

MP1570A
SONET/SDH/PDH/ATM Analyzer
Operation Manual
Vol.7
2.5G Jitter/Wander Measurement

Seventh Edition


Read this manual before using the equipment.
Keep this manual with the equipment.


ANRITSU CORPORATION


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.7 2.5G Jitter/Wander Measurement

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Printed in Japan

For Safety

WARNING



1. ALWAYS refer to the operation manual when working near locations at which the alert mark shown on the left is attached. If the operation, etc., is performed without heeding the advice in the operation manual, there is a risk of personal injury. In addition, the equipment performance may be reduced.
Moreover, this alert mark is sometimes used with other marks and descriptions indicating other dangers.

2. Measurement Categories

This instrument is designed for Measurement category I (CAT I). Don't use this instrument at the locations of measurement categories from CAT II to CAT IV.

In order to secure the safety of the user making measurements, IEC 61010 clarifies the range of use of instruments by classifying the location of measurement into measurement categories from I to IV.

The category outline is as follows:

Measurement category I (CAT I):

Secondary circuits of a device connected to an outlet via a power transformer etc.

Measurement category II (CAT II):

Primary circuits of a device with a power cord (portable tools, home appliance etc.) connected to an outlet.

Measurement category III (CAT III):

Primary circuits of a device (fixed equipment) to which power is directly supplied from the power distribution panel, and circuits from the distribution panel to outlets.

Measurement category IV (CAT IV):

All building service-line entrance circuits through the integrating wattmeter and primary circuit breaker (power distribution panel).

For Safety

WARNING



Repair

WARNING 

Falling Over

3. Laser radiation warning
 - NEVER look directly into the cable connector on the equipment nor into the end of a cable connected to the equipment. If laser radiation enters the eye, there is a risk of injury.
 - Laser Radiation Markings on a following page show the Laser Safety label attached to the equipment near the cable connector.
4. When supplying power to this equipment, connect the accessory 3-pin power cord to a grounded outlet. If a grounded outlet is not available, before supplying power to the equipment, use a conversion adapter and ground the green wire, or connect the frame ground on the rear panel of the equipment to ground. If power is supplied without grounding the equipment, there is a risk of receiving a severe or fatal electric shock.
5. This equipment cannot be repaired by the user. DO NOT attempt to open the cabinet or to disassemble internal parts. Only Anritsu-trained service personnel or staff from your sales representative with a knowledge of electrical fire and shock hazards should service this equipment. There are high-voltage parts in this equipment presenting a risk of severe injury or fatal electric shock to untrained personnel. In addition, there is a risk of damage to precision parts.
6. This equipment should be used in the correct position. If the cabinet is turned on its side, etc., it will be unstable and may be damaged if it falls over as a result of receiving a slight mechanical shock. And also DO NOT use this equipment in the position where the power switch operation is difficult.

For Safety

WARNING

-
7. DO NOT short the battery terminals and never attempt to disassemble it or dispose of it in a fire. If the battery is damaged by any of these actions, the battery fluid may leak.

This fluid is poisonous.

Battery Fluid

DO NOT touch it, ingest it, or get in your eyes. If it is accidentally ingested, spit it out immediately, rinse your mouth with water and seek medical help. If it enters your eyes accidentally, do not rub your eyes, irrigate them with clean running water and seek medical help. If the liquid gets on your skin or clothes, wash it off carefully and thoroughly.

8. This instrument uses a Liquid Crystal Display (LCD); DO NOT subject the instrument to excessive force or drop it. If the LCD is subjected to strong mechanical shock, it may break and liquid may leak.

This liquid is very caustic and poisonous.

LCD

DO NOT touch it, ingest it, or get in your eyes. If it is ingested accidentally, spit it out immediately, rinse your mouth with water and seek medical help. If it enters your eyes accidentally, do not rub your eyes, irrigate them with clean running water and seek medical help. If the liquid gets on your skin or clothes, wash it off carefully and thoroughly.

For Safety

CAUTION

Replacing Fuse

CAUTION 

1. Before Replacing the fuses, ALWAYS remove the power cord from the poweroutlet and replace the blown fuses. ALWAYS use new fuses of the type and rating specified on the fuse marking on the rear panel of the cabinet.

T__A indicates a time-lag fuse.

__A or F__ A indicate a normal fusing type fuse.

There is risk of receiving a fatal electric shock if the fuses are replaced with the power cord connected.

2. Keep the power supply and cooling fan free of dust.
 - Clean the power inlet regularly. If dust accumulates around the power pins, there is a risk of fire.
 - Keep the cooling fan clean so that the ventilation holes are not obstructed. If the ventilation is obstructed, the cabinet may overheat and catch fire.
3. The maximum input levels of the optical signal are 0 dBm for MU150002A 10G input, -8 dBm for MU150002A Option 01 2.5G input, and +3 dBm for MU150017A/B input. Excessive input level can damage the internal devices and circuit.

Cleaning



Before performing a self loop-back test, always install 15 dB (when MP0127A/MP0128A/MP0129A or MU150008A/MU150009A/MU150010A installed), 10 dB (when MU150002A installed), or 5 dB (when MU150017A/B installed) attenuator between the output connector and the input connector.

For Safety

WARNING

Laser Safety

The laser safety is assured by correct operation of the warning means of the laser output. Before using the optical output, if it is not possible to check the optical emission using the warning means of the laser output at power-on or when the optical output switch is set to on, the laser output may be faulty. Do not use the equipment and call our service department or representative to request repair.

Optical units for the MP1570A SONET/SDH/PDH/ATM Analyzer have Class 1 laser emitting parts as specified in IEC 60825-1, or Class I and IIIb parts as specified in 21CFR 1040.10 (refer to Table 1). Classes are indicated on the label at the top panel of this equipment and the front panel of each unit (refer to Table 2 and Figs 1 to 5).

Do not look directly into the end of any cable connected to the optical output connector of the unit. Laser light can seriously damage the eyes. Operating this unit in a procedure other than that as described above might result in injury or damage from laser emission. Please follow the handling instructions carefully.

Table 1 Class of each unit

Model number	Standard name	
	IEC 60825-1	21CFR 1040.10
MP0111A	Class 1	Class I
MP0112A	Class 1	Class I
MP0113A	Class 1	Class I
MP0122B	Class 1	Class I
MP0127A	Class 1	Class IIIb
MP0128A	Class 1	Class IIIb
MP0129A	Class 1	Class IIIb
MU150001A/B	Class 1	Class IIIb
MU150008A	Class 1	Class IIIb
MU150009A	Class 1	Class IIIb
MU150010A	Class 1	Class IIIb
MU150031A/C	Class 1	Class IIIb
MU150061A/B	Class 1	Class IIIb

For Safety

Class 1 indicates the danger degree of the laser radiation specified below according to IEC 60825-1.

Class 1: Lasers that are safe under reasonably foreseeable conditions of operation, including the use of optical instruments for intra-beam viewing.

And, Class I, IIa, II, IIIa and IIIb indicates the degree of danger of the laser radiation outlined below as defined by 21CFR 1040.10.

Class I: Class I labels of laser radiation are not considered to be hazardous.

Class IIa: Class IIa labels of laser radiation are not considered to be hazardous if viewed for any period of time less than or equal to 1×10^3 seconds but are considered to be a chronic viewing hazard for any period of time greater than 1×10^3 seconds. The wavelength range of laser radiating is in 400 to 710 nm.

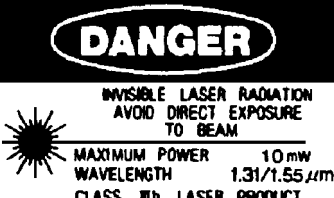


Class II: Class II labels of laser radiation are considered to be a chronic viewing hazard. The wavelength range of laser radiating is in 400 to 710 nm.

Class IIIa: Class IIIa labels of laser radiation are considered to be, depending upon the irradiance, either an acute intrabeam viewing hazard or chronic viewing hazard, and an acute viewing hazard if viewed directly with optical instruments. The wavelength range of laser radiating is in 400 to 710 nm.

Class IIIb: Class IIIb labels of laser radiation are considered to be an acute hazard to skin and eyes from direct radiation.

For Safety

Table 2

No.	Label	Description
[1]	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>AVOID EXPOSURE INVISIBLE LASER RADIATION IS EMITTED FROM THIS APERTURE</p> </div>	Aperture label (FDA 21CFR 1040.10)
[2]	<div style="text-align: center;">  <p>DANGER INVISIBLE LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM MAXIMUM POWER 10 mW WAVELENGTH 1.31/1.55 μm CLASS IIb LASER PRODUCT</p> </div>	Explanatory label (FDA 21CFR 1040.10)
[3]	<div style="border: 1px solid black; padding: 5px; text-align: center;">  <p>CLASS 1 LASER PRODUCT</p> </div>	Explanatory label (IEC 60825-1)
[4]	<div style="text-align: center;">  </div>	Warning label (IEC 60825-1)
[5]	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>CERTIFICATION LABEL THIS PRODUCT CONFORMS TO ALL APPLICABLE STANDARDS UNDER 21 CFR 1040.10</p> </div>	Certification label (FDA 21CFR 1040.10)
[6]	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>IDENTIFICATION LABEL ANRITSU CORP 1800, ONNA, ATSUGI-SHI KANAGAWA 243-8555, JAPAN MANUFACTURED AT: TOHOKU ANRITSU CO., LTD KORIYAMA PLANT, _____, 20____</p> </div>	Identification label (FDA 21CFR 1040.10)

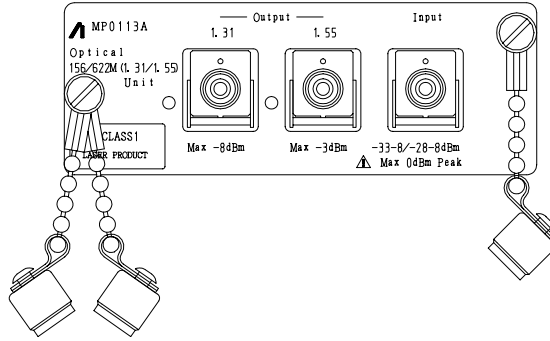


Fig. 1 MP0111A, MP0112A, MP0113A Front Panel of Unit

CAUTION

When only a Unit is purchased, an adhesive label is supplied with the Unit.

Please, attach it to the place, shown above.

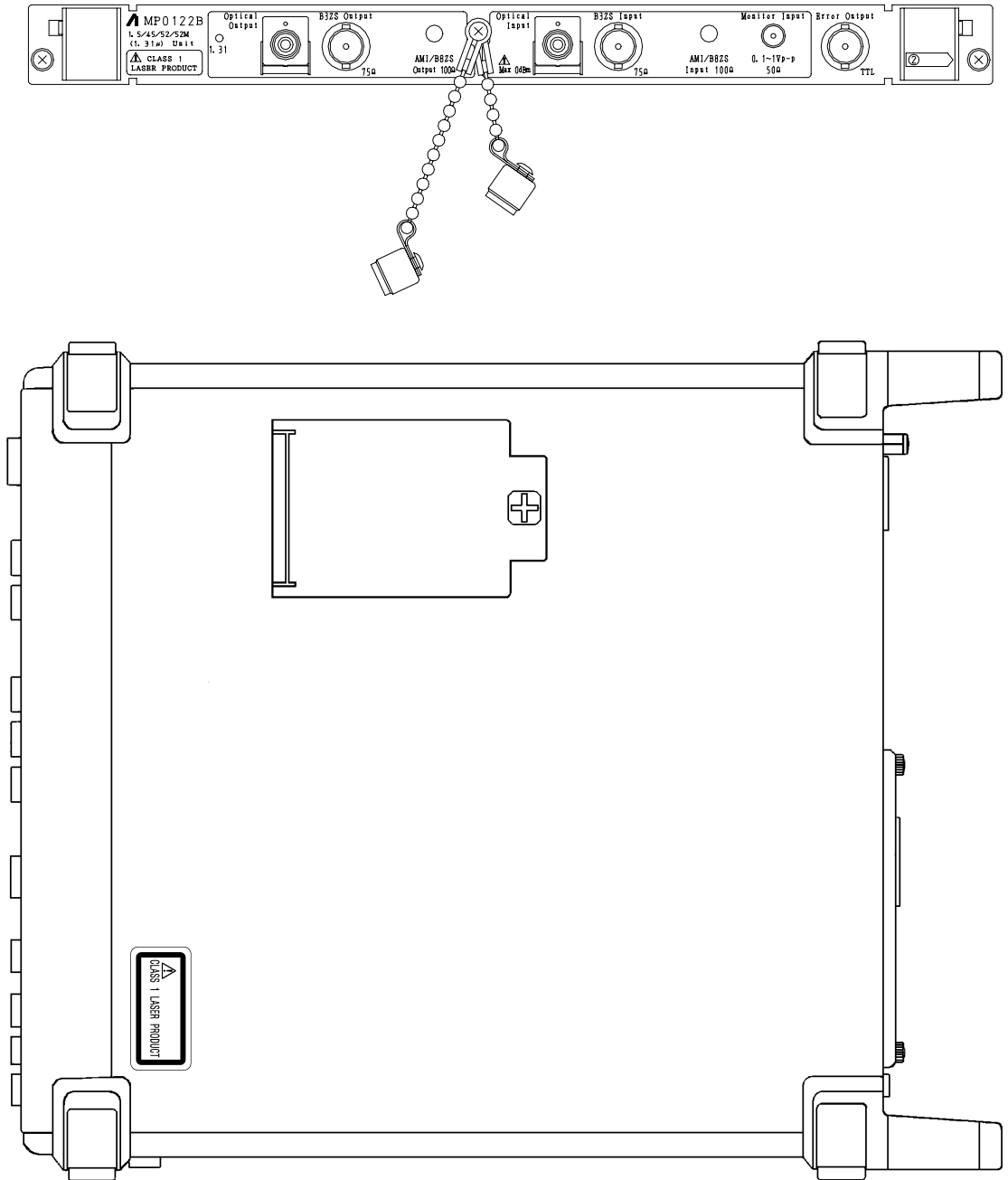


Fig. 2 MP0122B Front Panel of Unit and Top Panel of MP1570A
(Products shipping besides U.S.A.)

