
AU3	AU3 channel
TUG3	TUG3 channel
TUG2	TUG2 channel
TU11	TU11 channel
TU12	TU12 channel
K384	384K channel
VC416C	VC4_16c channel
VC44C	VC4_4c channel
VC4C	VC4_c channel

(SONET)

STS3	STS3 channel
STS1	AU3 channel
TUG3	TUG3 channel
VTG	VTG channel
VT2	VT2 channel
VT15	VT1.5 channel
K384	384k channel
STS316C	STS3cSPE*16c channel, STS48c channel
STS34C	STS3cSPE*4c channel, STS12c channel
STS3C	STS3cSPEc channel, STS3c channel

<numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 64	When <route> is AUG, STST3	Step value: 1
1 to 3	When <route> is AU3, STS1SPE	Step value: 1
1 to 3	When <route> is TUG3	Step value: 1
1 to 7	When <route> is TUG2, VTG	Step value: 1
1 to 3	When <route> is TU12, VT2	Step value: 1
1 to 4	When <route> is TU11, VT15	Step value: 1
1 to 4	When <route> is K384	Step value: 1
1 to 4	When <route> is VC4_16c, STS3cSPE*16c	Step value: 1
1 to 16	When <route> is VC4_16c, STS3cSPE*4c	Step value: 1
1 to 64	When <route> is VC4_16c, STS3cSPEc	Step value: 1

Function: Sets a channel at each SDH/SONET point.

Restriction: Invalid in the following case:

・When the channel is not applicable to the mapping set at :SENSe:TELecom:MAPPing:TYPE

・When <AUG> is set while 622M-type interface unit and 156M-type interface unit are not installed.

・When <TU11> is set while the 2/8/34/139/156M (CMI) unit is installed.

・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.

・For cases in the following table

<route>	Restriction conditions
AUG	・When :SENSe:TELecom:BRATe is <M52B3ZS>.
AU3	・When :SENSe:TELecom:MAPPing:AU is <AU4>.
TUG3	・When :SENSe:TELecom:BRATe is <M52B3ZS>. ・When :SENSe:TELecom:MAPPing:AU is <AU3>. ・When :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY> or <VC4_BLK>.
TUG2	・When :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_45MASY>, or <VC3_BLK>.
TU12	・When :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_45MASY>, <VC3_BLK>, <VC2_BLK>, or <VC2_MC>. ・When :SENSe:TELecom:MAPPing:TU is <TU11>.
TU11	・When :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_45MASY>, <VC3_BLK>, <VC2_BLK>, or <VC2_MC>. ・When :SENSe:TELecom:MAPPing:TU is <TU12>.
K384	・When :SENSe:TELecom:MAPPing:TYPE is other than <VC11_384D> or <VC11_384V>. ・When Japan mapping option 09 is not installed.
VC416C VC44C VC4C STS316C STS34C STS3C	・When :SENSe:TELecom:MAPPing:TYPE is other than concatenation mapping.

Example use: To set to the AUG channel to 4:

> :SENSe:TELecom:MAPPing:ROUTe AUG,4

:SENSe:TELecom:MAPPing:ROUTe? <route>

Parameter: <route> = <CHARACTER PROGRAM DATA>
Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the channel at each SDH/SONET point.
Example use: > :SENSe:TELecom:MAPPing:ROUTe? AUG
< 4

:SENSe:TELecom:MAPPing:MC <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 7 Step value: 1
Function: Specifies VC2/VT6SPE concatenated channel numbers (mc).
Restriction: Invalid in the following case:
・When :SENSe:TELecom:MAPPing:TYPE is other than <VC2_MC>.
・When <numeric> is greater than (7-TUG2 + 1).
※TUG2 = :SENSe:TELecom:MAPPing:ROUTe? TUG2
Example use: When concatenated number of VC2 is set to 5.
> :SENSe:TELecom:MAPPing:MC 5

:SENSe:TELecom:MAPPing:MC?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting of the VC2 concatenated channel numbers (mc)
Example use: > :SENSe:TELecom:MAPPing:MC?
< 5

:SENSe:TELecom:MAPPing:PAYLoad:DESCramble <descr>

Parameter <descr> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1
Function Sets the descramble of the payload of frame memory to used for IP over SONET.
Restriction Invalid in the following case:
・:INSTrument:CONFig is set to other than <IP_SONET>.
Example use To set the descramble of the payload of frame memory to used for IP over SONET.IP over SONET to On.
> :SENSe:TELecom: MAPPing:PAYLoad:DESCramble ON

:SENSe:TELecom:MAPPing:PAYLoad:DESCramble?

Response <boolen> = <NR1 NUMERIC RESPONSE DATA>
0
1
Function Queries the descramble of the payload of frame memory to used for IP over SONET.
Example use > :SENSe:TELecom: MAPPing:PAYLoad:DESCramble?
< 1

:SENSe:TELecom:MAPPing:SIG <sig>

Parameter: <sig> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 4 Step value: 1

Function: Set the number of channel for receive Signaling frame.

Restriction: Invalid in the following case:
- When :INSTrument:CONFig<type> is NON or CID.
- Valid when VC11_BIF, VC11_BLK, VC11_BYD, VC11_384D or VC11_384V is selected at :SENSe:TELecom:MAPPing:TYPE.
- When option 9 is not installed.
- Valid at each polarity when SOURce:SIGPreset:TX<type> and either SENSe:SIGPreset:RX<type> is on. Setting cannot be specified when of them is off.

Example use: To set the number of channel for receive Signaling frame to 2.
> :SENSe:TELecom: MAPPing: SIG 2

:SENSe:TELecom:MAPPing:SIG?

Response: <sig> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the number of channel for receive Signaling frame.

Example use: To query the number of channel for receive Signaling frame.
> :TELecom: MAPPing:SIG?
< 2

:SENSe:TELecom:DEMUX:MRATe <mrate>

Parameter: <mrate> = <CHARACTER PROGRAM DATA>

OFF	DEMUX function is not used.
M34	34Mbit/s
M8	8Mbit/s
M2	2Mbit/s
M1_5	1.5Mbit/s
K64	64kbit/s
K64_M2	* K64_M2 is settable only when the 2/8/34/139/156M (CMI) unit, 1.5/45/52M unit, and 45M-2M option are installed with bit rate 45M.

Function: Sets a bit rate for the last stage of DEMUX.

Restriction: Invalid in the following cases:
- When concatenation mapping, 6M, mc, 384k are selected at the setting of :SENSe:TELecom:MAPPing:TYPE.
- When <M34>, <M8>, or <M2> is specified while the 2/8/34/139/156M (CMI) unit is not installed.
- When <M34> or <M8> is specified while the MUX/DEMUX (2/8/34/139M) option is not installed.
- When <M2> is set while the 45M-2M option is not installed.
- When <M1_5> is set while the 1.5/45/52M unit is not installed.
- When <K64> or <K64_M2> is set while the 2/8/34/139M (CMI) unit, 1.5/45/52M unit, and 45M-2M option are not installed.

・When <OFF> or <K64> is set while the MUX/DEMUX (2/8/34/139M) option and MUX/DEMUX (1.5/45M) option are not installed.
・Cases in the following table

route	Restriction conditions
M34	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, <M34>, <M8>, <M2>, or <M1_5>. ・When :SENSe: TELecom:MAPPing:TYPE is other than <VC4_ASY>.
M8	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, <M8>, <M2>, or <M1_5>. ・When :SENSe: TELecom:MAPPing:TYPE is other than <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>.
M2	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, <M2>, or <M1_5> while 45M-2M option is not installed. ・When :SENSe:TELecom:BRATe is <M2> or <M1_5>. ・When :SENSe: TELecom:MAPPing:TYPE is other than <VC3_45MASY>, <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>.
M1_5	・When :SENSe:TELecom:BRATe is <M139>, <M34>, <M8>, <M2>, or <M1_5>. ・When :SENSe: TELecom:MAPPing:TYPE is other than <VC3_45MASY>.
K64, K64_M2	Cases in which all the following conditions are satisfied ① For non-2M selection ② For non-1.5M selection ③ When :SENSe: TELecom:MAPPing:TYPE is other than <VC12_ASY>, <VC12_BIF>, <VC12_BIF>, <VC12_BIL>, <VC12_BYF>, <VC12_BYL>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>, or <VC11_BYL>. ④When :SENSe:TELecom:BRATe is other than <M2>, <M1_5>.

Example use: To set the bit rate of the last stage of MUX to 2 Mbit/s:
> :SENSe:TELecom:DEMUX:MRATe M2

:SENSe:TELecom:DEMUX:MRATe?

Response: <mrate> = <CHARACTER RESPONSE DATA>
Function: Queries the bit rate of the last stage of DEMUX.
Example use: > :SENSe:TELecom:DEMUX:MRATe?
< M2

:SENSe:TELecom:DEMUX:ROUTe <mrate>,<numeric>

Parameter: <mrate> = <CHARACTER PROGRAM DATA>

M34	34Mbit/s
M8	8Mbit/s
M2	2Mbit/s
M1_5	1.5Mbit/s
K64	64kbit/s

<numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 4	When <mrate> is M34, M8, or M2	step value: 1
1 to 28	When <mrate> is M1.5	step value: 1
1 to 31	When <mrate> is K64	step value: 1

Function: Specifies the channel setting for each DMUX step.

Restriction: Invalid in the following case:

- When <M34>, <M8>, or <M2> is set while the 2/8/34/139/156M (CMI) unit is not installed.
- When <M34> or <M8> is specified while the MUX/DEMUX (2/8/34/139M) option is not installed.
- When <M2> is specified while the 45M-2M option is not installed.
- When <M1_5> is set while the 1.5/45/52M unit is not installed.
- When <M1_5> is set while the MUX/DEMUX (1.5/45M) option is not installed.
- When <K64> is set while the 2/8/34/139/156M (CMI) unit and 1.5/45/52M unit are not installed.
- When <K64> is set while the MUX/DEMUX (2/8/34/139M) option, MUX/DEMUX (1.5/45M) option, and 45M-2M option are not installed.

・For cases in the following table

<mrate>	Restriction conditions
M34	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, <M34>, <M8>, <M2>, or <M1_5>. ・When :SENSe:TELecom:DEMUX:MRATe is <OFF>. ・When :SENSe: TELecom:MAPPing:TYPE is other than <VC4_ASY>.
M8	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, <M8>, <M2>, or <M1_5>. ・When :SENSe:TELecom:DEMUX:MRATe is <OFF> or <M34>. ・When :SENSe: TELecom:MAPPing:TYPE is other than <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>.
M2	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, <M8>, <M2>, or <M1_5>. ・When :SENSe:TELecom:BRATe is <M45> while M45_2M option is not installed. ・When :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>. ・When :SENSe: TELecom:MAPPing:TYPE is other than <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>
M1_5	・When :SENSe:TELecom:BRATe is <M139>, <M34>, <M8>, <M2>, or <M1_5>. ・When :SENSe:TELecom:DEMUX:MRATe is <OFF> or <K64-M2>. ・When :SENSe: TELecom:MAPPing:TYPE is other than <VC3_45MASY>.
K64	・: When :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, <M8>, <M2>, or <M1_5>. ・For performing DEMUX with 2M when numeric= <31> is set while :SENSe:TELecom:M2:MCHannel is <30>. ・When other than 1 to 24 is set for performing DEMUX with 1.5M.

Example use: 8 Mbit/s channel is set to channel 4.
> :SENSe:TELecom:DEMUX:ROUTe M8,4

:SENSe:TELecom:DEMUX:ROUTe? <mrate>

Parameter: <mrate> = <CHARACTER PROGRAM DATA>
Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the channel setting for each DMUX step.
Example use: Queries the 8 Mbit/s channel.
> :SENSe:TELecom:DEMUX:ROUTe? M8
< 4

:SENSe:TELecom:DEMUX:N <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 31 step value: 1

Function: Sets 64 kbit/s continuous channels.
Test signals of consecutive N channels are received from the 64 kbit/s channel designated by :SENSe:TELecom:MUX:ROUTe.

Restriction: Invalid in the following case:
・When the 2/8/34/139/156M (CMI) unit and 1.5/45/52M unit are not installed.
・When the MUX/DEMUX (2/8/34/139M) option, MUX/DEMUX (1.5/45M) option, and 45M-2M option are not installed.
・When :SENce:TELecom:DEMUX:MRATe is <OFF>, <M34>, <M8>, <M2>, or <M1_5>.
・Upper limit when 2M is DEMUXed.
When <numeric> is greater than (2Mch-Route + 1)
2Mch =:SENSe:TELecom:M2:MCHannel
Route =:SENSe:TELecom:DEMUX:ROUTe? M2
・Upper limit when 1.5M is DEMUXed.
When <numeric> is greater than (24-Route + 1)
Route =:SENSe:TELecom:DEMUX:MRATe? M1_5

Example use: To set the number of consecutive channels to 5:
> :SENSe:TELecom:DEMUX:N 5

:SENSe:TELecom:DEMUX:N?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the 64 kbit/s consecutive channel setting.

Example use: > :SENSe:TELecom:DEMUX:N?
< 5

:SENSe:TELecom:PATTern[:TYPE] <pattern>

Parameter: <pattern> = <CHARACTER PROGRAM DATA>

PRBS11	$PRBS2^{11-1}$
PRBS15	$PRBS2^{15-1}$
PRBS20	$PRBS2^{20-1}$
PRBS20Z	$PRBS2^{20-1}$ (Zero suppress)
PRBS23	$PRBS2^{23-1}$
PRBS31	$PRBS2^{31-1}$
UWORd16	Word 16
AZERo	ALL0
AONE	ALL1
FRM3_24	3 in 24

Function: Sets the test pattern (send and receive).

Restriction: Invalid in the following case:
・When :ROUTe:DROP is <ON>.
・When :ROUTe:THRough is <ON>.
・When the <PRBS20Z> is specified while the :SENSe: TELecom:

MAPPing TYPE is other than <VC3_45MASY>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>, <VC11_BYL>, or <VC11_BLK>.

・When other than <FRM3_24> is set at the settings shown in the following table.

Mapping	MUX/DEMUX	Bit rate	MUX/DEMUX
45M(Async.)	1.5M	45M	1.5M
1.5M(Async.)	OFF	1.5M	OFF
1.5M(Bitsync.F)	OFF		
1.5M(Bitsync.L)	OFF		
1.5M(Bytesync.F)	OFF		
1.5M(Bytesync.L)	OFF		
Byte(Data)	OFF		
Byte(Voice)	OFF		

・When other than <PRB31> is set at the settings shown in the following table.

Bit rate	Concatenation mapping
9953M	STM64c-VC4*64c-Bulk
	STM64c-VC4*16c-Bulk
2488M	STM16c-VC4*16c-Bulk

・When DISPlay:TMENu[:NAME] is other than <"MANual[JOFF]">.

Example use: To set the test pattern for receive signal to PRBS211-1:
>:SENSe:TELecom:PATTern:TYPE PRBS11,
or :SENSe:TELecom:PATTern PRBS11 (TYPE may be omitted.)

:SENSe:TELecom:PATTern[:TYPE]?

Response: <pattern> = <CHARACTER RESPONSE DATA>
Function: Queries the test pattern (send and receive) setting.
Example use: > :SENSe:TELecom:PATTern:TYPE?
or :SENSe:TELecom:PATTern? (TYPE may be omitted.)
< PRBS11

:SENSe:TELecom:PATTern:UWORd <string>

Parameter: <string> = <STRING PROGRAM DATA>
"0000000000000000" to "1111111111111111"
Function: Sets the test pattern (send and receive) word data.
Restriction: Invalid in the following case:
・When the :ROUTe:THRough is <ON>.
・When the :SENSe:TELecom:PATTern:TYPE is <PRBS11>, <PRBS15>, <PRBS20>, <PRBS20Z>, <PRBS23>, <AZERo>, or <AONE>.
Example use: To set word data having 16-bit word length to "1100110011001100":
:SENSe:TELecom:PATTern:UWORd "1100110011001100"

SENSe:TELecom:PATTern:UWORd?

Response: <string> = <STRING RESPONSE DATA>
Function: Queries the test pattern (send and receive) word data.
Example use: > :SENSe:TELecom:PATTern:UWORd?
< "1100110011001100"

:SENse:TELecom:INVert <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 No PRBS inversion
ON or 1 PRBS inversion
Function: Sets inversion of test pattern (reception).
Restriction: Invalid when,
・<CID>, <ATM>, <IP_SDH>, <IP_SONET> or <JITTER> is set for :INSTrument:CONFig.
・:SENSe:TELecom:PATTern[:TYPE] is other than PRBS.
Example of use: To set test pattern (PRBS) to invert
> :SENse:TELecom:INVert ON

:SENSe:TELecom:INVert?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 No PRBS inversion
1 PRBS inversion
Function: Queries the setting of test pattern inversion.
Example of use: > :SENSe:TELecom:INVert?
< 1

:SENSe:TELecom:CIDPattern <byte>

Parameter: <byte> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 100 Step value: 1 byte
Function: Set the number of CID pattern.
Restriction: Invalid in the following case:
・When INSTrument:CONFig<type> is NON or CID.
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.
Example use: To Set CID pattern to 7 byte
> :SENSe:TELecom:CIDPattern 7

:SENSe:TELecom:CIDPattern?

Response: <byte> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the number of CID pattern setting.
Example use: To query the CID pattern setting.
> :SENSe:TELecom:CIDPattern?
< 7

:SENSe:TELecom:FRAMing <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Without frame
ON or 1 With frame

Function: Sets the frame of test signal for receive signal.
Sets the frame of the last Tributary signal when DEMUX (option) is ON.

Restriction: Invalid in the following case:
・When the :SENSe:TELecom:MAPPing:TYPE is <VC4_BLK>, <V3_BLK>, <VC2_BLK>, <VC2_MC> <VC12_BLK>, <VC11_BLK>, <VC11_384D> or <VC11_384V>.

Example use: To set the test signal frame of receive signal to ON:
> :SENSe:TELecom:FRAMing ON

:SENSe:TELecom:FRAMing?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries the test signal frame of receive signal.

Example use: > :SENSe:TELecom:FRAMing?
< 1

:SENSe:TELecom:MMODe <service>

Parameter: <service> = <CHARACTER PROGRAM DATA>
OSERvice Out-of-Service measurement
ISERvice In-Service measurement

Function: Selects the measurement mode.

Example use: To set the measurement mode to Out-of-Service:
> :SENSe:TELecom:MMODe OSERvice

:SENSe:TELecom:MMODe?

Response: <service> = <CHARACTER RESPONSE DATA>

Function: Queries the measurement mode.

Example use: > :SENSe:TELecom:MMODe?
< OSER

:SENSe:TELecom:M2:CRC <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Without CRC check
ON or 1 With CRC check

Function: Selects with or without CRC check for 2M.

Restriction: Invalid in the following case:
・When the 2/8/34/139/156M (CMI) unit is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS> and :SENSe:TELecom:MAPPing:TYPE is <VC4_BLK>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_BLK>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>,

<VC11_BYL>, <VC11_BLK>, <VC11_384D> or <VC11_384V>.
When :SENSe:TELecom:MAPPing:TYPE is <VC3_45MASY> while 45M-2M option is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS> and :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>, and :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>.
When DEMUX is <OFF>, <M1.5>, or <K64> while :SENSe:TELecom: MAPPing:TYPE is <VC3_45MASY> or 45M-2M option is not installed.
When :SENSe:TELecom:BRATe is <M139>, <M34>, or <M8>, and :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>.
・When :SENSe:TELecom:BRATe is <M1_5>.
When :SENSe:TELecom:BRATe is <45M> while 45M-2M option is not installed.
・When <ON> is set while the :SENSe:TELecom:FRAMing is <OFF>.

Example use: To set the CRC check to ON:
> :SENSe:TELecom:M2:CRC ON

:SENSe:TELecom:M2:CRC?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries the CRC check setting for 2M.

Example use: > :SENSe:TELecom:M2:CRC?
< 1

:SENSe:TELecom:M2:SIGNaling <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Signaling multi-frame OFF
ON or 1	Signaling multi-frame ON

Function: Sets the signaling frame setting.

Restriction: Invalid in the following case:
・When the 2/8/34/139/156M (CMI) unit is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS>, and :SENSe:TELecom:MAPPing:TYPE is <VC4_BLK>, <VC3_BLK>, <VC2_MC>, <VC12_BLK>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>, <VC11_BYL>, <VC11_BLK>, <VC11_384D> or <VC11_384V>.
When :SENSe:TELecom:MAPPing:TYPE is <VC3_45MASY> while 45M-2M option is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS> and :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>, and :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>.
When DEMUX is <OFF>, <M1_5>, or <K64> while :SENSe:TELecom: MAPPing:TYPE is <VC3_45MASY> or 45M-2M

option is not installed.
・When :SENSe:TELecom:BRATe is <M139>, <M34>, or <M8>, and :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>.
・When :SENSe:TELecom:BRATe is <M1_5>.
When :SENSe:TELecom:BRATe is <45M> while 45M-2M option is not installed.
・When <ON> is set while :SENSe:TELecom:MCHannel is <31>.
・When <ON> is set while the :SENSe:TELecom:FRAMing is <OFF>.

Example use: To set the signaling multi-frame check to ON:
> :SENSe:TELecom:M2:SIGNaling ON

:SENSe:TELecom:M2:SIGNaling?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries the signaling multi-frame setting.

Example use: > :SENSe:TELecom:M2:SIGNaling?
< 1

:SENSe:TELecom:M2:MCHannel <numeric>

Parameter: <numeric> = <DECIMALNUMERIC PROGRAM DATA>

30	30 channels
31	31 channels

Function: Sets the maximum number of channels for the receive 2M signal.

Restriction: Invalid in the following case:
・When the 2/8/34/139/156M (CMI) unit is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS>, and :SENSe:TELecom:MAPPing:TYPE is <VC4_BLK>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_BLK>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>, <VC11_BYL>, <VC11_BLK>, <VC11_384D> or <VC11_384V>.
When :SENSe:TELecom:MAPPing:TYPE is <VC3_45MASY> while 45M-2M option is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS> and :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>, and :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC3_ASY>, or <VC3_SYN>.
When DEMUX is <OFF>, <M1.5>, or <K64> while :SENSe: TELecom: MAPPing:TYPE is <VC3_45MASY>.
・When :SENSe:TELecom:BRATe is <M139>, <M34>, or <M8>, and :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>.
・When :SENSe:TELecom:BRATe is <M1_5>.
When :SENSe:TELecom:BRATe is <45M> while 45M-2M option is not installed.

Example use: To set the maximum number of receive 2M signal to 30:
> :SENSe:TELecom:M2:MCHannel 30

:SENSe:TELecom:M2:MCHannel?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the maximum number of channels for receive 2M signal.
Example use: > :SENSe:TELecom:M2:MCHannel?
< 30

:SENSe:TELecom:M1_5:FRAMed <frame>

Parameter: <frame> = <CHARACTER PROGRAM DATA>
D4
ESF
JESF Japan ESF
Function: Specifies setting for the 1.5M signal frame.
Restriction: Invalid in the following case:
・When the 1.5/45/52M unit is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS>, and :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_ASY>, <VC12_BIF>, <VC12_BIL>, <VC12_BYF>, <VC12_BYL>, <VC12_BLK>, <VC11_384D> or <VC11_384V>.
When :SENSe:TELecom:MAPPing:TYPE is <VC3_45MASY> while 45M-2M option is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS> and :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>.
・When :SENSe:TELecom:BRATe is <M139>, <M34>, <M8>, or <M2>.
・When :SENSe:TELecom:BRATe is <M45>, and the :SENSe: TELecom: DEMUX: MRATe is <OFF>.
Example use: To set the 1.5M frame to D4:
> :SENSe:TELecom:M1_5:FRAMed D4

:SENSe:TELecom:M1_5:FRAMed?

Response: <frame> = <CHARACTER RESPONSE DATA>
Function: Queries the 1.5M signal frame.
Example use: > :SENSe:TELecom:M1_5:FRAMed?
< D4

:SENSe:TELecom:M1_5:CODE <code>

Parameter: <code> = <CHARACTER PROGRAM DATA>
AMI
B8ZS
Function: Specifies the 1.5M signal code.

Restriction: Invalid in the following case:
・When the 1.5/45/52M unit is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS>, and :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_ASY>, <VC12_BIF>, <VC12_BIL>, <VC12_BYF>, <VC12_BYL>, <VC12_BLK>, <VC11_384D> or <VC11_384V>.
When :SENSe:TELecom:MAPPing:TYPE is <VC3_45MASY> while 45M-2M option is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS> and :SENSe:TELecom:DEMUX:MRATe is <OFF>, <M34>, or <M8>.
・When :SENSe:TELecom:BRATe is <M139>, <M34>, <M8>, or <M2>.
・When :SENSe:TELecom:BRATe is <M45>, and the :SENSe: TELecom: DEMUX: MRATe is <OFF>.
Example use: To set the 1.5M code to AMI:
> :SENSe:TELecom:M1_5:CODE AMI

:SENSe:TELecom:M1_5:CODE?

Response: <code> = <CHARACTER RESPONSE DATA>
Function: Queries the 1.5M signal code.
Example use: > :SENSe:TELecom:M1_5:CODE?
< AMI

:SENSe:TELecom:M45:FRAMed <frame>

Parameter: <frame> = <CHARACTER PROGRAM DATA>
M13
CBIT
Function: Specifies the 45M signal frame.
Restriction: Invalid in the following case:
・When the 1.5/45/52M unit is not installed.
・When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS>, and :SENSe:TELecom:MAPPing:TYPE is other than <VC3_45MASY>.
・When :SENSe:TELecom:BRATe is <M139>, <M34>, <M8>, <M2>, or <M1_5>.
Example use: To set the 45M frame to M13:
> :SENSe:TELecom:M45:FRAMed M13

:SENSe:TELecom:M45:FRAMed?

Response: <frame> = <CHARACTER RESPONSE DATA>
Function: Queries the 45M signal frame.
Example use: > :SENSe:TELecom:M45:FRAMed?
< M13

:SENSe:TELecom:IMODe <imode>

Parameter: <imode> = <CHARACTER PROGRAM DATA>

TERMinal	Monitor mode OFF
MONitoring	Monitor mode ON

Function: Sets the input signal level.

Restriction: Invalid in the following case:

- When an optical or NRZ unit is installed, and :SENSe:TELecom:BRATe is <M622>, or <M156>.
- When SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, or <M1_5>.
- When SENSe:TELeconl:BRATe <M52B3ZS> or <M45>, and DSX is <900>.

Example use: To set the input signal level to TERMinal.

> :SENSe:TELecom:IMODe TERMinal

:SENSe:TELecom:IMODe?

Response: <imode> = <CHARACTER RESPONSE DATA>

Function: Queries the input signal level.

Example use: > :SENSe:TELecom:IMODe?

< TERM

:SENSe:TELecom:DSX <dsx>

Parameter: <dsx> = <CHARACTER PROGRAM DATA>

0	0ft
450	450ft
655	655f
900	900f

Function: Specifies the DSX cable length in the receive signals.

Restriction: Invalid in the following case:

- When the 1.5/45/52M unit is not installed.
- When :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, <M139>, <M34>, <M8>, or <M2>.
- When <655> or <0> is set while :SENSe:TELecom:BRATe is <M5623BZS> or <M45>.
- When <450> or <900> is set while :SENSe:TELecom:BRATe is <M1_5>.
- When SENSe:TELecom:BRATe is <M1.5> at Tx/Rx.

Example use: To set the DSX cable length to 450ft

> :SENSe:TELecom:DSX 450

:SENSe:TELecom:DSX?

Response: <dsx> = <CHARACTER PROGRAM DATA>

0	0ft
450	450ft
655	655f
900	900f

Function: Queries the DSX cable length in the receive signals.
Example use: > :SENSe:TELecom:DSX?
< 450

:SENSe:MEASure:TYPE <mmode>

Parameter: <mmode> = <CHARACTER PROGRAM DATA>

MANual	Manual measurement
SINGle	Single measurement
REPeat	Repeat measurement

Function: Selects a measurement mode.
Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <"PSEQuence[:JOFF]">.
Example use: To set the measurement mode to Repeat:
> :SENSe:MEASure:TYPE REPeat

:SENSe:MEASure:TYPE?

Response: <mmode> = <CHARACTER RESPONSE DATA>
Function: Queries the measurement mode.
Example use: > :SENSe:MEASure:TYPE?
< REP

:SENSe:MEASure:PERiod <numeric>,<suffix>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 99
<suffix> = <CHARACTER PROGRAM DATA>

D	day
H	hour
M	minute
S	second

Function: Sets the measurement period setting.
Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <"PSEQuence[:JOFF]">.
・When <MANual> is set by the :SENSe:MEASure:TYPE.
Example use: To set the measurement period to 1 hour:
> :SENSe:MEASure:PERiod 1,h

:SENSe:MEASure:PERiod?

Response: <numeric>,<suffix>
<numeric> = <NR1 NUMERIC RESPONSE DATA>
<suffix> = <CHARACTER RESPONSE DATA>
Function: Queries the measurement period.
Example use: > :SENSe:MEASure:PERiod?
< 1,h

:SENSe:MEASure:BTIMe:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Measurement starting time setting function OFF
ON or 1	Measurement starting time setting function ON

Function: Sets ON/OFF of the measurement starting time setting function.

Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To set the Measurement starting time setting function to ON:
> :SENSe:MEASure:BTIMe:SET ON

:SENSe:MEASure:BTIMe:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries ON/OFF of the measurement starting time setting function.

Example use: > :SENSe:MEASure:BTIMe:SET?
< 1

:SENSe:MEASure:BTIMe:STARt <year>,<month>,<day>,<hour>,<minute>,<second>

Parameter: <year> = <DECIMAL NUMERIC PROGRAM DATA>
1994 to 2093
<month> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 12
<day> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 31
<hour> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 23
<minute>= <DECIMAL NUMERIC PROGRAM DATA>
0 to 59
<second>= <DECIMAL NUMERIC PROGRAM DATA>
0 to 59

Function: Sets the measurement starting time of the measurement starting time setting function.

Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.
・When <OFF> is set by the :SENSe:MEASure:BTIMe:SET.

Example use: To set the measurement starting time to 2000 April 1st, 10, 12' 13":
> :SENSe:MEASure:BTIMe:STARt 2000,4,1,10,12,13

:SENSe:MEASure:BTIMe:STARt?

Response: <year>,<month>,<day>,<hour>,<minute>,<second>
= <NR1 NUMERIC RESPONSE DATA>

Function: Queries the measurement starting time of the measurement starting time setting function.

Example use: > :SENSe:MEASure:BTIMe:STARt?
< 2000,4,1,10,12,13

:SENSe:MEASure:BERRor <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1

Function: Sets ON/OFF of the bit error measurement.

Example use: > :SENSe:MEASure:BERRor ON

:SENSe:MEASure:BERRor?

Response: <boolean> = <N1 NUMERIC RESPONSE DATA>
0
1

Function: Queries ON/OFF of the bit error measurement.

Example use: > :SENSe:MEASure:BERRor?
< 0

:SENSe:MEASure:STATe?

Response: <mestype>,<numeric>
<mestype> = <CHARACTER RESPONSE DATA>

TSE	Trouble search measurement
MAN	Manual measurement
PSEQ	Pointer sequence measurement
DEL	Delay measurement
JTOL	Jitter tolerance measurement
JTR	Jitter transfer measurement
JFR	Jitter frequency measurement
WAND	Wander measurement
CDV1	1-point CDV measurement
CDV2	2-point CDV measurement
JSW	Jitter sweep measurement
FSW	Freq. sweep measurement
WSW	Wander sweep measurement
OHT	OH test measurement
APST	APS test measurement
PERF	Performance check measurement
IPT	IP test measurement
FMEM	Frame memory measurement
S1T	S1 test measurement

<numeric> = <NR1 NUMERIC RESPONSE DATA>

	0	Measurement completed
	1	Measuring

Function: Queries the measurement status.
When measurement is not under-going and results are not present, the output is as follows:
< NON,0
Example use: > :SENSe:MEASure:STATe?
< MAN,1

:SENSe:MEASure:STARt

Parameter: None
Function: Initiates the measurement designated by :DISPlay:TMENu[:NAME].
Restriction: Invalid if the self-test screen is displayed.
Example use: > :SENSe:MEASure:STARt

:SENSe:MEASure:STOP

Parameter: None
Function: Stops the on-going measurement.
Restriction: Invalid if the self-test screen is displayed
Example use: > :SENSe:MEASure:STOP

:SENSe:MEASure:STIMe?

Response: <year>,<month>,<day>,<hour>,<minute>,<second>
= <NR1 NUMERIC RESPONSE DATA>
Function: Queries the measurement starting time.
Example use: > :SENSe:MEASure:STIMe?
< 2000,10,5,19,50,34

:SENSe:MEASure:ELAPsed?

Response: <day>,<hour>,<minute>,<second>
= <NR1 NUMERIC RESPONSE DATA>
Function: Queries the time elapsed from start of measurement.
Example use: When the elapsed time is 5 days, 19 hours, 50 minutes and 34 seconds:
> :SENSe:MEASure:ELAPsed?
< 5,19,50,34

:SENSe:MEASure:TSEarch:WTIMe <wtime>

Parameter: <wtime> = <CHARACTER PROGRAM DATA>

MS500	0.5sec
SEC1	1sec
SEC2	2sec
SEC5	5sec

Function: Sets the wait time for trouble search.
Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"TSEarch">.

Example use: To set the wait time for trouble search to 1 sec:
> :SENSe:MEASure:TSEarch:WTIMe SEC1

:SENSe:MEASure:TSEarch:WTIMe?

Response: <wtime> = <CHARACTER RESPONSE DATA>
Function: Queries the wait time for trouble search.
Example use: > :SENSe:MEASure:TSEarch:WTIMe?
< SEC1

:SENSe:MEASure:TSEarch:MPAYload:MODE <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1
Function: Sets ON/OFF upon Mixed payload function for trouble search.
Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"TSEarch">
・When the :SENSe:TELecom:BRATe is other than <M9953>, <M2488>, <M622>, <M156>, <M156CMI>.
・When the :SENSe:TELecom:MAPPing:TYPE is set to <VC4_ASY>, <VC4_BLK>, <VC4_64CBLK>, <VC4_16CBLK>, <VC4_4CBLK>, <VC4_CBLK> or <ST3_ASY>, <ST3_BLK>, <STS3_64CBLK>, <STS3_16CBLK>, <STS3_4CBLK>, <STS3_CBLK>.
Example use: When the Mixed payload function for trouble search is set to ON.
>:SENSe:MEASure:TSEarch:MPAYload:MODE ON

:SENSe:MEASure:TSEarch:MPAYload:MODE?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0
1
Function: Queries the setting of Mixed payload function for trouble search.
Use example: >:SENSe:MEASure:TSEarch:MPAYload:MODE?
<1

:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TYPE <ptype>

Parameter <ptype> = <CHARACTER PROGRAM DATA>
(SDH)

VC3_BLK	VC3 (Bulk)
VC2_BLK	VC2 (Bulk)
VC12_ BLK	VC12 (Bulk)
VC11_ BLK	VC11 (Bulk)

(SONET)

STS1_BLK	STS1 SPE (Bulk)
VT6_BLK	VT6 SPE (Bulk)
VT2_ BLK	VT2 SPE (Bulk)
VT15_ BLK	VT1.5 SPE (Bulk)

Function: Sets the measurement mapping route of Mixed payload1 for trouble search.

Restriction: Invalid in the following case:
- When the :DISPlay:TMENu[:NAME] is other than <"TSEarch">.
- When the :SENSe:TELecom:BRATe is other than <M9953>, <M2488>, <M622>, <M156>, <M156CMI>.
- When the :SENSe:TELecom:MAPPing:TYPE is set to VC4_ASY>, <VC4_BLK>, <VC4_64CBLK>, <VC4_16CBLK>, <VC4_4CBLK>, <VC4_CBLK> or <ST3_ASY>, <ST3_BLK>, <STS3_64CBLK>, <STS3_16CBLK>, STS3_4CBLK>,<STS3_CBLK>.
- When the:SENSe:MEASure:TSEarch: MPAYload:MODE is set to <OFF>.

Example use: When the measurement mapping route of Mixed payload1 for trouble search is set to VC3 (Bulk).
>:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TYPE VC3_BLK

:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TYPE?

Response: <ptype> = <CHARACTER RESPONSE DATA>

Function: Queries the measurement mapping of route Mixed payload1 for trouble search.

Example use: >:SENSe:MEASure:TSEarch:MPAYload:
PAYload1:TYPE?
>VC3_BLK

:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TU <ttype>
:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:VT <ttype>

Parameter <ttype> = <CHARACTER PROGRAM DATA>

(SDH)	TU12	(SONET)	VT2
	TU11		VT15

Function: Sets the measurement mapping route TU route of Mixed payload1 for trouble search.

Restriction: Invalid in the following case:
- When the :DISPlay:TMENu[:NAME] is other than <"TSEarch">.
- When the :SENSe:TELecom:BRATe is other than <M9953>, <M2488>, <M622>, <M156>, <M156CMI>
- When the :SENSe:TELecom:MAPPing:TYPE is set to <VC4_ASY>, <VC4_BLK>, <VC4_64CBLK>, <VC4_16CBLK>, <VC4_4CBLK>, <VC4_CBLK> or <ST3_ASY>, <ST3_BLK>, <STS3_64CBLK>, <STS3_16CBLK>, <STS3_4CBLK>, <STS3_CBLK>.
- When the :SENSe:MEASure:TSEarch:MPAYLoad: MODE is <OFF>.
- :SENSe:MEASure:TSEarch:MPAYload:PAYLoad1: TYPE <VC12_BLK>,<VC11_BLK>

Example use: When the measurement mapping route TU route of Mixed payload1 for trouble search is set to TU12.
>:SENSe:MEASure:TSEarch:MPAYload:PAYload1:TU TU12

:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TU?
:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:VT?

Parameter: <ttype> = <CHARACTER RESPONSE DATA>

Function: Queries the measurement mapping route TU route of Mixed payload1 for trouble search

Example use: >:SENSe:MEASure:TSEarch:MPAYload:PAYLoad1:TU?
<TU12

:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TYPE <ptype>

Parameter <ptype> = <CHARACTER PROGRAM DATA>

(SDH)

VC3_BLK	VC3 (Bulk)
VC2_BLK	VC2 (Bulk)
VC12_ BLK	VC12 (Bulk)
VC11_ BLK	VC11 (Bulk)

(SONET)

STS1_BLK	STS1 SPE (Bulk)
VT6_BLK	VT6 SPE (Bulk)
VT2_ BLK	VT2 SPE (Bulk)
VT15_ BLK	VT1.5 SPE (Bulk)

Function: Sets the measurement mapping route of Mixed payload2 for trouble search.

Restriction: Invalid in the following case:

- When the :DISPlay:TMENu[:NAME] is other than <"TSEarch">.
- When the :SENSe:TELecom:BRATe is other than <M9953>, <M2488>, <M622>, <M156>, <M156CMI>.
- When the :SENSe:TELecom:MAPPing:TYPE is set to VC4_ASY>, <VC4_BLK>, <VC4_64CBLK>, <VC4_16CBLK>, <VC4_4CBLK>, <VC4_CBLK> or <ST3_ASY>, <ST3_BLK>, <STS3_64CBLK>, <STS3_16CBLK>, STS3_4CBLK>,<STS3_CBLK>.
- When the:SENSe:MEASure:TSEarch: MPAYload:MODE is set to <OFF>.

Example use: When the measurement mapping route of Mixed payload2 for trouble search is set to VC3 (Bulk).
>:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TYPE VC3_BLK

:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TYPE?

Response: <ptype> = <CHARACTER RESPONSE DATA>

Function: Queries the measurement mapping of route Mixed payload2 for trouble search.

Example use: >:SENSe:MEASure:TSEarch:MPAYload:
PAYload2:TYPE?
>VC3_BLK

:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TU <ttype>
:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:VT <ttype>

Parameter <ttype> = <CHARACTER PROGRAM DATA>

(SDH)	TU12	(SONET)	VT2
	TU11		VT15

Function: Sets the measurement mapping route TU route of Mixed payload2 for trouble search.

Restriction: Invalid in the following case:

- When the :DISPlay:TMENu[:NAME] is other than <"TSEarch">.
- When the :SENSe:TELecom:BRATe is other than <M9953>, <M2488>, <M622>, <M156>, <M156CMI>
- When the :SENSe:TELecom:MAPPing:TYPE is set to <VC4_ASY>, <VC4_BLK>, <VC4_64CBLK>, <VC4_16CBLK>, <VC4_4CBLK>, <VC4_CBLK> or <ST3_ASY>, <ST3_BLK>, <STS3_64CBLK>, <STS3_16CBLK>, <STS3_4CBLK>, <STS3_CBLK>.
- When the :SENSe:MEASure:TSEarch:MPAYLoad: MODE is <OFF>.
- :SENSe:MEASure:TSEarch:MPAYload:PAYLoad2: TYPE <VC12_BLK>,<VC11_BLK>

Example use: When the measurement mapping route TU route of Mixed payload2 for trouble search is set to TU12.

>:SENSe:MEASure:TSEarch:MPAYload:PAYload2:TU TU12

:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TU?
:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:VT?

Parameter: <ttype> = <CHARACTER RESPONSE DATA>

Function: Queries the measurement mapping route TU route of Mixed payload2 for trouble search

Example use: >:SENSe:MEASure:TSEarch:MPAYload:PAYLoad2:TU?

<TU12

:SENSe:MEASure:DELay:PERiod <period>

Parameter: <period> = <CHARACTER PROGRAM DATA>

MS500	0.5sec
SEC1	1sec
SEC2	2sec
SEC5	5sec
SEC10	10sec

Function: Sets the measurement period for delay measurement.

Restriction: Invalid in the following case:

- When the :DISPlay:TMENu[:NAME] is other than <"DELay">.

Example use: To set the measurement period of delay measurement to 1 sec:

> :SENSe:MEASure:DELay:PERiod SEC1

:SENSe:MEASure:DELay:PERiod?

Response: <period> = <CHARACTER RESPONSE DATA>
Function: Queries the measurement period of delay measurement.
Example use: > :SENSe:MEASure:DELay:PERiod?
< SEC1

:SENSe:MEASure:GRESolution <gres>

Parameter: <gres> = <CHARACTER PROGRAM DATA>

SEC1	1ec
MIN1	1min
MIN15	15min
MIN60	60min

Function: Sets the time base resolution for analysis graph.
Example use: To set the time base resolution for analysis graph to 15 minutes:
> :SENSe:MEASure:GRESolution MIN15

:SENSe:MEASure:GRESolution?

Response: <gres> = <CHARACTER RESPONSE DATA>
Function: Queries the time base resolution setting for analysis graph.
Example use: > :SENSe:MEASure:GRESolution?
< MIN15

:SENSe:MEASure:ALARm:SECTion:MEAS <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
LOS
LOF
OOF
AIS
RDI
<mode> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1
Function: Sets whether or not to use the Alarm detection and removal condition of the Error/Alarm measurement in Section.
Restriction: Invalid in the following case:
・When AIS or RDI is set for the :INSTrument:CONFig <CID> setting.
・When LOF, OOF, AIS or RDI is set for the :INSTrument:CONFig <NON> setting.
Example use: To set LOS to ON in the Alarm detection and removal condition of the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:SECTion:MEAS LOS,ON

:SENSe:MEASure:ALARm:SECTion:MEAS? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries whether or not to use the Alarm detection and removal condition for the Error/Alarm measurement in Section.

Example use: To query the LOS setting of Alarm detection and removal condition for the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:SECTion:MEAS? LOS
< 1

:SENSe:MEASure:ALARm:SECTion:DETection <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
LOF
AIS
RDI
<mode> = <NON-DECIMAL NUMERIC PROGRAM DATA>
1.0 to 5.0ms Step value : 0.1 When <type> is LOF.
1 to 15frame Step value : 1 When <type> is AIS.
1 to 15frame Step value : 1 When <type> is RDI.

Function: Sets the Alarm detection condition of the Error/Alarm measurement.

Restriction: Invalid in the following case:
・When AIS or RDI is set for the INSTrument:CONFig <CID> setting.
・When :INSTrument:CONFig <NON> is set.

Example use: To set LOF Det to 1.0 ms in the Alarm detection and removal condition of the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:SECTion:DETection LOF,1.0

:SENSe:MEASure:ALARm:SECTion:DETection? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR2 NUMERIC RESPONSE DATA>

Function: Queries the setting value of Alarm detection condition for the Error/Alarm measurement.

Example use: To query the LOF Det setting of Alarm detection and removal condition for the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:SECTion:DETection? LOF
< 1.0

:SENSe:MEASure:ALARm:SECTion:REMove <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
LOF
AIS
RDI

<mode> = <NON-DECIMAL NUMERIC PROGRAM DATA>
1.0 to 5.0ms Step value : 0.1 When <type> is LOF.
1 to 15frame Step value : 1 When <type> is AIS.
1 to 15frame Step value : 1 When <type> is RDI.

Function: Sets the Alarm removal condition of the Error/Alarm measurement.

Restriction: Invalid in the following case:
・When AIS or RDI is set for the INSTrument:CONFig <CID> setting.
・When :INSTrument:CONFig <NON> is set.

Example use: To set LOF Rem to 2.0 ms in the Alarm detection and removal condition of the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:SECTion:REMove LOF,2.0

:SENSe:MEASure:ALARm:SECTion:REMove? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting value of Alarm removal condition for the Error/Alarm measurement.

Example use: To query the LOF Rem setting of Alarm detection and removal condition for the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:SECTion:REMove? LOF
< 2.0

:SENSe:MEASure:ALARm:HP:MEAS <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
AIS
LOP
RDI
SLM
TIM
UNEQ
(SONET)
AIS
LOP
RDI
PLM
TIM
UNEQ
<mode> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1

Function: Sets whether or not to use the Alarm detection and removal condition of the Error/Alarm measurement in High order path.

Example use: To set AIS to ON in the Alarm detection and removal condition of the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:HP:MEAS AIS,ON

:SENSe:MEASure:ALARm:HP:MEAS? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1
Function: Queries whether or not to use the Alarm detection and removal condition for the Error/Alarm measurement in High order path.
Example use: To query the AIS setting of Alarm detection and removal condition for the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:HP:MEAS? LOF
< 1

:SENSe:MEASure:ALARm:HP:DETection <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
AIS
RDI
SLM
UNEQ
(SONET)
AIS
RDI
PLM
UNEQ
<mode> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 frame Step value: 1
Function: Sets the Alarm detection condition of the Error/Alarm measurement.
Example use: To set AIS Det to 2 in the Alarm detection and removal condition of the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:HP:DETection AIS,2

:SENSe:MEASure:ALARm:HP:DETection? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting value of Alarm detection condition for the Error/Alarm measurement.
Example use: To query the AIS Det setting in the Alarm detection and removal condition for the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:HP:DETection? AIS
< 2

:SENSe:MEASure:ALARm:HP:REMove <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
AIS
RDI
SLM
UNEQ
(SONET)
AIS
RDI
PLM
UNEQ
<mode> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 frame Step value: 1

Function: Sets the Alarm removal condition of the Error/Alarm measurement.

Example use: To set AIS Rem to 2 in the Alarm detection and removal condition of the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:HP:REMove AIS,2

:SENSe:MEASure:ALARm:HP:REMove? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting value of Alarm removal condition for the Error/Alarm measurement.

Example use: To query the AIS Rem setting in the Alarm detection and removal condition for the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:HP:REMove? AIS
< 2

:SENSe:MEASure:ALARm:LP:MEAS <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
AIS
LOP
RDI
SLM
RFI
LOM
TIM
UNEQ

(SONET)
AIS
LOP
RDI
PLM
RFI
LOM
TIM
UNEQ

<mode> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1

Function: Sets whether or not to use the Alarm detection and removal condition of the Error/Alarm measurement in Low order path.

Example use: To set AIS to OFF in the Alarm detection and removal condition of the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:LP:MEAS AIS,OFF

:SENSe:MEASure:ALARm:LP:MEAS? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries whether or not to use the Alarm detection and removal condition for the Error/Alarm measurement in Low order path.

Example use: To query the AIS setting of Alarm detection and removal condition for the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:LP:MEAS? LOF
< 0

:SENSe:MEASure:ALARm:LP:DETection <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
AIS
LOP
RDI
SLM
RFI
LOM
UNEQ

(SONET)
AIS
LOP
RDI
PLM
RFI
LOM
UNEQ
<mode> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 frame Step value: 1

Function: Sets the Alarm detection condition of the Error/Alarm measurement.

Example use: To set AIS DETection to 2 in the Alarm detection and removal condition of the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:LP:DETection AIS,2

:SENSe:MEASure:ALARm:LP:DETection? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the setting value of Alarm detection condition for the Error/Alarm measurement.

Example use: To query the AIS Det setting of Alarm detection and removal condition for
the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:LP:DETection? AIS
< 2

:SENSe:MEASure:ALARm:LP:REMove <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)
AIS
LOP
RDI
SLM
RFI
LOM
UNEQ
(SONET)
AIS
LOP
RDI
PLM
RFI
LOM
UNEQ
<mode> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 frame Step value: 1

Function: Sets the Alarm removal condition of the Error/Alarm measurement.
Example use: To set AIS Rem to 2 in the Alarm detection and removal condition of the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:LP:REMove AIS,2

:SENSe:MEASure:ALARm:LP:REMove? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting value of Alarm removal condition for the Error/Alarm measurement.
Example use: To query the AIS Rem setting of Alarm detection and removal condition for the Error/Alarm measurement:
> :SENSe:MEASure:ALARm:LP:REMove? AISREMove
< 2

:SENSe:MEASure:ALARm:MASK <mask>

Parameter: <mask> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1
Function: Sets whether or not to mask the lower alarm occurrence when the higher alarm occurs.
Example use: To set to mask the lower alarm occurrence if the higher alarm occurs:
> :SENSe:MEASure:ALARm:MASK ON

:SENSe:MEASure:ALARm:MASK?

Response: <mask> = <NR1 NUMERIC RESPONSE DATA>
0
1
Function: Queries the setting value whether or not to mask the lower alarm occurrence if the higher alarm occurs.
Example use: To query the setting value whether or not to mask the lower alarm occurrence if the higher alarm occurs:
> :SENSe:MEASure:ALARm:MASK?
< 1

(for SDH)
:SENSe:MEASure:TANDem:N1HP:MODE <mode>
:SENSe:MEASure:TANDem:N1LP:MODE <mode>
:SENSe:MEASure:TANDem:N2:MODE <mode>
(for SONET)
:SENSe:MEASure:TANDem:Z5HP:MODE <mode>
:SENSe:MEASure:TANDem:Z5LP:MODE <mode>
:SENSe:MEASure:TANDem:Z6:MODE <mode>

Parameter: <mode> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1

Function: Sets the status to receive errors and alarms of the tandem connection.
Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.
Example use: To enable the status to receive errors and alarms of the tandem connection of N1_HP:
> :SENSe:MEASure:TANDem:N1HP:MODE ON

(for SDH)
:SENSe:MEASure:TANDem:N1HP:MODE?
:SENSe:MEASure:TANDem:N1LP:MODE?
:SENSe:MEASure:TANDem:N2:MODE?
(for SONET)
:SENSe:MEASure:TANDem:Z5HP:MODE?
:SENSe:MEASure:TANDem:Z5LP:MODE?
:SENSe:MEASure:TANDem:Z6:MODE?
Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1
Function: Queries the status whether or not to receive errors and alarms of the tandem connection.
Example use: > :SENSe:MEASure:TANDem:N1HP?
< 1

(for SDH)
:SENSe:MEASure:TANDem:N1HP:TYPE <type>
:SENSe:MEASure:TANDem:N1LP:TYPE <type>
(for SONET)
:SENSe:MEASure:TANDem:Z5HP:TYPE <type>
:SENSe:MEASure:TANDem:Z5LP:TYPE <type>
Parameter: <type> = <CHARACTER PROGRAM DATA>
TYPE1(TYPE1 is unavailable for N1_LP.)
TYPE2
Function: Sets the type of N1/Z5 bytes for the tandem connection.
Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.
Example use: To set the N1 type of N1_HP to TYPE2:
> :SENSe:MEASure:TANDem:N1HP:TYPE TYPE2

(for SDH)
:SENSe:MEASure:TANDem:N1HP:TYPE?
:SENSe:MEASure:TANDem:N1LP:TYPE?

(for SONET)

:SENSe:MEASure:TANDem:Z5HP:TYPE?
:SENSe:MEASure:TANDem:Z5LP:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
TYPE1(TYPE1 is unavailable for N1_LP.)
TYPE2

Function: Queries the type of N1/Z5 bytes for the tandem connection.

Example use: > :SENSe:MEASure:TANDem:N1HP:TYPE?
< TYPE2

:SENSe:MEASure:TANDem:HP:MEAS <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
VC-AIS
ISF
FAS
INCais
TC-RDI
ODI
<mode> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1

Function: Sets whether or not to use the Alarm detection and removal condition of The Error/Alarm measurement for tandem connection in High order path.

Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.

Example use: To set the detection and removal condition of VC-AIS to ON:
> :SENSe:MEASure:TANDem:HP:MEAS VC-AIS,ON

:SENSe:MEASure:TANDem:HP:MEAS? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries whether or not to use the Alarm detection and removal condition of the Error/Alarm measurement in tandem connection in High order path.

Example use: To query the presence of detection and removal condition for VC-AIS:
> :SENSe:MEASure:TANDem:HP:MEAS? VC-AIS
< 1

:SENSe:MEASure:TANDem:HP:DETection <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
VC-AIS
ISF
FAS
INCais
TC-RDI
ODI
<mode> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 frame Step value: 1

Function: Sets the condition to detect of errors and alarms for the tandem connection in High order path.

Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.

Example use: To set the detection condition VC-AIS Det to 2:
> :SENSe:MEASure:TANDem:HP:DETection VC-AIS,2

:SENSe:MEASure: TANDem:HP:DETection? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the condition to detect of tandem errors and alarms for the tandem connection in High order path.

Example use: To query the setting of detection condition VC-AIS Det:
> :SENSe:MEASure:TANDem:HP:DETection? VC-AIS
< 2

:SENSe:MEASure:TANDem:HP:REMove <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
VC-AIS
ISF
FAS
INCais
TC-RDI
ODI
<mode> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 frame Step value: 1

Function: Sets the condition to remove of errors and alarms for the tandem connection in High order path.

Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.

Example use: To set the release condition VC-AIS Rem of tandem errors and alarms to 2:
> :SENSe:MEASure:TANDem:HP:REMove VC-AIS,2

:SENSe:MEASure:TANDem:HP:REMove? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the condition to detect of tandem errors and alarms for the tandem connection in High order path.
Example use: To query the setting of VC-AIS Rem for release condition:
> :SENSe:MEASure:TANDem:HP:REMove? VC-AIS
< 2

:SENSe:MEASure:TANDem:LP:MEAS <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
VC-AIS
FAS
INCais
TC-RDI
ODI
<mode> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1
Function: Sets whether or not to use the Alarm detection and removal condition of The Error/Alarm measurement for tandem connection in Low order path.
Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.
Example use: To set the detection and removal condition of VC-AIS to ON:
> :SENSe:MEASure:TANDem:LP:MEAS VC-AIS,OFF

:SENSe:MEASure:TANDem:LP:MEAS? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1
Function: Queries whether or not to use the Alarm detection and removal condition of the Error/Alarm measurement in tandem connection in Low order path.
Example use: To query the presence of detection and removal condition of VC-AIS:
> :SENSe:MEASure:TANDem:LP:MEAS? LOF
< 0

:SENSe:MEASure:TANDem:LP:DETection <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
VC-AIS
FAS
INCais
TC-RDI

ODI
<mode> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 frame Step value: 1

Function: Sets the condition to detect of errors and alarms for the tandem connection in Low order path.

Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.

Example use: To set the detection condition VC-AIS Det to 2:
> :SENSe:MEASure:TANDem:LP:DETection VC-AIS,2

:SENSe:MEASure:TANDem:LP:DETection? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the condition to detect of tandem errors and alarms for the tandem connection in Low order path.

Example use: To query the setting of detection condition of VC-AIS Det:
> :SENSe:MEASure:TANDem:LP:DETection? VC-AIS
< 2

:SENSe:MEASure:TANDem:LP:REMove <type>,<mode>

Parameter: <type> = <CHARACTER PROGRAM DATA>
VC-AIS
FAS
INCais
TC-RDI
ODI
<mode> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 frame Step value: 1

Function: Sets the condition to remove of errors and alarms for the tandem connection in Low order path.

Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.

Example use: To set the release condition VC-AIS Rem of tandem errors and alarms to 2:
> :SENSe:MEASure:TANDem:LP:REMove VC-AIS,2

:SENSe:MEASure:TANDem:LP:REMove? <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the condition to detect of tandem errors and alarms for the tandem connection in Low order path.

Example use: To query the setting of VC-AIS Rem for release condition:
> :SENSe:MEASure:TANDem:LP:REMove? AISREMove
< 2

(for SDH)

:SENSe:MEASure:SLM:DETection:HP:MODE <mode>

:SENSe:MEASure:SLM:DETection:LP:MODE <mode>

(for SONET)

:SENSe:MEASure:PLM:DETection:HP:MODE <mode>

:SENSe:MEASure:PLM:DETection:LP:MODE <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>
AUTO
MANual

Function: Select whether auto or manual to set the SLM.

Example use: To set the comparison pattern to AUTO:
> SENSe:MEASure:SLM:DETection:HP:MODE AUTO

(for SDH)

:SENSe:MEASure:SLM:DETection:HP:MODE?

:SENSe:MEASure:SLM:DETection:LP:MODE?

(for SONET)

:SENSe:MEASure:PLM:DETection:HP:MODE?

:SENSe:MEASure:PLM:DETection:LP:MODE?

Response: <mode> = <CHARACTER PROGRAM DATA>

Function: Queries whether auto or manual to set the SLM.

Example use: To query the comparison pattern setting of signal identification pattern in POH:
> SENSe:MEASure:SLM:DETection:HP:MODE?
< AUTO

(for SDH)

:SENSe:MEASure:SLM:DETection:HP:PATTern <pattern>

:SENSe:MEASure:SLM:DETection:LP:PATTern <pattern>

(for SONET)

:SENSe:MEASure:PLM:DETection:HP:PATTern <pattern>

:SENSe:MEASure:PLM:DETection:LP:PATTern <pattern>

Parameter: <string> = <STRING PROGRAM DATA>
"00" to "FF" (Hexadecimal type)

Function: Sets the value of C2 byte when the selection of SLM(PLM) is Manual.

Example use: To set the comparison pattern of signal identification pattern in POH to AB:
> SENSe:MEASure:SLM:DETection:HP:PATTern “AB”

(for SDH)

:SENSe:MEASure:SLM:DETection:HP:PATTern?

:SENSe:MEASure:SLM:DETection:LP:PATTern?

(for SONET)

:SENSe:MEASure:PLM:DETection:HP:PATTern?
:SENSe:MEASure:PLM:DETection:LP:PATTern?

Response: <mode> = <CHARACTER PROGRAM DATA>

Function: Queries the value of C2 byte when the selection of SLM(PLM) is Manual.

Example use: To query the comparison pattern setting of signal identification pattern in POH:
> SENSe:MEASure:SLM:DETection:HP:PATTern?
< "AB"

:SENSe:MEASure:LOPDetection <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
- WITHssbit With SS bit
- WOUTssbit Without SS bit

Function: Sets.

Restriction: Invalid when,
・<CID>, <NON>, <ATM> or <JITTER> is set for :INSTrument:CONFig.

Example of use: Sets LOP Detection
> :SENSe:MEASure:LOPDetection WITHssbit

:SENSe:MEASure:LOPDetection?

Response: <type> = <CHARACTER RESPONSE DATA>
- WITH With SS bit
- WOUT Without SS bit

Function: Queries LOP detection condition

Example of use: > :SENSe:MEASure:LOPDetection?
< WITH

:SENSe:SIGPreset:RX <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
- OFF
- MULTI64
- MULTI8

Function: Selects the frame configuration of data to set to the signaling byte (usually called as W byte) of VC11 (V5 byte) when the mapping is BYTE (Data or Voice).

Restriction: Invalid in the following case:
When the option 09 Japan mapping is not installed.

Example use: To set 64-multiframe to the transmission signaling byte:
> :SENSe:SIGPreset:RX MULTI64

:SENSe:SIGPreset:RX?

Response: <type> = <CHARACTER RESPONSE DATA>
Function: Queries the frame configuration of data to set to the signaling byte (usually called as W byte) of VC11 (V5 byte) when the mapping is BYTE (Data or Voice).
Example use: To query the frame configuration of transmission signaling byte:
> :SENSe:SIGPreset:RX?

:SENSe:PCHeck:MODE <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>
MANUAL Manual
Function: Sets the Performance check measurement mode.
Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"PERFormance">.
Example use: To set the measurement mode:
> :SENSe:PCHeck:MODE MANUAL

:SENSe:PCHeck:MODE?

Response: <mode> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of Performance check measurement mode.
Example use: > :SENSe:PCHeck:MODE?
< MANUAL

:SENSe:IPTest:MEASuer:TYPE <mmode>

Parameter <mmode> = <CHARACTER PROGRAM DATA>
SINGle Single
REPeat Repeat
MANual Manual
Function Sets the IP test measurement mode.
Restriction Invalid in the following case:
・ Option-14 is not installed.
・ :DISPlay:TMENu[:NAME] is other than <"IPTest”>.
Example use To set the measurement mode to “Repeat”.
> :SENSe:IPTest:MEASuer:TYPE REPeat

:SENSe:IPTest:MEASuer:TYPE?

Response <mmode> = <CHARACTER RESPONSE DATA>
Same as :SENSe:IPTest:MEASuer:TYPE.
Function Queries the IP test measurement mode.
Example use > :SENSe:IPTest:MEASuer:TYPE?
< REP

:SENSe:IPTest:MEASuer:PERiod <numeric>,<suffix>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 ～ 99 Step value : 1
<suffix> = <CHARACTER PROGRAM DATA>

S	s
M	min
H	h
D	day

Function Sets time and unit of the measurement gating period.

Restriction Invalid in the following case:

- Option-14 is not installed.
- :DISPlay:TMENu[:NAME] is other than <"IPTest">.
- :SENSe:IPTest:MEASuer:TYPE is <MANual>.

Example use To set the measurement time to one hour.
> :SENSe:IPTest:MEASuer:PERiod 1,H

:SENSe:IPTest:MEASuer:PERiod?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
Same as :SENSe:IPTest:MEASuer:PERiod.
<suffix> = <CHARACTER RESPONSE DATA>
Same as :SENSe:IPTest:MEASuer:PERiod.

Function Queries time and unit of the measurement gating period.

Example use > :SENSe:IPTest:MEASuer:PERiod?
< 1,H

:SENSe:OHTest:OHBert:PATTern <pattern>

Parameter: <pattern> = <CHARACTER PROGRAM DATA>
PRBS11
PRBS15

Function: Selects the pattern to send of OH Bert in the OH test.

Restriction: Invalid in the following case:

- When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- When :SOURce:OHTest:TYPE is set to other than <OHB>.

Example use: To change the send change pattern of OH Bert to PRBS11:
> :SENSe:OHTest:OHBert:PATTern PRBS11

:SENSe:OHTest:OHBert:PATTern?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the pattern to send of OH Bert in the OH test.

Example use: > :SENSe:OHTest:OHBert:PATTern?
< PRBS11

:SENSe:OHTest:OHBert:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)

OFF	OFF
SOH1B	SOH 1byte
POH1B	POH 1byte
DRSect	D1-D3
DMSect	D4-D12

(SONET)

OFF	OFF
TOH1B	TOH 1byte
POH1B	POH 1byte
DRSect	D1-D3
DMSect	D4-D12

Function: Set the receive type of OH Bert in the OH test.

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
・When :SOURce:OHTest:TYPE is set to other than <OHB>.

Example use: To set the change type of OH Bert to POH 1byte:
> :SENSe:OHTest:OHBert:TYPE POH1B

:SENSe:OHTest:OHBert:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the receive type of OH Bert in the OH test.

Example use: > :SENSe:OHTest:OHBert:TYPE?
< POH1B

:SENSe:OHTest:OHBert:POSition:SOH <posi>
:SENSe:OHTest:OHBert:POSition:TOH <posi>

Parameter: <posi> = <CHARACTER PROGRAM DATA>

(SDH)

A11	A11	A13	A21	A22	A23	J0 Z01	X18	X19
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	Z23 M1	E2 X97	X98	X99

(SONET)

A11	A12	A13	A21	A22	A23	J0 Z01	Z02	Z03
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	Z23 M1	E2 X97	X98	X99

Function: Sets the change byte position of SOH 1byte[TOH 1byte] in OH Bert.

Restriction: Invalid in the following case:

・When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.

・When :SOURce:OHTest:TYPE is set to other than <OHB>.

・When :SENSe:OHTest:OHBert:TYPE is set to other than <SOH1B> and <TOH1B>.

Example use: To set the change position of OH Bert to Z12:

> :SENSe:OHTest:OHBert:POSition:SOH Z12

:SENSe:OHTest:OHBert:POSition:SOH?
:SENSe:OHTest:OHBert:POSition:TOH?

Response: <posi> = <CHARACTER RESPONSE DATA>
Same as :SENSe:OHTest:OHBert:POSition:SOH.

Function: Queries the change byte position of OH Bert.

Example use: To query the change byte position of OH Bert.
> :SENSe:OHTest:OHBert:POSition:SOH?
< Z12

:SENSe:OHTest:OHBert:POSition:POH <vctype>,<posi>

Parameter: <vctype> = <CHARACTER PROGRAM DATA>
(SDH)
VC4 POH VC4 pattern
VC3 POH VC3 pattern
VC1 POH VC2 pattern
(SONET)
STS3 POH STS3 pattern
STS1 POH STS1 pattern
VT POH VT pattern
<posi> = <CHARACTER PROGRAM DATA>
(SDH) J1, C2, G1, F2, H4, F3, K3, N1, J2, N2, K4
(SONET) J1, C2, G1, F2, H4, Z3, Z4, Z5, J2, Z6, Z7

Function: Sets the change byte position of POH 1byte in OH Bert.

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
・When :SOURce:OHTest:TYPE is set to other than <OHB>.
・When :SENSe:OHTest:OHBert:TYPE is set to other than <POH1B>.
・VC4[STS3] is invalid when the setting of
:SENSe:TELecom:MAPPing:AU is <AU3>.
・VC3[STS1] is invalid when :SENSe:TELecom:MAPPing:TYPE
<VC4_ASY>, <VC4_BLK>, or <ST3_ASY>, <ST3_BLK> are selected.
・VC3[STS1] is invalid when the setting of
:SENSe:TELecom:MAPPing:AU is <AU4> and the setting of
:SENSe:TELecom:MAPPing:TYPE is to select the following Mapping:
6M(Async.), 6M(Bitsync.), VC2-mc, VC2-Bulk, 2M(Async.),
2M(Bitsync.F), 2M(Bitsync.L), 2M(Bytesync.F), 2M(Bytesync.L),
VC12-Bulk, 1.5M(Async.), 1.5M(Bitsync.F), 1.5M(Bitsync.L),
1.5M(Bytesync.F), 1.5M(Bytesync.L), VC11-Bulk, Byte(Data),
Byte(Voice), 384k(Data), 384k(Voice)
・VC2/1 and VT are invalid when the setting of
:SENSe:TELecom:MAPPing:TYPE is to select the following Mapping:
139M(Async.), VC4-Bulk, 34M(Async.), 34M(Sync.), 45M(Async.)
VC3-Bulk, 2M(Bitsync.L), 2M(Bytesync.L), 1.5M(Bitsync.L),
1.5M(Bytesync.L)

Example use: To set the change position to J1 of VC4 when the change type of OH Bert is POH 1byte:
> :SENSe:OHTest:OHBert:POSition:POH VC4,J1

:SENSe:OHTest:OHBert:POSition:POH?

Response: <posi> = <CHARACTER RESPONSE DATA>
Function: Queries the change byte position of POH 1byte in OH Bert.
Example use: To query the setting for change byte position of OH Bert.
> :SENSe:OHTest:OHBert:POSition:POH?
< VC4, J1

:SENSe:OHTest:OHBert:CHANel <ch>

Parameter: <ch> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
Function: Sets the receive change channel position to SOH 1byte or TOH 1byte in OH Bert.
Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
・When :SOURce:OHTest:TYPE is set to other than <OHB>.
・When :SENSe:OHTest:OHBert:TYPE is set to other than <SOH1B> or <TOH1B>.
Example use: To set the receive change channel position to 7 when OH Bert is SOH 1byte:
> :SENSe:OHTest:OHBert:CHANel 7

:SENSe:OHTest:OHBert:CHANel?

Response: <ch> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting for receive change channel position of SOH 1byte or TOH 1byte in OH Bert.
Example use: To query the setting of receive change channel position when OH Bert SOH is TOH 1byte:
> :SENSe:OHTest:OHBert:CHANel?
< 7

:SENSe:OHTest:ADRop:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

(SDH)	OFF	OFF
	SOH1B	SOH 1byte
	POH1B	POH 1byte
	DRSect	D1-D3
	DMSect	D4-D12
(SONET)	OFF	OFF
	TOH1B	TOH 1byte
	POH1B	POH 1byte
	DRSect	D1-D3
	DMSect	D4-D12

Function: Sets the OH Drop type.
Restriction: This command is disabled in the following cases:
・:DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
・:SOURce: OHTest:TYPE is set to other than <ADROP>.
Example use: To set the OH Drop type to POH 1 byte:
> :SENSe:OHTest:ADRop:TYPE POH1B

:SENSe:OHTest:ADRop:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
Same as for :SENSe:OHTest:ADRop:TYPE.
Function: Queries the OH Drop type.

Example use: > :SENSe:OHTest:ADRop:TYPE?
< POH1B

:SENSe:OHTest:ADRop:POSition:SOH<posi>
:SENSe:OHTest:ADRop:POSition:TOH<posi>

Parameter: <posi> = <CHARACTER PROGRAM DATA>
(SDH)

A11	A12	A13	A21	A22	A23	J0 Z01	X18	X19
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

(SONET)

A11	A12	A13	A21	A22	A23	J0 Z01	Z02	Z03
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

Function: Sets the change byte position for OH Drop SOH 1byte[TOH 1 byte].

Restriction: This command is disabled in the following cases:

- :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- :SOURce: OHTest:TYPE is set to other than <ADROP>.
- :SENSe:OHTest:ADRop:TYPE is set to other than <SOH1B> or <TOH1B>.

Example use: To set the change position of OH Drop to X85.

> :SENSe:OHTest:ADRop:POSition:SOH X85

:SENSe:OHTest:ADRop:POSition:SOH?
:SENSe:OHTest:ADRop:POSition:TOH?

Response: <posi> = <CHARACTER RESPONSE DATA>

Same as for :SENSe:OHTest:ADRop:POSition:SOH.

Function: Queries the change byte position setting for OH Drop.

Example use: To query the change byte position setting for OH Drop:

> :SENSe:OHTest:ADRop:POSition:SOH?

< X85

:SENSe:OHTest:ADRop:POSition:POH<vctype>,<posi>

Parameter: <vctype> = <CHARACTER PROGRAM DATA>

(SDH)

VC4	POH VC4 pattern
VC3	POH VC3 pattern
VC1	POH VC2/1 pattern

(SONET)

STS3	POH STS3 pattern
STS1	POH STS1 pattern
VT	POH VT pattern

<posi> = <CHARACTER PROGRAM DATA>

(SDH)	J1	C2	G1	F2	H4	F3	K3	N1	J2	N2	K4
(SONET)	J1	C2	G1	F2	H4	Z3	Z4	Z5	J2	Z6	Z7

Function: Sets the change byte position for OH Drop POH 1byte, POH.

Restriction: This command is disabled in the following cases:

- :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- :SOURce: OHTest:TYPE is set to other than <ADROP>.
- :SENSe:OHTest:ADRop:TYPE is set to other than <POH1B>.
- :SENSe:TELecom:MAPPing:AU is set to <AU3> for VC4[STS3].
- :SENSe:TELecom:MAPPing:TYPE is set to <VC4_ASY> and <VC4_BLK> or <VC3_ASY> and <VC3_BLK> for VC3[STS1].
- For VC3[STS1], one of the following mappings is selected for :SENSe:TELecom:MAPPing:TYPE while :SENSe:TELecom:MAPPing:AU is set to <AU3>:
  6M(Async.), 6M(Bitsync.), VC2-mc, VC2-Bulk, 2M(Async.), 2M(Bitsync.F), 2M(Bitsync.L), 2M(Bytesync.F), 2M(Bytesync.L), VC12-Bulk, 1.5M(Async.), 1.5M(Bitsync.F), 1.5M(Bitsync.L), 1.5M(Bytesync.F), 1.5M(Bytesync.L), VC11-Bulk, Byte(Data), Byte(Voice), 384k(Data), 384k(Voice), VC4*64c-Bulk, VC4*16c-Bulk, VC4*4c-Bulk, VC4c-Bulk
- One of the following mappings is selected for :SENSe:TELecom:MAPPing:TYPE for VC2/1 or VT:
  139M(Async.), VC4-Bulk, 34M(Async.), 34M(Sync.), 45M(Async.), VC3-Bulk, 2M(Bitsync.L), 2M(Bytesync.L), 1.5M(Bitsync.L), 1.5M(Bytesync.L), VC4*64c-Bulk, VC4*16c-Bulk, VC4*4c-Bulk, VC4c-Bulk

Example use: To set the OH Drop change type and position to POH 1byte and J1 of VC4, respectively:

> :SENSe:OHTest:ADRop:POSition:POH VC4,J1

:SENSe:OHTest:ADRop:POSition:POH?

Response: <posi> = <CHARACTER RESPONSE DATA>
Same as for :SENSe:OHTest:ADRop:POSition:POH.

Function: Queries the OH Drop change byte position.

Example use: To query the OH Drop change byte position:

> :SENSe:OHTest:ADRop:POSition:POH?
< VC4, J1

:SENSe:OHTest:ADRop:CHANel <ch>

Parameter: <ch> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1

Function: Sets the change channel position for OH Drop SOH 1 byte.

Restriction: This command is disabled in the following cases:

- :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.
- :SOURce: OHTest:TYPE is set to other than <ADROP>.

・ :SENSe:OHTest:ADRop:TYPE is set to other than <SOH1B> or <TOH1B>.

Example use: To set the change channel position of OH Drop to 7.
> :SENSe:OHTest:ADRop:CHANel 7

:SENSe:OHTest:ADRop:CHANel?

Response: <ch> = <NR1 NUMERIC RESPONSE DATA>
Same as for :SENSe:OHTest:ADRop:CHANel.

Function: Queries the change channel position setting for OH Drop SOH 1 byte.

Example use: To query the change channel position for OH Drop SOH 1byte:
> :SENSe:OHTest:ADRop:CHANel?
< 7

:SENSe:OHTest:MEASure:TYPE <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>

SINGLE	Single
REPEAT	Repeat
MANUAL	Manual

Function: Sets the measurement mode.

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.

Example use: To set the time of Repeat measurement gating period for OH test measurement mode to 5 seconds:
> :SENSe:OHTest:MEASure:TYPE REPEAT

:SENSe:OHTest:MEASure:TYPE?

Response: <mode> = <CHARACTER RESPONSE DATA>

Function: Queries the setting measurement mode.

Example use: To query the setting for time and unit of OH test measurement mode measurement gating period:
> :SENSe:OHTest:MEASure:TYPE?
< REPEAT

:SENSe:OHTest:MEASure:PERiod <time>,<suffix>

Parameter: <time> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 99 frame Step value: 1
<suffix> = <CHARACTER PROGRAM DATA>

S	s
MIN	min
H	h
DAY	day

Function: Sets the time and the unit of OH test measurement mode.

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"OHTest">.

Example use: To set the time of Repeat measurement gating period for OH test measurement mode to 5 seconds:
> :SENSe:OHTest:MEASure:PERiod 5,S

:SENSe:OHTest:MEASure:PERiod?

Response: <time> = <NR1 NUMERIC RESPONSE DATA>
<suffix> = <CHARACTER RESPONSE DATA>
Function: Queries the time and the unit of OH test measurement mode.
Example use: To query the setting for time and unit of OH test measurement gating period:
> :SENSe:OHTest:MEASure:PERiod?
< 5,S

:SENSe:APSTest:TRIGger:TYPE <trig>

Parameter: <trig> = <STRING PROGRAM DATA>
(SDH)

"B1"	B1
"B2"	B2
"HB3"	HP-B3
"LB3"	LP-B3
"BIP2"	BIP-2
"MREI"	MS-REI
"HREI"	HP-REI
"LREI"	LP-REI
"BIT"	Bit
"MAIS"	MS-AIS
"AAIS"	AU-AIS
"ALOP"	AU-LOP
"HRDI"	HP-RDI
"TAIS"	TU-AIS
"TLOP"	TU-LOP
"TLOM"	TU-LOM
"LRDI"	LP-RDI
"LRFI"	LP-RFI

(SONET)

"B1"	B1
"B2"	B2
"HB3"	HP-B3
"LB3"	LP-B3
"BIP2"	BIP-2
"REIL"	REI-L
"REIP"	REI-P
"REIV"	REI-V
"BIT"	Bit
"AISL"	AIS-L
"AISP"	AIS-P
"LOPP"	LOP-P
"RDIP"	RDI-P
"AISV"	AIS-V
"LOPV"	LOP-V
"LOMV"	LOM-V
"RDIV"	RDI-V
"RFIV"	RFI-V

Function: Sets the trigger type in the APS test.