CAUTION

When only a Unit is purchased, an adhesive label is supplied with the Unit.

Please, attach it to the place, shown above.

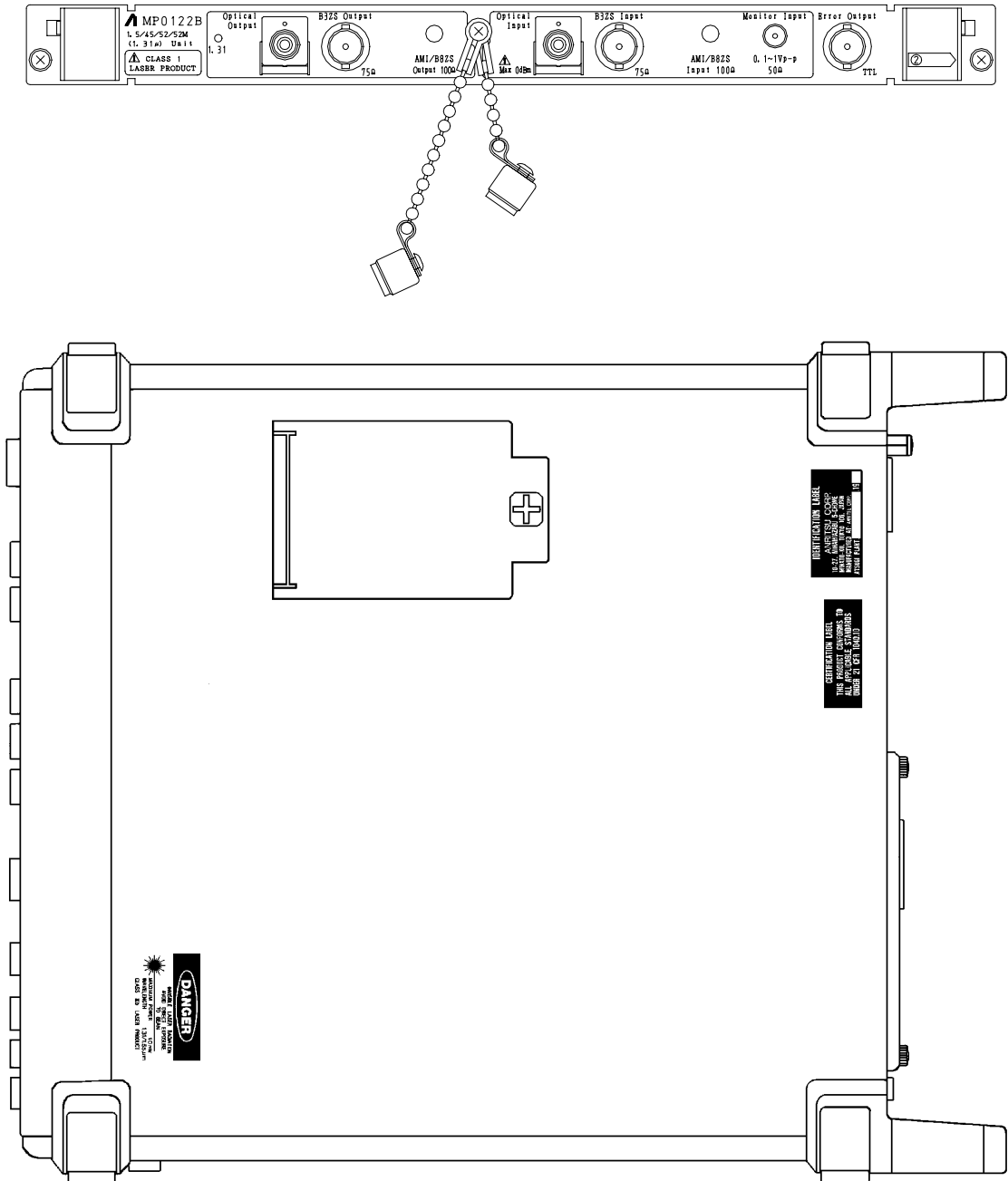


Fig. 3 MP0122B Front Panel of Unit and Top Panel of MP1570A
(Products shipping to U.S.A.)

CAUTION

When only a Unit is purchased, an adhesive label is supplied with the Unit.
Please, attach it to the place, shown above.

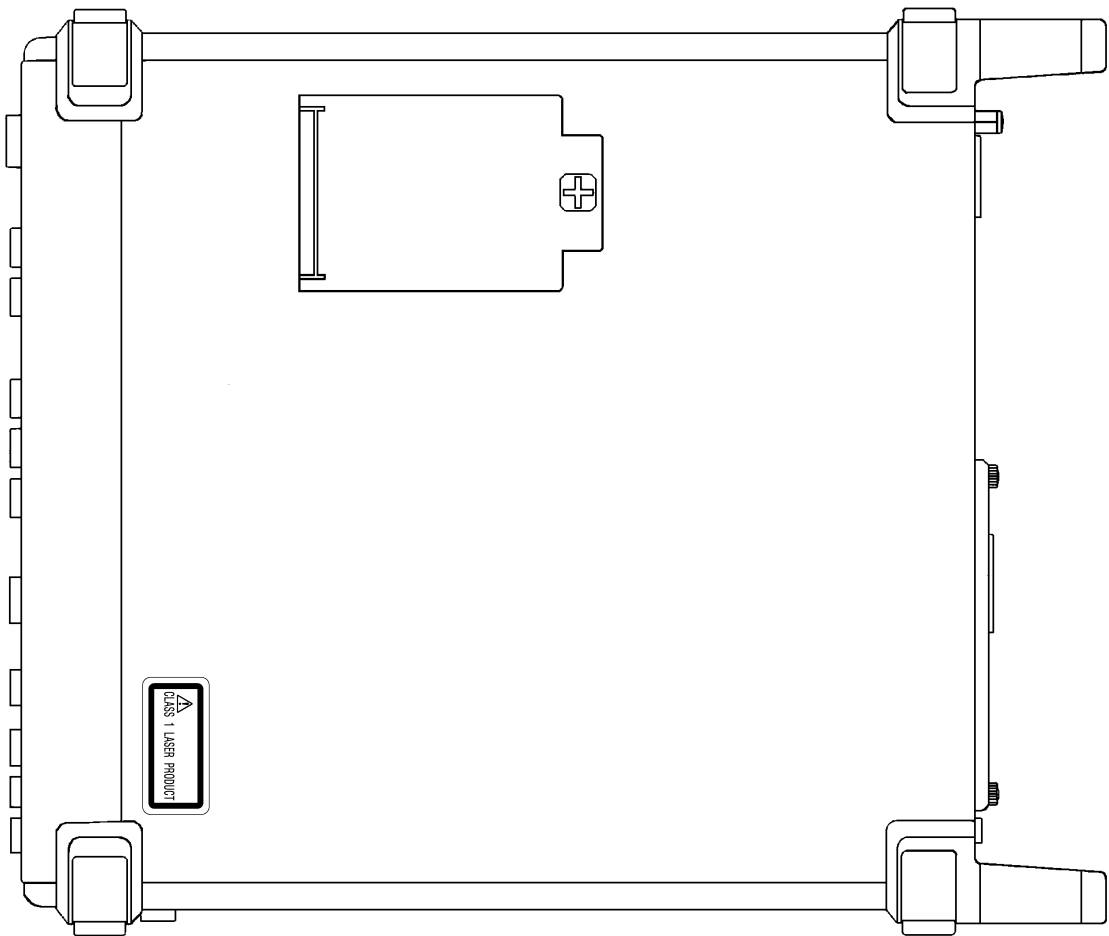
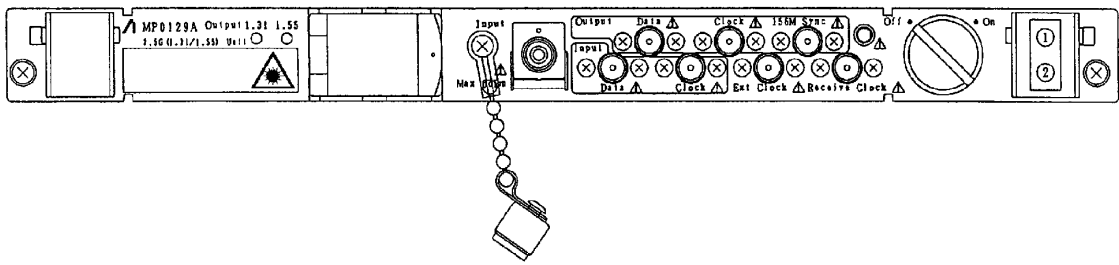


Fig. 4 MP0127A, MP0128A, MP0129A, MU150008A, MU150009A, MU150010A
 Front Panel of Unit and Top Panel of MP1570A
 (Products shipping besides U.S.A.)

CAUTION 

When only a Unit is purchased, an adhesive label is supplied with the Unit.

Please, attach it to the place, shown above.

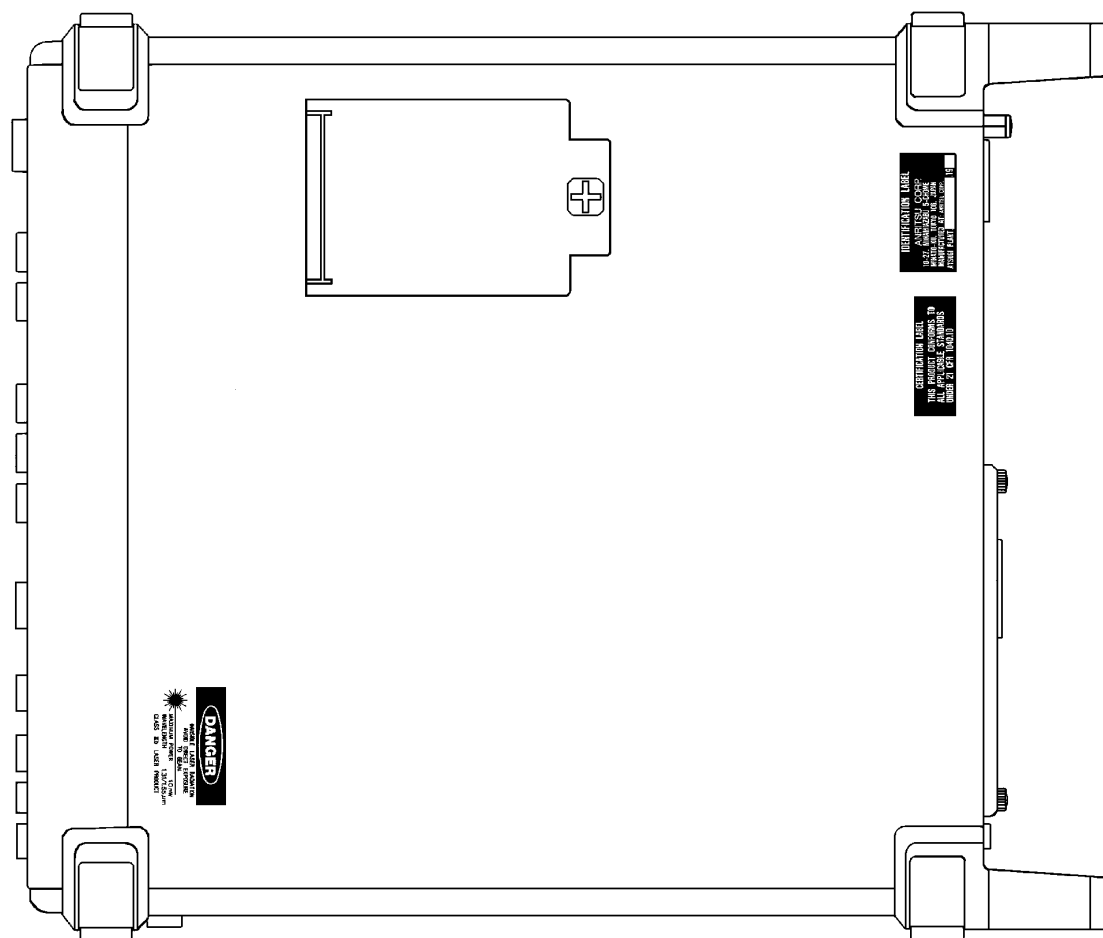
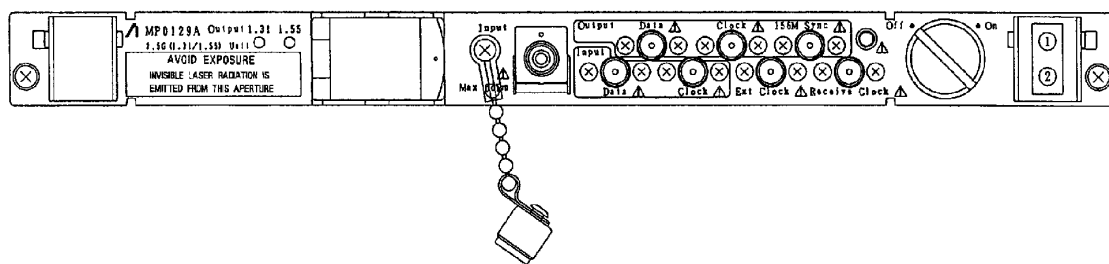


Fig. 5 MP0127A, MP0128A, MP0129A, MU150008A, MU150009A, MU150010A
 Front Panel of Unit and Top Panel of MP1570A
 (Products shipping to U.S.A.)

CAUTION

When only a Unit is purchased, an adhesive label is supplied with the Unit.

Please, attach it to the place, shown above.

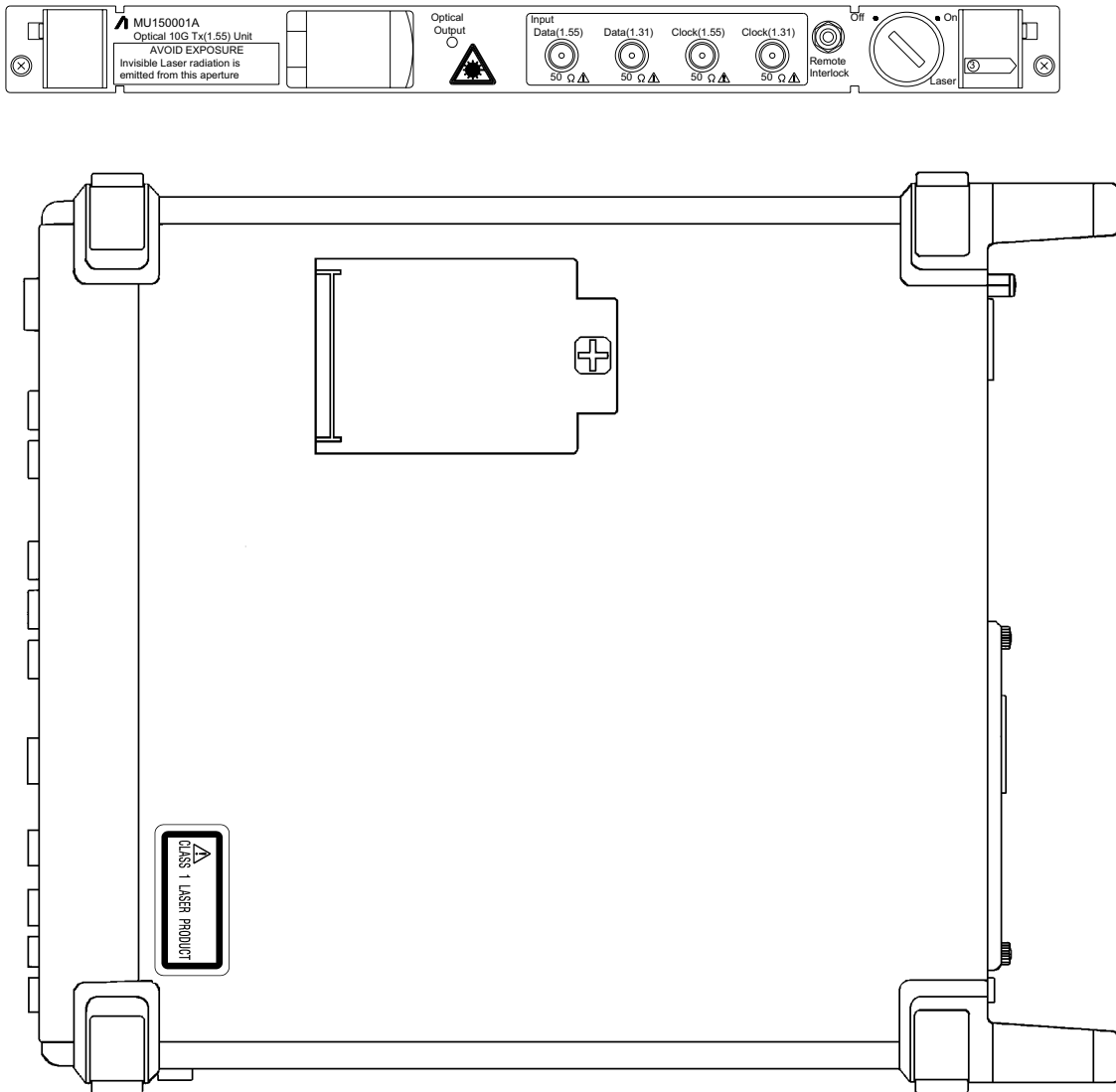


Fig. 6 MU150001A/B, MU150031A/C, MU150061A/B
 Front Panel of Unit and Top Panel of MP1570A
 (Products shipping besides U.S.A.)

CAUTION

When only a Unit is purchased, an adhesive label is supplied with the Unit.

Please, attach it to the place, shown above.

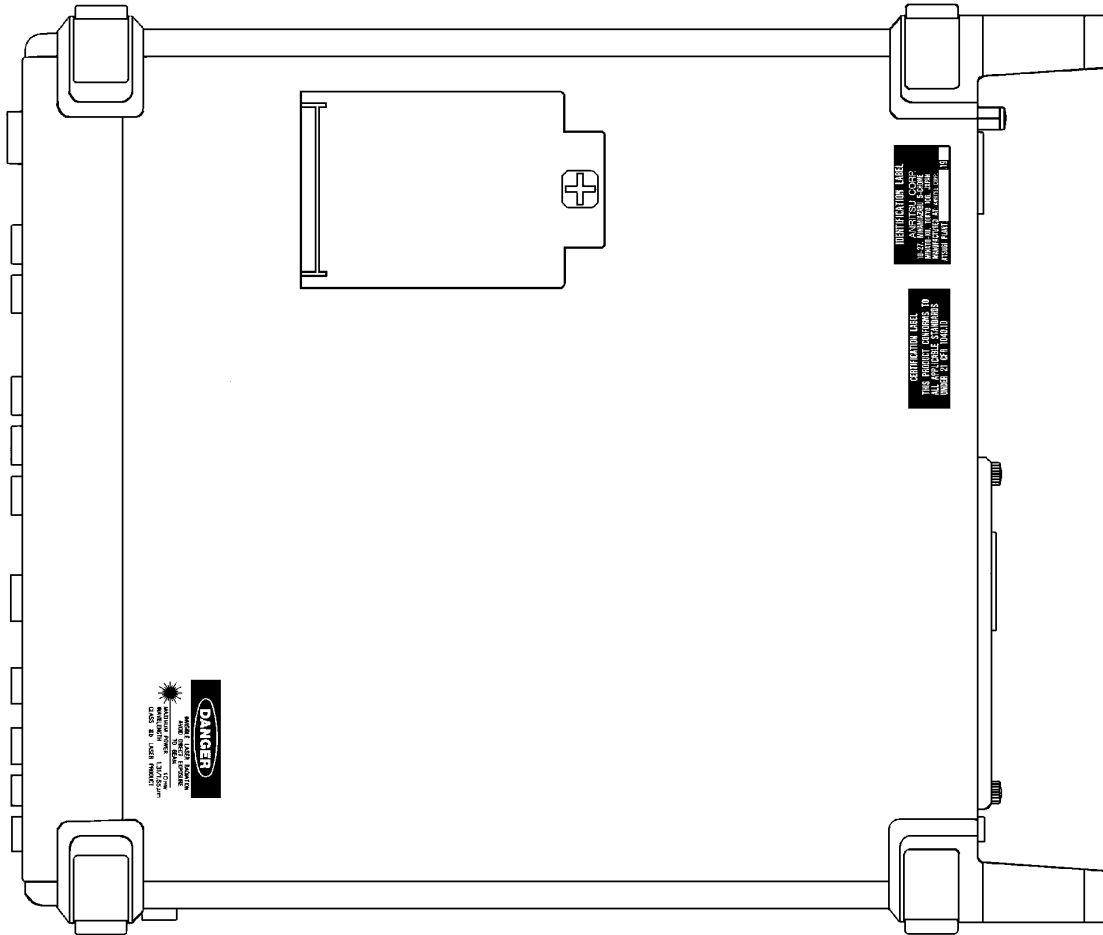
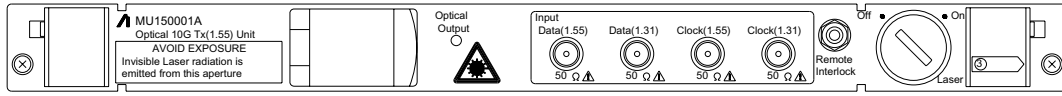


Fig. 7 MU150001A/B, MU150031A/C, MU150061A/B
 Front Panel of Unit and Top Panel of MP1570A
 (Products shipping to U.S.A.)

CAUTION 

When only a Unit is purchased, an adhesive label is supplied with the Unit.

Please, attach it to the place, shown above.

For Safety

Security Measure Functions

The MP0127A, MP0128A, MP0129A, MU150001A/B, MU150008A, MU150009A, MU150010A, MU150031A/C, MU150061A/B are provided with the following security measure functions to prevent the possibility of infliction bodily injury on operators.

- Laser cut-off

When the cable is disconnected from the optical output section, the protective cover closes and the laser emission stops.

- Laser output key lock

The laser output is mainly controlled by the key switch of the laser On/Off. When the switch is set to the OFF position, the key can be removed. In this state, the laser is locked off.

- Remote control using the remote interlock connectors

To ensure safe control of the laser output from a remote location, the laser output can be controlled using the remote interlock connectors of the Laser Output Remote Interlock section.

When both the ends of these two connectors (white and black) are connected electrically, the laser can be emitted. When both the ends are disconnected, it is not possible to emit the laser. For the voltage of the open end, the potential is +5 V at the white connector for the black connector. The laser output can be controlled by any equipment with a 0/+5 V interface.

- Laser emission indicators

These indicators on the optical output light while laser is being emitted.

- Laser output warning

When the laser is set to ON, the laser emission indicator lights as a warning or 3 to 4 seconds before laser is actually emitted. The laser is not emitted during this period.

Handling

The following safety precautions should be observed when handling the MP0127A, MP0128A, MP0129A, MU150001A/B, MU150008A, MU150009A, MU150010A, MU150031A/C, MU150061A/B.

- Before installing/removing this unit in/from the main frame, always make sure the main frame power switch is set to OFF.
- Before connecting/disconnecting a cable to/from the optical output section of this unit, always be sure to set the Laser On/Off key switch to OFF.

For Safety

CAUTION

Replacing Memory Back-up Battery

This equipment uses a Poly-carbomonofluoride lithium battery to back-up the memory. This battery must be replaced by a service engineer when it has reached the end of its useful life; contact the Anritsu sales section or your nearest representative.

Note: The battery used in this equipment has a maximum useful life of 7 years. It should be replaced before this period has elapsed.

Make sure that the output level from the MP0111A, MP0112A, MP0113A, MP0122B, MP0127A, MP0128A, MP0129A, MU150001A, MU150001B, MU150008A, MU150009A, MU150010A, MU150031A/C or MU150061A does not exceed the maximum rated input level when connecting.

The laser output is mainly controlled by the key switch of the laser On/Off. Before turning the equipment on, be sure to set the Laser On/Off key switch to OFF.

Before making the connections, make sure that the input level does not exceed the absolute maximum rating level of the equipment.

The input device may be damaged when the input level exceeds the maximum rating of MP0127A, MP0128A, MP0129A, MU150002A, MU150008A, MU150009A and MU150017A/B in particular. Before performing a self loop-back test, always insert the attached 15-dB optical attenuator between the input and output connectors for the MP0127A, MP0128A, MP0129A, MU150008A, MU150009A and MU150010A. For the MU150002A or MU150017A/B, use the 10-dB or 5-dB attenuator, respectively. The input device will be damaged if the direct output is connected by using the optical cable only.

Floppy Disk

Don't place in a dusty area.

Clean the magnetic head periodically for normal operation.

Use a cleaning kit sold at market for cleaning.

Anritsu does not recommend any specific cleaning kit. Contact with Anritsu or our sales representative if you inquire about the cleaning kit.

If the floppy disk drive malfunctions even after the cleaning, it is considered to be a fault. Ask for repair to Anritsu or our sales representative.

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 Communications Research Laboratory, 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

If this equipment develops a fault, contact Anritsu Service and Sales offices at the address at the end of paper-edition manual or the separate file of CD-edition manual.

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.