Restriction: Invalid in the following case:

・When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.

Example use: To set the detection condition to B2:

> :SENSe:APSTest:TRIGger:TYPE "B2"

:SENSe:APSTest:TRIGger:TYPE?

Response: <trig> = <CHARACTER RESPONSE DATA>

Function: Queries the setting of the trigger type in the APS test.

Example use: To query the setting of the detection condition:

> :SENSe:APSTest:TRIGger:TYPE?

< "B2"

:SENSe:APSTest:THReshold <thresh>

Parameter: <thresh> = <CHARACTER PROGRAM DATA>

1	1ms
10	10ms
100	100ms

Function: Sets the detection range of Threshold rate for the APS test.

Restriction: Invalid in the following case:

・When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.

・When the Trigger setting of :SENSe:APSTest:TRIGger:TYPE is other than MAIS, MREI, AAIS, ALOP, HRDI, TAIS, TLOP, LRDI, LRFI, and TLOM.

Example use: To set the detection range of Threshold rate to 100:

> :SENSe:APSTest:THReshold 100

:SENSe:APSTest:THReshold?

Response: <Thresh> = <CHARACTER RESPONSE DATA>
Function: Queries the detection range of Threshold rate for the APS test.
Example use: > :SENSe:APSTest:THReshold?
< 100

:SENSe:APSTest:MEASure:TYPE <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>

SINGLE	Single
REPEAT	Repeat
MANUAL	Manual

Function: Sets measurement mode in the APS test.
Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
Example use: To set the APS test measurement mode to Repeat.
> :SENSe:APSTest:MEASure:TYPE REPEAT

:SENSe:APSTest:MEASure:TYPE?

Response: <mode> = <CHARACTER RESPONSE DATA>
Function: Queries the setting measurement mode in the APS test.
Example use: To query the setting of APS test measurement mode.
> :SENSe:APSTest:MEASure:TYPE?
< REPEAT

:SENSe:APSTest:MEASure:PERiod <time>,<suffix>

Parameter: <time> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 99 Step value: 1
<suffix> = <CHARACTER PROGRAM DATA>

S	s
MIN	min
H	h
DAY	day

Function: Sets the time and unit of measurement gating period in the APS test.
Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
Example use: To set the time of APS test measurement gating period to 5 seconds:
> :SENSe:APSTest:MEASure:PERiod 5,S

:SENSe:APSTest:MEASure:PERiod?

Response: <time> = <NR1 NUMERIC RESPONSE DATA>
<suffix> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of time and unit of measurement gating period in the APS test.

Example use: To query the setting of time and unit of APS test measurement gating period:
> :SENSe:APSTest:MEASure:PERiod?
< 5,S

:SENSe:APSTest:STARt

Parameter: None
Function: Starts the Switch time measurement.
Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
Example use: > :SENSe:APSTest:STARt

:SENSe:APSTest:STOP

Parameter: None
Function: Stops the Switch time measurement.
Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is set to other than <"APSTest">.
Example use: > :SENSe:APSTest:STOP

:SENSe:APSTest:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
0 Stopping the Swich time measure.
1 Starting the Swich time measure.
Function: Queries the status of the Switch time measurement.
Example use: > :SENSe:APSTest:STATe?
< 0

:SENSe:APSCapture:STARt

Parameter: None.
Function: Starts APS Capture.
Example use: > :SENSe:APSCapture:STARt

:SENSe:APSCapture:STOP

Parameter: None.
Function: Stops APS Capture.
Example use: > :SENSe:APSCapture:STOP

:SENSe:APSCapture:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
0 Stopping the Swich time measure.
1 Starting the Swich time measure.
Function: Queries the status of APS Capture.
Example use: > :SENSe:APSCapture:STATe?
< 0

:SENSe:APSCapture:TRIGger:TYPE <trig>

Parameter: <trig> = <STRING PROGRAM DATA>

(SDH)

"B1"		B1
"B2"		B2
"HB3"		HP-B3
"LB3"		LP-B3
"BIP2"		BIP-2
"MREI"	(SDH)	MS-REI
"HREI"	(SDH)	HP-REI
"LREI"	(SDH)	LP-REI
"MAIS"	(SDH)	MS-AIS
"AAIS"	(SDH)	AU-AIS
"ALOP"	(SDH)	AU-LOP
"HSLM"	(SDH)	HP-SLM
"HRDI"	(SDH)	HP-RDI
"HTIM"	(SDH)	HP-TIM
"HUNEQ"	(SDH)	HP-UNEQ
"TAIS"	(SDH)	TU-AIS
"TLOP"	(SDH)	TU-LOP
"TLOM"	(SDH)	TU-LOM
"LRDI"	(SDH)	LP-RDI
"LSLM"	(SDH)	LP-SLM
"LRFI"	(SDH)	LP-RFI
"LTIM"	(SDH)	LP-TIM
"LUNEQ"	(SDH)	LP-UNEQ
"EXTernal"		External
"MANual"		MANual
"K12MAtch"		K1/K2 match
"K12MIsmatch"		K1/K2 mismatch

(SONET)

"B1"		B1
"B2"		B2
"HB3"		HP-B3
"LB3"		LP-B3
"BIP2"		BIP-2
"REIL"	(SONET)	REI-L
"REIP"	(SONET)	REI-P
"REIV"	(SONET)	REI-V
"AISL"	(SONET)	AIS-L
"AISP"	(SONET)	AIS-P
"LOPP"	(SONET)	LOP-P
"SLMP"	(SONET)	SLM-P
"RDIP"	(SONET)	RDI- P
"TIMP"	(SONET)	TIM-P
"UNEQP"	(SONET)	UNEQ-P
"AISV"	(SONET)	AIS-V
"LOPV"	(SONET)	LOP-V
"LOMV"	(SONET)	LOM-V
"RDIV"	(SONET)	RDI-V
"SLMV"	(SONET)	SLM-V
"RFIV"	(SONET)	RFI-V
"TIMV"	(SONET)	TIM-V
"UNEQV"	(SONET)	UNEQ-V
"EXTernal"		EXTernal
"MANual"		MANual
"K12MAtch"		K1/K2 match
"K12MIsmatch"		K1/K2 mismatch

Function: Sets the Trigger item in the APS capture.
Example use: To set the Trigger item to BIP2:
> :SENSe:APSCapture:TRIGger:TYPE "BIP2"

:SENSe:APSCapture:TRIGger:TYPE?

Response: <trig> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of Trigger item in the APS capture.
Example use: To query the setting of Trigger item:
> :SENSe:APSCapture:TRIGger:TYPE?
< "BIP2"

:SENSe:APSCapture:TRIGger:POSition <position>

Parameter: <position> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 63 Step value: 1
Function: Sets the Trigger position in the APS capture.
Example use: To set the Trigger position to 5:
> :SENSe:APSCapture:TRIGger:POSition 5

:SENSe:APSCapture:TRIGger:POSition?

Response: <position> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the setting of Trigger position in the APS capture.
Example use: To query the setting of Trigger position:
> :SENSe:APSCapture:TRIGger:POSition?
< 5

:SENSe:APSCapture:TRIGger:PATTern <pattern>

Parameter: <pattern> = <STRING PROGRAM DATA>
"0000000000000000" to "1111111111111111"
Function: Sets the trigger pattern for APS capture.
Restriction: This command is disabled in the following case:
・ :SENSe:APSCapture:TRIGer:TYPE is set to other than <"K12MAtch"> or <"K12MIsmatch">.
Example use: To set the trigger pattern to "0000110100001101":
> :SENSe:APSCapture:TRIGger:PATTern "0000110100001101"

:SENSe:APSCapture:TRIGger:PATTern?

Response: <pattern> = <STRING PESPONSE DATA>
Same as for :SENSe:APSCapture:TRIGer:PATTern.
Function: Queries the trigger pattern for APS capture.
Example use: >:SENSe:APSCapture:TRIGger:PATTern?
< "0000110100001101"

:SENSe:APSCapture:TRIGger:MASK <mask>

Parameter: <mask> = <STRING PROGRAM DATA>
"0000000000000000" to "1111111111111111"
Function: Sets the mask pattern for APS capture.
Restriction: This command is disabled in the following case:
・ :SENSe:APSCapture:TRIGer:TYPE is set to other than <"K12MAtch"> or <"K12MIsmatch">.
Example use: To set the pattern mask to "0000110100001101":
> :SENSe:APSCapture:TRIGger:MASK "0000110100001101"

:SENSe:APSCapture:TRIGger:MASK?

Response: <mask> = <STRING PESPONSE DATA>
Same as for :SENSe:APSCapture:TRIGer:MASK.
Function: Queries the pattern mask.
Example use: >:SENSe:APSCapture:TRIGger:MASK?
< "0000110100001101"

:SENSe:FRAMecapture:STARt

Parameter: None.
Function: Starts Frame capture.

Example use: To start Frame capture:
> :SENSe:FRAMecapture:STARt

:SENSe:FRAMecapture:STOP

Parameter: None.
Function: Stops Frame capture.
Example use: To start Frame capture:
> :SENSe:FRAMecapture:STOP

:SENSe:FRAMecapture:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
0 indicates that the Manual Trigger is not inserted.
1 indicates that the Manual Trigger is being inserted.
Function: Queries the status of Frame capture.
Example use: > :SENSe:FRAMecapture:STATe?
< 0

:SENSe:FRAMecapture:TRIGger:TYPE <type>,<position>

Parameter: <type> = <STRING PROGRAM DATA>

(SDH)

"B1"	B1
"B2"	B2
"HB3"	HP-B3
"LB3"	LP-B3
"MREI"	MS-REI
"HREI"	HP-REI
"LOF"	LOF
"OOF"	OOF
"MAIS"	MS-AIS
"MRDI"	MS-RDI
"AAIS"	AU-AIS
"ALOP"	AU-LOP
"HRDI"	HP-RDI
"HSLM"	HP-SLM
"HTIM"	HP-TIM
"HUNEQ"	HP-UNEQ
"K12MAtch"	K1/K2 match
"K12MIsmatch"	K1/K2 mismatch
"ANDF”	AU-NDF
"APPJC”	AU+PJC
"AMPJC”	AU-PJC
"A3CONS”	AU 3 cons
"EXTernal"	External
"MANual"	MANual

(SONET)

"B1"	B1
"B2"	B2
"HB3"	HP-B3
"LB3"	LP-B3
"REIL"	REI-L
"REIP"	REI-P
"LOF"	LOF
"OOF"	OOF
"AISL"	AIS-L
"RDIL"	RDI-L
RDI-L	AIS-P
"LOPP"	LOP-P
"RDIP"	RDI-P
"SLMP"	SLM-P
"TIMP"	TIM-P
"UNEQP"	UNEQ-P
"K12MAtch"	K1/K2 match
"K12MIsmatch"	K1/K2 mismatch
"ANDF"	STS-NDF
"APPJC"	STS+PJC
"AMPJC"	STS-PJC
"A3CONS"	STS3Cons
"EXTernal"	EXTernal
"MANual"	MANual

<position> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1

Function: Sets the Trigger item for frame capture.

Example use: To set Trigger to LOF20:
> :SENSe:FRAMecapture:TRIGger:TYPE "LOF",20

:SENSe:FRAMecapture:TRIGger:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
<position> = <NR1 NUMERIC RESPONSE DATE>

Function: Queries the setting of Trigger item for Frame capture.

Example use: To query the setting of Trigger item:
> :SENSe:FRAMecapture:TRIGger:TYPE?
< "LOF",20

:SENSe:FRAMecapture:TRIGger:PATTern <pattern>

Parameter: <pattern> = <STRING PROGRAM DATA>
"00000000 00000000" to "11111111 11111111"

Function: Sets the trigger pattern of Frame capture.

Restriction: Invalid in the following case:
・When the setting of :SENSe:FRAMecapture:TRIGger:TYPE is other than <"K12MAtch"> or <"K12MIsmatch">.
Example use: To set the Trigger pattern to "10111100 0100011"
> :SENSe:FRAMecapture:TRIGger:PATTern "10111100 01000011"

:SENSe:FRAMecapture:TRIGger:PATTern?

Response: <pattern> = <STRING RESPONSE DATA>
Function: Queries the trigger pattern of Frame capture.
Example use: > :SENSe:FRAMecapture:TRIGger:PATTern?
< "10111100 01000011"

:SENSe:FRAMecapture:TRIGger:MASK <mask>

Parameter: <mask> = <STRING PROGRAM DATA>
"00000000 00000000" to "11111111 11111111"
Function: Sets the trigger pattern to mask of Frame capture.
Restriction: Invalid in the following case:
・When the setting of :SENSe:FRAMecapture:TRIGger:TYPE is other than <"K12MAtch"> or <"K12MIsmatch">.
Example use: To set the Trigger pattern mask.
> :SENSe:FRAMecapture::TRIGger:MASK "10010010 11111111"

:SENSe:FRAMecapture:TRIGger:MASK?

Response: <mask> = <STRING RESPONSE DATA>
Function: Queries the trigger pattern to mask of Frame capture.
Example use: > :SENSe:FRAMecapture:TRIGger:MASK?
< "10010010 11111111"

:SENSe:OHCapture:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)

H1H2	H1/H2
K1K2	K1/K2
SOH	SOH 1byte
POH	POH 1byte

(SONET)

H1H2	H1/H2
K1K2	K1/K2
TOH	TOH 1byte
POH	POH 1byte

Function: Sets the item to capture of overhead.
Example use: To set SOH for the item to Capture:
> :SENSe:OHCapture:TYPe SOH

:SENSe:OHCapture:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of item to capture of overhead.
Example use: > :SENSe:OHCapture:TYPe?
< SOH

:SENSe:OHCapture:TRIGger:TYPE <trig>

Parameter: <trig> = <STRING PROGRAM DATA>
(SDH)

"B1"	B1
"B2"	B2
"HB3"	HP-B3
"BIP2"	BIP-2
"MREI"	MS-REI
"HREI"	HP-REI
"HIEC"	HP-IEC
"HTREI"	HP-TC-REI
"HOEI"	HP-OEI
"LREI"	LP-REI
"LIEC"	LP-IEC
"LTREI"	LP-TC-REI
"LOEI"	LP-OEI
"N2BIP2"	N2 BIP-2
"BIT"	Bit
"LOF"	LOF
"OOF"	OOF
"MAIS"	MS-AIS
"MRDI"	MS-RDI
"AAIS"	AU-AIS
"ALOP"	AU-LOP
"HRDI"	AU
"HSLM"	HP-RDI
"HTIM"	HP-TIM
"HUNEQ"	HP-UNEQ
"HVAIS"	HP-VC-AIS
"HISF"	HP-ISF
"HFAS"	HP-FAS
"HIAIS"	HP-Inc-AIS
"HTRDI"	HP-TC-RDI
"HODI"	HP-ODI
"TAIS"	TU-AIS
"TLOP"	TU-LOP
"TLOM"	TU-LOM
"LRDI"	LP-RDI
"LSLM"	LP-SLM
"LRFI"	LP-RFI

"LUNEQ"	LP-UNEQ
"LVAIS"	LP-VC-AIS
"LFAS"	LP-FAS
"LIAIS"	LP-Inc-AIS
"LTRDI"	LP-TC-RDI
"LODI"	LP-ODI
"SYNC"	Sync
"HAIS"	HG AIS
"HREC"	HG REC
"BAIS15M"	BAIS 1.5M
"SIGAIS"	SigAIS
"SIGOOF"	SigOOF
"K12MAtch"	K1/K2 match
"K12MIsmatch"	K1/K2 mismatch
"ANDF"	AU-NDF
"APPJC"	AU+PJC
"AMPJC"	AU-PJC
"A3CONS"	AU 3 cons
"TNDF"	TU-NDF
"TPPJC"	TU+PJC
"TMPJC"	TU-PJC
"T3CONS"	TU 3 cons
"MANual"	MANual

(SONET)

"B1"	B1
"B2"	B2
"HB3"	HP-B3
"LB3"	LP-B3
"BIP2"	BIP-2
"REIL"	REI-L
"REIP"	REI-P
"HIEC"	HP-IEC
"HTREI"	HP-TC-REI
"HOEI"	HP-OEI
"REIV"	REI-V
"LIEC"	LP-IEC
"LTREI"	LP-TC-REI
"LOEI"	LP-OEI
"N2BIP2"	N2 BIP-2
"LOF"	LOF
"OOF"	OOF
"AISL"	AIS-L
"RDIL"	RDI-L
"AISP"	AIS-P
"LOPP"	LOP-P
"RDIP"	RDI-P

"SLMP"	SLM-P
"TIMP"	TIM-P
"UNEQP"	UNEQ-P
"HVAIS"	HP-VC-AIS
"HISF"	HP-ISF
"HFAS"	HP-FAS
"HIAIS"	HP-Inc-AIS
"HTRDI"	HP-TC-RDI
"HODI"	HP-ODI
"AISV"	AIS-V
"LOPV"	LOP-V
"LOMV"	LOM-V
"RDIV"	RDI-V
"SLMV"	SLM-V
"RFIV"	RFI-V
"UNEQV"	UNEQ-V
"LVAIS"	LP-VC-AIS
"LFAS"	LP-FAS
"LIAIS"	LP-Inc-AIS
"LTRDI"	LP-TC-RDI
"LODI"	LP-ODI
"SYNC"	Sync
"HAIS"	HG AIS
"HREC"	HG REC
"BAIS15M"	BAIS 1.5M
"SIGAIS"	
"SIGOOF"	SigOOF
"K12MAtch"	K1/K2 match
"K12MIsmatch"	K1/K2 mismatch
"ANDF"	AU-NDF
"APPJC"	AU+PJC
"AMPJC"	AU-PJC
"A3CONS"	AU 3 cons
"TNDF"	TU-NDF
"TPPJC"	TU+PJC
"TMPJC"	TU-PJC
"T3CONS	TU 3 cons
"MANual"	MANual

Function: Sets the Trigger item to capture of overhead.

Example use: To set Trigger to B2:

> :SENSe:OHCapture:TRIGger:TYPE "B2"

:SENSe:OHCapture:TRIGger:TYPE?

Response: <trig> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of Trigger item to capture.
Example use: To query the setting of Trigger item:
> :SENSe:OHCapture:TRIGger:TYPE?
< B2

:SENSe:OHCapture:TRIGger:POSition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 1023 Step value: 1
Function: Sets the Trigger position to capture of overhead.
Example use: To set the Trigger position to 7:
> :SENSe:OHCapture:TRIGger:POSition 7

:SENSe:OHCapture:TRIGger:POSition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the Trigger position to capture.
Example use: > :SENSe:OHCapture:TRIGger:POSition?
< 7

:SENSe:OHCapture:TRIGger:PATTern <pattern>

Parameter: <pattern> = <STRING PROGRAM DATA>
"0000000000000000"to"1111111111111111"
Function: Sets the Trigger pattern to capture of overhead.
Restriction: Invalid in the following case:
・When the setting of :SENSe:OHCapture:TRIGger:TYPE is other than <K12MAtch> or <K12MIsmatch>.
Example use: To set the trigger pattern to "0000110100001101":
> :SENSe:OHCapture:TRIGger:PATTern "0000110100001101"

:SENSe:OHCapture:TRIGger:PATTern?

Response: <pattern> = <STRING RESPONSE DATA>
Function: Queries the trigger pattern to capture of overhead.
Example use: > :SENSe:OHCapture:TRIGger:PATTern?
< "0000110100001101"

:SENSe:OHCapture:TRIGger:MASK <mask>

Parameter: <mask> = <STRING PROGRAM DATA>
"0000000000000000" to "1111111111111111"
Function: Sets the mask pattern to capture of overhead.
Restriction: Invalid in the following case:
・When the setting of :SENSe:OHCapture:TRIGger:TYPE is other than <K12MAtch> or <K12MIsmatch>.
Example use: To set the pattern mask to "0000110100001101":
> :SENSe:OHCapture:TRIGger:MASK "0000110100001101"

:SENSe:OHCapture:TRIGger:MASK?

Response: <mask> = <STRING RESPONSE DATA>
Function: Queries the mask pattern to capture of overhead.
Example use: > :SENSe:OHCapture:TRIGger:MASK?
< "0000110100001101"

:SENSe:OHCapture:STARt

Parameter: None.
Function: Starts OH Capture.
Example use: To set to start Capture:
> :SENSe:OHCapture: STARt

:SENSe:OHCapture:STOP

Parameter: None.
Function: Stops OH Capture.
Example use: To stop OH Capture:
> :SENSe:OHCapture:STOP

:SENSe:OHCapture:STATe?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
0 Stopping OH Capture.
1 Starting OH Capture.
Function: Queries the status of OH Capture.
Example use: > :SENSe:OHCapture:STATe?
< 0

:SENSe:OHCapture:POSition:SOH <posi>
:SENSe:OHCapture:POSition:TOH <posi>

Parameter: <posi> = <CHARACTER PROGRAM DATA>

A11	A12	A13	A21	A22	A23	J0 Z01	X18 Z02	X19 Z03
- X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
X29	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	– X54	X55	X56	– X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	M1 Z23	E2 X97	X98	X99

Function: Sets the byte position to capture when using Type:SOH 1byte [TOH 1byte].
Restriction: Invalid in the following case:
・When the setting of :SENSe:OHCaptuer:TYPE is other than <SOH> and <TOH>.
Example use: To set the Capture position to Z12 when using Type:SOH 1byte.
> :SENSe:OHCapture:POSition:SOH Z12

:SENSe:OHCapture:POSition:SOH?
:SENSe:OHCapture:POSition:TOH?

Response: <posi> = <CHARACTER RESPONSE DATA>
Function: Queries the byte position to capture when using Type:SOH 1byte [TOH 1byte].
Example use: To query the Capture position to Z12 when using Type:SOH 1byte.
> :SENSe:OHCapture:POSition:SOH?
< Z12

:SENSe:OHCapture:POSition:POH <vctype>,<posi>

Parameter: <vctype> = <CHARACTER PROGRAM DATA>
(SDH)
VC4 POH VC4 pattern
VC3 POH VC3 pattern
VC1 POH VC1 pattern
(SONET)
STS3 POH STS3 pattern
STS1 POH STS1 pattern
VT POH VT pattern
<posi> = <CHARACTER PROGRAM DATA>
(SDH) J1, C2, G1, F2, H4, F3, K3, N1, J2, N2, K4
(SONET) J1, C2, G1, F2, H4, Z3, Z4, Z5, J2, Z6, Z7
Function: Sets the byte position to capture when using Type:POH 1byte.
Restriction: Invalid in the following case:
・When :SENSe:OHCapture:TYPE is set to other than <POH>.
・VC4[STS3] is invalid when the setting of :SENSe:TELecom:MAPPing:AU is <AU3>.
・VC3[STS1] is invalid when :SENSe:TELecom:MAPPing:TYPE <VC4_ASY>, <VC4_BLK>, or <ST3_ASY>, <ST3_BLK>, the concatenation mapping are selected.
・VC3[STS1] is invalid when SENSe:TELecom:Mapping:AU is <AU4> and SENSe:TELecom:Mapping:TYPE is to select the following Mapping.
6M(Async.), 6M(Bitsync.), VC2-mc, VC2-Bulk, 2M(Async.), 2M(Bitsync.F), 2M(Bitsync.L), 2M(Bytesync.F), 2M(Bytesync.L), VC12-Bulk, 1.5M(Async.), 1.5M(Bitsync.F), 1.5M(Bitsync.L), 1.5M(Bytesync.F), 1.5M(Bytesync.L), VC11-Bulk, Byte(Data), Byte(Voice), 384k(Data), 384k(Voice)

・VC2/1 and VT are invalid when the setting of
:SENSe:TELecom:MAPPing:TYPE is to select the following Mapping:
139M(Async.), VC4-Bulk, 34M(Async.), 34M(Sync.), 45M(Async.)
VC3-Bulk, 2M(Bitsync.L), 2M(Bytesync.L), 1.5M(Bitsync.L),
1.5M(Bytesync.L), the concatenation mapping

Example use: To set the change position to J1 of VC4 when using POH 1byte:
> :SENSe:OHCapture::POSition:POH VC4,J1

:SENSe:OHCapture::POSition:POH?

Response: <type> = <CHARACTER RESPONSE DATA>
Function: Queries the byte position to capture when using Type:POH 1byte.
Example use: > :SENSe:OHCapture:POSition:POH?
< VC4,J1

:SENSe:OHCapture:CHANel <ch>

Parameter: <ch> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
Function: Sets the channel position to capture of overhead when using Type:SOH 1byte [TOH 1byte].
Restriction: Invalid in the following case:
・When the setting of :SENSe:OHCaptuer:TYPE is other than <SOH> or <TOH>.
Example use: To set the channel position to 1:
> :SENSe:OHCapture:CHANel 1

:SENSe:OHCapture:CHANel?

Response: <chanel> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the channel position to capture of overhead when using Type:SOH 1byte [TOH 1byte].
Example use: > :SENSe:OHCapture:CHANel?
< 1

:SENSe:STEst:MEASure:TYPE <mode>

Parameter <mode> = <CHARACTER PROGRAM DATA>
MANUAL Manual
Function Sets the S1 test measurement mode.
Restriction Invalid in the following case:
・:INSTrument:CONFig <type> is set to other than <SDH_PDH> and <SONET_PDH>.
・Measurement mode is other than “In-service”.
・ROUTe:THRough[:TYPE] is set to <OFF>.
・:ROUTe:THRough:MODE is set to other than <OH>.
・:ROUTe:THRough:OH is other than <S1>.
・Option-22 is not installed.
Example use > :SENSe:STEst:MEASure:TYPE MANUAL

:SENSe:STEst:MEASure:TYPE?

Response <mode> = <CHARACTER RESPONSE DATA>
Same as :SENSe:STEst:MEASure:TYPE.
Function Queries the state of the S1 test measurement mode.
Example use > :SENSe:STEst:MEASure:TYPE?
< MANUAL

:SENSe:IPCapture:STARt

Parameter None
Function Starts IPCapture.
Example use To start IPCapture.
> :SENSe:IPCapture:STARt

:SENSe:IPCapture:STOP

Parameter None
Function Stops IPCapture
Example use To stop IPCapture.
> :SENSe:IPCapture:STOP

:SENSe:IPCapture:STATe?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
0 indicates IPCapture is off.
1 indicates IPCapture is on.
Function Queries the state of IPCapture.
Example use > :SENSe:IPCapture:STATe?
< 0

:SENSe:IPCapture:TRIGger:TYPE <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
PPPFRAME PPPframe
Function Sets the trigger type of IPCapture.
Example use To set “PPPframe” as the trigger type.
> :SENSe:IPCapture:TRIGger:TYPE PPPFRAME

:SENSe:IPCapture:TRIGger:TYPE?

Response <type> = <CHARACTER RESPONSE DATA>
Same as :SENSe:IPCapture:TRIGger:TYPE.
Function Queries the trigger type of IPCapture.
Example use > :SENSe:IPCapture:TRIGger:TYPE?
< PPPFR

:SENSe:IPCapture:IPV4adr “<sadr1>,<sadr2>,<sadr3>,<sadr4>”, “<dadr1>,<dadr2>,<dadr3>,<dadr4>”

Parameter <sadr1>,<sadr2>,<sadr3>,<sadr4> = <STRING PROGRAM DATA>
***,000 to 255 Step value : 1

<dadr1>,<dadr2>,<dadr3>,<dadr4> = <STRING NUMERIC PROGRAM DATA>
***,000 to 255 Step value : 1

Function Sets the mask of IP address to be captured (for IP ver.4).

Restriction Invalid in the following case:
- Option-14 is not installed.
- :DISPlay:ANALysis:IPCapture:CAPTuretype is other than <IPV4>.

Example use To set IP mask for IP ver.4 to
Source address = “255.255.255.255” and
Destination address = “255.255.255.254”.
>:SENSe:IPCapture:IPV4adr “255,255,255,255”, “255,255,255,254”

:SENSe:IPCapture:IPV4adr?

Response <sadr1>,<sadr2>,<sadr3>,<sadr4> = <STRING RESPONSE DATA>
Same as :SENSe:IPCapture:IPV4adr.
<dadr1>,<dadr2>,<dadr3>,<dadr4> = <STRING RESPONSE DATA>
Same as :SENSe:IPCapture:IPV4adr.

Function Queries the mask setting of IP address to be captured (for IP ver.4).

Example use > :SENSe:IPCapture:IPV4adr?
< “255,255,255,255”, “255,255,255,254”

:SENSe:IPCapture:IPV6adr “<sadr1>,<sadr2>,<sadr3>,<sadr4>,<sadr5>,<sadr6>,<sadr7>,<sadr8>”, “<dadr1>,<dadr2>, <dadr3>,<dadr4>,<dadr5>,<dadr6>,<dadr7>,<dadr8>”

Parameter <sadr1>,<sadr2>,⋯,<sadr8> = <STRING PROGRAM DATA>
"XXXX"
"XXXX": 0000 to FFFF,**** Step value : 1
<dadr1>,<dadr2>,⋯,<dadr8> = <STRING PROGRAM DATA>
"XXXX"
"XXXX": 0000 to FFFF Step value : 1

Function Sets the mask of IP address to be captured (for IP ver.6).

Restriction Invalid in the following case:
- Option-14 is not installed.
- :DISPlay:ANALysis:IPCapture:CAPTuretype is other than <IPV6>.

Example use To set IP mask for IP ver.6 to
Source address = “FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFE” and
Destination address = “FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF”.
> :SENSe:IPCapture:IPV6adr
“FFFF,FFFF,FFFF,FFFF,FFFF,FFFF,FFFF,FFFE”,
“FFFF,FFFF,FFFF,FFFF,FFFF,FFFF,FFFF,FFFF”

:SENSe:IPCapture:IPV6adr?

Response <sadr1>,<sadr2>,⋯,<sadr8> = <STRING RESPONSE DATA>
Same as :SENSe:IPCapture:IPV6adr.
<dadr1>,<dadr2>,⋯,<dadr8> = <STRING RESPONSE DATA>
Same as :SENSe:IPCapture:IPV6adr.

Function	Queries the mask setting of IP address to be captured (for IP ver.6).
Example use	>:SENSe:IPCapture:IPV6adr? < “FFFF,FFFF,FFFF,FFFF,FFFF,FFFF,FFFF,FFFE”, “FFFF,FFFF,FFFF,FFFF,FFFF,FFFF,FFFF,FFFF”

10.3.4 DISPlay subsystem

Use the DISPlay subsystem to set the parameters on the Result and Analysis screens. The following table shows functions, commands, and parameters.

Function	Command	Parameter
Page 10-333		
Sets to switch the main screen.	:DISPlay:DSELect[:NAME]	display
Queries the display status of main screen.	:DISPlay:DSELect[:NAME]?	
Page 10-333		
Selects the subscreen in the Test menu main screen.	:DISPlay:TMENu[:NAME]	tdisplay
Queries the subscreen in the Test menu main screen.	:DISPlay:TMENu[:NAME]?	
Page 10-334		
Sets whether or not to display Mixed Payload.	:DISPlay:MAPPing:MIXCh	boolean
Page 10-335		
Sets the paths for the N1 byte and the Z5 byte.	:DISPlay:TANDem:CONDition:N1:MODE	mode
	:DISPlay:TANDem:CONDition:Z5:MODE	
Queries the setting of paths for the N1 byte and the Z5 byte.	:DISPlay:TANDem:CONDition:N1:MODE?	
	:DISPlay:TANDem:CONDition:Z5:MODE?	
Sets the LAPD message type of the N1 byte and the Z5 byte.	:DISPlay:TANDem:CONDition:N1:TYPE	mode
	:DISPlay:TANDem:CONDition:Z5:TYPE	
Queries the LAPD message type of the N1 byte and the Z5 byte.	:DISPlay:TANDem:CONDition:N1:TYPE?	
	:DISPlay:TANDem:CONDition:Z5:TYPE?	
Page 10-336		
Sets the path of the N1 byte and the Z5 byte for the dummy channel.	:DISPlay:DPReset:TANDem:CONDition:N1:MODE	mode
	:DISPlay:DPReset:TANDem:CONDition:Z5:MODE	
Queries the path of the N1 byte and the Z5 byte for the dummy channel.	:DISPlay:DPReset:TANDem:CONDition:N1:MODE?	
	:DISPlay:DPReset:TANDem:CONDition:Z5:MODE?	
Sets the LAPD message types of the N1 byte and the Z5 byte for the dummy channel.	:DISPlay:DPReset:TANDem:CONDition:N1:TYPE	mode
	:DISPlay:DPReset:TANDem:CONDition:Z5:TYPE	
Queries the LAPD message type of the N1 byte and the Z5 byte for the dummy channel.	:DISPlay:DPReset:TANDem:CONDition:N1:TYPE?	
	:DISPlay:DPReset:TANDem:CONDition:Z5:TYPE?	
Page 10-337		
Sets IP packet number to be edited.	:DISPlay:IPPacket:PRESetno	presetno
Queries IP packet number to be edited.	:DISPlay:IPPacket:PRESetno?	
Page 10-337		
Sets the range of pointer (PTR).	:DISPlay:PTR64:POINter	mode
Queries the pointer (PTR) range.	:DISPlay:PTR64:POINter?	
Page 10-338		
Selects a subscreen of the Result main screen.	:DISPlay:RESult[:NAME]	rdisplay
Queries the selected subscreen of the Result main screen.	:DISPlay:RESult[:NAME]?	

Page 10-338

Selects a display mode for the Result main screen (Error/Alarm subscreen).	:DISPlay:RESult:EALarm:MODE	rdmode
Queries the selected display mode of the Result main screen (Error/Alarm subscreen).	:DISPlay:RESult:EALarm:MODE?	
Selects the count value or rate value display for the Result main screen (Error/Alarm subscreen).	:DISPlay:RESult:EALarm:UNIT	unit
Queries selection of the count or rate value display for the Result main screen (Error/Alarm subscreen).	:DISPlay:RESult:EALarm:UNIT?	
Switches the display of measurement result related to SDH/SONET, and PDH.	:DISPlay:RESult:EALarm:DISPmode	mode
Queries the display mode of measurement result.	:DISPlay:RESult:EALarm:DISPmode?	
Sets the display unit of Alarm measurement result for the Result main screen (Error/Alarm subscreen).	:DISPlay:RESult:EALarm:AUNit	unit
Queries the setting of display unit of the Alarm measurement result for the Result main screen.	:DISPlay:RESult:EALarm:AUNit?	
Forcibly stops displaying the measurement result.	:DISPlay:RESult:EALarm:PAUSe	
Queries the status to forcibly stop displaying the measurement result.	:DISPlay:RESult:EALarm:PAUSe?	

Page 10-340

Selects a display mode for the Result main screen (Justification subscreen)	:DISPlay:RESult:JUSTificat:MODE	rdmode
Queries the selected display mode of the Result main screen (Justification subscreen).	:DISPlay:RESult:JUSTificat:MODE?	
Selects the count or rate value display for the Result main screen (Justification subscreen).	:DISPlay:RESult:JUSTificat:UNIT	unit
Queries the selected count or rate value display for the Result main screen (Justification subscreen).	:DISPlay:RESult:JUSTificat:UNIT?	

Page 10-341

Selects a display mode for the Result main screen (Zoom subscreen).	:DISPlay:RESult:ZOOM:MODE	rdmode
Queries the selected display mode of the Result main screen (Zoom subscreen).	:DISPlay:RESult:ZOOM:MODE?	
Selects the count value or rate value display for the Result main screen (Zoom subscreen).	:DISPlay:RESult:ZOOM:UNIT	unit
Queries the selected count or rate value display for the Result main screen (Zoom subscreen).	:DISPlay:RESult:ZOOM:UNIT?	
Sets the display unit of Alarm measurement result for the Result main screen (Zoom subscreen).	:DISPlay:RESult:ZOOM:AUNit	Unit

Queries the setting of display unit of the Alarm measurement result for the Result main screen.	:DISPlay:RESult:ZOOM:AUNit?	
Selects the alarm display for measurement results of the Result main screen (Zoom subscreen).	:DISPlay:RESult:ZOOM:ALARm	alarm
Queries the selected alarm display for measurement results of the Result main screen (Zoom subscreen).	:DISPlay:RESult:ZOOM:ALARm?	
Selects the error display for measurement results of the Result main screen.	:DISPlay:RESult:ZOOM:ERRor	error
Queries the selected error display for measurement results of the Result main screen (Zoom subscreen).	:DISPlay:RESult:ZOOM:ERRor?	

Page 10-346

Selects the display mode of measurement results.	:DISPlay:RESult:PERFormance:MODE	rdmode
Queries the display mode for the measurement result.	:DISPlay:RESult:PERFormance:MODE?	
Selects error content for Measurement results of the Result main screen (Performance G.826).	:DISPlay:RESult:PERFormance:ERROR[:G826]	error
Queries the error content of measurement results (Performance G.826) of the Result main screen (Performance subscreen).	:DISPlay:RESult:PERFormance:ERROR[:G826]?	
Selects the error content of measurement result (the performance M.2101).	:DISPlay:RESult:PERFormance:ERROR:M2101	error
Queries the error content of measurement result (the performance M.2101).	:DISPlay:RESult:PERFormance:ERROR:M2101?	
Sets the measurement range of M.2110.	:DISPlay:RESult:PERFormance:ERRor:M2110:LAYer 1	type
Queries the measurement range of M.2110.	DISPlay:RESult:PERFormance:ERRor:M2110:LAYer 1?	
Sets the measurement range of M.2110.	:DISPlay:RESult:PERFormance:ERRor:M2110:LAYer 2	type
Queries the measurement range of M.2110.	:DISPlay:RESult:PERFormance:ERRor:M2110:LAYer 2?	
Sets the measurement range of M. 2120.	:DISPlay:RESult:PERFormance:ERRor:M2120:LAYer 1	type
Queries the measurement range of M. 2120.	:DISPlay:RESult:PERFormance:ERRor:M2120:LAYer 1?	
Sets the measurement range of M. 2120.	:DISPlay:RESult:PERFormance:ERRor:M2120:LAYer 2	type
Queries the measurement range of M. 2120.	:DISPlay:RESult:PERFormance:ERRor:M2120:LAYer 2?	

Page 10-351

Sets the display type of the simultaneous measurement (Current or Last).	:DISPlay:RESult:SIMultaneous:DISPdata	data
Queries the display type of the simultaneous measurement (Current or Last).	:DISPlay:RESult:SIMultaneous:DISPdata?	

Page 10-351

Selects a B2 display mode of the measurement result.	:DISPlay:RESult:B2:MODE	rdmode
Queries the B2 display mode of the measurement result.	:DISPlay:RESult:B2:MODE?	

Page 10-351

Selects a measurement time display on the Result main screen.	:DISPlay:RESult:TIME	time
Queries the selected measurement time display on the Result main screen.	:DISPlay:RESult:TIME?	

Page 10-352

Sets the AUG channels to be displayed in the Trouble search measurement result.	:DISPlay:RESult:TSEarch:AUG	numeric
Sets the STS3 channels to be displayed in the Trouble search measurement result.	:DISPlay:RESult:TSEarch:STS	numeric
Queries the value of AUG channel to be displayed in the Trouble search measurement result.	:DISPlay:RESult:TSEarch:AUG?	
Queries the value of STS3 channel to be displayed in the Trouble search measurement result.	:DISPlay:RESult:TSEarch:STS?	
Searches the channel where Trouble occurred (AUG#/STS3#).	:DISPlay:RESult:TSEarch:SEARch	type
Displays the detailed information of Trouble occurrence channel (AUG#/STS3#) on the screen.	:DISPlay:RESult:TSEarch:ANALyze	

Page 10-353

Selects the display mode of the measurement result on the Result:IP packet screen.	:DISPlay:RESult:IPPacket:MODE	rdmode
Queries the display mode of the measurement results on the Result:IP packet screen.	:DISPlay:RESult:IPPacket:MODE?	

Page 10-354

Sets the unit for the alarm measurement results.	:DISPlay:RESult:SEQuencetest:EALarm:AUNit	unit
Queries the unit of the alarm measurement results.	:DISPlay:RESult:SEQuencetest:EALarm:AUNit?	
Sets the unit of the error measurement results.	:DISPlay:RESult:SEQuencetest:EALarm:ERRor	error
Queries the unit of the error measurement results.	:DISPlay:RESult:SEQuencetest:EALarm:ERRor?	
Switches the display of SDH/PDH-related measurement.	:DISPlay:RESult:SEQuencetest:EALarm:DISPmode	mode
Queries the display mode of the measurement results.	:DISPlay:RESult:SEQuencetest:EALarm:DISPmode?	
Sets the unit of the Justification measurement.	:DISPlay:RESult:SEQuencetest:JUSTificat:UNIT	unit
Queries the unit of the Justification measurement.	:DISPlay:RESult:SEQuencetest:JUSTificat:UNIT?	
Sets the unit of the alarm measurement results.	:DISPlay:RESult:SEQuencetest:ZOOM:AUNit	unit

Queries the unit of the alarm measurement results.	:DISPlay:RESult:SEQuencetest:ZOOM:AUNit?	
Sets the unit of the error measurement results.	:DISPlay:RESult:SEQuencetest:ZOOM:UNIT	unit
Queries the unit of the error measurement results.	:DISPlay:RESult:SEQuencetest:ZOOM:UNIT?	
Selects the alarm indication of the measurement results (ZOOM).	:DISPlay:RESult:SEQuencetest:ZOOM:ALARm	alarm
Queries the alarm display of the measurement results (ZOOM).	:DISPlay:RESult:SEQuencetest:ZOOM:ALARm?	
Selects the error display of the measurement results (ZOOM).	:DISPlay:RESult:SEQuencetest:ZOOM:ERRor	error
Queries the setting of the displayed error item.	:DISPlay:RESult:SEQuencetest:ZOOM:ERRor?	
Selects the contents of the error measurement results (performance G.826).	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor[:G826]	error
Queries the contents of the error measurement results (performance G.826).	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor[:G826]?	
Selects the contents of the error measurement results (performance M.2101).	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2101	error
Queries the contents of the error measurement results (performance M.2101).	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2101?	
Designates the M.2110 measurement range.	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2110:LAYer2	type
Queries the M.2110 measurement range.	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2110:LAYer2?	
Designates the M.2120 measurement range.	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:LAYer1	type
Queries the M.2120 measurement range.	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:LAYer1?	
Designates the M.2120 measurement range.	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:LAYer2	type
Queries the M.2120 measurement range.	:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:LAYer2?	

Page 10-363

Selects a subscreen of the Analyze main screen.	:DISPlay:ANALysis:[NAME]	adisplay
Queries the selected subscreen of the Analyze main screen.	:DISPlay:ANALysis:[NAME]?	

Page 10-363

Switches the display of trouble search results of the Analyze main screen (Trouble search subscreen).	:DISPlay:ANALysis:TSEarch:SELect	search
Queries the display mode of trouble search results of the Analyze main screen.	:DISPlay:ANALysis:TSEarch:SELect?	
Instructs an analyze search of the Analyze main screen (Trouble search subscreen).	:DISPlay:ANALysis:TSEarch:SEARch	search
Designates the display route for analyzed results of the Analyze main screen (Trouble search subscreen).	:DISPlay:ANALysis:TSEarch:ROUTe	troute numeric

Queries the display route for analyzed results of the Analyze main screen (Trouble search subscreen).	:DISPlay:ANALysis:TSEarch:ROUTe?	
Queries the analyzed result of currently displayed route of the Analyze main screen (Trouble search subscreen).	:DISPlay:ANALysis:TSEarch:DATA?	result
Designates a printing range for the Analyze main screen (Trouble search subscreen).	:DISPlay:ANALysis:TSEarch:PRINt	Type
Queries the selected printing range for the Analyze main screen (Trouble search subscreen).	:DISPlay:ANALysis:TSEarch:PRINt?	
Instructs scroll at Trouble search measurement and Select:NG path display of the Analyze main screen(Trouble search subscreen).	:DISPlay:ANALysis:TSEarch:SCRoll	scroll

Page 10-371

Instructs scroll on the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:SCRoll	scroll
Instructs shift of the marker on the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:MARKer	marker
Queries data indicated by the marker for the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:DATA?	
Sets a width for 1 graduation of the time base for the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:INTerval	numeric suffix
Queries the 1 graduation width of time base of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:INTerval?	
Sets on/off of the marker display on the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:MDISplay	boolean
Queries on/off of the marker display on the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:MDISplay?	
Instructs the search type for the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:SEARch	type
Sets the graph display starting position for the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:FROM	numeric1 numeric2 numeric3 numeric4 numeric5 numeric6
Queries the graph display starting position for the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:FROM?	
Sets an error item to be displayed to the graph on the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ERRor	error1 error2
Queries an error item for graphic display of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ERRor?	

Sets an alarm item to be displayed to alarm1 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm1	alarm
Queries an alarm item displayed to alarm1 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm1?	
Sets an alarm item to be displayed to alarm2 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm2	alarm
Queries an alarm item displayed to alarm2 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm2?	
Sets an alarm item to be displayed to alarm3 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm3	alarm
Queries an alarm item displayed to alarm3 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm3?	
Sets an alarm item to be displayed to alarm4 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm4	alarm
Queries an alarm item displayed to alarm4 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm4?	
Sets an alarm item to be displayed to alarm5 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm5	alarm
Queries an alarm item displayed to alarm5 of the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:ALARm5?	
Designates a printing range for the Analyze main screen (Error/Alarm subscreen.)	:DISPlay:ANALysis:TGRaph:PRINt	type
Queries the selected printing range for the Analyze main screen (Error/Alarm subscreen).	:DISPlay:ANALysis:TGRaph:PRINt?	
Specifies the trace graph title.	:DISPlay:ANALysis:TGRaph:TITLe	title
Queries the trace graph title.	:DISPlay:ANALysis:TGRaph:TITLe?	

Page 10-381

Selects a monitor item for the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:TYPE	ohmonitor
Queries the monitor item of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:TYPE?	
Sets the SOH monitor channel on the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:SOHCh	numeric
Sets the TOH monitor channel on the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:TOHCh	numeric
Queries the SOH monitor channel on the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:SOHCh?	
Queries the TOH monitor channel for the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:TOHCh?	

Queries the SOH monitor data of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:SOHData?	
Queries the TOH monitor data of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:TOHData?	
Queries the monitor data of S1 (5 to 8 bits) on OH monitor.	:DISPlay:ANALysis:OHMonitor:SSMessage?	
Queries the POH monitor data of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:POHData?	
Queries the monitor data of C2 (1 to 8 bits) on OH monitor.	:DISPlay:ANALysis:OHMonitor:SLABel?	pohtype
	:DISPlay:ANALysis:OHMonitor:PLABel?	
Queries the monitor data of V5 on OH monitor.	:DISPlay:ANALysis:OHMonitor:VLABel?	
Queries the VC4 and VC3 monitor data of G1 (5 to 7 bits) on OH monitor.	:DISPlay:ANALysis:OHMonitor:G1Label?	
Queries the monitor data of K4/Z7 (5 to 7 bits) on OH monitor.	:DISPlay:ANALysis:OHMonitor:K4Label?	
	:DISPlay:ANALysis:OHMonitor:Z7Label?	
Queries the K1/K2 monitor data of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:MSP?	
Queries the Pointer monitor data of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:POINter?	
Queries the Path trace (J0) monitor data of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:PTRace:J0?	
Queries the Path trace (J1-HP) monitor data of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:PTRace:J1H?	
Queries the Path trace (J1-LP) monitor data of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:PTRace:J1L?	
Queries the Path trace (J2) monitor data of the Analyze main screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:PTRace:J2?	
Selects the display items of the PDH frame.	:DISPlay:ANALysis:OHMonitor:PFRame	
Queries the patterns of the PDH frame monitor.	:DISPlay:ANALysis:OHMonitor:PFRame?	
Queries the Payload monitor data of the Analyze main screen (OH monitor).	:DISPlay:ANALysis:OHMonitor:PAYLoad?	
Sets the channels for the OH monitor (Payload).	:DISPlay:ANALysis:OHMonitor:PCH	
Queries the channels for the OH monitor (Payload).	:DISPlay:ANALysis:OHMonitor:PCH?	
Sets the column position for the OH monitor (Payload).	:DISPlay:ANALysis:OHMonitor:PCOLumn	
Queries the column position for the OH monitor:	:DISPlay:ANALysis:OHMonitor:PCOLumn?	
Queries the monitor data of trail trace for OH monitor.	:DISPlay:ANALysis:OHMonitor:TTRace?	
Queries the monitor data (8bit) of appointed channel in the Information area	:DISPlay:ANALysis:OHMonitor:IBData?	

Sets an monitor channel of Information byte in the Analyze screen (OH monitor subscreen).	:DISPlay:ANALysis:OHMonitor:IBCHannel	
Queries the monitor channel of Information byte in the Analyze screen(OH monitor sub screen).	:DISPlay:ANALysis:OHMonitor:IBCHannel?	
Specifies Pause on the OH monitor of the Analyze screen.	:DISPlay:ANALysis:OHMonitor:PAUSe	boolean
Queries Pause status on the OH monitor of the Analyze screen.	:DISPlay:ANALysis:OHMonitor:PAUSe?	
Queries the Tandem monitor data.	:DISPlay:ANALysis:OHMonitor:TANDem?	
Sets the Tandem connection monitor type of the Analyze screen (OH monitor sub screen).	:DISPlay:ANALysis:OHMonitor:Tcselect	type
Queries the Tandem connection monitor type of the Analyze screen(OH monitor sub screen).	:DISPlay:ANALysis:OHMonitor:Tcselect?	
Switch the Tandem connection (TC-API#9-#72) display of the Analyze screen (OH monitor sub screen).	:DISPlay:ANALysis:OHMonitor:ASCII	type
Queries the switch to the Tandem connection (TC-API#9-#72) display of the Analyze screen (OH monitor sub screen).	:DISPlay:ANALysis:OHMonitor:ASCII?	
Queries the monitor data of OH monitor (at Signalling#4) of the Analyze screen.	:DISPlay:ANALysis:OHMonitor:SIGDATA?	

Page 10-400

Sets wavelength for Opt. power meter of the Analyze screen.	:DISPlay:ANALysis:OPMeter:WLENgth	length
Queries wavelength for Opt. power meter of the Analyze screen..	:DISPlay:ANALysis:OPMeter:WLENgth?	
Sets reference value for Opt. power meter of the Analyze screen..	:DISPlay:ANALysis:OPMeter:Reference:SET	
Sets Pause for Opt. power meter of the Analyze screen..	:DISPlay:ANALysis:OPMeter:PAUSe	boolean
Queries state of Pause for Opt. power meter of the Analyze screen..	:DISPlay:ANALysis:OPMeter:PAUSe?	
Queries the monitor data of Opt. power meter of the Analyze screen.	:DISPlay:ANALysis:OPMeter:DATA?	

Page 10-401

Specify the title of the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:TITLe	title
Queries the title on the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:TITLe?	
Sets the display position on the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:JUMP:TYPE	jump1, jump2
Queries the display position on the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:JUMP:TYME?	
Sets the display position (Number) on the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:JUMP:LINE	
Queries the display position (Number) on the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:JUMP:LINE?	

Instructs the scroll on the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:SCRoll	type
Sets the type of display data for the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:PTYPe	type
Queries the type of display data for the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:PTYPe?	
Sets the print range for the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:PRINt	from, to
Queries the print range for the Analyze screen (OHCapture subscreen).	:DISPlay:ANALysis:OHCapture:PRINt?	

Page 10-404

Sets the title for the Analyze screen (APS capture subscreen).	:DISPlay:ANALysis:APSCapture:TITLe	title
Queries the title for the Analyze screen (APS capture subscreen).	:DISPlay:ANALysis:APSCapture:TITLe?	
Sets the display position (type) for the Analyze screen (APS capture subscreen).	:DISPlay:ANALysis:APSCapture:JUMP:TYPE	jump1 jump2
Queries the display position (type) for the Analyze screen (APS capture subscreen).	:DISPlay:ANALysis:APSCapture:JUMP:TYPE?	
Sets the display position (Number) for the Analyze screen (APS capture subscreen).	:DISPlay:ANALysis:APSCapture:JUMP:LINE	
Queries the display position (Number) for the Analyze screen (APS capture subscreen).	:DISPlay:ANALysis:APSCapture:JUMP:LINE?	
Instructs scroll on the ASP Capture data table for the Analyze screen.	:DISPlay:ANALysis:APSCapture:SCRoll	type

Page 10-405

Instructs shift of the marker for the Analyze screen (Error/Alarm subscreen).	:DISPlay:ANALysis:PMONitor:MARKer	marker
Queries the data indicated by marker on the Analyze screen (Pointer monitor subscreen).	:DISPlay:ANALysis:PMONitor:DATA?	
Sets a width for 1 graduation of the time base on the Analyze screen (Pointer monitor subscreen).	:DISPlay:ANALysis:PMONitor:INTerval	numeric suffix
Queries the 1 graduation width of the time base on the Analyze screen (Pointer monitor subscreen).	:DISPlay:ANALysis:PMONitor:INTerval?	
Sets with or without marker display on the Analyze screen (Pointer monitor subscreen).	:DISPlay:ANALysis:PMONitor:MDISplay	boolean
Queries with or without marker display on the Analyze screen (Pointer monitor subscreen).	:DISPlay:ANALysis:PMONitor:MDISplay?	
Sets the pointer to monitor.	:DISPlay:ANALysis:PMONitor:TYPE	type
Queries the setting of the pointer to monitor.	:DISPlay:ANALysis:PMONitor:TYPE?	
Sets the vertical axis scale of pointer graph on the Analyze screen (Pointer monitor subscreen).	:DISPlay:ANALysis:PMONitor:PSCale	scale

Queries the vertical axis scale of pointer graph on the Analyze screen (Pointer monitor subscreen).	:DISPlay:ANALysis:PMONitor:PSCale?	
Sets the vertical axis scale of justification graph on the Analyze screen(Pointer monitor subscreen).	:DISPlay:ANALysis:PMONitor:JSCale	scale
Queries the vertical axis scale of justification graph on the Analyze screen(Pointer monitor subscreen).	:DISPlay:ANALysis:PMONitor:JSCale?	
Selects the graph to display on the Pointer monitor.	:DISPlay:ANALysis:PMONitor:SELect	type
Queries the setting of graph to display on the Pointer monitor.	:DISPlay:ANALysis:PMONitor:SELect?	

Page 10-409

Sets the type of IP packet to be captured.	:DISPlay:ANALysis:IPCapture:CAPTuretype	type
Queries the type of IP packet to be captured.	:DISPlay:ANALysis:IPCapture:CAPTuretype?	
Sets the display start position.	:DISPlay:ANALysis:IPCapture:JUMP	jump
Queries the display start position.	:DISPlay:ANALysis:IPCapture:JUMP?	
Scrolls table of the IP capture data.	:DISPlay:ANALysis:IPCapture:SCRoll	type

Page 10-410

Sets the title for the Analyze screen (Frame capture subscreen).	:DISPlay:ANALysis:FRAMecapture:TITLe	title
Queries the title for the Analyze screen (Frame capture subscreen).	:DISPlay:ANALysis:FRAMecapture:TITLe?	
Sets the frame number to display for the Analyze screen (Frame capture subscreen).	:DISPlay:ANALysis:FRAMecapture:DFRame	frame
Queries the frame number to display for the Analyze screen (Frame capture subscreen).	:DISPlay:ANALysis:FRAMecapture: DFRame?	
Sets the display position (type) on the Analyze screen (Frame capture subscreen).	:DISPlay:ANALysis:FRAMecapture:JUMP:TYPE	jump1 jump2
Queries the display position (type) on the Analyze screen (Frame capture subscreen).	:DISPlay:ANALysis:FRAMecapture:JUMP:TYPE?	
Sets the display position (Number) on the Analyze screen (Frame capture subscreen).	:DISPlay:ANALysis:FRAMecapture:JUMP:LINE	
Queries the display position (Number) on the Analyze screen (Frame capture subscreen).	:DISPlay:ANALysis:FRAMecapture:JUMP:LINE?	
Sets the start and end positions to print the Frame capture data.	:DISPlay:ANALysis:FRAMecapture:PRINt	from, to
Queries the start and end positions to print the Frame capture data.	:DISPlay:ANALysis:FRAMecapture:PRINt?	
Instructs scroll on the Frame capture data table for the Analyze screen.	:DISPlay:ANALysis:FRAMecapture:SCRoll	type
Queries the Freq. monitor data.	:DISPlay:ANALysis:FMONitor:FREQuency?	
Sets Pause for the Freq. monitor.	:DISPlay:ANALysis:FMONitor:PAUSe	boolean
Queries the Pause status for the Freq. monitor.	:DISPlay:ANALysis:FMONitor:PAUSe?	

Page 10-414

Sets the title on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:TITLe	title
Queries the title on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:TITLe?	
Instructs the scroll on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:SCRoll	scroll
Instructs the marker movement on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:MARKer	marker
Queries the data to which the marker on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:DATA?	
Sets the interval of the graph on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:INTerval	numeric suffix
Queries the interval of the graph on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph: INTerval?	
Sets whether the marker is displayed on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:MDISplay	boolean
Queries whether the marker is displayed on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:MDISplay?	
Sets the start position to display on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:FROM	numeric1 numeric2 numeric3 numeric4 numeric5
Queries the start position to display on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:FROM?	
Specifies the print range on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:PRINt	type
Queries the print range on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:PRINt?	
Sets the vertical scale of graph on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:SCALe	character
Queries the vertical scale of graph on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:SCALe?	

Page 10-418

Queries the data type displayed on the Analyze: Recall screen.	:DISPlay:ANALysis:RECall:TYPE?	
Instruct scroll on the Analyze main screen (Recall subscreen).	:DISPlay:ANALysis:RECall:TGRaph:SCRoll	scroll
Instructs marker shift on the Analyze main screen (Recall subscreen).	:DISPlay:ANALysis:RECall:TGRaph:MARKer	marker
Queries data indicated by the marker for the Analyze:Rcall screen (Error/Alarm).	:DISPlay:ANALysis:RECall:TGRaph:DATA?	
Sets a width for 1 graduation of the time base for the Analyze main screen (Recall subscreen).	:DISPlay:ANALysis:RECall:TGRaph:INTerval	numeric suffix
Queries the 1 graduation width of time base of the Analyze :RECall screen (Error/Alarm).	:DISPlay:ANALysis:RECall:TGRaph:INTerval?	

Sets with or without marker display on the Analyze :RECall screen (Error/Alarm).	:DISPlay:ANALysis:RECall:TGRaph:MDISplay	boolean
Queries with or without marker display on the Analyze : RECall screen (Error/Alarm).	:DISPlay:ANALysis:RECall:TGRaph:MDISplay?	
Instructs the search type for the Analyze : RECall screen (Error/Alarm).	:DISPlay:ANALysis:RECall:TGRaph:SEARch	type
Sets the Error/Alarm graph display starting position for the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:FROM	numeric1 numeric2 numeric3 numeric4 numeric5 numeric6
Queries the Error/Alarm graph display starting position for the Analyze: RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:FROM?	
Sets an error item to be displayed to the Error/Alarm graph on the Analyze RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ERRor	error1 error2
Queries an error item for Error/Alarm graphic display of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ERRor?	
Sets an alarm item to be displayed to alarm1 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm1	alarm
Queries an alarm item displayed to alarm1 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm1?	
Sets an alarm item to be displayed to alarm2 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm2	alarm
Queries an alarm item displayed to alarm2 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm2?	
Sets an alarm item to be displayed to alarm3 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm3	alarm
Queries an alarm item displayed to alarm3 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm3?	
Sets an alarm item to be displayed to alarm4 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm4	alarm
Queries an alarm item displayed to alarm4 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm4?	
Sets an alarm item to be displayed to alarm5 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm5	alarm
Queries an alarm item displayed to alarm5 of the Analyze:RECall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm5?	
Designates a printing range for the Analyze:RECall screen (Error/Alarm).	:DISPlay:ANALysis:RECall:TGRaph:PRINt	type
Queries the selected printing range for the Analyze:RECall screen (Error/Alarm).	:DISPlay:ANALysis:RECall:TGRaph:PRINt?	
Queries the trace graph title on the Analyze:Recall screen.	:DISPlay:ANALysis:RECall:TGRaph:TITLe?	
Queries the title on the Analyze:Recall (OH capture) screen.	:DISPlay:ANALysis:RECall:OHCapture:TITLe?	
Sets the display position on Analyze:Recall (OH capture) screen.	:DISPlay:ANALysis:RECall:OHCapture:JUMP:TYPE	jump1 jump2
Queries the display position on Analyze:Recall (OH capture) screen.	:DISPlay:ANALysis:RECall:OHCapture:JUMP:TYPE ?	

Sets the display position (Number) on the Analyze: Recall (OH capture) screen.	:DISPlay:ANALysis:RECall:OHCapture:JUMP:LINE	numeric
Queries the display position (Number) on the Analyze: Recall (OH capture) screen.	:DISPlay:ANALysis:RECall:OHCapture:JUMP:LINE ?	
Instructs the scroll on the Analyze: OH capture screen.	:DISPlay:ANALysis:RECall:OHCapture:SCRoll	type
Sets the data display type for the Analyze:Recall (OH capture) screen.	:DISPlay:ANALysis:RECall:OHCapture:PTYPe	type
Queries the setting of data display type for the Analyze:Recall (OH capture) screen.	:DISPlay:ANALysis:RECall:OHCapture:PTYPe?	
Sets the print range for the Analyze:Recall (OH capture) screen.	:DISPlay:ANALysis:RECall:OHCapture:PRINt	from, to
Queries the print range for the Analyze:Recall (OH capture) screen.	:DISPlay:ANALysis:RECall:OHCapture:PRINt?	
Queries the title for the Analyze:Recall (APS capture) screen.	:DISPlay:ANALysis:RECall:APSCapture:TITLe?	
Sets the display position (type) on the Analyze:Recall (APS capture) screen.	:DISPlay:ANALysis:RECall:APSCapture:JUMP:TYPE	jump1 jump2
Queries the display position (type) on the Analyze: Recall (APS capture) screen.	:DISPlay:ANALysis:RECall:APSCapture:JUMP:TYPE?	
Sets the display position (Number) on the Analyze: Recall (APS capture) screen.	:DISPlay:ANALysis:RECall:APSCapture:JUMP:LINE	numeric
Queries the display position (Number) on the Analyze: Recall (APS capture) screen.	:DISPlay:ANALysis:RECall:APSCapture:JUMP:LINE ?	
Scrolls the ASP Capture data table for the Analyze: Recall (APS capture) screen.	:DISPlay:ANALysis:RECall:APSCapture:SCRoll	type
Queries the title on the Analyze: Recall screen (Frequency).	:DISPlay:ANALysis:RECall:FGRaph:TITLe?	
Instructs the scroll on the Analyze: Recall screen (Frequency).	:DISPlay:ANALysis:RECall:FGRaph:SCRoll	scroll
Instructs shift of the marker on the Analyze: Recall screen (Frequency).	:DISPlay:ANALysis:RECall:FGRaph:MARKer	marker
Queries the data to which the marker on the Analyze: Recall screen(Frequency).	:DISPlay:ANALysis:RECall:FGRaph:DATA?	
Sets a width for 1 graduation of the time base on the Analyze: Recall screen (Frequency).	:DISPlay:ANALysis:RECall:FGRaph:INTerval	numeric suffix
Queries the interval of the graph on the Analyze: Recall screen(Frequency).	:DISPlay:ANALysis:RECall:FGRaph:INTerval?	
Sets whether the marker is displayed on the Analyze: Recall screen(Frequency).	:DISPlay:ANALysis:RECall:FGRaph:MDISplay	boolean
Queries whether the marker is displayed on the Analyze: Recall screen (Frequency).	:DISPlay:ANALysis:RECall:FGRaph:MDISplay?	

Sets the start position to display the Frequency graph on the Analyze: Recall screen.	:DISPlay:ANALysis:RECall:FGRaph:FROM	numeric1 numeric2 numeric3 numeric4 numeric5 numeric6
Queries the start position to display the Frequency graph on the Analyze: Recall screen.	:DISPlay:ANALysis:RECall:FGRaph:FROM?	
Specifies the print range on the Analyze: Recall screen (Frequency).	:DISPlay:ANALysis:RECall:FGRaph:PRINt	type
Queries the print range on the Analyze: Recall screen (Frequency).	:DISPlay:ANALysis:RECall:FGRaph:PRINt?	
Sets the vertical scale of graph on the Analyze: Recall screen (Frequency).	:DISPlay:ANALysis:RECall:FGRaph:SCALe	numeric
Queries the vertical scale of graph on the Analyze: Recall screen (Frequency).	:DISPlay:ANALysis:RECall:FGRaph:SCALe?	

Page 10-433

Queries the type of data displayed on the Analyze:Recall screen.	:DISPlay:ANALysis:SEQuencetest:TYPE?	
Indicates the scroll on the Analyze: Sequence test screen (Error/Alarm).	:DISPlay:ANALysis:SEQuencetest:TGRaph:SCRoll	scroll
Shifts the marker on the Analyze:SEQuencetest screen (Error/Alarm).	:DISPlay:ANALysis:SEQuencetest:TGRaph:MARKer	marker
Queries the data indicated by the marker on the Analyze:SEQuence test screen (Error/Alarm).	:DISPlay:ANALysis:SEQuencetest:TGRaph:DATA?	
Sets a width for 1 graduation of the time base for the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:INTerval	numeric suffix
Queries a width for 1 graduation of the time base on the Analyze:SEQuencetest screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:INTerval?	
Set Marker On/Off on the Analyze:SEQuencetest screen (Error/Alarm).	:DISPlay:ANALysis:SEQuencetest:TGRaph:MDISplay	boolean
Queries whether the marker is displayed on the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:MDISplay?	
Designates a search on the Analyze:SEQuence test screen (Error/Alarm).	:DISPlay:ANALysis:SEQuencetest:TGRaph:SEARch	type
Sets the Error/Alarm graph display starting position for the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:FROM	numeric1 numeric2 numeric3 numeric4 numeric5 numeric6
Queries the Error/Alarm graph display starting position for the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:FROM?	
Sets an error item to be displayed to the Error/Alarm graph on the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ERRor	error1 error2

Queries an error item for Error/Alarm graphic display of the Analyze:SEQuence test screeen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ERRor?	
Sets an alarm item to be displayed to alarm1 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1	alarm
Queries an alarm item displayed to alarm1 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1?	
Queries an alarm item displayed to alarm2 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm2	alarm
Queries an alarm item displayed to alarm2 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm2?	
Sets an alarm item to be displayed to alarm3 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm3	alarm
Queries an alarm item displayed to alarm3 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm3?	
Sets an alarm item to be displayed to alarm4 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm4	alarm
Queries an alarm item displayed to alarm4 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm4?	
Sets an alarm item to be displayed to alarm5 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm5	alarm
Queries an alarm item displayed to alarm5 of the Analyze:SEQuence test screen.	:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm5?	
Designates a printing range for the Analyze:SEQuence test screen (Error/Alarm).	:DISPlay:ANALysis:SEQuencetest:TGRaph:PRINt	type
Queries the printing range for the Analyze:SEQuence test screen (Error/Alarm).	:DISPlay:ANALysis:SEQuencetest:TGRaph:PRINt?	
Queries the trace graph title on the Analyze:SEQuence test screen (Error/Alarm).	:DISPlay:ANALysis:SEQuencetest:TGRaph:TITLe?	
Queries the trace graph title on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:TITLe?	
Sets with or without marker display on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:MDISplay	boolean
Queries with or without marker display on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:MDISplay?	
Instructs scroll on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:SCRoll	scroll
Instructs shift of the marker on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:MARKer	marker

Queries data indicated by the marker for the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:DATA?	
Sets a width for 1 graduation of the time base for the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:INTerval	numeric suffix
Queries the 1 graduation width of time base of the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:INTerval ?	
Sets the start position to display on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:FROM	numeric1 numeric2 numeric3 numeric4 numeric5 [numeric6]
Queries the start position to display on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:FROM?	
Specifies the print range on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:PRINt	type
Queries the print range on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:PRINt?	
Sets the vertical scale of graph on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:SCALe	numeric
Queries the vertical scale of graph on the Analyze:SEQuence test screen (Frequency).	:DISPlay:ANALysis:SEQuencetest:FGRaph:SCALe?	

Page 10-442

Selects a subscreen of the Setup main screen.	:DISPlay:SETup:[NAME]	sdisplay
Queries the selected subscreen of the Setup main screen.	:DISPlay:SETup:[NAME]?	

Page 10-442

Sets a display bit rate for OH preset data of the Setup main screen (OH preset data subscreen).	:DISPlay:SETup:BRATe	brate
Queries the display bit rate for OH preset data of the Setup main screen (OH preset data subscreen).	:DISPlay:SETup:BRATe?	

Page 10-443

Sets a display SOH [TOH] channel for OH preset data of the Setup main screen (OH preset data subscreen).	:DISPlay:SETup:SOHCh	numeric
	:DISPlay:SETup:TOHch	
Queries the display SOH [TOH] channel for OH preset data of the Setup main screen (OH preset data subscreen).	:DISPlay:SETup:SOHCh?	
	:DISPlay:SETup:TOHch?	

Page 10-443

Instructs page scrolling for the Setup main screen (Floppy Disk subscreen).	:DISPlay:SETup:FDPage	page
Queries the page number currently displayed on the Setup main screen (Floppy Disk subscreen).	:DISPlay:SETup:FDPage?	

Page 10-444

Sets the display switch of the OH preset data on the Setup screen.	:DISPlay:SETup:OHPReset:[NAME]	type
Queries the display switch of the Oh preset data on the Setup screen.	:DISPlay:SETup:OHPReset:[NAME]?	

Page 10-444

Instructs the scroll for the PTR64 frame on the Setup screen.	:DISPlay:SETup:PTR64:SCRoll	type

Page 10-444

Sets the first column number to edit of the Setup:Frame memory screen.	:DISPlay:SETup:FMEMory:JUMP	jump
Queries the first column number to edit of the Setup:Frame memory screen.	:DISPlay:SETup:FMEMory:JUMP?	
Sets the display position of payload data for the Frame memory.	:DISPlay:SETup:FMEMory:SCRoll	type
Instructs the scroll for APS program data on the Setup screen.	:DISPlay:SETup:APS:SCRoll	scroll
Instructs the scroll for S1 program data on the Setup screen.	:DISPlay:SETup:SPR:SCRoll	scroll

:DISPlay:DSELect[:NAME] <display>

Parameter: <display> = <STRING PROGRAM DATA>

"SETup"	Setup main screen
"TMENu"	Test menu main screen
"RESult"	Result main screen
"ANALysis"	Analyze main screen
"T&R"	Test menu & Result main screen
"T&A"	Test menu & Analyze main screen
"R&A"	Result & Analyze main screen
"T&R&A"	Test menu & Result & Analyze main screen

Function: Selects to switch the main screen.

Example use: To select 2-divided screen of Test menu and Result main menus:

> :DISPlay:DSELect:NAME "T&R"

>:DISPlay:DSELect:NAME "T&R" or :DISPlay:DSELect "T&R" (NAME can be omitted).

:DISPlay:DSELect[:NAME]?

Response: <display> = <STRING RESPONSE DATA>

Function: Queries the display status of main screen.

Example use: > :DISPlay:DSELect:NAME?

>:DISPlay:DSELect:NAME? or :DISPlay:DSELect? (NAME can be omitted).

< "T&R"

:DISPlay:TMENu[:NAME] <tdisplay>

Parameter <tdisplay> = <STRING PROGRAM DATA>

"TSEarch"	Trouble search subscreen
"MANual:JOFF"	Manual subscreen
"MANual"	Manual subscreen
"MANual:NON"	Manual Non-frame subscreen
"MANual:CID"	Manual CID subscreen
"PSEQuence"	Pointer sequence subscreen
"PSEQuence:JOFF"	Pointer sequence subscreen
"DELay"	Delay subscreen
"OHTest"	OH test subscreen
"APSTest"	APS test subscreen
"PERFormance"	Performance check subscreen
"FMEMory"	Frame memory subscreen
"IPTest"	IP Test subscreen

Function Selects the subscreen in the Test menu main screen.

The measurement started by :SENSe:MEASure:STARt is the measurement corresponding to the subscreen specified by this command.

Restriction
Invalid in the following case:
・ When "PSEQuence" is set while MP0104A/B, MP0105A, MP0106B, MP0108A, MP0109A, and MP0110A, are not installed.
・ :When <"PSEQuence:[JOFF]"> is set while :SOURce:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5> or :SENSe:TELecom:MMODe is <ISERvice>.
・ When <"DELay"> is set while :SENSe:TELecom:MMODe is <ISERvice>.
・ When <"FMEMory"> is set while the frame memory option is not installed.
・When “IPTest” is set while option-14 is not installed.
・When “STE” is set while option-22 is not installed.
・When “STE” is set while the measurement mode is other than ”In-service”
・When “STE” is set while ROUTe:THRough[:TYPE] is set to OFF.
・When “STE” is set while :ROUTe:THRough:MODE is set to other than “OH”.
・When “STE” is set while :ROUTe:THRough:OH is set to other than “S1”.

Example use
To select "TSEarch" for the subscreen of Test menu main-screen:
> :DISPlay:TMENu:NAME "TSEarch"
or :DISPlay:TMENu "TSEarch" (NAME can be omitted.)

:DISPlay:TMENu[:NAME]?

Response:
<display> = <STRING RESPONSE DATA>

Function:
Queries the subscreen in the Test menu main screen.

Example use:
>:DISPlay:TMENu:NAME?
or :DISPlay:TMENu?(NAME can be omitted).
< "TSE"

:DISPlay:MAPPing:MIXCh <boolean>

Parameter:
<boolean> = <BOOLEAN PROGRAM DATA>

OFF	or	0
ON	or	1

Function:
Sets whether or not to display Mixed Payload.

Restriction:
Invalid in the following cases:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.

Example use:
To set to display Mixed Payload:
> :DISPlay:MAPPing:MIXCh ON

:DISPlay:TANDem:CONDition:N1:MODE <mode>
:DISPlay:TANDem:CONDition:Z5:MODE <mode>

Parameter: <mode> = <CHARACTOR PROGRAM DATA>
HP Higher order Pass
LP Lower order Pass
Function: Sets the paths for the N1 byte and the Z5 byte.
Restriction: Invalid in the following cases:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.
Example use: To set the path of N1 byte to HP:
> :DISPlay:TANDem:CONDition:N1:MODE HP

:DISPlay:TANDem:CONDition:N1:MODE?
:DISPlay:TANDem:CONDition:Z5:MODE?

Response: <mode> = <CHARACTOR RESPONSE DATA>
Function: Queries the setting of paths for the N1 byte and the Z5 byte.
Example use: To query the path of N1 byte:
> :DISPlay:TANDem:CONDition:N1:MODE?
< HP

:DISPlay:TANDem:CONDition:N1:TYPE <mode>
:DISPlay:TANDem:CONDition:Z5:TYPE <type>

Parameter: <type> = <CHARACTOR PROGRAM DATA>
TYPE1
TYPE2
Function: Sets the LAPD message type of the N1 byte and the Z5 byte.
Restriction: Invalid in the following cases:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.
・When the setting of :DISPlay:TANDem:CONDition:N1:MODE is <LP> and, when the setting of :DISPlay:TANDem:CONDition:Z5:MODE is <LP>.
Example use: To set the LAPD message type of N1 byte to Type1:
> :DISPlay:TANDem:CONDition:N1:TYPE TYPE1

:DISPlay:TANDem:CONDition:N1:TYPE?
:DISPlay:TANDem:CONDition:Z5:TYPE?

Response: <mode> = <CHARACTOR RESPONSE DATA>
Function: Queries the LAPD message type of the N1 byte and the Z5 byte.
Example use: To query the LAPD message type of the N1 byte:
> :DISPlay:TANDem:CONDition:N1:TYPE?
< TYPE1

:DISPlay:DPReset:TANDem:CONDition:N1:MODE <mode>
:DISPlay:DPReset:TANDem:CONDition:Z5:MODE <mode>

Parameter: <mode> = <CHARACTOR PROGRAM DATA>
HP Higher order Pass
LP Lower order Pass

Function: Sets the path of N1 byte and Z5 byte for the dummy channel.

Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.

Example use: To set the path of N1 byte to HP:
> :DISPlay:DPReset:TANDem:CONDition:N1:MODE HP

:DISPlay:DPReset:TANDem:CONDition:N1:MODE?
:DISPlay:DPReset:TANDem:CONDition:Z5:MODE?

Response: <mode> = <CHARACTOR RESPONSE DATA>

Function: Queries the path of N1 byte and Z5 byte for the dummy channel.

Example use: To query the path of N1 byte:
> :DISPlay:DPReset:TANDem:CONDition:N1:MODE?
< HP

:DISPlay:DPReset:TANDem:CONDition:N1:TYPE <mode>
:DISPlay:DPReset:TANDem:CONDition:Z5:TYPE <type>

Parameter: <type> = <CHARACTOR PROGRAM DATA>
TYPE1
TYPE2

Function: Sets the LAPD message types of N1 byte and Z5 byte for the dummy channel.

Restriction: Invalid in the following case:
・When :INSTrument:CONFig <type> is NON, CID, or ATM.
・When <TYPE2> is set while
:DISPlay:DPReset:TANDem:CONDition:N1:MODE or
:DISPlay:DPReset:TANDem:CONDition:Z5:MODE is set to <LP>.

Example use: To set the LAPD message type of N1 byte to Type1:
> :DISPlay:DPReset:TANDem:CONDition:N1:TYPE TYPE1

:DISPlay:DPReset:TANDem:CONDition:N1:TYPE?
:DISPlay:DPReset:TANDem:CONDition:Z5:TYPE?

Response: <mode> = <CHARACTOR RESPONSE DATA>

Function: Queries the LAPD message type of N1 byte and Z5 byte for the dummy channel.

Example use: To query the LAPD message type of the N1 byte:
> :DISPlay:DPReset:TANDem:CONDition:N1:TYPE?
< TYPE1

:DISPlay:IPPacket:PRESetno <presetno>

Parameter <presetno> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 3 Step value : 1
Function Sets IP packet No. to be edited.
Restriction Invalid in the following case:
・When the options 13 and 14 are not installed.
Example use To edit IP packet No.1.
> :DISPlay:IPPacket:PRESetno 1

:DISPlay:IPPacket:PRESetno?

Response <presetno> = <NR1 NUMERIC RESPONSE DATA>
Function Queries IP packet number to be edited.
Example use To query the packet No. to be edited.
> :DISPlay:IPPacket: PRESetno?
< 1

:DISPlay:PTR64:POINter <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>
(SDH)
AUPTR
TUPTR
(SONET)
STSPTR
VTPTR
Function: Sets the range of pointer (PTR).
Example use: To set the range of pointer to AUPTR:
> :DISPlay:PTR64:POINter AUPTR

:DISPlay:PTR64:POINter?

Response: <mode> = <CHARACTER RESPONSE DATA>
Function: Queries the pointer (PTR) range.
Example use: To query the pointer range:
> :DISPlay:PTR64:POINter?
> AUPTR

:DISPlay:RESult[:NAME] <rdisplay>

Parameter <rdisplay> = <STRING PROGRAM DATA>

"TSEarch"	Trouble search subscreen
"EALarm"	Error/Alarm subscreen
"JUSTificat"	Justification subscreen
"ZOOM"	Zoom subscreen
"PERFormance"	Performance subscreen
"DELay"	Performance subscreen
"B2"	B2 error subscreen
"SIMultaneous"	Simultaneous subscreen
"DELay"	Delay subscreen
"APS"	APS test subscreen
"IPPacket"	IP packet subscreen
"SEQuence"	Sequence test subscreen

Function Selects a subscreen of the Result main screen.

Restriction Invalid in the following case:
・When the Result screen which is not allowed select by Test menu selection screen is selected.

Example use To select "TSEarch" of the Result main screen:
> :DISPlay:RESult:NAME "TSEarch"
or :DISPlay:RESult "TSEarch" (NAME can be omitted.)

:DISPlay:RESult[:NAME]?

Response: <rdisplay> = <STRING RESPONSE DATA>

Function: Queries the selected subscreen of the Result main screen.

Example use: > :DISPlay:RESult:NAME?
or :DISPlay:RESult? (NAME may be omitted.)
< "TSE"

:DISPlay:RESult:EALarm:MODE <rdmode>

Parameter: <rdmode> = <CHARACTER PROGRAM DATA>

CURRent	Current measurement result
LAST	Result of immediately preceding measurement

Function: Selects a display mode for the Result main screen (Error/Alarm subscreen).

Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

Example use: To display the current measurement result:
> :DISPlay:RESult:EALarm:MODE CURRent

:DISPlay:RESult:EALarm:MODE?

Response: <rdmode> = <CHARACTER RESPONSE DATA>

Function: Queries the selected display mode of the Result main screen (Error/Alarm subscreen).

Example use: > :DISPlay:RESult:EALarm:MODE?
< CURR

:DISPlay:RESult:EALarm:UNIT <unit>

Parameter: <unit> = <CHARACTER PROGRAM DATA>

COUNt	Count value display
RATE	Rate value display

Function: Selects the count value or rate value display for the Result main screen (Error/Alarm subscreen).

Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.

Example use: To select the count value display for measurement result indication:
> :DISPlay:RESult:EALarm:UNIT COUNt

:DISPlay:RESult:EALarm:UNIT?

Response: <unit> = <CHARACTER RESPONSE DATA>

Function: Queries selection of the count or rate value display for the Result main screen (Error/Alarm subscreen).

Example use: > :DISPlay:RESult:EALarm:UNIT?
< COUN

:DISPlay:RESult:EALarm:DISPmode <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>

SDH	SDH
SONET	SONET
TC	TC or Tc/Sig

Function: Switches the display of measurement result related to SDH/SONET, and PDH.

Restriction: Invalid in the following case:
・When :INSTrument:CONFig<type> is NON, CID, and ATM.
・When setting of Standard of Setup:System screen is SDH, commands for SONET are invalid, and when setting of Standard of Setup:System screen is SONET, commands for SDH are invalid.

Example use: To set the display of measurement result to SDH.
> :DISPlay:RESult:EALarm:DISPmode SDH

:DISPlay:RESult:EALarm:DISPmode?

Response: <mode> = <CHARACTER RESPONSE DATA>

Function: Queries the display mode of measurement result.

Example use: > :DISPlay:RESult:EALarm:DISPmode?
< SDH

:DISPlay:RESult:EALarm:AUNit <unit>

Parameter: <alarm> = <CHARACTER PROGRAM DATA>
SECond
FRAMe

Function: Sets the display unit of Alarm measurement result for the Result main screen(Error/Alarm subscreen).

Restriction: Invalid in the following case:
・When :INSTrument:CONFig<type> is NON, CID, and ATM.
・When <FRAMe> is set while :SENSe:TELecom:BRATe is M1_5, M2, M8, M34, M45, M139.

Example use: To set display unit to SEC.
> :DISPlay:RESult:EALarm:AUNit SEC

:DISPlay:RESult:EALarm:AUNit?

Response: <alarm> = <CHARACTER RESPONSE DATA>

Function: Queries the setting of display unit of the Alarm measurement result for the Result main screen.

Example use: > :DISPlay:RESult:EALarm:AUNit?
< SEC

:DISPlay:RESult:EALarm:PAUSe

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 non-stop
ON or 1 stop

Function: Forcibly stops displaying of the measurement result.

Restriction: Invalid in the following case:
・When :SYSTem:MPAuse is <DISABLE> .

Example use: To stop displaying the measurement result forcibly.
> :DISPlay:RESult:EALarm:PAUSe ON

:DISPlay:RESult:EALarm:PAUSe?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries the status to forcibly stop displaying of the measurement result.

Example use: > : DISPlay:RESult:EALarm:PAUSe?
< 1

:DISPlay:RESult:JUSTificat:MODE <rdmode>

Parameter: <rdmode> = <CHARACTER PROGRAM DATA>
CURRent Current measurement result
LAST Result of immediately preceding measurement

Function: Selects a display mode for the Result main screen (Justification subscreen).

Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.
・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
Example use: To select the current measurement result:
> :DISPlay:RESult:JUSTificat:MODE CURRent

:DISPlay:RESult:JUSTificat:MODE?

Response: <rdmode> = <CHARACTER RESPONSE DATA>
Function: Queries the selected display mode of the Result main screen (Justification subscreen).
Example use: > :DISPlay:RESult:JUSTificat:MODE?
< CURR

:DISPlay:RESult:JUSTificat:UNIT <unit>

Parameter: <unit> = <CHARACTER PROGRAM DATA>

COUNt	Count value display
RATE	Rate value display
PPM	ppm display

Function: Selects the count or rate value display for the Result main screen (Justification subscreen).
Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.
・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
Example use: To select the count value display for the measurement result indication:
> :DISPlay:RESult:JUSTificat:UNIT COUNt

:DISPlay:RESult:JUSTificat:UNIT?

Response: <unit> = <CHARACTER RESPONSE DATA>
Function: Queries the selected count or rate value display for the Result main screen (Justification subscreen).
Example use: > :DISPlay:RESult:JUSTificat:UNIT?
< COUN

:DISPlay:RESult:ZOOM:MODE <rdmode>

Parameter: <rdmode> = <CHARACTER PROGRAM DATA>

CURRent	Current measurement result
LAST	Result of immediately preceding measurement

Function: Selects a display mode for the Result main screen (Zoom subscreen).
Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.

Example use: To select the current measurement result:
> :DISPlay:RESult:ZOOM:MODE CURRent

:DISPlay:RESult:ZOOM:MODE?

Response: <rdmode> = <CHARACTER RESPONSE DATA>
Function: Queries the selected display mode of the Result main screen (Zoom subscreen).
Example use: > :DISPlay:RESult:ZOOM:MODE?
< CURR

:DISPlay:RESult:ZOOM:UNIT <unit>

Parameter: <unit> = <CHARACTER PROGRAM DATA>
COUNt Count value display
RATE Rate value display
Function: Selects the count value or rate value display for the Result main screen (Zoom subscreen).
Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.
Example use: To select the count value display for the measured result indication:
> :DISPlay:RESult:ZOOM:UNIT COUNt

:DISPlay:RESult:ZOOM:UNIT?

Response: <unit> = <CHARACTER RESPONSE DATA>
Function: Queries the selected count or rate value display for the Result main screen (Zoom subscreen).
Example use: > :DISPlay:RESult:ZOOM:UNIT?
< COUN

:DISPlay:RESult:ZOOM:AUNit <unit>

Parameter: <unit> = <CHARACTER PROGRAM DATA>
SECond
FRAMe
Function: Sets the display unit of Alarm measurement result for the Result main screen (Zoom subscreen).
Restriction: Invalid in the following case:
・When :INSTrument:CONFig<type> is NON, CID, and ATM.
・When <FRAMe> is set while :SENSe:TELecom:BRATe is M1_5, M2, M8, M34, M45, M139.
Example use: To set display unit to SECOND.
> :DISPlay:RESult:ZOOM:AUNit SECOND

:DISPlay:RESult:ZOOM:AUNit?

Response: <unit> = <CHARACTER RESPONSE DATA>

Function: Queries the setting of display unit of the Alarm measurement result for the Result main screen.
Example use: > :DISPlay:RESult:ZOOM:AUNit?
< SEC

:DISPlay:RESult:ZOOM:ALARm <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>

"POWer"		Power fail
"LOS"		LOS
"LOF"		LOF
"OOF"		OOF
"AIS:MS"	(SDH)	MS-AIS
"AIS:L"	(SONET)	AIS-L
"RDI:MS"	(SDH)	MS-RDI
"RDI:L"	(SONET)	RDI-L
"AIS:AU"	(SDH)	AU-AIS
"AIS:P"	(SONET)	AIS-P
"LOP:AU"	(SDH)	AU-LOP
"LOP:P"	(SONET)	LOP-P
"RDI:HP"	(SDH)	HP-RDI
"RDI:P"	(SONET)	RDI-P
"SLM:HP"	(SDH)	HP-SLM
"PLM:P"	(SONET)	PLM-P
“TIM:HP”	(SDH)	HP-TIM
“TIM:P”	(SONET)	TIM-P
“UNEQ:HP”	(SDH)	HP-UNEQ
“UNEQ:P”	(SONET)	UNEQ-P
“AIS:HV”		HP-VC-AIS
“ISF:HP”		HP-ISF
“FAS:HP”		HP-FAS
“IAIS:HP”		HP-IncAIS
“TRDI:HP”		HP-TC-RDI
“ODI:HP”		HP-ODI
"AIS:TU"	(SDH)	TU-AIS
"AIS:V"	(SONET)	AIS-V
"LOP:TU"	(SDH)	TU-LOP
"LOP:V"	(SONET)	LOP-V
"RDI:LP"	(SDH)	LP-RDI
"RDI:V"	(SONET)	RDI-V
"SLM:LP"	(SDH)	LP-SLM
"PLM:V"	(SONET)	PLM-V
"RFI:LP"		LP-RFI
"RFI:V"	(SONET)	RFI-V
"LOM:HP"		HP-LOM
"LOM:TU"		TU-LOM
"LOP:V"	(SONET)	LOP-V

“TIM:LP”	(SDH)	LP-TIM
“TIM:V”	(SONET)	TIM-V
“UNEQ:LP”	(SDH)	LP-UNEQ
“UNEQ:V”	(SONET)	UNEQ-V
“AIS:LV”		LP-VC-AIS
“FAS:LP”		LP-FAS
“IAIS:LP”		LP-IncAIS
“TRDI:LP”		LP-TC-RDI
“ODI:LP”		LP-ODI
"AIS:M139"		139M AIS
"AIS:M45"		45M AIS
"AIS:M34"		34M AIS
"AIS:M8"		8M AIS
"AIS:M2"		2M AIS
"AIS:M1_5"		1.5M AIS
"LOF:M139"		139M LOF
"LOF:M45"		45M LOF
"LOF:M34"		34M LOF
"LOF:M8"		8M LOF
"LOF:M2"		2M LOF
"LOF:M1_5"		1.5M LOF
"LOF:MF"		MF LOF
"RDI:M139"		139M RDI
"RDI:M45"		45M RDI
"RDI:M34"		34M RDI
"RDI:M8"		8M RDI
"RDI:M2"		2M RDI
"RDI:M1_5"		1.5M RDI
"RDI:MF"		MF RDI
“SYN:OH”		OH sync
“AIS:HG”		HG AIS
“REC:HG”		HG REC
“BAI:S15”		BAIS1.5
“AIS:S15”		SigAIS1.5
“SIG:OOF”		SigOOF
"PATTern"		Sync. loss

* Parameters without (SDH) or (SONET)indication can be used in either SDH or SONET

Function: Selects the alarm display for measurement results of the Result main screen (Zoom subscreen).

Restriction: Invalid in the following case:

・When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.

・When the alarm at tandem connection is set while the settings relating N1 and N2 byte in Setup:Measurement condition are off.

Example use: To select MS-AIS for the alarm display of measurement results

(ZOOM):
> :DISPlay:RESult:ZOOM:ALARm "AIS:MS"

:DISPlay:RESult:ZOOM:ALARm?

Response: <alarm> = <STRING RESPONSE DATA>
Function: Queries the selected alarm display for measurement results of the Result main screen (Zoom subscreen).
Example use: > :DISPlay:RESult:ZOOM:ALARm?
< "AIS:MS"

:DISPlay:RESult:ZOOM:ERRor <error>

Parameter: <error> = <STRING PROGRAM DATA>

"B1"	B1 error
"B2"	B2 error
"B3:HP"	HP-B3 error
"B3:LP"	LP-B3 error
"BIP2"	BIP-2 error
"REI:MS" (SDH)	MS-REI error
"REI:HP" (SDH)	HP-REI error
"REI:LP" (SDH)	LP-REI error
"REI:L" (SONET)	REI-L error
"REI:P" (SONET)	REI-P error
"REI:V" (SONET)	REI-V error
“IEC:HP”	HP-IEC error
“REI:HT”	HP-TC-REI error
“OEI:HP”	HP-OEI error
“IEC:LP”	LP-IEC error
“REI:LT”	LP-TC-REI error
“OEI:LP”	LP-OEI error
“BIP2:N2”	N2 BIP-2 error
“BIT:OH”	OH Bit error
"CODE"	Code error
"FRAMe:M139"	139M FAS
"FRAMe:M45"	45M FAS
"FRAMe:M34"	34M FAS
"FRAMe:M8"	8M FAS
"FRAMe:M2"	2M FAS
"FRAMe:M1_5"	1.5M FAS
"REI:M139"	139M REI error
"REI:M45"	45M REI error
"REI:M34"	34M REI error
"EBIT"	E-Bit
"BIP8"	BIP-8 error
"PARITY"	Parity
"CBIT"	C-Bit
"CRC6"	CRC-6 error

"BIT" bit error
"CIDPKT" CID PKT

* Parameters without (SDH) or (SONET)indication can be used in either SDH or SONET

Function: Selects the error display for measurement results of the Result main screen.

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.
・ When the alarm at tandem connection is set while the settings relating N1 and N2 byte in Setup:Measurement condition are off.

Example use: To select E-Bit for the error display of measurement results (ZOOM):
> :DISPlay:RESult:ZOOM:ERRor "EBIT"

:DISPlay:RESult:ZOOM:ERRor?

Response: <error> = <STRING RESPONSE DATA>

Function: Queries the selected error display for measurement results of the Result
main screen (Zoom subscreen).

Example use: > :DISPlay:RESult:ZOOM:ERRor?
< "EBIT"

:DISPlay:RESult:PERFormance:MODE <rdmode>

Parameter: <rdmode> = <CHARACTER PROGRAM DATA>
CURRent Current measured result
LAST Result immediately before measurement

Function: Selects the display mode of measurement results.

Restriction: Invalid in the following case:
・ When the :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.
・ When the :CALCulate:TELecom:PERFormance:TYPE is <OFF>.

Example use: When measurement display mode is changed to the current measurement results:
> :DISPlay:RESult:PERFormance:MODE CURRent

:DISPlay:RESult:PERFormance:MODE?

Response: <rdmode> = <CHARACTER RESPONSE DATA>

CURR	Current measured result
LAST	Result immediately before measurement

Function: Queries the display mode for the measurement result.

Example use:
> :DISPlay:RESult:PERFormance:MODE?
< CURR

:DISPlay:RESult:PERFormance:ERRor [:G826]<error>

Parameter: <error> = <STRING PROGRAM DATA>

"BIP"	BIP
"REI"	REI
"FCRC"	FAS/CRC
"PARITY"	PARITY
"BIT"	Bit

Function: Selects an error content for measurement results of the Result main screen (Performance G.826).

Restriction: Invalid in the following case:

- When the DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"].
- When <"PARITY"> is set while the 1.5/45/52M unit is not installed.
- When the :CALCulate:TELecom:PERFormance:TYPE is <OFF>, <G821>, <M2100>, <M2101>, <M2110>, or <M2120>.
- : When <"BIP"> or <"REI"> is set while :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
- When <"FCRC"> or <"BIT"> is set while the :SENSe:TELecom:MAPPing:TYPE is <VC4_BLK>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_BLK>, or <VC11_BLK>.
- When <"FCRC"> is set while the SENSe:TELecom:MMODe is <OSERvice>.
- When <"BIT"> is set while the SENSe:TELecom:MMODe is <ISERvice>.
- When <"FCRC"> is set while the SENSe:TELecom:MMODe is <ISERvice>, the SENSe:TELecom:DEMUX:MRATe is <OFF>, and the SENSe:TELecom:FRAMing is <OFF>.
- When <"PARITY"> is set while the SENSe:TELecom:BRATe is other than <M45>.
- When <"FCRC"> is set while the SENSe:TELecom:BRATe is <M45>.

Example use: To select BIP for error of measurement results (Performance G.826):
> :DISPlay:RESult:PERFormance:ERRor "BIP"

:DISPlay:RESult:PERFormance:ERRor[:G826]?

Response: <error> = <STRING RESPONSE DATA>

Function: Queries the error content of measurement results (Performance G.826) of the Result main screen (Performance subscreen).

Example use: > :DISPlay:RESult:PERFormance:ERRor?
< "BIP"

:DISPlay:RESult:PERFormance:ERRor:M2101 <error>

Parameter: <error> = <STRING PROGRAM DATA>

"SECTion"	Section, Section/Line
"HOPath"	AU, STS path
"LOPath"	TU, VT path

Function: Selects the error content of measurement result (the performance M.2101).

Restriction: Invalid in the following case:

- When <"PARITY"> is set while the 1.5/45/52M units are not installed.
- When :CALCulate:TELecom:PERFormance:TYPE is <OFF>, <G821>, <M2100><M2100><M2110><M2120>.
- When <"FCRC"> or <"BIT"> is set while :SENSe:TELecom:MAPPing:TYPE is <VC4_BLK>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_BLK>, <VC11_BLK>.
- When <"FCRC"> is set while :SENSe:TELecom:MMODe is <OSERvice>.
- When <"BIT"> is set while :SENSe:TELecom:MMODe is <ISERvice>.
- When <"PARITY"> is set while :SENSe:TELecom:BRETe is other than <M45>.
- When <"FCRC"> is set while :SENSe:TELecom:BRATe is <M45>.

Example use: To set the error of measurement result (the performance M.2101) to Section:
> :DISPlay:RESult:PERFormance:ERRor:M2101 "SECTion"

:DISPlay:RESult:PERFormance:ERRor:M2101?

Response: <error> = <STRING RESPONSE DATA>

"SECT"
"HOP"
"LOP"

Function: Queries the error content of measurement result (the performance M.2101).

Example use: > :DISPlay:RESult:PERFormance:ERRor:M2101?
< "SECT"

:DISPlay:RESult:PERFormance:ERRor:M2110:LAYer1 <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

PDH	PDH
SDH	SDH/SONET

Function: Sets the measurement range of M.2110.

Restriction: Invalid in the following case:
・When other than <M2110> is set for
:CALCulate:TELecom:PERFormance:TYPE.

Example use: To set the measurement range of M.2110 to PDH:
> :DISPlay:RESult:PERFormance:ERRor:M2110:LAYer1 PDH

:DISPlay:RESult:PERFormance:ERRor:M2110:LAYer1?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the measurement range of M.2110.

Example use: > :DISPlay:RESult:PERFormance:ERRor:M2110:LAYer1?
< PDH

:DISPlay:RESult:PERFormance:ERRor:M2110:LAYer2 <type>

Parameter: <type> = <STRING PROGRAM DATA>

(SDH)	"SECTion"	Section
	"AUPath"	AU path
	"TUPath"	TU path
(SONET)	"SECTion"	Section/Line
	"STSPath"	STS path
	"VTPath"	VT path

Function: Sets the measurement range of M.2110.

Restriction: Invalid in the following case:
・When other than <M2110> is set for
:CALCulate:TELecom:PERFormance:TYPE.

Example use: To set the measurement range of M.2110 to "SECTion":
> :DISPlay:RESult:PERFormance:ERRor:M2110:LAYer2 "SECTion"

:DISPlay:RESult:PERFormance:ERRor:M2110:LAYer2?

Response: <type> = <STRING RESPONSE DATA>

Function: Queries the measurement range of M.2110.

Example use: > :DISPlay:RESult:PERFormance:ERRor:M2110:LAYer2?
< "SECT"

:DISPlay:RESult:PERFormance:ERRor:M2120:LAYer1 <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

	PDH	PDH
	SDH	SDH/SONET

Function: Sets the measurement range of M.2120.

Restriction: Invalid in the following case:
・When other than <M2120> is set for :CALCulate:TELecom:PERFormance:TYPE.

Example use: To set the measurement range of M.2120 to PDH:
> :DISPlay:RESult:PERFormance:ERRor:M2120:LAYer1 PDH

:DISPlay:RESult:PERFormance:ERRor:M2120:LAYer1?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the measurement range of M.2120.

Example use: > :DISPlay:RESult:PERFormance:ERRor:M2120:LAYer1?
< PDH

:DISPlay:RESult:PERFormance:ERRor:M2120:LAYer2 <type>

Parameter: <type> = <STRING PROGRAM DATA>

(SDH)	"SECTion"	Section
	"AUPath"	AU path
	"TUPath"	TU path
(SONET)	"SECTion"	Section/Line
	"STSPath"	STS path
	"VTPath"	VT path

Function: Sets the measurement range of M.2120.

Restriction: Invalid in the following case:
・When other than <M2120> is set for :CALCulate:TELecom:PERFormance:TYPE.

Example use: To set the measurement range of M.2120 to "SECTion":
> :DISPlay:RESult:PERFormance:ERRor:M2120:LAYer2 "SECTion"

:DISPlay:RESult:PERFormance:ERRor:M2120:LAYer2?

Response: <type> = <STRING RESPONSE DATA>

Function: Queries the measurement range of M.2120.

Example use: > :DISPlay:RESult:PERFormance:ERRor:M2120:LAYer2?
< "SECT"

:DISPlay:RESult:SIMultaneous:DISPdata <data>

Parameter <data> = <STRING PROGRAM DATA>
"CURRent" Current
"LAST" Last

Function Sets the display type of the simultaneous measurement (Current or Last).

Example use To set Last.
> :DISPlay:RESult:Simultaneous:DISPdata LAST

:DISPlay:RESult:SIMultaneous:DISPdata?

Response <data> = <STRING RESPONSE DATA>

Function Queries the display type of the simultaneous measurement (Current or Last).

Example use > :DISPlay:RESult:SIMultaneous:DISPdata?
< ・LAST"

:DISPlay:RESult:B2:MODE <rdmode>

Parameter: <rdmode> = <CHARACTER PROGRAM DATA>
CURRent Current measured result
Last Result immediately before measurement

Function: Selects a B2 display mode of the measurement result.

Example use: To select the current measurement result in B2 display modes of measurement result:
> :DISPlay:RESult:B2:MODE CURRent

:DISPlay:RESult:B2:MODE?

Response: <rdmode> = <CHARACTER RESPONSE DATA>

Function: Queries the B2 display mode of the measurement result.

Example use: > :DISPlay:RESult:B2:MODE?
< CURR

:DISPlay:RESult:TIME <time>

Parameter: <time> = <CHARACTER PROGRAM DATA>
ELAPsed Elapsed time
STARt Start time

Function: Selects a measurement time display on the Result main screen.

Restriction: Invalid in the following case:
・When <ELAPsed> is set while :DISPlay:TMENu[:NAME] is <"TSEarch"> or <"DELay">.

Example use: To select the elapsed time display:
> :DISPlay:RESult:TIME ELAPsed

:DISPlay:RESult:TIME?

Response: <time> = <CHARACTER RESPONSE DATA>

Function: Queries the selected measurement time display on the Result main screen.

Example use: > :DISPlay:RESult:TIME?
< ELAP

:DISPlay:RESult:TSEarch:AUG <numeric>
:DISPlay:RESult:TSEarch:STS <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1

Function: Sets the AUG/STS3 channels to be displayed in the Trouble search measurement result.

Restriction: Invalid in the following case:

・Upper limit values are as follow in accordance with the Rx Bit rate (:SENSe:TELecoom:BRATe):

Rx Bit rate	Upper limit value
156M,	1
156MCMI	1
622M	4
2488M	16
9953M	64

・When the Rx Bit rate is 1.5, 2, 8, 34, 45, 139, 52M, or 52MB3ZS.

・When the setting is other than :DISPlay:TMENu[:NAME] <"TSEarch">.

・During the measurement.

Example use: To set the AUG channel to 7:
> :DISPlay:RESult:TSEarch:AUG 7

:DISPlay:RESult:TSEarch:AUG?
:DISPlay:RESult:TSEarch:STS?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the value of AUG (STS3) channel to be displayed in the Trouble search measurement result.

Example use: > :DISPlay:RESult:TSEarch:AUG?
< 7

:DISPlay:RESult:TSEarch:SEARch <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

BEFore	Searches in the direction to reduce the channel number.
NEXT	Searches in the direction to increase the channel number.

Function: Searches the channel where Trouble occurred (AUG#/STS3#).

Restriction: Invalid in the following case:

- When the setting of :SENSe:TELecom:BRATE is M1_5, M2, M8, M34, M45, or M139.
- When :DISPlay:TMENu[:NAME] is other than <"TSEarch">.

Example use: To search in the direction to increase the channel number:

> :DISPlay:RESult:TSEarch:SEARch BIG

:DISPlay:RESult:TSEarch:ANALyze

Parameter: None.

Function: Displays the detailed information of Trouble occurrence channel (AUG#/STS3#) on the screen.

Example use: > :DISPlay:RESult:TSEarch:ANALyze

:DISPlay:RESult:IPPacket:MODE <rdmode>

Parameter <rdmode> = <CHARACTER PROGRAM DATA>

CURRent	Current measurement results
LAST	Last measurement results

Function Selects the display mode of the measurement result on the Result:IP packet screen.

Restriction Invalid in the following case:

- :DISPlay:TMENu[:NAME] is set to other than <"IPTest”>.

Example use To displays the current measurement result.

> :DISPlay:RESult:IPPacket:MODE CURRent

:DISPlay:RESult:IPPacket:MODE?

Response <rdmode> = <CHARACTER RESPONSE DATA>

CURR	Current measurement result
LAST	Last measurement result

Function Queries the display mode of the measurement results on the Result:IP packet screen.

Example use > :DISPlay:RESult:IPPacket:MODE?

< CURR

:DISPlay:RESult:SEQuencetest:EALarm:AUNit <unit>

Parameter <unit> = <CHARACTER PROGRAM DATA>
SECond
FRAMe

Function Sets the unit for the alarm measurement results.

Restriction Invalid in the following case:
・:INSTrument:CONFig <type> is NON, CID, or ATM.
・:SENSe:TELecom:BRATe is set to M1_5, M2, M8, M34, M45, or M139; and <FRAMe> is set.

Example use To set the unit to “SECOND”.
> :DISPlay:RESult:SEQuencetest:EALarm:ALArm SECOND

:DISPlay:RESult:SEQuencetest:EALarm:AUNit?

Response <unit> = <CHARACTER RESPONSE DATA>

SEC	SECond
FRAM	FRAMe

Function Queries the unit of the alarm measurement results.

Example use > :DISPlay:RESult:SEQuencetest:EALarm:ALARm?
< SEC

:DISPlay:RESult:SEQuencetest:EALarm:ERRor <error>

Parameter <error> = <CHARACTER PROGRAM DATA>

COUNT	Count
RATE	Rate

Function Sets the unit of the error measurement results.

Example use To set the unit to “Rate”
> :DISPlay:RESult:SEQuencetest:EALarm:ERRor RATE

:DISPlay:RESult:SEQuencetest:EALarm:ERRor?

Response <error> = <CHARACTER RESPONSE DATA>

Function Queries the unit of the error measurement results.

Example use > :DISPlay:RESult:SEQuencetest:EALarm:ERRor?
< RATE

:DISPlay:RESult:SEQuencetest:EALarm:DISPmode <mode>

Parameter <mode> = <CHARACTER PROGRAM DATA>

SDH	SDH
SONET	SONET
TC	TC or Tc/Sig

Function Switches the display of SDH/PDH-related measurement.

Restriction Invalid in the following case:
・:INSTrument:CONFig <type> is NON, CID, or ATM.
・:SENSe:TELecom:BRATe is set to M1_5, M2, M8, M34, M45, or M139; and no measurement result exists.

Example use To set the display of the measurement results to SDH.
> :DISPlay:RESult:SEQuencetest:EALarm:DISPmode SDH

:DISPlay:RESult:SEQuencetest:EALarm:DISPmode?

Response <mode> = <CHARACTER RESPONSE DATA>
Function Queries the display mode of the measurement results.
Example use > :DISPlay:RESult:SEQuencetest:EALarm:DISPmode?
< SDH

:DISPlay:RESult:SEQuencetest:JUSTificat:UNIT <unit>

Parameter <unit> = <CHARACTER PROGRAM DATA>

COUNt	Count
RATE	Rate
PPM	ppm

Function Sets the unit of the Justification measurement.
Example use To set the unit to “ppm”.
> :DISPlay:RESult:SEQuencetest:JUSTificat:UNIT PPM

:DISPlay:RESult:SEQuencetest:JUSTificat:UNIT?

Response <unit> = <CHARACTER RESPONSE DATA>

COUN	Count
RATE	Rate
PPM	ppm

Function Queries the unit of the Justification measurement.
Example use > :DISPlay:RESult:SEQuencetest:JUSTificat:UNIT?
< PPM

:DISPlay:RESult:SEQuencetest:ZOOM:AUNit <unit>

Parameter <unit> = <CHARACTER PROGRAM DATA>

SECond	Second
FRAMe	Frame

Function Sets the unit of the alarm measurement results.
Restriction Invalid in the following case:
・:INSTrument:CONFig <type> is NON, CID, or ATM.
・:SENSe:TELecom:BRATe is set to M1_5, M2, M8, M34, M45, or M139; and <FRAMe> is set.
Example use To set the unit to “Frame”.
> :DISPlay:RESult:SEQuencetest:ZOOM:AUNit FRAMe

:DISPlay:RESult:SEQuencetest:ZOOM:AUNit?

Response <unit> = <CHARACTER RESPONSE DATA>
SEC Second
FRAM Frame

Function Queries the unit of the alarm measurement results.

Example use > :DISPlay:RESult:SEQuencetest:ZOOM:AUNit?
< FRAM

:DISPlay:RESult:SEQuencetest:ZOOM:UNIT <unit>

Parameter <unit> = <CHARACTER PROGRAM DATA>
COUNt Count
RATE Rate

Function Sets the unit of the error measurement results.

Example use To set the unit to “Count”.
> :DISPlay:RESult:SEQuencetest:ZOOM:UNIT COUNT

:DISPlay:RESult:SEQuencetest:ZOOM:UNIT?

Response <unit> = <CHARACTER RESPONSE DATA>
COUN Count
RATE Rate

Function Queries the unit of the error measurement results.

Example use > :DISPlay:RESult:SEQuencetest:ZOOM:UNIT?
< COUNT

:DISPlay:RESult:SEQuencetest:ZOOM:ALARm <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>

"POWer"		Power fail
"LOS"		LOS
"LOF"		LOF
"OOF"		OOF
"AIS:MS"	(SDH)	MS-AIS
"AIS:L"	(SONET)	AIS-L
"RDI:MS"	(SDH)	MS-RDI
"RDI:L"	(SONET)	RDI-L
"AIS:AU"	(SDH)	AU-AIS
"AIS:P"	(SONET)	AIS-P
"LOP:AU"	(SDH)	AU-LOP
"LOP:P"	(SONET)	LOP-P
"RDI:HP"	(SDH)	HP-RDI
"RDI:P"	(SONET)	RDI-P
"SLM:HP"	(SDH)	HP-SLM
"PLM:P"	(SONET)	PLM-P
“TIM:HP”	(SDH)	HP-TIM
“TIM:P”	(SONET)	TIM-P
“UNEQ:HP”	(SDH)	HP-UNEQ
“UNEQ:P”	(SONET)	UNEQ-P

“AIS:HV”	HP-VC-AIS
“ISF:HP”	HP-ISF
“FAS:HP”	HP-FAS
“IAIS:HP”	HP-IncAIS
“TRDI:HP”	HP-TC-RDI
“ODI:HP”	HP-ODI
"AIS:TU" (SDH)	TU-AIS
"AIS:V" (SONET)	AIS-V
"LOP:TU" (SDH)	TU-LOP
"LOP:V" (SONET)	LOP-V
"RDI:LP" (SDH)	LP-RDI
"RDI:V" (SONET)	RDI-V
"SLM:LP" (SDH)	LP-SLM
"PLM:V" (SONET)	PLM-V
"RFI:LP" (SDH)	LP-RFI
"RFI:V" (SONET)	RFI-V
"LOM:HP"	HP-LOM
"LOM:TU" (SDH)	TU-LOM
"LOP:V" (SONET)	LOP-V
“TIM:LP” (SDH)	LP-TIM
“TIM:V” (SONET)	TIM-V
“UNEQ:LP” (SDH)	LP-UNEQ
“UNEQ:V” (SONET)	UNEQ-V
“AIS:LV”	LP-VC-AIS
“FAS:LP”	LP-FAS
“IAIS:LP”	LP-IncAIS
“TRDI:LP”	LP-TC-RDI
“ODI:LP”	LP-ODI
"AIS:M139"	139M AIS
"AIS:M45"	45M AIS
"AIS:M34"	34M AIS
"AIS:M8"	8M AIS
"AIS:M2"	2M AIS
"AIS:M1_5"	1.5M AIS
"LOF:M139"	139M LOF
"LOF:M45"	45M LOF
"LOF:M34"	34M LOF
"LOF:M8"	8M LOF
"LOF:M2"	2M LOF
"LOF:M1_5"	1.5M LOF
"LOF:MF"	MF LOF
"RDI:M139"	139M RDI
"RDI:M45"	45M RDI
"RDI:M34"	34M RDI
"RDI:M8"	8M RDI
"RDI:M2"	2M RDI

	"RDI:M1_5"	1.5M RDI
	"RDI:MF"	MF RDI
	“SYN:OH”	OH sync
	“AIS:HG”	HG AIS
	“REC:HG”	HG REC
	“BAI:S15”	BAIS1.5
	“AIS:S15”	SigAIS1.5
	“SIG:OOF”	SigOOF
	"PATTern"	Sync. loss

* The parameters without the indications of “(SDH)” and “(SONET)” are available in both SDH and SONET measurement.

Function Selects the alarm indication of the measurement results (ZOOM).

Example use To display the measurement results (ZOOM) in “RDI-L”.
> :DISPlay:RESult:SEQuencetest:ZOOM:ALARm “RDI:L”

:DISPlay:RESult:SEQuencetest:ZOOM:ALARm?

Response <alarm> = <CHARACTER RESPONSE DATA>

Function Queries the alarm display of the measurement results (ZOOM).

Example use > :DISPlay:RESult:SEQuencetest:ZOOM:ALARm?
< “RDI:L”

:DISPlay:RESult:SEQuencetest:ZOOM:ERRor <error>

Parameter <error> = <STRING PROGRAM DATA>

"B1"	B1 error
"B2"	B2 error
"B3:HP"	HP-B3 error
"B3:LP"	LP-B3 error
"BIP2"	BIP-2 error
"REI:MS" (SDH)	MS-REI error
"REI:HP" (SDH)	HP-REI error
"REI:LP" (SDH)	LP-REI error
"REI:L" (SONET)	REI-L error
"REI:P" (SONET)	REI-P error
"REI:V" (SONET)	REI-V error
“IEC:HP”	HP-IEC error
“REI:HT”	HP-TC-REI error
“OEI:HP”	HP-OEI error
“IEC:LP”	LP-IEC error
“REI:LT”	LP-TC-REI error
“OEI:LP”	LP-OEI error
“BIP2:N2”	N2 BIP-2 error
“BIT:OH”	OH Bit error
"CODE"	Code error
"FRAMe:M139"	139M FAS
"FRAMe:M45"	45M FAS
"FRAMe:M34"	34M FAS

"FRAMe:M8"	8M FAS
"FRAMe:M2"	2M FAS
"FRAMe:M1_5"	1.5M FAS
"REI:M139"	139M REI error
"REI:M45"	45M REI error
"REI:M34"	34M REI error
"EBIT"	E-Bit
"BIP8"	BIP-8 error
"PARITY"	Parity
"CBIT"	C-Bit
"CRC6"	CRC-6 error
"BIT"	Bit error
"CIDPKT"	CID PKT

* The parameters without the indications of "(SDH)" and "(SONET)" are available in both SDH and SONET measurement.

Function Selects the error display of the measurement results (ZOOM).

Example use To display the measurement results (ZOOM) in "E-Bit".
> :DISPlay:RESult:SEQuencetest:ZOOM:ERRor "EBIT"

:DISPlay:RESult:SEQuencetest:ZOOM:ERRor?

Response <error> = <STRING RESPONSE DATA>

Function Queries the setting of the displayed error item.

Example use > :DISPlay:RESult:SEQuencetest:ZOOM:ERRor?
< "EBIT"

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor[:G826] <error>

Parameter <error> = <STRING PROGRAM DATA>

"BIP"	BIP
"REI"	REI
"FCRC"	FAS/CRC
"PARITY"	Parity
"BIT"	Bit

Function Selects the contents of the error measurement results (performance G.826).

Restriction
Invalid in the following case:
・:DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <PSEQuence [:"JOFF"]>.
・The 1.5/45/52M unit is not installed; and <“PARITY”> is set.
・:CALCulate:TELecom:PERFormance:TYPE is <OFF>, <G821>, <M2100>, <M2101>, <M2110>, or <M2120>.
・:SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, <M1_5>; and <"BIP">, <"REI">.
・:SENSe:TELecom:MAPPing:TYPE is , <VC4_BLK>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_BLK>, <VC11_BLK>; and <"FCRC">,
<"BIT">.
・:SENSe:TELecom:MMODe is <OSERvice>; and <"FCRC"> is set.
・:SENSe:TELecom:MMODe is <ISERvice>; and <"BIT"> is set.
・:SENSe:TELecom:MMODe is <ISERvice>;
:SENSe:TELecom:DEMUX:MRATe is <OFF>;
:SENSe:TELecom:FRAMing is <OFF>; and <"FCRC"> is set.
・:SENSe:TELecom:BRATe is other than <M45>; and <"PARITY"> is set.
・:SENSe:TELecom:BRATe is <M45>; and <"FCRC"> is set.

Example use
To set the error measurement result (performance G.826) to “BIP”.
> :DISPlay:RESult:SEQuencetest:PERFormance:ERRor "BIP"
or
> :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:G826 "BIP"

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor[:G826]?

Response
<error> = <STRING RESPONSE DATA>

Function
Queries the contents of the error measurement results (performance G.826).

Example use
> :DISPlay:RESult:SEQuencetest:PERFormance:ERRor?
or
> :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:G826?
< "BIP"

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2101 <error>

Parameter
<error> = <STRING PROGRAM DATA>
"SECTion"
"HOPath"
"LOPath"

Function
Selects the contents of the error measurement results (performance M.2101).

Example use
To set the error measurement result (performance M.2101) to “Section”.
> :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:
M2101"SECTion"

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2101?

Response <error> = <STRING RESPONSE DATA>
"SECT"
"HOP"
"LOP"

Function Queries the contents of the error measurement results (performance M.2101).

Example use > :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2101?
< "SECT"

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2110:LAYer2 <type>

Parameter <type> = <STRING PROGRAM DATA>
"SECTion"
"AUPath"
"TUPath"

Function Designates the M.2110 measurement range.

Restriction Invalid in the following case:
・ Performance is not set to"M.2110" on the Setup:Measurement condition screen.
・ When M.2100 or M.2101 can not be set on the Setup:Measurement condition screen.

Example use To set the M.2110 measurement range to "SECTion".
> :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2110:
LAYer2 "SECTion"

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2110:LAYer2?

Response <type> = <STRING RESPONSE DATA>
"SECT"
"AUP"
"TUP"

Function Queries the M.2110 measurement range.

Example use > :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2110:
LAYer2?
< "SECT"

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:LAYer1 <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
PDH
SDH

Function Designates the M.2120 measurement range.

Restriction Invalid in the following case:
・Performance is not set to M.2110 on the Setup:Measurement condition screen.
・ When M.2100 or M.2101 can not be set on the Setup:Measurement condition screen.

Example use To the M.2120 measurement range to “PDH”.
> :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:
LAYer1 PDH

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:LAYer1?

Response <type> = <CHARACTER RESPONSE DATA>
Function Queries the M.2120 measurement range.
Example use > :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:
LAYer1?
< PDH

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:LAYer2 <type>

Parameter <type> = <STRING PROGRAM DATA>
"SECTion"
"AUPath"
"TUPath"
Function Designates the M.2120 measurement range.
Restriction Invalid in the following case:
・Performance is not set to M.2110 Setup:Measurement on the condition screen.
・When M.2100 or M.2101 can not be set on the Setup:Measurement condition screen.
Example use To set the M.2120 measurement range to "SECTion".
> :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:
LAYer2 "SECTion"

:DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:LAYer2?

Response <type> = <STRING RESPONSE DATA>
"SECT"
"AUP"
"TUP"
Function Queries the M.2120 measurement range.
Example use > :DISPlay:RESult:SEQuencetest:PERFormance:ERRor:M2120:
LAYer2?
< "SECT"

:DISPlay:ANALysis[:NAME] <adisplay>

Parameter: <adisplay> = <STRING PROGRAM DATA>

"TSEarch"	Trouble search screen
"EALarm"	Error/Alarm screen
"OHMonitor"	OH monitor screen
"OPMeter"	Opt. power meter screen
"OHCapture"	OH capture screen
“APSCapture"	APS capture screen
“POINtermonitor"	Pointer monitor screen
“FCAPture"	Frame capture screen
"FMONitor"	Freq. monitor screen
"FREQuency"	Frequency screen
"SEQuencetest"	Sequence test screen
"RECall"	Recall screen
“IPCapture"	IP capture screen

Function: Selects a subscreen of the Analyze main screen.

Restriction: Invalid in the following case:

・When the Result screen which is not allowed to select by Test menu selection screen is selected.

・When <"OHMonitor"> is set while the :SENSe:TELecom:BRATe is <M45>, or <M1_5>.

・When <"FRAMe64"> is set while the :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.

・Option-14 is not installed ; and <“IPCapture"> is set.

・Sequence test has not been done ; and <"SEQuencetest"> is set.

Example use: To select "TSEarch" of the Analyze main screen:

> :DISPlay:ANALysis:NAME "TSEarch"

or

:DISPlay:ANALysis "TSEarch" (NAME may be omitted.)

:DISPlay:ANALysis[:NAME]?

Response: <adisplay> = <STRING RESPONSE DATA>

Function: Queries the selected subscreen of the Analyze main screen.

Example use: > :DISPlay:ANALysis:NAME?

or :DISPlay:ANALysis? (NAME may be omitted.)

< "TSE"

:DISPlay:ANALysis:TSEarch:SELect <search>

Parameter: <search> = <CHARACTER PROGRAM DATA>

DETail	Detail
NGPath	NG path

Function: Switches the display of trouble search results of the Analyze main screen (Trouble search subscreen).

Restriction: Invalid in the following case:
・When Justification, B2 error is set while
:INSTrument:CONFig <type> is NON, CID.
・When Justification, B2 error is set while
:SENSe:TELecom:BRATe is M1_5, M2, M8, M34, M45, or M139.

Example use: To display the switching of display of trouble search result for each measurement route.
> :DISPlay:ANALysis:TSEarch:SELect DETail

:DISPlay:ANALysis:TSEarch:SELect?

Response: <search> = <CHARACTER RESPONSE DATA>

DET	Detail
NGP	NG path

Function: Queries the display mode of trouble search results of the Analyze main screen.

Example use: To query the display mode of trouble search result.
> :DISPlay:ANALysis:TSEarch:SELect?
< DET

:DISPlay:ANALysis:TSEarch:SEARch <search>

Parameter: <search> = <CHARACTER PROGRAM DATA>

BEFore	Before search
NEXT	Next search

Function: Instructs an analyze search of the Analyze main screen (Trouble search subscreen).

Restriction: Invalid when there are no Trouble search data.

Example use: To select search to before:
> :DISPlay:ANALysis:TSEarch:SEARch BEFore

:DISPlay:ANALysis:TSEarch:ROUTe <troute>, <numeric>

Parameter: <troute> = <CHARACTER PROGRAM DATA>
(SDH)

AUG	AUG channel
AU3	AU3 channel
TUG3	TUG3 channel
TUG2	TUG2 channel
TU12	TU12 channel
TU11	TU11 channel
K384	384k channel
M34	34Mbit/s channel
M8	8Mbit/s channel
M2	2Mbit/s channel
M1_5	1.5Mbit/s channel
K64	64kbit/s channel

(SONET)

STS3	AUG channel
STS1	AU3 channel
TUG3	TUG3 channel
VTG	TUG2 channel
VT2	TU12 channel
VT15	TU11 channel
K384	384k channel
M34	34M channel
M8	8M channel
M2	2M channel
M1_5	1.5M channel
K64	64k channel

<numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 16	When <route> is AUG, STS3	Step value: 1
1 to 3	When <route> is AU3, STS1	Step value: 1
1 to 3	When <route> is TUG3	Step value: 1
1 to 7	When <route> is TUG2, VTG	Step value: 1
1 to 3	When <route> is TU12, VT2	Step value: 1
1 to 4	When <route> is TU11, VT15	Step value: 1
1 to 4	When <route> is 384k	Step value: 1
1 to 4	When <route> is M34	Step value: 1
1 to 4	When <route> is M8	Step value: 1
1 to 21	When <route> is M2	Step value: 1
1 to 28	When <route> is M1.5	Step value: 1
1 to 31	When <route> is K64	Step value: 1

Function: Designates the display route for analyzed results of the Analyze main screen (Trouble search subscreen).

Restriction: Invalid in the following case:

- When <TU11> is set while the 2/8/34/139/156 (CMI) is installed.
- In case no trouble search data is provided.
- Test for the pertinent channel is not completed during trouble search execution.
- Cases table below

<route>	Restriction conditions
AUG [STS3]	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M139>, <M45>, <M34>, <M2>, or <M1_5>.
AU3 [STS1]	・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M2>, or <M1_5>. ・When :SENSe:TELecom: MAPPing:AU is <AU4>.

TUG3	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M139>, <M45>, <M2>, or <M1_5>. ・When :SENSe:TELecom: MAPPing:AU is <AU3>. ・When :SENSe:TELecom: MAPPing:TYPE is <VC4_ASY>, or <VC4_BLK>.
TUG2 and VTG	・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M2>, or <M1_5>. ・When :SENSe:TELecom: MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_45MASY>, or <VC3_BLK>.
TU12 [VT2]	・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M2>, or <M1_5>. ・When :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_45MASY>, <VC3_BLK>, <VC2_BLK>, or <VC2_MC>. ・When :SENSe:TELecom:MAPPing:TU is <TU11>.
TU11 [VT15]	・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M2>, or <M1_5>. ・When :SENSe:TELecom:MAPPing:TYPE is <VC4_ASY>, <VC4_BLK>, <VC3_ASY>, <VC3_SYN>, <VC3_45MASY>, <VC3_BLK>, <VC2_BLK>, or <VC2_MC>. ・When :SENSe:TELecom:MAPPing:TU is <TU12>.
M34	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, <M34>, <M8>, <M2>, or <M1_5>. ・When :SENSe:TELecom:MUX:MRATe is <OFF>. ・When :SENSe:TELecom:MAPPing:TYPE is other than <VC4_ASY>.
M8	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, <M8>, <M2>, or <M1_5>. ・When :SENSe:TELecom:MUX:MRATe is <OFF>, or <M34>. ・When :SENSe:TELecom:MAPPing:TYPE is other than <VC4_ASY>, <VC3_ASY>, <VC3_SYN>.

<route>	Restriction conditions
M2	・When :SENSe:TELecom:BRATe is <M52B3ZS>, <M45>, <M2>, or <M1_5>. ・When :SENSe:TELecom:MUX:MRATe is <OFF>, <M34>, or <M8>. ・When :SENSe:TELecom:MAPPing:TYPE is other than <VC4_ASY>, <VC3_ASY>, <VC3_SYN>.
M1_5	・When :SENSe:TELecom:BRATe is <M139>, <M34>, <M8>, <M2>, or <M1_5>. ・When :SENSe:TELecom:MUX:MRATe is <OFF>. ・When :SENSe:TELecom:MAPPing:TYPE is other than <M52B3ZS>.
K384	・When option 09 Japan mapping is not installed.
K64	・When :SENSe:TELecom:MUX:MRATe is <OFF>, <M34>, <M8>, <M2>, or <M1_5>. ・When the <numeric> is set to <31> to be DEMUXed into 2M while :SENSe:TELecom:M2:MCHannel is <30>. ・When specifying settings other than from 1 to 24 to DEMUX into 1.5M.

Example use: To set the AU channel to 4:
> :DISPlay:ANALysis:TSEarch:ROUTe AUG, 4

:DISPlay:ANALysis:TSEarch:ROUTe?

Response: <aug>, <au3>, <tug3>, <tug2>, <tu12>, <tu11>, <k384>, <m34>, <m8>, <m2>, <m1.5>, <k64>

<aug> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 64 AUG, STS3channel No.

<au3> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 3 AU3, STS1channel No.

<tug3> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 3 TUG3 channel No.

<tug2> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 7 TUG2, VTG channel No.

<tu12> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 3 TU12, VT2 channel No.

<tu11> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 4 TU11, VT15 channel No.

<k384> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 4 384k channel No.

<m34> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 4 34Mbit/s channel No.

<m8> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 4 8Mbit/s channel No.

<m2> = <NR1 NUMERIC RESPONSE DATA>

0, 1 to 21 2Mbit/s channel No.
<m1.5> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 28 1.5Mbit/s channel No.
<k64> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 31 64kbit/s channel No.
When no data exists
< 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Function: Queries the display route for analyzed results of the Analyze main screen (Trouble search subscreen).

Example use: > :DISPlay:ANALysis:TSEarch:ROUTe?
< 1, 0, 3, 0, 0, 0, 0, 0, 4, 1, 0, 3

:DISPlay:ANALysis:TSEarch:DATA? <result>

Parameter: <result> = <STRING PROGRAM DATA>
See Table 10-3.

Response: <string> = <STRING RESPONSE DATA>
See Table 10-3.

Function: Queries the analyzed result of currently displayed route of the Analyze main screen (Trouble search subscreen).

Example use: > :DISPlay:ANALysis:TSEarch:DATA? "TSEarch:LOS:PDH"
< " Acceptable"

Analyzed Result (Trouble search) Query Content (1/3)

Item		<result>	Response Format
LOS		"TSEarch:LOS"	Form4
Sync. loss		"TSEarch:PATTern"	Form4
AIS	139M	"TSEarch:AIS:M139"	Form4
	45M	"TSEarch:AIS:M45"	Form4
	34M	"TSEarch:AIS:M34"	Form4
	8M	"TSEarch:AIS:M8"	Form4
	2M	"TSEarch:AIS:M2"	Form4
	1.5M	"TSEarch:AIS:M1_5"	Form4
	MS(SDH)	"TSEarch:AIS:MS"	Form4
	L (SONET)	"TSEarch:AIS:L"	Form4
	AU(SDH)	"TSEarch:AIS:AU"	Form4
	TU(SDH)	"TSEarch:AIS:TU"	Form4
	P (SONET)	"TSEarch:AIS:P"	Form4
	V (SONET)	"TSEarch:AIS:V"	Form4
LOF	139M	"TSEarch:LOF:M139"	Form4
	45M	"TSEarch:LOF:M45"	Form4
	34M	"TSEarch:LOF:M34"	Form4

	8M	"TSEarch:LOF:M8"	Form4
	2M	"TSEarch:LOF:M2"	Form4
	1.5M	"TSEarch:LOF:M1_5"	Form4
	MF	"TSEarch:LOF:MF"	Form4
		"TSEarch:LOF"	Form4

Analyzed Result (Trouble search) Query Content (2/3)

Item		<result>	Response Format
RDI	139M	"TSEarch:RDI:M139"	Form4
	45M	"TSEarch:RDI:M45"	Form4
	34M	"TSEarch:RDI:M34"	Form4
	8M	"TSEarch:RDI:M8"	Form4
	2M	"TSEarch:RDI:M2"	Form4
	1.5M	"TSEarch:RDI:M1_5"	Form4
	MF	"TSEarch:RDI:MF"	Form4
OOF		"TSEarch:OOF"	Form4
LOP	AU(SDH)	"TSEarch:LOP:AU"	Form4
	TU(SDH)	"TSEarch:LOP:TU"	Form4
	P (SONET)	"TSEarch:LOP:P"	Form4
	V (SONET)	"TSEarch:LOP:V"	Form4
RDI	MS(SDH)	"TSEarch:RDI:MS"	Form4
	L (SONET)	"TSEarch:RDI:L"	Form4
	HP(SDH)	"TSEarch:RDI:HP"	Form4
	LP(SDH)	"TSEarch:RDI:LP"	Form4
	P (SONET)	"TSEarch:RDI:P"	Form4
	V (SONET)	"TSEarch:RDI:V"	Form4
SLM	HP(SDH)	"TSEarch:SLM:HP"	Form4
	LP(SDH)	"TSEarch:SLM:LP"	Form4
	P (SONET)	"TSEarch:SLM:P"	Form4
	V (SONET)	"TSEarch:SLM:V"	Form4
LP-RFI(SDH)		"TSEarch:RFI:LP"	Form4
RFI-V(SONET)		"TSEarch:RFI:V"	Form4
TU-LOM(SDH)		"TSEarch:LOM:TU"	Form4
LOM-V(SONET)		"TSEarch:LOM:V"	Form4

Analyzed Result (Trouble search) Query Content (3/3)

Item	<result>	Response Format
B1 error	"TSEarch:B1"	Form4
B2 error	"TSEarch:B2"	Form4
HP-B3 error	"TSEarch:B3:HP"	Form4
LP-B3 error	"TSEarch:B3:LP"	Form4
BIP-2 error	"TSEarch:BIP2"	Form4
MS-REI error(SDH)	"TSEarch:REI:MS"	Form4
HP-REI error(SDH)	"TSEarch:REI:HP"	Form4
LP-REI error(SDH)	"TSEarch:REI:LP"	Form4
REI-L error(SONET)	"TSEarch:REI:L"	Form4
REI-P error(SONET)	"TSEarch:REI:P"	Form4
REI-V error(SONET)	"TSEarch:REI:V"	Form4
code error	"TSEarch:CODE"	Form4
139M frame error	"TSEarch:FRAMe:M139"	Form4
45M frame error	"TSEarch:FRAMe:M45"	Form4
34M frame error	"TSEarch:FRAMe:M34"	Form4
8M frame error	"TSEarch:FRAMe:M8"	Form4
2M frame error	"TSEarch:FRAMe:M2"	Form4
1.5M frame error	"TSEarch:FRAMe:M1_5"	Form4
45M REI error	"TSEarch:REI:M45"	Form4
CRC-4 error	"TSEarch:CRC4"	Form4
E-Bit	"TSEarch:EBIT"	Form4
PARITY error	"TSEarch:PARITY"	Form4
C-Bit	"TSEarch:CBIT"	Form4
CRC-6 error	"TSEarch:CRC6"	Form4
bit error	"TSEarch:BIT"	Form4

:DISPlay:ANALysis:TSEarch:PRINt <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

DISPlay	Display
ALL	All
AFTer	After
BEFore	Before

Function: Designates a printing range for the Analyze main screen (Trouble search subscreen).

Example use: To select the currently displayed screen as the printing range:
> :DISPlay:ANALysis:TSEarch:PRINt DISPlay

:DISPlay:ANALysis:TSEarch:PRINt?

Response: <type> = <CHARACTER PROGRAM DATA>
Function: Queries the selected printing range for the Analyze main screen (Trouble search subscreen).
Example use: > :DISPlay:ANALysis:TSEarch:PRINt?
< DISP

:DISPlay:ANALysis:TSEarch:SCRoll <scroll>

Parameter: <scroll> = <CHARACTER PROGRAM DATA>

UP	Scroll to the upper screen
DOWN	Scroll to the lower screen
TOP	Shift to the top
BOTTom	Shift to the bottom

Function: Instructs scroll at Trouble search measurement and Select:NG path display of the Analyze main screen(Trouble search subscreen).
Restriction: Invalid in the following case:
When there is no error/alarm data.
Example use: To select scroll to the upper direction:
> :DISPlay:ANALysis:LMONitor:SCRoll UP

:DISPlay:ANALysis:TGRaph:SCRoll <scroll>

Parameter: <scroll> = <CHARACTER PROGRAM DATA>

LEFT	Scroll to the left
RIGHt	Scroll to the right
TOP	Shift to the top
BOTTom	Shift to the bottom

Function: Instructs scroll on the Analyze main screen (Error/Alarm subscreen).
Restriction: Invalid in the following case:
When there is no error/alarm data.
Example use: To select scroll to the right:
> :DISPlay:ANALysis:TGRaph:SCRoll RIGHt

:DISPlay:ANALysis:TGRaph:MARKer <marker>

Parameter: <marker> = <CHARACTER PROGRAM DATA>

LEFT	Shift to the left by 1 div.
RIGHt	Shift to the right by 1 div.

Function: Instructs shift of the marker on the Analyze main screen (Error/Alarm subscreen).
Restriction: Invalid in the following case:
When there is no error/alarm data.
Example use: To shift the marker to the right by 1 div.:
> :DISPlay:ANALysis:TGRaph:MARKer RIGHt

:DISPlay:ANALysis:TGRaph:DATA?

Response: <time>, <alarm1s>, <alarm1c>, <alarm2s>, <alarm2c>, <alarm3s>, <alarm3s>, <alarm3c>, <alarm4s>, <alarm4c>, <alarm5s>, <alarm5c>, <error1>, <error2>

<time> = <year>, <month>, <day>, <hour>, <minute>, <second>

Time indicated by marker

<year> = <NR1 NUMERIC RESPONSE DATA>

Year 0, 1994 to 2093

<month> = <NR1 NUMERIC RESPONSE DATA>

Month 0, 1 to 12

<day> = <NR1 NUMERIC RESPONSE DATA>

Day 0, 1 to 31

<hour> = <NR1 NUMERIC RESPONSE DATA>

Hour 0 to 23

<minute> = <NR1 NUMERIC RESPONSE DATA>

Minute 0 to 59

<second> = <NR1 NUMERIC RESPONSE DATA>

Second 0 to 59

<alarm1s> = <STRING RESPONSE DATA>

Alarm 1 occurrence time (s) indicated by marker

Form1

<alarm1c> = <STRING RESPONSE DATA>

Number of occurrence of alarm 1 indicated by marker data

Form1

<alarm2s> = <STRING RESPONSE DATA>

Alarm 2 occurrence time (s) indicated by marker

Form1

<alarm2c> = <STRING RESPONSE DATA>

Number of occurrence of alarm 2 indicated by marker data

Form1

<alarm3s> = <STRING RESPONSE DATA>

Alarm 3 occurrence time (s) indicated by marker

Form1

<alarm3c> = <STRING RESPONSE DATA>

Number of occurrence of alarm 3 indicated by marker data

Form1

<alarm4s> = <STRING RESPONSE DATA>

Alarm 4 occurrence time (s) indicated by marker

Form1

<alarm4c> = <STRING RESPONSE DATA>

Number of occurrence of alarm 4 indicated by marker data

Form1

<alarm5s> = <STRING RESPONSE DATA>
Alarm 5 occurrence time (s) indicated by marker
Form1
<alarm5c> = <STRING RESPONSE DATA>
Number of occurrence of alarm 5 indicated by marker data
Form1
<error1> = <STRING RESPONSE DATA>
Error count value of data indicated by marker
Form1
<error2> = <STRING RESPONSE DATA>
Error rate value of data indicated by marker
Form2

Function: Queries data indicated by the marker for the Analyze main screen (Error/Alarm subscreen).

Example use:
> :DISPlay:ANALysis:TGRaph:DATA?
< 2000, 12, 25, 12, 54, 30, " 1", " 1", " 0", " 0",
" 104", " 10", " 1", " 1", " 1", " 1",
" 189", " 3.3E-04"

:DISPlay:ANALysis:TGRaph:INTerval <numeric>, <suffix>

Parameter:
<numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1, 15, 60
<suffix> = <CHARACTER PROGRAM DATA>
M minute
S second

Function: Sets a width for 1 graduation of the time base for the Analyze main screen (Error/Alarm subscreen).

Restriction: Invalid in the following case:
・When the :DISPlay:TMENu[:NAME] is other than <"NAME][:JOFF]">, or <PSEQuence[:"JOFF"]>.
・The following restrictions apply to :SENSe:MEASure:GRESolution:
1s: 1s, 1min, 15min, 60min
1min: 1min, 15min, 60min
15min:15min, 60min
60min:60min
・When values less than that specified by :SENSe:MEASure:GRESolution.

Example use: To set 1 graduation to 1 min:
> :DISPlay:ANALysis:TGRaph:INTerval 1, M

:DISPlay:ANALysis:TGRaph:INTerval?

Response: <interval> = <CHARCTER RESPONSE DATA>
Function: Queries the 1 graduation width of time base of the Analyze main screen (Error/Alarm subscreen).
Example use: > :DISPlay:ANALysis:TGRaph:INTerval?
< 1, M

:DISPlay:ANALysis:TGRaph:MDISplay <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Marker OFF
ON or 1 Marker ON
Function: Sets with or without marker display on the Analyze main screen (Error/Alarm subscreen).
Restriction: Invalid in the following case:
・When there is no error/alarm data.
Example use: To select with marker:
> :DISPlay:ANALysis:TGRaph:MDISplay ON

:DISPlay:ANALysis:TGRaph:MDISplay?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1
Function: Queries with or without marker display on the Analyze main screen (Error/Alarm subscreen).
Example use: > :DISPlay:ANALysis:TGRaph:MDISplay?
< 1

:DISPlay:ANALysis:TGRaph:SEARch <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
BEFore Before search
NEXT Next search
Function: Instructs the search type for the Analyze main screen (Error/Alarm subscreen).
Restriction: Invalid in the following case:
・When :DISPlay:ANALysis:TGRaph:MDISplay is <OFF>.
・When <BEFore> is set while there is no measurement point exists foreword.
・When <NEXT> is set while there is no measurement point exists backward.
Example use: To select the Next search:
> :DISPlay:ANALysis:TGRaph:SEARch NEXT

:DISPlay:ANALysis:TGRaph:FROM<numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, [<numeric6>]

Parameter: <DECIMAL NUMERIC PROGRAM DATA>
- <numeric1> = 1994 to 2093 (year)
- <numeric2> = 1 to 12 (month)
- <numeric3> = 1 to 31 (day)
- <numeric4> = 0 to 23 (hour)
- <numeric5> = 0 to 59 (minute)
- <numeric6> = 0 to 59 (second)

When a value other than the interval being set by Graphic resolution, the value is raised to the next number, including the second unit.

Function: Sets the graph display starting position for the Analyze main screen (Error/Alarm subscreen).

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.

Example use: To indicate the graph from 11:30 on July 28, 2000:
> :DISPlay:ANALysis:TGRaph:FROM 2000, 7, 28, 11, 30, 0

:DISPlay:ANALysis:TGRaph:FROM?

Response: <numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, <numeric6>
= <NR1 NUMERIC RESPONSE DATA>

Function: Queries the graph display starting position for the Analyze main screen (Error/Alarm subscreen).

Example use: > :DISPlay:ANALysis:TGRaph:FROM?
< 2000, 7, 28, 11, 30, 0

:DISPlay:ANALysis:TGRaph:ERRor <error1>, <error2>

Parameter: <error1> = <STRING PROGRAM DATA>

"B1"	B1 error
"B2"	B2 error
"B3:HP"	HP-B3 error
"B3:LP"	LP-B3 error
"BIP2"	BIP-2 error
"REI:MS" (SDH)	MS-REI error
"REI:HP" (SDH)	HP-REI error
"REI:LP" (SDH)	LP-REI error
"REI:L" (SONET)	REI-L error
"REI:P" (SONET)	REI-P error
"REI:V" (SONET)	REI-V error
“IEC:HP”	HP-IEC error
“REI:HT”	HP-TC-REI error
“OEI:HP”	HP-OEI error
“IEC:LP”	LP-IEC error
“REI:LT”	LP-TC-REI error
“OEI:LP”	LP-OEI error
“BIP2:N2”	N2 BIP-2 error
“BIT:OH”	OH Bit error
"CODE"	Code error
"FRAMe:M139"	139M FAS
"FRAMe:M45"	45M FAS
"FRAMe:M34"	34M FAS
"FRAMe:M8"	8M FAS
"FRAMe:M2"	2M FAS
"FRAMe:M1_5"	1.5M FAS
"REI:M139"	139M REI error
"REI:M45"	45M REI error
"REI:M34"	34M REI error
"EBIT"	E-Bit
"BIP8"	BIP-8 error
"PARITY"	Parity
"CBIT"	C-Bit
"CRC6"	CRC-6 error
"BIT"	bit error
"CIDPKT"	CID PKT

* Parameters without (SDH) or (SONET)indication can be used in either SDH or SONET

<error2> = <CHARACTER PROGRAM DATA>

EC	Count
ER	Rate

Function: Sets an error item to be displayed to the graph on the Analyze main screen (Error/Alarm subscreen).
Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.
Example use: To display the error rate of bit errors on the graph:
> :DISPlay:ANALysis:TGRaph:ERRor "BIT", ER

:DISPlay:ANALysis:TGRaph:ERRor?

Response: <error1>, <error2>
<error1> = <STRING RESPONSE DATA>
<error2> = <CHARACTER RESPONSE DATA>
Function: Queries an error item for graphic display of the Analyze main screen (Error/Alarm subscreen).
Example use: > :DISPlay:ANALysis:TGRaph:ERRor?
< "BIT", ER

:DISPlay:ANALysis:TGRaph:ALARm1 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>

"ALL"		ALL
"POWer"		Power fail
"LOS"		LOS
"LOF"		LOF
"OOF"		OOF
"AIS:MS"	(SDH)	MS-AIS
"AIS:L"	(SONET)	AIS-L
"RDI:MS"	(SDH)	MS-RDI
"RDI:L"	(SONET)	RDI-L
"AIS:AU"	(SDH)	AU-AIS
"AIS:P"	(SONET)	AIS-P
"LOP:AU"	(SDH)	AU-LOP
"LOP:P"	(SONET)	LOP-P
"RDI:HP"	(SDH)	HP-RDI
"RDI:P"	(SONET)	RDI-P
"SLM:HP"	(SDH)	HP-SLM
"PLM:P"	(SONET)	PLM-P
“TIM:HP”	(SDH)	HP-TIM
“TIM:P”	(SONET)	TIM-P
“UNEQ:HP”	(SDH)	HP-UNEQ
“UNEQ:P”	(SONET)	UNEQ-P
“AIS:HV”		HP-VC-AIS
“ISF:HP”		HP-ISF
“FAS:HP”		HP-FAS
“IAIS:HP”		HP-IncAIS
“TRDI:HP”		HP-TC-RDI
“ODI:HP”		HP-ODI

"AIS:TU"	(SDH)	TU-AIS
"AIS:V"	(SONET)	AIS-V
"LOP:TU"	(SDH)	TU-LOP
"LOP:V"	(SONET)	LOP-V
"RDI:LP"	(SDH)	LP-RDI
"RDI:V"	(SONET)	RDI-V
"SLM:LP"	(SDH)	LP-SLM
"PLM:V"	(SONET)	PLM-V
"RFI:LP"	(SDH)	LP-RFI
"RFI:V"	(SONET)	RFI-V
"LOM:TU"	(SDH)	TU-LOM
"LOM:V"	(SONET)	LOP-V
“TIM:LP”	(SDH)	LP-TIM
“TIM:V”	(SONET)	TIM-V
“UNEQ:LP”	(SDH)	LP-UNEQ
“UNEQ:V”	(SONET)	UNEQ-V
“AIS:LV”		LP-VC-AIS
“FAS:LP”		LP-FAS
“IAIS:LP”		LP-IncAIS
“TRDI:LP”		LP-TC-RDI
“ODI:LP”		LP-ODI
"AIS:M139"		139M AIS
"AIS:M45"		45M AIS
"AIS:M34"		34M AIS
"AIS:M8"		8M AIS
"AIS:M2"		2M AIS
"AIS:M1_5"		1.5M AIS
"LOF:M139"		139M LOF
"LOF:M45"		45M LOF
"LOF:M34"		34M LOF
"LOF:M8"		8M LOF
"LOF:M2"		2M LOF
"LOF:M1_5"		1.5M LOF
"LOF:MF"		MF LOF
"RDI:M139"		139M RDI
"RDI:M45"		45M RDI
"RDI:M34"		34M RDI
"RDI:M8"		8M RDI
"RDI:M2"		2M RDI
"RDI:M1_5"		1.5M RDI
"RDI:MF"		MF RDI
“SYN:OH”		OH sync
“AIS:HG”		HG AIS
“REC:HG”		HG REC
“BAI:S15”		BAIS1.5
“AIS:S15”		SigAIS1.5

“SIG:OOF”	SigOOF
"PATTern"	Sync. loss

* Parameters without (SDH) or (SONET) indication can be used in either SDH or SONET

Function: Sets an alarm item to be displayed to alarm1 of the Analyze main screen (Error/Alarm subscreen).

Restriction: Invalid in the following case:
- When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.

Example use: To display Power fail to alarm1:
> :DISPlay:ANALysis:TGRaph:ALARm1 "POWer"

:DISPlay:ANALysis:TGRaph:ALARm1?

Response: <alarm> = <STRING RESPONSE DATA>

Function: Queries an alarm item displayed to alarm1 of the Analyze main screen (Error/Alarm subscreen).

Example use: > :DISPlay:ANALysis:TGRaph:ALARm1?
< "POW"

:DISPlay:ANALysis:TGRaph:ALARm2 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>
Same as those of :DISPlay:ANALysis:TGRaph:ALARm1.

Function: Sets an alarm item to be displayed to alarm2 of the Analyze main screen (Error/Alarm subscreen).

:DISPlay:ANALysis:TGRaph:ALARm2?

Response: <alarm> = <STRING RESPONSE DATA>
Same as those of :DISPlay:ANALysis:TGRaph:ALARm1?

Function: Queries an alarm item displayed to alarm2 of the Analyze main screen (Error/Alarm subscreen).

:DISPlay:ANALysis:TGRaph:ALARm3 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>
Same as those of :DISPlay:ANALysis:TGRaph:ALARm1.

Function: Sets an alarm item to be displayed to alarm3 of the Analyze main screen (Error/Alarm subscreen).

:DISPlay:ANALysis:TGRaph:ALARm3?

Response: <alarm> = <STRING RESPONSE DATA>
Same as those of :DISPlay:ANALysis:TGRaph:ALARm1?

Function: Queries an alarm item displayed to alarm3 of the Analyze main screen (Error/Alarm subscreen).

:DISPlay:ANALysis:TGRaph:ALARm4 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>
Same as those of :DISPlay:ANALysis:TGRaph:ALARm1.
Function: Sets an alarm item to be displayed to alarm4 of the Analyze main screen (Error/Alarm subscreen).

:DISPlay:ANALysis:TGRaph:ALARm4?

Response: <alarm> = <STRING RESPONSE DATA>
Same as those of :DISPlay:ANALysis:TGRaph:ALARm1?
Function: Queries an alarm item displayed to alarm4 of the Analyze main screen (Error/Alarm subscreen).

:DISPlay:ANALysis:TGRaph:ALARm5 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>
Same as those of :DISPlay:ANALysis:TGRaph:ALARm1.
Function: Sets an alarm item to be displayed to alarm5 of the Analyze main screen (Error/Alarm subscreen).

:DISPlay:ANALysis:TGRaph:ALARm5?

Response: <alarm> = <STRING RESPONSE DATA>
Same as those of :DISPlay:ANALysis:TGRaph:ALARm1?
Function: Queries an alarm item displayed to alarm5 of the Analyze main screen (Error/Alarm subscreen).

:DISPlay:ANALysis:TGRaph:PRINt <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

DISPlay	Display
ALL	All
AFTer	After
BEFore	Before

Function: Designates a printing range for the Analyze main screen (Error/Alarm subscreen).
Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.
Example use: To print the currently displayed screen range:
> :DISPlay:ANALysis:TGRaph:PRINt DISPlay

:DISPlay:ANALysis:TGRaph:PRINt?

Response: <type> = <CHARACTER PROGRAM DATA>
Function: Queries the selected printing range for the Analyze main screen (Error/Alarm subscreen).
Example use: > :DISPlay:ANALysis:TGRaph:PRINt?
< DISP

:DISPlay:ANALysis:TGRaph:TITLe <title>

Parameter: <title> = <STRING PROGRAM DATA>
"Title character string" Title character string (Up to 15 characters)
Character length (0 to 15 characters) and double-quotation marks are usable.

Function: Specifies the trace graph title.

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <PSEQuence[:"JOFF"]>.

Example use: When "TITLE-DISP" is displayed as the trace graph title.
> :DISPlay:ANALysis:TGRaph:TITLe "TITLE-DISP"

:DISPlay:ANALysis:TGRaph:TITLe?

Response: <title> = <STRING RESPONSE DATA>

Function: Queries the trace graph title.

Example use: > :DISPlay:ANALysis:TGRaph:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:OHMonitor:TYPE <ohmonitor>

Parameter: <ohmonitor> = <CHRACTER PROGRAM DATA>

OHead	OH
PMSP	PTR, K1/K2
PTRace	Path trace
DFRame	DSn frame
TTRace	Trail trace
IBYTe	Info. Byte
PAYLoad	Payload
TANDem	Tandem
SIGNal	Signalling

Function: Selects a monitor item for the Analyze main screen (OH monitor subscreen).

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <"PSEQuence[: JOFF]">.
・When <OHead>, <PMSP>, or <PTRace> is set while the :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
・When <PFRame> is set while :SENSe:TELecom:MAPPing:TYPE is <VC4_BLK>, <VC3_45MASY>, <VC3_BLK>, <VC2_BLK>, <VC2_MC>, <VC12_BLK>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>, <VC11_BYL>, or <VC11_BLK>.
・When <PFRame> is set while :SENSe:TELecom:BRATe is <M45> or <M1_5>.
・When <PFRame> is set while :SENSe:TELecom:DEMUX:MRATe is <OFF>, and :SENSe:TELecom:FRAMing is <OFF>.
・When <TTRace> is set while :SENSe:TELecom:BRATe is other than

<M139> or <M45>.
・When <SIGNal> is set while the option 09 Japan mapping is not installed.

Example use: To select the Path trace:
> :DISPlay:ANALysis:OHMonitor:TYPE PTRace

:DISPlay:ANALysis:OHMonitor:TYPE?

Response: <ohmonitor> = <CHRACTER RESPONSE DATA>

OH	OH
PMSP	PTR, K1/K2
PTR	Path trace
DFR	DSn frame
TTR	Trail trace
IBYT	Info. byte
PAYL	Payload
TANDem	Tandem
SIGNal	Signalling

Function: Queries the monitor item of the Analyze main screen (OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:TYPE?
< PTR

:DISPlay:ANALysis:OHMonitor:SOHCh<numeric>
:DISPlay:ANALysis:OHMonitor:TOHCh <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1

Function: Queries the SOH/TOH monitor channel on the Analyze main screen (OH monitor subscreen).

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <PSEQuence[:"JOFF"]>.
・When :DISPlay:ANALysis:OHMonitor:TYPE is other than <OH>.
・When :SENSe:TELecom:BRATe is <M156>, <M156CMI>, <M52B3ZS>, <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>.
・When :SENSe:TELecom:MAPPing:ROUTe is other than the value set in <AUG>.

Example use: > :DISPlay:ANALysis:OHMonitor:SOHCh 4

:DISPlay:ANALysis:OHMonitor:SOHCh?
:DISPlay:ANALysis:OHMonitor:TOHCh?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
1 to 64 Step value: 1

Function: Queries the SOH/TOH monitor channel for the Analyze main screen (OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:SOHCh?
< 4

:DISPlay:ANALysis:OHMonitor:SOHData?
:DISPlay:ANALysis:OHMonitor:TOHData?