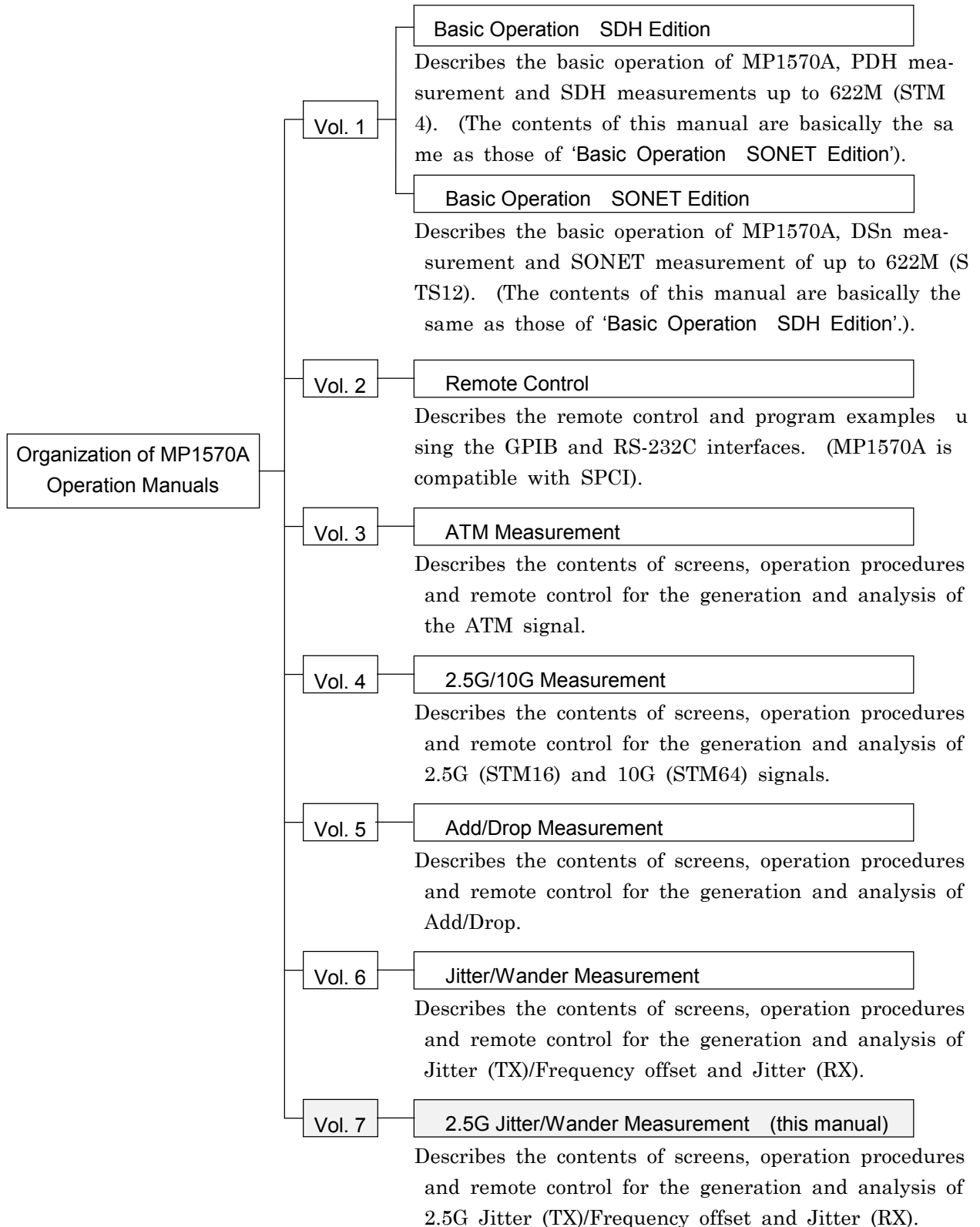
When you dispose of export-controlled items, the products/manuals are needed to be broken/shredded so as not to be unlawfully used for military purpose.

Disposing of Product

The MP1570A employs a Lithium Battery. Also, the MP0111A, MP0112A, MP0113A, MP0122B, MP0127A, MP0128A, MP0129A, MU150001A/B, MU150002A, MU150008A, MU150009A, MU150010A, MU150017A/B, MU150031A/C, MU150061A/B use PD/LD modules including arsenic. The MP0130A use IC including arsenic. At the end of its life, the equipment should be recycled or disposed properly according to the local disposal regulations.

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.7 2.5G Jitter/Wander Measurement) mainly describes 2.5G Jitter and Wander Measurement that can be performed by installing MP0130A 2.5G Jitter unit..

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

Section 1	General	1-1
1.1	Product Outline	1-3
1.2	Panel Description of MP0130A 2.5G Jitter unit	1-4
1.3	Installing 2.5G Jitter Unit	1-6
Section 2	Screen	2-1
2.1	Screen Composition	2-3
2.2	Setup Main Screen	2-5
2.3	Test Menu Main Screen	2-25
2.4	Result Main Screen	2-40
2.5	Analyze Main Screen	2-54
Section 3	Operation	3-1
3.1	Jitter Tolerance Measurement	3-3
3.2	Jitter Sweep Measurement	3-8
3.3	Jitter Transfer Measurement	3-13
3.4	Pattern Jitter Measurement and Pointer Sequence Generation	3-18
3.5	Wander Measurement (Manual)	3-23
3.6	Wander Measurement (TIE: Time Interval Error)	3-27
3.7	Frequency Offset vs Jitter Measurement	3-32
3.8	Frequency Measurement	3-36
3.9	Frequency Sweep Measurement	3-41
3.10	Wander Sweep Measurement	3-46
3.11	Through Jitter Addition	3-51
Section 4	Remote Control	4-1
4.1	Common Command	4-3
4.2	MP1570A Unique Status Register	4-4
4.3	Detailed Device Message	4-7
4.4	Device Unique Command	4-12
Appendix		
Appendix A	Specifications of 2.5G Jitter Unit	A-1
Appendix B	Self Test Error Code List	B-1
Appendix C	Text File Format	C-1
Appendix D	Relation Between Screen and Commands	D-1



Section 1 General

This section describes the outlines of 2.5G Jitter measurement when the MP0130A and MP150011A 2.5G Jitter unit is installed on MP1570A.

- 1.1 Product Outline 1-3
- 1.2 Panel Description 2.5G Jitter Unit 1-4
- 1.3 Installing 2.5G Jitter unit 1-6

1.1 Product Outline

When a 2.5G Jitter unit is installed, the MP1570A SONET/SDH/PDH/ATM analyzer can evaluate jitter and wander of the 2.5G signal.

For this purpose, the MP0127A 2.5G (1.31), MP0128A 2.5G (1.55), or MP0129A 2.5G (1.31/1.55) unit must be installed.

Features

- Jitter generation and variable frequency functions

The unit generates jitter in conformance with ITU-T Recommendations G.823, G.824, G.825, and G.958. Further, it can vary transmission frequencies in a range between -70 and +70 p-pm in 0.1-ppm steps.

- Jitter measurement function

The unit measures jitter and monitors (measures) frequencies in conformance with ITU-T Recommendations G.823, G.824, G.825, and G.958.

- 2.5G Jitter measurement function

The unit measures jitter of the 2.5G signal. One of the following three units is installed according to the dispersion wavelength of the optical interface.

MP0127A	2.5G (1.31) unit
MP0128A	2.5G (1.55) unit
MP0129A	2.5G (1.31/1.55) unit

- Conformance to various types of map-ping

For measurement of jitter of the 2.5G signal, the units to be installed can be combined to select map-ping from the various types.

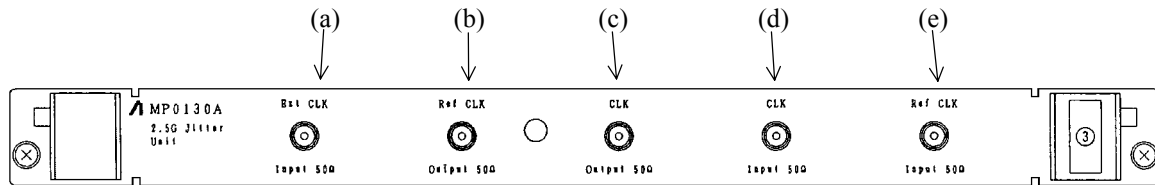
Available combinations include the MP0130A or MU150011A 2.5G Jitter unit with another 2.5G unit, and the MP0121A 2/8/34/139/156M (CMI) unit or the MP0122A 1.5/45/52M unit with any interface unit.

- Wander measurement function

The unit measures wander of the 2.5G signal. For this purpose, the MP0127A, MP0128A, or MP0129A 2.5G unit and a Jitter unit (MP0124A, MP0125A, or MP0126A) incorporating a wander measurement option must be installed.

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

1.2 Panel Description of MP0130A 2.5G Jitter Unit



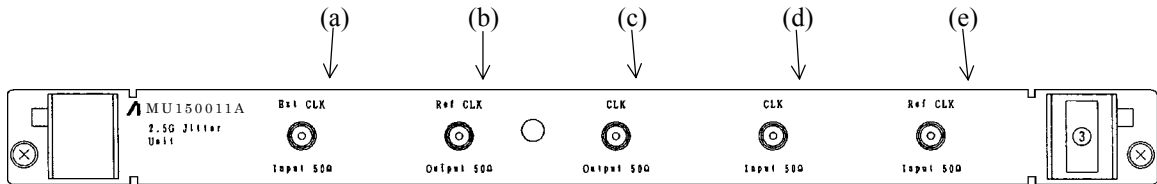
MP0130A 2.5G Jitter Unit

Description of MP0130A 2.5G Jitter Unit

Label	Description
(a) Ext CLK Input 50 Ω	Connector which inputs a transmission clock signal with jitter added from an external signal source. This input is valid when "External" is selected as the jitter modulation signal source on the Setup: Mapping subscreen. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω
(b) CLK Output 50 Ω	Connector which outputs a clock signal with jitter added. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω
(c) Ref CLK Output 50 Ω	Connector which outputs the reference clock signal generated in the MP0130A with no jitter, or the external clock signal input from the Ext Clock Input connector. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω
(d) CLK Input 50 Ω	Connector which inputs the clock signal for jitter measurement. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω
(e) Ref CLK Input 50 Ω	Connector which inputs an external reference clock signal to be used for jitter measurement by an external reference signal. This input is valid when "External" is selected as the reference signal source for jitter measurement on the Setup: Mapping screen. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω

- Serial number indicating label

The serial number is indicated on the label at the upper panel of the unit.



MU150011A 2.5G Jitter Unit

Description of MU150011A 2.5G Jitter Unit

	Label	Description
(a)	Ext CLK Input 50 Ω	Connector which inputs a transmission clock signal with jitter added from an external signal source. This input is valid when "External" is selected as the jitter modulation signal source on the Setup: Mapping subscreen. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω
(b)	CLK Output 50 Ω	Connector which outputs a clock signal with jitter added. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω
(c)	Ref CLK Output 50 Ω	Connector which outputs the reference clock signal generated in the MP0130A with no jitter, or the external clock signal input from the Ext Clock Input connector. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω
(d)	CLK Input 50 Ω	Connector which inputs the clock signal for jitter measurement. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω
(e)	Ref CLK Input 50 Ω	Connector which inputs an external reference clock signal to be used for jitter measurement by an external reference signal. This input is valid when "External" is selected as the reference signal source for jitter measurement on the Setup: Mapping screen. Frequency : 2488.32 MHz Level : 0.8 ± 0.25 Vp-p (AC) Connector : SMA 50 Ω

- Serial number indicating label

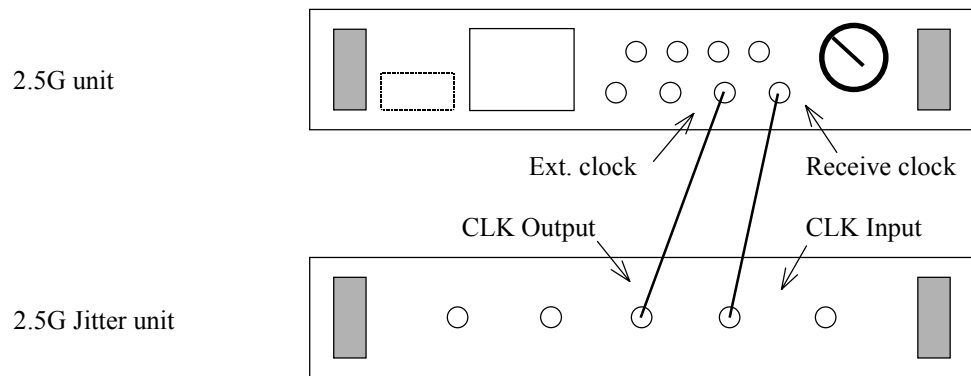
The serial number is indicated on the label at the up-per panel of the unit.

1.3 Installing 2.5G Jitter Unit

Install the MP0130A 2.5G Jitter unit or MU150011A 2.5G Jitter unit on the Slot 3 for plug-in unit on the right side of the MP1570A.

In this case, regardless of performing the jitter measurement or not, connect the Ext. Clock of 2.5G unit (*1) to the CLK Output of 2.5G Jitter unit, and the Receive clock of 2.5G unit to the CLK Input of 2.5G Jitter unit respectively.

However, when the jitter measurement of a clock signal is performed, directly use each of the CLK Output and CLK Input of the 2.5G Jitter unit without performing the above connections.



- *1 : One of the following units is :
- MP0127A 2.5G(1.31) unit
 - MP0128A 2.5G(1.55) unit
 - MP0129A 2.5G(1.31/1.55) unit
 - MU150008A 2.5G(1.31) unit
 - MU150009A 2.5G(1.55) unit
 - MU150010A 2.5G(1.31/1.55) unit

Section 2 Screen

This section describes the composition and display of the screen when 2.5G jitter unit is installed on MP1570A.

2.1	Screen Composition	2-3
2.2	Setup Main Screen	2-5
2.2.1	Mapping Subscreen	2-5
2.2.2	Print Subscreen	2-7
2.2.3	Jitter/Wander Subscreen	2-8
2.2.4	Jitter tolerance Subscreen	2-11
2.2.5	Jitter sweep Subscreen	2-14
2.2.6	Jitter transfer Subscreen	2-17
2.2.7	Freq. sweep Subscreen	2-21
2.2.8	Wander sweep Subscreen	2-23
2.3	Test Menu Main Screen	2-25
2.3.1	Manual Subscreen	2-25
2.3.2	Jitter tolerance Subscreen	2-30
2.3.3	Jitter sweep Subscreen	2-32
2.3.4	Jitter transfer Subscreen	2-34
2.3.5	Wander Subscreen	2-36
2.3.6	Freq. sweep Subscreen	2-38
2.3.7	Wander sweep Subscreen	2-39
2.4	Result Main Screen	2-40
2.4.1	Jitter/Wander Subscreen	2-40
2.4.2	Jitter tolerance Subscreen	2-44
2.4.3	Jitter sweep Subscreen	2-46
2.4.4	Jitter transfer Subscreen	2-48
2.4.5	Wander Subscreen	2-50
2.4.6	Freq. sweep Subscreen	2-52
2.4.7	Wander sweep Subscreen	2-53
2.5	Analyze Main Screen	2-54
2.5.1	Jitter tolerance Subscreen	2-54
2.5.2	Jitter sweep Subscreen	2-56
2.5.3	Jitter transfer Subscreen	2-58
2.5.4	Wander Subscreen	2-60
2.5.5	Frequency monitor Subscreen	2-62
2.5.6	Frequency Subscreen	2-64
2.5.7	Freq. sweep Subscreen	2-66
2.5.8	Wander sweep Subscreen	2-68
2.5.9	Peak jitter Subscreen	2-70

2.1 Screen Composition

Compositions of MP1570A main screens and subscreens are as listed in the following tables.

Main screen	Subscreen	Description
Setup	Mapping	Sets interface conditions with respect to the object under measurement, and items related to measurement.
	Memory	Allows storing and reading of measurement conditions, and graph data on the Analyze main screen.
	Print	Performs settings for automatic printing.
	OH preset data	Sets the transmission signal overhead initial value.
	Jitter tolerance *1	Check or modify measurement points for jitter tolerance automatic measurement or mask line.
	Jitter transfer *1	Check or modify measurement points for jitter transfer automatic measurement or mask line.
	System	Performs setting for the buzzer, clock, screen colors, GPIB, RS-232C, etc.
	Floppy disk	Performs saving and reading of measurement conditions, and graph data on the Analyze main screen.
	Selftest	Performs selftest.
	Auto setup	Performs Auto setup.
	Customer	Performs the settings for items that cannot be set on other Setup screens.
Test menu	Trouble search	Trouble search Sets the measurement conditions for trouble search.
	Manual	Sets the conditions for manual measurement.
	Delay	Sets the conditions for Delay measurement.
	Jitter tolerance *1	Sets the conditions for jitter tolerance automatic measurement.
	Jitter transfer *1	Sets the conditions for jitter transfer automatic measurement.
	Jitter sweep *1	Sets the conditions for jitter sweep automatic measurement.
	Wander *2	Sets the conditions for wander (TEI) measurement.

Main screen	Subscreen	Description
Result	Jitter/Wander *3	Indicates jitter/wander measurement results.
	Jitter tolerance *1	Indicates jitter tolerance automatic measurement results.
	Jitter transfer *1	Indicates jitter transfer automatic measurement results.
	Jitter sweep *1	Indicates jitter sweep automatic measurement results.
	Wander *2	Indicates wander measurement results.
Analyze	Jitter tolerance *1	Analyzes jitter tolerance automatic measurement results.
	Jitter transfer *1	Analyzes jitter transfer automatic measurement results.
	Jitter sweep *1	Displays a graph for analyzing the jitter sweep automatic measurement results.
	Wander *2	Displays a graph for analyzing the wander measurement results.
	Frequency *1	Displays a graph showing frequency measurement results.
	Freq. monitor *1	Displays a graph showing frequency monitoring results.
	Recall	Displays the graph data stored in memory or a floppy disk.

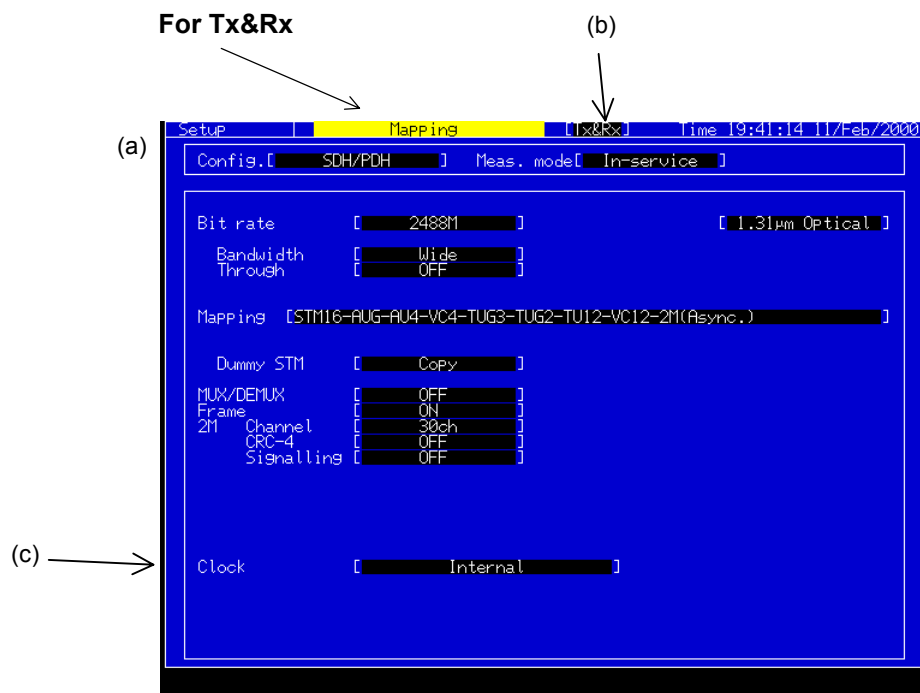
Notes:

- *1 This screen can be displayed only when a 2.5G unit (MP0127A, MP0128A, or MP0129A) is installed.
- *2 This screen can be displayed only when a 2.5G unit (MP0127A, MP0128A, or MP0129A) and a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) with the Wander measurement option mounted are installed.
- *3 This screen can be displayed only when a 2.5G unit (MP0127A, MP0128A, or MP0129A) and a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) are installed. Measuring jitter and wander at the same time requires the Wander measurement option.

2.2 Setup Main Screen

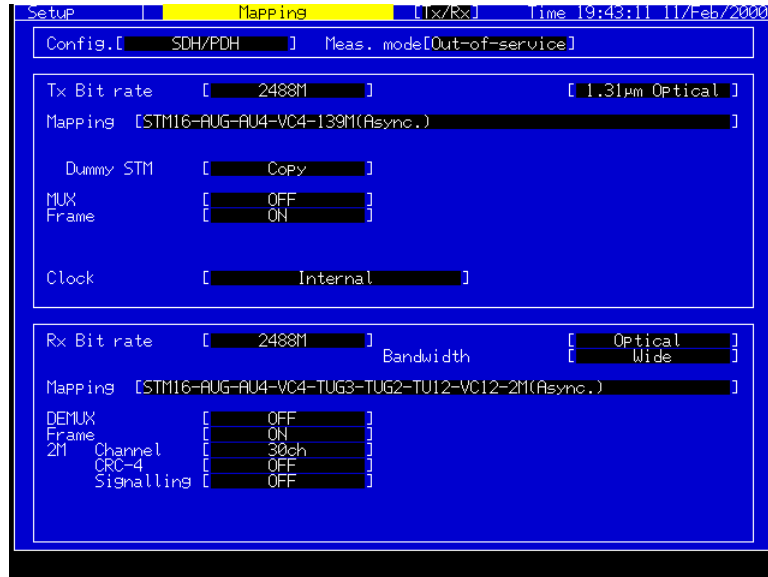
2.2.1 Mapping Subscreen

Use this screen for determining initial settings of measurements. When parameters of this screen are changed during a measurement, the measurement is restarted. Specify Tx&Rx for simultaneous settings of send and receive or Tx/Rx for independent settings of send and receive.



	Display	Description
(a)	[Subscreen selection]	Selects a subscreen of Setup main screen. This is also used for selecting desired subscreens of other main screens.
(b)		Select the setting method. Tx&Rx Simultaneous setting for send and receive Tx/Rx Independent settings for send and receive
(c)	Clock	Sets the reference clock of the send signal.

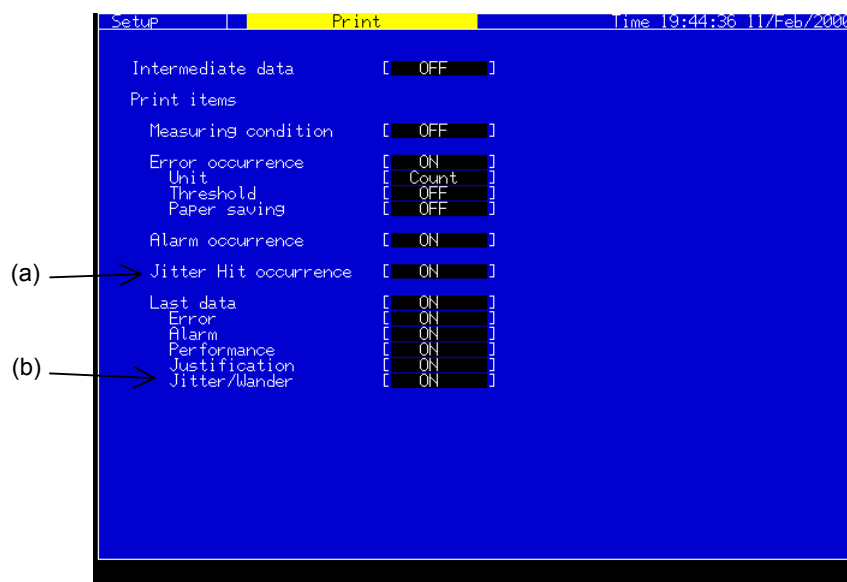
For Condition = Tx/Rx



Use the upper half of the screen for settings relating to send and the lower half, for those relating to receive. Contents of items indicated are identical to those of Tx&Rx.

2.2.2 Print Subscreen

Use this screen for settings relating to the automatic printing.

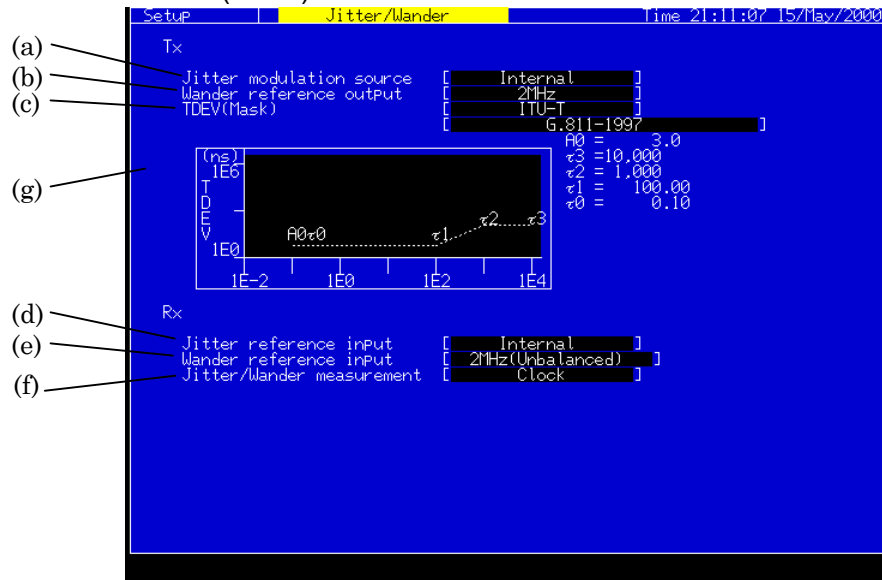


	Display	Description
(a)	Jitter Hit occurrence	Jitter hit data can be printed. Set to ON when data is to be printed.
(b)	Last data Jitter/Wander	Set to ON when Jitter/Wander measurement results are to be printed upon completion of measurement.

2.2.3 Jitter/Wander Subscreen

Use this screen for determining basic settings relating to the jitter and wander measurements.