Response: <string> = <STRING RESPONSE DATA>
SOH/TOH monitor data (Hex indication)
When no data exists:

・Bit rate : 622M, 156M

”--, --, --, --, --, --, --, --, --,
--, --, --, --, --, --, --, --, --,
--, --, --, --, --, --, --, --, --,
--, --, --, --, --, --, --, --, --,
--, --, --, --, --, --, --, --, --,
--, --, --, --, --, --, --, --, --,
--, --, --, --, --, --, --, --, --,
--, --, --, --, --, --, --, --, --,
--, --, --, --, --, --, --, --, --, ”

・Bit rate : 52MB3ZS

”--, --, --,
--, --, --,
--, --, --,
--, --, --,
--, --, --,
--, --, --,
--, --, --,
--, --, --,
--, --, --, ”

Function: Queries the SOH/TOH monitor data of the Analyze main screen (OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:SOHData?
< " 01, 02, 03, 04, 05, 06, 07, 08, 09
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09, ”

:DISPlay:ANALysis:OHMonitor:SSMessage?

Response: <string>, <s1bit>
<string> = <STRING RESPONSE DATA>
Monitor data (plain language indication) of S1 (5 to 8 bits)
"Quality unknown" (0000
"G.811" (0010)
"G.812 transit" (0100)
"G.812 local" (1000)
"SETS" (1011)
"Do not use for sync." (1111)
<s1bit> = <STRING RESPONSE DATA>
Monitor data (bit indication) of S1 (5 to 8 bits)
"0000" to "1111"

Function: Queries the monitor data of S1 (5 to 8 bits) on OH monitor.

Example use: > :DISPlay:ANALysis:OHMonitor:SSMessage?
< "Quality unknown", "0000"

:DISPlay:ANALysis:OHMonitor:POHData?

Response: <pohvc4>, <pohvc3>, <pohvc2/1>
<pohvc4> = <STRING RESPONSE DATA>
POH-VC4 monitor data (Hex indication)
When no data exists: "--, --, --, --, --, --, --, --, --",
<pohvc3> = <STRING RESPONSE DATA>
POH-VC3 monitor data (Hex indication)
When no data exists: "--, --, --, --, --, --, --, --, --",
<pohvc2/1> = <STRING RESPONSE DATA>
POH-VC1 monitor data (Hex indication)
When no data exists: "--, --, --, --",

Function: Queries the POH monitor data of the Analyze main screen (OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:POHData?
< "01, 02, 03, 04, 05, 06, 07, 08, 09",
"--, --, --, --, --, --, --, --, --",
"01, 02, 03, 04"

:DISPlay:ANALysis:OHMonitor:SLABel?
:DISPlay:ANALysis:OHMonitor:PLABel?

Response: <pohvc4>, <bitvc4>, <pohvc3>, <bitvc3>
<pohvc4> = <STRING RESPONSE DATA>
Monitor data C2 (plain language indication) of POH-VC4

(SDH)

"Unequipped"	(0000 0000)
"Equipped-non-specific"	(0000 0001)
"TUG structure"	(0000 0010)
"Locked TU"	(0000 0011)
"Async. 34M or 45M(C-3)"	(0000 0100)
"Async. 139M(C-4)"	(0001 0010)
"ATM mapping"	(0001 0011)
"MAN(DQDB)mapping"	(0001 0100)
"FDDI mapping"	(0001 0101)
"O.181 mapping"	(1111 1110)
"VC-AIS"	(1111 1111)

(SONET)

"Unequipped"	(0000 0000)
"Equipped-non-specific"	(0000 0001)
"VT structure"	(0000 0010)
"Locked VT"	(0000 0011)
"Async. Mapping DS3"	(0000 0100)
"Async. Mapping DS4NA"	(0001 0010)
"Mapping for ATM"	(0001 0011)
"Mapping for DQDB"	(0001 0100)
"Async. Mapping FDDI"	(0001 0101)
"AIS-P"	(1111 1111)

<bitvc4> = <STRING RESPONSE DATA>
Monitor data C2 (bit indication) of POH-VC4
"00000000" to "11111111"
<pohvc3> = <STRING RESPONSE DATA>
Monitor data C2 (plain language indication) of POH-VC3

(SDH)

"Unequipped"	(0000 0000)
"Equipped-non-specific"	(0000 0001)
"TUG structure"	(0000 0010)
"Locked TU"	(0000 0011)
"Async. 34M or 45M(C-3)"	(0000 0100)
"Async. 139M(C-4)"	(0001 0010)
"ATM mapping"	(0001 0011)
"MAN(DQDB)mapping"	(0001 0100)
"FDDI mapping"	(0001 0101)
"O.181 mapping"	(1111 1110)
"VC-AIS"	(1111 1111)

(SONET)

"Unequipped"	(0000 0000)
"Equipped-non-specific"	(0000 0001)
"VT structure"	(0000 0010)
"Locked VT"	(0000 0011)
"Async. Mapping DS3"	(0000 0100)
"Async. Mapping DS4NA"	(0001 0010)
"Mapping for ATM"	(0001 0011)
"Mapping for DQDB"	(0001 0100)
"Async. Mapping FDDI"	(0001 0101)
"AIS-P"	(1111 1111)

<bitvc3> = <STRING RESPONSE DATA>
Monitor data C2 (bit indication) of POH-VC3
"00000000" to "11111111"

Function: Queries the monitor data of C2 (1 to 8 bits) on OH monitor.
Example use: > :DISPlay:ANALysis:OHMonitor:SLABel?
< "Unequipped", "00000000", "VC-AIS", "11111111"

:DISPlay:ANALysis:OHMonitor:VLABel?

Response: <pohvc2/1>, <bitvc2/1>
<pohvc2/1> = <STRING RESUPONSE DATA>
POH-VC2/1 monitor data of V5 (plain language indication)
(SDH)

"Unequipped"	(000)
"Unequipped-non-specific"	(001)
"Asynchronous"	(010)
"Bitsynchronous"	(011)
"Bytesynchronous"	(100)
"Reserved"	(101)
"O.181 mapping"	(110)
"VC-AIS"	(111)

(SONET)

"Unequipped"	(000)
"Unequipped-non-specific"	(001)
"Asynchronous"	(010)
"Bitsynchronous"	(011)
"Bytesynchronous"	(100)
"Reserved"	(101)
"Reserved"	(110)
"AIS-P"	(111)

<bitvc2/1> = <STRING RESUPONSE DATA>
POH-VC2/1 monitor data of V5(bit indication)
"000" to "111"
When no analyzed data exists
"----------", "---"

Function: Queries the monitor data of V5 on OH monitor.
Example use: > :DISPlay:ANALysis:OHMonitor:VLABel?
< "VC-AIS", "111"

:DISPlay:ANALysis:OHMonitor:G1Label?

Response: <vc4>, <bitvc4>, <vc3>, <bitvc3>
<vc3>, <vc4> = <STRING RESPONSE DATA>
OH monitor data of G1 (plain language indication)

"No remote defect"	(000)
"No remote defect"	(001)
"Remote payload defect"	(010)
"No remote defect"	(011)
"Remote defect"	(100)
"Remote server defect"	(101)
"Remote connectivity defect"	(110)
"Remote defect"	(111)

<bitvc3>, <bitvc4> = <STRING RESPONSE DATA>
OH monitor data of G1 (bit indication)
"000" to "111"
When no analyzed data exists
"----------", "---"

Function: Queries the VC4(STS3) and VC3(STS1) monitor data of G1 (5 to 7 bits) on OH monitor.
Example use: > :DISPlay:ANALysis:OHMonitor:G1Label?
< "No remote defect", "000", "No remote defect", "000"

:DISPlay:ANALysis:OHMonitor:K4Label?
:DISPlay:ANALysis:OHMonitor:Z7Label?

Response: <pohg1>, <bitg1>

<pohg1> = <STRING RESPONSE DATA>

OH monitor data of K4/Z7 (plain language indication)

"No remote defect"	(000)
"No remote defect"	(001)
"Remote payload defect"	(010)
"No remote defect"	(011)
"Remote defect"	(100)
"Remote server defect"	(101)
"Remote connectivity defect"	(110)
"Remote defect"	(111)

<bitg1> = <STRING RESPONSE DATA>

OH monitor data of K4/Z7 (bit indication)

"000" to "111"

When no analyzed data exists

"----------", "---"

Function: Queries the monitor data of K4/Z7 (5 to 7 bits) on OH monitor.

Example use: > :DISPlay:ANALysis:OHMonitor:Z7Label?

< "No remote defect", "000"

:DISPlay:ANALysis:OHMonitor:MSP?

Response: <request1>, <request2>, <channel1>, <channel2>, <bridge1>, <bridge2>, <arch1>, <arch2>, <reserved2>

<request1> = <CHARACTER RESPONSE DATA>

K1 (1 to 4bits) monitor data (plain language indication)

NREQ	No request(0000)
DNR	Do not revet(0001)
RREQ	Reverce request(0010)
UUS3	Unused(0011)
EXER	Exercise(0100)
UUS5	Unused(0101
WTR	Wait to restore(0110)
UUS7	Unused(0111)
MSW	Manual switch(1000)
UUS9	Unused(1001)
SDLP	Signal degrade low priority(1010)
SDHP	Signal degrade high priority(1011)
SFLP	Signal fall low priority(1100)
SFHP	Signal fall high priority(1101)
FSW	Forced switch(1110)
LOPR	Lockout of protection(1111)

<request2> = <STRING RESPONSE DATA>
K1 (1-4bit) monitor data (bit indication)
"0000" to "1111"
<channel1> = <CHARACTER RESPONSE DATA>
K1 (5 to 8bits) monitor data (plain language indication)

NCH	Null channel(0000)
WC1	Working channel1(0001)
WC2	Working channel2(0010)
WC3	Working channel3(0011)
WC4	Working channel4(0100)
WC5	Working channel5(0101)
WC6	Working channel6(0110)
WC7	Working channel7(0111)
WC8	Working channel8(1000)
WC9	Working channel9(1001)
WC10	Working channel10(1010)
WC11	Working channel11(1011)
WC12	Working channel12(1100)
WC13	Working channel13(1101)
WC14	Working channel14(1110)
ETCH	Extra traffic channel(1111)

<channel2> = <STRING RESPONSE DATA>
K1 (5 to 8bits) monitor data (bit indication)
"0000" to "1111"
<bridge1> = <CHARACTER RESPONSE DATA>
K2 (1 to 4bits) monitor data (plain language indication)

NCH	Null channel(0000)
WC1	Working channel1(0001)
WC2	Working channel2(0010)
WC3	Working channel3(0011)
WC4	Working channel4(0100)
WC5	Working channel5(0101)
WC6	Working channel6(0110)
WC7	Working channel7(0111)
WC8	Working channel8(1000)
WC9	Working channel9(1001)
WC10	Working channel10(1010)
WC11	Working channel11(1011)
WC12	Working channel12(1100)
WC13	Working channel13(1101)
WC14	Working channel14(1110)
ETCH	Extra traffic channel(1111)

<bridge2> = <STRING RESPONSE DATA>
K2 (1 to 4bits) monitor data (bit indication)
"0000"to"1111"
<arch1> = <CHARACTER RESPONSE DATA>
K2 (5bit) monitor data (plain language indication)
OPOA 1+1 architecture(0)
OCNA 1:n architecture(1)
<arch2> = <STRING RESPONSE DATA>
K2 (5bit) monitor data (bit indication)
"0" to "1"
<reserved2> = <STRING RESPONSE DATA>
K2 (6 to 8bits) monitor data (bit indication)
"000" to "111"

Function: Queries the K1/K2 monitor data of the Analyze main screen (OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:MSP?
< SDHP, "1101", WC14, "1110", WC14, "1110", OCNA, "1", "101"

:DISPlay:ANALysis:OHMonitor:POINter?

Response: <andf>, <ass>, <aid>, <tndf>, <tss>, <tid>
<andf> = <STRING RESPONSE DATA>
AU-PTR(NDF) monitor data (bit indication)
"----", "0000"to"1111"
<ass> = <STRING RESPONSE DATA>
AU-PTR (SS) monitor data (bit indication)
"--", "00"to"11"
<aid> = <STRING RESPONSE DATA>
AU-PTR (ID) monitor data (decimal indication)
"----", "0000" to "1023"
<tndf> = <STRING RESPONSE DATA>
TU-PTR (NDF) monitor data (bit indication)
"----", "0000"to"1111"
<tss> = <STRING RESPONSE DATA>
TU-PTR (SS) monitor data (bit indication)
"--", "00" to "11"
<tid> = <STRING RESPONSE DATA>
TU-PTR (ID) monitor data (decimal indication)
"----", "0000" to "1023"

Function: Queries the Pointer monitor data of the Analyze main screen (OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:POINter?
< "1001", "10", "1023", "0110", "01", "0001"

:DISPlay:ANALysis:OHMonitor:PTRace:J0?

Response: <crc>, <tim>, <trdata>
<crc> = <STRING RESPONSE DATA>
CRC check result of J0
Form4
<tim> = <STRING RESPONSE DATA>
TIM check result of J0
Form4
<trdata> = <STRING RESPONSE DATA>
Monitor result of J0 (fixed to 64 characters)
Characters are replaced to '?' when outputting characters other than 0x20-0x7e.

Function: Queries the Path trace (J0) monitor data of the Analyze main screen (OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:PTRace:J0?
< "Unacceptable", "0123456789 abcdefghijklmnopqrstuvwxyz _ABCDEFGHIJKLMNOPQRSTUVWXYZ",

:DISPlay:ANALysis:OHMonitor:PTRace:J1H?

Response: <crc>, <tim>, <trdata>
<crc> = <STRING RESPONSE DATA>
CRC check result of J1-HP
Form4
<tim> = <STRING RESPONSE DATA>
Results of TIM check of J1-HP
Form4
<trdata> = <STRING RESPONSE DATA>
Monitor result of J1-HP (fixed to 64 characters)
Characters are replaced to '?' when outputting characters other than 0x20-0x7e.

Function: Queries the Path trace (J1-HP) monitor data of the Analyze main screen

(OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:PTRace:J1H?
< "Unacceptable", "0123456789 abcdefghijklmnopqrstuvwxyz _ABCDEFGHIJKLMNOPQRSTUVWXYZ",

:DISPlay:ANALysis:OHMonitor:PTRace:J1L?

Response: <crc>, <tim>, <trdata>
<crc> = <STRING RESPONSE DATA>
CRC check result of J1-LP
Form4
<tim> = <STRING RESPONSE DATA>
Results of TIM check of J1-LP
Form4
<trdata> = <STRING RESPONSE DATA>
Monitor result of J1-LP (fixed to 64 characters)
Characters are replaced to '?' when outputting characters other than 0x20-0x7e.

Function: Queries the Path trace (J1-LP) monitor data of the Analyze main screen (OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:PTRace:J1L?
< "Unacceptable", "0123456789 abcdefghijklmnopqrstuvwxyz
_ABCDEFGHIJKLMNOPQRSTUVWXYZ",

:DISPlay:ANALysis:OHMonitor:PTRace:J2?

Response: <crc>, <tim>, <trdata>
<crc> = <STRING RESPONSE DATA>
CRC check result of J2
Form4
<tim> = <STRING RESPONSE DATA>
Results of TIM check of J2
Form4
<trdata> = <STRING RESPONSE DATA>
Monitor result of J2 (fixed to 64 characters)
Characters are replaced to '?' when outputting characters other than 0x20-0x7e.

Function: Queries the Path trace (J2) monitor data of the Analyze main screen (OH monitor subscreen).

Example use: > :DISPlay:ANALysis:OHMonitor:PTRace:J2?
< "Unacceptable", "0123456789 abcdefghijklmnopqrstuvwxyz
_ABCDEFGHIJKLMNOPQRSTUVWXYZ",

:DISPlay:ANALysis:OHMonitor:PFRame <display>

Parameter: <display> = <CHRACTER PROGRAM DATA>

FAS139	FAS139M
FAS34	FAS 34M
FAS8	FAS 8M
FW2	FW 2M
NFW2	NFW 2M
MFW2	MFW 2M

Function: Selects the display items of the PDH frame.
Restriction: Invalid in the following case:
・When <FAS139> is set at non-measurement item in FAS139M.
・When <FAS34> is set at non-measurement item in FAS34M.
・When <FAS8> is set at non-measurement item in FAS8M.
・When <FW2>, <NFW2>, or <NFW2> is set at non-measurement item in FAS2M.
・When <MFW2> is set while :SENSe:TELecom:M2:SIGNaling is <OFF>.
Example use: When the FAS139 is selected.
> :DISPlay:ANALysis:OHMonitor:PFRame FAS139

:DISPlay:ANALysis:OHMonitor:PFRame?

Response: <display>, <pattern>
<display> = <CHRACTER RESPONSE DATA>
<pattern> = <STRING RESPONSE DATA>

"XXXXXXXXXXXX"	FAS139
"XXXXXXXXXX"	FAS34
"XXXXXXXXXX"	FAS8
"XXXXXXXX"	FW2
"XXXXXXXX"	NFW2
"XXXXXXXX"	MFW2

Function: Queries the patterns of the PDH frame monitor.
Example use: > :DISPlay:ANALysis:OHMonitor:PFRame?
< FAS139, "001001000111"

:DISPlay:ANALysis:OHMonitor:PAYLoad?

Response: <string> = <STRING RESPONSE DATA>
Payload monitor data(Hex indication)
When no analyzed data exists:

・Bit rate : 9953, 2488M, 622M, 156M	・Bit rate : 52M
"--, --, --, --, --, --, --, --, --,	"--, --, --,
"--, --, --, --, --, --, --, --, --,	"--, --, --,
"--, --, --, --, --, --, --, --, --,	"--, --, --,
"--, --, --, --, --, --, --, --, --,	"--, --, --,
"--, --, --, --, --, --, --, --, --,	"--, --, --,
"--, --, --, --, --, --, --, --, --,	"--, --, --,
"--, --, --, --, --, --, --, --, --,	"--, --, --,
"--, --, --, --, --, --, --, --, --,	"--, --, --,
"--, --, --, --, --, --, --, --, --,"	"--, --, --,"

Function: Queries the Payload monitor data of the Analyze main screen (OH monitor).

Example use: > :DISPlay:ANALysis:OHMonitor:PAYLoad?
< " 01, 02, 03, 04, 05, 06, 07, 08, 09
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09,
01, 02, 03, 04, 05, 06, 07, 08, 09, ”

:DISPlay:ANALysis:OHMonitor:PCH <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 step value: 1
Function: Sets the channels for the OH monitor (Payload).
Restriction: Invalid in the following case:
・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2> or <M1_5>.
Example use: To set to the channel1:
> :DISPlay:ANALysis:OHMonitor:PCH 1

:DISPlay:ANALysis:OHMonitor:PCH?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the channels for the OH monitor (Payload).
Example use: > :DISPlay:ANALysis:OHMonitor:PCH?
< 1

:DISPlay:ANALysis:OHMonitor:PCOLumn <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
to 16704÷#/1 step value: 1
Function: Sets the column position for the OH monitor (Payload).
Restriction: Invalid in the following case:
・When :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2> or <M1_5>.
Example use: To set to the column position to 1:
> :DISPlay:ANALysis:OHMonitor:PCOLumn 1

:DISPlay:ANALysis:OHMonitor:PCOLumn?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the column position for the OH monitor:
Example use: > :DISPlay:ANALysis:OHMonitor:PCOLumn?
< 1

:DISPlay:ANALysis:OHMonitor:TTRace?

Response <crc>,<mismatch>,<trail>
<crc> = <STRING RESPONSE DATA>
CRC check result of trail trace
Form4
<mismatch> = <STRING RESPONSE DATA>
TR mismatch check result of trail trace
Form4
<trail> = <STRING RESPONSE DATA>
Monitor result of trail trace (fixed on 16 characters)
When characters other than 0x20-0x7e are outputted, they are replaced to '?".
"abcdefghijklmnop"
When no data exists, the following is outputted.
< "------------","------------","----------------"

Function Queries the monitor data of trail trace for OH monitor.

Restriction Invalid in the following case:
:DISPlay:ANALysis:OHMonitor:TYPE is other than Trail trace.

Example use > :DISPlay:ANALysis:OHMonitor:TTRace?
< "Unacceptable","Unacceptable","abcdefghijklmnop"

:DISPlay:ANALysis:OHMonitor:IBData?

Response: <channel> = <NUMERIC RESPONSE DATA>
1 to 31 monitor channel
<pattern> = <STRING RESPONSE DATA>
"00000000"

Function: Queries the monitor data(8bit) of appointed channel in the Information area

Example use: To set for Monitoring the byte (8bit) of 64k channel specified to 2M.
> :DISPlay:ANALysis:OHMonitor: IBData?
< 1, "00000000"

:DISPlay:ANALysis:OHMonitor:IBCHannel

Parameter: <channel> = <NUMERIC RESPONSE DATA>
1 to 31 monitor channel

Function: Sets an monitor channel of Information byte in the Analyze screen (OH monitor subscreen).

Restriction: Invalid in the following case:
When :Display:ANALysis:OHMonitor:TYPE is set to other than Info. Byte.

Example use: To set the monitor channel 1 of Info. byte of OH monitor screen.
> :DISPlay:ANALysis:OHMonitor:IBCHannel 1

:DISPlay:ANALysis:OHMonitor:IBCHannel?

Response: **<channel> = <NUMERIC RESPONSE DATA>**

1 to 31 monitor channel

Function: Queries the monitor channel of Information byte in the Analyze screen (OH monitor sub screen).

Restriction: Invalid in the following case:
When :Display:ANALysis:OHMonitor:TYPE is set to other than Info. Byte.

Example use: To query the monitor channel of Info. byte of OH monitor screen.
> :DISPlay:ANALysis:OHMonitor:IBCHannel?
> :1

:DISPlay:ANALysis:OHMonitor:PAUSe <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Pause OFF
ON or 1	Pause ON

Function: Specifies Pause on the OH monitor of the Analyze screen.

Restriction: Invalid in the following case:
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <PSEQuence[:"JOFF"]>.
・When :SENSe:TELecom:BRATe is <M1_5>.
When :SENSe:TELecom:BRATe is <M45> while 45M-2M option is not installed.

Example use: To set Pause ON on the OH monitor.
> :DISPlay:ANALysis:OHMonitor:PAUSe ON

:DISPlay:ANALysis:OHMonitor:PAUSe?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Pause OFF
1	Pause ON

Function: Queries Pause status on the OH monitor of the Analyze screen.

Example use: > :DISPlay:ANALysis:OHMonitor:PAUSe?

:DISPlay:ANALysis:OHMonitor:TANDem?

Response:

(When Monitor is N1-HP(Type2), N1-LP(Type2) or N2)
<frame1-8>, <frame9-72>, <frame73>, <frame74>, <frame75>, <frame76>
<frame1-8> = <STRING RESPONSE DATA>
"0000000000000000" to "1111111111111111"
<frame9-72> = <STRING RESPONSE DATA>
"00" to "FF" (fixed on 16 byte)
<frame73> = <STRING RESPONSE DATA>
"00" to "11"
<frame74> = <STRING RESPONSE DATA>
"00" to "11"
<frame75> = <STRING RESPONSE DATA>
"00" to "11"
<frame76> = <STRING RESPONSE DATA>
"00" to "11"

(When Monitor is N1-HP(Type1)
<flag>, <sapi>, <tei>, <type>, <eic>, <lic>, <unit>, <fic>, <fcs>
<flag> = <STRING RESPONSE DATA>
"00000000" to "11111111" (BIN type)
<sapi> = <STRING RESPONSE DATA>
"00000000" to "11111111" (BIN type)
<tei> = <STRING RESPONSE DATA>
"00000000" to "11111111" (BIN type)
<type> = <STRING RESPONSE DATA>
"00000000" to "11111111" (BIN type)
<eic> = <STRING RESPONSE DATA>
"00" to "FF" (fixed on 10 byte)
<lic> = <STRING RESPONSE DATA>
"00" to "11" (fixed on 11 byte)
<fic> = <STRING RESPONSE DATA>
"00" to "FF" (fixed on 10 byte)
<uint> = <STRING RESPONSE DATA>
"00" to "FF" (fixed on 6 byte)
<fic> = <STRING RESPONSE DATA>
"00" to "FF" (fixed on 38 byte)
<fcs> = <STRING RESPONSE DATA>
"0000" to "FFFF" (HEX type)

Function: Queries the Tandem monitor data.

Example use:
```
> :DISPlay:ANALysis:OHMonitor:TANDem?
<"1111111111111110, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26,
 00, 00, 00, 00"
```

:DISPlay:ANALysis:OHMonitor:TCSelect <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

N1HP1	N1-HP(Type1)
N1HP2	N1-HP(Type2)
N1LP2	N1-LP(Type2)
N2	

Function: Sets the Tandem connection monitor type of the Analyze screen (OH monitor sub screen).

Example use: To set the Tandem connection monitor type to N1-HP(Type1).
> :DISPlay:ANALysis:OHMonitor:TCSelect N1HP1

:DISPlay:ANALysis:OHMonitor:TCSelect?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the Tandem connection monitor type of the Analyze screen (OH monitor sub screen).

Example use: To query the Tandem connection monitor type to N1-HP(Type1).
> :DISPlay:ANALysis:OHMonitor:TCSelect?
< N1HP1

:DISPlay:ANALysis:OHMonitor:ASCII <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

HEX	
ASCII	

Function: Switch the Tandem connection (TC-API#9-#72) display of the Analyze screen (OH monitor sub screen).

Example use: To switch Tandem connection (TC-API#9-#72) display to ASCII.
> :DISPlay:ANALysis:OHMonitor:ASCII ASCII

:DISPlay:ANALysis:OHMonitor:ASCII?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the switch of the Tandem connection (TC-API#9-#72) display of the Analyze screen (OH monitor sub screen).

Example use: To query the switch of the Tandem connection (TC-API#9-#72) display.
> :DISPlay:ANALysis:OHMonitor:ASCII?
< ASCII

:DISPlay:ANALysis:OHMonitor:SIGDATA?

Response:

(at 64multiframe)
(at sig#1)
<fs>, <ais>, <15mbais>, <bais>, <loopocu>, <pty>, <berr>, <loop2>, <lp>,
<trace>, <ress>, <resu>
(at sig#2)
<fs>, <ais>, <kx>, <bais>, <loop15m>, <pty>, <berr>, <lp>, <trace>, <ress>,
<resu>
(at sig#3)
<fs>, <ais>, <ky>, <bais>, <pty>, <berr>, <lp>, <trace>, <ress>, <resu>
(at sig#4)
<fs>, <ais>, <kz>, <bais>, <pty>, <berr>, <lp>, <trace>, <ress>, <resu>
(at 8multiframe)
(at sig#1)to(at sig#4)
<fs>
<fs> = <STRING RESPONSE DATA>
"00000000" to "11111111"
<ais> = <STRING RESPONSE DATA>
"000000" to "111111"
<15mbais> = <STRING RESPONSE DATA>
"0" to "1"
<kx>, <ky>, <kz> = <STRING RESPONSE DATA>
"0" to "1"
<bais> = <STRING RESPONSE DATA>
"000000" to "111111"
<loopocu>, <loop15m> = <STRING RESPONSE DATA>
"0" to "1"
<pty> = <STRING RESPONSE DATA>
"000000" to "111111"
<berr> = <STRING RESPONSE DATA>
"000000" to "111111"
<loop2> = <STRING RESPONSE DATA>
"000" to "111"
<lp> = <STRING RESPONSE DATA>
"000000" to "111111" "000" to "111" at sig#1
<trace> = <STRING RESPONSE DATA>
"000000" to "111111"
<ress>, <resu> = <STRING RESPONSE DATA>
"000000" to "111111"

Function: Queries the monitor data of OH monitor (at Signalling#4) of the Analyze screen.
Example use: To query the monitor data of OH monitor (at Signaling).
> :DISPlay:ANALysis:OHMonitor:SIGDATA?
<"11010110, 000000, 0, 000000, 000000, 000000, 000000, 000000, 000000,
000000"

:DISPlay:ANALysis:OPMeter:DATA?

Response: <power>, <relative>, <reference>
<freq> = <STRING RESPONSE DATA>
" -40.0" to " + 0.0", "<-40.0", ">+ 0.0"
<relative> = <STRING RESPONSE DATA>
" -40.0" to " +40.0"
<reference> = <STRING RESPONSE DATA>
" -40.0" to " + 0.0"
When no data exists, the following is outputted.
<"-----","-----","-----"
Function: Queries monitor data of Opt. power meter of the Analyze screen.
Example use: > :DISPlay:ANALysis:OPMeter:DATA?
> " -23.4", " + 2.0", " -25.4"

:DISPlay:ANALysis:OPMeter:WLENgth <length>

Parameter: <boolean> = <CHARACTER PROGRAM DATA>
"1.31" 1.31 μ m
"1.55" 1.55 μ m
Function: Sets wavelength for Opt. power meter of the Analyze screen.
Restriction: Invalid in the following case:
・When MP0111A/ MP0112A/MP0113A unit is not installed.
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:Joff]"> and <"PSEQuence[:JOFF]">.
・When <"1.55"> is set while MP0111A unit is installed.
・When <"1.31"> is set while MP0112A unit is installed.
Example use: To set wavelength of Opt. power meter to 1.31.
> :DISPlay:ANALysis:OPMeter:WLENgth 1.31

:DISPlay:ANALysis:OPMeter:WLENgth?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
"1.31" 1.31 μ m
"1.55" 1.55 μ m
Function: Queries wavelength for Opt. power meter of the Analyze screen.
Example use: > :DISPlay:ANALysis:OPMeter:WLENgth?
< "1.31"

:DISPlay:ANALysis:OPMeter:REFerence:SET

Parameter: None
Function: Sets reference value for Opt. power meter of the Analyze screen.
Restriction: Invalid in the following case:
・When MP0111A/ MP0112A/MP0113A unit is not installed .
・When:DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <"PSEQuence[:JOFF]">.
Example use: To set reference value of Opt. power meter.
> :DISPlay:ANALysis:OPMeter:REFerence:SET

:DISPlay:ANALysis:OPMeter:PAUSe <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Pause OFF
ON or 1 Pause ON
Function: Sets Pause for Opt. power meter of the Analyze screen .
Restriction: Invalid in the following case:
・When MP0111A/ MP0112A/MP0113A unit is not installed.
・When :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <"PSEQuence[:JOFF]">.
Example use: To set Pause of Opt. power meter to ON.
> :DISPlay:ANALysis:OPMeter:PAUSe ON

:DISPlay:ANALysis:OPMeter:PAUse?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Pause OFF
1 Pause ON
Function: Queries state of Pause for Opt. power meter of the Analyze screen.
Example use: > :DISPlay:ANALysis:OPMeter:PAUSe?
< 1

:DISPlay:ANALysis:OHCapture:TITLe <title>

Parameter: <title> = <STRING PROGRAM DATA>
"Title character string" Title character string (Up to 15 characters)
Character length (0 to 15 characters) and double-quotation marks are usable.
String is padded out with spaces when it is less than 15 characters.
Function: Specify the title of the Analyze screen (OHCapture subscreen).
Example use: To display "TITLE-DISP" on the measurement title.
> :DISPlay:ANALysis:OHCapture:TITLe "TITLE-DISP"

:DISPlay:ANALysis:OHCapture:TITLe?

Response: <title> = <STRING RESPONSE DATA>
Function: Queries the title of the Analyze screen (OHCapture subscreen).
Example use: > :DISPlay:ANALysis:OHCapture:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:OHCapture:JUMP:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

TRIGger	Displays the trigger position.
NUMBer	Displays the Number position.

Function: Sets the display position of the Analyze screen (OHCapture subscreen).

Restriction: Invalid in the following case:
When there are no Capture data.

Example use: To move the display position to the trigger display position on the Analyze: OH capture screen:
> :DISPlay:ANALysis:OHCapture:JUMP:TYPE TRIGer

:DISPlay:ANALysis:OHCapture:JUMP:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

TRIG	Displays the trigger position.
NUMB	Displays the Number position.

Function: Queries the display position of the Analyze screen (OHCapture subscreen).

Example use: > :DISPlay:ANALysis:OHCapture:JUMP:TYPE?
< TRIG

:DISPlay:ANALysis:OHCapture:JUMP:LINE <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 1017 Step value: 1

Function: Sets the display position (Number) of the Analyze screen (OHCapture subscreen).

Restriction: Invalid in the following case:
・When there are no Capture data.
・When the setting of :DISPlay:ANALysis:RECall:OHCapture:JUMP:TYPE is Trigger.
・When the set value is greater than the total number of Capture data (a same value can be set).

The following table shows the maximum values indicating setting ranges:

Type	H1/H1	K1/K2[HEX]	K1/K2[Binary]	SOH 1byte	POH 1byte
Screen 1	978	1001	978	1001	1001
Screen 2	1008	1016	1008	1017	1017
Screen 3	1016	1016	1016	1017	1017

Example use: To set the display start position at 5:
> :DISPlay:ANALysis:OHCapture:JUMP:LINE 5

:DISPlay:ANALysis:OHCapture:JUMP:LINE?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the display position (Number) of the Analyze screen (OHCapture subscreen).

Example use: > :DISPlay:ANALysis:OHCapture:JUMP:LINE?
< 5

:DISPlay:ANALysis:OHCapture:SCRoll <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

LEFT	Scrolls to the left.
RIGHt	Scrolls to the right.
UP	Scrolls up.
DOWN	Scrolls down.
HTOP	Shifts to the left end.
HBOTtom	Shifts to the right end.
VTOP	Shifts to the top.
VBOTtom	Shifts to the bottom.

Function: Instructs the scroll of the Analyze screen (OHCapture subscreen).

Restriction: Invalid in the following case:
- When the setting of :SENSe:OHCaptuer:TYPE is H1/H2, K1/K2.
- When the setting of :SENSe:OHCaptuer:TYPE is :SOH 1byte [TOH 1byte] and a single screen display is separated to two panes.
- When the setting of :SENSe:OHCaptuer:TYPE is :POH 1byte and a single screen display is separated to two panes.

Example use: To shift to the last line of the table:
> :DISPlay:ANALysis:OHCapture:SCRoll VBOTtom

:DISPlay:ANALysis:OHCapture:PTYPe<type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

HEX	HEX
BINARY	Binary

Function: Sets the type of display data for the Analyze screen (OHCapture subscreen).

Restriction: Invalid in the following case:
When the setting of :SENSe:OHCaptuer:TYPE is other than K1/K2.

Example use: To set the display type to HEX:
> :DISPlay:ANALysis:OHCapture:PTYPe HEX

:DISPlay:ANALysis:OHCapture:PTYPe?

Response: <type> = <CHARACTER PROGRAM DATA>

Function: Queries the type of display data for the Analyze screen (OHCapture subscreen).

Example use: > :DISPlay:ANALysis:OHCapture:PTYPe?
< HEX

:DISPlay:ANALysis:OHCapture:PRINt <from>, <to>

Parameter: <from> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 1023 Step value: 1
<to> = <DECIMAL NUMERIC PROGRAM DATA>
<from> to 1023 Step value: 1

Function: Sets the print range for the Analyze screen (OHCapture subscreen).

Restriction: Invalid in the following case:
When there are no data.
Example use: To print the seventh line only:
> :DISPlay:ANALysis:OHCapture:PRINt 7, 7

:DISPlay:ANALysis:OHCapture:PRINt?

Response: <from> = <NR1 NUMERIC RESPONSE DATA>
<to> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the print range for the Analyze screen (OHCapture subscreen).
Example use: > :DISPlay:ANALysis:OHCapture:PRINt?
< 7, 7

:DISPlay:ANALysis:APSCapture:TITLe <title>

Parameter: <title> = <STRING PROGRAM DATA>
"Title string": Title string (maximum 15 characters)
The title string length is 0 to 15 character(s) and double-quotation marks are usable.
Pad the string with spaces when its length is less than 15 characters.
Function: Sets the title for the Analyze screen (APS capture subscreen).
Example use: To display "TITLE-DISP" as the title:
> :DISPlay:ANALysis:APSCapture:TITLe "TITLE-DISP"

:DISPlay:ANALysis:APSCapture:TITLe?

Response: <title> = <STRING RESPONSE DATA>
Function: Queries the title for the Analyze screen (APS capture subscreen).
Example use: > :DISPlay:ANALysis:APSCapture:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:APSCapture:JUMP:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

TRIGger	Displays the trigger position.
NUMBer	Displays the Number position.

Function: Sets the display position (type) for the Analyze screen (APS capture subscreen).
Restriction: Invalid in the following case:
When there are no Capture data.
Example use: To shift to the trigger display position:
> :DISPlay:ANALysis:APSCapture:JUMP:TYPE TRIGger

:DISPlay:ANALysis:APSCapture:JUMP:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

TRIG	Displays the trigger position.
NUMB	Displays the Number position.

Function: Queries the display position (type) for the Analyze screen (APS capture subscreen).
Example use: > :DISPlay:ANALysis:APSCapture:JUMP:TYPE?
< TRIG

:DISPlay:ANALysis:APSCapture:JUMP:LINE <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 55 Step value: 1
Function: Sets the display position (Number) for the Analyze screen (APS capture subscreen).
Restriction: Invalid in the following case:
・When there are no Capture data.
・When the setting of :DISPlay:ANALysis:APSCapture:JUMP:TYPE is Trigger.
・When the set value is greater than the total number of Capture data.
Example use: To set the display start position at 5:
> :DISPlay:ANALysis:APSCapture:JUMP:LINE 5

:DISPlay:ANALysis:APSCapture:JUMP:LINE?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the display position (Number) for the Analyze screen (APS capture subscreen).
Example use: > :DISPlay:ANALysis:APSCapture:JUMP:LINE?
< 5

:DISPlay:ANALysis:APSCapture:SCRoll <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

TOP	Scrolls to the first data position.
END	Scrolls to the last data position.
UP	Scrolls up by 5 lines.
DOWN	Scrolls down by 5 lines.

Function: Instructs scroll on the ASP Capture data table for the Analyze screen.
Example use: To shift to the last line of the table:
> :DISPlay:ANALysis:APSCapture:SCRoll END

:DISPlay:ANALysis:PMONitor:MARKer <marker>

Parameter: <marker> = <CHARACTER PROGRAM DATA>

LEFT	Shifts to the left by 1 div.
RIGHt	Shifts to the right by 1 div.

Function: Instructs shift of the marker for the Analyze screen (Error/Alarm subscreen).
Restriction: Invalid in the following case:
When Marker:OFF is instructed.
Example use: To shift to the right:
> :DISPlay:ANALysis:PMONitor:MARKer RIGHt

:DISPlay:ANALysis:PMONitor:DATA?

Response: <time>, <ptr>, <ppjc>, <mpjc>, <ndf>, <cons>
<time> = <year>, <month>, <day>, <hour>, <minute>, <second>
Time indicated by marker
<year> = <NR1 NUMERIC RESPONSE DATA>
0, 1994 to 2093 Year
<month> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 12 Month
<day> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 31 Day
<hour> = <NR1 NUMERIC RESPONSE DATA>
0 to 23 Hour
<minute> = <NR1 NUMERIC RESPONSE DATA>
0 to 59 Minute
<second> = <NR1 NUMERIC RESPONSE DATA>
0 to 59 Second
<ptr> = <STRING RESPONSE DATA>
AU(STS) PTR value Form1 type
<ppjc> = <STRING RESPONSE DATA>
+ PJC value Form1 type
<mpjc> = <STRING RESPONSE DATA>
- PJC value Form1 type
<ndf> = <STRING RESPONSE DATA>
ndf (new data flag) value Form1 type
<cons> = <STRING RESPONSE DATA>
Cons value Form1 type

Function: Queries the data indicated by marker on the Analyze screen (Pointer monitor subscreen).

Example use: To query the data indicated by marker on the Analyze: Pointer monitor screen:
> :DISPlay:ANALysis:PMONitor:DATA?
< 2000, 12, 25, 12, 54, 30, " 396", " 0", " 235", " 3", " 0"

:DISPlay:ANALysis:PMONitor:INTerval <numeric>, <suffix>

Parameter: <numeric> = <CHARACTER PROGRAM DATA>
1, 15, 60
<suffix> = < CHARACTER PROGRAM DATA>
Min minute
S s

Function: Sets a width for 1 graduation of the time base on the Analyze screen (Pointer monitor subscreen).

Example use: To set 1 graduation width to 1 min.:
> :DISPlay:ANALysis: PMONitor:INTerval 1, M

:DISPlay:ANALysis:PMONitor:INTerval?

Response: <interval> = <CHARACTER RESPONSE DATA>

Function: Queries the 1 graduation width of the time base on the Analyze screen (Pointer monitor subscreen).

Example use: > :DISPlay:ANALysis:PMONitor:INTerval?
< 1, M

:DISPlay:ANALysis:PMONitor:MDISplay <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Marker OFF
ON or 1	Marker ON

Function: Sets with or without marker display on the Analyze screen (Pointer monitor subscreen).

Example use: To set marker display to ON:
> :DISPlay:ANALysis:PMONitor:MDISplay ON

:DISPlay:ANALysis:PMONitor:MDISplay?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Marker OFF
1	Marker ON

Function: Queries with or without marker display on the Analyze screen (Pointer monitor subscreen).

Example use: > :DISPlay:ANALysis:PMONitor:MDISplay?
< 1

:DISPlay:ANALysis:PMONitor:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

(SDH)
- AU
- TU

(SONET)
- STS
- VT

Function: Sets the pointer to monitor.

Restriction: Invalid in the following case:
When TU[VT] is following receive mapping on the Setup: Mapping screen:
139M(Async), VC4[STS3cSPE]-Bulk,
AU3[STS1SPE]-45M(Async), AU3[STS1SPE]-Bulk,
VC4*Xc[STS3cSPE*Xc]-Bulk

Example use: To set AU for the pointer to monitor:
> :DISPlay:ANALysis:PMONitor:TYPE AU

:DISPlay:ANALysis:PMONitor:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of the pointer to monitor.
Example use: To query the setting of the pointer to monitor:
> :DISPlay:ANALysis:PMONitor:TYPE?
< AU

:DISPlay:ANALysis:PMONitor:PSCale <scale>

Parameter: < scale > = <CHARACTER PROGRAM DATA>
200
400
800
Function: Sets the vertical axis scale of pointer graph on the Analyze screen (Pointer monitor subscreen).
Restriction: Invalid in the following case:
When 800 or 400 is selected while Setup: Mapping screen : Rx Mapping is TU12[VT2] or TU11[VT1.5].
Example use: To set the vertical axis scale of pointer graph at 400 on the Analyze: Pointer monitor screen:
> :DISPlay:ANALysis:PMONitor:PSCale 400

:DISPlay:ANALysis:PMONitor:PSCale?

Response: < scale > = <CHARACTER RESPONSE DATA>
Function: Queries the vertical axis scale of pointer graph on the Analyze screen (Pointer monitor subscreen).
Example use: To query the vertical axis scale of pointer graph on the Analyze: Pointer monitor screen:
> :DISPlay:ANALysis: PMONitor:SCAle?
< 400

:DISPlay:ANALysis:PMONitor:JSCale < scale >

Parameter: < scale > = <CHARACTER PROGRAM DATA>
1E9 1E9
1E6 1E6
1E3 1E3
Function: Sets the vertical axis scale of justification graph on the Analyze screen (Pointer monitor subscreen).
Restriction: Invalid in the following case:
When using AU PTR[STS PTR]or TU PTR[VT PTR].
Example use: To set 1E3 as the vertical axis scale of justification graph on the Analyze: Pointer monitor screen:
> :DISPlay:ANALysis:PMONitor:JSCale S1E3

:DISPlay:ANALysis:PMONitor:JSCale?

Response: <numeric> = <CHARACTER RESPONSE DATA>
Function: Queries the vertical axis scale of justification graph on the Analyze screen(Pointer monitor subscreen).
Example use: To query the vertical axis scale of justification graph on the Analyze: Pointer monitor screen:
> :DISPlay:ANALysis: PMONitor:JSCale?
< S1E3

:DISPlay:ANALysis:PMONitor:SELect <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
(SDH)

AU	AU PTR
TU	TU PTR
PJC	+PJC/-PJC

(SONET)

STS	STS PTR
VT	VT PTR
PJC	+PJC/-PJC

Function: Selects the graph to display on the Pointer monitor.
Restriction: Invalid in the following case:
When selecting AU PTR[STS PTR] while TU[VT] is set.
When selecting TU PTR[VT PTR] while Type: AU[STS] is set.
Example use: To select TU PTR for the graph to display on the Pointer monitor:
> :DISPlay:ANALysis:PMONitor:SELect TU

:DISPlay:ANALysis:PMONitor:SELect?

Response: <type> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of graph to display on the Pointer monitor.
Example use: To query the setting of graph to display on the Pointer monitor:
> :DISPlay:ANALysis:PMONitor:SELect?
< TU

:DISPlay:ANALysis:IPCapture:CAPTuretype <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

IPV4	IPv4
IPV6	IPv6

Function Sets the type of IP packet to be captured.
Restriction Invalid in the following case:
・When option-14 is not installed.
Example use To set IP packet to “IPv4”.
> :DISPlay:ANALysis:IPCapture:CAPTuretype IPV4

:DISPlay:ANALysis:IPCapture:CAPTuretype?

Response <type> = <CHARACTER RESPONSE DATA>
Function Queries the type of IP packet to be captured.
Example use > :DISPlay:ANALysis:IPCapture:CAPTuretype?
< IPV4

:DISPlay:ANALysis:IPCapture:JUMP <jump>

Parameter <jump> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 9999999 Step value : 1
Function Sets the display start position.
Restriction Invalid in the following case:
・When option-14 is not installed.
・No captured data exists.
・When a value that is higher than the total amount of the captured data is inputted.
Example use To set the display start position to 25.
> :DISPlay:ANALysis:IPCapture:JUMP 25

:DISPlay:ANALysis:IPCapture:JUMP?

Response <jump> = <NR1 NUMERIC RESPONSE DATA>
Function Queries the display start position.
Example use > :DISPlay:ANALysis:IPCapture:JUMP?
< 25

:DISPlay:ANALysis:IPCapture:SCRoll <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

TOP	Shifts to the top of data.
END	Shifts to the bottom of data.
UP	Scrolls up 12 data. (Five data when two or three division screen.)
DOWN	Scrolls down 12 data. (Five data when two or three division screen.)

Function Scrolls table of the IP capture data.
Example use To scroll to the bottom of table.
> :DISPlay:ANALysis:IPCapture:SCRoll END

:DISPlay:ANALysis:FRAMecapture:TITLe <title>

Parameter: <title> = <STRING PROGRAM DATA>
"Title string": Title string (maximum 15 characters)
The title string length is 0 to 15 character(s) and double-quotation marks are usable.
Pad the string with spaces when its length is less than 15 characters.

Function: Sets the title for the Analyze screen (Frame capture subscreen).
Example use: To display "TITLE-DISP" as the title of measurement:
> :DISPlay:ANALysis:FRAMecapture:TITLe "TITLE-DISP"

:DISPlay:ANALysis:FRAMecapture:TITLe?

Response: <title> = <STRING RESPONSE DATA>
Function: Queries the title for the Analyze screen (Frame capture subscreen).
Example use: > :DISPlay:ANALysis:FRAMecapture:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:FRAMecapture:DFRame <frame>

Parameter: <frame> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
Function: Sets the frame number to display for the Analyze screen (Frame capture
subscreen).
Example use: To set the frame start position at 1:
> :DISPlay:ANALysis:FRAMecapture:DFRame 1

:DISPlay:ANALysis:FRAMecapture: DFRame?

Response: <frame> = <DECIMAL NUMERIC RESPONSE DATA>
Function: Queries the frame number to display for the Analyze screen (Frame capture subscreen).
Example use: > :DISPlay:ANALysis:FRAMecapture:DFRame?
< 1

:DISPlay:ANALysis:FRAMecapture:JUMP:TYPE

Parameter: <type> = <CHARACTER PROGRAM DATA>

TRIGger	Displays the trigger position.
NUMBer	Displays the Number position.

Function: Sets the display position (type) on the Analyze screen (Frame capture subscreen).
Restriction: Invalid in the following case:
When there are no Capture data.
Example use: To shift to the trigger display position:
> :DISPlay:ANALysis:FRAMecapture:JUMP:TYPE TRIGger

:DISPlay:ANALysis:FRAMecapture:JUMP:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

TRIG	Displays the trigger position.
NUMB	Displays the Number position.

Function: Queries the display position (type) on the Analyze screen (Frame capture subscreen)
Example use: > :DISPlay:ANALysis:FRAMecapture:JUMP:TYPE?
< TRIG

:DISPlay:ANALysis:FRAMecapture:JUMP:LINE <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC RESPONSE DATA>
1 to 17272 Step value: 1

Function: Sets the display position (Number) on the Analyze screen (Frame capture subscreen).

Restriction: Invalid in the following case:
When there are no Capture data.

Example use: To set the display position at 10:
> :DISPlay:ANALysis:FRAMecapture:JUMP:LINE 10

:DISPlay:ANALysis:FRAMecapture:JUMP:LINE?

Response: <numeric> = <DECIMAL NUMERIC RESPONSE DATA>

Function: Queries the display position (Number) on the Analyze screen (Frame capture subscreen).

Example use: > :DISPlay:ANALysis:FRAMecapture:JUMP:LINE?
< 10

:DISPlay:ANALysis:FRAMecapture:PRINt <from>, <to>

Parameter: <from> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 17280 Step value: 1
<to> = <DECIMAL NUMERIC PROGRAM DATA>
<from> to 17280 Step value: 1

Function: Sets the start and end positions to print the Frame capture data.

Restriction: Invalid in the following case:
・When a range is selected other than Bit Rate: 9953M: 1 to 17280, 2448M: 1 to 4320, 622M: 1 to 1080, 156M: 1 to 270, 52M: 1 to 90.
・When the set value is greater than the total number of Capture data.

Example use: To print the Frame capture data from 10 to 20:
> :DISPlay:ANALysis:FRAMecapture:PRINt 10, 20

:DISPlay:ANALysis:FRAMecapture:PRINt?

Response: <from> = <NR1 NUMERIC RESPONSE DATA>
<to> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the start and end positions to print the Frame capture data.

Example use: To query the start and end positions to print the Frame capture data:
> :DISPlay:ANALysis:FRAMecapture:PRINt?
< 10, 20

:DISPlay:ANALysis:FRAMecapture:SCRoll <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

TOP	Jumps to the top position of horizontal axis of data.
END	Jumps to the end position of horizontal axis of data.
BEFOR	Scrolls to the left by 18 bytes on the horizontal axis of data.
NEXT	Scrolls to the right by 18 bytes on the horizontal axis of data.

Function: Instructs scroll on the Frame capture data table for the Analyze screen.

Example use: To scroll to the end position of table:

> :DISPlay:ANALysis:FRAMecapture:SCRoll END

:DISPlay:ANALysis:FMONitor:FREQuency?

Response: <freq>, <ppm>, <relative>

<freq> = <STRING RESPONSE DATA>
Form10

<ppm> = <STRING RESPONSE DATA>
Form11

<relative> = <STRING RESPONSE DATA>
Form13

* Following content is output when there are no data:

< "----------", "--------", "----------"

Function: Queries the Freq. monitor data.

Example use: > :DISPlay:ANALysis:FMONitor:FREQuency?

< " 1100.0", " +1000.0", " +100.0"

:DISPlay:ANALysis:FMONitor:PAUSe <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Pause OFF
ON or 1	Pause ON

Function: Sets Pause at the Freq. monitor.

Example use: To set Pause to ON for the Freq. monitor:

> :DISPlay:ANALysis:FMONitor:PAUSe ON

:DISPlay:ANALysis:FMONitor:PAUSe?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Pause OFF
1	Pause ON

Function: Queries the Pause state at the Freq. monitor.

Example use: > :DISPlay:ANALysis:FMONitor:PAUSe?

< 1

:DISPlay:ANALysis:FGRaph:TITLe <title>

Parameter: <title> = <STRING PROGRAM DATA>
"Title string": Title string (maximum 15 characters)
The title string length is 0 to 15 character(s) and double-quotation marks are usable.
Pad the string with spaces when its length is less than 15 characters.

Function: Sets the title on the frequency monitoring (graph) screen.

Example use: To display "TITLE-DISP" as the title of Frequency:
> :DISPlay:ANALysis:FGRaph:TITLe "TITLE-DISP"

:DISPlay:ANALysis:FGRaph:TITLe?

Response: <title> = <STRING RESPONSE DATA>

Function: Queries the title on the frequency monitoring (graph) screen.

Example use: > :DISPlay:ANALysis:FGRaph:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:FGRaph:SCRoll <scroll>

Parameter: <scroll> = <CHARACTER PROGRAM DATA>

LEFT	Scrolls to the left.
RIGHt	Scrolls to the right.
TOP	Scrolls to the top.
BOTTom	Scrolls to the bottom.

Function: Instructs the scroll on the frequency monitoring (graph) screen.

Example use: To scroll to the left:
> :DISPlay:ANALysis:FGRaph:SCRoll LEFT

:DISPlay:ANALysis:FGRaph:MARKer <marker>

Parameter: <marker> = <CHARACTER PROGRAM DATA>

LEFT	Shifts to the left by 1 div.
RIGHt	Shifts to the right by 1 div.

Function: Instructs the marker movement on the frequency monitoring (graph) screen.

Restriction: Invalid in the following case:
・When Marker: OFF is instructed.

Example use: To move to the right:
> :DISPlay:ANALysis:FGRaph:MARKer RIGHt

:DISPlay:ANALysis:FGRaph:DATA?

Response: <time>, <frequency>, <ppm>
<time> = <year>, <month>, <day>, <hour>, <minute>, <second>
Year, month, day, hour, minute, and second of the read data.
Outputs the data of nearest time later than the specified time when the data specified by the parameter are not available.
Outputs the data at the time of measurement start when the set time was earlier than the time of measurement start. Also outputs the data at the time of log end when the set time was later than the time of log end.
<year> = <NR1 NUMERIC RESPONSE DATA>
0, 1994 to 2093 Year
<month> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 12 Month
<day> = <NR1 NUMERIC RESPONSE DATA>
0, 1 to 31 Day
<hour> = <NR1 NUMERIC RESPONSE DATA>
0 to 23 Hour
<minute> = <NR1 NUMERIC RESPONSE DATA>
0 to 59 Minute
<second> = <NR1 NUMERIC RESPONSE DATA>
0 to 59 Second
<frequency> = <STRING RESPONSE DATA>
Monitor frequency (Hz)
(Form10)
<ppm> = <STRING RESPONSE DATA>
Monitor frequency deviation (ppm)
(Form11)
* Following content is output when there are no data:
< 0, 0, 0, 0, 0, 0, "----------", "--------"

Function: Queries the data to which the marker on the frequency monitoring (graph) screen.

Example use: > :DISPlay:ANALysis:FGRaph:DATA?
< 2000, 10, 23, 1, 20, 30, " 100.0", " +1000"

:DISPlay:ANALysis:FGRaph:INTerval <numeric>, <suffix>

Parameter: <numeric> = <CHARACTER PROGRAM DATA>
1, 15, 60
<suffix> = <CHARACTER PROGRAM DATA>
M minute

Function: Sets the interval of the graph on the frequency monitoring (graph) screen.

Example use: To set 1 graduation width to 1 min.:
> :DISPlay:ANALysis:FGRaph:INTerval 1, M

:DISPlay:ANALysis:FGRaph:INTerval?

Response: <numeric> = <CHARACTER RESPONSE DATA>
<suffix> = <CHARACTER RESPONSE DATA>

Function: Queries the interval of the graph on the frequency monitoring (graph) screen.

Example use: > :DISPlay:ANALysis:FGRaph:INTerval?
< 1, M

:DISPlay:ANALysis:FGRaph:MDISplay <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Marker OFF
ON or 1	Marker ON

Function: Sets whether the marker is displayed on the frequency monitoring (graph) screen.

Example use: To set the Frequency marker display to ON:
> :DISPlay:ANALysis:FGRaph:MDISplay 1

:DISPlay:ANALysis:FGRaph:MDISplay?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Marker OFF
1	Marker ON

Function: Queries whether the marker is displayed on the frequency monitoring (graph) screen.

Example use: > :DISPlay:ANALysis:FGRaph:MDISplay?
< 1

:DISPlay:ANALysis:FGRaph:FROM <numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, [, <numeric6>]

Parameter: <DECIMAL NUMERIC PROGRAM DATA>

<numeric1> =	1994 to 2093 (year)
<numeric2> =	1 to 12 (month)
<numeric3> =	1 to 31 (day)
<numeric4> =	0 to 23 (hour)
<numeric5> =	0 to 59 (minute)
<numeric6> =	0 to 59 (second)

* The nearest time later than the specified time is set when there is no such time as specified by the parameter. However, the measurement start time is set when the set time is earlier than the measurement start time. The log end time is set when the set time is later than the log end time.

Function: Sets the start position to display on the frequency monitoring (graph) screen.

Example use: To display the time at 11:30:40 on July 28th, 2000:
> :DISPlay:ANALysis:FGRaph:FROM 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:FGRaph:FROM?

Response: <numeric1>, <numeric2>, <numeric3>, <numeric4>,
<numeric5>, <numeric6>
= <NR1 NUMERIC RESPONSE DATA>
* Following content is output when there are no Frequency data:
< -, -, -, -, -, -

Function: Queries the start position to display on the frequency monitoring (graph) screen.

Example use: > :DISPlay:ANALysis:FGRaph:FROM?
< 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:FGRaph:PRINt <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

DISPlay	Display
ALL	All
AFTer	After
BEFore	Before

Function: Specifies the print range on the frequency monitoring (graph) screen.

Example use: To set the Frequency screen range:
> :DISPlay:ANALysis:FGRaph:PRINt DISPlay

:DISPlay:ANALysis:FGRaph:PRINt?

Response: <type> = <CHARACTER RESPONSE DATA>

DISP	Display
ALL	All
AFT	After
BEF	Before

Function: Queries the print range on the frequency monitoring (graph) screen.

Example use: > :DISPlay:ANALysis:FGRaph:PRINt?
< DISP

:DISPlay:ANALysis:FGRaph:SCALe <character>

Parameter: <character> = <CHARACTER PROGRAM DATA>

10	10 ppm
100	100 ppm
1000	1000 ppm

Function: Sets the vertical scale of graph on the frequency monitoring (graph) screen

Example use: To set the vertical scale of Frequency graph at 10 ppm:
> :DISPlay:ANALysis:FGRaph:SCALe 10

:DISPlay:ANALysis:FGRaph:SCALe?

Response: <numeric1> = <CHARACTER RESPONSE DATA>

Function: Queries the vertical scale of graph on the frequency monitoring (graph)
screen.

Example use: > :DISPlay:ANALysis:FGRaph:SCALe?
< 10

:DISPlay:ANALysis:RECall:TYPE?

Response: <type> = <STRING RESPONSE DATA>

"EAL"	Error/Alarm measurements
"FGR"	Frequency data
"APS"	APS capture data
"OH"	OH capture data

Function: Queries the data type displayed on the Analyze: Recall screen.
Example use: > :DISPlay:ANALysis:RECall:TYPE?
< "EAL"

:DISPlay:ANALysis:RECall:TGRaph:SCRoll <scroll>

Parameter: <scroll> = <CHARACTER PROGRAM DATA>

LEFT	Scroll to the left
RIGHt	Scroll to the right
TOP	Shift to the top
BOTTom	Shift to the bottom

Function: Instruct scroll on the Analyze main screen (Recall subscreen).
Restriction: Invalid in the following case:
Invalid when :DISPlay:ANALysis:RECall:TYPE? is other than <"EAL">.
Example use: To scroll to the right:
> :DISPlay:ANALysis:RECall:TGRaph:SCRoll RIGHt

:DISPlay:ANALysis:RECall:TGRaph:MARKer <marker>

Parameter: <marker> = <CHARACTER PROGRAM DATA>

LEFT	Shift to the left by 1 div.
RIGHt	Shift to the right by 1 div.

Function: Instructs marker shift on the Analyze main screen (Recall subscreen).
Restriction: Invalid in the following case:
・When :DISPlay:ANALysis:RECall:TYPE? is other than <"EAL">.
・When :DISPlay:ANALysis:RECall:TGRaph:MDISplay is <OFF>.
* Note: When plural screens are displayed and then marker is ON, the normal operation can be performed.
Example use: To shift the marker to the right by 1 div.:
> :DISPlay:ANALysis:RECall:TGRaph:MARKer RIGHt

:DISPlay:ANALysis:RECall:TGRaph:DATA?

Response: <time>, <alarm1s>, <alarm1c>, <alarm2s>, <alarm2c>, <alarm3s>, <alarm3c>, <alarm4s>, <alarm4c>, <alarm5s>, <alarm5c>, <error1>, <error2>

Function: Queries data indicated by the marker for the Analyze:Rcall screen (Error/Alarm).
Example use: > :DISPlay:ANALysis:RECall:TGRaph:DATA?
< 2000, 12, 25, 12, 54, 30, " 1", " 1", " 0", " 0",
" 104", " 10", " 1", " 1", " 1", " 1",
" 189", " 3.3E-04"

:DISPlay:ANALysis:RECall:TGRaph:INTerval <numeric>, <suffix>

Parameter: <numeric> = <CHARACTER PROGRAM DATA>
1, 15, 60
<suffix> = <CHARACTER PROGRAM DATA>
M minute
S s
Function: Sets a width for 1 graduation of the time base for the Analyze main screen (Recall subscreen).
Restriction: Invalid in the following case:
・When :DISPlay:ANALysis:RECall:TYPE? is other than <"EAL">.
・The following restrictions apply according to the saved graph resolution status.
・1s: 1s, 1min, 15min, 60min
・1min: 1min, 15min, 60min
・15min:15min, 60min
・60min:60min
Example use: To set 1 graduation to 1 min:
> :DISPlay:ANALysis:RECall:TGRaph:INTerval 1, M

:DISPlay:ANALysis:RECall:TGRaph:INTerval?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
<suffix> = <CHARACTER RESPONSE DATA>
Function: Queries the 1 graduation width of time base of the Analyze :RECall screen (Error/Alarm).
Example use: > :DISPlay:ANALysis:RECall:TGRaph:INTerval?
< 1, M

:DISPlay:ANALysis:RECall:TGRaph:MDISplay <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Marker OFF
ON or 1 Marker ON
Function: Sets with or without marker display on the Analyze :RECall screen (Error/Alarm).
Restriction: Invalid when :DISPlay:ANALysis:RECall:TYPE? is other than <"EAL">.
Example use: To set marker to on:
> :DISPlay:ANALysis:RECall:TGRaph:MDISplay ON

:DISPlay:ANALysis:RECall:TGRaph:MDISplay?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Marker OFF
1 Marker ON

Function: Queries with or without marker display on the Analyze : RECall screen (Error/Alarm).

Example use: > :DISPlay:ANALysis:RECall:TGRaph:MDISplay?
< 1

:DISPlay:ANALysis:RECall:TGRaph:SEARch <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
BEFore Before search
NEXT Next search

Function: Instructs the search type for the Analyze : RECall screen (Error/Alarm).

Restriction: Invalid in the following case:
・When :DISPlay:ANALysis:RECall:TYPE? is other than <"EAL">.
・When :DISPlay:ANALysis:RECall:TGRaph:MDISplay is <OFF>.
・When <BEFore> is set while no measurement point exists forward.
・When <NEXT> is set while no measurement point exists backward.

Example use: To select the Before search:
> :DISPlay:ANALysis:RECall:TGRaph:SEARch BEFore

:DISPlay:ANALysis:RECall:TGRaph:FROM <numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, <numeric6>

Parameter: <DECIMAL NUMERIC PROGRAM DATA>
<numeric1> = 1994 to 2093 (year)
<numeric2> = 1 to 12 (month)
<numeric3> = 1 to 31 (day)
<numeric4> = 0 to 23 (hour)
<numeric5> = 0 to 59 (minute)
<numeric6> = 0 to 59 (second)
* If no times are specified in the parameter, the nearest times after the specified time are selected. However, the start time of measurement must be specified before the prescribed time, and the log end time must be specified after prescribed time.

Function: Sets the Error/Alarm graph display starting position for the Analyze:RECall screen.

Restriction: Invalid when :DISPlay:ANALysis:RECall:TYPE? is other than <"EAL">.

Example use: To indicate the graph from 11' 30' 40" on July 28, 2000:
> :DISPlay:ANALysis:RECall:TGRaph:FROM 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:RECall:TGRaph:FROM?

Response: <numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, <numeric6>
= <NR1 NUMERIC RESPONSE DATA>

Function: Queries the Error/Alarm graph display starting position for the Analyze: RECall screen.

Example use: > :DISPlay:ANALysis:RECall:TGRaph:FROM?
< 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:RECall:TGRaph:ERRor <error1>, <error2>

Parameter: <error1> = <STRING PROGRAM DATA>
<error2> = <CHARACTER PROGRAM DATA>

Function: Sets an error item to be displayed to the Error/Alarm graph on the Analyze RECall screen.

Restriction: Invalid in the following case:
・When :DISPlay:ANALysis:RECall:TYPE? is other than <"EAL">.
・When <"ER"> is set while the <"HIT"> setting.

Example use: To display the error rate of bit errors on the graph:
> :DISPlay:ANALysis:RECall:TGRaph:ERRor "BIT", ER

:DISPlay:ANALysis:RECall:TGRaph:ERRor?

Response: <error1>, <error2>
<error1> = <STRING RESPONSE DATA>
<error2> = <CHARACTER RESPONSE DATA>

Function: Queries an error item for Error/Alarm graphic display of the Analyze:RECall screen.

Example use: > :DISPlay:ANALysis:RECall:TGRaph:ERRor?
< "BIT", ER

:DISPlay:ANALysis:RECall:TGRaph:ALARm1 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>

"ALL"		ALL
"POWer"		Power fail
"LOS"		LOS
"LOF"		LOF
"OOF"		OOF
"AIS:MS"	(SDH)	MS-AIS
"AIS:L"	(SONET)	AIS-L
"RDI:MS"	(SDH)	MS-RDI
"RDI:L"	(SONET)	RDI-L
"AIS:AU"	(SDH)	AU-AIS
"AIS:P"	(SONET)	AIS-P
"LOP:AU"	(SDH)	AU-LOP
"LOP:P"	(SONET)	LOP-P
"RDI:HP"	(SDH)	HP-RDI
"RDI:P"	(SONET)	RDI-P

"SLM:HP"	(SDH)	HP-SLM
"PLM:P"	(SONET)	PLM-P
“TIM:HP”	(SDH)	HP-TIM
“TIM:P”	(SONET)	TIM-P
“UNEQ:HP”	(SDH)	HP-UNEQ
“UNEQ:P”	(SONET)	UNEQ-P
“AIS:HV”		HP-VC-AIS
“ISF:HP”		HP-ISF
“FAS:HP”		HP-FAS
“IAIS:HP”		HP-IncAIS
“TRDI:HP”		HP-TC-RDI
“ODI:HP”		HP-ODI
"AIS:TU"	(SDH)	TU-AIS
"AIS:V"	(SONET)	AIS-V
"LOP:TU"	(SDH)	TU-LOP
"LOP:V"	(SONET)	LOP-V
"RDI:LP"	(SDH)	LP-RDI
"RDI:V"	(SONET)	RDI-V
"SLM:LP"	(SDH)	LP-SLM
"PLM:V"	(SONET)	PLM-V
"RFI:LP"	(SDH)	LP-RFI
"RFI:V"	(SONET)	RFI-V
"LOM:TU"	(SDH)	TU-LOM
"LOM:V"	(SONET)	LOP-V
“TIM:LP”	(SDH)	LP-TIM
“TIM:V”	(SONET)	TIM-V
“UNEQ:LP”	(SDH)	LP-UNEQ
“UNEQ:V”	(SONET)	UNEQ-V
“AIS:LV”		LP-VC-AIS
“FAS:LP”		LP-FAS
“IAIS:LP”		LP-IncAIS
“TRDI:LP”		LP-TC-RDI
“ODI:LP”		LP-ODI
"AIS:M139"		139M AIS
"AIS:M45"		45M AIS
"AIS:M34"		34M AIS
"AIS:M8"		8M AIS
"AIS:M2"		2M AIS
"AIS:M1_5"		1.5M AIS
"LOF:M139"		139M LOF
"LOF:M45"		45M LOF
"LOF:M34"		34M LOF
"LOF:M8"		8M LOF
"LOF:M2"		2M LOF
"LOF:M1_5"		1.5M LOF
"LOF:MF"		MF LOF

"RDI:M139"	139M RDI
"RDI:M45"	45M RDI
"RDI:M34"	34M RDI
"RDI:M8"	8M RDI
"RDI:M2"	2M RDI
"RDI:M1_5"	1.5M RDI
"RDI:MF"	MF RDI
“SYN:OH”	OH sync
“AIS:HG”	HG AIS
“REC:HG”	HG REC
“BAI:S15”	BAIS1.5
“AIS:S15”	SigAIS1.5
“SIG:OOF”	SigOOF
"PATTern"	Sync. loss

* Parameters without (SDH) or (SONET) indication can be used in either SDH or SONET

Function: Sets an alarm item to be displayed to alarm1 of the Analyze:RECall screen.

Restriction: Invalid when DISPlay:ANALysis:RECall:TYPE? is other than <"EAL">.

Example use: To display Power fail to alarm1:
> :DISPlay:ANALysis:RECall:TGRaph:ALARm1 "POWer"

:DISPlay:ANALysis:RECall:TGRaph:ALARm1?

Response: <alarm> = <STRING RESPONSE DATA>

Function: Queries an alarm item displayed to alarm1 of the Analyze:RECall screen.

Example use: > :DISPlay:ANALysis:RECall:TGRaph:ALARm1?
< "POW"

:DISPlay:ANALysis:RECall:TGRaph:ALARm2 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>
Same as those of :DISPlay:ANALysis:RECall:TGRaph:ALARm1.

Function: Sets an alarm item to be displayed to alarm2 of the Analyze:RECall screen.

Restriction: Same as :DISPlay:ANALysis:RECall:TGRaph:ALARm1.

:DISPlay:ANALysis:RECall:TGRaph:ALARm2?

Response: <alarm> = <STRING RESPONSE DATA>

Function: Queries an alarm item displayed to alarm2 of the Analyze:RECall screen.

:DISPlay:ANALysis:RECall:TGRaph:ALARm3 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>
Same as those of :DISPlay:ANALysis:RECall:TGRaph:ALARm1.
Function: Sets an alarm item to be displayed to alarm3 of the Analyze:RECall screen.
Restriction: Same as :DISPlay:ANALysis:RECall:TGRaph:ALARm1.

:DISPlay:ANALysis:RECall:TGRaph:ALARm3?

Response: <alarm> = <STRING RESPONSE DATA>
Same as those of :DISPlay:ANALysis:RECall:TGRaph:ALARm1?.
Function: Queries an alarm item displayed to alarm3 of the Analyze:RECall screen.

:DISPlay:ANALysis:RECall:TGRaph:ALARm4 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>
Same as those of :DISPlay:ANALysis:RECall:TGRaph:ALARm1.
Function: Sets an alarm item to be displayed to alarm4 of the Analyze:RECall screen.
Restriction: Same as :DISPlay:ANALysis:RECall:TGRaph:ALARm1.

:DISPlay:ANALysis:RECall:TGRaph:ALARm4?

Response: <alarm> = <STRING RESPONSE DATA>
Same as those of :DISPlay:ANALysis:RECall:TGRaph:ALARm1?.
Function: Queries an alarm item displayed to alarm4 of the Analyze:RECall screen.

:DISPlay:ANALysis:RECall:TGRaph:ALARm5 <alarm>

Parameter: <alarm> = <STRING PROGRAM DATA>
Same as those of :DISPlay:ANALysis:RECall:TGRaph:ALARm1.
Function: Sets an alarm item to be displayed to alarm5 of the Analyze:RECall screen.
Restriction: Same as :DISPlay:ANALysis:RECall:TGRaph:ALARm1.

:DISPlay:ANALysis:RECall:TGRaph:ALARm5?

Response: <alarm> = <STRING RESPONSE DATA>
Same as those of :DISPlay:ANALysis:RECall:TGRaph:ALARm1?.
Function: Queries an alarm item displayed to alarm5 of the Analyze:RECall screen.

:DISPlay:ANALysis:RECall:TGRaph:PRINt <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

DISPlay	Display
ALL	All
AFTer	After
BEFore	Before

Function: Designates a printing range for the Analyze:RECall screen (Error/Alarm).

Restriction: Invalid when :DISPlay:ANALysis:RECall:TYPE is other than <"EAL">.

Example use: To print the currently displayed screen range:
> :DISPlay:ANALysis:RECall:TGRaph:PRINt DISPlay

:DISPlay:ANALysis:RECall:TGRaph:PRINt?

Response: <type> = <CHARACTER RESPONSE DATA>

DISP	Display
ALL	All
AFT	After
BEF	Before

Function: Queries the selected printing range for the Analyze:RECall screen (Error/Alarm).

Example use: > :DISPlay:ANALysis:RECall:TGRaph:PRINt?
< DISP

:DISPlay:ANALysis:RECall:TGRaph:TITLe?

Response: <title> = <STRING RESPONSE DATA>
The same as :DISPlay:ANALysis:TGRaph:TITLe

Function: Queries the trace graph title on the Analyze:Recall screen.

Example use: > :DISPlay:ANALysis:RECall:TGRaph:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:RECall:OHCapture:TITLe?

Response: <title> = <STRING RESPONSE DATA>

Function: Queries the title on the Analyze:Recall (OH capture) screen.

Example use: > :DISPlay:ANALysis:RECall:OHCapture:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:RECall:OHCapture:JUMP:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

TRIGger	Trigger position display
NUMBer	Number position display

Function: Sets the display position on the Analyze:Recall (OH capture) screen.

Restriction: Invalid in the following case:
When no Capture data exists.

Example use: To shift to the position trigger is displayed.
> :DISPlay:ANALysis:RECall:OHCapture:JUMP:TYPE TRIGger

:DISPlay:ANALysis:RECall:OHCapture:JUMP:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

TRIG	Trigger position display
NUMB	Number position display

Function: Queries the display position on the Analyze:Recall (OH capture) screen.

Example use: > :DISPlay:ANALysis:RECall:OHCapture:JUMP:TYPE?
< TRIG

:DISPlay:ANALysis:RECall:OHCapture:JUMP:LINE <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 1017 Step value: 1

Function: Sets the display position (Number) on the Analyze:Recall (OH capture) screen.

Restriction: Invalid in the following case:
Restriction by other functions: ・When there are no Capture data.
・When the setting of :DISPlay:ANALysis:RECall:OHCapture:JUMP:TYPE is Trigger.
・When the setting of PE is Trigger.
・When the set value is greater than the total number of Capture data (the same value can be set).
The following table shows the maximum values and setting ranges:

Type	H1/H1	K1/K2[HEX]	K1/K2[Binary]	SOH 1byte	POH 1byte
Screen 1	978	1001	978	1001	1001
Screen 2	1008	1016	1008	1017	1017
Screen 3	1016	1016	1016	1017	1017

Example use: To set the display position at 5:
> :DISPlay:ANALysis:RECall:OHCapture:JUMP:LINE 5

:DISPlay:ANALysis:RECall:OHCapture:JUMP:LINE?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the display position (Number) on the Analyze: Recall (OH capture) screen.

Example use: > :DISPlay:ANALysis:RECall:OHCapture:JUMP:LINE?
< 5

:DISPlay:ANALysis:RECall:OHCapture:SCRoll <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

LEFT	Scrolls to the left.
RIGHt	Scrolls to the right.
UP	Scrolls up.
DOWN	Scrolls down.
HTOP	Shifts to the left end.
HBOTtom	Shifts to the right end.
VTOP	Shifts to the top.
VBOTtom	Shifts to the bottom.

Function: Instructs the scroll on the Analyze: OH capture screen.
Restriction: Invalid in the following case:
・When the setting of :SENSe:OHCaptuer:TYPE is H1/H2, K1/K2.
・When the setting of :SENSe:OHCaptuer:TYPE is :SOH 1byte [TOH 1byte] and a single screen display is separated to two panes.
・When the setting of :SENSe:OHCaptuer:TYPE is :POH 1byte and a single screen display is separated to two panes.
Example use: To shift to the last line of the table:
> :DISPlay:ANALysis:RECall:OHCapture:SCRoll VBOTtom

:DISPlay:ANALysis:RECall:OHCapture:PTYPe<type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
HEX HEX
BINARY Binary
Function: Sets the data display type for the Analyze:Recall (OH capture) screen.
Restriction: Invalid in the following case:
When the setting of :SENSe:OHCaptuer:TYPE is other than K1/K2.
Example use: To set the display type to HEX:
> :DISPlay:ANALysis:RECall:OHCapture:PTYPe HEX

:DISPlay:ANALysis:RECall:OHCapture:PTYPe?

Response: <type> = <CHARACTER PROGRAM DATA>
Function: Queries the setting of data display type for the Analyze:Recall (OH capture) screen.
Example use: > :DISPlay:ANALysis:RECall:OHCapture:PTYPe?
< HEX

:DISPlay:ANALysis:RECall:OHCapture:PRINt <from>, <to>

Parameter: <from> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 1023 Step value: 1
<to> = <DECIMAL NUMERIC PROGRAM DATA>
from to 1023 Step value: 1
Function: Sets the print range for the Analyze:Recall (OH capture) screen.
Restriction: Invalid in the following case:
When there are no data.
Example use: To print the seventh line only:
> :DISPlay:ANALysis:RECall:OHCapture:PRINt 7, 7

:DISPlay:ANALysis:RECall:OHCapture:PRINt?