When TDEV (Mask) is other than "User"



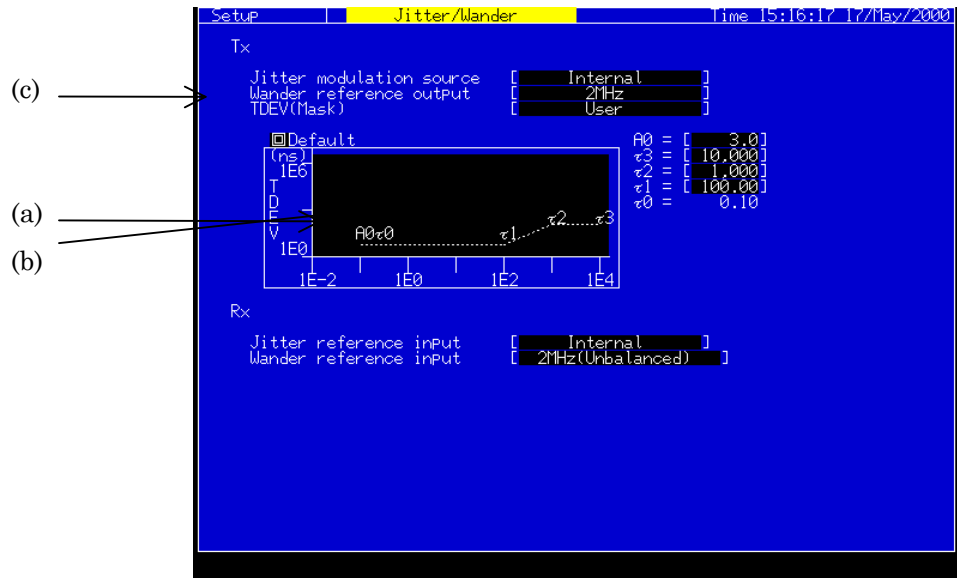
	Display	Description
(a)	Jitter modulation source	Selects a jitter modulation signal source: InternalSelects internal signal source. ExternalSelects external signal source. - If "External" is selected, signals are input from Ext Mod Input connector on the unit panel. - This is displayed when the jitter unit is installed.
(b)	Wander reference output	Selects an output signal for wander measurements. In this case, signals are output to Wander Ref CLK Output connector on the jitter unit panel. - This is displayed when the jitter unit is installed.
(c)	TDEV (Mask)*	Select a mask line for TDEV generation. - This is displayed when the jitter unit and Wander Option 02 are installed.
(d)	Jitter reference input	Selects a reference signal source for jitter measurements. InternalSelects internal signal source. ExternalSelects external signal source. - If "External" is selected, signals are input from Ref Clock Input connector on the unit panel. - This is displayed when the jitter unit is installed.

(e)	Wander reference input	Selects an input signal for wander measurements. In this case, signals are input to Wander Ref Input connector on the jitter unit panel. - This is displayed when the jitter unit and Wander Option 02 are installed.
(f)	Jitter/Wonder measurement*	Selects the type of measurement signal for the jitter measurement and wander measurement. - This is displayed when the jitter unit is installed.
(g)	Peak jitter graph*	Select whether to display the peak jitter measurement result on the Analyze screen. - This is displayed when the jitter unit is installed.

Note:

* This parameter can be displayed when the MU150011A Jitter unit is installed.

When TDEV (Mask) is “User”



	Display	Description
(a)	A0 *	Sets the amplitude at the generation start frequency ($\tau 0$). Set the amplitude in the range of value display on the screen. - Valid when TDEV (Mask) “User”. Refer to Appendix E for recommended standards and values this equipment can generate.
(b)	$\tau 1, \tau 2, \tau 3, \tau 4$ *	Sets the amplitude at each point. Set the amplitude in the range of values display on the screen. - Valid when TDEV (Mask) “User”. Refer to Appendix E for recommended standards and values this equipment can generate.
(c)	TDEV (Mask) Default *	Initializes the values of A0, and $\tau 1$ to $\tau 4$. - Valid when TDEV (Mask) “User”. Refer to Appendix E for recommended standards and values this equipment can generate.

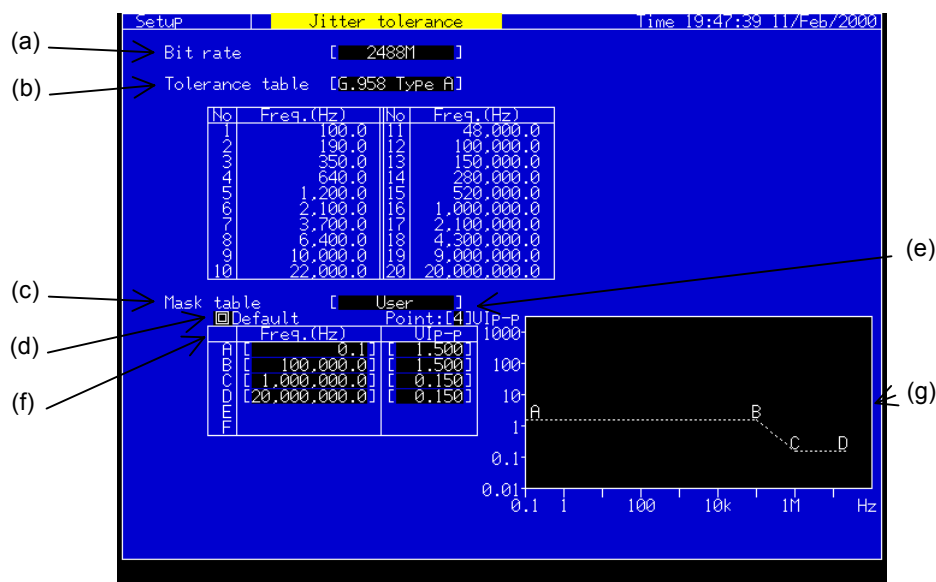
Notes :

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

2.2.4 Jitter tolerance Subscreen

Use this screen for settings relating to the jitter tolerance automatic measurement.

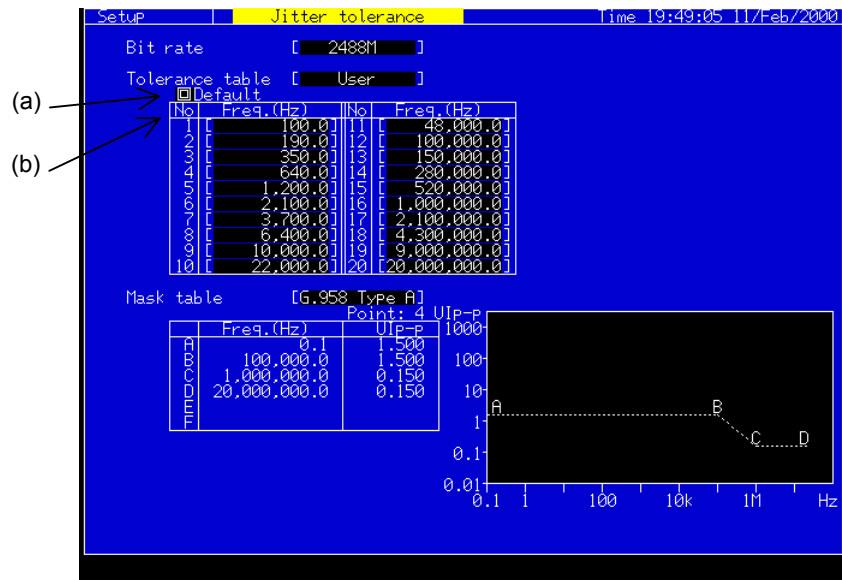
Tolerance Table : Other than User



	Display	Description
(a)	Bit rate	Changes set condition table for measurements according to bit rate.
(b)	Tolerance table	Selects a measurement point type. It can be selected from G.958 TypeA, G.958 TypeB, G.823, G.825 or User. The jitter modulation frequency at each measuring point is shown in the table below.
(c)	Mask table	Selects a mask line type It can be selected from G.958 Type A, G.958 Type B, G.825 or User.
(d)	Mask table Default	** Initializes the mask line. This is enabled when Mask table is set to User.
(e)	Mask table Point	** Changes the number of points of mask line. This is enabled when Mask table is set to User.
(f)	Mask table Freq. UI _{P-P}	** Sets the frequency and jitter amplitude at each point of mask line. Use cursor keys to move the cursor to the desired position, then press <input type="button" value="Set"/> to open a numeric input window. Enter the desired value, then press <input type="button" value="Set"/> again to set the value and close the numeric input window. To cancel the input value, press <input type="button" value="Cancel"/> . - This is enabled when Mask table is set to User.

	Display	Description
(g)	(Graph)	<p>Displays the mask line in a graph.</p> <p>Characters of A to F indicate points in the mask table. The mask line in the graph is updated when:</p> <ul style="list-style-type: none"> • Bit rate is changed, • Mask table is changed, • Mask table data is changed, • Mask table Default is selected, or • Mask table Point is changed.

Tolerance Table : User



	Display	Description
(a)	Tolerance table Default **	Initializes the measurement point. This is enabled when Tolerance table is set to User.
(b)	Tolerance table Freq. **	<p>Sets jitter modulation frequency at each measurement point.</p> <p>The setting range depends on the Bit rate setting.</p> <p>Use cursor keys (↑, ↓, →, and ←) to move the cursor to the desired position, then press the Set key to open the numeric input window. Enter the desired value, then press the Set key again to set the value and close the numeric input window.</p> <p>To cancel the input value, press the Cancel key.</p> <p>This is enabled when Tolerance table is set to User.</p>

Notes:

- ** When an item setting is changed during measurement, Jitter Tolerance measurement is restarted.

When the table contents on Setup screen are changed during measurement while setting Tolerance table or Mask table on Test menu screen to User, the measurement is restarted.

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) must be installed. The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

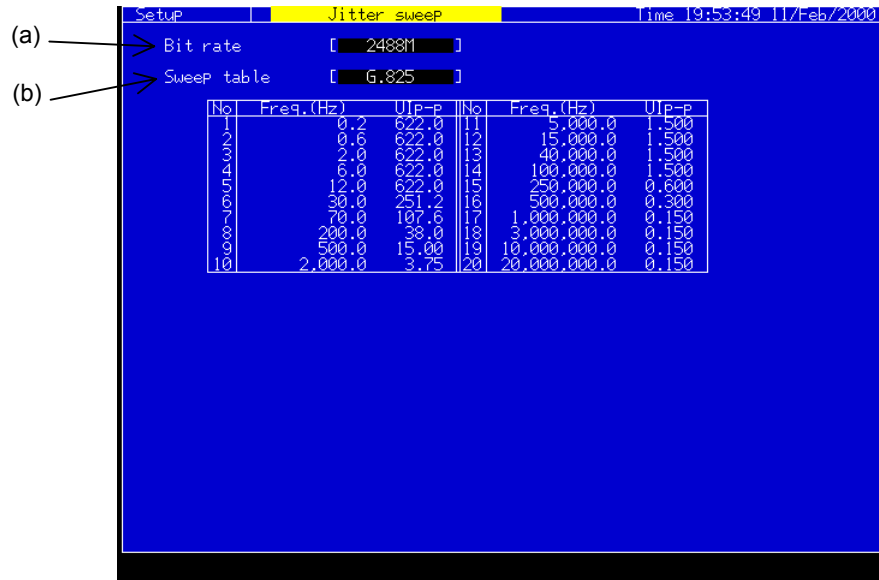
Bit rate (Tx)	MP0124A Jitter	MP0125A Jitter	MP0126A Jitter	MP0130A 2.5G Jitter ^{*1}
	MU150005A Jitter	MU150006A Jitter	MU150007A Jitter	MU150011A 2.5G Jitter ^{*1}
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

- *1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.2.5 Jitter sweep Subscreen

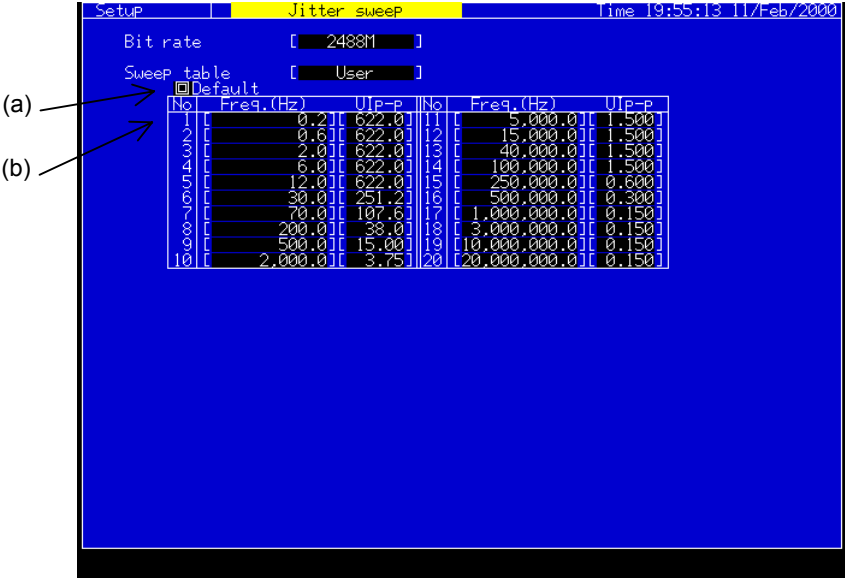
Use this screen for settings relating to the jitter sweep automatic measurement.

Sweep table : Other than User



	Display	Description
(a)	Bit rate	Changes set condition table for measurements according to bit rate.
(b)	Sweep table	Selects a measurement point type. It can be selected from G.958 TypeA, G.958 TypeB, G.823, G.825 or User. The jitter modulation frequency at each measuring point is shown in the table below.

Sweep table: User



	Display	Description
(a)	Sweep table Default **	Initializes the measurement point. This is enabled when Tolerance table is set to User.
(b)	Sweep table Freq. **	Sets jitter modulation frequency at each measurement point. The setting range depends on the Bit rate setting. Use cursor keys to move the cursor to the desired position, then press <input type="button" value="Set"/> to open the numeric input window. Enter the desired value, then press <input type="button" value="Set"/> again to set the value and close the numeric input window. To cancel the input value, press <input type="button" value="Cancel"/> the Cancel key. This is enabled when Sweep table is set to User.

Notes:

** When an item setting is changed during measurement, Jitter Tolerance measurement is restarted.

When the table contents on Setup screen are changed during measurement while setting Sweep table on Test menu screen to User, the measurement is restarted.

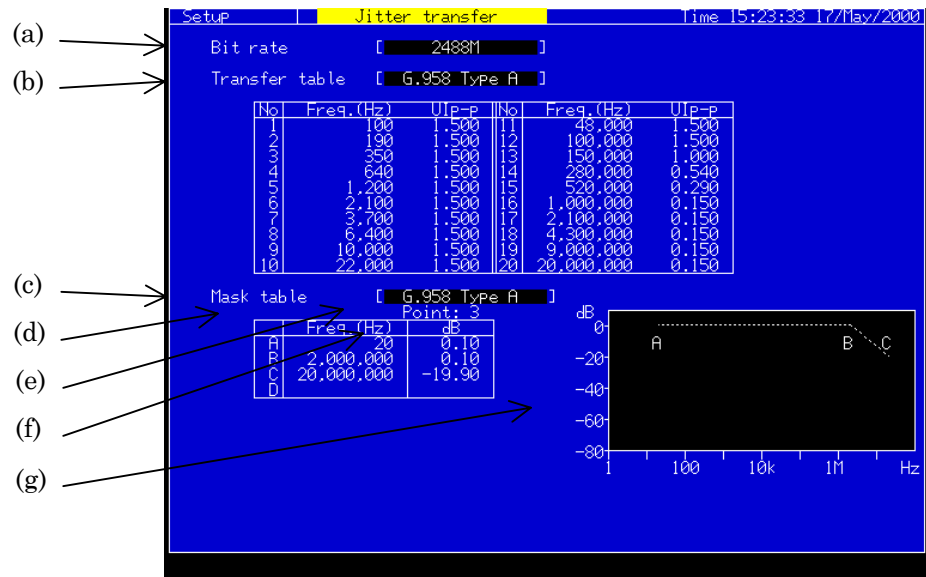
This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed. The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter	MP0125A Jitter	MP0126A Jitter	MP0130A 2.5G Jitter *1
	MU150005A Jitter	MU150006A Jitter	MU150007A Jitter	MU150011A 2.5G Jitter*1
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

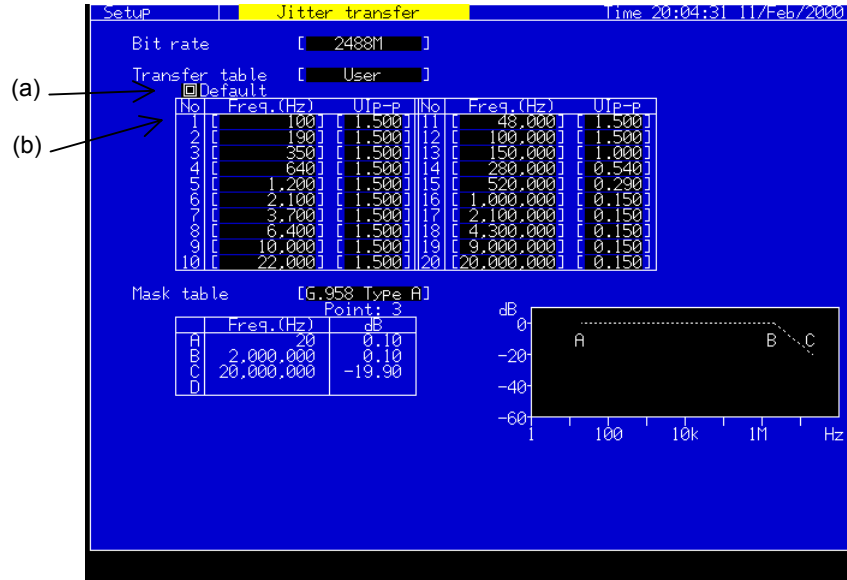
2.2.6 Jitter transfer Subscreen

Use this screen for settings relating to the jitter transfer automatic measurement.

Transfer Table : Other than User

	Display	Description
(a)	Bit rate	Changes set condition table for measurements according to bit rate.
(b)	Transfer table	Selects a measurement point type. It can be selected from G.958 Type A, G.958 Type B, G.825 or User. The jitter modulation frequency and jitter amplitude at each measuring point are listed in the table below.
(c)	Mask table	Selects a mask line type from G.958 Type A, G.958 Type B, or User.
(d)	Mask table Default	Initializes the mask line. This is effective when the Mask table is set to User.
(e)	Mask table Point	Changes the number of measurement points. This is effective when the Mask table is set to User.
(f)	Mask table Freq. dB	Sets frequency and jitter gain at each point of mask line. Use cursor keys to move the cursor to the desired position, then press <input type="button" value="Set"/> to open the numeric input window. Enter the desired value, then press <input type="button" value="Set"/> again to set the value and close the numeric input window. To cancel the input value, press <input type="button" value="Cancel"/> .
(g)	(Graph)	Displays the mask line in a graph. The characters A to D indicate the points in the mask table.

Transfer Table : User



	Display	Description
(a)	Transfer table Default	Initializes each measurement point. This is enabled when Transfer table is set to User.
(b)	Transfer table Freq. UI _{p-p}	Sets jitter frequency and transmission jitter amplitude at each measurement point. Use cursor keys to move the cursor to the desired position, then press <input type="button" value="Set"/> to open the numeric input window. Enter the desired value, then press <input type="button" value="Set"/> again to set the value and close the numeric input window. To cancel the input value, press <input type="button" value="Cancel"/> .
		This is enabled when Mask table is set to User.

Note:

When Calibration measurement is performed while setting Transfer table on Test menu screen to User, the calibration data is created.

Hereafter, when the Transfer table contents on Setup screen are changed, the following window is displayed. When "Yes" selected, the calibration data is deleted. If a measurement is performed after the erasure, perform the Calibration measurement beforehand.

Freq.(Hz)	UIpp	No	Freq.(Hz)	UIpp
[200]	[1.500]	11	[30,000]	[0.305]
[100.0Hz Min: 20.0Hz Max: 1.5MHz]				
				[0.222]
				[0.150]
				[0.150]
[1,600]	[1.500]	15	[150,000]	[0]
[3,200]	[1.500]	16	[230,000]	[0]
[6,500]	[1.500]	17	[360,000]	[0]
[9,500]	[1.026]	18	[550,000]	[0]

When the Mask table contents on Setup screen are changed during measurement while setting Mask table on Test menu screen to User, the measurement is restarted.

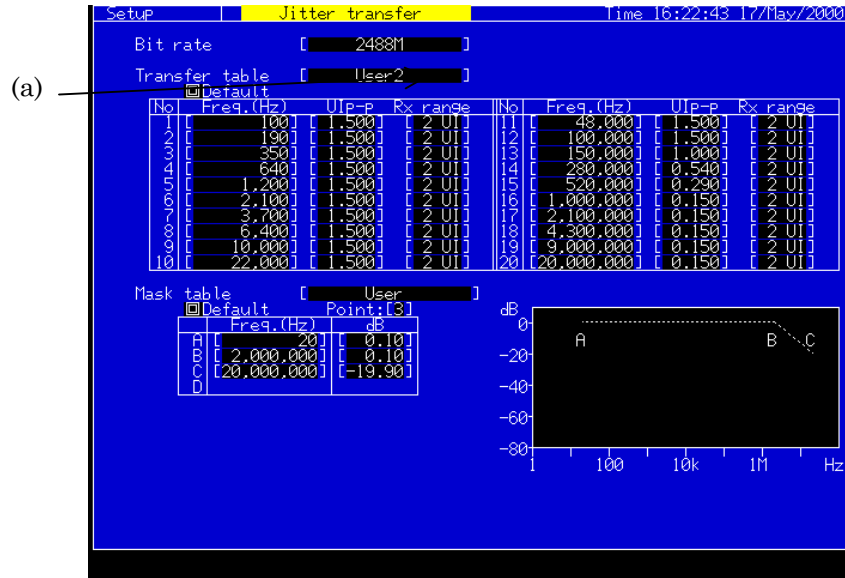
This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter	MP0125A Jitter	MP0126A Jitter	MP0130A 2.5G Jitter ^{*1}
	MU150005A Jitter	MU150006A Jitter	MU150007A Jitter	MU150011A 2.5G Jitter ^{*1}
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

When Transfer table is "User2"



	Diaplsy	Description
(a)	Transfer table Rx range	Sets measurement ranges of each measurement point. <ul style="list-style-type: none"> This is enabled when the Mask table is set to "User2".

2.2.7 Freq. sweep Subscreen

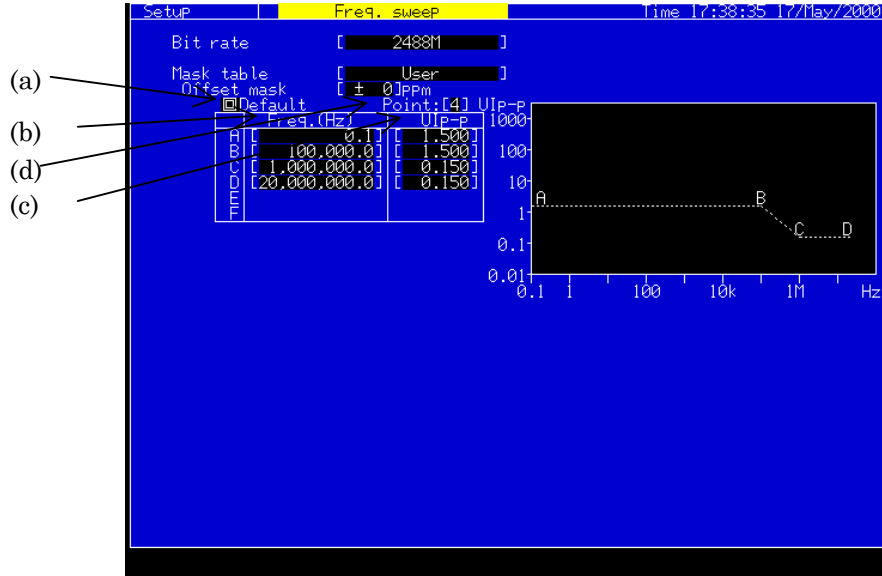
Use this screen for settings relating to the frequency sweep automatic measurement.

When Mask table is other than "User"



	Display	Description
(a)	Bit rate	Changes the set condition table for automatic measurements according to the bit rate.
(b)	Mask table	Select a measurement point.
(c)	Offset mask	Set the value of an offset line to be displayed on the Analyze screen. <ul style="list-style-type: none"> • This setting does not affect the measurement result.

When Mask table is "User"



	Display	Description
(a)	Mask table Default	Initializes a measurement point. - This is enabled when Sweep table is set to User.
(b)	Mask table Freq.	Sets a jitter frequency at each measurement point. - This is enabled when Sweep table is set to User.
(c)	Mask table UI _{p-p}	Set send jitter amplitude at each measurement point. - This is enabled when Sweep table is set to User
(d)	Mask table Point	- Change the measurement point.

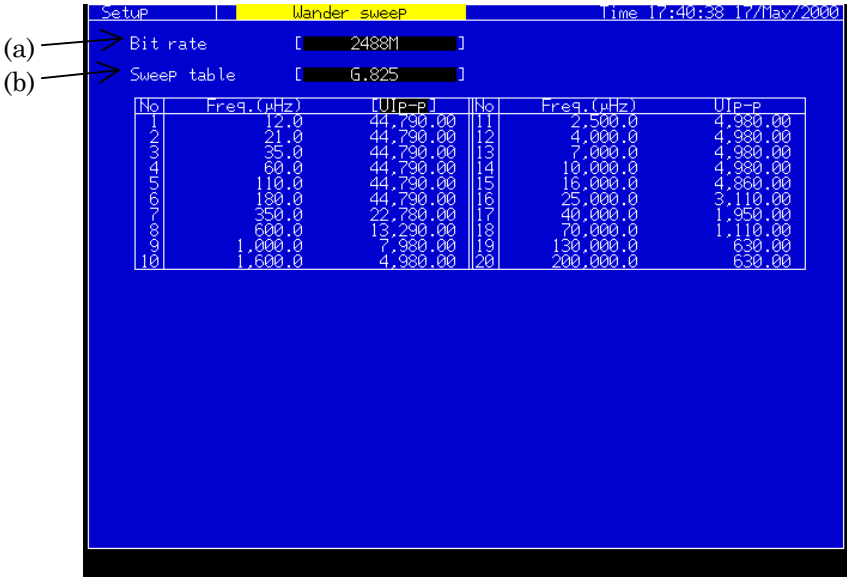
Notes:

- This screen is displayed when a jitter unit (MU150005A, MU150006A, or MU150007A) is installed.
- When an item is changed during a measurement, the frequency sweep measurement is restarted.
- When the contents of the Setup screen are changed during a measurement

2.2.8 Wander sweep Subscreen

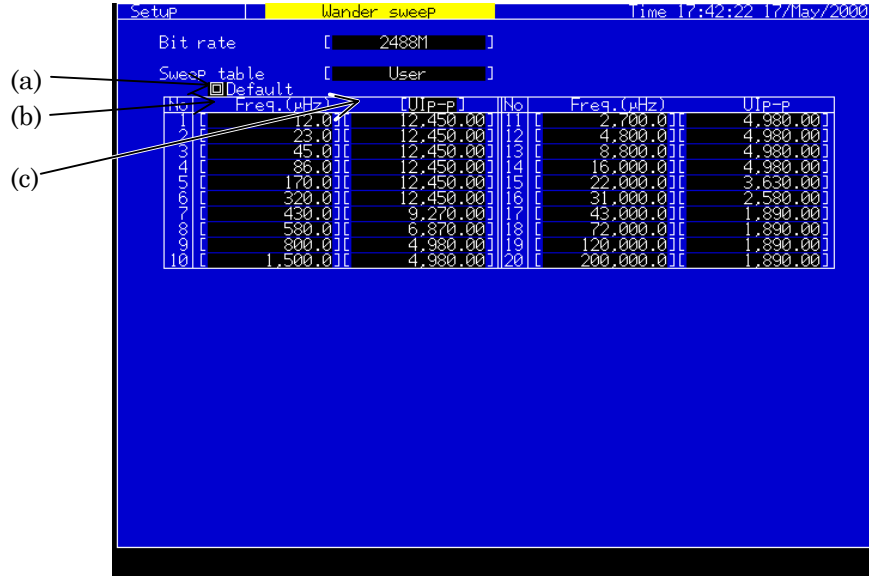
Use this screen for settings relating to the wander sweep automatic measurement.