Response: <from> = <NR1 NUMERIC RESPONSE DATA>
<to> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the print range for the Analyze:Recall (OH capture) screen.
Example use: > :DISPlay:ANALysis:RECall:OHCapture:PRINt?
< 7, 7

:DISPlay:ANALysis:RECall:APSCapture:TITLe?

Response: <title> = <STRING RESPONSE DATA>
Function: Queries the title for the Analyze:Recall (APS capture) screen.
Example use: > :DISPlay:ANALysis:APSCapture:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:RECall:APSCapture:JUMP:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
TRIGger Displays the trigger position.
NUMBer Displays the Number position.
Function: Sets the display position (type) on the Analyze:Recall (APS capture) screen.
Restriction: Invalid in the following case:
When there are no Capture data.
Example use: To set the display position to the trigger display position on the Analyze: Recall (APS capture) screen:
> :DISPlay:ANALysis:RECall:APSCapture:JUMP:TYPE TRIGger

:DISPlay:ANALysis:RECall:APSCapture:JUMP:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
Function: Queries the display position (type) on the Analyze: Recall (APS capture) screen.
Example use: > :DISPlay:ANALysis:RECall:APSCapture:JUMP:TYPE?
< TRIG

:DISPlay:ANALysis:RECall:APSCapture:JUMP:LINE <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 55 Step value: 1
Function: Sets the display position (Number) on the Analyze: Recall (APS capture)
screen.
Restriction: Invalid in the following case:
・When there are no Capture data.
・When the setting of :DISPlay:ANALysis:APSCapture:JUMP:TYPE is Trigger.
・When the set value is greater than the total number of Capture data.
Example use: To set the display position at 5:
> :DISPlay:ANALysis:RECall:APSCapture:JUMP:LINE 5

:DISPlay:ANALysis:RECall:APSCapture:JUMP:LINE?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the display position (Number) on the Analyze: Recall (APS capture) screen.
Example use: > :DISPlay:ANALysis:RECall:APSCapture:JUMP:LINE?
< 5

:DISPlay:ANALysis:RECall:APSCapture:SCRoll <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

TOP	Shifts to the top data position.
END	Shifts to the end data position.
UP	Scrolls up by 5 lines.
DOWN	Scrolls down by 5 lines.

Function: Scrolls the ASP Capture data table for the Analyze: Recall (APS capture) screen.

Example use: To shift to the last line of the table:
> :DISPlay:ANALysis:RECall:APSCapture:SCRoll END

:DISPlay:ANALysis:RECall:FGRaph:TITLe?

Response: <title> = <STRING RESPONSE DATA>
* Following content is output when there are no Recall: Frequency analysis data:
< "No data"

Function: Queries the title on the Analyze: Recall screen (Frequency).

Example use: > :DISPlay:ANALysis:RECall:FGRaph:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:RECall:FGRaph:SCRoll <scroll>

Parameter: <scroll> = <CHARACTER PROGRAM DATA>

LEFT	Scrolls to the left.
RIGHt	Scrolls to the right.
TOP	Shifts to the top.
BOTTom	Shifts to the bottom.

Function: Instructs the scroll on the Analyze: Recall screen (Frequency).

Example use: To scroll to the left:
> :DISPlay:ANALysis:RECall:FGRaph:SCRoll LEFT

:DISPlay:ANALysis:RECall:FGRaph:MARKer <marker>

Parameter: <marker> = <CHARACTER PROGRAM DATA>

LEFT	Shifts to the left by 1 div.
RIGHt	Shifts to the right by 1 div.

Function: Instructs the marker movement on the Analyze: Recall screen (Frequency).

Restriction: Invalid in the following case:
When Marker: OFF is instructed.

Example use: To shift to the right:
> :DISPlay:ANALysis:RECall:FGRaph:MARKer RIGHt

:DISPlay:ANALysis:RECall:FGRaph:DATA?

Response: <time>, <frequency>, <ppm>
* · Following content is output when there are no Recall: Frequency analysis data:
< "No data"
· Following content is output when the marker is OFF:
< 0, 0, 0, 0, 0, 0, "----------", "--------"

Function: Queries the data to which the marker on the Analyze: Recall screen (Frequency).

Example use: > :DISPlay:ANALysis:RECall:FGRaph:DATA?
< 2000, 12, 25, 12, 54, 30, " 1000.0", " +1000.0"

:DISPlay:ANALysis:RECall:FGRaph:INTerval <numeric>, <suffix>

Parameter: <numeric> = <CHARACTER PROGRAM DATA>
1, 15, 60
<suffix> = <CHARACTER PROGRAM DATA>
M minute

Function: Sets the interval of the graph on the Analyze: Recall screen (Frequency).

Example use: To set 1 graduation width to 1 min.:
> :DISPlay:ANALysis:RECall:FGRaph:INTerval 1, M

:DISPlay:ANALysis:RECall:FGRaph:INTerval?

Response: <numeric> = <CHARACTER RESPONSE DATA>
<suffix> = <CHARACTER RESPONSE DATA>
* Following content is output when there are no Recall: Frequency analysis data:
< "No data"

Function: Queries the interval of the graph on the Analyze: Recall screen (Frequency).

Example use: > :DISPlay:ANALysis:RECall:FGRaph:INTerval?
< 1, M

:DISPlay:ANALysis:RECall:FGRaph:MDISplay <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Marker OFF
ON or 1 Marker ON

Function: Sets whether the marker is displayed on the Analyze: Recall screen (Frequency).

Example use: To set the Frequency marker display to ON:
> :DISPlay:ANALysis:RECall:FGRaph:MDISplay 1

:DISPlay:ANALysis:RECall:FGRaph:MDISplay?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Marker OFF
1	Marker ON

* Following content is output when there are no Recall: Frequency analysis data:

< "No data"

Function: Queries whether the marker is displayed on the Analyze: Recall screen (Frequency).

Example use:
> :DISPlay:ANALysis:RECall:FGRaph:MDISplay?
< 1

:DISPlay:ANALysis:RECall:FGRaph:FROM <numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>[, <numeric6>]

Parameter: <DECIMAL NUMERIC PROGRAM DATA>

<numeric1> =	1994 to 2093 (year)
<numeric2> =	1 to 12 (month)
<numeric3> =	1 to 31 (day)
<numeric4> =	0 to 23 (hour)
<numeric5> =	0 to 59 (minute)
<numeric6> =	0 to 59 (second)

* The nearest time later than the specified time is set when there is no such time as specified by the parameter. However, the measurement start time is set when the set time is earlier than the measurement start time. The log end time is set when the set time is later than the log end time.

Function: Sets the start position to display the Frequency graph on the Analyze: Recall screen.

Example use: To display the time at 11:30:40 on July 28th, 2000:
> :DISPlay:ANALysis:RECall:FGRaph:FROM 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:RECall:FGRaph:FROM?

Response: <numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, <numeric6>
= <NR1 NUMERIC RESPONSE DATA>

* Following content is output when there are no Recall: Frequency analysis data:

< "No data"

Function: Queries the start position to display the Frequency graph on the Analyze: Recall screen.

Example use:
> :DISPlay:ANALysis:RECall:FGRaph:FROM?
< 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:RECall:FGRaph:PRINt <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

DISPlay	Display
ALL	All
AFTer	After
BEFore	Before

Function: Specifies the print range on the Analyze: Recall screen (Frequency).

Example use: To set the Frequency screen range:

> :DISPlay:ANALysis:RECall:FGRaph:PRINt DISPlay

:DISPlay:ANALysis:RECall:FGRaph:PRINt?

Response: <type> = <CHARACTER RESPONSE DATA>

DISP	Display
ALL	All
AFT	After
BEF	Before

* Following content is output when there are no Recall: Frequency analysis data:

< "No data"

Function: Queries the print range on the Analyze: Recall screen (Frequency).

Example use: > :DISPlay:ANALysis:RECall:FGRaph:PRINt?

< DISP

:DISPlay:ANALysis:RECall:FGRaph:SCALe <numeric>

Parameter: <numeric> = <CHARACTER PROGRAM DATA>

10	10 ppm
100	100 ppm
1000	1000 ppm

Function: Sets the vertical scale of graph on the Analyze: Recall screen (Frequency).

Example use: To set the vertical axis scale of Frequency graph at 10 ppm:

> :DISPlay:ANALysis:RECall:FGRaph:SCALe 10

:DISPlay:ANALysis:RECall:FGRaph:SCALe?

Response: <numeric> = <CHARACTER RESPONSE DATA>

* Following content is output when there are no Recall: Frequency analysis data:

< "No data"

Function: Queries the vertical scale of graph on the Analyze: Recall screen (Frequency).

Example use: > :DISPlay:ANALysis:RECall:FGRaph:SCALe?

< 10

:DISPlay:ANALysis:SEQuencetest:TYPE?

Response <type> = <STRING RESPONSE DATA>
"TRS" Trouble search
"EALFGR" Error/Alarm measurement frequency data

Function Queries the type of data displayed on the Analyze:Recall screen.

Example use > :DISPlay:ANALysis:SEQuencetest:TYPE?
< "EALFGR"

:DISPlay:ANALysis:SEQuencetest:TGRaph:SCRoll <scroll>

Parameter <scroll> = <CHARACTER PROGRAM DATA>
LEFT Scrolls to the left.
RIGHt Scrolls to the right.
TOP Shifts to the top.
BOTTom Shifts to the bottom.

Function Indicates the scroll on the Analyze: Sequence test screen (Error/Alarm).

Restriction Invalid in the following case:
・A sequence test has not been done.

Example use To scroll to the right.
> :DISPlay:ANALysis:SEQuencetest:TGRaph:SCRoll RIGHt

:DISPlay:ANALysis:SEQuencetest:TGRaph:MARKer <marker>

Parameter <marker> = <CHARACTER PROGRAM DATA>
LEFT Shifts to the left by 1 div.
RIGHt Shifts to the right by 1 div.

Function Shifts the marker on the Analyze:SEQuencetest screen (Error/Alarm).

Restriction Invalid in the following case:
・A sequence test has not been done.

Example use To shift the marker to the right.
> :DISPlay:ANALysis:SEQuencetest:TGRaph:MARKer RIGHt

:DISPlay:ANALysis:SEQuencetest:TGRaph:DATA?

Response <time>, <alarm1s>, <alarm1c>, <alarm2s>, <alarm2c>, <alarm3s>, <alarm3c>, <alarm4s>, <alarm4c>, <alarm5s>, <alarm5c>, <error1>, <error2>
Same as ":DISPlay:ANALysis:TGRaph:DATA?".

Function Queries the data indicated by the marker on the Analyze:SEQuence test screen (Error/Alarm).

Example use > :DISPlay:ANALysis:SEQuencetest:TGRaph:DATA?
< 2000, 12, 25, 12, 54, 30, " 1", " 1", " 0", " 0", " 104", " 10", " 1", " 1", " 1", " 1", " 189", " 3.3E-04"

:DISPlay:ANALysis:SEQuencetest:TGRaph:INTerval <numeric>, <suffix>

Parameter <numeric> = <CHARACTER PROGRAM DATA>
1, 15, 60
<suffix> = <CHARACTER PROGRAM DATA>
M minute
S s

Function Sets a width for 1 graduation of the time base for the Analyze:SEQuence test screen.

Restriction Invalid in the following case:
・A sequence test has not been done.
・It changes by the setting of "Graph resolution" on the Setup:System screen.

Graph resolution	Analysis Graph Interval
1s	1s, 1min, 15min, 60min
1min	1min, 15min, 60min
15min	15min, 60min
60min	60min

Example use To set a width for 1 graduation of the time base to 1 minute.
> :DISPlay:ANALysis:SEQuencetest:TGRaph:INTerval 1, M

:DISPlay:ANALysis:SEQuencetest:TGRaph:INTerval?

Response <numeric> = <CHARACTER RESPONSE DATA>
<suffix> = <CHARACTER RESPONSE DATA>

Function Queries a width for 1 graduation of the time base on the Analyze:SEQuencetest screen.

Example use > :DISPlay:ANALysis:SEQuencetest:TGRaph:INTerval?
< 1, M

:DISPlay:ANALysis:SEQuencetest:TGRaph:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Marker OFF
ON or 1 Marker ON

Function Set Marker On/Off on the Analyze:SEQuencetest screen (Error/Alarm).

Restriction Invalid in the following case:
・A sequence test has not been done.

Example use To display the marker.
> :DISPlay:ANALysis:SEQuencetest:TGRaph:MDISplay ON

:DISPlay:ANALysis:SEQuencetest:TGRaph:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Marker OFF
1 Marker ON

Function Queries whether the marker is displayed on the Analyze:SEQuence test screen.

Example use > :DISPlay:ANALysis:SEQuencetest:TGRaph:MDISplay?
< 1

:DISPlay:ANALysis:SEQuencetest:TGRaph:SEARch <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

BEFore	Before search
NEXT	Next search

Function Designates a search on the Analyze:SEQuence test screen (Error/Alarm).

Restriction Invalid in the following case:
- A sequence test has not been done.
- :DISPlay:ANALysis:SEQuencetest:TGRaph:MDISplay is <OFF>.
- There is no measurement point to before ; and <BEFore> is set.
- There is no measurement point to after ; and <NEXT> is set.

Example use To designate a search to before.
> :DISPlay:ANALysis:SEQuencetest:TGRaph:SEARch BEFore

:DISPlay:ANALysis:SEQuencetest:TGRaph:FROM<numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, <numeric6>

Parameter <DECIMAL NUMERIC PROGRAM DATA>

<numeric1> =	1994 to 2093 (year)
<numeric2> =	1 to 12 (month)
<numeric3> =	1 to 31 (day)
<numeric4> =	0 to 23 (hour)
<numeric5> =	0 to 59 (minute)
<numeric6> =	0 to 59 (second)

* If no times are specified in the parameter, the nearest times after the specified time are selected. However, the start time of measurement must be specified before the prescribed time, and the log end time must be specified after prescribed time.

Function Sets the Error/Alarm graph display starting position for the Analyze:SEQuence test screen.

Restriction Invalid in the following case:
- A sequence test has not been done.

Example use To indicate the graph from 11' 30' 40" on July 28, 2000:
> :DISPlay:ANALysis:SEQuencetest:TGRaph:FROM 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:SEQuencetest:TGRaph:FROM?

Response <numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, <numeric6>
= <NR1 NUMERIC RESPONSE DATA>

Function Queries the Error/Alarm graph display starting position for the Analyze:SEQuence test screen.

Example use > :DISPlay:ANALysis:SEQuencetest:TGRaph:FROM?
< 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:SEQuencetest:TGRaph:ERRor <error1>, <error2>

Parameter	<error1> = <STRING PROGRAM DATA> <error2> = <CHARACTER PROGRAM DATA> Same as ":DISPlay:ANALysis:TGRaph:ERRor".
Function	Sets an error item to be displayed to the Error/Alarm graph on the Analyze:SEQuence test screen.
Restriction	Invalid in the following case: ・A sequence test has not been done.
Example use	To display the error rate of bit errors on the graph: > :DISPlay:ANALysis:SEQuencetest:TGRaph:ERRor "BIT", ER

:DISPlay:ANALysis:SEQuencetest:TGRaph:ERRor?

Response	<error1>, <error2> <error1> = <STRING RESPONSE DATA> <error2> = <CHARACTER RESPONSE DATA>
Function	Queries an error item for Error/Alarm graphic display of the Analyze:SEQuence test screeen.
Example use	> :DISPlay:ANALysis:SEQuencetest:TGRaph:ERRor? < "BIT", ER

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1 <alarm>

Parameter	<alarm> = <STRING PROGRAM DATA> Same as ":DISPlay:ANALysis:TGRaph:ALARm1".
Function	Sets an alarm item to be displayed to alarm1 of the Analyze:SEQuence test screen.
Restriction	Invalid in the following case: ・A sequence test has not been done.
Example use	To display Power fail to alarm1: > :DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1 "POWer"

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1?

Response	<alarm> = <STRING RESPONSE DATA>
Function	Queries an alarm item displayed to alarm1 of the Analyze:SEQuence test screen.
Example use	> :DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1? < "POW"

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm2 <alarm>

Parameter	<alarm> = <STRING PROGRAM DATA>
Function	Queries an alarm item displayed to alarm2 of the Analyze:SEQuence test screen.
Restriction	Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1".

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm2?

Response <alarm> = <STRING RESPONSE DATA>
Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1?".
Function Queries an alarm item displayed to alarm2 of the Analyze:SEQuence test screen.

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm3 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>
Function Sets an alarm item to be displayed to alarm3 of the Analyze:SEQuence test screen.
Restriction Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1".

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm3?

Response <alarm> = <STRING RESPONSE DATA>
Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1?".
Function Queries an alarm item displayed to alarm3 of the Analyze:SEQuence test screen.

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm4 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>
Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1".
Function Sets an alarm item to be displayed to alarm4 of the Analyze:SEQuence test screen.
Restriction Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1".

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm4?

Response <alarm> = <STRING RESPONSE DATA>
Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1?".
Function Queries an alarm item displayed to alarm4 of the Analyze:SEQuence test screen.

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm5 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>
Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1".
Function Sets an alarm item to be displayed to alarm5 of the Analyze:SEQuence test screen.
Restriction Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1".

:DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm5?

Response <alarm> = <STRING RESPONSE DATA>
Same as ":DISPlay:ANALysis:SEQuencetest:TGRaph:ALARm1?".
Function Queries an alarm item displayed to alarm5 of the Analyze:SEQuence test screen.

:DISPlay:ANALysis:SEQuencetest:TGRaph:PRINt <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

DISPlay	Display
ALL	All
AFTer	After
BEFore	Before

Function Designates a printing range for the Analyze:SEQuence test screen (Error/Alarm).

Restriction Invalid in the following case:
・A sequence test has not been done.

Example use To print the currently displayed screen range:
> :DISPlay:ANALysis:SEQuencetest:TGRaph:PRINt DISPlay

:DISPlay:ANALysis:SEQuencetest:TGRaph:PRINt?

Response <type> = <CHARACTER RESPONSE DATA>

DISP	Display
ALL	All
AFT	After
BEF	Before

Function Queries the printing range for the Analyze:SEQuence test screen (Error/Alarm).

Example use > :DISPlay:ANALysis:SEQuencetest:TGRaph:PRINt?
< DISP

:DISPlay:ANALysis:SEQuencetest:TGRaph:TITLe?

Response <title> = <STRING RESPONSE DATA>

Function Queries the trace graph title on the Analyze:SEQuence test screen (Error/Alarm).

Example use > :DISPlay:ANALysis:SEQuencetest:TGRaph:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:SEQuencetest:FGRaph:TITLe?

Response <title> = <STRING RESPONSE DATA>
Same as ":DISPlay:ANALysis:TRAFfic:TITLe".

Function Queries the trace graph title on the Analyze:SEQuence test screen (Frequency).

Example use > :DISPlay:ANALysis:SEQuencetest:FGRaph:TITLe?
< "TITLE-DISP "

:DISPlay:ANALysis:SEQuencetest:FGRaph:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Marker OFF
ON or 1	Marker ON

Function Sets with or without marker display on the Analyze:SEQuence test screen (Frequency).

Restriction Invalid in the following case:
・A sequence test has not been done.
・When there is no error/alarm data.
Example use To select with marker:
> :DISPlay:ANALysis:SEQuencetest:FGRaph:MDISplay 1

:DISPlay:ANALysis:SEQuencetest:FGRaph:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Marker OFF
1 Marker ON
Function Queries with or without marker display on the Analyze:SEQuence test screen (Frequency).
Example use > :DISPlay:ANALysis:SEQuencetest:FGRaph:MDISplay?
< 1

:DISPlay:ANALysis:SEQuencetest:FGRaph:SCRoll <scroll>

Parameter <scroll> = <CHARACTER PROGRAM DATA>
LEFT Scrolls to the left.
RIGHt Scrolls to the right.
TOP Scroll to the top.
BOTTom Scrolls to the bottom.
Function Instructs scroll on the Analyze:SEQuence test screen (Frequency).
Example use To select scroll to the left.
> :DISPlay:ANALysis:SEQuencetest:FGRaph:SCRoll LEFT

:DISPlay:ANALysis:SEQuencetest:FGRaph:MARKer <marker>

Parameter <marker> = <CHARACTER PROGRAM DATA>
LEFT Shift to the left by 1 div.
RIGHt Shift to the right by 1 div.
Function Instructs shift of the marker on the Analyze:SEQuence test screen (Frequency).
Restriction Invalid in the following case:
・A sequence test has not been done.
・ :DISPlay:ANALysis:SEQuencetest:FGRaph:MDISplay is set to 0 (Marker:OFF).。
Example use To shift the marker to the right by 1 div.:
> :DISPlay:ANALysis:SEQuencetest:FGRaph:MARKer RIGHt

:DISPlay:ANALysis:SEQuencetest:FGRaph:DATA?

Response <time>, <frequency>, <ppm>
Same as ":DISPlay:ANALysis:FGRaph:DATA".
Function Queries data indicated by the marker for the Analyze:SEQuence test screen (Frequency).
Example use > :DISPlay:ANALysis:SEQuencetest:FGRaph:DATA?
< 2000, 12, 25, 12, 54, 30, " 1000.0", " +1000.0"

:DISPlay:ANALysis:SEQuencetest:FGRaph:INTerval <numeric>, <suffix>

Parameter <numeric> = <CHARACTER PROGRAM DATA>
1, 15, 60
<suffix> = <CHARACTER PROGRAM DATA>
M minute

Function Sets a width for 1 graduation of the time base for the Analyze:SEQuence test screen (Frequency).

Restriction Invalid in the following case:
・A sequence test has not been done.

Example use To set a width for 1 graduation of the time base to one minute.
> :DISPlay:ANALysis:SEQuencetest:FGRaph:INTerval 1, M

:DISPlay:ANALysis:SEQuencetest:FGRaph:INTerval?

Response <numeric> = <CHARACTER RESPONSE DATA>
<suffix> = <CHARACTER RESPONSE DATA>

Function Queries the 1 graduation width of time base of the Analyze:SEQuence test screen (Frequency).

Example use > :DISPlay:ANALysis:SEQuencetest:FGRaph:INTerval?
< 1, M

:DISPlay:ANALysis:SEQuencetest:FGRaph:FROM<numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>[, <numeric6>]

Parameter <DECIMAL NUMERIC PROGRAM DATA>
<numeric1> = 1994 to 2093 (year)
<numeric2> = 1 to 12 (month)
<numeric3> = 1 to 31 (day)
<numeric4> = 0 to 23 (hour)
<numeric5> = 0 to 59 (minute)
<numeric6> = 0 to 59 (second)
* The nearest time later than the specified time is set when there is no such time as specified by the parameter. However, the measurement start time is set when the set time is earlier than the measurement start time. The log end time is set when the set time is later than the log end time.

Function Sets the start position to display on the Analyze:SEQuence test screen (Frequency).

Example use To display the time at 11:30:40 on July 28th, 2000:
> :DISPlay:ANALysis:SEQuencetest:FGRaph:FROM 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:SEQuencetest:FGRaph:FROM?

Response <numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, <numeric6>
= <NR1 NUMERIC RESPONSE DATA>

Function Queries the start position to display on the Analyze:SEQuence test screen (Frequency).
Example use > :DISPlay:ANALysis:SEQuencetest:FGRaph:FROM?
< 2000, 7, 28, 11, 30, 40

:DISPlay:ANALysis:SEQuencetest:FGRaph:PRINt <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

DISPlay	Display
ALL	All
AFTer	After
BEFore	Before

Function Specifies the print range on the Analyze:SEQuence test screen (Frequency).
Restriction Invalid in the following case:
・A sequence test has not been done.
Example use To set the print range.
> :DISPlay:ANALysis:SEQuencetest:FGRaph:PRINt DISPlay

:DISPlay:ANALysis:SEQuencetest:FGRaph:PRINt?

Response <type> = <CHARACTER RESPONSE DATA>

DISP	Display
ALL	All
AFT	After
BEF	Before

Function Queries the print range on the Analyze:SEQuence test screen (Frequency).
Example use > :DISPlay:ANALysis:SEQuencetest:FGRaph:PRINt?
< DISP

:DISPlay:ANALysis:SEQuencetest:FGRaph:SCALe <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>

10	10 ppm
100	100 ppm
1000	1000 ppm

Function Sets the vertical scale of graph on the Analyze:SEQuence test screen (Frequency).
Restriction Invalid in the following case:
・A sequence test has not been done.
Example use To set the vertical scale of Frequency graph at 10 ppm:
> :DISPlay:ANALysis:SEQuencetest:FGRaph:SCALe 10

:DISPlay:ANALysis:SEQuencetest:FGRaph:SCALe?

Response <numeric> = <CHARACTER RESPONSE DATA>
Function Queries the vertical scale of graph on the Analyze:SEQuence test screen (Frequency).

Example use > :DISPlay:ANALysis:SEQuencetest:FGRaph:SCALe?
< 10

:DISPlay:SETup[:NAME] <sdisplay>

Parameter: <sdisplay> = <STRING PROGRAM DATA>

"MAPPing"	Mapping subscreen
"MEMory"	Memory subscreen
"PRINt"	Print subscreen
"FDISk"	Floppy disk subscreen
"SYSTem"	System subscreen
"SPPData"	OH preset data subscreen
"TANDem"	Tandem screen
"DMYPreset"	Dummy Preset screen
"MEAScond"	Measurement condition screen
"APSProg"	APS programable data screen
"PTR64frame"	PTR 64frame screen
"OHCHange"	OH change data screen
"FMEMory"	Frame memory screen
"SIGPreset"	Signaling preset screen
"25G10Gcustom"	2.5G/10G custom screen
"CUSTOmer"	Custom function subscreen
"SEQuence"	Sequence test subscreen
"ASETup"	Auto setup subscreen
"STESt"	Self test subscreen

Function: Selects a subscreen of the Setup main screen.

Restriction: Invalid in the following case:
- When <"STESt"> is specified during measurement specified by the test menu main screen.

Example use: To select "PRINt" subscreen of the Setup main screen:
> :DISPlay:SETup:NAME "PRINt"
or :DISPlay:SETup "PRINt" (NAME may be omitted.)

:DISPlay:SETup[:NAME]?

Response: <display> = <STRING RESPONSE DATA>

Function: Queries the selected subscreen of the Setup main screen.

Example use: > :DISPlay:SETup:NAME?
or :DISPlay:SETup? (NAME may be omitted.)
< "PRIN"

:DISPlay:SETup:BRATe <brate>

Parameter: <brate> = <CHARACTER PROGRAM DATA>

M9953	9953Mbit/s
M2488	2488Mbit/s
M622	622Mbit/s
M156	156Mbit/s
M52	52Mbit/s

Function: Sets a display bit rate for OH preset data of the Setup main screen (OH preset data subscreen).
Restriction: Invalid in the following case:
- When <M9953> is set while 9953M-type interface unit is not installed.
- When <M2488> is set while 2488M-type interface unit is not installed.
- When <M622> is set while 622M-type interface unit is not installed.
- When <M156> is set while 156M-type interface unit and 2/8/34/139/156M (CMI) unit are not installed.

Example use: To select the 622 Mb/s display:
> :DISPlay:SETup:BRATe M622

:DISPlay:SETup:BRATe?

Response: <brate> = <CHARACTER RESPONSE DATA>
Function: Queries the display bit rate for OH preset data of the Setup main screen (OH preset data subscreen).
Example use: > :DISPlay:SETup:BRATe?
< M622

:DISPlay:SETup:SOHCh <numeric>
:DISPlay:SETup:TOHCh <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1
Function: Sets a display SOH [TOH] channel for OH preset data of the Setup main screen (OH preset data subscreen).
Restriction: Invalid in the following case:
Invalid when only the 2/8/34/139/156M (CMI) unit is installed.
Example use: To display the SOH channel4:
> :DISPlay:SETup:SOHCh 4

:DISPlay:SETup:SOHCh?
:DISPlay:SETup:TOHCh?

Response: <NR1 NUMERIC RESPONSE DATA>
Function: Queries the display SOH [TOH] channel for OH preset data of the Setup main screen (OH preset data subscreen).
Example use: > :DISPlay:SETup:SOHCh?
< 4

:DISPlay:SETup:FDPage <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 7 Page number
Function: Instructs page scrolling for the Setup main screen (Floppy Disk subscreen).
Example use: To scroll to the 2nd page:
> :DISPlay:SETup:FDPage 2

:DISPlay:SETup:FDPage?

Response: <numeric1>, <numeric2>
<numeric1> = <NR1 NUMERIC RESPONSE DATA>
Current page number
1 to 7
<numeric2> = <NR1 NUMERIC RESPONSE DATA>
Total number of pages
1 to 7

Function: Queries the page number currently displayed on the Setup main screen (Floppy Disk subscreen).

Example use:
> :DISPlay:SETup:FDPage?
< 1, 2

:DISPlay:SETup:OHPReset[:NAME] <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

SDH	SDH
SONET	SONET

Function: Sets the display switch of the OH preset data on the Setup screen.

Restriction: Invalid in the following case:
When the setting of Config for the Setup: Mapping screen is NON.

Example use: To switch to the SDH screen:
> :DISPlay:SETup:OHPReset:NAME SDH
or
> :DISPlay:SETup:OHPReset SDH

:DISPlay:SETup:OHPReset[:NAME]?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the display switch of the Oh preset data on the Setup screen.

Example use:
> :DISPlay:SETup:OHPReset:NAME?
or
> :DISPlay:SETup:OHPReset?
< SDH

:DISPlay:SETup:PTR64:SCRoll <type>

Parameter: <scroll> = <CHARACTER PROGRAM DATA>

UP	Scrolls upward.
DOWN	Scrolls downward.
TOP	Shifts to the top.
BOTTom	Shifts to the bottom.

Function: Instructs the scroll for the PTR64 frame on the Setup screen.

Example use: To scroll up:
> :DISPlay:SETup:CELL:MEMorized:SCRoll UP

:DISPlay:SETup:FMEMory:JUMP <jump>

Parameter: <jump> = <DECIMAL NUMERIC PROGRAM DATA>

	1 to 73	When using 52M.
	1 to 253	When using 156M.
	1 to 1063	When using 622M.
	1 to 4303	When using 2448M.
	1 to 17263	When using 9953M.

Function: Sets the first column number to edit of the Setup:Frame memory screen.

Example use: To set the first column number 7 to edit:
> :DISPlay:SETup:FMEMory:JUMP 7

:DISPlay:SETup:FMEMory:JUMP?

Response: <jump> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the first column number to edit of the Setup:Frame memory screen.

Example use: To query the first column number to edit:
> :DISPlay:SETup:FMEMory:JUMP?
< 7

:DISPlay:SETup:FMEMory:SCRoll <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

TOP	Jumps to the top column.
END	Jumps to the end column.
NEXT	Goes to next page (by 18 columns).
BEFOR	Goes back to previous page (by 18 columns).

Function: Sets the display position of payload data for the Setup:Frame memory screen.

Example use: To go to next page:
> :DISPlay:SETup:FMEMory:SCRoll NEXT

:DISPlay:SETup:APS:SCRoll <type>

Parameter <scroll> = <CHARACTER PROGRAM DATA>

UP	Scrolls up.
DOWN	Scrolls down.
TOP	Shift to the top
BOTTom	Shift to the bottom

Function Instructs the scroll of the Setup:APS program data screen.

Example use To scroll up.
>:DISPlay:SETup:APS:SCRoll UP

:DISPlay:SETup:SPR:SCRoll <type>

Parameter	<scroll> = <CHARACTER PROGRAM DATA>	
	UP	Scrolls up.
	DOWN	Scrolls down.
	TOP	Shift to the top
	BOTTom	Shift to the bottom
Function	Instructs the scroll of the Setup:S1 program data screen.	
Example use	To scroll up.	
	> :DISPlay:SETu	

10.3.5 ROUTe subsystem

The ROUTe subsystem sets connectors to be used. The following table shows functions, commands, and parameters.

Function	Command	Parameter
Page 10-448		
Selects a signal input connector when the receive signal is 2M.	:ROUTe:INPut:SELect	port
Queries the signal input connector for the 2M receive signal.	:ROUTe:INPut:SELect?	
Page 10-448		
Sets ON/OFF of the Thorough function.	:ROUTe:THRough[:TYPE]	boolean
Queries the status of Thorough function setting.	:ROUTe:THRough[:TYPE]?	
Page 10-449		
Sets the processing mode of the through data upon Through on.	:ROUTe:THRough:MODE	mode
Queries the processing mode of the through data upon Through on.	:ROUTe:THRough:MODE?	
Page 10-449		
Sets the range of OH overwrite upon Through on.	:ROUTe:THRough:OH	otype
Queries the range of OH overwrite upon Through on.	:ROUTe:THRough:OH?	
Sets the byte position of SOH 1byte overwrite upon Through on.	:ROUTe:THRough:POSition::SOH1	posi
	:ROUTe:THRough:POSition::TOH1	posi
Queries the byte position of SOH 1byte overwrite upon Through on.	:ROUTe:THRough:POSition::SOH1?	
	:ROUTe:THRough:POSition::TOH1?	
Sets the channel position of SOH 1byte overwrite upon Trough on.	:ROUTe:THRough:CHANel	ch
Queries the channel position of SOH 1byte overwrite upon Trough on.	:ROUTe:THRough:CHANel?	
Sets the changing byte position of POH 1byte overwrite upon Through on.	:ROUTe:THRough:POSition:POH1	vctype, posi
Queries the changing byte position of POH 1byte overwrite upon Through on.	:ROUTe:THRough:POSition:POH1?	
Page 10-453		
Sets the 52M signal input.	:ROUTe:M52:MINPut	type
Queries the 52M signal input.	:ROUTe:M52:MINPut?	
Page 10-453		
Sets the 52M signal output.	:ROUTe:M52:OUTPut	type
Queries the 52M signal output.	:ROUTe:M52:OUTPut?	

:ROUTe:INPut:SELect <port>

Parameter: <port> = <CHARACTER PROGRAM DATA>

PORT1	Unbalanced connector
PORT2	Balanced connector

Function: Selects a signal input connector when the receive signal is 2M.

Restriction: Invalid in the following cases:

- When the 2/8/34/139/156M (CMI) unit is not installed.
- :SENSe:TELecom:BRATe is other than <M2>.

Example use: To select the unbalanced setting for the input connector:

> :ROUTe:INPut:SELect PORT1

:ROUTe:INPut:SELect?

Response: <port> = <CHARACTER RESPONSE DATA>

Function: Queries the signal input connector for the 2M receive signal.

Example use: > :ROUTe:INPut:SELect?

< PORT1

ROUTe:THRough[:TYPE] <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Through OFF
ON or 1	Through ON

Function: Sets ON/OFF of the Thorough function.

Restriction: Invalid unless all the following conditions are satisfied:

- :INSTrument:COUPle is set to <ALL>.
- :SENSe:TELecom:BRATe is set to <M622> or <M156>.
- :SENSe:TELecom:MMODe is set to <ISERvice>.

Example use: To set the Thorough function to ON:

> :ROUTe:THRough ON

:ROUTe:THRough:[TYPE]?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the status of Thorough function setting.

Restriction: Invalid unless all the following conditions are satisfied:

- :INSTrument:COUPle is set to <ALL>.
- :SENSe:TELecom:BRATe is set to <M622> or <M156>.
- :SENSe:TELecom:MMODe is set to <ISERvice>.

Example use: > :ROUTe:THRough?

< 1

:ROUTe:THRough:MODE <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>

(SDH)

TRANS	Transparent through
OH	OH overwrite
PAYLOAD	Payload overwrite
SOH1	SOH 1 byte overwrite
POH1	POH 1 byte overwrite

(SONET)

TRANS	Transparent through
OH	OH overwrite
PAYLOAD	Payload overwrite
TOH1	TOH 1 byte overwrite
POH1	POH 1 byte overwrite

Function: Sets the processing mode of the through data upon Through on.

Restriction: Invalid in the following case:

・:INSTrument:CONFig <type> is set to NON,CID, or ATM.

・ROUTe:THRough[:TYPE] is set to <OFF>.

Example use: When the processing mode of the through data is set to OH.

> :ROUTe:THRough:MODE OH

:ROUTe:THRough:MODE?

Response: <mode> = <CHARACTER RESPONSE DATA>

Function: Queries the processing mode of the through data upon Through on.

Example use: > :ROUTe:THRough:MODE?

< OH

:ROUTe:THRough:OH <otype>

Parameter <otype> = <CHARACTER PROGRAM DATA>

SOH

POH

K1_K2

S1

Function Sets the range of OH overwrite upon Through on.

Restriction Invalid in the following case:

・:INSTrument:CONFig <type> is set to NON,CID, or ATM.

・ROUTe:THRough[:TYPE] is set to <OFF>.

・:ROUTe:THRough:MODE is other than <OH>.

・Option-22 is not installed and <K1_K2> or <S1> is selected.

Example use When the range of OH overwrite is set to SOH.

> :ROUTe:THRough:OH SOH

:ROUTe:THRough:OH?

Response: <otype> = <CHARACTER RESPONSE DATA>
Function: Queries the range of OH overwrite upon Through on.
Example use: > :SOURce:TELecom:THRough:OH?
< SOH

:ROUTe:THRough:POSition:SOH1 <posi>
:ROUTe:THRough:POSition:TOH1 <posi>

Parameter: <posi> = <CHARACTER PROGRAM DATA>
(SDH)

A11	A11	A13	A21	A22	A23	J0 Z01	X18	X19
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	Z23 M1	E2 X97	X98	X99

(SONET)

A11	A12	A13	A21	A22	A23	J0 Z01	Z02	Z03
X21	X22	X23	E1 X24	X25	X26	F1 X27	X28	X29
D1 X31	X32	X33	D2 X34	X35	X36	D3 X37	X38	X39
—	—	—	—	—	—	—	—	—
—	—	—	X54	X55	X56	X57	X58	X59
D4 X61	X62	X63	D5 X64	X65	X66	D6 X67	X68	X69
D7 X71	X72	X73	D8 X74	X75	X76	D9 X77	X78	X79
D10 X81	X82	X83	D11 X84	X85	X86	D12 X87	X88	X89
S1 Z11	Z12	Z13	Z21	Z22	Z23 M1	E2 X97	X98	X99

Function: Sets the byte position of SOH 1byte overwrite [TOH 1byte overwrite] upon Through on.

Restriction: Invalid in the following case:
・When INSTrument:CONFig <type> is NON,CID, or ATM.
・When ROUTe:THRough[:TYPE] is set to <OFF>.
・When ROUTe:THRough:MODE is set to<SOH1> or <TOH1>.
Example use: When the byte position of SOH 1 byte overwrite upon Through on is set to <ALL>.
>:ROUTe:THRough:POSition:SOH1 A11

:ROUTe:THRough:POSition:SOH1?
:ROUTe:THRough:POSition:TOH1?

Response: <posi> = <CHARACTER RESPONSE DATA>
Function: Queries the byte position of SOH 1byte overwrite [TOH 1byte overwrite] upon Through on
Example use: >:ROUTe:THRough:POSition:SOH1?
<A11

:ROUTe:THRough:CHANel <ch>

Parameter <ch> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value 1
Function: Sets the channel position of SOH 1byte upon Through on.
Restriction: Invalid in the following case:
・When INSTrument:CONFig <type> is NON,CID, or ATM.
・When ROUTe:THRough[:TYPE] is set to <OFF>.
・When ROUTe:THRough:MODE is set to <SOH1> or <TOH1>.
Example use: When the channel of SOH 1byte overwrite is set to “4” upon Through on.
>:ROUTe:THRough:CHANel 4

:ROUTe:THRough:CHANel?

Response: <ch> = <NR1 RESPONSE DATA>
1 to 64 Step value 1
Function: Queries the channel position of SOH 1byte upon Through on.
Example use: >:ROUTe:THRough:CHANel?
<4

:ROUTe:THRough:POSition:POH1 <vctype>,<posi>

Parameter <vctype> = <CHARACTER PROGRAM DATA>

(SDH)

VC4	POH VC4 pattern
VC3	POH VC3 pattern
VC1	POH VC2/1 pattern

(SONET)

STS3	POH STS3 pattern
STS1	POH STS1 pattern
VT	POH VT pattern

<posi> = <CHARACTER PROGRAM DATA>

(SDH) J1 C2 G1 F2 H4 F3 K3 N1 J2 N2 K4

(SONET) J1 C2 G1 F2 H4 Z3 Z4 Z5 J2 Z6 Z7

Function: Sets the changing byte position of POH 1byte overwrite upon Through on.

Restriction: Invalid in the following case:

・: When INSTrument:CONFig <type> is NON,CID or ATM.

・: When ROUTe:THRough[:TYPE] is set to <OFF>.

・: When ROUTe:THRough:MODE is set to <POH1>.

・: When SOURce:TELecom:MAPPing:AU upon VC4 [STS3] is set to <AU3>.

・ :When:SOURce:TELecom:MAPPing:TYPE upon VC3[STS1] <VC4_16CBLK>, <VC4_4CBLK>, <VC4_CBLK> or <ST3_ASY>, <ST3_BLK>, <STS3_64CBLK>, <STS3_16CBLK>, <STS3_4CBLK>, <STS3_CBLK>.

・When SOURce:TELecom:MAPPing:AU upon VC3[STS1] is set to <AU4> and then when :SOURce:TELecom:MAPPing:TYPE is set in the following mapping: <VC2_6MASY>, <VC2_6MBIT>, <VC2_BLK>, <VC2_MC>, <VC12_ASY>, <VC12_BIF>, <VC12_BIL>, <VC12_BYF>, <VC12_BYL>, <VC12_BLK>, <VC11_ASY>, <VC11_BIF>, <VC11_BIL>, <VC11_BYF>, <VC11_BYL>, <VC11_BLK>, <VC11_BYD>, <VC11_BYV>, <VC11_384D>, <VC11_384V> or <VT6_ASY>, <VT6_BIT>, <VT6_BLK>, <VT6_MC>, <VT2_ASY>, <VT2_BIF>, <VT2_BIL>, <VT2_BYF>, <VT2_BYL>, <VT2_BLK>, <VT15_ASY>, <VT15_BIF>, <VT15_BIL>, <VT15_BYF>, <VT15_BYL>, <VT15_BLK>, <VT15_ASY>, <VT15_BIF>, <VT15_BIL>, <VT15_BYF>, <VT15_BYL>, <VT15_BLK>, <VT15_BYD>, <VT15_BYV>, <VT15_384D>, <VT15_384V>

Example use: When the byte position of POH 1byte overwrite is set to VC4 J1 upon Through on.

>:ROUTe:THRough:POSition:POH1 VC4,J1

:ROUTe:THRough:POSition:POH1?

Response <vctype> = <CHARACTER RESPONSE DATA>
Function Queries the changing position of POH 1byte overwrite upon Through on.
Example use >:ROUTe:THRough:POSition:POH1?
<VC4,J1

:ROUTe:M52:MINPut <type>

Parameter: <type> = <BOOLEAN PROGRAM DATA>
OFF or 0 Monitor input OFF
ON or 1 Monitor input ON
Function: Sets the 52M signal input.
Restriction: Invalid in the following case:
・When 52M (Optical) unit is not installed.
・When the :SOURce:TELecom:BRATe is other than <M52>
Example use: To set the 52M signal input to Monitor input
> :ROUTe:M52:MINPut ON

:ROUTe:M52:MINPut?

Response: <type> = <NR1 NUMERIC RESPONSE DATA>
0 Monitor input OFF
1 Monitor input ON
Function: Queries the 52M signal input.
Example use: > :ROUTe:M52:INPut?
< 1

:ROUTe:M52:OUTPut <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>
OPTical1 (1.31 μ m)
OPTical2 (1.55 μ m)
Function: Sets the 52M signal output.
Restriction: Invalid in the following case:
・When 52M (Optical) unit is not installed.
・When <OPTical1>is selected while 52M (1.31) unit is not installed.
・When <OPTical2>is selected while 52M (1.55) unit is not installed.
・When the :SENSe:TELecom:BRATe is other than <M52>
Example use: To set the 52M signal input to Optical(1.31 μ m).
> :ROUTe:M52:OUTPut OPTical1

:ROUTe:M52:OUTPut?

Response: <type> = <CHARACTER RESPONSE DATA>
OPT1
OPT2
Function: Queries the 52M signal output.
Example use: > :ROUTe:M52:OUTPut?
< OPT1

10.3.6 CALCulate subsystem

The CALCulate subsystem displays the settings of the performance measurements and the measurment results. The following table shows functions, commands, and parmeters.

Function	Command	Parameter
Page 10-461		
Sets a type of the performance measurement	CALCulate:TELecom:PERFormance:TYPE	perform
Queries the type of performance measurement	CALCulate:TELecom:PERFormance:TYPE?	
Sets the performance measurement frame	CALCulate:TELecom:PERFormance:FRAMe	pdhframe
Queries the performance measurement frame	CALCulate:TELecom:PERFormance:FRAMe?	
Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2100:ES:SET	boolean
Queries the current setting of the threshold judgement of the M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:ES:SET?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S1	numeric
Queries the threshold (lower limit) of M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S1?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S2	numeric
Queries the threshold (upper limit) of M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S2?	
Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2100:SES:SET	boolean
Queries the current setting of the threshold judgement of the M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:SES:SET?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S1	numeric
Queries the threshold (lower limit) of M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S1?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S2	numeric
Queries the threshold (upper limit) of M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S2?	
Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2100:US:SET	boolean
Queries the current setting of the threshold judgement of the M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:US:SET?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:US:S1	numeric
Queries the threshold (lower limit) of M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:US:S1?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:US:S2	numeric

Queries the threshold (upper limit) of M.2100 performance.	:CALCulate:TELecom:PERFormance:THReshold:M2100:US:S2?	
Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:SET	boolean
Queries the current setting of the threshold judgement of the M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:SET?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S1	numeric
Queries the threshold (lower limit) of M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S1?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S2	numeric
Queries the threshold (upper limit) of M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S2?	
Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:SET	boolean
Queries the current setting of the threshold judgement of the M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:SET?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S1	numeric
Queries the threshold (lower limit) of M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S1?	
Sets the threshold for the M.2100 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S2	numeric
Queries the threshold (upper limit) of M.2100 performance.	CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S2?	
Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2101:ES:SET	boolean
Queries the current setting of the threshold judgement of the M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:ES:SET?	
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S1	numeric
Queries the threshold (lower limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S1?	
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S2	numeric
Queries the threshold (upper limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S2?	
Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2101:SES:SET	boolean
Queries the current setting of the threshold judgement of the M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:SES:SET?	boolean
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S1	numeric
Queries the threshold (lower limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S1?	
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S2	numeric
Queries the threshold (upper limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S2?	

Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2101:US:SET	boolean
Queries the current setting of the threshold judgement of the M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:US:SET?	
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:US:S1	numeric
Queries the threshold (lower limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:US:S1?	
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:US:S2	numeric
Queries the threshold (upper limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:US:S2?	
Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:SET	boolean
Queries the current setting of the threshold judgement of the M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:SET?	
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S1	numeric
Queries the threshold (lower limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S1?	
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S2	numeric
Queries the threshold (upper limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S2?	
Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:SET	boolean
Queries the current setting of the threshold judgement of the M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:SET?	
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S1	numeric
Queries the threshold (lower limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S1?	
Sets the threshold for the M.2101 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S2	numeric
Queries the threshold (upper limit) of M.2101 performance.	CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S2?	
Sets BIS Limit for M.2110 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2110:TYPe	type
Queries the setting of BIS Limit for M.2110 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2110:TYPe?	
Sets the value of BIS Limit for M.2110 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2110:LIMit	limit
Queries the value of BIS Limit for M.2110 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2110:LIMit?	
Sets the threshold of 2-hour ES S1 for M.2110 performance judgement.	CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S1	numeric
Queries the threshold of 2-hour ES S1 for M.2110 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S1?	
Sets the threshold of 2-hour ES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S2	numeric

Queries the threshold of 2-hour ES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S2?	
Sets the threshold of 24-hour ES S1 M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S1	numeric
Queries the threshold of 24-hour ES S1 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S1?	
Sets the threshold of 24-hour ES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S2	numeric
Queries the threshold of 24-hour ES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S2?	
Sets the threshold of 7-day ES for M.2110 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S1	numeric
Queries the threshold of 7-day ES S1 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S1?	
Sets the threshold of 7-day ES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S2	numeric
Queries the threshold of 7-day ES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S2?	
Sets the threshold of 2-hour SES S1 M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S1	numeric
Queries the threshold of 2-hour SES S1 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S1?	
Sets the threshold of 2-hour SES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S2	numeric
Queries the threshold of 2-hour SES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S2?	
Sets the threshold of 24-hour SES S1 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S1	numeric
Queries the threshold of 24-hour SES S1 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S1?	
Sets the threshold of 24-hour SES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S2	numeric
Queries the threshold of 24-hour SES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S2?	
Sets the threshold of 7-day SES for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S1	numeric
Queries the threshold of 7-day SES S1 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S1?	
Sets the threshold of 7-day SES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S2	numeric
Queries the threshold of 7-day SES S2 for M.2110 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S2?	
Sets Threshold for M.2120 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2120:TYPe	type

Queries the setting of the Threshold for M.2120 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2120:TYPe?	
Sets the value of Threshold for M.2120 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit1	limit
Queries the value of threshold for M.2110 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit1?	
Sets Threshold for M.2120 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit2	limit
Queries the threshold of M.2120 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit2?	
Sets the threshold of ES TR1 (15-minute) for M.2120 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR1	numeric
Queries the threshold of ES TR1 M.2120 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR1?	
Sets the threshold of ES TR2 (24-hour) for M.2120 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR2	numeric
Queries the threshold of ES TR2 M.2120 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR2?	
Sets the threshold of SES TR1 (15-minute) for M.2120 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR1	numeric
Queries the threshold of SES TR1 M.2120 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR1?	
Sets the threshold of SES TR2 (24-hour) for M.2120 performance judgement	:CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR2	numeric
Queries the threshold of SES TR2 M.2120 performance judgement.	:CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR2?	

Page 10-487

Queries the measurement result corresponding to the parameter.	:CALCulate:DATA?	string

Page 10-507

Querying of measurement result	:CALCulate:HISTory?	string

Page 10-507

Queries trouble search judgement results.	:CALCulate:TSEarch:RESult?	

Page 10-507

Queries trouble search result data.	:CALCulate:TSEarch:DATA?	result

Page 10-511

Queries the Error/Alarm analysis result.	:CALCulate:TGRaph:DATA?	numeric1 numeric2 numeric3 numeric4 numeric5 numeric6

Page 10-513

Queries the value of graph data on the frequency monitoring screen	:CALCulate:FGRaph:DATA?	Time number

Page 10-514

Queries the simultaneous measurement result.	:CALCulate:SIMultaneous:DATA?	ch1 ch2

Page 10-514

Queries results of APS Capture measurement.	:CALCulate:APSCapture:DATA?	numeric1 numeric2

Page 10-515

Queries the Frame Capture data.	:CALCulate:FRAMecapture:DATA?	start1 start2 stop1 stop2

Page 10-515

Queries results of Overhead Capture measurement.	:CALCulate:OHCapture:DATA?	Type numeric1 numeric2

Page 10-516

Queries source addresses and destination addresses currently displayed (up to 12 addresses).	:CALCulate:IPCapture:LIST?	

Page 10-517

Queries the number of IPの source addresses and destination addresses of IP.	:CALCulate:IPCAPTure:PCOunt?	

Page 10-517

Queries Etype and IP header of specified No., along with information data specified by start and stop.	:CALCulate:IPCapture:IPPACket?	no start stop

:CALCulate:TELecom:PERFormance:TYPE <perform>

Parameter: <perform> = <CHARACTER PROGRAM DATA>

OFF	OFF
G821	G.821 performance measurement
G826	G.826 performance measurement
M2100	M.2100 performance measurement
M2101	M.2101 performance measurement
M2110	M.2110 performance measurement
M2120	M.2120 performance measurement

Function: Sets a type of the performance measurement

Restriction: Invalid in the following case:

・When <G821>, <G826>, <M2100>, or <M2101> is set under all of the conditions below.

(1) :SENSe:TELecom:BRATe is <M139>, <M45>, <M34>, <M8>, <M2>, or <M1_5>

(1) :SENSe:TELecom:MMODe is <ISERvice>

(2) :SENSe:TELecom:DEMUX:MRATe is <OFF>

(3) :SENSe:TELecom:FRAMing is <OFF>

When <G821> or <M2100> is set while :SENSe: TELecom: MAPPing:TYPE is <VC4_BLK>, <VC3_BLK>, <VC2_BLK>, <VC4_MC>, <VC12_BLK>, or <VC11_BLK>.

・When <G821> or <M2100> is set under the all of the conditions below.

(1) :SENSe:TELecom:BRATe is <M622>, <M156>, <M156CMI>, or <M52B3ZS>

(2) :SENSe:TELecom:MMODe is <ISERvice>

(3) :SENSe:TELecom:DEMUX:MRATe is <OFF>

(4) :SENSe:TELecom:FRAMing is <OFF>

Example use: To select the M.2100 performance measurement

> :CALCulate:TELecom:PERFormance:TYPE M2100

:CALCulate:TELecom:PERFormance:TYPE?

Response: <perform> = <CHARACTER RESPONSE DATA>

Function: Queries the type of performance measurement

Example use: > :CALCulate:TELecom:PERFormance:TYPE?

< M2100

:CALCulate:TELecom:PERFormance:FRAMe <pdhframe>

Parameter: <pdhframe> = <CHARACTER PROGRAM DATA>

M139	139Mbit/s frame
M45	45Mbit/s frame
M34	34Mbit/s frame
M8	8Mbit/s frame
M2	2Mbit/s frame
M1_5	1.5Mbit/s frame

Function: Sets the performance measurement frame
Restriction: Invalid in the following case:
・When only the 1.5/45/52MB3ZS unit is installed.
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>
・When :SENSe: TELecom: MAPPing:TYPE is <VC4_BLK>, <VC3_BLK>, <VC2_BLK>, <VC4_MC>, <VC12_BLK>, or <VC11_BLK>.
・When :SENSe: TELecom:MMODe is <OSERvice>
Example use: To set the performance measurement frame to 139 Mbit/s frame:
> :CALCulate:TELecom:PERFormance:FRAMe M139

:CALCulate:TELecom:PERFormance:FRAMe?

Response: <pdhframe> = <CHARACTER RESPONSE DATA>
Function: Queries the performance measurement frame
Example use: > :CALCulate:TELecom:PERFormance:FRAMe
< M139

:CALCulate:TELecom:PERFormance:THReshold:M2100:ES:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Does not make judgement
ON or 1	Makes judgement

Function: Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement.
The above command sets ON/OFF of RxES
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
Example use: To set the judgement with RxES of M.2100 to ON:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:ES:SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2100:ES:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Does not make judgement
1	Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2100 performance.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:ES:SET?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step: 1

Function: Sets the threshold for the M.2100 performance judgement.
The above command sets S1 (lower limit of the threshold) of RxES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M2100:ES:SET is <OFF>.

Example use: To set the threshold lower limit of M.2100 RxES to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (lower limit) of M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1

Function: Sets the threshold for the M.2100 performance judgement.
The above command sets S2 (upper limit of the threshold) of RxES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M2100:ES:SET is <OFF>.
- When S2 is equal to or smaller than S1

Example use: To set the threshold upper limit of M.2100 RxES to 99999:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (upper limit) of M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2100:SES:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Does not make judgement
ON or 1 Makes judgement

Function: Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement
The above command sets ON/OFF of RxSES

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.

Example use: To set the judgement with RxSES of M.2100 to ON:
>:CALCulate:TELecom:PERFormance:THReshold:M2100:SES:SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2100:SES:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Does not make judgement
1 Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:SES:SET?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step: 1

Function: Set the threshold for the M.2100 performance judgement.
The above command sets S1 (lower limit of the threshold) of RxSES.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
・When :CALCulate:TELecom:PERFormance:THReshold:M2100:SES:SET is <OFF>.

Example use: To set the threshold lower limit of M.2100 RxSES to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (lower limit) of M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1

Function: Set the threshold for the M.2100 performance judgement.
The above command sets S2 (upper limit of the threshold) of RxSES.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>,<M2110> or <M2120>.
・When :CALCulate:TELecom:PERFormance:THReshold:M2100:SES:SET is <OFF>.
・When S2 is equal to or smaller than S1.

Example use: To set the threshold upper limit of M.2100 RxSES to 99999:
>:CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA

Function: Queries the threshold (upper limit) of M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2100:US:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Does not make judgement
ON or 1	Makes judgement

Function: Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement.
The above command sets ON/OFF of RxUS.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>,<M2110> or <M2120>.

Example use: To set the judgement with RxUS of M.2100 to ON:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:US:SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2100:US:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Does not make judgement
1	Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:US:SET?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2100:US:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step: 1

Function: Set the threshold for the M.2100 performance judgement.
The above command sets S1 (lower limit of the threshold) of RxUS.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M2100:US:SET is <OFF>.

Example use: To set the threshold lower limit of M.2100 RxUS to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:US:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:US:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (lower limit) of M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:US:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:US:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1

Function: Set the threshold for the M.2100 performance judgement.
The above command sets S2 (upper limit of the threshold) of RxUS.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M2100:US:SET is <OFF>.
- When S2 is equal to or smaller than S1.

Example use: To set the threshold upper limit of M.2100 RxUS to 99999:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:US
:S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2100:US:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (upper limit) of M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Does not make judgement
ON or 1 Makes judgement

Function: Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement.
The above command sets ON/OFF of TxES.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
・When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.

Example use: To set the judgement with TxES of M.2100 set to ON:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:TXES :SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Does not make judgement
1 Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:SET?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step: 1

Function: Set the threshold for the M.2100 performance judgement.
The above command sets S1 (lower limit of the threshold) of TxES.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
When CALCulate:TELecom:PERFormance:THReshold:M2100:TXES: SET is <OFF>.
・When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.

Example use: To set the threshold lower limit of M.2100 TxES to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold (lower limit) of M.2100 performance.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1
Function: Set the threshold for the M.2100 performance judgement.
The above command sets S2 (upper limit of the threshold) of TxES.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
・When :CALCulate:TELecom:PERFormance:THReshold:M2100: TXES: SET is <OFF>.
・When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.
・When S2 is equal to or smaller than S1
Example use: To set the threshold upper limit of M.2100 TxES to 99999:
>:CALCulate:TELecom:PERFormance:THReshold:M2100:TXES :S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold (upper limit) of M.2100 performance.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Does not make judgement
ON or 1 Makes judgement
Function: Specifies whether to perform the judgement using the threshold of the M.2100 performance measurement.
The above command sets ON/OFF of TxSES
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
Example use: To set the judgement with TxSES of M.2100 to ON:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Does not make judgement
1 Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES :SET?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step: 1

Function: Set the threshold for the M.2100 performance judgement.
The above command sets S1 (lower limit of the threshold) of TxSES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M2100: TXSES:SET is <OFF>.
- When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.

Example use: To set the threshold lower limit of M.2100 RxES to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (lower limit) of M.2100 performance.

Example use: To set the threshold lower limit of M.2100 RxTXSES to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1

Function: Set the threshold for the M.2100 performance judgement.
The above command sets S2 (upper limit of the threshold) of TxSES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2101>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:SET is <OFF>.
- When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.
- When S2 is equal to or smaller than S1.

Example use: To set the threshold upper limit of M.2100 TxSES to 99999:
>:CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES :S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (upper limit) of M.2100 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:ES:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Does not make judgement
ON or 1	Makes judgement

Function: Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.
The above command sets ON/OFF of RxES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.

Example use: To set the judgement with RxES of M.2101 to ON:
> :CALCulate:TELecom:PERFormance:THReshold:M2101:ES:SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2101:ES:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Does not make judgement
1	Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:ES:SET?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S1 (lower limit of the threshold) of RxES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M2101:ES:SET is <OFF>.

Example use: To set the threshold lower limit of M.2101 RxES to 4:
:CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (lower limit) of M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S2 (upper limit of the threshold) of RxES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M2101:ES:SET is <OFF>.
- When S2 is equal to or smaller than S1.

Example use: To set the threshold upper limit of M.2101 RxES to 99999:
> :CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (upper limit) of M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:SES:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Does not make judgement
ON or 1 Makes judgement

Function: Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.
The above command sets ON/OFF of RxSES.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.

Example use: To set the judgement with RxSES of M.2101 set to ON:
>:CALCulate:TELecom:PERFormance:THReshold:M2101:SES:SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2101:SES:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Does not make judgement
1 Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:SES:SET?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S1 (lower limit of the threshold) of RxSES.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.
・When :CALCulate:TELecom:PERFormance:THReshold:M.2101:SES: SET is <OFF>.

Example use: To set the threshold lower limit of M.2101 RxSES to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (lower limit) of M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S2 (upper limit of the threshold) of RxSES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M.2101:SES:SET is <OFF>.
- When S2 is equal to or smaller than S1.

Example use: To set the threshold upper limit of M.2101 RxSES to 99999:
>:CALCulate:TELecom:PERFormance:THReshold:M2101:SES
:S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (upper limit) of M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:US:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Does not make judgement
ON or 1	Makes judgement

Function: Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.
The above command sets ON/OFF of RxUS.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.

Example use: To set the judgement with RxUS of M.2101 to ON:
> :CALCulate:TELecom:PERFormance:THReshold:M2101:US:SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2101:US:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Does not make judgement
1	Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:US:SET?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2101:US:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S1 (lower limit of the threshold) of RxUS.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M.2101:US: SET is <OFF>.

Example use: To set the threshold lower limit of M.2101 RxUS to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2101:US:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:US:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (lower limit) of M.2101 performance judgement.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:US:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:US:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S2 (upper limit of the threshold) of RxUS.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M.2101:US: SET is <OFF>.
- When S2 is equal to or smaller than S1

Example use: To set the threshold upper limit of M.2101 RxUS to 99999:
> :CALCulate:TELecom:PERFormance:THReshold:M2101:US :S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:US:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (upper limit) of M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Does not make judgement
ON or 1	Makes judgement

Function: Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.
上 The above command sets ON/OFF of TxES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.
- When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.

Example use: To set the judgement with TxES of M.2101 set to ON:
>:CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Does not make judgement
1	Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:SET?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

0 to 99998	Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S1 (lower limit of the threshold) of TxES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M.2101: TXES:SET is <OFF>
- When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.

Example use: To set the threshold lower limit of M.2101 TxES to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (lower limit) of M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S2 (upper limit of the threshold) of TxES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M.2101: TXES:SET is <OFF>.
- When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.
- When S2 is equal to or smaller than S1.

Example use: To set the threshold upper limit of M.2101 TxES to 99999:
>:CALCulate:TELecom:PERFormance:THReshold:M2101:TXES :S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (upper limit) of M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Does not make judgement
ON or 1	Makes judgement

Function: Specifies whether to perform the judgement using the threshold of the M.2101 performance measurement.
The above command sets ON/OFF of TxSES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or <M2120>.

Example use: To set the judgement with TxSES of M.2101 set to ON:
> :CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:SET ON

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:SET?

Response: <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Does not make judgement
1 Makes judgement

Function: Queries the current setting of the threshold judgement of the M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:SE
:SE T?
< 1

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S1 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S1 (lower limit of the threshold) of TxSES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or<M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M.2101: TXSES:SET is <OFF>.
- When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.

Example use: To set the threshold lower limit of M.2101 RxES to 4:
:CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S1 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (lower limit) of M.2101 performance.

Example use: To set the threshold lower limit of M.2101 RxTXSES to 4:
> :CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S1?
< 4

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S2 <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(S1+1) to 99999 Step: 1

Function: Set the threshold for the M.2101 performance judgement.
The above command sets S2 (upper limit of the threshold) of TxSES.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormence:TYPE is <OFF>, <G821>, <G826>, <M2100>, <M2110> or<M2120>.
- When :CALCulate:TELecom:PERFormance:THReshold:M.2101: TXSES:SET is <OFF>.
- When 2M is outside the measurement range, :SENSe:TELecom:M2:CRC is <OFF>, or :SENSe:TELecom:MMODe is <OSERvice>.
- When S2 is equal to or smaller than S1.

Example use: To set the threshold upper limit of M.2101 RxSES to 99999:
>:CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S2 99999

:CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold (upper limit) of M.2101 performance.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S2?
< 99999

:CALCulate:TELecom:PERFormance:THReshold:M2110:TYPE <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

PATH	Path allocation
USER	User

Function: Sets BIS Limit for M.2110 performance judgement.

Restriction: Invalid in the following case:
- When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>,or <M2120>.

Example use: To select the BIS Limit of M.2110 to User.
> :CALCulate:TELecom:PERFormance:THReshold:M2110:TYPE USER

:CALCulate:TELecom:PERFormance:THReshold:M2110:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the setting of BIS Limit for M.2110 performance judgement.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:TYPE?
< USER

:CALCulate:TELecom:PERFormance:THReshold:M2110:LIMit <limit>

Parameter <limit> = <NON-DECIMAL NUMERIC PROGRAM DATA>
0.5 to 63.0 Step value: 0.5
Function: Sets the value of BIS Limit for M.2110 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.
Example use: To set the BIS Limit of M.2110 to 7.5.
> :CALCulate:TELecom:PERFormance:THReshold:M2110:LIMit 7.5

:CALCulate:TELecom:PERFormance:THReshold:M2110:LIMit?

Response: <numeric> = <NR2 NUMERIC RESPONSE DATA>
Function: Queries the value of BIS Limit for M.2110 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:LIMit?
< 7.5

CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S1 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 7119 Step value: 1
Function: Sets the threshold of 2-hour ES S1 for M.2110 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.
Example use: To set the threshold of M.2110 2-hour ES S1 to 500.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S1 500

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of 2-hour ES S1 for M.2110 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S1?
> 500

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S2 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(2 hour ES S1 value)+1 to 7200 Step value: 1
Function: Sets the threshold of 2-hour ES S2 for M.2110 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.
Example use: To set the threshold of M.2110 2-hour ES S2 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S2 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of 2-hour ES S2 for M.2110 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S1?
> 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S1 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 86399 Step value: 1
Function: Sets the threshold of 24-hour ES S1 M.2110 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.
Example use: To set the threshold of M.2110 24-hour ES S1 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S1 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of 24-hour ES S1 for M.2110 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S1?
> 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S2 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(24 hour ES S1 value) +1 to 86400 Step value: 1
Function: Sets the threshold of 24-hour ES S2 for M.2110 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.
Example use: To set the threshold of M.2110 24-hour ES S2 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S2 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of 24-hour ES S2 for M.2110 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S2?
> 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S1 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step value: 1

Function: Sets the threshold of 7-day ES for M.2110 performance judgement.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.

Example use: To set the threshold of M.2110 7 day ES S1 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S1 12340

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold of 7-day ES S1 for M.2110 performance judgement.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S1?
> 12340

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S2 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(7 day ES S1 value)+1 to 99999 Step value: 1

Function: Sets the threshold of 7-day ES S2 for M.2110 performance judgement.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.

Example use: To set the threshold of M.2110 7-day ES S2 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S2 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold of 7-day ES S2 for M.2110 performance judgement.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S2?
>12340

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S1 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 711 Step value: 1

Function: Sets the threshold of 2-hour SES S1 M.2110 performance judgement.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.

Example use: To set the threshold of M.2110 2-hour SES S1 to 500.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S1 500

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold of 2-hour SES S1 for M.2110 performance judgement.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S1?
> 500

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S2 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(2 hour SES S1 value) +1 to 7200 Step value: 1

Function: Sets the threshold of 2-hour SES S2 for M.2110 performance judgement.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>,or <M2120>.

Example use: To set the threshold of M.2110 2-hour SES S2 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S2 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold of 2-hour SES S2 for M.2110 performance judgement.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S1?
> 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S1 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 86399 Step value: 1

Function: Sets the threshold of 24-hour SES S1 for M.2110 performance judgement.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.

Example use: To set the threshold of M.2110 24-hour SES S1 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S1 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold of 24-hour SES S1 for M.2110 performance judgement.

Example use: >
:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S1?
> 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S2 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(24 hour SES S1 value) +1 to 86400 Step value: 1

Function: Sets the threshold of 24-hour SES S2 for M.2110 performance judgement.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.

Example use: To set the threshold of M.2110 24-hour SES S2 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S2 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold of 24-hour SES S2 for M.2110 performance judgement.

Example use: >:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S2?
＞850

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S1 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 99998 Step value: 1

Function: Sets the threshold of 7-day SES for M.2110 performance judgement.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.
Example use: To set the threshold of M.2110 7 day SES S1 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S1 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of 7-day SES S1 for M.2110 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S1?
> 12340

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S2 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(7 day ES S1 value) +1 to 99999 Step value: 1
Function: Sets the threshold of 7-day SES S2 for M.2110 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2120>.
Example use: To set the threshold of M.2110 7-day SES S2 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S2 850

:CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of 7-day SES S2 for M.2110 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S2?
> 12340

:CALCulate:TELecom:PERFormance:THReshold:M2120:TYPE <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
PATH Path allocation
USER User
Function: Sets Threshold for M.2120 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2110>.
Example use: To select the thresholdof M.2120 to User.
> :CALCulate:TELecom:PERFormance:THReshold:M2120:TYPe USER

:CALCulate:TELecom:PERFormance:THReshold:M2120:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>
Function: Queries the setting of the Threshold for M.2120 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2120:TYPE?
< USER

:CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit1 <limit>

Parameter <limit> = <NON-DECIMAL NUMERIC PROGRAM DATA>
0.5 to 63.0 Step value: 0.5
Function: Sets the value of Threshold for M.2120 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2110>.
Example use: To set the value of Threshold for M.2120 to 7.5.
> :CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit1 7.5

:CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit1?

Response: <numeric> = <NR2 NUMERIC RESPONSE DATA>
Function: Queries the value of threshold for M.2110 performance judgement.
Example use: >:CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit1?
<7. 5

:CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit2 <limit>

Parameter <limit> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 100 Step value: 1
Function: Sets Threshold for M.2120 performance judgement.
Restriction: Invalid in the following case:。
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2110>.
Example use: To set the threshold of M.2120 to 500.
> :CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit2 7

:CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of M.2120 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit2?
< 7

:CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR1 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 900 Step value: 1
Function: Sets the threshold of ES TR1 (15-minute) for M.2120 performance judgement.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2110>.
Example use: To set the threshold of M.2120 ES TR1 to 500.
> :CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR1 500

:CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of ES TR1 M.2120 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR1?
> 500

:CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR2 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 86400 Step value: 1
Function: Sets the threshold of ES TR2 (24-hour) for M.2120 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2110>.
Example use: To set the threshold of M.2120 ES TR2 to 850.
> :CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR2 850

:CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of ES TR2 M.2120 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR2?
> 850

:CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR1 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(ES+1) to 900 Step value: 1
Function: Sets the threshold of SES TR1 (15-minute) for M.2120 performance judgement.
Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2110>.
Example use: To set the threshold of M.2120 SES TR1 to 500.
> :CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR1 500

:CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR1?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function: Queries the threshold of SES TR1 M.2120 performance judgement.
Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR1?
> 500

:CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR2 <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
(ES+1) to 86400 Step value: 1

Function: Sets the threshold of SES TR2 (24-hour) for M.2120 performance judgement.

Restriction: Invalid in the following case:
・When :CALCulate:TELecom:PERFormance:TYPE is <OFF>,<G821>,<G826>,<M2100>,<M2101>, or <M2110>.

Example use: To set the threshold of M.2120 SES TR2 to 850.
>:CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR2 850

:CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR2?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the threshold of SES TR2 M.2120 performance judgement.

Example use: > :CALCulate:TELecom:PERFormance:THReshold:M2120:SES:TR2?
> 850

:CALCulate:DATA? <string>

Parameter <string> = <STRING PROGRAM DATA>
"[CURRent:]<result>" Current measurement result
"LAST:<result>" Last measurement result
See Table 10-4 for the <result> contents.

Response: <string> = <STRING RESPONSE DATA>
See Table 10-4

Function: Queries the measurement result corresponding to the parameter.

Example use: To query the current bit error EC value.
:CALCulate:DATA? "CURRent:EC:BIT"
or
:CALCulate:DATA? "EC:BIT"
< " 892"

Measurement Result Query Count (1/23)

Item		<result>	Response format
EC	B1 error	"EC:B1"	Form1
	B2 error	"EC:B2"	Form1
	HP-B3 error	"EC:B3:HP"	Form1
	LP-B3 error	"EC:B3:LP"	Form1
	BIP-2 error	"EC:BIP2"	Form1
	MS-REI error	"EC:REI:MS" (SDH)	Form1
	HP-REI error	"EC:REI:HP" (SDH)	Form1
	LP-REI error	"EC:REI:LP" (SDH)	Form1
	REI-L error	"EC:REI:L" (SONET)	Form1
	REI-P error	"EC:REI:P" (SONET)	Form1
	REI-V error	"EC:REI:V" (SONET)	Form1
	Code error	"EC:CODE"	Form1
	139M frame error	"EC:FRAMe:M139"	Form1
	45M frame error	"EC:FRAMe:M45"	Form1
	34M frame error	"EC:FRAMe:M34"	Form1
	8M frame error	"EC:FRAMe:M8"	Form1
	2M frame error	"EC:FRAMe:M2"	Form1
	1.5M frame error	"EC:FRAMe:M1_5"	Form1
	139M REI error	"EC:REI:M139"	Form1
	45M REI error	"EC:REI:M45"	Form1
	34M REI error	"EC:REI:M34"	Form1
	REI PLCP error	"EC:REI:PLCP"	Form1
	CRC-4 error	"EC:CRC4"	Form1
	E-Bit error	"EC:EBIT"	Form1
	BIP-8 error	"EC:BIP8"	Form1
	Parity error	"EC:PARITY"	Form1
	C-Bit error	"EC:CBIT"	Form1
	CRC-6 error	"EC:CRC6"	Form1
	Cell error	"EC:CELL"	Form1
	Corrected error	"EC:CORR"	Form1
	Discarded error	"EC:DISC"	Form1
	Nonconf error	"EC:NONCONF"	Form1
	Errored cell error	"EC:ERRORED"	Form1
	Lost cell error	"EC:LOST"	Form1
	Misinserted error	"EC:MISINS"	Form1
	SECB error	"EC:SECB"	Form1
	SAR-PDU error	"EC:SARPDU"	Form1
	SNP error	"EC:SNP"	Form1
	Uncorect SNP error	"EC:UCSNP"	Form1
	P error	"EC:P"	Form1

Measurement Result Query Count (2/23)

Item		<result>	Response format
EC	OSF error	"EC:OSF"	Form1
	SN error	"EC:SN"	Form1
	CPS-Packet error	"EC:CPSPKT"	Form1
	HEC error error	"EC:CPSHEC"	Form1
	Length error indicater error	"EC:LI"	Form1
	Length error	"EC:LENGTH"	Form1
	CPCS-PDU error	"EC:CPCS"	Form1
	MID error	"EC:MID"	Form1
	CRC10 error	"EC:CRC10"	Form1
	Discarded error PDU error	"EC:DISCPDU"	Form1
	HP-IEC error	“EC:HIEC”	Form1
	HP-TC-REI error	“EC:HTREI”	Form1
	HP-OEI error	“EC:HOEI”	Form1
	LP-IEC error	“EC:LIEC”	Form1
	LP-TC-REI error	“EC:LTREI”	Form1
	LP-OEI error	“EC:LOEI”	Form1
	N2 BIP-2 error	“EC:N2BIP2”	Form1
	OH Bit error	“EC:OHBIT”	Form1
	Segment type error	"EC:ST"	Form1
	Abort error	"EC:ABORT"	Form1
	Undelivered error PDU error	"EC:UDLVPDU"	Form1
	CPI error	"EC:CPI"	Form1
	B/ETag error	"EC:BETAG"	Form1
	BASize error	"EC:BASIZE"	Form1
	AL error	"EC:AL"	Form1
	Frame size error	"EC:FSIZE"	Form1
	CRC32 error	"EC:CRC32"	Form1
	FM Lost error	"EC:FM:LOST"	Form1
	FM error Misinserted error	"EC:FM:MISINS"	Form1
	FM BIPV error	"EC:FM:BIPV"	Form1
	FM SECB error	"EC:FM:SECB"	Form1
	BR Lost error	"EC:BR:LOST"	Form1
	BR error Misinserted error	"EC:BR:MISINS"	Form1
	BR BIPV error	"EC:BR:BIPV"	Form1
	BR SECB error	"EC:BR:SECB"	Form1
	Bit error	"EC:BIT"	Form1
	CID PKT error	"EC:CIDPKT"	Form1

Measurement Result Query Count (3/23)

Item		<result>	Response format
ER	B1 error	"ER:B1"	Form2
	B2 error	"ER:B2"	Form2
	HP-B3 error	"ER:B3:HP"	Form2
	LP-B3 error	"ER:B3:LP"	Form2
	BIP-2 error	"ER:BIP2"	Form2
	MS-REI error	"ER:REI:MS" (SDH)	Form2
	HP-REI error	"ER:REI:HP" (SDH)	Form2
	LP-REI error	"ER:REI:LP" (SDH)	Form2
	REI-L error	"ER:REI:L" (SONET)	Form2
	REI-P error	"ER:REI:P" (SONET)	Form2
	REI-V error	"ER:REI:V" (SONET)	Form2
	Code error	"ER:CODE"	Form2
	139M frame error	"ER:FRAMe:M139"	Form2
	45M frame error	"ER:FRAMe:M45"	Form2
	34M frame error	"ER:FRAMe:M34"	Form2
	8M frame error	"ER:FRAMe:M8"	Form2
	2M frame error	"ER:FRAMe:M2"	Form2
	1.5M frame error	"ER:FRAMe:M1_5"	Form2
	139M REI error	"ER:REI:M139"	Form2
	45M REI error	"ER:REI:M45"	Form2
	34M REI error	"ER:REI:M34"	Form2
	REI PLCP error	"ER:REI:PLCP"	Form2
	CRC-4 error	"ER:CRC4"	Form2
	E-Bit error	"ER:EBIT"	Form2
	BIP-8 error	"ER:BIP8"	Form2
	Parity error	"ER:PARITY"	Form2
	C-Bit error	"ER:CBIT"	Form2
	CRC-6 error	"ER:CRC6"	Form2
	Cell error	"ER:CELL"	Form1
	Corrected error	"ER:CORR"	Form1
	Discarded error	"ER:DISC"	Form1
	Nonconf error	"ER:NONCONF"	Form1
	Errored cell error	"ER:ERRORED"	Form1
	Lost cell error	"ER:LOST"	Form1
	Misinserted error	"ER:MISINS"	Form1
	SECB error	"ER:SECB"	Form1
	SAR-PDU error	"ER:SARPDU"	Form1
	SNP error	"ER:SNP"	Form1
	Uncorect SNP error	"ER:UCSNP"	Form1
	P error	"ER:P"	Form1
	OSF error	"ER:OSF"	Form1
	SN error	"ER:SN"	Form1
	HEC error error	"ER:CPSHEC"	Form1
	Length error	"ER:LI"	Form1

Measurement Result Query Count (4/23)

Item		<result>	Response format
ER	indicater error		
	Length error	"ER:LENGTH"	Form1
	CRC10 error	"ER:CRC10"	Form1
	Discarded error	"ER:DISCPDU"	Form1
	PDU error		
	Segment type error	"ER:ST"	Form1
	Abort error	"ER:ABORT"	Form1
	Undelivered error	"ER:UDLVPDU"	Form1
	PDU error		
	HP-IEC error	“ER:HIEC”	Form1
	HP-TC-REI error	“ER:HTREI”	Form1
	HP-OEI error	“ER:HOEI”	Form1
	LP-IEC error	“ER:LIEC”	Form1
	LP-TC-REI error	“ER:LTREI”	Form1
	LP-OEI error	“ER:LOEI”	Form1
	N2 BIP-2 error	“ER:N2BIP2”	Form1
	OH Bit error	“ER:OHBIT”	Form1
	CPI error	"ER:CPI"	
	B/ETag error	"ER:BETAG"	Form2
	BASize error	"ER:BASIZE"	Form2
	AL error	"ER:AL"	Form2
	Frame size error	"ER:FSIZE"	Form2
	CRC32 error	"ER:CRC32"	Form2
	FM Lost error	"ER:FM:LOST"	Form2
	FM error	"ER:FM:MISINS"	Form2
	Misinserted error		
	FM BIPV error	"ER:FM:BIPV"	Form2
	FM SECB error	"ER:FM:SECB"	Form2
	BR Lost error	"ER:BR:LOST"	Form2
	BR error	"ER:BR:MISINS"	Form2
	Misinserted error		
	BR BIPV error	"ER:BR:BIPV"	Form2
	BR SECB error	"ER:BR:SECB"	Form2
	Bit error	"ER:BIT"	Form2
	CID PKT error	"ER:CIDPKT"	Form2

Measurement Result Query Count (5/23)

Item		<result>	Response format
Power fail		"ASEConds:POWer"	Form1
LOS		"ASEConds:LOS"	Form1
Sync. loss		"ASEConds:PATTern"	Form1
AIS	139M	"ASEConds:AIS:M139"	Form1
	45M	"ASEConds:AIS:M45"	Form1
	34M	"ASEConds:AIS:M34"	Form1
	8M	"ASEConds:AIS:M8"	Form1
	2M	"ASEConds:AIS:M2"	Form1
	1.5M	"ASEConds:AIS:M1_5"	Form1
	MS	"ASEConds:AIS:MS"(SDH)	Form1
	AU	"ASEConds:AIS:AU" (SDH)	Form1
	TU	"ASEConds:AIS:TU" (SDH)	Form1
	L	"ASEConds:AIS:L" (SONET)	Form1
	P	"ASEConds:AIS:P" (SONET)	Form1
	V	"ASEConds:AIS:V" (SONET)	Form1
LOF	139M	"ASEConds:LOF:M139"	Form1
	45M	"ASEConds:LOF:M45"	Form1
	34M	"ASEConds:LOF:M34"	Form1
	8M	"ASEConds:LOF:M8"	Form1
	2M	"ASEConds:LOF:M2"	Form1
	1.5M	"ASEConds:LOF:M1_5"	Form1
	MF	"ASEConds:LOF:MF"	Form1
	(SDH)	"ASEConds:LOF"	Form1
	PLCP	"ASEConds:LOF:PLCP"	Form1
RDI	139M	"ASEConds:RDI:M139"	Form1
	45M	"ASEConds:RDI:M45"	Form1
	34M	"ASEConds:RDI:M34"	Form1
	8M	"ASEConds:RDI:M8"	Form1
	2M	"ASEConds:RDI:M2"	Form1
	1.5M	"ASEConds:RDI:M1_5"	Form1
	MF	"ASEConds:RDI:MF"	Form1
RDI	PLCP	"ASEConds:RDI:PLCP"	Form1
RAI	PLCP	"ASEConds:RAI:PLCP"	Form1
OOF		"ASEConds:OOF"	Form1
	PLCP	"ASEConds:OOF:PLCP"	Form1
LOP	AU	"ASEConds:LOP:AU" (SDH)	Form1
	TU	"ASEConds:LOP:TU" (SDH)	Form1
	P	"ASEConds:LOP:P" (SONET)	Form1
	V	"ASEConds:LOP:V" (SONET)	Form1
RDI	MS	"ASEConds:RDI:MS" (SDH)	Form1
	HP	"ASEConds:RDI:HP" (SDH)	Form1
	LP	"ASEConds:RDI:LP" (SDH)	Form1

SLM	L	"ASEConds:RDI:L" (SONET)	Form1
	P	"ASEConds:RDI:P" (SONET)	Form1
	V	"ASEConds:RDI:V" (SONET)	Form1
	HP	"ASEConds:PLM:HP" (SDH)	Form1
	LP	"ASEConds:PLM:LP" (SDH)	Form1

Measurement Result Query Count (6/23)

Item		<result>	Response format
PLM	P	"ASEConds:PLM:P" (SONET)	Form1
	V	"ASEConds:PLM:V" (SONET)	Form1
RFI	LP	"ASEConds:RFI:LP" (SDH)	Form1
	V	"ASEConds:RFI:V" (SONET)	Form1
TIM	HP	"ASEConds:TIM:HP" (SDH)	Form1
	LP	"ASEConds:TIM:LP" (SDH)	Form1
UNEQ	HP	"ASEConds:UNEQ:HP" (SDH)	Form1
	LP	"ASEConds:UNEQ:LP" (SDH)	Form1
VC-AIS	HP	"ASEConds:VAIS:HP" (SDH)	Form1
	LP	"ASEConds:VAIS:LP" (SDH)	Form1
FAS	HP	"ASEConds:FAS:HP" (SDH)	Form1
	LP	"ASEConds:FAS:LP" (SDH)	Form1
IncAIS	HP	"ASEConds:IAIS:HP" (SDH)	Form1
	LP	"ASEConds:IAIS:LP" (SDH)	Form1
ISF	HP	"ASEConds:ISF:HP" (SDH)	Form1
	LP	"ASEConds:ISF:LP" (SDH)	Form1
TC-RDI	HP	"ASEConds:TRDI:HP" (SDH)	Form1
	LP	"ASEConds:TRDI:LP" (SDH)	Form1
ODI	HP	"ASEConds:ODI:HP" (SDH)	Form1
	LP	"ASEConds:ODI:LP" (SDH)	Form1
Sync. OH		"ASEConds:SYNCOH" (SDH)	Form1
AIS HG		"ASEConds:AISHG" (SDH)	Form1
REC HG		"ASEConds:RECHG" (SDH)	Form1
BAIS1.5M		"ASEConds:BAIS15" (SDH)	Form1
SigAIS1.5		"ASEConds:SAIA15" (SDH)	Form1
Sig OOF		"ASEConds:SIGOOF" (SDH)	Form1
Power fail		"AFRame:POWer"	Form1
LOS		"AFRame:LOS"	Form1
Sync. loss		"AFRame:PATTern"	Form1
AIS	139M	"AFRame:AIS:M139"	Form1
	45M	"AFRame:AIS:M45"	Form1
	34M	"AFRame:AIS:M34"	Form1
	8M	"AFRame:AIS:M8"	Form1
	2M	"AFRame:AIS:M2"	Form1
	1.5M	"AFRame:AIS:M1_5"	Form1
	MS	"AFRame:AIS:MS" (SDH)	Form1
	AU	"AFRame:AIS:AU" (SDH)	Form1
	TU	"AFRame:AIS:TU" (SDH)	Form1
	L	"AFRame:AIS:L" (SONET)	Form1
	P	"AFRame:AIS:P" (SONET)	Form1
	V	"AFRame:AIS:V" (SONET)	Form1

Measurement Result Query Count (7/23)

Item		<result>	Response format
LOF	139M	"AFRame:LOF:M139"	Form1
	45M	"AFRame:LOF:M45"	Form1
	34M	"AFRame:LOF:M34"	Form1
	8M	"AFRame:LOF:M8"	Form1
	2M	"AFRame:LOF:M2"	Form1
	1.5M	"AFRame:LOF:M1_5"	Form1
	MF	"AFRame:LOF:MF"	Form1
	(SDH)	"AFRame:LOF"	Form1
	PLCP	"AFRame:LOF:PLCP"	Form1
RDI	139M	"AFRame:RDI:M139"	Form1
	45M	"AFRame:RDI:M45"	Form1
	34M	"AFRame:RDI:M34"	Form1
	8M	"AFRame:RDI:M8"	Form1
	2M	"AFRame:RDI:M2"	Form1
	1.5M	"AFRame:RDI:M1_5"	Form1
	MF	"AFRame:RDI:MF"	Form1
RDI	PLCP	"AFRame:RDI:PLCP"	Form1
RAI	PLCP	"AFRame:RAI:PLCP"	Form1
OOF		"AFRame:OOF"	Form1
	PLCP	"AFRame:OOF:PLCP"	Form1
LOP	AU	"AFRame:LOP:AU" (SDH)	Form1
	TU	"AFRame:LOP:TU" (SDH)	Form1
	P	"AFRame:LOP:P" (SONET)	Form1
	V	"AFRame:LOP:V" (SONET)	Form1
RDI	MS	"AFRame:RDI:MS" (SDH)	Form1
	HP	"AFRame:RDI:HP" (SDH)	Form1
	LP	"AFRame:RDI:LP" (SDH)	Form1
	L	"AFRame:RDI:L" (SONET)	Form1
	P	"AFRame:RDI:P" (SONET)	Form1
	V	"AFRame:RDI:V" (SONET)	Form1
SLM	HP	"AFRame:SLM:HP" (SDH)	Form1
	LP	"AFRame:SLM:LP" (SDH)	Form1
PLM	P	"AFRame:PLM:P" (SONET)	Form1
	V	"AFRame:PLM:V" (SONET)	Form1
RFI	LP	"AFRame:RFI:LP" (SDH)	Form1
	V	"AFRame:RFI:V" (SONET)	Form1
TIM	HP	"AFRame:TIM:HP" (SDH)	Form1
	LP	"AFRame:TIM:LP" (SDH)	Form1
UNEQ	HP	"AFRame:UNEQ:HP" (SDH)	Form1
	LP	"AFRame:UNEQ:LP" (SDH)	Form1
VC-AIS	HP	"AFRame:VAIS:HP" (SDH)	Form1
	LP	"AFRame:VAIS:LP" (SDH)	Form1

FAS	HP	"AFRame:FAS:HP" (SDH)	Form1
	LP	"AFRame:FAS:LP" (SDH)	Form1
IncAIS	HP	"AFRame:IAIS:HP" (SDH)	Form1
	LP	"AFRame:IAIS:LP" (SDH)	Form1
ISF	HP	"AFRame:ISF:HP" (SDH)	Form1
	LP	"AFRame:ISF:LP" (SDH)	Form1

Measurement Result Query Count (8/23)

Item		<result>	Response format
TC-RDI	HP	"AFRame:TRDI:HP" (SDH)	Form1
	LP	"AFRame:TRDI:LP" (SDH)	Form1
ODI	HP	"AFRame:ODI:HP" (SDH)	Form1
	LP	"AFRame:ODI:LP" (SDH)	Form1
Sync. OH		"AFRame:SYNCOH" (SDH)	Form1
AIS HG		"AFRame:AISHG" (SDH)	Form1
REC HG		"AFRame:RECHG" (SDH)	Form1
BAIS1.5M		"AFRame:BAIS15" (SDH)	Form1
SigAIS1.5		"AFRame:SAIA15" (SDH)	Form1
Sig OOF		"AFRame:SIGOOF" (SDH)	Form1

Measurement Result Query Count (9/23)

Item		<result>	Response format
TU-LOM		"ASEConds:LOM:TU"(SDH)	Form1
LOM-V		"ASEConds:LOM:V" (SONET)	Form1
VP	AIS	"ASEConds:VP:AIS"	Form1
	RDI	"ASEConds:VP:RDI"	Form1
	LOC	"ASEConds:VP:LOC"	Form1
VC	AIS	"ASEConds:VC:AIS"	Form1
	RDI	"ASEConds:VC:RDI"	Form1
	LOC	"ASEConds:VC:LOC"	Form1
LCD		"ASEConds:LCD"	Form1

Measurement Result Query Count (10/23)

Item		<result>	Response format
VP	AIS	"ACOunts:VP:AIS"	Form1
	RDI	"ACOunts:VP:RDI"	Form1
	LOC	"ACOunts:VP:LOC"	Form1
VC	AIS	"ACOunts:VC:AIS"	Form1
	RDI	"ACOunts:VC:RDI"	Form1
	LOC	"ACOunts:VC:LOC"	Form1

Measurement Result Query Count (11/23)

Item			<result>	Response format
G.821		%ES	"G821:ES"	Form3
		ES	"G821:ES2"	Form1
		AnD%ES	"G821:ES3"	Form3
		Code ES	"G821:ES4"	Form1
		%SES	"G821:SES"	Form3
		SES	"G821:SES2"	Form1
		%US	"G821:US"	Form3
		US	"G821:US2"	Form1
		%DM	"G821:DM"	Form3
		DM	"G821:DM2"	Form1
		EC	"G821:EC"	Form1
		%EFS	"G821:EFS"	Form3
		EFS	"G821:EFS2"	Form1
M.2100		RxES	"M2100:ES"	Form1
		TxES	"M2100:ES2"	Form1
		RxSES	"M2100:SES"	Form1
		TxSES	"M2100:SES2"	Form1
		RxUS	"M2100:US"	Form1
		RxTEST	"M2100:TEST"	Form4
		TxTEST	"M2100:TEST2"	Form4
M.2101	Section	RxES	"M2101:SECTion:ES"	Form1
		RxSES	"M2101:SECTion:SES"	Form1
		RxUS	"M2101:SECTion:US"	Form1
		RxTEST	"M2101:SECTion:TEST"	Form4
		TxES	"M2101:SECTion:ES2"	Form1
		TxSES	"M2101:SECTion:SES2"	Form1
		TxTEST	"M2101:SECTion:TEST2"	Form4
	HO-path	RxES	"M2101:HOPath:ES"	Form1
		RxSES	"M2101:HOPath:SES"	Form1
		RxUS	"M2101:HOPath:US"	Form1
		RxTEST	"M2101:HOPath:TEST"	Form4
		TxES	"M2101:HOPath:ES2"	Form1
		TxSES	"M2101:HOPath:SES2"	Form1
		TxTEST	"M2101:HOPath:TEST2"	Form4
	LO-path	RxES	"M2101:LOPath:ES"	Form1
		RxSES	"M2101:LOPath:SES"	Form1
		RxUS	"M2101:LOPath:US"	Form1
		RxTEST	"M2101:LOPath:TEST"	Form4
		TxES	"M2101:LOPath:ES2"	Form1
		TxSES	"M2101:LOPath:SES2"	Form1
		TxTEST	"M2101:LOPath:TEST2"	Form4

Measurement Result Query Count (12/23)

Item			<result>	Response format
G.826	Bit or FAS/CRC	ES	"G826:ES"	Form1
		SES	"G826:SES"	Form1
		BBE	"G826:BBE"	Form1
		ESR	"G826:ESR"	Form2
		SESR	"G826:SESR"	Form2
		BBER	"G826:BBER"	Form2
		SDP	"G826:SDP"	Form1
		US	"G826:US"	Form1
	B1	ES	"G826:ES:B1"	Form1
		SES	"G826:ES:B1"	Form1
		BBE	"G826:SES:B1"	Form1
		ESR	"G826:ESR:B1"	Form2
		SESR	"G826:SESR:B1"	Form2
		BBER	"G826:BBER:B1"	Form2
		SDP	"G826:SDP:B1"	Form1
		US	"G826:US:B1"	Form1
	B2	ES	"G826:ES:B2"	Form1
		SES	"G826:SES:B2"	Form1
		BBE	"G826:BBE:B2"	Form1
		ESR	"G826:ESR:B2"	Form2
		SESR	"G826:SESR:B2"	Form2
		BBER	"G826:BBER:B2"	Form2
		SDP	"G826:SDP:B2"	Form1
		US	"G826:US:B3:HP"	Form1
	HP-B3	ES	"G826:ES:B3:HP"	Form1
		SES	"G826:SES:B3:HP"	Form1
		BBE	"G826:BBE:B3:HP"	Form1
		ESR	"G826:ESR:B3:HP"	Form2
		SESR	"G826:SESR:B3:HP"	Form2
		BBER	"G826:BBER:B3:HP"	Form2
		SDP	"G826:SDP:B3:HP"	Form1
		US	"G826:US:B3:HP"	Form1
	LP-B3	ES	"G826:ES:B3:LP"	Form1
		SES	"G826:SES:B3:LP"	Form1
		BBE	"G826:BBE:B3:LP"	Form1
		ESR	"G826:ESR:B3:LP"	Form2
		SESR	"G826:SESR:B3:LP"	Form2
		BBER	"G826:BBER:B3:LP"	Form2
		SDP	"G826:SDP:B3:LP"	Form1
		US	"G826:US:B3:LP"	Form1
	BIP-2	ES	"G826:ES:BIP2"	Form1
		SES	"G826:SES:BIP2"	Form1
		BBE	"G826:BBE:BIP2"	Form1
		ESR	"G826:ESR:BIP2"	Form2

		SESR	"G826:SESR:BIP2"	Form2
		BBER	"G826:BBER:BIP2"	Form2
		SDP	"G826:SDP:BIP2"	Form1
		US	"G826:US:BIP2"	Form1

Measurement Result Query Count (13/23)

Item			<result>	Response format
G.826	MS-REI	ES	"G826:ES:REI:MS"	Form1
		SES	"G826:SES:REI:MS"	Form1
		BBE	"G826:BBE:REI:MS"	Form1
		ESR	"G826:ESR:REI:MS"	Form2
		SESR	"G826:SESR:REI:MS"	Form2
		BBER	"G826:BBER:REI:MS"	Form2
		SDP	"G826:SDP:REI:MS"	Form1
		US	"G826:US:REI:MS"	Form1

Measurement Result Query Count (14/23)

Item			<result>	Response format
G.826	HP-REI	ES	"G826:ES:REI:HP"	Form1
		SES	"G826:SES:REI:HP"	Form1
		BBE	"G826:BBE:REI:HP"	Form1
		ESR	"G826:ESR:REI:HP"	Form2
		SESR	"G826:SESR:REI:HP"	Form2
		BBER	"G826:BBER:REI:HP"	Form2
		SDP	"G826:SDP:REI:HP"	Form1
		US	"G826:US:REI:HP"	Form1
	LP-REI	ES	"G826:ES:REI:LP"	Form1
		SES	"G826:SES:REI:LP"	Form1
		BBE	"G826:BBE:REI:LP"	Form1
		ESR	"G826:ESR:REI:LP"	Form2
		SESR	"G826:SESR:REI:LP"	Form2
		BBER	"G826:BBER:REI:LP"	Form2
		SDP	"G826:SDP:REI:LP"	Form1
		US	"G826:US:REI:LP"	Form1
	REI-L	ES	"G826:ES:REI:L"	Form1
		SES	"G826:SES:REI:L"	Form1
		BBE	"G826:BBE:REI:L"	Form1
		ESR	"G826:ESR:REI:L"	Form2
		SESR	"G826:SESR:REI:L"	Form2
		BBER	"G826:BBER:REI:L"	Form2
		SDP	"G826:SDP:REI:L"	Form1
		US	"G826:US:REI:L"	Form1
	REI-P	ES	"G826:ES:REI:P"	Form1
		SES	"G826:SES:REI:P"	Form1
		BBE	"G826:BBE:REI:P"	Form1
		ESR	"G826:ESR:REI:P"	Form2
		SESR	"G826:SESR:REI:P"	Form2
		BBER	"G826:BBER:REI:P"	Form2
		SDP	"G826:SDP:REI:P"	Form1
		US	"G826:US:REI:P"	Form1
	REI-V	ES	"G826:ES:REI:V"	Form1
		SES	"G826:SES:REI:V"	Form1
		BBE	"G826:BBE:REI:V"	Form1
		ESR	"G826:ESR:REI:V"	Form2
		SESR	"G826:SESR:REI:V"	Form2
		BBER	"G826:BBER:REI:V"	Form2
		SDP	"G826:SDP:REI:V"	Form1
		US	"G826:US:REI:V"	Form1

Measurement Result Query Count (15/23)

Item			<result>	Response format
G.826	Parity	ES	"G826:ES:PARITY"	Form1
		SES	"G826:SES:PARITY"	Form1
		BBE	"G826:BBE:PARITY"	Form1
		ESR	"G826:ESR:PARITY"	Form2
		SESR	"G826:SESR:PARITY"	Form2
		BBER	"G826:BBER:PARITY"	Form2
		SDP	"G826:SDP:PARITY"	Form1
		US	"G826:US:PARITY"	Form1
M.2110 (SDH)	Section	Rx 2-hour	"M2110:SECTion:HOUR2R"	Form1
		Rx 24-hour	"M2110:SECTion:HOUR24R"	Form1
		Rx 7-day	"M2110:SECTion:DAY7R"	Form1
		Rx ES	"M2110:SECTion:ESR"	Form4
		Rx SES	"M2110:SECTion:SESR"	Form1
		Rx US	"M2110:SECTion:USR"	Form1
		Tx 2-hour	"M2110:SECTion:HOUR2T"	Form1
		Tx 24-hour	"M2110:SECTion:HOUR24T"	Form1
		Tx 7-day	"M2110:SECTion:DAY7T"	Form1
		Tx ES	"M2110:SECTion:EST"	Form4
		Tx SES	"M2110:SECTion:SEST"	Form1
	HO-path	Rx 2-hour	"M2110:HOPath:HOUR2R"	Form1
		Rx 24-hour	"M2110:HOPath:HOUR24R"	Form1
		Rx 7-day	"M2110:HOPath:DAY7R"	Form1
		Rx ES	"M2110:HOPath:ESR"	Form4
		Rx SES	"M2110:HOPath:SESR"	Form1
		Rx US	"M2110:HOPath:USR"	Form1
		Tx 2-hour	"M2110:HOPath:HOUR2T"	Form1
		Tx 24-hour	"M2110:HOPath:HOUR24T"	Form1
		Tx 7-day	"M2110:HOPath:DAY7T"	Form1
		Tx ES	"M2110:HOPath:EST"	Form4
		Tx SES	"M2110:HOPath:SEST"	Form1
	LO-path	Rx 2-hour	"M2110:LOPath:HOUR2R"	Form1
		Rx 24-hour	"M2110:LOPath:HOUR24R"	Form1
		Rx 7-day	"M2110:LOPath:DAY7R"	Form1
		Rx ES	"M2110:LOPath:ESR"	Form4
		Rx SES	"M2110:LOPath:SESR"	Form1
		Rx US	"M2110:LOPath:USR"	Form1
		Tx 2-hour	"M2110:LOPath:HOUR2T"	Form1
		Tx 24-hour	"M2110:LOPath:HOUR24T"	Form1
		Tx 7-day	"M2110:LOPath:DAY7T"	Form1
		Tx ES	"M2110:LOPath:EST"	Form4
		Tx SES	"M2110:LOPath:SEST"	Form1

Measurement Result Query Count (16/23)

Item			<result>	Response format
M.2110 (PDH)	Rx 2-hour		"M2110:HOUR2R"	Form1
	Rx 24-hour		"M2110:HOUR24R"	Form1
	Rx 7-day		"M2110:DAY7R"	Form1
	Rx ES		"M2110:ESR"	Form4
	Rx SES		"M2110:SESR"	Form1
	Rx US		"M2110:USR"	Form1
	Tx 2-hour		"M2110:HOUR2T"	Form1
	Tx 24-hour		"M2110:HOUR24T"	Form1
	Tx 7-day		"M2110:DAY7T"	Form1
	Tx ES		"M2110:EST"	Form4
	Tx SES		"M2110:SEST"	Form1
M.2120 (SDH)	Section	Rx TR1-ES	"M2120:SECTion:TR1ESR"	Form1
		Rx TR1-SES	"M2120:SECTion:TR1SESR"	Form1
		Rx TR2-ES	"M2120:SECTion:TR2ESR"	Form1
		Rx TR2-SES	"M2120:SECTion:TR2SESR"	Form1
		Rx ES	"M2120:SECTion:ESR"	Form4
		Rx SES	"M2120:SECTion:SESR"	Form1
		Rx US	"M2110:SECTion:USR"	Form1
		Tx TR1-ES	"M2120:SECTion:TR1EST"	Form1
		Tx TR1-SES	"M2120:SECTion:TR1SEST"	Form1
		Tx TR2-ES	"M2120:SECTion:TR2EST"	Form1
		Tx TR2-SES	"M2120:SECTion:TR2SEST"	Form1
		Tx ES	"M2120:SECTion:EST"	Form4
		Tx SES	"M2120:SECTion:SEST"	Form1
	HO-path	Rx TR1-ES	"M2120:HOPath:TR1ESR"	Form1
		Rx TR1-SES	"M2120:HOPath:TR1SESR"	Form1
		Rx TR2-ES	"M2120:HOPath:TR2ESR"	Form1
		Rx TR2-SES	"M2120:HOPath:TR2SESR"	Form1
		Rx ES	"M2120:HOPath:ESR"	Form4
		Rx SES	"M2120:HOPath:SESR"	Form1
		Rx US	"M2110:HOPath:USR"	Form1
		Tx TR1-ES	"M2120:HOPath:TR1EST"	Form1
		Tx TR1-SES	"M2120:HOPath:TR1SEST"	Form1
		Tx TR2-ES	"M2120:HOPath:TR2EST"	Form1
		Tx TR2-SES	"M2120:HOPath:TR2SEST"	Form1
		Tx ES	"M2120:HOPath:EST"	Form4
		Tx SES	"M2120:HOPath:SEST"	Form1

Measurement Result Query Count (17/23)

Item			<result>	Response format
M.2120 (SDH)	LO-path	Rx TR1-ES	"M2120:LOPath:TR1ESR"	Form1
		Rx TR1-SES	"M2120:LOPath:TR1SESR"	Form1
		Rx TR2-ES	"M2120:LOPath:TR2ESR"	Form1
		Rx TR2-SES	"M2120:LOPath:TR2SESR"	Form1
		Rx ES	"M2120:LOPath:ESR"	Form4
		Rx SES	"M2120:LOPath:SESR"	Form1
		Rx US	"M2110:LOPath:USR"	Form1
		Tx TR1-ES	"M2120:LOPath:TR1EST"	Form1
		Tx TR1-SES	"M2120:LOPath:TR1SEST"	Form1
		Tx TR2-ES	"M2120:LOPath:TR2EST"	Form1
		Tx TR2-SES	"M2120:LOPath:TR2SEST"	Form1
		Tx ES	"M2120:LOPath:EST"	Form4
		Tx SES	"M2120:LOPath:SEST"	Form1
M.2120 (PDH)	Rx TR1-ES		"M2120:TR1ESR"	Form1
	Rx TR1-SES		"M2120:TR1SESR"	Form1
	Rx TR2-ES		"M2120:TR2ESR"	Form1
	Rx TR2-SES		"M2120:TR2SESR"	Form1
	Rx ES		"M2120:ESR"	Form4
	Rx SES		"M2120:SESR"	Form1
	Rx US		"M2110:USR"	Form1
	Tx TR1-ES		"M2120:TR1EST"	Form1
	Tx TR1-SES		"M2120:TR1SEST"	Form1
	Tx TR2-ES		"M2120:TR2EST"	Form1
	Tx TR2-SES		"M2120:TR2SEST"	Form1
	Tx ES		"M2120:EST"	Form4
	Tx SES		"M2120:SEST"	Form1

Measurement Result Query Count (SDH) (18/23)

Item			<result>	Response format
COUNT	AU PTR	NDF	"JC:NDF:AU"	Form1
		+PJC	"JC:PPJC: AU "	Form1
		-PJC	"JC:NPJC: AU "	Form1
		Cons.	"JC:CONS: AU "	Form1
	TU PTR	NDF	"JC:NDF:TU"	Form1
		+PJC	"JC:PPJC: TU "	Form1
		-PJC	"JC:NPJC: TU "	Form1
		Cons.	"JC:CONS: TU "	Form1
	C1		"JC:C1"	Form1
	C2		"JC:C2"	Form1
	C		"JC:C"	Form1
RATE	AU PTR	NDF	"JR:NDF: AU "	Form2
		+PJC	"JR:PPJC: AU "	Form2
		-PJC	"JR:NPJC: AU "	Form2
		Cons.	"JR:CONS: AU "	Form2
	TU PTR	NDF	"JR:NDF: TU "	Form2
		+PJC	"JR:PPJC: TU "	Form2
		-PJC	"JR:NPJC: TU "	Form2
		Cons.	"JR:CONS: TU "	Form2
	C1		"JR:C1"	Form2
	C2		"JR:C2"	Form2
	C		"JR:C"	Form2

Measurement Result Query Count (SONET) (19/23)

Item			<result>	Response format
C O U N T	STS PTR	NDF	"JC:NDF:STS"	Form1
		+PJC	"JC:PPJC: STS "	Form1
		-PJC	"JC:NPJC: STS "	Form1
		Cons.	"JC:CONS: STS "	Form1
	VT PTR	NDF	"JC:NDF:VT"	Form1
		+PJC	"JC:PPJC: VT "	Form1
		-PJC	"JC:NPJC: VT "	Form1
		Cons.	"JC:CONS: VT "	Form1
	C1		"JC:C1"	Form1
	C2		"JC:C2"	Form1
	C		"JC:C"	Form1
R A T E	STS PTR	NDF	"JR:NDF: STS "	Form2
		+PJC	"JR:PPJC: STS "	Form2
		-PJC	"JR:NPJC: STS "	Form2
		Cons.	"JR:CONS: STS "	Form2
	VT PTR	NDF	"JR:NDF: VT "	Form2
		+PJC	"JR:PPJC: VT "	Form2
		-PJC	"JR:NPJC: VT "	Form2
		Cons.	"JR:CONS: VT "	Form2
	C1		"JR:C1"	Form2
	C2		"JR:C2"	Form2
	C		"JR:C"	Form2

Measurement Result Query Count (20/23)

Item	<result>	Response format (Unit : μs)
Current	"DELay:CURRent"	Form1
Maximum	"DELay:MAXimam"	Form1
Minimum	"DELay:MINimam"	Form1

Measurement Result Query Count (21/23)

Item	<result>	Response format (Unit : ms)
Switch time	"APSTest:Switchtime"	Form7

Measurement Result Query Count (22/23)

Item	<result>	Response format (Unit : μs)
Measurement result	"B2:CH1"	Form1
	・・・	
	"B2:CH64"	

Measurement Result Query Count (23/23)

Item	<result>	Response format
IP send packet	"IPSend:PACket1" "IPSend:PACket2" "IPSend:PACket3"	Form15
Receive packet	"IPRecive:PACket"	Form15

:CALCulate:HISTory? <string>

Parameter: <string> = <STRING PROGRAM DATA>
"CURRent" Current measurement result
"LAST" Last measurement result

Response: <string> = <STRING RESPONSE DATA>
Result is: with Error/Alarm "Unacceptable"
None " Acceptable"
Invalid "----------" (for 12 characters)

Function: Queries the measurement result. Returns valid measurement result from the Error/Alarm measurement item (0/1). However, Performance, Justification and B2 error measurement items/results are excluded. The result is cleared at measurement start, and maintained after the measurement. (If the measurement status is shifted from measuring to suspended, Current and Last have the same data. Data is updated when measurement is being performed or completed.)

Example of use: > :CALCulate:HISTory? "LAST"
< " Acceptable"

:CALCulate:TSEarch:RESult?

Response: <result>,<trouble>,<route>
<result> = <STRING RESPONSE DATA>
Judgement result of trouble search
Form4
<trouble> = <NR1 NUMERIC RESPONSE DATA>
Number of routes with troubles
0 to 31744
<route> = <NR1 NUMERIC RESPONSE DATA>
Total number of routes on which trouble search was conducted.
1 to 31744

Function: Queries trouble search judgement results.

Example use: > :CALCulate:TSEarch:RESult?
< " Acceptable",0,512

:CALCulate:TSEarch:DATA? <result>

Parameter <result> = <STRING PROGRAM DATA>
See table10-5

Response: <string> = <STRING PROGRAM DATA>
See table10-5

Function: Queries trouble search result data.

Example use: > :CALCulate:TSEarch:DATA? "TSEarch:LOS"
< " Acceptable"

Measurement Result Data (Trouble search) Query Content (1/3)

Item	<result>	Response format
B1 error	"TSEarch:B1"	Form4
B2 error	"TSEarch:B2"	Form4
HP-B3 error	"TSEarch:B3:HP"	Form4
LP-B3 error	"TSEarch:B3:LP"	Form4
BIP-2 error	"TSEarch:BIP2"	Form4
MS-REI	"TSEarch:REI:MS"	Form4
HP-REI	"TSEarch:REI:HP"	Form4
LP-REI	"TSEarch:REI:LP"	Form4
Code error	"TSEarch:CODE"	Form4
139M frame error	"TSEarch:FRAMe:M139"	Form4
45M frame error	"TSEarch:FRAMe:M45"	Form4
34M frame error	"TSEarch:FRAMe:M34"	Form4
8M frame error	"TSEarch:FRAMe:M8"	Form4
2M frame error	"TSEarch:FRAMe:M2"	Form4
1.5M frame error	"TSEarch:FRAMe:M1_5"	Form4
45M REI error	"TSEarch:REI:M45"	Form4
CRC-4 error	"TSEarch:CRC4"	Form4
E-Bit error	"TSEarch:EBIT"	Form4
BIP-8 error	"TSEarch:BIP8"	Form4
Parity error	"TSEarch:PARITY"	Form4
CRC-6 error	"TSEarch:CRC6"	Form4
C-Bit error	"TSEarch:CBIT"	Form4
Bit error	"TSEarch:BIT"	Form4

Measurement Result Query Contents (2/3)

Item		<result>	Response format
LOS		"TSEarch:LOS"	Form4
Sync. Loss		"TSEarch:PATTern"	Form4
AIS	139M	"TSEarch:AIS:M139"	Form4
	45M	"TSEarch:AIS:M45"	Form4
	34M	"TSEarch:AIS:M34"	Form4
	8M	"TSEarch:AIS:M8"	Form4
	2M	"TSEarch:AIS:M2"	Form4
	1.5M	"TSEarch:AIS:M1_5"	Form4
	MS	"TSEarch:AIS:MS"	Form4
	AU	"TSEarch:AIS:AU"	Form4
	TU	"TSEarch:AIS:TU"	Form4
LOF	139M	"TSEarch:LOF:M139"	Form4
	45M	"TSEarch:LOF:M45"	Form4
	34M	"TSEarch:LOF:M34"	Form4
	8M	"TSEarch:LOF:M8"	Form4
	2M	"TSEarch:LOF:M2"	Form4
	1.5M	"TSEarch:LOF:M1_5"	Form4
	MF	"TSEarch:LOF:MF"	Form4
	(SDH)	"TSEarch:LOF"	Form4
RDI	139M	"TSEarch:RDI:M139"	Form4
	45M	"TSEarch:RDI:M45"	Form4
	34M	"TSEarch:RDI:M34"	Form4
	8M	"TSEarch:RDI:M8"	Form4
	2M	"TSEarch:RDI:M2"	Form4
	1.5M	"TSEarch:RDI:M1_5"	Form4
	MF	"TSEarch:RDI:MF"	Form4
OOF		"TSEarch:OOF"	Form4
LOP	AU	"TSEarch:LOP:AU"	Form4
	TU	"TSEarch:LOP:TU"	Form4
RDI	MS	"TSEarch:RDI:MS"	Form4
	HP	"TSEarch:RDI:HP"	Form4
	LP	"TSEarch:RDI:LP"	Form4
SLM	HP	"TSEarch:SLM:HP"	Form4
	LP	"TSEarch:SLM:LP"	Form4

Measurement Result Query Contents (3/3)

Item	<result>	Response format
LP-RFI	"TSEarch:RFI:LP"	Form4
TU-LOM	"TSEarch:LOM:TU"	Form4
Judgement	"TSEarch:TEST"	Form4
HP-TIM	"TSEarch:HTIM"	
HP-UNEQ	"TSEarch:HUNEQ"	
LP-TIM	"TSEarch:LTIM"	
LP-UNEQ	"TSEarch:LUNEQ"	

:CALCulate:TGRaph:DATA?<numeric1>,<numeric2>,<numeric3>,<numeric4>,<numeric5>,[<numeric6>]

Parameter <DECIMAL NUMERIC PROGRAM DATA>
Year, month, day and time of read data
<numeric1> = 1994 to 2093 (year)
<numeric2> = 1 to 12 (month)
<numeric3> = 1 to 31 (day)
<numeric4> = 0 to 23 (hour)
<numeric5> = 0 to 59 (minute)
<numeric6> = 0 to 59 (second)

Response: <time>,<alarm1s>,<alarm1c>,<alarm2s>,<alarm2c>,<alarm3s>,
<alarm3c>,
<alarm4s>,<alarm4c>,<alarm5s>,<alarm5c>,<error1>,<error2>
<time> = <year>,<month>,<day>,<hour>,<minute>,<second>
Year, month, day and time of read data
When data at the time specified by the parameter does not exist, data of the nearest time from the specified time is output.
<year> = <NR1 NUMERIC RESPONSE DATA>
Year
0,1994 to 2093
<month> = <NR1 NUMERIC RESPONSE DATA>
Month
0,1 to 12
<day> = <NR1 NUMERIC RESPONSE DATA>
Day
0,1 to 31
<hour> = <NR1 NUMERIC RESPONSE DATA>
Hour
0 to 23
<minute> = <NR1 NUMERIC RESPONSE DATA>
Minute
0 to 59
<second> = <NR1 NUMERIC RESPONSE DATA>
Second
0 to 59
<alarm1s> = <STRING RESPONSE DATA>
Alarm1 occurrence time (sec)
(Form1)
<alarm1c> = <STRING RESPONSE DATA>
Alarm1 occurrence time
(Form1)

<alarm2s> = <STRING RESPONSE DATA>
Alarm2 occurrence time (sec)
(Form1)
<alarm2c> = <STRING RESPONSE DATA>
Alarm2 occurrence time
(Form1)
<alarm3s> = <STRING RESPONSE DATA>
Alarm3 occurrence time (sec)
(Form1)
<alarm3c> = <STRING RESPONSE DATA>
Alarm3 occurrence time
(Form1)
<alarm4s> = <STRING RESPONSE DATA>
Alarm4 occurrence time (sec)
(Form1)
<alarm4c> = <STRING RESPONSE DATA>
Alarm4 occurrence time
(Form1)
<alarm5s> = <STRING RESPONSE DATA>
(Form1)
Alarm5 occurrence time (sec)
<alarm5c> = <STRING RESPONSE DATA>
(Form1)
Alarm5 occurrence time
<error1> = <STRING RESPONSE DATA>
Error count value
(Form1)
<error2> = <STRING RESPONSE DATA>
Error rate value
(Form2)
* When no data exists:
< 0,0,0,0,0,"--------","--------","--------","--------","--------",
"--------","--------","--------","--------","--------","--------","--------"

Function: Queries the Error/Alarm analysis result.

Example use: To read analysis data of 1:20 on October 23, 2000.
> :CALCulate:TGRaph:DATA? 2000,10,23,1,20
< 2000,10,23,1,20,"0"," 0","14","
4","4","4","1.2E+06","100","0","0","111"," 1.3E-06"

:CALCulate:FGRaph:DATA? <time>[,<number>]

Parameter: <time> = <year>,<month>,<day>,<hour>,<minute>,[<second>]

<year> = <DECIMAL NUMERIC PROGRAM DATA>
1994 to 2093 year

<month> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 12 month

<day> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 31 day

<hour> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 23 hour

<minute> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 59 minute

<second> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 59 second

<number> = <DECIMAL NUMEIC PROGRAM DATA>
Number of data to be quried
0 to 3600

Response: <time> = <year>,<month>,<day>,<hour>,<minute>,<second>
Year, month, day and time of read data
When data at the time specified by the parameter does not exist, data of the nearest time from the specified time is output.

<year> = <NR1 NUMERIC RESPONSE DATA>
0,1994 to 2093 year

<month> = <NR1 NUMERIC RESPONSE DATA>
0,1 to 12 month

<day> = <NR1 NUMERIC RESPONSE DATA>
0,1 to 31 day

<hour> = <NR1 NUMERIC RESPONSE DATA>
0 to 23 hour

<minute> = <NR1 NUMERIC RESPONSE DATA>
0 to 59 minute

<second> = <NR1 NUMERIC RESPONSE DATA>
0 to 59 second

<freq> = <STRING RESPONSE DATA>
Frequency (numeral)
From10

<ppm> = <STRING RESPONSE DATA>
ppm value
From11

*When no data exists:
< 0,0,0,0,0,0,"----------","--------"

Function: Queries the value of graph data on the frequency monitoring screen.

Example use:
> :CALCulate:FGRaph:DATA? 2000,6,10,10,30,0,1
or
> :CALCulate:FGRaph:DATA? 2000,6,10,10,30,1
< 2000, 6,10,10,30, 0," 100300.9"," -1000.0"

:CALCulate:SIMultaneous:DATA? <ch1>,<ch2>

Parameter
<ch1> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 7 Step value: 1 (When TUG2# or VTG# is set.)
<ch2> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 4 Step value: 1
(TU11#, TU12#, TU2#, VT1.5#, VT2#, or VT6# is set)

Response
<string> = <STRING RESPONSE DATA>
(The measurement result is shown in order of AIS, LOP, RDI, RFI, BIP2, and REI.)
"ACCEPTABLE" OK
"UNACCEPTABLE" NG

Function
Queries the simultaneous measurement result.

Example use
To query the measurement result of AIS, LOP, RDI, RFI, BIP2, and REI when the simultaneous measurement is performed, and TUG2# and TU11# are set to 7 and 1 respectively.
> :CALCulate:SIMultance : DATA? 7,1
<
"ACCEPTABLE,ACCEPTABLE,UNACCEPTABLE,ACCEPTABLE,UNACCEPTABLE,ACCEPTABLE"

:CALCulate:APSCapture:DATA? <numeric1>,<numeric2>

Parameter
<numeric1>, <numeric2> =
<DECIMAL NUMERIC PROGRAM DATA>
1 to 64 Step value: 1

Response:
<string> = <STRING RESPONSE DATA>
Returns "K1, K2, Frame" of the designated numbers.

Function:
Queries results of APS Capture measurement.

Example use:
To query the measurement result of No.5 to No.7.
> :CALCulate:APSCapture : DATA? 5,7
< "FF,01,8000","20,06,17","6E,0A,6890"

:CALCulate:FRAMecapture:DATA? <start1>,<start2>,<stop1>,<stop2>

Parameter
<start1>, <stop1> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 9 Step value: 1 Line No.
<start2>, <stop2> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 90 52M Step value: 1 Column No.
1 to 270 156M Step value: 1 Column No.
1 to 1080 622M Step value: 1 Column No.

Response:
<string> = <STRING RESPONSE DATA>
Receives data of the designated numbers in hexadecimal digits.

Function:
Queries the Frame Capture data.

Example use:
To queries the Frame Capture data from the third line of seven column.
> :CALCulate:FRAMecapture : DATA? 3,7,3,11
< ”00,01,02,03,04”

:CALCulate:OHCapture:DATA? <type>, <numeric1>,<numeric2>

Parameter
<type> = <CHARACTER PROGRAM DATA>
H1H H1/H2
K1K2 K1/K2
SOH SOH 1byte [TOH 1byte]
POH POH 1byte
<numeric1> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 1023 (Decimal) Step value: 1
<numeric2> = <DECIMAL NUMERIC PROGRAM DATA>
numeric1 to 1023 (Decimal) Step value: 1

Response:
<string> = <STRING RESPONSE DATA>
type = H1/H2
Returns "NDF, SS, PTR, IDIDIDIDID" of the designated numbers.
type = K1/K2
Returns "K1, K2" of the designated numbers.
type = SOH 1byte
"SOH (TOH) 1byte position", "Channel",
"Display repeatedly the designated section in HEX code data numeric"
type = POH 1byte
"POH 1byte type (VC4/VC3/VC21) or (STS3/STS1/VT)",
"POH 1byte position",
"Display repeatedly the designated section in HEX code data numeric"

Function:
Queries results of Overhead Capture measurement.

Example use: To queries the measurement result of the type H1/H2.
(from No.5 to No.7)
> :CALCulate:OHCapture : DATA? H1H2, 5, 7
<"1001,00, 3,0000000011","1001,00, 5,0000000101","1001,00, 12,0000001100"
To queries the measurement result of the type K1/K2.
(from No.5 to No.7)
> :CALCulate:OHCapture : DATA? K1K2, 5, 7
< "FF", "01", "20", "06", "6E", "0A"
To queries the measurement result of the type SOH 1byte.
(from No.5 to No.7)
> :CALCulate:OHCapture : DATA? SOH, 5, 7
< "X19", "1", "00", "02", "03"
To queries the measurement result of the type POH 1byte.
(from No.5 to No.7)
> :CALCulate:OHCapture : DATA? POH, 5, 7
< "VC4", "J1", "00", "00", "03"

:CALCulate:IPCapture:LIST?

Response <string> = <STRING RESPONSE DATA>
Returns all source addresses and eestination addresses.
For IPV4 "255.255.255.255", "255.255.255.255"
When no data exists. "---.---.---.---", "---.---.---.---"
For IPV6
"FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF","FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF"
when no data exists. "---.---.---.---.---.---.---.---","---.---.---.---.---.---.---.---"

Function Queries source addresses and destination addresses currently displ ayed (up to 12 addresses).

Example use To query the source addresses and destination addresses for IPV4.
> :CALCulate:IPCapture : LIST?
<"255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255""255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255","255.255.255.255", "255.255.255.255"
To query the source addresses and destination addresses for IPV6.
> :CALCulate:IPCapture : LIST?
<"FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF","FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF","FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF","FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF"
"FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF","FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF.FFFF"
All 12 sets are displayed.

:CALCulate:IPCAPTure:PCOunt?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
1 to 9999999
* "0" is outputted when no information data exists.

Function Queries the number of IP source addresses and destination addresses of IP.

Example use > :CALCulate:IPCAPTure:PCOunt?
< 2047

:CALCulate:IPCapture:IPPacket? <no>,<start>,<stop>

Parameter <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 9999999 Step value: 1
<start> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 65535 Step value: 1 (information No)
<stop> = <DECIMAL NUMERIC PROGRAM DATA>
(start+1) to 65535 Step value: 1 (information No)
* When <start> value is "65535", only "65535" can be set as <stop> value.

Response <ppp> = <STRING RESPONSE DATA>
(Flag, Address, Control, Protocol, FCS, Flag)
<iphed> = <STRING RESPONSE DATA>
IP header
For IPV4
(Ver, IHL, type of service, Total length, identification, flag, Fragment offset, Time to live, Protocol, Checksum, Source address, Destination address)
For IPV6
(Ver, Priority, Flow Label, Payload length, Next Header Hop Limit, Source address, Destination address)
<info> = <STRING RESPONSE DATA>
information (is informatin value (start to stop) specified by parameter)

Function Queries Protocol and IP header of specified No., along with information data specified by start and stop.

Example use To query the PPP of No.5, and IP header and information data of No. 30 and 31 when IP capture is Ipv4.
> : CALCulate:IPCapture : IPPacket? 5,30,31
< "4","00101","00000110","1114","FFFF","000","0000","127","6","---- ", "128

10.3.7 SYSTem subsystem

Use the SYSTem subsystem for printer, memory and buzzer settings. The following table shows functions, commands, and parameters.

Function	Command	Parameter
Page 10-523		
Selects the type of intermittent data printing.	:SYSTem:PRINt:IDATa[:TYPE]	type
Queries the type of intermittent data printing.	:SYSTem:PRINt:IDATa[:TYPE]?	
Page 10-523		
Sets the intermittent data printing period.	:SYSTem:PRINt:IDATa:PERiod	numeric suffix
Queries the intermittent data printing period.	:SYSTem:PRINt:IDATa:PERiod?	
Page 10-524		
Sets ON/OFF of measurement condition printing.	:SYSTem:PRINt:MCONdition	boolean
Queries the measurement condition print setting.	:SYSTem:PRINt:MCONdition?	
Page 10-524		
Sets the error occurrence printing to ON or OFF.	:SYSTem:PRINt:ERRor:SET	boolean
Queries the error occurrence print setting.	:SYSTem:PRINt:ERRor:SET?	
Sets a type of the error occurrence printing.	:SYSTem:PRINt:ERRor:TYPE	type
Queries the selected type of error occurrence printing.	:SYSTem:PRINt:ERRor:TYPE?	
Sets the error count threshold for error occurrence print.	:SYSTem:PRINt:ERRor:THReshold:EC	numeric
Queries the error count threshold for error occurrence print.	:SYSTem:PRINt:ERRor:THReshold:EC?	
Sets the error rate threshold for error occurrence print.	:SYSTem:PRINt:ERRor:THReshold:ER	erate
Queries the error rate threshold for error occurrence print.	:SYSTem:PRINt:ERRor:THReshold:ER?	
Sets ON/OFF of the paper-save printing function.	:SYSTem:PRINt:ERRor:SQUelch	boolean
Queries the printing stop setting when errors occur consecutively.	:SYSTem:PRINt:ERRor:SQUelch?	
Page 10-526		
Sets the alarm occurrence printing ON/OFF.	:SYSTem:PRINt:ALARm:SET	boolean
Queries the alarm occurrence print setting.	:SYSTem:PRINt:ALARm:SET?	
Page 10-526		
Sets the measurement result data printing ON/OFF.	:SYSTem:PRINt:LDATa:SET	boolean
Queries with or without measurement result data printing.	:SYSTem:PRINt:LDATa:SET?	
Sets with or without printing error data of measurement result data.	:SYSTem:PRINt:LDATa:ERRor	boolean

Queries with or without printing error data of measurement result data.	:SYSTem:PRINt:LDATa:ERRor?	
Sets with or without printing alarm data of measurement result data.	:SYSTem:PRINt:LDATa:ALARm	boolean
Queries with or without printing alarm data of measurement result data.	:SYSTem:PRINt:LDATa:ALARm?	
Sets with or without printing performance data of measurement result data.	:SYSTem:PRINt:LDATa:PERFormance	boolean
Queries with or without printing performance data of measurement result data.	:SYSTem:PRINt:LDATa:PERFormance?	
Sets with or without printing pointer data of measurement result data.	:SYSTem:PRINt:LDATa:JUSTificat	boolean
Queries with or without printing pointer data of measurement result data.	:SYSTem:PRINt:LDATa:JUSTificat?	

Page 10-529

Sets printing by the printer ON/OFF. (Print key)	:SYSTem:PRINt:ENABle	boolean
Queries ON/OFF of printing by the printer.	:SYSTem:PRINt:ENABle?	

Page 10-529

Outputs the character string specified by the parameter to the built-in or external	:SYSTem:PRINt:TEXT	string

Page 10-529

Recalls data from a Condition memory.	:SYSTem:MEMory:RECall	numeric

Page 10-529

Writes data into a Condition memory.	:SYSTem:MEMory:STORe	numeric

Page 10-529

Clears data from a Condition memory.	:SYSTem:MEMory:CLEar	numeric

Page 10-530

Gives a name to a Condition memory.	:SYSTem:MEMory:LABel	numeric title
Queries label of a Condition memory.	:SYSTem:MEMory:LABel?	numeric

Page 10-530

Queries the Analyze memory registration status.	:SYSTem:MEMory:ANALysis:LABel?	numeric
Recalls data from a Analyze memory.	:SYSTem:MEMory:ANALysis:RECall	numeric
Writes data into the Analyze memory.	:SYSTem:MEMory:ANALysis:STORe	type string
Clears data from the Analyze memory	:SYSTem:MEMory:ANALysis:CLEar	numeric
Clears all data from the Analyze memory	:SYSTem:MEMory:ANALysis:ACLear	

Page 10-532

Reads out data from a file stored in a floppy disk. (Only in current directory)	:SYSTem:MMEMory:RECall	file_name

Page 10-532

Writes data into a file on a floppy disk. (Only in current directory)	:SYSTem:MMEMory:STORe	type file_name

Page 10-533

Deletes a file or directory from a floppy disk. (Only within the current directory)	:SYSTem:MMEMory:DELete	file_name

Page 10-533

Generates a subdirectory to a floppy disk. (Only within the current directory)	:SYSTem:MMEMory:MDIRectory	dir_name

Page 10-533

Changes a file name of a floppy disk. (Only within the current directory)	:SYSTem:MMEMory:REName	src_file dst_file

Page 10-533

Formats a floppy disk (No format type designation is required.)	:SYSTem:MMEMory:INITialize	

Page 10-534

Queries the floppy disk information.	:SYSTem:MMEMory:CATalog?	numeric

Page 10-535

Shifts a directory to a floppy disk.	:SYSTem:MMEMory:CDIRectory	dir_name

Page 10-535

Switches the recommendation G.783/G.841 display mode.	:SYSTem:PROTection	mode
Queries the ITU-T recommendation G.783/G.841 display mode.	:SYSTem:PROTection?	

Page 10-535

Switches E1/E2 bytes for voice data input output.	:SYSTem:ORDerwire:TYPE	otype
Queries bytes for voice data input output.	:SYSTem:ORDerwire:TYPE?	

Page 10-536

Sets the volume of voice data input output	:SYSTem:ORDerwire:VOLume	volume
Queries the volume of voice data input output.	:SYSTem:ORDerwire:VOLume?	

Page 10-536

Selects the recommendation to determine conditions for MS-RDI detection/remove.	:SYSTem:RDI:VC43 :SYSTem:RDI:STS	bit
Queries the recommendation to determine conditions for MS-RDI detection/remove.	:SYSTem:RDI:VC43? :SYSTem:RDI:STS?	

Page 10-537

Selects the recommendation to determine conditions for MS-RDI detection/remove.	:SYSTem:RDI:VC21 :SYSTem:RDI:VT	bit
Queries the recommendation to determine conditions for MS-RDI detection/remove.	:SYSTem:RDI:VC21? :SYSTem:RDI:VT?	

Page 10-537

Sets the Pause function for Error/Alarm measurement.	:SYSTem:MPAuse	mode
Queries the Pause function for Error/Alarm measurement.	:SYSTem:MPAuse?	

Page 10-538

Sets the data for each sequence.	:SYSTem:SEQUence:SET	no1 no2
Queries the data of each sequence.	:SYSTem:SEQUence:SET?	no1

Page 10-538

Recalls the measurement result data form the memory.	:SYSTem:SEQUence:RECall	no
Queries "RECall No." of the measurement result data.	:SYSTem:SEQUence:RECall?	

Page 10-538

Sets the date of the current day.	:SYSTem:DATE	numeric1 numeric2 numeric3
Queries the date of the current day.	:SYSTem:DATE?	

Page 10-539

Sets values of the current time.	:SYSTem:TIME	numeric1 numeric2 numeric3
Queries the current time.	:SYSTem:TIME?	

Page 10-539

Select ON/OFF of the buzzer.	:SYSTem:BUZZer	boolean
Queries the buzzer setting status.	:SYSTem:BUZZer?	

Page 10-539

Sets the LED history function ON or OFF.	:SYSTem:LED:HIStory	boolean
Queries the LED history function setting status.	:SYSTem:LED:HIStory?	

Page 10-540

Sets Coupled MP1656A	:SYSTem:COUPled:M1656	boolean
Queries the Coupled MP1656A	:SYSTem:COUPled:M1656?	

Page 10-540

Sets whether or not to execute trigger.	:SYSTem:TRIGgerout	trg
Queries the set value of whether or not to execute trigger.	:SYSTem:TRIGgerout?	

:SYSTem:PRINt:IDATa[:TYPE] <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

OFF	Without outputting intermittent data
INDividual	Value from immediately preceding intermittent data
ACCumulative	Accumulated value from start of measurement

Function: Selects the type of intermittent data printing.

Example use: To select printing of values from immediately preceding intermittent data

> :SYSTem:PRINt:IDATa:TYPE INDividual

or :SYSTem:PRINt:IDATa INDividual

:SYSTem:PRINt:IDATa[:TYPE]?

Response: <type> = <CHARACTER RESPONSE DATA>

OFF	Without outputting intermittent data
IND	Value from immediately preceding intermittent data
ACC	Accumulated value from start of measurement

Function: Queries the type of intermittent data printing.

Example use: > :SYSTem:PRINt:IDATa:TYPE?

or :SYSTem:PRINt:IDATa?

< IND

:SYSTem:PRINt:IDATa:PERiod <numeric>,<suffix>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 99	Step value: 1

<suffix> = <CHARACTER PROGRAM DATA>

D	day
H	hour
M	minute
S	second

Function: Sets the intermittent data printing period.

Restriction: Invalid when :SYSTem:PRINt:IDATa[:TYPE] is set to <OFF> .

Example use: To set the intermittent data printing period to 1 hour:

> :SYSTem:PRINt:IDATa:PERiod 1, h

:SYSTem:PRINt:IDATa:PERiod?

Response: <numeric>,<suffix>

<numeric> = <NR1 NUMERIC RESPONS DATA>

<suffix> = <CHARACTER RESPONSE DATA>

Function: Queries the intermittent data printing period.

Example use: > :SYSTem:PRINt:IDATa:PERiod?

< 1,h

:SYSTem:PRINt:MCONdition <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Without printing measurement condition
ON or 1	With printing measurement condition

Function: Sets ON/OFF of measurement condition printing.

Example use: To select with printing measurement condition.

> :SYSTem:PRINt:MCONdition ON

:SYSTem:PRINt:MCONdition?

Response: <NR1 NUMERIC RESPONSE DATA>

0 or 1

Function: Queries the measurement condition print setting.

Example use: > :SYSTem:PRINt:MCONdition?

< 1

:SYSTem:PRINt:ERRor:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Without error occurrence printing
ON or 1	With error occurrence printing

Function: Sets the error occurrence printing to ON or OFF.

Example use: To select with error occurrence printing:

> :SYSTem:PRINt:ERRor:SET ON

:SYSTem:PRINt:ERRor:SET?

Response: <NR1 NUMERIC RESPONSE DATA>

0 or 1

Function: Queries the error occurrence print setting.

Example use: > :SYSTem:PRINt:ERRor:SET?

< 1

:SYSTem:PRINt:ERRor:TYPE <type>

Parameter: <type> = <CHARACTER PROGRAM DATA>

EC	Error count
ER	Error rate

Function: Sets a type of the error occurrence printing.

Restriction: This command is disabled when :SYSTem: PRINt: ERRor: SET is set to <OFF>.

Example use: To select the error count:

> :SYSTem:PRINt:ERRor:TYPE EC

:SYSTem:PRINt:ERRor:TYPE?

Response: <type> = <CHARACTER RESPONSE DATA>

Function: Queries the selected type of error occurrence printing.

Example use: > :SYSTem:PRINt:ERRor:TYPE?

< EC

:SYSTem:PRINt:ERRor:THReshold:EC <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

0	OFF
1	> 1
10	> 10
100	> 100
1000	>1000

Function: Sets the error count threshold for error occurrence print.
Printing is done when the number of errors occurring during 1 second exceeds the set value.

Restriction: Invalid in the following case:
・:SYSTem:PRINt:ERRor:SET is set to <OFF>
・:SYSTem:PRINt:ERRor:TYPE is set to <ER>.

Example use: To activate printing when errors exceeding 100 occur for 1 second:
> :SYSTem:PRINt:ERRor:THReshold:EC 100

:SYSTem:PRINt:ERRor:THReshold:EC?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function: Queries the error count threshold for error occurrence print.

Example use: > :SYSTem:PRINt:ERRor:THReshold:EC?
< 100

:SYSTem:PRINt:ERRor:THReshold:ER <erate>

Parameter: <erate> = <CHARACTER PROGRAM DATA>

OFF	
E_3	>1E-3
E_4	>1E-4
E_5	>1E-5
E_6	>1E-6

Function: Sets the error rate threshold for error occurrence print.
Printing is done when the error rate occurring for 1 second exceeds the set value.

Restriction: Invalid in the following case:
・:SYSTem:PRINt:ERRor:SET is set to <OFF>
・:SYSTem:PRINt:ERRor:TYPE is set to <EC>.

Example use: To activate printing when error exceeding 1E-4 occur for 1 second:
> :SYSTem:PRINt:ERRor:THReshold:ER E_4

:SYSTem:PRINt:ERRor:THReshold:ER?

Response: <erate> = <CHARACTER RESPONSE DATA>

Function: Queries the error rate threshold for error occurrence print.

Example use: > :SYSTem:PRINt:ERRor:THReshold:ER?
< E_4

:SYSTem:PRINt:ERRor:SQUelch <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Without paper-save printing
ON or 1	With paper-save printing

Function: Sets ON/OFF of the paper-save printing function.
Restriction: Invalid when :SYSTem:PRINt:ERRor:SET is set to <OFF>.
Example use: To stop printing when errors occur consecutively:
> :SYSTem:PRINt:ERRor:SQUelch ON

:SYSTem:PRINt:ERRor:SQUelch?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1
Function: Queries the printing stop setting when errors occur consecutively.
Example use: > :SYSTem:PRINt:ERRor:SQUelch?
< 1

:SYSTem:PRINt:ALARm:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Without printing alarm data
ON or 1	Print alarm data

Function: Sets the alarm occurrence printing ON/OFF.
Example use: To print alarm data upon alarm occurrence or recovery.
> :SYSTem:PRINt:ALARm:SET ON

:SYSTem:PRINt:ALARm:SET?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1
Function: Queries the alarm occurrence print setting.
Example use: > :SYSTem:PRINt:ALARm:SET?
< 1

:SYSTem:PRINt:LDATa:SET <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Without printing measurement result data.
ON or 1	With printing measurement result data.

Function: Sets the measurement result data printing ON/OFF.
Example use: To print measurement result data:
> :SYSTem:PRINt:LDATa:SET ON

:SYSTem:PRINt:LDATa:SET?

Response: <NR1 NUMERIC RESPONSE DATA>

0	Without printing measurement result data.
1	With printing measurement result data

Function: Queries with or without measurement result data printing.
Example use: > :SYSTem:PRINt:LDATa:SET?
< 1

:SYSTem:PRINt:LDATa:ERRor <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Without printing error data of measurement result data
ON or 1	With printing error data of measurement result data

Function: Sets with or without printing error data of measurement result data.

Restriction: This command is disabled when :SYSTem: PRINt: LDATa: SET is set to <OFF>.

Example use: To print error data contained in measurement result data
> :SYSTem:PRINt:LDATa:ERRor ON

:SYSTem:PRINt:LDATa:ERRor?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries with or without printing error data of measurement result data.

Example use: > :SYSTem:PRINt:LDATa:ERRor?
< 1

:SYSTem:PRINt:LDATa:ALARm <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Without printing alarm data of measurement result data
ON or 1	With printing alarm data of measurement result data

Function: Sets with or without printing alarm data of measurement result data.

Restriction: This command is disabled when :SYSTem: PRINt: LDATa: SET is set to <OFF>.

Example use: To print alarm data contained in measurement result data:
> :SYSTem:PRINt:LDATa:ALARm ON

:SYSTem:PRINt:LDATa:ALARm?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries with or without printing alarm data of measurement result data.

Example use: > :SYSTem:PRINt:LDATa:ALARm?
< 1

:SYSTem:PRINt:LDATa:PERFormance <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Without printing performance data of measurement result data
ON or 1	With printing performance data of measurement result data

Function: Sets with or without printing performance data of measurement result data.

Restriction: This command is disabled when :SYSTem: PRINt: LDATa: SET is set to <OFF>.

Example use: To print performance data contained in measurement result data
> :SYSTem:PRINt:LDATa:PERFormance ON

:SYSTem:PRINt:LDATa:PERFormance?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries with or without printing performance data of measurement result data.

Example use: > :SYSTem:PRINt:LDATa:PERFormance?
< 1

:SYSTem:PRINt:LDATa:JUSTificat <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Without printing pointer data of measurement result data
ON or 1	With printing pointer data of measurement result data

Function: Sets with or without printing pointer data of measurement result data.

Restriction: This command is disabled when :SYSTem: PRINt: LDATa: SET is set to <OFF>.

Example use: To print pointer data contained in measurement result data:
> :SYSTem:PRINt:LDATa:JUSTification ON

:SYSTem:PRINt:LDATa:JUSTificat?

Response: <NR1 NUMERIC RESPONSE DATA>

Function: Queries with or without printing pointer data of measurement result data.

Example use: > :SYSTem:PRINt:LDATa:JUSTificat?
< 1

:SYSTem:PRINt:ENABle <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Printer OFF
ON or 1 Printer ON

Function: Sets printing by the printer ON/OFF. (Print key)

Example use: To set the printer to enable
> :SYSTem:PRINt:ENABle ON

:SYSTem:PRINt:ENABle?

Response: <NR1 NUMERIC PROGRAM DATA>
0 or 1

Function: Queries ON/OFF of printing by the printer.

Example use: > :SYSTem:PRINt:ENABle?
< 1

:SYSTem:PRINt:TEXT <string>

Parameter: <string> = <STRING PROGRAM DATA>
"Various character string" (Up to 40 characters including double quotation marks)

Function: Outputs the character string specified by the parameter to the built-in or external printer.

Example use: To output "- - - 139 M TEST - - -" to the built-in or external printer:
> :SYSTem:PRINt:TEXT "--- 139M TEST ---"

:SYSTem:MEMory:RECall <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
0 to 10

Function: Recalls data from a Condition memory.

Restriction: Invalid when a Condition memory number containing no data is designated.

Example use: To recall data from memory No. 1:
> :SYSTem:MEMory:RECall 1

:SYSTem:MEMory:STORe <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 10

Function: Writes data into a Condition memory.
This acts in the same way as the common command *SAV. *

Example use: To write data into Condition memory No. 3:
> :SYSTem:MEMory:STORe 3

:SYSTem:MEMory:CLEar <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 10

Function: Clears data from a Condition memory.

Restriction: Invalid when a Condition memory number containing no data is designated.
Example use: To clear data from Condition memory No. 3:
> :SYSTem:MEMory:CLEar 3

:SYSTem:MEMory:LABel <numeric>,<title>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 10
<title> = <STRING PROGRAM DATA>
"Memory name" (Up to 15 characters including double quotation marks)
Function: Gives a name to a Condition memory.
Restriction: Invalid when a Condition memory number containing no data is designated.
Example use: To give a name of "139 M TEST" to Condition memory No.1
> :SYSTem:MEMory:LABel 1,"139M TEST"

:SYSTem:MEMory:LABel? <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 10
Response: <title> = <STRING RESPONSE DATA>
Function: Queries label of a Condition memory.
Example use: Queries name of a Condition memory No.1.
> :SYSTem:MEMory:LABel? 1
< "139M TEST"

:SYSTem:MEMory:ANALysis:LABel? <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 Memory No. 1 to No.15
Response: <title>,<gtype>,<stime>,<use>
<title> = <STRING RESPONSE DATA>
Memory name (fixed to 8 characters)
<gtype> = <CHARACTER RESPONSE DATA>
Graph type

EAL	Error/Alarm measurement
FREQ	Frequency data
APSC	APS capture data
OHCA	OH capture data

<stime> = <STRING RESPONSE DATA>
Measurement starting time (fixed to 19 characters)
"2000.12.25 18:40:30"
<use> = <STRING RESPONSE DATA>
Used memory area (percentage indication)
Form3
Function: Queries the Analyze memory registration status.

Example use: To query memory No.1 registration status
> :SYSTem:MEMory:ANALysis:LABel? 1
< "PDH ANAL",EAL,"2000.12.25 18:40:30"," 30.0000"

:SYSTem:MEMory:ANALysis:RECall <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 Memory No. 1 to No.15
Function: Recalls data from a Analyze memory.
Restriction: Invalid when a Condition memory number containing no data is designated.
Example use: To recall data from memory No.1
> :SYSTem:MEMory:ANALysis:RECall 1

:SYSTem:MEMory:ANALysis:STORe <type>,<string>

Parameter: <type> = <CHARACTER PROGRAM DATA>

EALarm	Error/Alarm measurement
FREQuency	Frequency data
APSCapture	APS capture data
OHCapture	OH capture data

<string> = <STRING PROGRAM DATA>
Memory name (Up to 8 characters quotation marks are excluded)
Function: Writes data into the Analyze memory.
Restriction: Invalid in the following case:
・available Analyze memory capacity is insufficient
・10 items have already been registered
Example use: To write data (Error/Alarm) under a name of "Demo1" into the Analyze memory
> :SYSTem:MEMory:ANALysis:STORe EALarm,"Demo1"

:SYSTem:MEMory:ANALysis:CLEar <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 15 Memory No. 1 to No.15
Function: Clears data from the Analyze memory
Example use: To clear data from memory No.1
> :SYSTem:MEMory:ANALysis:CLEar 1

:SYSTem:MEMory:ANALysis:ACLear

Parameter: None
Function: Clears all data from the Analyze memory
Example use: > :SYSTem:MEMory:ANALysis:ACLear

:SYSTem:MMEMory:RECall <file_name>[,<memorized>]

Parameter: <file_name> = <STRING PROGRAM DATA>

File name (no distinction of capital and small letters, includes extension)

Up to 12 characters

<memorized> = <CHARACTER PROGRAM DATA>

OHPRset	Recalls the OH preset screen.
APSProgram	Recalls the APS program screen.
SPRogram	Recalls the S1 program screen.
OHCHange	Recalls the OH change screen.

Function: Reads out data from a file stored in a floppy disk. (Only in current directory)

Example use: To read a file name "Demo1.CND"

> :SYSTem:MMEMory:RECall "DEMO1.CND"

:SYSTem:MMEMory:STORe <type>,<file_name>

Parameter: <type> = <STRING PROGRAM DATA>

"CONDition"	Set condition data
"TSEarch:RTEXt"	Trouble search measurement resul to n the Result screen (text format)
"EALarm:RTEXt"	Error/Alarm measurement resul to n the Result screen (text format)
"DELay:RTEXt"	DELay measurement resul to n the Result screen (text format)
"EALarm:EALarm"	Error/Alarm analyze data of Error/Alarm subscreen
"EALarm:EAText"	Error/Alarm analyze data of Error/Alarm subscreen (text format)
"RECall:RECall"	Analysis data on Recall subscreen
"RECall:RTExt"	Analysis data on Recall subscreen (text format)
“APSCapture:APSCapture”	Analysis data of APS capture subscreen
“APSCapture:APSText"	Analysis data of APS capture subscreen(text format)
“OHCapture:OHCapture”	Analysis data of OH capture subscreen
“OHCapture:OHText・	Analysis data of OH capture subscreen(text format)
"FREQuency:FREQuency"	Analysis data on Frequency subscreen
"FREQuency:FTEXt"	Analysis data on Frequency subscreen(text format)
“OHPReset:DATText”	Setting data on OH preset subscreen(text format)
“OHCHange:DATText”	Setting data on OH change subscreen(text format)
“APSProgram:DATText”	Setting data on APS program subscreen(text format)

<file_name> = <STRING PROGRAM DATA>

File name (no distinction of capital and small letters, includes extension)

Up to 12 characters (excluding double quotation marks)

Function: Writes data into a file on a floppy disk. (Only in current directory)

Example use: To write current set conditions into a file name "Demo1.CND"

> :SYSTem:MMEMory:STORe "CONDition","DEMO1.CND"

:SYSTem:MMEMory:DELete <file_name>

Parameter: <file_name> = <STRING PROGRAM DATA>
File name (no distinction of capital and small letters, includes extension)
Up to 12 characters (excluding double quotation marks)

Function: Deletes a file or directory from a floppy disk. (Only within the current directory)

Example use: To delete a file named "Demo1.CND"
> :SYSTem:MMEMory:DELete "DEMO1.CND"

:SYSTem:MMEMory:MDIRectory <dir_name>

Parameter: <dir_name> = <STRING PROGRAM DATA>
Direc to ry name (no distinction of capital and small letters)
Up to 12 characters

Function: Generates a subdirectory to a floppy disk.
(Only within the current directory)

Example use: To generate an "ORIGINAL" subdirectory under the current directory
> :SYSTem:MMEMory:MDIRectory "ORIGINAL"

:SYSTem:MMEMory:REName <src_file>,<dst_file>

Parameter: <src_file> = <STRING PROGRAM DATA>
Source file name (no distinction of capital and small letters)
Up to 12 characters
<dst_file> = <STRING PROGRAM DATA>
Destination file name (no distinction of capital and small letters)
Up to 12 characters

Function: Changes a file name of a floppy disk. (Only within the current directory)

Restriction: ・MS-DOS format is used.

Example use: To change a "Demo1.CND" file name to "Demo2.CND"
> :SYSTem:MMEMory:REName "DEMO1.CND","DEMO2.CND"

:SYSTem:MMEMory:INITialize

Parameter: None

Function: Formats a floppy disk (No format type designation is required.)

Example use: To format a floppy disk to the 1.44 MB format
> :SYSTem:MMEMory:INITialize

:SYSTem:MMEMory:CATalog? <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
Head line number of display data
The newest file or subdirectory is designated as line No.1.
1 to 200

Response: <use_byte>,<free_byte>,<current_dir>,<current_file>,<file_entry>
<use_byte> = <NR1 NUMERIC RESPONSE DATA>
Used memory capacity
0 to 1457664
<free_byte> = <NR1 NUMERIC RESPONSE DATA>
Available memory capacity
0 to 1457664
<current_dir> = <STRING RESPONSE DATA>
Current directory
<current_file> = <NR1 NUMERIC RESPONSE DATA>
Number of all files on the current directory
(including subdirectory)
0 to 200
<file_entry> = <STRING RESPONSE DATA>
File information of the current directory
The following information is output sequentially from the newest file:
Priority, however, is given to subdirectories, over files.
<file_name>,<file_size>,<date_time>
<file_name>: Subdirectory or file name
Capital letters (A file name includes extension. A directory name is surrounded by <>.)
<file_size>: Size of the file (Form1)
<file_time>: Year, Month, day, hour, minute, and second of a file
When disk information cannot be read out:
0,0,"--------",0,"--------,---------,-------------------"

Function: Queries the floppy disk information.
A maximum of 4 files or directories can be output at a time.

Example use:
```
> :SYSTem:MMEMory:CATalog? 1,4
< 1024,1456640,"¥ORIGINAL",35,
"<SUB_ORG1>,---------,-------------------,
<SUB_ORG2>,---------,-------------------,
DEMO___1.CND,        256,2000.12.31 10:30:00,
DEMO___2.CND,        256,2000.12.31 10:22:05"
```

:SYSTem:MMEMory:CDIRectory <dir_name>

Parameter: <dir_name> = <STRING PROGRAM DATA>
Directory name
(no distinction of capital and small letters, either relative or full path can be designated)
The character string length must be from 1 to 63 characters, and quotation marks must be not used.

Function: Shifts a directory to a floppy disk.

Example use: To shift from the current directory named "ORIGINAL" and at the same level.
> :SYSTem:MMEMory:CDIRectory "..¥ORIGINAL"

:SYSTem:PROTection <mode>

Parameter: <mode> = <CHARACTER PROGRAM DATA>

G783	ITU-T Recommendation G.783
G841	ITU-T Recommendation G.841

Function: Switches the recommendation G.783/G.841 display mode.

Example use: To select the recommendation G.841.
> :SYSTem:PROTection G841

:SYSTem:PROTection?

Response: <mode> = <CHARACTER RESPONSE DATA>

Function: Queries the ITU-T recommendation G.783/G.841 display mode.

Example use: > :SYSTem:PROTection?
< G841

:SYSTem:ORDerwire:TYPE <otype>

Parameter: <otype> = <CHARACTER PROGRAM DATA>

OFF	OFF
E1U	E1u-low
E1A	E1a-low
E2U	E2u-low
E2A	E2a-low

Function: Switches E1/E2 bytes for voice data input output.

Example use: To switch the E1a-low of E1 byte.
> :SYSTem:ORDerwire:TYPE E1A

:SYSTem:ORDerwire:TYPE?

Response: <otype> = <CHARACTER RESPONSE DATA>

Response: <otype> = <CHARACTER RESPONSE DATA>

Function: Queries bytes for voice data input output.

Example use: > :SYSTem:ORDerwire:TYPE?
< E1A

:SYSTem:ORDerwire:VOLume <volume>

Parameter: <volume> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 8
Function: Sets the volume of voice data input output
Restriction: Invalid in the following case:
When :SYSTem:ORDerwire:TYPE is other than <OFF>.
Example use: Sets the volume of voice data 5:
> :SYSTem:ORDerwire:VOLume 5

:SYSTem:ORDerwire:VOLume?

Response: <volume> = <DECIMAL NUMERIC RESPONSE DATA>
Response: <volume> = <DECIMAL NUMERIC RESPONSE DATA>
Function: Queries the volume of voice data input output.
Example use: > :SYSTem:ORDerwire:VOLume?
< 5

(for SDH)

:SYSTem:RDI:VC43 <bit>

(for SONET)

:SYSTem:RDI:STS <bit>

Parameter: <bit> = <CHARACTER PROGRAM DATA>
G1B57 G1(bit 5 to 7)
G1B5 G1(bit 5)
Function: Selects the recommendation to determine conditions for MS-RDI detection/remove.
Example use: To set the recommendation for MS-RDI G1(bit 5 to 7)
> :SYSTem:RDI:VC43 G1B57 (for SDH)
> :SYSTem:RDI:STS G1B57 (for SONET)

(for SDH)

:SYSTem:RDI:VC43?

(for SONET)

:SYSTem:RDI:STS?

Response: <bit> = <CHARACTER RESPONSE DATA>
Function: Queries the recommendation to determine conditions for MS-RDI detection/remove.
Example use: > :SYSTem:RDI:VC43? (for SDH)
> :SYSTem:RDI:STS? (for SONET)
< G1B57

(for SDH)

:SYSTem:RDI:VC21 <bit>

(for SONET)

:SYSTem:RDI:VT <bit>

Parameter: <bit> = <CHARACTER PROGRAM DATA>

(for SDH)

K4B57	K4(b5-7)
V5B8	V5(b8)

(for SONET)

Z7	Z7(b5-7)
V5	V5(b8)

Function: Selects the recommendation to determine conditions for MS-RDI detection/remove.

Example use:
> :SYSTem:RDI:VC21 V5B8
> :SYSTem:RDI:VT V5

(for SDH)

:SYSTem:RDI:VC21?

(for SONET)

:SYSTem:RDI:VT?

Response: <bit> = <CHARACTER RESPONSE DATA>

Function: Queries the recommendation to determine conditions for MS-RDI detection/remove.

Example use:
> :SYSTem:RDI:VC21? (for SDH)
> :SYSTem:RDI:VT? (for SONET)
< V5B8

:SYSTem:MPAuse <mode>

Parameter: <mode> = <BOOLEAN PROGRAM DATA>
DISABLE or 0
ENABLE or 1

Function: Sets the Pause function for Error/Alarm measurement.

Restriction: Invalid in the following case:
During the measurement.

Example use: To set the Pause function enable.
> :SYSTem:MPAuse ENABLE

:SYSTem:MPAuse?

Response: <mode> = <NR1 NUMERIC RESPONSE DATA>
0
1

Function: Queries the Pause function for Error/Alarm measurement.

Example use:
> :SYSTem:MPAuse?
< 1

:SYSTem:SEQuence:SET <no1>,<no2>

Parameter <no1> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 10 Order of the sequence tests.
<no2> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 10 Memory No.1 to 10

Function Sets the data for each sequence.

Restriction Invalid in the following case:
When no data exists.

Example use To set the measurement condition No.6 registered in the memory to the sequence test No.2.
> :SYSTem:SEQuence:SET 2,6

:SYSTem:SEQuence:SET? <no1>

Parameter <no1> = <DECIMAL NUMERIC PROGRAM DATA>

Response <condition> = <CHARACTER RESPONSE DATA>
Measurement condition mnemonic registered in the memory

Function Queries the data of each sequence.

Example use To query the measurement condition set as the sequence test No.2.
> :SYSTem:SEQuence:SET? 2
< Error/Alarm1

:SYSTem:SEQuence:RECall <no>

Parameter <no> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 10 Memory No.1 to 10

Function Recalls the measurement result data form the memory.

Restriction Invalid in the following case:
When no data exists.

Example use To recall “Result” data and “Analyze” data from memory No.2.
> :SYSTem:SEQuence:RECall 2

:SYSTem:SEQuence:RECall?

Response <no> = <DECIMAL NUMERIC PROGRAM DATA>

Function Queries “RECall No.” of the measurement result data.

Example use To recall “Resrult” data and “Analyze” data from memory No.2.
> :SYSTem:SEQuence:RECall?

:SYSTem:DATE <numeric1>,<numeric2>,<numeric3>

Parameter: <DECIMAL NUMERIC PROGRAM DATA>
<numeric1> = 1994 to 2093
<numeric2> = 1 to 12
<numeric3> = 1 to 31

Function: Sets the date of the current day.

Example use: To set the date (July 28,2000)
> :SYSTem:DATE 2000,7,28

:SYSTem:DATE?

Response: <numeric1>,<numeric2>,<numeric3>
= <NR1 NUMERIC RESPONSE DATA>
Function: Queries the date of the current day.
Example use: > :SYSTem:DATE?
< 2000,7,28

:SYSTem:TIME <numeric1>,<numeric2>,<numeric3>

Parameter: <DECIMAL NUMERIC PROGRAM DATA>
<numeric1> = 0 to 23
<numeric2> = 0 to 59
<numeric3> = 0 to 59
Function: Sets values of the current time.
Example use: To set the current time 14:00:00.
> :SYSTem:TIME 14,0,0

:SYSTem:TIME?

Response: <numeric1>,<numeric2>,<numeric3>
= <NR1 NUMERIC RESPONSE DATA>
Function: Queries the current time.
Example use: > :SYSTem:TIME?
< 14,0,0

:SYSTem:BUZZer <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Buzzer OFF
ON or 1	Buzzer ON

Function: Selec to N/OFF of the buzzer.
Example use: To set the buzzer ON.
> :SYSTem:BUZZer ON

:SYSTem:BUZZer?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1
Function: Queries the buzzer setting status.
Example use: > :SYSTem:BUZZer?
< 1

:SYSTem:LED:HIStory <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	LED history OFF
ON or 1	LED history ON

Function: Sets the LED history function ON or OFF.
Example use: To set the LED history function to ON.
> :SYSTem:LED:HIStory ON

:SYSTem:LED:HIStory?

Response: <NR1 NUMERIC RESPONSE DATA>
0 or 1

Function: Queries the LED history function setting status.

Example use: > :SYSTem:LED:HIStory?
< 1

:SYSTem:COUPled:M1656 <boolean>

Parameter: <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0
ON or 1

Function: Sets with or without Coupled MP1656A.

Restriction: Invalid in the following case:
・When Coupled MP1656A mode is Disable.

Example use: To set the Coupled MP1656A to ON:
> :SYSTem:COUPled:M1656 ON

:SYSTem:COUPled:M1656?

Response: <bollean> = <BOOLEAN PROGRAM DATA>

Function: Queries with or without Coupled MP1656A.

Example use: > :SYSTem:COUPled:M1656?
< 1

:SYSTem:TRIGgerout <trg>

Parameter: <trg> = <CHARACTER PROGRAM DATA>
OFF
CAPTURE
TXFRAME
TXCLOCK
RXFRAME
RXCLOCK

Function: Sets whether or not to execute trigger.

Restriction: Invalid in the following case:
In the receive condition, Detection should not occur when Error/Alarm is masked.

Example use: To execute trigger the frame of sending.
> :SYSTem:TRIGgerout TXFRAME

:SYSTem:TRIGgerout?

Response: <trg> = <CHARACTER RESPONSE DATA>

Function: Queries the set value of whether or not to execute trigger.

Example use: > :SYSTem:TRIGgeout?
< TXFRAME

10.3.8 TEST subsystem

Use the TEST subsystem for displaying the self test results. The following table shows functions, commands, and parameters.

Function	Command	Parameter
Page 10-542		
Selects a type of the self test.	:TEST:TYPE	string
Page 10-543		
Selects the target of the main unit function test	:TEST:SCONtent:TYPE	type
Queries the target of the main unit test	:TEST:SCONtent:TYPE?	
Page 10-543		
Sets the PDH/SDH item as a target of the main unit test.	:TEST:SCONtent:PSDH (for SDH)	boolean
Queries the current setting of the PDH/SDH item in the main unit.	:TEST:SCONtent:PSDH? (for SDH)	
Page 10-544		
Select the target unit of the PDH/SDH test.	:TEST:SCONtent:SUNit	type
Queries the target unit of the PDH/SDH test.	:TEST:SCONtent:SUNit?	
Page 10-544		
Queries the self test measurement status	:TEST:STATe?	
Page 10-544		
Initiates the self test	:TEST:STARt	
Page 10-544		
Stop the self test.	:TEST:STOP	
Page 10-545		
Queries the test result	:TEST:ECODe?	block
Page 10-545		
Queries the test result	:TEST:RESult?	
Page 10-545		
Sets the display position of the error code.	:TEST:SCRoll	scroll

:TEST:TYPE <string>

Parameter <string> = <STRING PROGRAM DATA>

"MFTest"	Mainframe function test..... [1]
"IFTest:MP0109A"	MP0109A 622M/156M Interface test..... [2]
"IFTest:MP0110A"	MP0110A 622M/156M Interface test..... [3]
"IFTest:MP0104A:M156"	MP0104A 156M Interface test ..... [4]
"IFTest:MP0104B:M156"	MP0104B 156M interface test ..... [5]
"IFTest:MP0104B:M622"	MP0104B 622M interface test ..... [6]
"IFTest:MP0105A:M156"	MP0105A 156M interface test ..... [7]
"IFTest:MP0106B:M156"	MP0106B 156M interface test ..... [8]
"IFTest:MP0106B:M622"	MP0106B 622M interface test ..... [9]
"IFTest:MP0108A"	MP0108A 622M/156M Interface test..... [10]
"IFTest:MP0111A"	MP0111A 622M/156M Interface test..... [11]
"IFTest:MP0112A"	MP0112A 622M/156M Interface test..... [12]
"IFTest:MP0113A:1.31"	MP0113A 622M/156M(1.31) Interface test .. [13]
"IFTest:MP0113A:1.55"	MP0113A 622M/156M(1.55) Interface test .. [14]

Function Selects a type of the self test.

Restriction Invalid in the following case:

・Cases not marked with a circle in the table

Diagnosis item / Mounted unit	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
No unit	○													
MP0109A	○	○												
MP0110A	○		○											
MP0104A	○			○										
MP0104B	○				○	○								
MP0105A	○						○							
MP0106B	○							○	○					
MP0108A	○									○				
MP0111A	○										○			
MP0112A	○											○		
MP0113A	○												○	○

:TEST:SCONtent:TYPE <type>

Parameter <type> = <CHARACTOR PROGRAM DATA>

ISELect	Item select

Function Selects the target of the main unit function test

Restriction Invalid in the following case:

・When :TEST:TYPE is not <MFT>.

Example use To set test target to selection mode

> :TEST:SCONtent:TYPE ISELect

:TEST:SCONtent:TYPE?

Response <type> = <CHARACTOR RESPONSE DATA>

Function Queries the target of the main unit test

Example use > :TEST:SCONtent:TYPE?

< ISEL

:TEST:SCONtent:PSDH <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Does not conduct the PDH/SDH test.
ON or 1	Conducts the PDH/SDH test

Function Sets the PDH/SDH item as a target of the main unit test.

Restriction Invalid in the following case:

・When the MP0121A and MP0122A units are disabled.

・When :TEST:TYPE is not <MFT>.

・When :TEST:CONTENT:TYPE is not <ISEL>

Example use To set the PDH/SDH item to a test target.

> :TEST:SCONtent:PSDH ON

:TEST:SCONtent:PSDH?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Does not conduct the PDH/SDH test.
1	Conducts the PDH/SDH test

Function Queries the current setting of the PDH/SDH item in the main unit.

Example use > :TEST:SCONtent:PSDH?

< 1

Parameter <type> = <CHARACTOR PROGRAM DATA>

ALL	MP0121A and MP0122A units
MP0121A	MP0121A unit
MP0122A	MP0122A unit
MP0122B	MP0122B unit
MP0131A	MP0131A unit

Function Select the target unit of the PDH/SDH test.

Restriction
Invalid in the following case:
- When the MP0121A unit is disabled and <MP0121A> is set.
- When the MP0122A unit is disabled and <MP0122A>is set.
- When the MP0122B unit is disabled and <MP0122B> is set.
- When the MP0131A unit is disabled and <MP0131A> is set.
- When the MP0121A and MP0122A units are disabled and <ALL>is set.
- When :TEST:TYPE is not <MFT>.
- When :TEST:CONtent:TYPE is not <ISEL>.
- When the MP0121A or MP0122A unit is not mounted and <ALL> is set.

Example use
To set MP0121A as a test target.
> :TEST:SCONtent:SUNit MP0121A

:TEST:SCONtent:SUNit?

Response
<type> = <CHARACTOR RESPONSE DATA>

Function
Queries the target unit of the PDH/SDH test.

Example use
> :TEST:SCONtent:SUNit?
< MP0121A

:TEST:STATe?

Response
<numeric> = <NR1 NUMERIC RESPONSE DATA>

0	Measurement completed
1	Measuring
2	Measurement stop

Function
Queries the self test status

Example use
> :TEST:STATe?
< 1

:TEST:STARt

Parameter
None

Function
Initiates the self test

Restriction
Invalid when the self test menu is currently not displayed.

Example use
> :TEST:STARt

:TEST:STOP

Parameter
None

Function
Stop the self test.

Restriction
Invalid in the following case:
- When the Setup:Selftest screen is not displayed.

Example use
> :TEST:STOP

:TEST:ECODe? <block>

Parameter <block> = <CHARACTOR PROGRAM DATA>

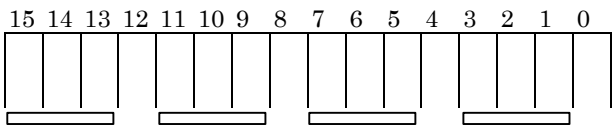
BLOCK0	Outputs 1 to 40th error codes.
BLOCK1	Outputs 41 to 80 th error codes.
BLOCK2	Outputs 81 to 120 th error codes.
BLOCK3	Outputs 121 to 160 th error codes.
BLOCK4	Outputs 161 to 200 th error codes.
BLOCK5	Outputs 201 to 240 th error codes.

Response <string> = <STRING RESPONSE DATA>

"XXNNNN"

XX	Two-alphabets representing a self test item
NNNN	Four-digit numeric value representing detailed error content (Hexadecimal)

Bit



When no data exists, "-N-" is output

When two or more errors exist, each one is separated by comma.

A maximum of 36error codes can be output at a time.

Function Queries the self test result

When two or more result exists, each one is separated by comma.

Example: "1A0001,1B0001,...."

For details on the self test items and error of each bit, see APPENDIXB.

Example use
> :TEST:ECODe? BLOCK0
< "1A0001,1B0001,1C0010,0D1000"

:TEST:RESult?

Response <result> = <STRING RESPONSE DATA>

Form4

Function Queries the test result

Example use
> :TEST:RESult?
< "Unacceptable"

:TEST:SCRoll <scroll>

Parameter <scroll> = <CHARACTER PROGRAM DATA>

TOP	Displays the top page of the error code (or measured results)
BEFore	Displays the previous page of the error code (or measured results)
NEXT	Displays the next page of the error code (or measured results)
BOTTom	Displays the last page of the error code (or measured results)

Function	Sets the display position of the error code.
Restriction	Invalid in the following case: ・When there are no error codes at Debug:OFF ・When there are no measured results at Debug:ON ・When <BEF> is set while there are no previous pages. ・When <NEXT> is set while there are no next pages.
Example use	To set the display position to top page. > :TEST:SCRoll TOP

10.3.9 STATus subsystem

TheSTATus subsystem is used for controlling status registers (settings and display). The following table shows functions, commands, and parameters.

Function	Command	Parameter
Page 10-556		
Initializes the status registers.	:STATus:PRESet	
<QUEStionable Status Register>		
Page 10-557		
Queries the Event register content of the Questionable status register.	:STATus:QUEStionable[:EVENt]?	
Page 10-557		
Queries the Condition register content of the Questionable status register.	:STATus:QUEStionable:CONDition?	
Page 10-557		
Sets mask for the Event Enable Register.	:STATus:QUEStionable:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:QUEStionable:ENABle?	
Page 10-558		
Sets the Positive Transition Filter.	:STATus:QUEStionable:PTRansition	numeric
Queries the current setting of the Positive Transition Register	:STATus:QUEStionable:PTRansition?	
Page 10-558		
Sets the Negative Transition Filter.	:STATus:QUEStionable:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:NTRansition?	
<TELecom Status Register>		
Page 10-559		
Queries the Event register content of the TELecom status register.	:STATus:QUEStionable:TELecom[:EVENt]?	
Queries the Condition register content of the TELecom status register.	:STATus:QUEStionable:TELecom:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:QUEStionable:TELecom:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:PTRansition	numeric
Queries the current setting of the Positive Transition Register	:STATus:QUEStionable:TELecom:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:NTRansition?	
<139M Status Register>		
Page 10-562		
Queries the Event register content of the 139M status register.	:STATus:QUEStionable:TELecom:M139[:EVENt]?	
Queries the Condition register content of the 139M status register.	:STATus:QUEStionable:TELecom:M139:CONDition?	

Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:M139:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:QUEStionable:TELecom:M139:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:M139:PTRansition	numeric
Queries the current setting of the Positive Transition Register	:STATus:QUEStionable:TELecom:M139:PTRansition ?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:M139:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:M139:NTRansition ?	

<34M Status Register>

Page 10-565

Queries the Event register content of the 34M status register.	:STATus:QUEStionable:TELecom:M34[:EVENt]?	
Queries the Condition register content of the 34M status register.	:STATus:QUEStionable:TELecom:M34:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:M34:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:QUEStionable:TELecom:M34:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:M34:PTRansition	numeric
Queries the current setting of the Positive Transition Register	:STATus:QUEStionable:TELecom:M34:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:M34:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:M34:NTRansition?	

<8M Status Register>

Page 10-568

Queries the Event register content of the 8M status register.	:STATus:QUEStionable:TELecom:M8[:EVENt]?	
Queries the Condition register content of the 8M status register.	:STATus:QUEStionable:TELecom:M8:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:M8:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:QUEStionable:TELecom:M8:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:M8:PTRansition	numeric
Queries the current setting of the Positive Transition Register	:STATus:QUEStionable:TELecom:M8:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:M8:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:M8:NTRansition?	

<2M Status Register>

Page 10-570

Queries the Event register content of the 2M status register.	:STATus:QUEStionable:TELecom:M2[:EVENt]?	
Queries the Condition register content of the 2M status register.	:STATus:QUEStionable:TELecom:M2:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:M2:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:QUEStionable:TELecom:M2:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:M2:PTRansition	numeric

Queries the current setting of the Positive Transition Register	:STATus:QUEStionable:TELecom:M2:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:M2:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:M2:NTRansition?	

<SDH/SONET Status Register>

Page 10-573

for SDH

Queries the Event register content of the SDH status register.	:STATus:QUEStionable:TELecom:SDH[:EVENt]?	
Queries the Condition register content of the SDH status register.	:STATus:QUEStionable:TELecom:SDH:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SDH:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SDH:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SDH:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SDH:NTRansition?	

for SONET

Queries the Event register content of the SONET status register.	:STATus:QUEStionable:TELecom:SONet[:EVENt]?	
Queries the Condition register content of the SONET status register.	:STATus:QUEStionable:TELecom:SONet:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONet:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONet:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SONet:PTRansitio n	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SONet:PTRansitio n?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SONet:NTRansitio n	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SONet:NTRansitio n?	

<SECT (Sect/Line) Status Register>

Page 10-576

for SDH

Queries the Event register content of the SECT status register.	:STATus:QUEStionable:TELecom:SDH:SECT[:EVEN t]?	
Queries the Condition register content of the SECT status register.	:STATus:QUEStionable:TELecom:SDH:SECT:CONDi tion?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:SECT:ENABl e	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:SECT:ENABl e?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SDH:SECT:PTRan sition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SDH:SECT:PTRan sition?	

Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SDH:SECT:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SDH:SECT:NTRansition?	

for SONET

Queries the Event register content of the Sect/Line status register.	:STATus:QUEStionable:TELecom:SONet:SLINe[:EVENt]?	
Queries the Condition register content of the Sect/Line status register.	:STATus:QUEStionable:TELecom:SONet:SLINe:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONet:SLINe:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONet:SLINe:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SONet:SLINe:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SONet:SLINe:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SONet:SLINe:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SONet:SLINe:NTRansition?	

<HP/P Status Register>

Page 10-579

for SDH

Queries the Event register content of the HP status register.	:STATus:QUEStionable:TELecom:SDH:HP[:EVENt]?	
Queries the Condition register content of the HP status register.	:STATus:QUEStionable:TELecom:SDH:HP:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:HP:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:HP:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SDH:HP:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SDH:HP:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SDH:HP:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SDH:HP:NTRansition?	

for SONET

Queries the Event register content of the P status register.	:STATus:QUEStionable:TELecom:SONet:P[:EVENt]?	
Queries the Condition register content of the P status register.	:STATus:QUEStionable:TELecom:SONet:P:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONet:P:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONet:P:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SONet:P:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SONet:P:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SONet:P:NTRansition	numeric

Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SONet:P:NTRansition?	

<LP/V Status Register>

Page 10-582

for SDH

Queries the Event register content of the LP status register.	:STATus:QUEStionable:TELecom:SDH:LP[:EVENt]?	
Queries the Condition register content of the LP status register.	:STATus:QUEStionable:TELecom:SDH:LP:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:LP:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:LP:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SDH:LP:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SDH:LP:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SDH:LP:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SDH:LP:NTRansition?	

for SONET

Queries the Event register content of the V status register.	:STATus:QUEStionable:TELecom:SONet:V[:EVENt]?	
Queries the Condition register content of the V status register.	:STATus:QUEStionable:TELecom:SONet:V:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONet:V:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONet:V:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SONet:V:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SONet:V:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SONet:V:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SONet:V:NTRansition?	

<TCOH(HP) / TCOH(P) Status Register>

Page 10-585

for SDH

Queries the Event register Content of the TCOH(HP) status register.	:STATus:QUEStionable:TELecom:SDH:THP[:EVENt]?	
Queries the Condition register content of the TCOH(HP)status register.	:STATus:QUEStionable:TELecom:SDH:THP:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:THP:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:THP:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SDH:THP:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SDH:THP:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SDH:THP:NTRansition	numeric

Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SDH:THP:NTRansition?	

for SONET

Queries the Event register content of the TCOH(P) status register.	:STATus:QUEStionable:TELecom:SONET:TP[:EVENt]?	
Queries the Condition register content of the TCOH(P)status register.	:STATus:QUEStionable:TELecom:SONET:TP:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONET:TP:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONET:TP:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SONET:TP:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SONET:TP:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SONET:TP:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SONET:TP:NTRansition?	

<TCOH(LP) / TCOH(V) Status Register>

Page 10-588

for SDH

Queries the Event register content of the TCOH(LP) status register.	:STATus:QUEStionable:TELecom:SDH:TLP[:EVENt]?	
Queries the Condition register content of the TCOH(LP)status register.	:STATus:QUEStionable:TELecom:SDH:TLP:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:TLP:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:TLP:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SDH:TLP:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SDH:TLP:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SDH:TLP:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SDH:TLP:NTRansition?	

for SONET

Queries the Event register content of the TCOH(V) status register.	:STATus:QUEStionable:TELecom:SONET:TV[:EVENt]?	
Queries the Condition register content of the TCOH(V)status register.	:STATus:QUEStionable:TELecom:SONET:TV:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONET:TV:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONET:TV:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SONET:TV:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SONET:TV:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SONET:TV:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SONET:TV:NTRansition?	

<OH Status Register>

Page 10-591

for SDH

Queries the Event register content of the OH status register.	:STATus:QUEStionable:TELecom:SDH:OH[:EVENt]?	
Queries the Condition register content of the OH status register.	:STATus:QUEStionable:TELecom:SDH:OH:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:OH:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:OH:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SDH:OH:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SDH:OH:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SDH:OH:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SDH:OH:NTRansition?	
Queries the Event register content of the SIGNalling status register.	:STATus:QUEStionable:TELecom:SDH:SIGNalling[:EVENt]?	
Queries the Condition register content of the SIGNalling status register.	:STATus:QUEStionable:TELecom:SDH:SIGNalling :CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:SIGNalling :ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SDH:SIGNalling :ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SDH:SIGNalling :PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SDH:SIGNalling :PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SDH:SIGNalling :NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SDH:SIGNalling :NTRansition?	

for SONET

Queries the Event register content of the OH status register.	:STATus:QUEStionable:TELecom:SONET:OH[:EVENt]?	
Queries the Condition register content of the OH status register.	:STATus:QUEStionable:TELecom:SONET:OH:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONET:OH:ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONET:OH:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SONET:OH:PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SONET:OH:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SONET:OH:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SONET:OH:NTRansition?	
Queries the Event register content of the SIGNalling status register.	:STATus:QUEStionable:TELecom:SONET:SIGNalling [:EVENt]?	
Queries the Condition register content of the SIGNalling status register.	:STATus:QUEStionable:TELecom:SONET:SIGNalling :CONDition?	

Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONET:SIGNalling :ENABle	numeric
Queries the current mask settings for the Event Enable Register.	:STATus:QUEStionable:TELecom:SONET:SIGNalling :ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom:SONET:SIGNalling :PTRansition	numeric
Queries the current setting of the Positive Transition Register.	:STATus:QUEStionable:TELecom:SONET:SIGNalling :PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom:SONET:SIGNalling :NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom:SONET:SIGNalling :NTRansition?	

<TELecom2 Status Register>

Page 10-595

Queries the Event register contents of the TELecom2 status register.	:STATus:QUEStionable:TELecom2[:EVENt]?	
Queries the Condition register contents of the TELecom2 status register.	:STATus:QUEStionable:TELecom2:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom2:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:QUEStionable:TELecom2:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom2:PTRansition	numeric
Queries the current setting of the Positive Transition Register	:STATus:QUEStionable:TELecom2:PTRansition?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom2:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom2:NTRansition?	

<45M Status Register>

Page 10-597

Queries the Event register contents of the 45M status register.	:STATus:QUEStionable:TELecom2:M45[:EVENt]?	
Queries the Condition register contents of the 45M status register.	:STATus:QUEStionable:TELecom2:M45:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom2:M45:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:QUEStionable:TELecom2:M45:ENABle?	
Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom2:M45:PTRansition	numeric
Queries the current setting of the Positive Transition Register	:STATus:QUEStionable:TELecom2:M45:PTRansition ?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom2:M45:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom2:M45:NTRansition ?	

<1.5M Status Register>

Page 10-600

Queries the Event register contents of the 1.5M status register.	:STATus:QUEStionable:TELecom2:M1_5[:EVENt]?	
Queries the Condition register contents of the 1.5M status register.	:STATus:QUEStionable:TELecom2:M1_5:CONDition?	
Sets mask for the Event Enable Register.	:STATus:QUEStionable:TELecom2:M1_5:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:QUEStionable:TELecom2:M1_5:ENABle?	

Sets the Positive Transition Filter.	:STATus:QUEStionable:TELecom2:M1_5:PTRansitio n	numeric
Queries the current setting of the Positive Transition Register	:STATus:QUEStionable:TELecom2:M1_5:PTRansitio n?	
Sets the Negative Transition Filter.	:STATus:QUEStionable:TELecom2:M1_5:NTRansitio n	numeric
Queries the current setting of the Negative Transition Register.	:STATus:QUEStionable:TELecom2:M1_5:NTRansitio n?	

<OPERation Status Register>

Page 10-602

Queries the Event register content of the OPERation status register.	:STATus:OPERation[:EVENt]?	

Page 10-602

Queries the Condition register content of the OPERation status register.	:STATus:OPERation:CONDition?	

Page 10-602

Sets mask for the Event Enable Register.	:STATus:OPERation:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:OPERation:ENABle?	

Page 10-603

Sets the Positive Transition Filter.	:STATus:OPERation:PTRansition	numeric
Queries the current setting of the Positive Transition Register	:STATus:OPERation:PTRansition?	

Page 10-603

Sets the Negative Transition Filter.	:STATus:OPERation:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:OPERation:NTRansition?	

<INSTrument Status Register>

Page 10-604

Queries the Event register content of the INSTrument status register.	:STATus:OPERation:INSTrument[:EVENt]?	
Queries the Condition register content of the INSTrument status register.	:STATus:OPERation:INSTrument:CONDition?	
Sets mask for the Event Enable Register.	:STATus:OPERation:INSTrument:ENABle	numeric
Queries the current mask settings for the Event Enable Register	:STATus:OPERation:INSTrument:ENABle?	
Sets the Positive Transition Filter.	:STATus:OPERation:INSTrument:PTRansition	numeric
Queries the current setting of the Positive Transition Register	:STATus:OPERation:INSTrument:PTRansition?	
Sets the Negative Transition Filter.	:STATus:OPERation:INSTrument:NTRansition	numeric
Queries the current setting of the Negative Transition Register.	:STATus:OPERation:INSTrument:NTRansition?	

:STATus:PRESet

Parameter:	None
Function:	Initializes the status registers. Registers affected by this command are as follows: ・Transition and enable registers of the SCPI specified registers ・Transition and enable registers of the equipment unique registers
Example use:	> :STATus:PRESet

<QUEStionable Status Register>

The QUEStionable Status Register supplies the DATA Status Register summary, etc.

:STATus:QUEStionable[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the Questionable status register.

Example use: > :STATus:QUEStionable:EVENt?
or :STATus:QUEStionable?
< 512

:STATus:QUEStionable:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the Questionable status register.

Example use: > :STATus:QUEStionable:CONDition?
< 512

:STATus:QUEStionable:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

512 (Bit 9)	Telecom Status Register summary
1024 (Bit10)	Telecom2 Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register.
The Event Register status corresponding to the mask are reported to the QUEStionable summary bit.
When the Event Enable Register bit is set to 1, the QUEStionable summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bit 9 to enable
> :STATus:QUEStionable:ENABle 512

:STATus:QUEStionable:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask settings for the Event Enable Register

Example use: > :STATus:QUEStionable:ENABle?
< 512

:STATus:QUEStionable:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

512	(Bit 9)	Telecom Status Register summary
1024	(Bit10)	Telecom2 Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding Questionable Event Register bit when the corresponding Questionable Event Register bit goes from 0 to 1.

Example use: To set bit 9
> :STATus:QUEStionable:PTRansition 512

:STATus:QUEStionable:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register

Example use: > :STATus:QUEStionable:PTRansition?
< 512

:STATus:QUEStionable:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

512	(Bit 9)	TELecom Status Register summary
1024	(Bit10)	TELecom 2 Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding Questionable Condition Register bit when the corresponding Questionable Condition Register bit goes from 0 to 1.

Example use: To set bit 9
> :STATus:QUEStionable:NTRansition 512

:STATus:QUEStionable:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:NTRansition?
< 512

<TELecom Status Register>

The TELecom Status Register supplies the 139M, 34M, 8M, and 2M Status Register summaries and shuts off power.

:STATus:QUEStionable:TELecom[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the TELecom status register.

Example use: > :STATus:QUEStionable:TELecom:EVENt?
or :STATus:QUEStionable:TELecom?
< 2050 (Indicates that bits 1 and 11 are set.)

:STATus:QUEStionable:TELecom:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the TELecom status register.

Example use: > :STATus:QUEStionable:TELecom:CONDition?
< 4100 (Indicates that bits 2 and 12 are set.)

:STATus:QUEStionable:TELecom:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	Code error occurrence
2	(Bit 1)	Bit error occurrence
4	(Bit 2)	Pattern sync loss occurrence
8	(Bit 3)	Signal loss occurrence
16	(Bit 4)	Power shut off occurrence
32	(Bit 5)	Clock loss occurrence
64	(Bit 6)	UNLOCK occurrence
1024	(Bit10)	SDH/SONET Status Register summary
2048	(Bit11)	2M Status Register summary
4096	(Bit12)	8M Status Register summary
8192	(Bit13)	34M Status Register summary
16384	(Bit14)	139M Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the TELecom summary bit.
When the Event Enable Register bit is set to 1, the TELecom summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bit 4 and 14:
> :STATus:QUEStionable:TELecom:ENABle 16400

:STATus:QUEStionable:TELecom:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask settings for the Event Enable Register

Example use: > :STATus:QUEStionable:TELecom:ENABle?
< 16400

:STATus:QUEStionable:TELecom:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	Code error occurrence
2	(Bit 1)	Bit error occurrence
4	(Bit 2)	Pattern sync loss occurrence
8	(Bit 3)	Signal loss occurrence
16	(Bit 4)	Power shut off occurrence
32	(Bit 5)	Clock loss occurrence
64	(Bit 6)	UNLOCK occurrence
1024	(Bit10)	SDH/SONET Status Register summary
2048	(Bit11)	2M Status Register summary
4096	(Bit12)	8M Status Register summary
8192	(Bit13)	34M Status Register summary
16384	(Bit14)	139M Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding TELecom Condition Register bit when the corresponding TELecom Event Register bit goes from 0 to 1.

Example use: To set bit 2 and 13
> :STATus:QUEStionable:TELecom:PTRansition 8198

:STATus:QUEStionable:TELecom:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:PTRansition?
< 8198

:STATus:QUEStionable:TELecom:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	Code error occurrence
2	(Bit 1)	Bit error occurrence
4	(Bit 2)	Pattern sync loss occurrence
8	(Bit 3)	Signal loss occurrence
16	(Bit 4)	Power shut off occurrence
32	(Bit 5)	Clock loss occurrence
64	(Bit 6)	UNLOCK occurrence
1024	(Bit10)	SDH/SONET Status Register summary
2048	(Bit11)	2M Status Register summary
4096	(Bit12)	8M Status Register summary
8192	(Bit13)	34M Status Register summary
16384	(Bit14)	139M Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding TELecom Condition Register bit when the corresponding TELecom Event Register bit goes from 0 to 1.

Example use: To set bit 3 and 12
> :STATus:QUEStionable:TELecom:NTRansition 4104

:STATus:QUEStionable:TELecom:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Filter.

Example use: > :STATus:QUEStionable:TELecom:NTRansition?
< 4104

<139M Status Register>

The 139M Status Register displays the frame error, etc. of 139M signals.

:STATus:QUEStionable:TELecom:M139[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the 139M status register.

Example use: > :STATus:QUEStionable:TELecom:M139:EVENt?
or :STATus:QUEStionable:TELecom:M139?
< 3 (Indicates that bits 0 and 1 are set.)

:STATus:QUEStionable:TELecom:M139:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the 139M status register.

Example use: > :STATus:QUEStionable:TELecom:M139:CONDition?
< 6 (Indicates that bits 1 and 2 are set.)

:STATus:QUEStionable:TELecom:M139:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	139M LOF occurrence
2	(Bit 1)	139M RDI occurrence
4	(Bit 2)	139M AIS occurrence
4096	(Bit12)	139M REI error occurrence
8192	(Bit13)	139M BIP-8 error occurrence
16384	(Bit14)	139M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the 139M summary bit.
When the Event Enable Register bit is set to 1, the 139M summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 2 and 14 to enable:
> :STATus:QUEStionable:TELecom:M139:ENABle 16388

:STATus:QUEStionable:TELecom:M139:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask settings for the Event Enable Register

Example use: > :STATus:QUEStionable:TELecom:M139:ENABle?
< 16388

:STATus:QUEStionable:TELecom:M139:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	139M LOF occurrence
2	(Bit 1)	139M RDI occurrence
4	(Bit 2)	139M AIS occurrence
4096	(Bit12)	139M REI error occurrence
8192	(Bit13)	139M BIP-8 error occurrence
16384	(Bit14)	139M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding 139M Condition Register bit when the corresponding 139M Event Register bit goes from 0 to 1.

Example use: To set bit 0 and 14
> :STATus:QUEStionable:TELecom:M139:PTRansition 16385

:STATus:QUEStionable:TELecom:M139:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:M139:PTRansition?
< 16385

:STATus:QUEStionable:TELecom:M139:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	139M LOF occurrence
2	(Bit 1)	139M RDI occurrence
4	(Bit 2)	139M AIS occurrence
4096	(Bit12)	139M REI error occurrence
8192	(Bit13)	139M BIP-8 error occurrence
16384	(Bit14)	139M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding 139M Condition Register bit when the corresponding 139M Event Register bit goes from 0 to 1.

Example use: To set bit 1
> :STATus:QUEStionable:TELecom:M139:NTRansition 2

:STATus:QUEStionable:TELecom:M139:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:M139:NTRansition?
< 2

<34M Status Register>

The 34M Status Register displays the frame error, etc. of 34M signals.

:STATus:QUEStionable:TELecom:M34[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the 34M status register.

Example use: > :STATus:QUEStionable:TELecom:M34:EVENt?
or :STATus:QUEStionable:TELecom:M34?
< 3 (Indicates that bits 0 and 1 are set.)

:STATus:QUEStionable:TELecom:M34:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the 34M status register.

Example use: > :STATus:QUEStionable:TELecom:M34:CONDition?
< 6 (Indicates that bits 1 and 2 are set.)

:STATus:QUEStionable:TELecom:M34:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	34M LOF occurrence
2	(Bit 1)	34M RDI occurrence
4	(Bit 2)	34M AIS occurrence
4096	(Bit12)	139M REI error occurrence
8192	(Bit13)	139M BIP-8 error occurrence
16384	(Bit14)	34M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the 34M summary bit.
When the Event Enable Register bit is set to 1, the 34M summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bit 2 and 14:
> :STATus:QUEStionable:TELecom:M34:ENABle 16388

:STATus:QUEStionable:TELecom:M34:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:M34:ENABle?
< 16388

:STATus:QUEStionable:TELecom:M34:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	34M LOF occurrence
2	(Bit 1)	34M RDI occurrence
4	(Bit 2)	34M AIS occurrence
4096	(Bit12)	139M REI error occurrence
8192	(Bit13)	139M BIP-8 error occurrence
16384	(Bit14)	34M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding 34M Condition Register bit when the corresponding 34M Event Register bit goes from 0 to 1.

Example use: To set bit 2 and 14:
> :STATus:QUEStionable:TELecom:M34:PTRansition 16385

:STATus:QUEStionable:TELecom:M34:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:M34:PTRansition?
< 16385

:STATus:QUEStionable:TELecom:M34:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	34M LOF occurrence
2	(Bit 1)	34M RDI occurrence
4	(Bit 2)	34M AIS occurrence
4096	(Bit12)	139M REI error occurrence
8192	(Bit13)	139M BIP-8 error occurrence
16384	(Bit14)	34M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding 34M Condition Register bit when the corresponding 34M Event Register bit goes from 0 to 1.

Example use: To set bit 0 and 2
> :STATus:QUEStionable:TELecom:M34:NTRansition 5

:STATus:QUEStionable:TELecom:M34:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:M34:NTRansition?
< 5

<8M Status Register>

The 8M Status Register displays the frame error, etc. of 8M signals

:STATus:QUEStionable:TELecom:M8[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the 8M status register.

Example use: > :STATus:QUEStionable:TELecom:M8:EVENt?
or :STATus:QUEStionable:TELecom:M8?
< 1 (Indicates that bits 0 is set.)

:STATus:QUEStionable:TELecom:M8:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded

Function: Queries the Condition register content of the 8M status register.

Example use: > :STATus:QUEStionable:TELecom:M8:CONDition?
< 2 (Indicates that bits 1 is set.)

:STATus:QUEStionable:TELecom:M8:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	8M LOF occurrence
2	(Bit 1)	8M RDI occurrence
4	(Bit 2)	8M AIS occurrence
16384	(Bit14)	8M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the 8M summary bit.
When the Event Enable Register bit is set to 1, the 8M summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bit 2
> :STATus:QUEStionable:TELecom:M8:ENABle 4

:STATus:QUEStionable:TELecom:M8:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:M8:ENABle?
< 4

:STATus:QUEStionable:TELecom:M8:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	8M LOF occurrence
2	(Bit 1)	8M RDI occurrence
4	(Bit 2)	8M AIS occurrence
16384	(Bit14)	8M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding 8M Event Register bit when the corresponding 8M Condition Register bit goes from 0 to 1.

Example use: To set bit 14:
> :STATus:QUEStionable:TELecom:M8:PTRansition 16384

:STATus:QUEStionable:TELecom:M8:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:M8:PTRansition?
< 16384

:STATus:QUEStionable:TELecom:M8:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	8M LOF occurrence
2	(Bit 1)	8M RDI occurrence
4	(Bit 2)	8M AIS occurrence
16384	(Bit14)	8M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding 8M Event Register bit when the corresponding 8M Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 14:
> :STATus:QUEStionable:TELecom:M8:NTRansition 16385

:STATus:QUEStionable:TELecom:M8:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:M8:NTRansition?
< 16385

<2M Status Register>

The 2M Status Register displays the frame error, etc. of 2M signals.

:STATus:QUEStionable:TELecom:M2[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the 2M status register.

Example use: > :STATus:QUEStionable:TELecom:M2:EVENt?
or :STATus:QUEStionable:TELecom:M2?
< 24 (Indicates that bits 3 and 4 have been set.)

:STATus:QUEStionable:TELecom:M2:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the 2M status register.

Example use: > :STATus:QUEStionable:TELecom:M2:CONDition?
< 8200 (Indicates that bits 3 and 13 have been set.)

:STATus:QUEStionable:TELecom:M2:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	2M LOF occurrence
2	(Bit 1)	2M RDI occurrence
4	(Bit 2)	2M AIS occurrence
8	(Bit 3)	LOF MF occurrence
16	(Bit 4)	RDI MF occurrence
4096	(Bit12)	E-Bit occurrence
8192	(Bit13)	CRC error occurrence
16384	(Bit14)	2M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the 2M summary bit.
When the Event Enable Register bit is set to 1, the 2M summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 13 and 14 to enable:
> :STATus:QUEStionable:TELecom:M2:ENABle 24576

:STATus:QUEStionable:TELecom:M2:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:M2:ENABle?
< 24576

:STATus:QUEStionable:TELecom:M2:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	2M LOF occurrence
2	(Bit 1)	2M RDI occurrence
4	(Bit 2)	2M AIS occurrence
8	(Bit 3)	LOF MF occurrence
16	(Bit 4)	RDI MF occurrence
4096	(Bit12)	E-Bit occurrence
8192	(Bit13)	CRC error occurrence
16384	(Bit14)	2M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding 2M Event Register bit when the corresponding 2M Condition Register bit goes from 0 to 1.

Example use: To set bits 3 and 4:
> :STATus:QUEStionable:TELecom:M2:PTRansition 24

:STATus:QUEStionable:TELecom:M2:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:M2:PTRansition?
< 24

:STATus:QUEStionable:TELecom:M2:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	2M LOF occurrence
2	(Bit 1)	2M RDI occurrence
4	(Bit 2)	2M AIS occurrence
8	(Bit 3)	LOF MF occurrence
16	(Bit 4)	RDI MF occurrence
4096	(Bit12)	E-Bit occurrence
8192	(Bit13)	CRC error occurrence
16384	(Bit14)	2M frame error occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding 2M Event Register bit when the corresponding 2M Condition Register bit goes from 0 to 1.

Example use: To set bits 4 and 14:
> :STATus:QUEStionable:TELecom:M2:NTRansition 16400

:STATus:QUEStionable:TELecom:M2:NTRansition?

Response:	<numeric> = <NR1 NUMERIC RESPONSE DATA> The sum of bit digit values of set bits is responded.
Function:	Queries the current setting of the Negative Transition Register.
Example use:	> :STATus:QUEStionable:TELecom:M2:NTRansition? < 16400

<SDH/SONET Status Register>

The SDH/SONET Status Register displays the alarm, etc. of SDH/SONET signals.

:STATus:QUEStionable:TELecom:SDH[:EVENt]?
:STATus:QUEStionable:TELecom:SONet[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the SDH/SONET status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:EVENt?
or :STATus:QUEStionable:TELecom:SDH?
< 24 (Indicates that bits 3 and 4 have been set.)

:STATus:QUEStionable:TELecom:SDH:CONDition?
:STATus:QUEStionable:TELecom:SONet:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the SDH/SONET status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:CONDition?
< 8200 (Indicates that bits 3 and 13 have been set.)

:STATus:QUEStionable:TELecom:SDH:ENABle <numeric>
:STATus:QUEStionable:TELecom:SONet:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

64	(Bit 6)	LOF occurrence
128	(Bit 7)	OOF occurrence
256	(Bit 8)	OOF occurrence
512	(Bit 9)	SIGNalling Status Register summary
1024	(Bit10)	HP/P Status Register summary
2048	(Bit11)	LP/V Status Register summary
4096	(Bit12)	TCOH(HP)/TCOH(P)Status Register summary
8192	(Bit13)	TCOH(LP)/TCOH(V)Status Register summary
16384	(Bit14)	OH Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the SDH/SONET summary bit.
When the Event Enable Register bit is set to 1, the SDH/SONET summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 13 and 14 to enable:
> :STATus:QUEStionable:TELecom:SDH:ENABle 24576

:STATus:QUEStionable:TELecom:SDH:ENABle?
:STATus:QUEStionable:TELecom:SONet:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:ENABle?
< 24576

:STATus:QUEStionable:TELecom:SDH:PTRansition <numeric>
:STATus:QUEStionable:TELecom:SONet:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

64	(Bit 6)	LOF occurrence
128	(Bit 7)	OOF occurrence
256	(Bit 8)	OOF occurrence
512	(Bit 9)	SIGNalling Status Register summary
1024	(Bit10)	HP/P Status Register summary
2048	(Bit11)	LP/V Status Register summary
4096	(Bit12)	TCOH(HP)/TCOH(P)Status Register summary
8192	(Bit13)	TCOH(LP)/TCOH(V)Status Register summary
16384	(Bit14)	OH Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding SDH/SONET Event Register bit when the corresponding SDH/SONET Condition Register bit goes from 0 to 1.

Example use: To set bits 3 and 4:
> :STATus:QUEStionable:TELecom:SDH:PTRansition 24

:STATus:QUEStionable:TELecom:SDH:PTRansition?
:STATus:QUEStionable:TELecom:SONet:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:PTRansition?
< 24

:STATus:QUEStionable:TELecom:SDH:NTRansition <numeric>
:STATus:QUEStionable:TELecom:SONet:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

64	(Bit 6)	LOF occurrence
128	(Bit 7)	OOF occurrence
256	(Bit 8)	OOF occurrence
512	(Bit 9)	SIGNalling Status Register summary
1024	(Bit10)	HP/P Status Register summary
2048	(Bit11)	LP/V Status Register summary
4096	(Bit12)	TCOH(HP)/TCOH(P)Status Register summary
8192	(Bit13)	TCOH(LP)/TCOH(V)Status Register summary
16384	(Bit14)	OH Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding SDH/SONET Event Register bit when the corresponding SDH/SONET Condition Register bit goes from 0 to 1.

Example use: To set bits 4 and 14:
> :STATus:QUEStionable:TELecom:SDH:NTRansition 16400

:STATus:QUEStionable:TELecom:SDH:NTRansition?
:STATus:QUEStionable:TELecom:SONet:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:NTRansition?
< 16400

<SECT (Sect/Line) Status Register>

The SECT (Sect/Line) Status Register displays the alarm, etc. of SECT or Sect/Line signals.

:STATus:QUEStionable:TELecom:SDH:SECT[:EVENt]?
:STATus:QUEStionable:TELecom:SONet:SLINe[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the SECT or Sect/Line status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:SECT:EVENt?
or :STATus:QUEStionable:TELecom:SDH:SECT?
< 24 (Indicates that bits 3 and 4 have been set.)

:STATus:QUEStionable:TELecom:SDH:SECT:CONDition?
:STATus:QUEStionable:TELecom:SONet:SLINe:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the SECT or Sect/Line status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:SECT:CONDition?
< 8200 (Indicates that bits 3 and 13 have been set.)

:STATus:QUEStionable:TELecom:SDH:SECT:ENABle <numeric>
:STATus:QUEStionable:TELecom:SONet:SLINe:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	MS-AIS/AIS-L occurrence
4	(Bit 2)	MS-RDI/RDI-L occurrence
1024	(Bit10)	B1 error occurrence
2048	(Bit11)	B2 error occurrence
16384	(Bit14)	MS-REI/REI-L occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the SECT or Sect/Line summary bit.
When the Event Enable Register bit is set to 1, the SECT or Sect/Line summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 0 and 2 to enable:
> :STATus:QUEStionable:TELecom:SDH:SECT:ENABle 5

:STATus:QUEStionable:TELecom:SDH:SECT:ENABle?
:STATus:QUEStionable:TELecom:SONet:SLINe:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:SECT:ENABle?
< 5

:STATus:QUEStionable:TELecom:SDH:SECT:PTRansition <numeric>
:STATus:QUEStionable:TELecom:SONet:SLINe:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	MS-AIS/AIS-L occurrence
4	(Bit 2)	MS-RDI/RDI-L occurrence
1024	(Bit10)	B1 error occurrence
2048	(Bit11)	B2 error occurrence
16384	(Bit14)	MS-REI/REI-L occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding SDH Event Register bit when the corresponding SDH Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2
> :STATus:QUEStionable:TELecom:SDH:SECT:PTRansition 5

:STATus:QUEStionable:TELecom:SDH:SECT:PTRansition?
:STATus:QUEStionable:TELecom:SONet:SLINe:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:SECT:PTRansition?
< 5

:STATus:QUEStionable:TELecom:SDH:SECT:NTRansition <numeric>
:STATus:QUEStionable:TELecom:SONet:SLINe:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	MS-AIS/AIS-L occurrence
4	(Bit 2)	MS-RDI/RDI-L occurrence
1024	(Bit10)	B1 error occurrence
2048	(Bit11)	B2 error occurrence
16384	(Bit14)	MS-REI/REI-L occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding SECT or Sect/Line Event Register bit when the corresponding SECT or Sect/Line Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
> :STATus:QUEStionable:TELecom:SDH:SECT:NTRansition 5

:STATus:QUEStionable:TELecom:SDH:SECT:NTRansition?
:STATus:QUEStionable:TELecom:SONet:SLINe:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:SECT:NTRansition?
< 5

<HP/P Status Register>

The HP/P Status Register displays alarm, etc. of the HP or P signals.

:STATus:QUEStionable:TELecom:SDH:HP[:EVENt]?
:STATus:QUEStionable:TELecom:SONet:P[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the HP/P status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:HP:EVENt?
or :STATus:QUEStionable:TELecom:SDH:HP?
< 24 (Indicates that bits 3 and 4 have been set.)

:STATus:QUEStionable:TELecom:SDH:HP:CONDition?
:STATus:QUEStionable:TELecom:SONet:P:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the HP/P status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:HP:CONDition?
< 8200 (Indicates that bits 3 and 13 have been set.)

:STATus:QUEStionable:TELecom:SDH:HP:ENABle <numeric>
:STATus:QUEStionable:TELecom:SONet:P:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	AU-AIS/AIS-P occurrence
2	(Bit 1)	AU-LOP/LOP-P occurrence
4	(Bit 2)	HP-RDI/RDI-P occurrence
16	(Bit 4)	HP-SLM/SLM-P occurrence
128	(Bit 7)	HP-TIM/TIM-P occurrence
256	(Bit 8)	HP-UNEQ/UNEQ-P occurrence
4096	(Bit12)	HP-B3 error occurrence
16384	(Bit14)	HP-REI/REI-P occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the HP/P summary bit.
When the Event Enable Register bit is set to 1, the HP/P summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 0 and 2 to enable:
> :STATus:QUEStionable:TELecom:SDH:HP:ENABle 5

:STATus:QUEStionable:TELecom:SDH:HP:ENABle?
:STATus:QUEStionable:TELecom:SONet:P:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask settings for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:HP:ENABle?
< 5

:STATus:QUEStionable:TELecom:SDH:HP:PTRansition <numeric>
:STATus:QUEStionable:TELecom:SONet:P:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	AU-AIS/AIS-P occurrence
2	(Bit 1)	AU-LOP/LOP-P occurrence
4	(Bit 2)	HP-RDI/RDI-P occurrence
16	(Bit 4)	HP-SLM/SLM-P occurrence
128	(Bit 7)	HP-TIM/TIM-P occurrence
256	(Bit 8)	HP-UNEQ/UNEQ-P occurrence
4096	(Bit12)	HP-B3 error occurrence
16384	(Bit14)	HP-REI/REI-P occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding SDH Event Register bit when the corresponding SDH Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
> :STATus:QUEStionable:TELecom:SDH:HP:PTRansition 5

:STATus:QUEStionable:TELecom:SDH:HP:PTRansition?
:STATus:QUEStionable:TELecom:SONet:P:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:HP:PTRansition?
< 5

:STATus:QUEStionable:TELecom:SDH:HP:NTRansition <numeric>
:STATus:QUEStionable:TELecom:SONet:P:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	AU-AIS/AIS-P occurrence
2	(Bit 1)	AU-LOP/LOP-P occurrence
4	(Bit 2)	HP-RDI/RDI-P occurrence
16	(Bit 4)	HP-SLM/SLM-P occurrence
128	(Bit 7)	HP-TIM/TIM-P occurrence
256	(Bit 8)	HP-UNEQ/UNEQ-P occurrence
4096	(Bit12)	HP-B3 error occurrence
16384	(Bit14)	HP-REI/REI-P occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding HP/P Event Register bit when the corresponding HP/P Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
> :STATus:QUEStionable:TELecom:SDH:HP:NTRansition 5

:STATus:QUEStionable:TELecom:SDH:HP:NTRansition?
:STATus:QUEStionable:TELecom:SONet:P:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:HP:NTRansition?
< 5

<LP/V Status Register>

The LP/V Status Register displays alarm, etc. of the LP or V signals.

:STATus:QUEStionable:TELecom:SDH:LP[:EVENt]?
:STATus:QUEStionable:TELecom:SONet:V[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the LP/V status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:LP:EVENt?
or :STATus:QUEStionable:TELecom:SDH:LP?
< 24 (Indicates that bits 3 and 4 have been set.)

:STATus:QUEStionable:TELecom:SDH:LP:CONDition?
:STATus:QUEStionable:TELecom:SONet:V:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the LP/V status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:LP:CONDition?
< 8200 (Indicates that bits 3 and 13 have been set.)

:STATus:QUEStionable:TELecom:SDH:LP:ENABle <numeric>
:STATus:QUEStionable:TELecom:SONet:V:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	TU-AIS/AIS-V occurrence
2	(Bit 1)	TU-LOP/LOP-V occurrence
4	(Bit 2)	LP-RDI/RDI-V occurrence
8	(Bit 3)	LP-LOM/LOM-V occurrence
16	(Bit 4)	LP-SLM/SLM-V occurrence
32	(Bit 5)	LP-RFI/RFI-V occurrence
128	(Bit 7)	LP-TIM/TIM -V occurrence
256	(Bit 8)	LP-UNEQ/UNEQ-V occurrence
4096	(Bit 2)	LP-B3 error occurrence
8192	(Bit13)	BIP-2 error occurrence
16384	(Bit14)	LP-REI/REI-V occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the LP/V summary bit.
When the Event Enable Register bit is set to 1, the LP/V summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 0 and 2 to enable:
> :STATus:QUEStionable:TELecom:SDH:LP:ENABle 5

:STATus:QUEStionable:TELecom:SDH:LP:ENABle?
:STATus:QUEStionable:TELecom:SONet:V:ENABle ?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:LP:ENABle?
< 5

:STATus:QUEStionable:TELecom:SDH:LP:PTRansition <numeric>
:STATus:QUEStionable:TELecom:SONet:V:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	TU-AIS/AIS-V occurrence
2	(Bit 1)	TU-LOP/LOP-V occurrence
4	(Bit 2)	LP-RDI/RDI-V occurrence
8	(Bit 3)	LP-LOM/LOM-V occurrence
16	(Bit 4)	LP-SLM/SLM-V occurrence
32	(Bit 5)	LP-RFI/RFI-V occurrence
128	(Bit 7)	LP-TIM/TIM -V occurrence
256	(Bit 8)	LP-UNEQ/UNEQ-V occurrence
4096	(Bit 2)	LP-B3 error occurrence
8192	(Bit13)	BIP-2 error occurrence
16384	(Bit14)	LP-REI/REI-V occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding SDH Event Register bit when the corresponding SDH Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
> :STATus:QUEStionable:TELecom:SDH:LP:PTRansition 5

:STATus:QUEStionable:TELecom:SDH:LP:PTRansition?
:STATus:QUEStionable:TELecom:SONet:V:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:LP:PTRansition?
< 5

:STATus:QUEStionable:TELecom:SDH:LP:NTRansition <numeric>
:STATus:QUEStionable:TELecom:SONet:V:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	TU-AIS/AIS-V occurrence
2	(Bit 1)	TU-LOP/LOP-V occurrence
4	(Bit 2)	LP-RDI/RDI-V occurrence
8	(Bit 3)	LP-LOM/LOM-V occurrence
16	(Bit 4)	LP-SLM/SLM-V occurrence
32	(Bit 5)	LP-RFI/RFI-V occurrence
128	(Bit 7)	LP-TIM/TIM -V occurrence
256	(Bit 8)	LP-UNEQ/UNEQ-V occurrence
4096	(Bit 2)	LP-B3 error occurrence
8192	(Bit13)	BIP-2 error occurrence
16384	(Bit14)	LP-REI/REI-V occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding LP/V Event Register bit when the corresponding LP/V Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
> :STATus:QUEStionable:TELecom:SDH:LP:NTRansition 5

:STATus:QUEStionable:TELecom:SDH:LP:NTRansition?
:STATus:QUEStionable:TELecom:SONet:V:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:LP:NTRansition?
< 5

<TCOH(HP) / TCOH(P) Status Register>

The TCOH(HP)/ TCOH(P)Status Register displays alarm, etc. of the HP or P signals in tandem connection.

:STATus:QUEStionable:TELecom:SDH:THP[:EVENt]?
:STATus:QUEStionable:TELecom:SONET:TP[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries contents of the event register of TCOH (HP)/ TCOH (P) status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:THP [:EVENt]?
< 16384

:STATus:QUEStionable:TELecom:SDH:THP:CONDition?
:STATus:QUEStionable:TELecom:SONET:TP:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries contents of the condition register of TCOH (HP)/ TCOH (P) status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:THP:CONDition?
< 16384

:STATus:QUEStionable:TELecom:SDH:THP:ENABle <numeric>
:STATus:QUEStionable:TELecom:SONET:TP:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	VC-AIS occurrence
2	(Bit 1)	ISF occurrence
4	(Bit 2)	FAS occurrence
8	(Bit 3)	Incoming-AIS occurrence
16	(Bit 4)	TC-RDI occurrence
32	(Bit 5)	ODI occurrence
4096	(Bit12)	IEC error occurrence
8192	(Bit13)	TC-REI error occurrence
16384	(Bit14)	OEI occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register.
The Event Register status corresponding to the mask are reported to the TCOH(HP)/ TCOH(P) summary bit.
When the Event Enable Register bit is set to 1, the TCOH(HP)/ TCOH(P) summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 0 and 2 to enable.
> :STATus:QUEStionable:TELecom:SDH:THP:ENABle 5

:STATus:QUEStionable:TELecom:SDH:THP:ENABle?
:STATus:QUEStionable:TELecom:SONET:TP:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:THP ENABle?
< 5

:STATus:QUEStionable:TELecom:SDH:THP:PTRansition <numeric>
:STATus:QUEStionable:TELecom:SONET:TP:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	VC-AIS occurrence
2	(Bit 1)	ISF occurrence
4	(Bit 2)	FAS occurrence
8	(Bit 3)	Incoming-AIS occurrence
16	(Bit 4)	TC-RDI occurrence
32	(Bit 5)	ODI occurrence
4096	(Bit12)	IEC error occurrence
8192	(Bit13)	TC-REI error occurrence
16384	(Bit14)	OEI occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding TCOH(HP)/ TCOH(P)Event Register bit when the corresponding TCOH(HP)/ TCOH(P)Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
> :STATus:QUEStionable:TELecom:SDH:THP:PTRansition 5

:STATus:QUEStionable:TELecom:SDH:THP:PTRansition?
:STATus:QUEStionable:TELecom:SONET:TP:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:THP:PTRansition?
< 5

:STATus:QUEStionable:TELecom:SDH:THP:NTRansition <numeric>
:STATus:QUEStionable:TELecom:SONET:TP:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	VC-AIS occurrence
2	(Bit 1)	ISF occurrence
4	(Bit 2)	FAS occurrence
8	(Bit 3)	Incoming-AIS occurrence
16	(Bit 4)	TC-RDI occurrence
32	(Bit 5)	ODI occurrence
4096	(Bit12)	IEC error occurrence
8192	(Bit13)	TC-REI error occurrence
16384	(Bit14)	OEI occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding TCOH(HP)/ TCOH(P)Event Register bit when the corresponding TCOH(HP)/ TCOH(P)Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
> :STATus:QUEStionable:TELecom:SDH:THP:NTRansition 5

:STATus:QUEStionable:TELecom:SDH:THP:NTRansition?
:STATus:QUEStionable:TELecom:SONET:TP:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:THP:NTRansition?
< 5

<TCOH(LP) / TCOH(V) Status Register>

The TCOH(LP) / TCOH(V) Status Register displays alarm, etc. of the LP or V signals in tandem connection.

:STATus:QUEStionable:TELecom:SDH:TLP[:EVENt]?
:STATus:QUEStionable:TELecom:SONET:TV[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries contents of the event register of TCOH (LP)/ TCOH (V) status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:TLP [:EVENt]?
< 16384

:STATus:QUEStionable:TELecom:SDH:TLP:CONDition?
:STATus:QUEStionable:TELecom:SONET:TV:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries contents of the condition register of TCOH (LP)/ TCOH (V) status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:TLP:CONDition?
< 16384

:STATus:QUEStionable:TELecom:SDH:TLP:ENABle <numeric>
:STATus:QUEStionable:TELecom:SONET:TV:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	VC-AIS occurrence
2	(Bit 1)	ISF occurrence
4	(Bit 2)	FAS occurrence
8	(Bit 3)	Incoming-AIS occurrence
16	(Bit 4)	TC-RDI occurrence
32	(Bit 5)	ODI occurrence
4096	(Bit12)	IEC error occurrence
8192	(Bit13)	TC-REI error occurrence
16384	(Bit14)	N2 BIP2 occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register.
The Event Register status corresponding to the mask are reported to the TCOH (LP)/ TCOH (V) summary bit.
When the Event Enable Register bit is set to 1, the TCOH (LP)/ TCOH (V) summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 0 and 2 to enable.
> :STATus:QUEStionable:TELecom:SDH:TLP:ENABle 5

:STATus:QUEStionable:TELecom:SDH:TLP:ENABle?
:STATus:QUEStionable:TELecom:SONET:TV:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:TLP ENABle?
< 5

:STATus:QUEStionable:TELecom:SDH:TLP:PTRansition <numeric>
:STATus:QUEStionable:TELecom:SONET:TV:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	VC-AIS occurrence
2	(Bit 1)	ISF occurrence
4	(Bit 2)	FAS occurrence
8	(Bit 3)	Incoming-AIS occurrence
16	(Bit 4)	TC-RDI occurrence
32	(Bit 5)	ODI occurrence
4096	(Bit12)	IEC error occurrence
8192	(Bit13)	TC-REI error occurrence
16384	(Bit14)	N2 BIP2 occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding TCOH (LP)/ TCOH (V) Event Register bit when the corresponding TCOH (LP)/ TCOH (V) Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
> :STATus:QUEStionable:TELecom:SDH:TLP:PTRansition 5

:STATus:QUEStionable:TELecom:SDH:TLP:PTRansition?
:STATus:QUEStionable:TELecom:SONET:TV:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:TLP:PTRansition?
< 5

:STATus:QUEStionable:TELecom:SDH:TLP:NTRansition <numeric>
:STATus:QUEStionable:TELecom:SONET:TV:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	VC-AIS occurrence
2	(Bit 1)	ISF occurrence
4	(Bit 2)	FAS occurrence
8	(Bit 3)	Incoming-AIS occurrence
16	(Bit 4)	TC-RDI occurrence
32	(Bit 5)	ODI occurrence
4096	(Bit12)	IEC error occurrence
8192	(Bit13)	TC-REI error occurrence
16384	(Bit14)	N2 BIP2 occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding TCOH (LP)/ TCOH (V) Event Register bit when the corresponding TCOH (LP)/ TCOH (V) Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
> :STATus:QUEStionable:TELecom:SDH:TLP:NTRansition 5

:STATus:QUEStionable:TELecom:SDH:TLP:NTRansition?
:STATus:QUEStionable:TELecom:SONET:TV:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:TLP:NTRansition?
< 5

<OH Status Register>

The OH Status Register displays such as error and alarm about the overhead.

:STATus:QUEStionable:TELecom:SDH:OH[:EVENt]?
:STATus:QUEStionable:TELecom:SONET:OH[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries contents of the event register of OH status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:OH[:EVENt]?
< 2

:STATus:QUEStionable:TELecom:SDH:OH:CONDition?
:STATus:QUEStionable:TELecom:SONET:OH:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries contents of the condition register of OH status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:OH:CONDition?
< 2

:STATus:QUEStionable:TELecom:SDH:OH:ENABle <numeric>
:STATus:QUEStionable:TELecom:SONET:OH:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

2	(Bit 1)	BERR occurrence
4	(Bit 2)	PSL occurrence

Function: Sets mask for the Event Enable Register.
The Event Register status corresponding to the mask are reported to the OH summary bit.
When the Event Enable Register bit is set to 1, the OH summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 2 to enable.
> :STATus:QUEStionable:TELecom:SDH:OH:ENABle 2

:STATus:QUEStionable:TELecom:SDH:OH:ENABle?
:STATus:QUEStionable:TELecom:SONET:OH:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:OH ENABle?
< 2

:STATus:QUEStionable:TELecom:SDH:OH:PTRansition <numeric>
:STATus:QUEStionable:TELecom:SONET:OH:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

2	(Bit 1)	BERR occurrence
4	(Bit 2)	PSL occurrence

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding OH Event Register bit when the corresponding OH Condition Register bit goes from 0 to 1.
Example use: To set bits 2:
> :STATus:QUEStionable:TELecom:SDH:OH:PTRansition 2

:STATus:QUEStionable:TELecom:SDH:OH:PTRansition?
:STATus:QUEStionable:TELecom:SONET:OH:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.
Function: Queries the current setting of the Positive Transition Register.
Example use: > :STATus:QUEStionable:TELecom:SDH:OH:PTRansition?
< 2

:STATus:QUEStionable:TELecom:SDH:OH:NTRansition <numeric>
:STATus:QUEStionable:TELecom:SONET:OH:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

2	(Bit 1)	BERR occurrence
4	(Bit 2)	PSL occurrence

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding OH Event Register bit when the corresponding OH Condition Register bit goes from 0 to 1.
Example use: To set bits 2:
> :STATus:QUEStionable:TELecom:SDH:OH:NTRansition 2

:STATus:QUEStionable:TELecom:SDH:OH:NTRansition?
:STATus:QUEStionable:TELecom:SONET:OH:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.
Function: Queries the current setting of the Negative Transition Register.
Example use: > :STATus:QUEStionable:TELecom:SDH:OH:NTRansition?
< 2

:STATus:QUEStionable:TELecom:SDH:SIGNalling[:EVENt]?
:STATus:QUEStionable:TELecom:SONET:SIGNalling[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.
Function: Queries contents of the event register of SIGNalling status register.
Example use: > :STATus:QUEStionable:TELecom:SDH:SIGNalling [:EVENt]?
< 5

:STATus:QUEStionable:TELecom:SDH:SIGNalling:CONDition?
:STATus:QUEStionable:TELecom:SONET:SIGNalling:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries contents of the condition register of SIGNalling status register.

Example use: > :STATus:QUEStionable:TELecom:SDH:SIGNalling :CONDition?
< 5

:STATus:QUEStionable:TELecom:SDH:SIGNalling:ENABle <numeric>
:STATus:QUEStionable:TELecom:SONET:SIGNalling:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	HG-AIS occurrence
2	(Bit 1)	HG-REC occurrence
4	(Bit 2)	BAIS1.5 occurrence
8	(Bit 3)	AIS1.5 occurrence
16	(Bit 4)	Sig.OOF occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register.
The Event Register status corresponding to the mask are reported to the SIGNalling summary bit.
When the Event Enable Register bit is set to 1, the SIGNalling summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 0 and 2 to enable.
> :STATus:QUEStionable:TELecom:SDH:SIGNalling :ENABle 5

:STATus:QUEStionable:TELecom:SDH:SIGNalling:ENABle?
:STATus:QUEStionable:TELecom:SONET:SIGNalling:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:SIGNalling :ENABle?
< 5

:STATus:QUEStionable:TELecom:SDH:SIGNalling:PTRansition <numeric>
:STATus:QUEStionable:TELecom:SONET:SIGNalling:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	HG-AIS occurrence
2	(Bit 1)	HG-REC occurrence
4	(Bit 2)	BAIS1.5 occurrence
8	(Bit 3)	AIS1.5 occurrence
16	(Bit 4)	Sig.OOF occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register.
The Event Register status corresponding to the mask are reported to the SIGNalling summary bit.
When the Event Enable Register bit is set to 1, the SIGNalling summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 0 and 2 to enable.
>:STATus:QUEStionable:TELecom:SDH:SIGNalling :PTRansition 5

:STATus:QUEStionable:TELecom:SDH:SIGNalling:PTRansition?
:STATus:QUEStionable:TELecom:SONET:SIGNalling:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:SIGNalling :PTRansition?
< 5

:STATus:QUEStionable:TELecom:SDH:SIGNalling:NTRansition <numeric>
:STATus:QUEStionable:TELecom:SONET:SIGNalling:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	HG-AIS occurrence
2	(Bit 1)	HG-REC occurrence
4	(Bit 2)	BAIS1.5 occurrence
8	(Bit 3)	AIS1.5 occurrence
16	(Bit 4)	Sig.OOF occurrence

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding SIGNalling Event Register bit when the corresponding SIGNalling Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 2:
>:STATus:QUEStionable:TELecom:SDH:SIGNalling:NTRansition 5

:STATus:QUEStionable:TELecom:SDH:SIGNalling:NTRansition?
:STATus:QUEStionable:TELecom:SONET:SIGNalling:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:QUEStionable:TELecom:SDH:SIGNalling:NTRansition?
< 5

<TELecom2 Status Register>

The TELecom2 Status Register supplies the 45M and 1.5M Status Register summaries and indicates power-off.

:STATus:QUEStionable:TELecom2[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the Event register contents of the TELecom2 status register.

Example use: > :STATus:QUEStionable:TELecom2:EVENt?
or :STATus:QUEStionable:TELecom2?
< 2050 (Indicates that bits 1 and 11 are set.)

:STATus:QUEStionable:TELecom2:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
Set the sum of the bit digit values of bits to be set.

Function: Queries the Condition register contents of the TELecom2 status register.

Example use: > :STATus:QUEStionable:TELecom2:CONDition?
< 4100 (Indicates that bits 2 and 12 are set.)

:STATus:QUEStionable:TELecom2:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
2048 (Bit11) 1.5M Status Register summary
4096 (Bit12) 45M Status Register summary
Set the sum of the bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the TELecom2 summary bit.
When the Event Enable Register bit is set to 1, the TELecom2 summary bit becomes true when the corresponding Event bit becomes true.

Example use: To set bits 4 and 14 to enable:
> :STATus:QUEStionable:TELecom2:ENABle 16400

:STATus:QUEStionable:TELecom2:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom2:ENABle?
< 16400

:STATus:QUEStionable:TELecom2:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
2048 (Bit11) 1.5M Status Register summary
4096 (Bit12) 45M Status Register summary
Set the sum of the bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding TELecom2 Event Register bit when the corresponding TELecom2 Condition Register bit goes from 0 to 1.

Example use: To set bits 2 and 13:
> :STATus:QUEStionable:TELecom2:PTRansition 8200

:STATus:QUEStionable:TELecom2:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Filter.

Example use: > :STATus:QUEStionable:TELecom2:PTRansition?
< 8200

:STATus:QUEStionable:TELecom2:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
2048 (Bit11) 1.5M Status Register summary
4096 (Bit12) 45M Status Register summary
Set the sum of the bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding TELecom2 Event Register bit when the corresponding TELecom2 Condition Register bit goes from 1 to 0.

Example use: To set bits 3 and 12:
> :STATus:QUEStionable:TELecom2:NTRansition 4104

:STATus:QUEStionable:TELecom2:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Filter.

Example use: > :STATus:QUEStionable:TELecom2:NTRansition?
< 4104

<45M Status Register>

The 45M Status Register displays the frame error, etc. of 45M signals.

:STATus:QUEStionable:TELecom2:M45[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the Event register contents of the 45M status register.

Example use: > :STATus:QUEStionable:TELecom2:M45:EVENt?
or :STATus:QUEStionable:TELecom2:M45?
< 3 (Indicates that bits 0 and 1 have been set.)

:STATus:QUEStionable:TELecom2:M45:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the Condition register contents of the 45M status register.

Example use: > :STATus:QUEStionable:TELecom2:M45:CONDition?
< 6 (Indicates that bits 1 and 2 have been set.)

:STATus:QUEStionable:TELecom2:M45:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	45M LOF occurrence
2	(Bit 1)	45M RDI occurrence
4	(Bit 2)	45M AIS occurrence
1024	(Bit10)	45M Parity occurrence
2048	(Bit11)	45M C-bit occurrence
4096	(Bit12)	45M REI occurrence
16384	(Bit14)	45M frame error occurrence

Set the sum of the bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the 45M summary bit.
When the Event Enable Register bit is set to 1, the 45M summary bit becomes true when the corresponding Event bit becomes true.

Example use: To set bits 2 and 14 to enable:
> :STATus:QUEStionable:TELecom2:M45:ENABle 16388

:STATus:QUEStionable:TELecom2:M45:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom2:M45:ENABle?
< 16388

:STATus:QUEStionable:TELecom2:M45:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	45M LOF occurrence
2	(Bit 1)	45M RDI occurrence
4	(Bit 2)	45M AIS occurrence
1024	(Bit10)	45M Parity occurrence
2048	(Bit11)	45M C-bit occurrence
4096	(Bit12)	45M REI occurrence
16384	(Bit14)	45M frame error occurrence

Set the sum of the bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding 45M Event Register bit when the corresponding 45M Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 14:
> :STATus:QUEStionable:TELecom2:M45:PTRansition 16385

:STATus:QUEStionable:TELecom2:M45:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Filter.

Example use: > :STATus:QUEStionable:TELecom2:M45:PTRansition?
< 16385

:STATus:QUEStionable:TELecom2:M45:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	45M LOF occurrence
2	(Bit 1)	45M RDI occurrence
4	(Bit 2)	45M AIS occurrence
1024	(Bit10)	45M Parity occurrence
2048	(Bit11)	45M C-bit occurrence
4096	(Bit12)	45M REI occurrence
16384	(Bit14)	45M frame error occurrence

Set the sum of the bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding 45M Event Register bit when the corresponding 45M Condition Register bit goes from 1 to 0.

Example use: To set bit 1:
> :STATus:QUEStionable:TELecom2:M45:NTRansition 2

:STATus:QUEStionable:TELecom2:M45:NTRansition?

Response:	<numeric> = <NR1 NUMERIC RESPONSE DATA> The sum of the bit digit values of set bits is responded.
Function:	Queries the current setting of the Negative Transition Filter.
Example use:	> :STATus:QUEStionable:TELecom2:M45:NTRansition? < 2

<1.5M Status Register>

The 1.5M Status Register displays the frame error, etc. of 1.5M signals.

:STATus:QUEStionable:TELecom2:M1_5[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the Event register contents of the 1.5M status register.

Example use: > :STATus:QUEStionable:TELecom2:M1.5:EVENt?
or :STATus:QUEStionable:TELecom2:M1.5?
< 3 (Indicates that bits 0 and 1 have been set.)

:STATus:QUEStionable:TELecom2:M1_5:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded

Function: Queries the Condition register contents of the 1.5M status register.

Example use: > :STATus:QUEStionable:TELecom2:M1.5:CONDition?
< 6 (Indicates that bits 1 and 2 have been set.)

:STATus:QUEStionable:TELecom2:M1_5:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	1.5M LOF occurrence
2	(Bit 1)	1.5M RDI occurrence
4	(Bit 2)	1.5M AIS occurrence
8192	(Bit13)	1.5M CRC-6 occurrence
16384	(Bit14)	1.5M frame error occurrence

Set the sum of the bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the 1.5M summary bit.
When the Event Enable Register bit is set to 1, the 1.5M summary bit becomes true when the corresponding Event bit becomes true.

Example use: To set bits 2 and 14 to enable:
> :STATus:QUEStionable:TELecom2:M1.5:ENABle 16388

:STATus:QUEStionable:TELecom2:M1_5:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:QUEStionable:TELecom2:M1.5:ENABle?
< 16388

:STATus:QUEStionable:TELecom2:M1_5:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	1.5M LOF occurrence
2	(Bit 1)	1.5M RDI occurrence
4	(Bit 2)	1.5M AIS occurrence
8192	(Bit13)	1.5M CRC-6 occurrence
16384	(Bit14)	1.5M frame error occurrence

Set the sum of the bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding 1.5M Event Register bit when the corresponding 1.5M Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 14:
> :STATus:QUEStionable:TELecom2:M1.5:PTRansition 16385

:STATus:QUEStionable:TELecom2:M1_5:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Filter.

Example use: > :STATus:QUEStionable:TELecom2:M1.5:PTRansition?
< 16385

:STATus:QUEStionable:TELecom2:M1_5:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	1.5M LOF occurrence
2	(Bit 1)	1.5M RDI occurrence
4	(Bit 2)	1.5M AIS occurrence
8192	(Bit13)	1.5M CRC-6 occurrence
16384	(Bit14)	1.5M frame error occurrence

Set the sum of the bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding 1.5M Event Register bit when the corresponding 1.5M Condition Register bit goes from 1 to 0.

Example use: To set bit 1:
> :STATus:QUEStionable:TELecom2:M1.5:NTRansition 2

:STATus:QUEStionable:TELecom2:M1_5:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of the bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Filter.

Example use: > :STATus:QUEStionable:TELecom2:M1.5:NTRansition?
< 2

<OPERation Status Register>

The OPERation Status Register supplies the INSTrument Status Register summary and carries out display during execution.

:STATus:OPERation[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the OPERation status register.

Example use: > :STATus:OPERation:EVENt?
or :STATus:OPERation?
< 16 (Indicates that bit 4 has been set.)

:STATus:OPERation:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the OPERation status register.

Example use: > :STATus:OPERation:CONDition?
< 8192 (Indicates that bit 13 has been set.)

:STATus:OPERation:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
16 (Bit 4) Executing measurement
8192 (Bit13) INSTrument Status Register summary
16384(Bit14) INSTrument2 Status Register summary
Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the OPERation summary bit.
When the Event Enable Register bit is set to 1, the OPERation summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bit 4 to enable:
> :STATus:OPERation:ENABle 16

:STATus:OPERation:ENABle?

Response: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:OPERation:ENABle?
< 16

:STATus:OPERation:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

16	(Bit 4)	Executing measurement
8192	(Bit13)	INSTrument Status Register summary
16384	(Bit14)	INSTrument2 Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding OPERation Event Register bit when the corresponding OPERation Condition Register bit goes from 0 to 1.

Example use: To set bit 13:
> :STATus:OPERation:PTRansition 8192

:STATus:OPERation:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:OPERation:PTRansition?
< 8192

:STATus:OPERation:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

16	(Bit 4)	Executing measurement
8192	(Bit13)	INSTrument Status Register summary
16384	(Bit14)	INSTrument2 Status Register summary

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding OPERation Event Register bit when the corresponding OPERation Condition Register bit goes from 0 to 1.

Example use: To set bits 4 and 13:
> :STATus:OPERation:NTRansition 8208

:STATus:OPERation:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:OPERation:NTRansition?
< 8208

<INSTrument Status Register>

The INSTrument Status Register displays the end of self test and log information.

:STATus:OPERation:INSTrument[:EVENt]?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Event register content of the INSTrument status register.

Example use: > :STATus:OPERation:INSTrument:EVENt?
or :STATus:OPERation:INSTrument?
< 3 (Indicates that bits 0 and 1 have been set.)

:STATus:OPERation:INSTrument:CONDition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the Condition register content of the INSTrument status register.

Example use: > :STATus:OPERation:INSTrument:CONDition?
< 6 (Indicates that bits 1 and 2 have been set.)

:STATus:OPERation:INSTrument:ENABle <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	Log is full.
2	(Bit 1)	Log is empty.
4	(Bit 2)	End of test (measurement)
8	(Bit 3)	End of self test
16	(Bit 4)	Change in alarm
128	(Bit 7)	Intermediate print timing of printer

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets mask for the Event Enable Register. The Event Register status corresponding to the mask are reported to the INSTrument summary bit.
When the Event Enable Register bit is set to 1, the INSTrument summary bit becomes true when the corresponding Event bit comes to true.

Example use: To set bits 2 and 3 to enable:
> :STATus:OPERation:INSTrument:ENABle 12

:STATus:OPERation:INSTrument:ENABle?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current mask status for the Event Enable Register.

Example use: > :STATus:OPERation:INSTrument:ENABle?
< 12

:STATus:OPERation:INSTrument:PTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	Log is full.
2	(Bit 1)	Log is empty.
4	(Bit 2)	End of test (measurement)
8	(Bit 3)	End of self test
16	(Bit 4)	Change in alarm
128	(Bit 7)	Intermediate print timing of printer

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Positive Transition Filter.
When the Positive Transition Filter bit is set, 1 is written to the corresponding INSTrument Event Register bit when the corresponding INSTrument Condition Register bit goes from 0 to 1.

Example use: To set bits 3 and 4:
> :STATus:OPERation:INSTrument:PTRansition 24

:STATus:OPERation:INSTrument:PTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Positive Transition Register.

Example use: > :STATus:OPERation:INSTrument:PTRansition?
< 24

:STATus:OPERation:INSTrument:NTRansition <numeric>

Parameter: <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1	(Bit 0)	Log is full.
2	(Bit 1)	Log is empty.
4	(Bit 2)	End of test (measurement)
8	(Bit 3)	End of self test
16	(Bit 4)	Change in alarm
128	(Bit 7)	Intermediate print timing of printer

Set a sum of bit digit values of bits to be set.
Set 0 when all bits are set to false.

Function: Sets the Negative Transition Filter.
When the Negative Transition Filter bit is set, 1 is written to the corresponding INSTrument Event Register bit when the corresponding INSTrument Condition Register bit goes from 0 to 1.

Example use: To set bits 0 and 3:
> :STATus:OPERation:INSTrument:NTRansition 9

:STATus:OPERation:INSTrument:NTRansition?

Response: <numeric> = <NR1 NUMERIC RESPONSE DATA>
The sum of bit digit values of set bits is responded.

Function: Queries the current setting of the Negative Transition Register.

Example use: > :STATus:OPERation:INSTrument:NTRansition?
< 9

Section 11 Program Example

This section describes examples of simple measurements using the remote control option.

- The program explained in this section uses the Quick BASIC.
- Programs explained hereunder operates either by the GPIB or RS-232C. For portions different settings are required according to the interface and controller types, subroutines are used. Generate subroutines according to the programming environment.

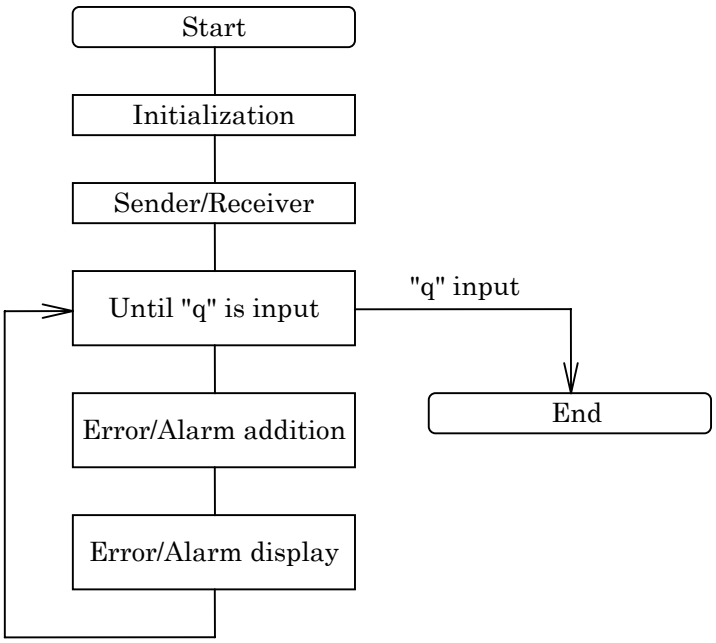
11.1 Programing Sample (1) Loopback Measurement

This section explain a program to set the out-of-service state and conduct the Loopback measurement.

Measurement Conditions

- Repeats measurements at 5 sec intervals
- Displays bit errors, AIS139M, and RDI139M measurement results occurred during a measurement cycle.
- The Error/Alarm addition is turned ON/OFF from the keyboard.
- The program is continued until "q" is input from the keyboard.

A simple flowchart of a program is shown below.



Sample Program (1) is shown on the following pages.

MP1570A SONET/SDH/PDH/ATM Analyzer
Sample Program(1)

Include of header file

Define the constant used by the head. bas file.

For this program, definitions are as follows:

CONST SON% = 1	Represents the ON state.
CONST SOFF% = 0	Represents the OFF state.
CONST ZERO$ = " 0"	Used to judge if measurement result is 0.
CONST EOT% = 4	Used to judge if bit 2 of INSTrument status event register is set. ($4=2^2$)
CONST TRUE% = -1	Represents the true state.

```
REM $INCLUDE: 'head.bas'
```

Subroutine, function declaration

```
DECLARE SUB init ()
DECLARE SUB send (cmd$)
DECLARE SUB rcv (resp$)
```

Interface initialization (See init subroutine.)

```
CALL init
```

Sender/receiver settings

```
CALL send(":DISPlay:TMENu'MANual'")                    'Manual Measurement
CALL send(":SENSe:TELecom:MMODe OSERvice")             'Out-of Service
CALL send(":INSTrument:COUPle ALL")                    'Tx&Rx (common sender/receiver
                                                       settings)
CALL send(":SENSe:TELecom:BRATe M139;PATTern PRBS23")  'Bit rate:139Mb/s  Patt:PRBS23
CALL send(":SENSe:TELecom:FRAMing ON")                 'Frame:ON
CALL send(":SOURce:TELecom:ERRor:TYPE OFF")            'Error:OFF
CALL send(":SOURce:TELecom:ALARm:TYPE OFF")            'Alarm:OFF
CALL send(":SENSe:MEASure:TYPE REPeat;PERiod 5,s")     'Mode:Repeat [ 5 secs ]
```

Initial value settings for variables

```
char$ = ""                                             'char$ : Variables for saving keys
                                                               being pressed
```

Start of measurement

```
CALL send(":STATus:PRESet")                            'Reset of status register
CALL send(":SENSe:MEASure:STARt")                      'Start of measurement
PRINT "Measurement Start"
```

```
Measurement result display for each 5-sec cycle (bit error, AIS139M, RDI139M)
    Measurement results of each 5-sec cycle are indicated until "q" is input.
WHILE TRUE%
    CALL send("*CLS")                                   'Clear of event register
      End of measurement judgment and character input
          1 End of measurement judgment and error/alarm addition ON/OFF are conducted until
          1-cycle measurement is complete.
    mend% = SOFF%                                       'mend% : measurement
                                                                judgment
    t0 = TIMER                                          'Variable for waiting time
    t1 = t0
    WHILE mend% = SOFF%
        End of measurement judgment
            In order to judge if 1-cycle measurement is complete or not, the INSTrument
           status event register is read to see if its bit 2 (end of measurement judgment bit) is
           set.
            If the bit is set, variables other than 0 are set to the variable mend% using the
AND
           calculation.
        t1 = TIMER                                      'Waiting time
        WHILE t0 = t1
        t1 = TIMER
        WEND
        t0 = t1
        CALL send(":STATus:OPERatiON:INSTrument:EVENt?")    Read of event register
        CALL rcv(st$)
        mend% = VAL(st$) AND EOT%                       ' Check of bit 2 status
```

Keyboard input

Error/alarm addition ON/OFF and program stop are conducted by keyboard input.

Keys on the keyboard correspond to the following functions:

- "e" : Adds bit error to 139M signal at 1E-3 rate.
- "a" : Adds AIS to 139M signal.
- "r" : Adds RDI to 139M signal.
- "s" : Sets error/alarm addition to OFF.
- "q" : Stops the program.

```
char$ = INKEY$
SELECT CASE char$                                   'Key judgment
CASE “e”
CALL send(":SOURce:TELecom:ERRor:TYPE BIT139;ERATe R1E_3;STARt")
CASE “a”
CALL send(":SOURce:TELecom:ALARm:TYPE AIS139;STARt")
CASE “r”
CALL send(":SOURce:TELecom:ALARm:TYPE RDI139;STARt")
CASE “s”
CALL send(":SOURce:TELecom:ERRor:TYPE OFF")
CALL send(":SOURce:TELecom:ALARm:TYPE OFF")
CASE “q”
PRINT "Measurement Stop"
STOP
END SELECT
WEND
```

Time and measurement results read

Time and measurement results including bit error, AIS139M and RDI139M are read.

```
CALL send(":SYSTem:DATE?")                          'Read of year, month, day, hour,
                                                    minute and second.
CALL rcv(dat1$)
CALL send(":SYSTem:TIME?")
CALL rcv(dat2$)
CALL send(":CALCulate:DATA? 'LAST:EC:BIT'")         'Read of error count of the bit
                                                    error
CALL rcv(mdBERR$)
CALL send(":CALCulate:DATA? 'LAST:ASECONds:AIS:M139'")  'Read of alarm second for
                                                    AIS139M
CALL rcv(mdAIS$)
CALL send(":CALCulate:DATA? 'LAST:ASECONds:RDI:M139'")  'Read of alarm second for
                                                    RDI139M
```

```
    CALL rcv(mdRDI$)
```

Display of measurement results
When measurement results are not 0 (error/alarm were measured), error count/alarm second of the error/alarm occurred are displayed.

```
    IF (mdBERR$ <> ZERO$) OR (mdAIS$ <> ZERO$) OR (mdRDI$ <> ZERO$) THEN
        PRINT dat1$
        PRINT dat2$
        IF mdBERR$ <> ZERO$ THEN
            PRINT "       Bit Err", mdBERR$
        END IF
        IF mdAIS$ <> ZERO$ THEN
            PRINT "      AIS139M", mdAIS$
        END IF
        IF mdRDI$ <> ZERO$ THEN
            PRINT "      RDI139M", mdRDI$
        END IF
    END IF
WEND
END
```

init init Interface initialization
Generate a subroutine for the following processing according to the controller and interface in use:
GPIB interface: Conduct bus initialization (IFC), message transfer initialization(DCL, SDC) and terminator setting using the subroutine.
RS-232C interface: Conduct the necessary controller data baud rate, parity, transmitted character length settings using the subroutine.

```
SUB init
        :
        :
END SUB
```

send(cmd$) Command transmission to measuring instrument
Argument cmd$: Character string variables representing a command to be transmitted.
Generate a subroutine for transmitting commands to the measuring instrument according to the controller in use.

```
SUB send (cmd$)
        :
        :
END SUB
```

rcv(resp$) Data read from measuring instrument
Argument resp$: Character string variables for substituting values returned from the measuring
instrument.
Generate a subroutine for reading data from the measuring instrument according to the controller in use.

```
SUB rcv (resp$)
        :
        :
END SUB
```

<Excution results>

```
Measurement Start
1994,02,04;13,06,56
    Bit Err      9.82E+07
    AIS139M             4
    RDI139M             4
1994,02,04;13,07,01
    Bit Err      1.43E+08
    AIS139M             5
    RDI139M             5
1994,02,04;13,07,06
    Bit Err      1.45E+08
    AIS139M             5
    RDI139M             5
Measurement Stop
```

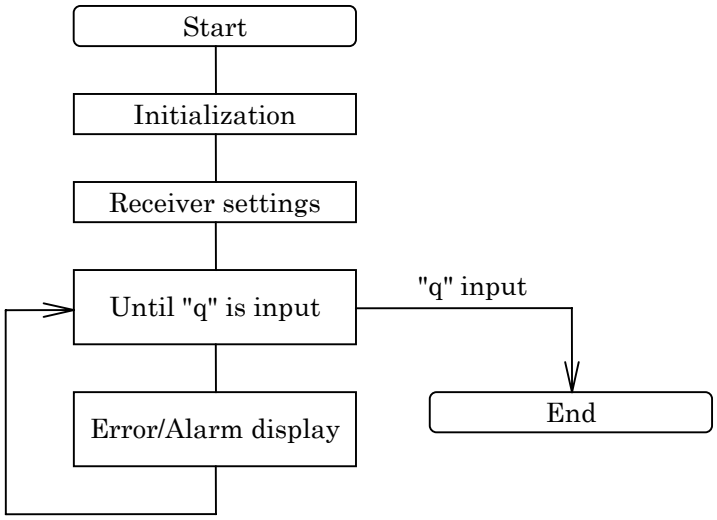
11.2 Programing Sample (2) Monitor Measurement

This section explain a program to set the In-Service state and conduct the monitor measurement.

Measurement Conditions

- Measurements are repeated at 5-sec intervals
- Measurement results including 34M frame error, AIS34M and RDI34M are displayed.
- The program is repeated until "q" is input from the keyboard.

A simple flowchart of a program is shown below.



Sample Program (2) is shown on the following pages:

- For processings identical to those of (1) loopback measurement, see explanations for program (1).

MP1570A SONET/SDH/PDH/ATM Analyzer
Sample Program(2)

Include of header file (See init Sample Program(1))

```
CONST SON% = 1
CONST SOFF% = 0
CONST ZERO$ = "          0"
CONST EOT% = 4
CONST TRUE% = -1
REM $INCLUDE: 'head.bas'
```

Subroutine, function declaration

```
DECLARE SUB init ()
DECLARE SUB send (cmd$)
DECLARE SUB rcv (resp$)
```

Interface initialization (See init subroutine.)

```
CALL init
```

Receiver settings

```
CALL send(":DISPlay:TMENu'MANual'")                    'Manual Measurement
CALL send(":SENSe:TELecom:MMODe ISERvice")             'In-Service
CALL send(":INSTrument:COUPle NONE")                   'Setting by send and receive
CALL send(":SENSe:TELecom:BRATe M34")                  'Bit rate:34Mb/s
CALL send(":SENSe:TELecom:FRAMing ON")                 'Frame:ON
CALL send(":SENSe:MEASure:TYPE REPeat;PERiod 5,s")     'Mode:Repeat [ 5 secs]
```

Initial value settings for variables

```
char$ = ""                                             'char$ :  Variables for saving keys
                                                                 being pressed
```

Start of measurement

```
CALL send(":STATus:PRESet")                            'Reset of status register
CALL send(":SENSe:MEASure:STARt")                      'Start of measurement
PRINT "Measurement Start"
```

```
Measurement result display for each 5-sec cycle (34M frame error, AIS34M, RDI34M)
Measurement results of each 5-sec cycle are indicated until "q" is input from the keyboard.
WHILE TRUE%
    CALL send("*CLS")                                   'Clear of event register
    End of measurement judgment and keyboard input
        End of measurement judgment and keyboard input are conducted until 1-cycle
        measurement is complete.
    mend% = SOFF%                                       'mend% : Variable for end of
                                                                measurement
    judgment
    t0 = TIMER                                          't0,t1:Variable for wating
                                                            time
    t1 = t0
    WHILE mend% = SOFF%
        End of measurement judgment
            In order to judge if 1-cycle measurement is complete or not, the INSTrument
            status event register is read to see if its bit 2 (end of measurement judgment bit) is
            set.
            If the bit is set, variables other than 0 are set to the variable mend% using the
    AND
            calculation.
        t1 = TIMER                                      'Waiting time
        WHILE t0 = t1
        t1 = TIMER
        WEND
        t0 = t1
        CALL send(":STATus:OPERatiON:INSTrument:EVENt?")    'Read of event register
        CALL rcv(st$)
        mend% = VAL(st$) AND EOT%                       'Check of bit 2 status
```

```
        Keyboard input
            The program stops when "q" is input from the keyboard.
        char$ = INKEY$
        IFChar$ = “q” THEN
            PRINT "Measurement Stop"
            STOP
        END IF
WEND
```

```
Time and measurement results read
    Time and measurement results including bit error, AIS139M and RDI139M are read.
CALL send(":SYSTem:DATE?")                                  ' Read of year, month, day,
CALL rcv(dat1$)                                             hour, minute and second.
CALL send(":SYSTem:TIME?")
CALL rcv(dat2$)
CALL send(":CALCulate:DATA? 'LAST:EC:FRAMe:M34'             'Read of error count of the bit
                                                            error
CALL rcv(mdBERR$)
CALL send(":CALCulate:DATA? 'LAST:ASECONds:AIS:M34'")       'Read of alarm second for
                                                            AIS34M
CALL rcv(mdAIS$)
CALL send(":CALCulate:DATA? 'LAST:ASECONds:RDI:M34'")       'Read of alarm second for
                                                            RDI34M
CALL rcv(mdRDI$)
```

```
    Display of measurement results
        When measurement results are not 0 (error/alarm were measured), error count/alarm
        second of the error/alarm occurred are displayed.
    IF (mdBERR$ <> ZERO$) OR (mdAIS$ <> ZERO$) OR (mdRDI$ <> ZERO$) THEN
        PRINT dat1$
        PRINT dat2$
        IF mdBERR$ <> ZERO$ THEN
            PRINT "       FRM 34M", mdBERR$
        END IF
        IF mdAIS$ <> ZERO$ THEN
            PRINT "       AIS 34M", mdAIS$
        END IF
        IF mdRDI$ <> ZERO$ THEN
            PRINT "       RDI 34M", mdRDI$
        END IF
    END IF
WEND
END
```

```
init Interface initialization (See sample Program (1))
SUB init
        :
        :
END SUB
```

```
send(cmd$) Command transmission to measuring instrument (See sample Program (1))
SUB send (cmd$)
        :
        :
END SUB
```

```
rcv(resp$) Data read from measuring instrument (See sample Program (1))
SUB rcv (resp$)
        :
        :
END SUB
```

<Excution results>

```
Measurement Start
1994,02,04;13,09,49
    FRM 34M      726
1994,02,04;13,09,54
    FRM 34M      30887
    RDI 34M          1
1994,02,04;13,09,59
    FRM 34M      29486
    RDI 34M          2
1994,02,04;13,10,04
    FRM 34M      23202
    RDI 34M          1
Measurement Stop
```

Appendix A Conformance Information

A.1 SCPI Version

The MP1570A conforms to the SCPI version 1993.0.

A.2 SCPI Fixed Command

Commands listed below are those fixed by the SCPI 1993.0 among commands used by the MP1570A.

:INSTrument:COUPle
:INSTrument:COUPle?
:CALCulate:DATA?
:SYSTem:DATE
:SYSTem:DATE?
:SYSTem:TIME
:SYSTem:TIME?
:SYSTem:ERRor?
:SYSTem:VERSion?
:STATus:PRESet
:STATus:QUEStionable[:EVENt]?
:STATus:QUEStionable:CONDition?
:STATus:QUEStionable:ENABle
:STATus:QUEStionable:ENABle?
:STATus:QUEStionable:PTRansition
:STATus:QUEStionable:PTRansition?
:STATus:QUEStionable:NTRansition
STATus:QUEStionable:NTRansition?
:STATus:OPERation[:EVENt]?
:STATus:OPERation:CONDition?
:STATus:OPERation:ENABle
:STATus:OPERation:ENABle?
:STATus:OPERation:PTRansition
:STATus:OPERation:PTRansition?
:STATus:OPERation:NTRansition
:STATus:OPERation:NTRansition?
:STATus:OPERation:INSTrument[:EVENt]?
:STATus:OPERation:INSTrument:CONDition?
:STATus:OPERation:INSTrument:ENABle
:STATus:OPERation:INSTrument:ENABle?
:STATus:OPERation:INSTrument:PTRansition
:STATus:OPERation:INSTrument:PTRansition?
:STATus:OPERation:INSTrument:NTRansition
:STATus:OPERation:INSTrument:NTRansition?

*IDN?
*RST
*TST?
*OPC
*OPC?
*WAI
*CLS
*ESE
*ESE?
*ESR?
*SRE
*SRE?
*STB?
*TRG
*PSC
*PSC?
*SAV
*RCL
*OPT?

Appendix B Self Test Error Code

As for self-test error codes, refer to the MP1570A SDH/PDH/ATM Analyzer Operation Manual Vol. 1.

Appendix C Relationships between Program Commands and Screens

Relationships between program commands and panel indications are explained.

As for detail on program commands, refer to 10.3, Equipment Unique Command.

C.1 Commands Corresponding to Test Menu Main Screens

C.1.1 Trouble search subscreen

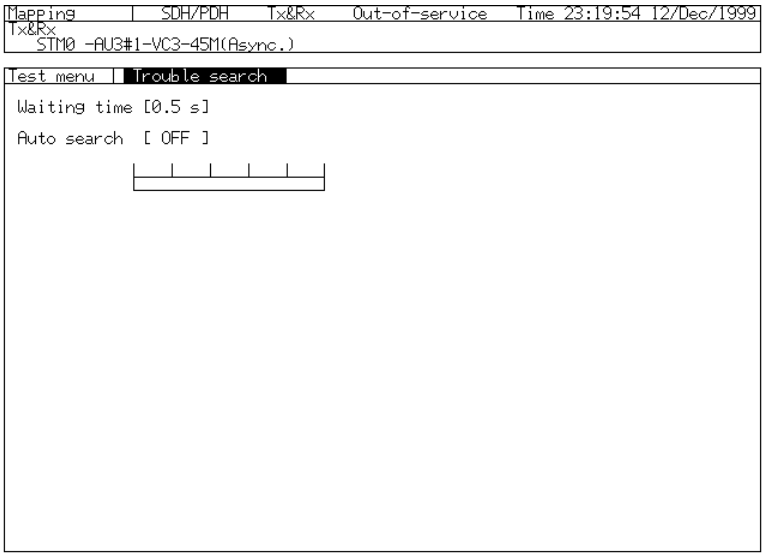


Fig. C-1 Test Menu Main Screen (Trouble search subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:TMENu[:NAME]

(10):SENSe:MEASure:TSEarch:WTIMe

C.1.2 Manual subscreen

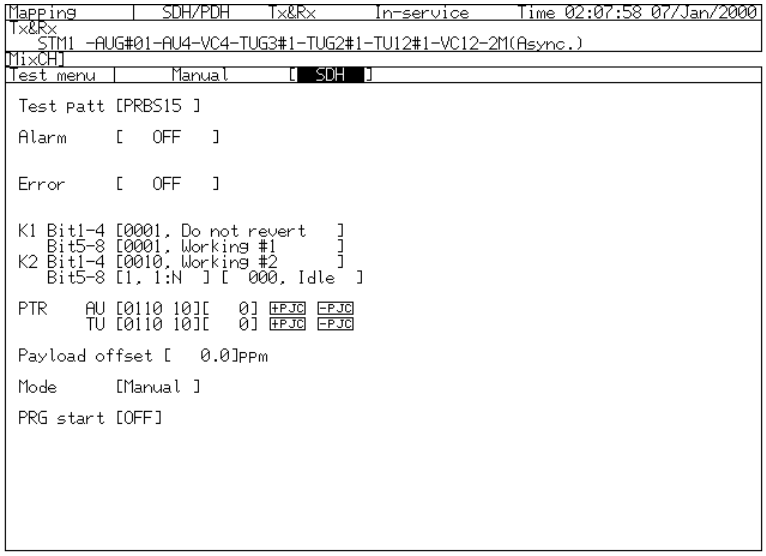


Fig. C-2 Test Menu Main Screen (Manual subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:TMENu[:NAME]

(10):SOURce:TELecom:ALARm:TYPE

(11):SOURce:TELecom:ERRor:TYPE

(12):SOURce:TELecom:ERATe:TYPE

(13):SOURce:TELecom:MSPMessages:REQuest

(14):SOURce:TELecom:MSPMessages:CHANnel

(15):SOURce:TELecom:MSPMessages:BRIDge

(16):SOURce:TELecom:MSPMessages:ARCHitect

(17):SOURce:TELecom:ALARm:STARt

(18):SOURce:TELecom:ALARm:STOP

(19):SOURce:TELecom:ALARm:STATe?

(20):SOURce:TELecom:ERRor:EFRame

(21):SOURce:TELecom:ERRor:NFRame

(22):SOURce:TELecom:ERRor:STARt

(23):SOURce:TELecom:ERRor:STOP

(24):SOURce:TELecom:ERRor:STATe?

(25):SOURce:TELecom:ERRor:OHCH

(26):SOURce:TELecom:ERRor:OHCH?

(27):SOURce:TELecom:ERRor:OHTYpe

(28):SOURce:TELecom:ERRor:OHTYpe?

(29):SOURce:TELecom:ERRor:OHPattern

(30):SOURce:TELecom:ERRor:OHPattern?

(31):SOURce:TELecom:MSPBits:REQuest

(32):SOURce:TELecom:MSPBits:CHANnel

(33):SOURce:TELecom:MSPBits:BRIDge

(34):SOURce:TELecom:MSPBits:ARCHitect

(35):SOURce:TELecom:MSPBits:REServed

(36):SOURce:TELecom:PSETting:NDFSet

(37):SOURce:TELecom:PSETting:SSSet

(38):SOURce:TELecom:PSETting:IDSet

(39):SOURce:TELecom:PSETting:PPJC

(40):SOURce:TELecom:PSETting:NPJC

(41):SENSe:TELecom:PATTern[:TYPE]

(42):SENSe:TELecom:PATTern:UWORd

(43):SENSe:MEASure:TYPE

(44):SENSe:MEASure:PERiod

(45):SENSe:MEASure:BTIMe:SET

(46):SENSe:MEASure:BTIMe:STARt

C.1.3 Pointer sequence subscreen

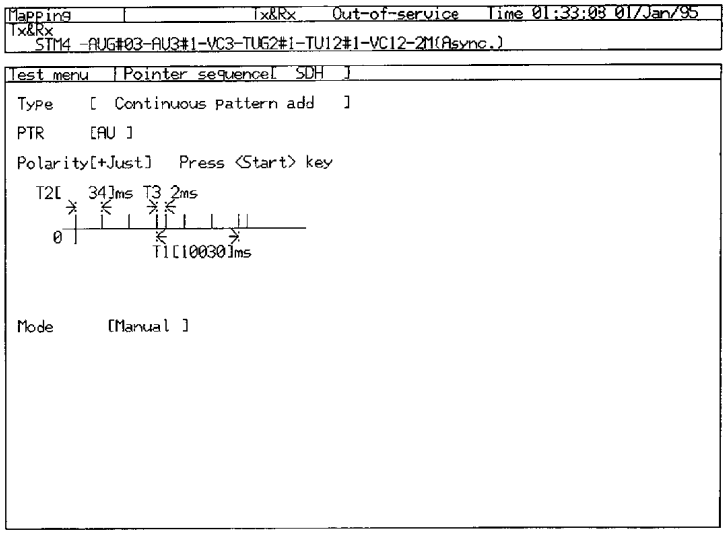


Fig. C-3 Test Menu Main Screen (Pointer sequence subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSce:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:TMENu[:NAME]

(10):SOURce:TELecom:PSEQuence:TYPE

(11):SOURce:TELecom:PSEQuence:POLarity

(12):SOURce:TELecom:PSEQuence:POINter

(13):SOURce:TELecom:PSEQuence:TIMing:T1

(14):SOURce:TELecom:PSEQuence:TIMing:T2

(15):SOURce:TELecom:PSEQuence:TIMing:T

(16):SOURce:TELecom:PSEQuence:TIMing:AINTerval

(17):SOURce:TELecom:PSEQuence:TIMing:CINTerval

C.1.4 Delay subscreen

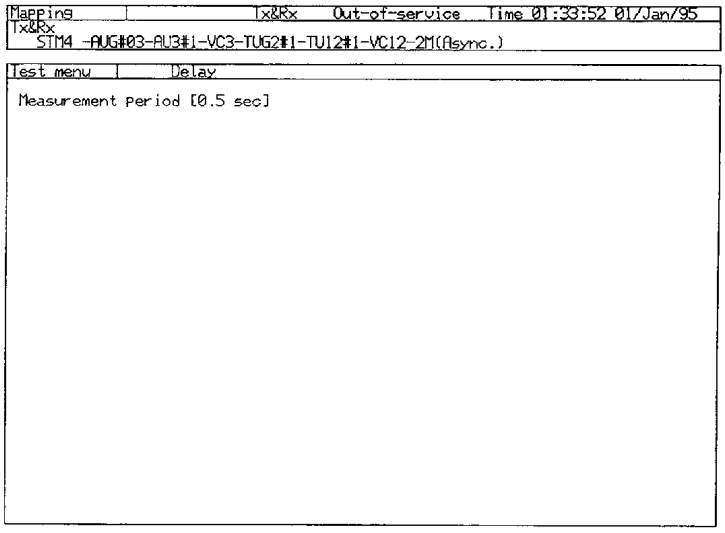


Fig.C-4 Test menu main screen (Delay subscreeen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:TMENu[:NAME]

(10):SENSe:MEASure:DELay:PERiod

C.2 Commands Corresponding to Result Main Screen

C.2.1 Trouble search subscreen

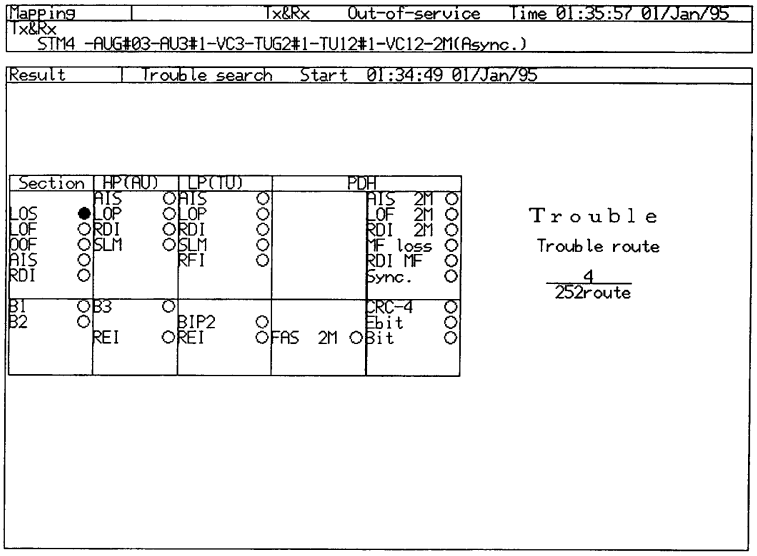


Fig. C-5 Result Menu Main Screen (Trouble search subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENEe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:RESult[:NAME]

(10):DISPlay:RESult:TIME

(11)Time indication

:SENSe:MEASure:STIMe?

:SENSe:MEASure:ELAPsed?

(12)Result indication

:CALCulate:TSEarch:RESult?

:CALCulate:TSEarch:DATA?

C.2.2 Error/Alarm subscreen

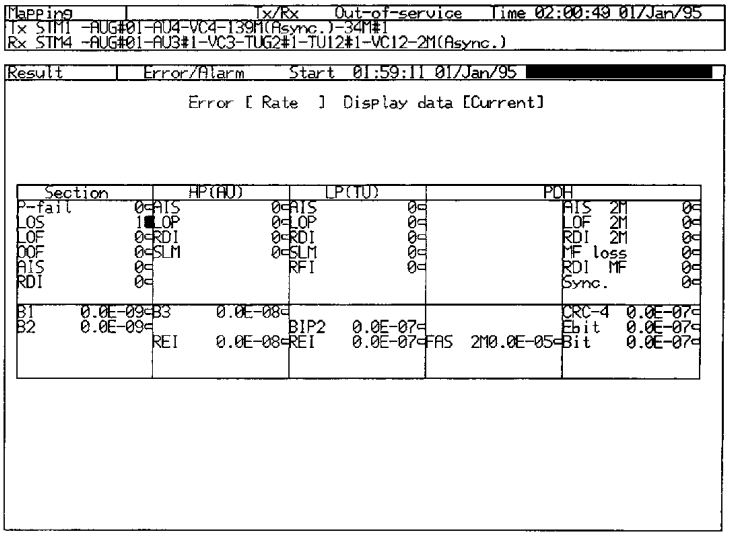


Fig. C-6 Result Menu Main Screen (Error/Alarm subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:RESult[:NAME]

(10):DISPlay:RESult:TIME

(11):DISPlay:RESult:EALarm:UNIT

(12):DISPlay:RESult:EALarm:MODE

(13):DISPlay:RESult:EALarm:AUNit

(14)Time indication

:SENSe:MEASure:STIMe?

:SENSe:MEASure:ELAPsed?

(15) Result indication

:CALCulate:DATA?

C.2.3 Justification subscreen

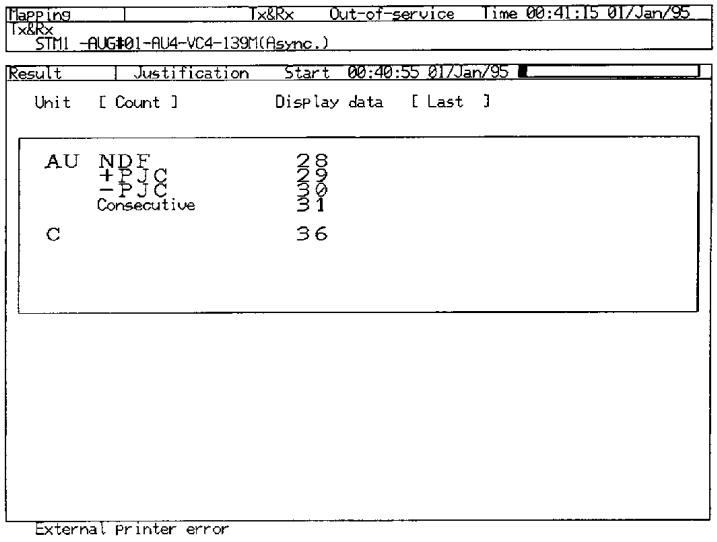


Fig. C-7 Result Menu Main Screen (Justification subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:RESult[:NAME]

(10):DISPlay:RESult:TIME

(11):DISPlay:RESult:JUSTificat:UNIT

(12):DISPlay:RESult:JUSTificat:MODE

(13)Time indication

:SENSe:MEASure:STIMe?

:SENSe:MEASure:ELAPsed?

(14)Result indication

:CALCulate:DATA?

C.2.4 Zoom subscreen

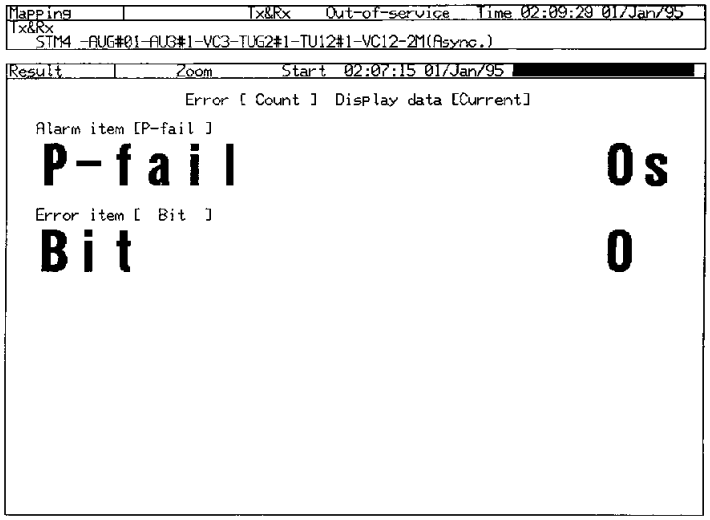


Fig. C-8 Result Menu Main Screen (Zoom subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELcom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:RESult[:NAME]

(10):DISPlay:RESult:TIME

(11):DISPlay:RESult:ZOOM:UNIT

(12):DISPlay:RESult:ZOOM:MODE

(13):DISPlay:RESult:ZOOM:UNIT

(14):DISPlay:RESult:ZOOM:ALARm

(15):DISPlay:RESult:ZOOM:ERRor

(16)Time indication

:SENSe:MEASure:STIMe?

:SENSe:MEASure:ELAPsed?

(17)Result indication

:CALCulate:DATA?

C.2.5 Performance subscreen

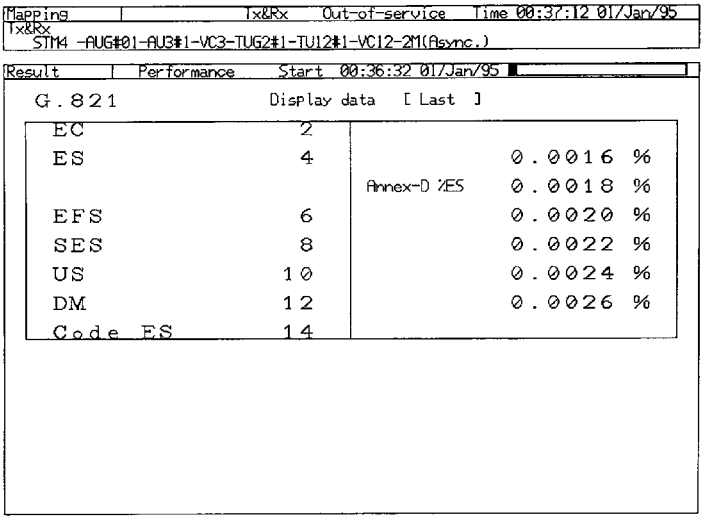


Fig. C-9 Result Menu Main Screen (Performance subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:RESult[:NAME]

(10):DISPlay:RESult:TIME

(11):DISPlay:RESult:PERFormance:ERRor[:G826]

(12):DISPlay:RESult:PERFomance:ERRor:M2100

(13):CALCulate:TELecom:PERFormance:THReshold:M2100:ES:SET

(14):CALCulate:TELecom:PERFormance:THReshold:M2100:SES:SET

(15):CALCulate:TELecom:PERFormance:THReshold:M2100:US:SET

(16):CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:SET

(17):CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:SET

(18):CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S1

(19):CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S1

(20):CALCulate:TELecom:PERFormance:THReshold:M2100:US:S1

(21):CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S1

(22):CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S1

(23):CALCulate:TELecom:PERFormance:THReshold:M2100:ES:S2

(24):CALCulate:TELecom:PERFormance:THReshold:M2100:SES:S2

(25):CALCulate:TELecom:PERFormance:THReshold:M2100:US:S2

(26):CALCulate:TELecom:PERFormance:THReshold:M2100:TXES:S2

(27):CALCulate:TELecom:PERFormance:THReshold:M2100:TXSES:S2

(28):DISPlay:RESult:PERFomance:ERRor:M2101

(29):CALCulate:TELecom:PERFormance:THReshold:M2101:ES:SET

(30):CALCulate:TELecom:PERFormance:THReshold:M2101:SES:SET

(31):CALCulate:TELecom:PERFormance:THReshold:M2101:US:SET

(32):CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:SET

(33):CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:SET

(34):CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S1

(35):CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S1

(36):CALCulate:TELecom:PERFormance:THReshold:M2101:US:S1

(37):CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S1

(38):CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S1

(39):CALCulate:TELecom:PERFormance:THReshold:M2101:ES:S2

(40):CALCulate:TELecom:PERFormance:THReshold:M2101:SES:S2

(41):CALCulate:TELecom:PERFormance:THReshold:M2101:US:S2

(42):CALCulate:TELecom:PERFormance:THReshold:M2101:TXES:S2

(43):CALCulate:TELecom:PERFormance:THReshold:M2101:TXSES:S2

(44):CALCulate:TELecom:PERFormance:THReshold:M2110:TYPe

(45):CALCulate:TELecom:PERFormance:THReshold:M2110:LIMit

(46)CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S1

(47):CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H2S2

(48):CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S1

(49):CALCulate:TELecom:PERFormance:THReshold:M2110:ES:H24S2

(50):CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S1

(51):CALCulate:TELecom:PERFormance:THReshold:M2110:ES:D7S2

(52):CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S1

(53):CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H2S2

(54):CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S1

(55):CALCulate:TELecom:PERFormance:THReshold:M2110:SES:H24S2

(56):CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S1

(57):CALCulate:TELecom:PERFormance:THReshold:M2110:SES:D7S2

(58):CALCulate:TELecom:PERFormance:THReshold:M2120:TYPe

(59):CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit1

(60):CALCulate:TELecom:PERFormance:THReshold:M2120:LIMit2

(61):CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR1

(62):CALCulate:TELecom:PERFormance:THReshold:M2120:ES:TR2

(63)Time indication

:SENSe:MEASure:STIMe?

:SENSe:MEASure:ELAPsed?

(64)Result indication

:CALCulate:DATA?

C.2.6 Delay subscreen

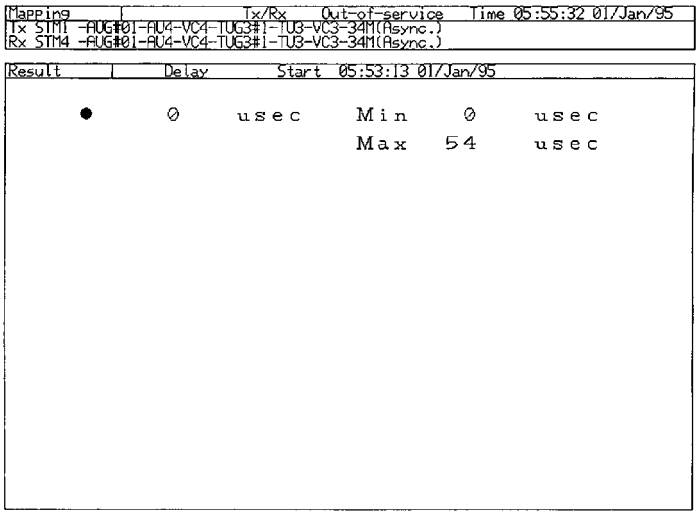


Fig. C-10 Result Menu Main Screen (Delay subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:RESult[:NAME]

(10):DISPlay:RESult:TIME

(11)Time indication

:SENSe:MEASure:STIMe?

:SENSe:MEASure:ELAPsed?

(12)Result indication

:CALCulate:DATA?

C.2.7 B2 Error subscreen

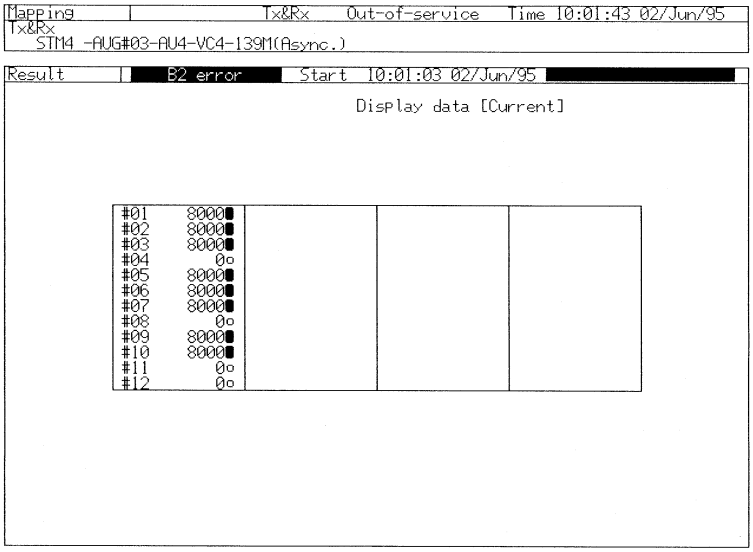


Fig. C-11 Result Menu Main Screen (B2 Error subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:MC

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:MC

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:RESult[:NAME]

(10):DISPlay:RESult:TIME

(11):DISPlay:RESult:B2:MODE

(12)Time indication

:SENSe:MEASure:STIMe?

:SENSe:MEASure:ELAPsed?

(13)Result indication

:CALCulate:DATA?

C.3 Commands Corresponding to Analyze Main Screen

C.3.1 Trouble search subscreen

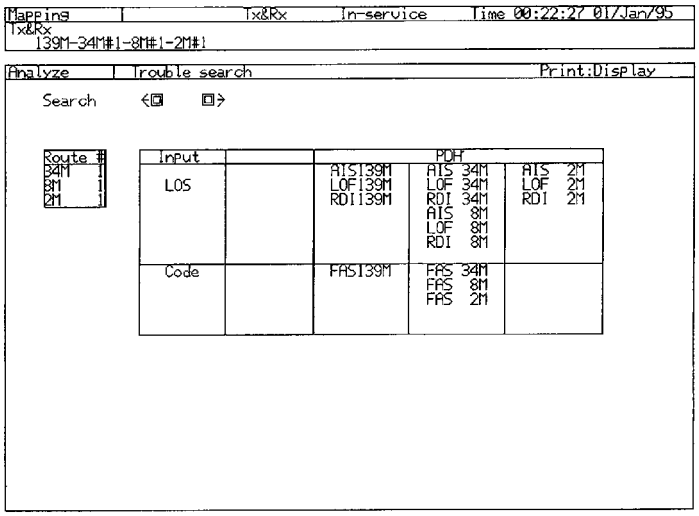


Fig. C-12 Analyze Main Screen (Trouble search subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:ANALysis[:NAME]

(10):DISPlay:ANALysis:TSEarch:SEARch

(11):DISPlay:ANALysis:TSEarch:ROUTe

(12):DISPlay:ANALysis:TSEarch:PRINt

(13)Result indication

:DISPlay:ANALysis:TSEarch:DATA?

C.3.2 Error/Alarm subscreen

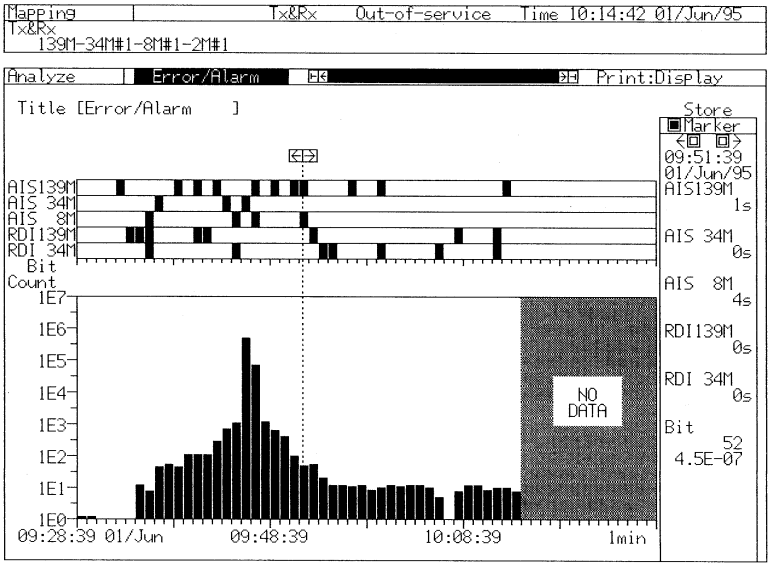


Fig. C-13 Analyze Main Screen (Error/Alarm subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:ANALysis[:NAME]

(10):DISPlay:ANALysis:TGRaph:SCRoll

(11):DISPlay:ANALysis:TGRaph:MARKer

(12):DISPlay:ANALysis:TGRaph:INTerval

(13):DISPlay:ANALysis:TGRaph:MDISplay

(14):DISPlay:ANALysis:TGRaph:SEARch

(15):DISPlay:ANALysis:TGRaph:FROM

(16):DISPlay:ANALysis:TGRaph:ERRor

(17):DISPlay:ANALysis:TGRaph:ALARm1

(18):DISPlay:ANALysis:TGRaph:ALARm2

(19):DISPlay:ANALysis:TGRaph:ALARm3

(20):DISPlay:ANALysis:TGRaph:ALARm4

(21):DISPlay:ANALysis:TGRaph:ALARm5

(22):DISPlay:ANALysis:TGRaph:PRINt

(23):DISPlay:ANALysis:TGRaph:TITLe

(24):SENSe:MEASure:GRESolution

(25)Result indication

:DISPlay:ANALysis:TGRaph:DATA?

:CALCulate:TGRaph:DATA?

C.3.3 OH monitor subscreen

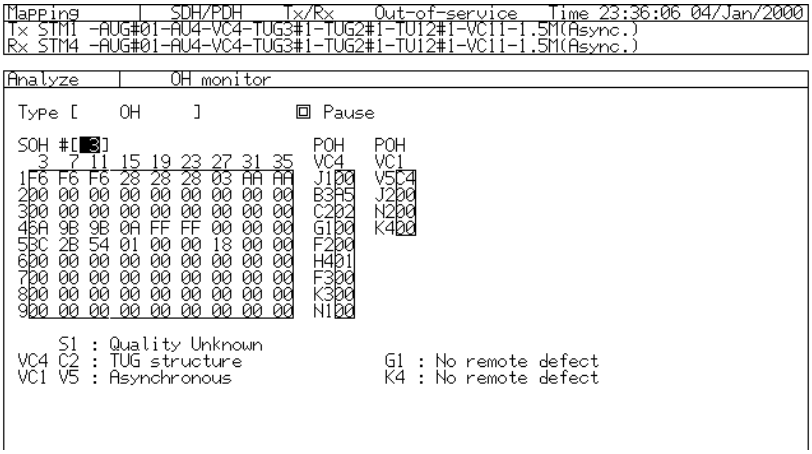


Fig. C-14 Analyze Main Screen (OH monitor subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:ANALysis[:NAME]

(10):DISPlay:ANALysis:OHMonitor:TYPE

(11):DISPlay:ANALysis:OHMonitor:SOHCh?

(12):DISPlay:ANALysis:OHMonitor:PFRame

(13):DISPlay:ANALysis:OHMonitor:PAUSe

(14)Result indication

:DISPlay:ANALysis:OHMonitor:SOHData?

:DISPlay:ANALysis:OHMonitor:POHData?

:DISPlay:ANALysis:OHMonitor:SSMessage?

:DISPlay:ANALysis:OHMonitor:SLABel?

:DISPlay:ANALysis:OHMonitor:PLABel?

:DISPlay:ANALysis:OHMonitor:VLABel?

:DISPlay:ANALysis:OHMonitor:G1LABel?

:DISPlay:ANALysis:OHMonitor:K4LABel?

:DISPlay:ANALysis:OHMonitor:Z7LABel?

:DISPlay:ANALysis:OHMonitor:MSP?

:DISPlay:ANALysis:OHMonitor:POINter?

:DISPlay:ANALysis:OHMonitor:PTRace:J0?

:DISPlay:ANALysis:OHMonitor:PTRace:J1H?

:DISPlay:ANALysis:OHMonitor:PTRace:J1L?

:DISPlay:ANALysis:OHMonitor:PTRace:J2?

:DISPlay:ANALysis:OHMonitor:PFRame?

C.3.4 OH 64 frame subscreen

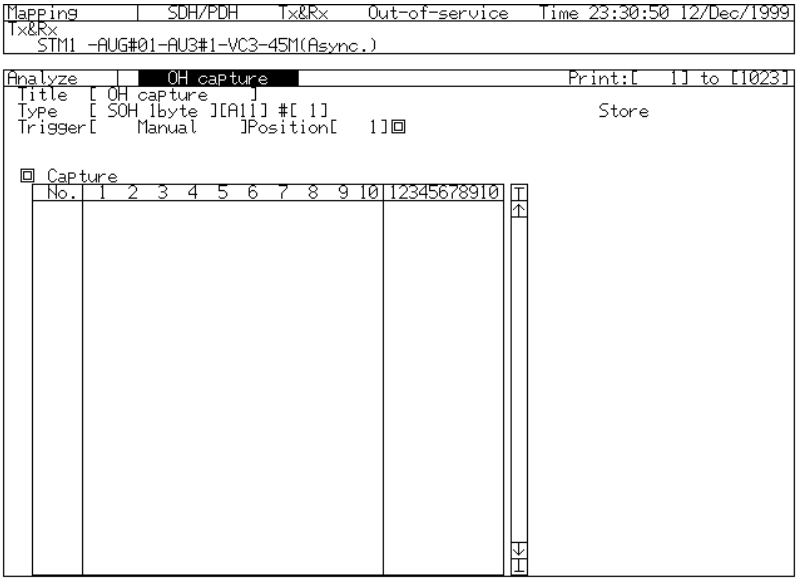


Fig. C-15 Analyze Main Screen (SOH 64 frame subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9)::SENSe:OHCapture:TYPE

(10):SENSe:OHCapture:TRIGger:TYPE

(11):SENSe:OHCapture:TRIGger:POSition

(12):SENSe:OHCapture:TRIGger:PATTern

(13):SENSe:OHCapture:TRIGger:MASK

(14):SENSe:OHCapture:STARt

(15):SENSe:OHCapture:STOP

(16):SENSe:OHCapture:STATe?

(17):SENSe:OHCapture:POSition:SOH

(18):SENSe:OHCapture:POSition:TOH

(19):SENSe:OHCapture:POSition:POH

(20):SENSe:OHCapture:CHANel

(21):DISPlay:ANALysis[:NAME]

(22):DISPlay:ANALysis:OHCapture:TITLe

(23):DISPlay:ANALysis:OHCapture:JUMP

(24):DISPlay:ANALysis:OHCapture:SCRoll

(25)Result indication

:CALCulate:OHCapture:DATA?

C.3.5 Recall subscreen

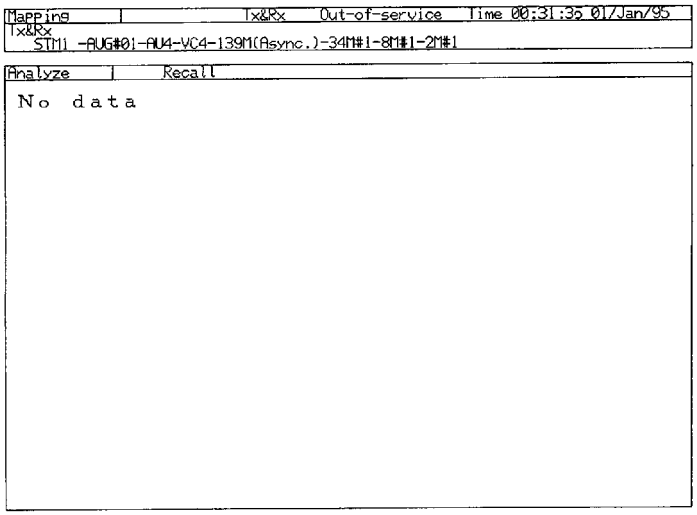


Fig. C-16 Analyze Main Screen (Recall subscreen)

(1):SOURce:TELecom:MAPPing:ROUTe

(2):SOURce:TELecom:MAPPing:mc

(3):SOURce:TELecom:MUX:N

(4):SOURce:TELecom:MUX:ROUTe

(5):SENSe:TELecom:MAPPing:ROUTe

(6):SENSe:TELecom:MAPPing:mc

(7):SENSe:TELecom:DEMUX:N

(8):SENSe:TELecom:DEMUX:ROUTe

(9):DISPlay:ANALysis[:NAME]

(10):DISPlay:ANALysis:RECall:TGRaph:SCRoll

(11):DISPlay:ANALysis:RECall:TGRaph:MARKer

(12):DISPlay:ANALysis:RECall:TGRaph:INTerval

(13):DISPlay:ANALysis:RECall:TGRaph:MDISplay

(14):DISPlay:ANALysis:RECall:TGRaph:SEARch

(15):DISPlay:ANALysis:RECall:TGRaph:FROM

(16):DISPlay:ANALysis:RECall:TGRaph:ERRor

(17):DISPlay:ANALysis:RECall:TGRaph:ALARm1

(18):DISPlay:ANALysis:RECall:TGRaph:ALARm2

(19):DISPlay:ANALysis:RECall:TGRaph:ALARm3

(20):DISPlay:ANALysis:RECall:TGRaph:ALARm4

(21):DISPlay:ANALysis:RECall:TGRaph:ALARm5

(22):DISPlay:ANALysis:RECall:TGRaph:PRINt

(23)Result indication

:DISPlay:ANALysis:RECall:TGRaph:DATA?

C.4 Commands Corresponding to Setup Main Screen

C.4.1 Mapping subscreen

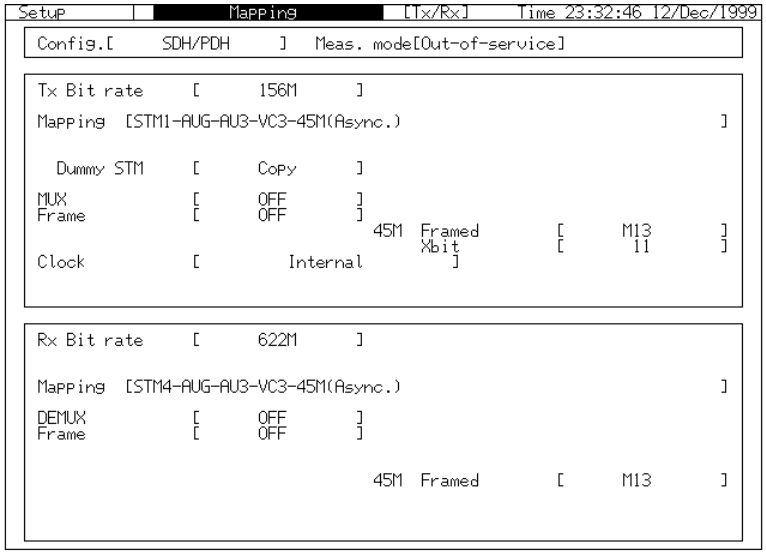


Fig. C-17 Setup Main Screen (Mapping subscreen)

(1):DISPlay:SETup[:NAME]

(2):INSTrument:COUPle

(3):SOURce:TELecom:BRATe

(4):SOURce:TELecom:MAPPing:TYPE

(5):SOURce:TELecom:MAPPing:AU

(6):SOURce:TELecom:MAPPing:TU

(7):SOURce:TELecom:MUX:MRATe

(8):SOURce:TELecom:FRAMing

(9):SOURce:TELecom:M2:CRC

(10):SOURce:TELecom:M2:MCHannel

(11):SOURce:TELecom:CLOCk:SOURce

(12):SOURce:TELecom:M1.5:FRAMed

(13):SOURce:TELecom:M1.5:CODE

(14):SOURce:TELecom:M45:FRAMed

(15):SOURce:TELecom:M45:XBIT

(16):SOURce:TELecom:DSX

(17):SENSe:TELecom:BRATe

(18):SENSe:TELecom:MAPPing:TYPE

(19):SENSe:TELecom:MAPPing:AU

(20):SENSe:TELecom:MAPPing:TU

(21):SENSe:TELecom:DEMUX:MRATe

(22):SENSe:TELecom:FRAMing

(23):SENSe:TELecom:MMODe

(24):SENSe:TELecom:M2:CRC

(25):SENSe:TELecom:M2:SIGNaling

(26):SENSe:TELecom:M2:MCHannel

(27):SENSe:TELecom:M1.5:FRAMed

(28):SENSe:TELecom:M1.5:CODE

(29):SENSe:TELecom:M45:FRAMed

(30):SENSe:TELecom:DSX

(31):SENSe:TELecom:IMODe

(32):SENSe:MEASure:GRESolution

(33):ROUTe:INPut:SELect

(34):ROUTe:THRough

(35):CALCulate:TELecom:PERFormance:TYPE

(36):CALCulate:TELecom:PERFormance:FRAMe

C.4.2 Memory subscreen

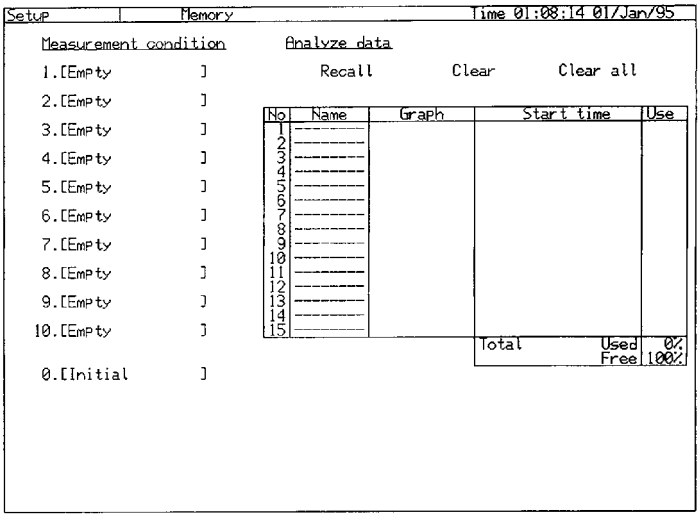


Fig. C-18 Setup Main Screen (Memory subscreen)

(1):DISPlay:SETup[:NAME]

(2):SYSTem:MEMory:RECall

(3):SYSTem:MEMory:STORe

(4):SYSTem:MEMory:CLEar

(5):SYSTem:MEMory:LABel

(6):SYSTem:MEMory:ANALysis:LABel?

(7):SYSTem:MEMory:ANALysis:RECall

(8):SYSTem:MEMory:ANALysis:STORe

(9):SYSTem:MEMory:ANALysis:CLEar

(10):SYSTem:MEMory:ANALysis:ACLear

C.4.3 Print subscreen

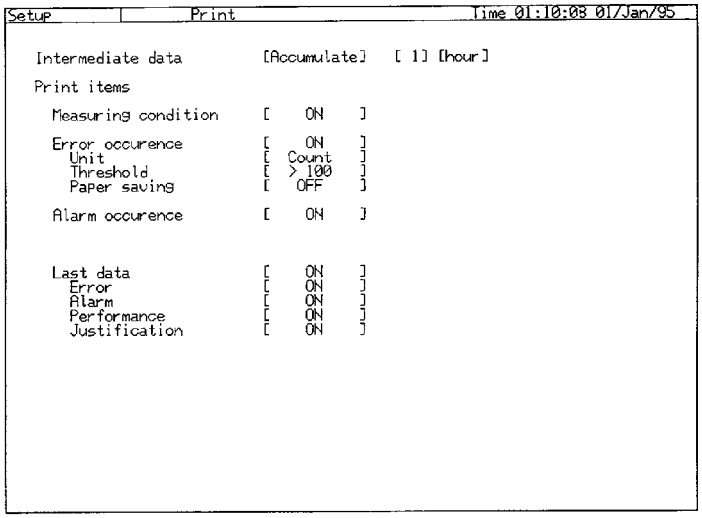


Fig. C-19 Setup Main Screen (Print subscreen)

(1):DISPlay:SETup[:NAME]

(2):SYSTem:PRINt:IDATa[:TYPE]

(3):SYSTem:PRINt:IDATa:PERiod

(4):SYSTem:PRINt:MCONdition

(5):SYSTem:PRINt:ERRor:SET

(6):SYSTem:PRINt:ERRor:TYPE

(7):SYSTem:PRINt:ERRor:THReshold:EC

(8):SYSTem:PRINt:ERRor:THReshold:ER

(9):SYSTem:PRINt:ERRor:SQUelch

(10):SYSTem:PRINt:ALARm:SET

(11):SYSTem:PRINt:LDATa:SET

(12):SYSTem:PRINt:LDATa:ERRor

(13):SYSTEm:PRINt:LDATa:ALARm

(14):SYSTem:PRINt:LDATa:PERFormance

(15):SYSTem:PRINt:LDATa:JUSTificat

C.4.4 OH preset data subscreen

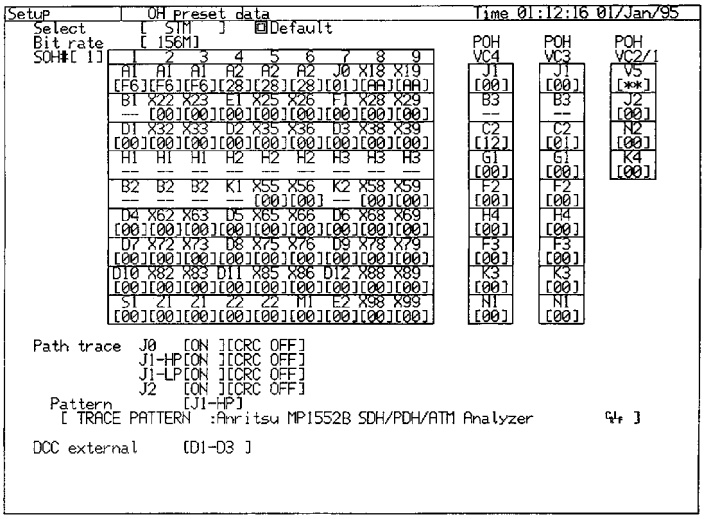


Fig. C-20 Setup Main Screen (OH preset data subscreen)

(1):DISPlay:SETup[:NAME]

(2):SOURce:TELecom:OHPReset:SOHPattern

(3):SOURce:TELecom:OHPReset:POHPattern

(4):SOURce:TELecom:OHPReset:DEFault

(5):SOURce:TELecom:OHPReset:PTCondition

(6):SOURce:TELecom:OHPReset:PTData

(7):SOURce:TELecom:OHPReset:DEXTernal

(8):DISPlay:SETup:BRATe

(9):DISPlay:SETup:SOHCh

(10):SOURce:TELecom:OHPReset:SSMessage

(11):SOURce:TELecom:OHPReset:SLABel

C.4.5 System subscreen

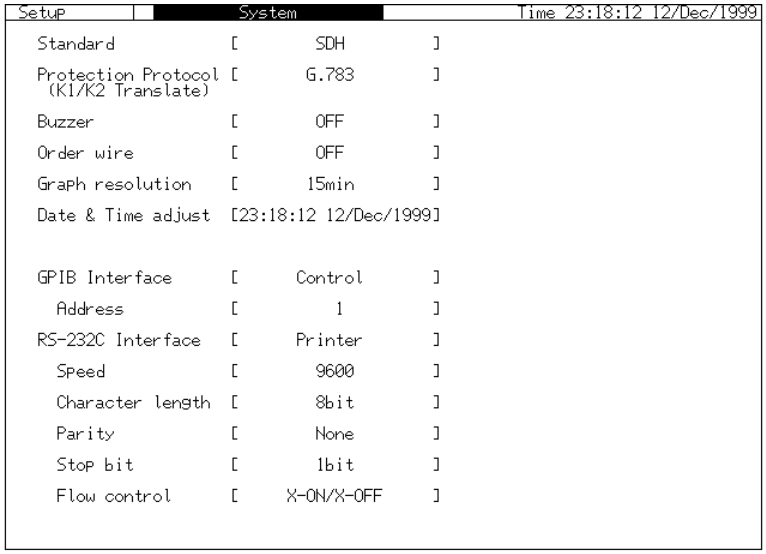


Fig. C-21 Setup Main Screen (System subscreen)

(1):DISPlay:SETup[:NAME]

(2):SYSTem:DATE

(3):SYSTem:TIME

(4):SYSTem:BUZZer

(5):SYSTem:COLor

(6):INSTrument:STANdard

(7):SYSTem:PROTection

(8):SYSTem:ORDerwire:VOLume

(9):SENSe:MEASure:GRESolution

C.4.6 Floppy disk subscreen

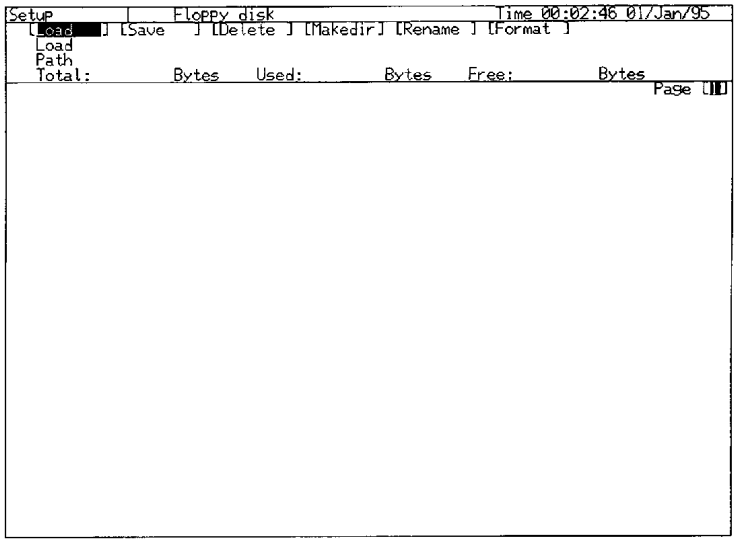


Fig. C-22 Setup Main Screen (Floppy disk subscreen)

(1):DISPlay:SETup[:NAME]

(2):DISPlay:SETup:FDPage?

(3):SYSTem:MMEMory:RECall

(4):SYSTem:MMEMory:STORe

(5):SYSTem:MMEMory:DELete

(6):SYSTem:MMEMory:MDIRectory

(7):SYSTem:MMEMory:REName

(8):SYSTem:MMEMory:INITialize

(9):SYSTem:MMEMory:CATalog?

(10):SYSTem:MMEMory:CDIRectory

C.4.7 Auto setup subscreen

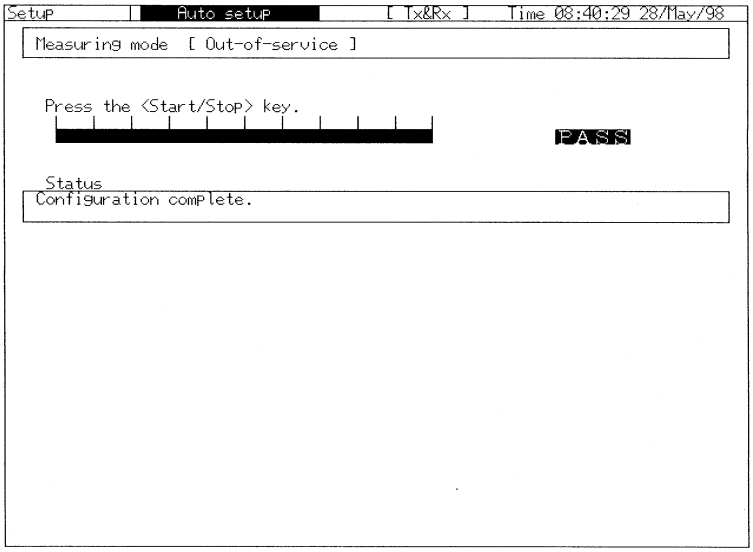


Fig. C-23 Setup Main Screen (Auto setup subscreen)

(1):DISPlay:Setup[:NAME]

C.4.8 Self test subscreen

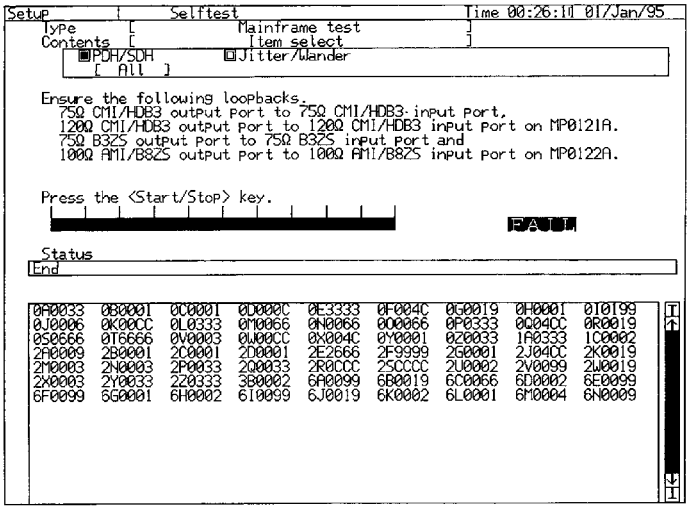


Fig. C-24 Setup Main Screen (Self test subscreen)

(1):DISPlay:SETup[:NAME]

(2):TEST:TYPE

(3):TEST:ECODe?

(4):TEST:RESult?

(5):TEST:CONTent:TYPE

(6):TEST:CONTent:PSDH

(7):TEST:STARt

(8):TEST:CONTinue

(9):TEST:STOP

(10):TEST:SCRoll

C.4.9 Customer subscreen

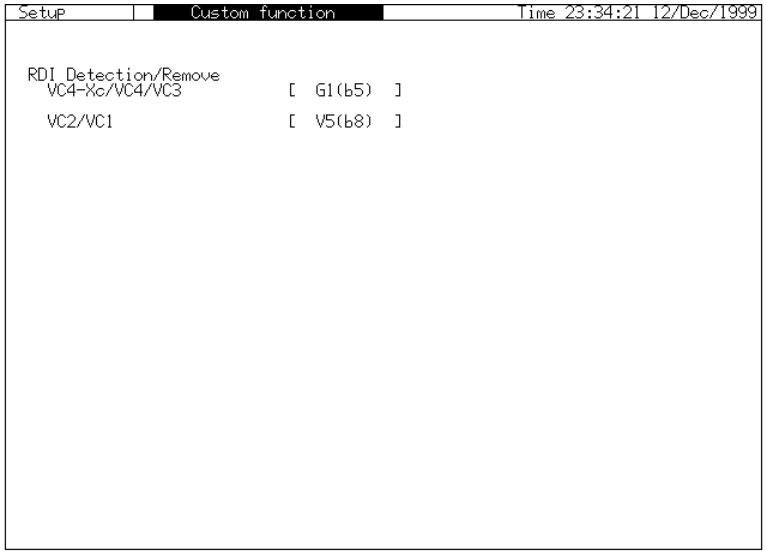


Fig. C-25 Setup Main Screen (Customer subscreen)

(1):DISPlay:Setup[:NAME]

(2):SYSTem:COUPled:M1656

(3):SYSTem:RDI:VC43

(4):SYSTem:RDI:STS

(5):SYSTem:RDI:VC21

(6):SYSTem:RDI:VT

(7):SYSTem:MPAuse

C.5 Front Panel and Other Command

Table C-1 Front panel and Other Commands List

Key	Start/Stop Key Measure	:SENSe:MEASure:STARt :SENSe:MEASure:STOP :SENSe:MEASure:STATe?
	Self test	:TEST:STARt :TEST:STOP :TEST:STATe?
	Print Key	:SYSTem:PRINt:ENABle
	Print Now Key	:SYSTem:PRINt:COPY
	Paper Feed Key	:SYSTem:PRINt:FEED
	History Key	:SYSTem:LED:HISTory
	History Reset Key	:SYSTem:LED:RESet
Others		:SYSTem:PRINt:TEXT :SYSTem:ERRor? :SYSTem:VERSion? STARus Subsystem