When Sweep table is other than "User"



	Display	Description
(a)	Bit rate	Changes the set condition table for automatic measurements according to the bit rate.
(b)	Sweep table	Select a measurement point from G.812 Type 1, G.812 Type 2, G.812 Type 3, G.813, G.823, G.824, G.825, or User.

When Sweep table is "User"



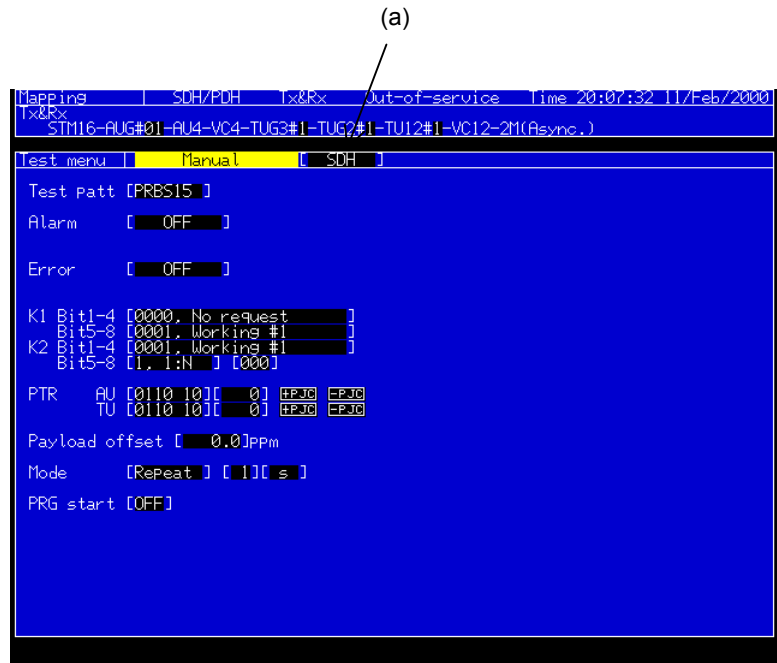
	Display	Description
(a)	Sweep table Default	Initializes a measurement point. - This is enabled when Sweep table is set to User.
(b)	Sweep table Freq.	Set a wander modulation frequency at each measurement point. - This is enabled when Sweep table is set to User.
(c)	Sweep table [UI _{p-p}] [ns]	Set a send wander amplitude at each measurement point. The unit of amplitude is UI _{p-p} or ns. - This is enabled when Sweep table is set to User.

Notes:

- This screen is displayed when a jitter unit (MU150005A, MU150006A, or MU150007A) and the wander measurement option are installed.
- When an item is changed during a measurement, the wander sweep measurement is restarted.
- When the contents of the Setup screen are changed during a measurement

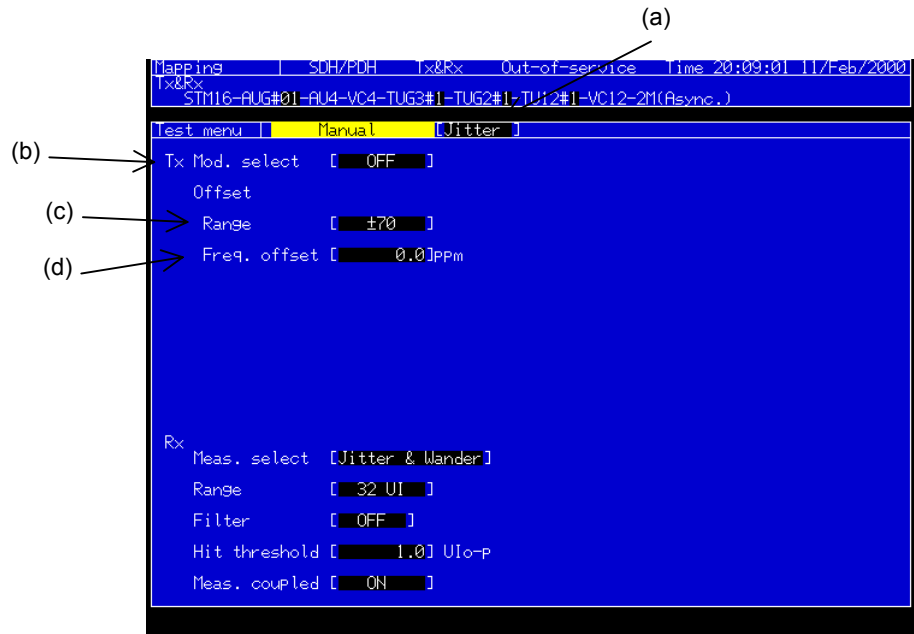
2.3 Test Menu Main Screen

2.3.1 Manual Subscreen



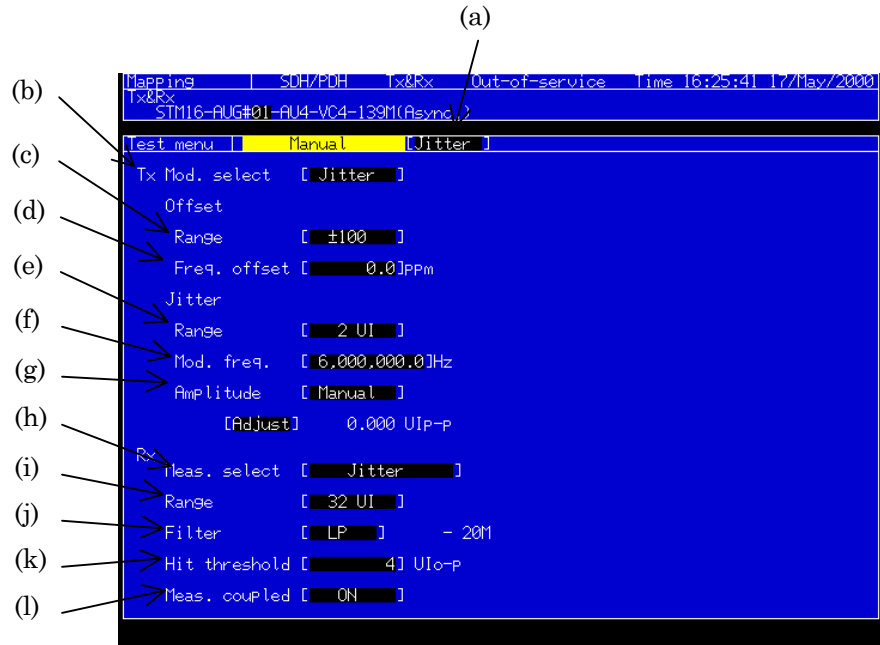
	Display	Description
(a)		Goes to 2nd page of Manual subscreen.

Tx Mod Select : OFF



	Display	Description
(a)		Goes to 1st page of Manual subscreen.
(b)	Mod.select	Tx Mod. select Selects jitter/wander occurrence. Selects jitter or wander occurrence. Wander can be selected when wander options are installed.
(c)	Range	Sets the frequency offset range.
(d)	Freq. offset	Sets the frequency offset.

Mod. select : Jitter



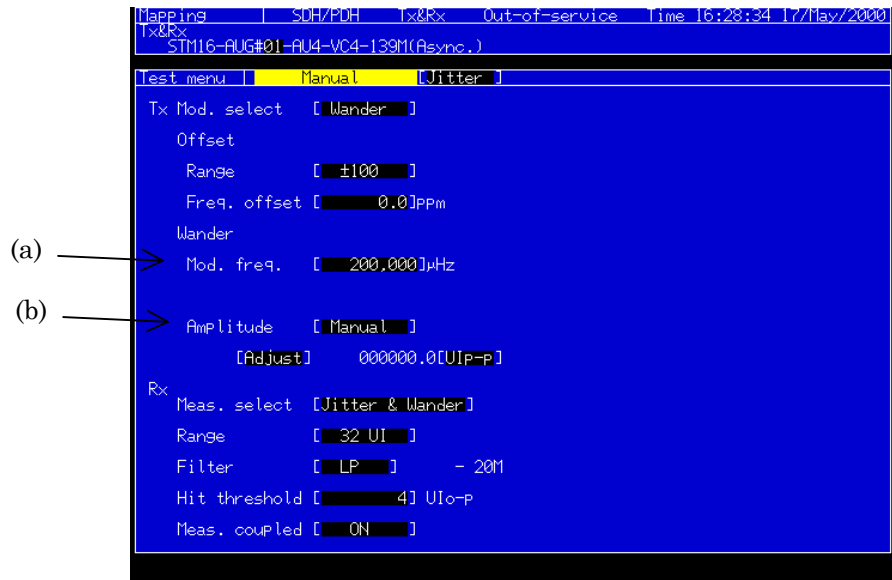
	Display	Description
(a)		Goes to 1st page of Manual subscreen.
(b)	Mod.select	Selects jitter or wander occurrence. Wander can be selected when wander options are installed.
(c)	Range	Sets the frequency offset range.
(d)	Freq.offset	Sets the frequency offset.
(e)	Tx Range	Switches the range of transmission jitter.
(f)	Mod. freq.	Sets the modulation frequency. This is enabled when Mod. source of Jitter setting is set to Internal. (See Mapping subscreen of Setup main screen.)

	Display	Description
(g)	Amplitude	<p>Instructs increase or decrease of transmission jitter amplitude.</p> <p>When the MP0130A is installed and “Amplitude” is set to “Manual” :</p> <p>Move the cursor here and press <input type="button" value="Set"/> to blink the cursor. While blinking, set the transmission jitter amplitude with <input type="button" value="▲"/> <input type="button" value="▼"/> <input type="button" value="◀"/> <input type="button" value="▶"/>.</p> <p>Course:..... Large jitter amplitude increment</p> <p>Fine: Small jitter amplitude increment</p> <p>When the MU150011A is installed and “Amplitude” is set to “Manual” :</p> <p>Move the cursor to “Adjust” displayed under (g) and press <input type="button" value="Set"/>. While blinking, set the transmission jitter amplitude with <input type="button" value="▲"/> <input type="button" value="▼"/> <input type="button" value="◀"/> <input type="button" value="▶"/>.</p> <p>When “Amplitude” is set to “Auto” :</p> <p>The transmission jitter amplitude can be set in the parentheses displayed under item (g). Move the cursor here and set the transmission jitter amplitude with <input type="button" value="▲"/> <input type="button" value="▼"/> <input type="button" value="◀"/> <input type="button" value="▶"/>.</p> <p>- This is enabled when Mod. source of Jitter setting is set to Internal. (See Mapping subscreen of Setup main screen.)</p>
(h)	Meas. select	<p>Sets a measurement type.</p> <p>Jitter: Jitter measurements are conducted.</p> <p>Jitter & Wander ...Jitter and wander measurements are conducted, simultaneously.</p> <p>This is enabled only when a Jitter unit is installed.</p> <p>Jitter & Wander can be selected only when the Wander measurement option is installed.</p>
(i)	Rx Range	Switches range for measuring receive jitter.
(j)	Filter	<p>Selects filter for measuring receive jitter.</p> <p>The cut-off frequency is displayed on the right.</p>
(k)	Hit threshold	Sets threshold of jitter hit.
(l)	Meas. coupled	<p>Selects whether measurement is synchronized with error/alarm measurement.</p> <p>OFF: Measurement is asynchronous with error/alarm measurement.</p> <p>ON: Measurement is synchronous with error/alarm measurement.</p>
(m)	Auto sync. *	<p>When the receive section of this equipment is set to “Unlock”, select whether to display measurement result.</p> <p>ONdisplays the measurement result.</p> <p>OFFdoes not display the measurement result.</p>

Note :

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

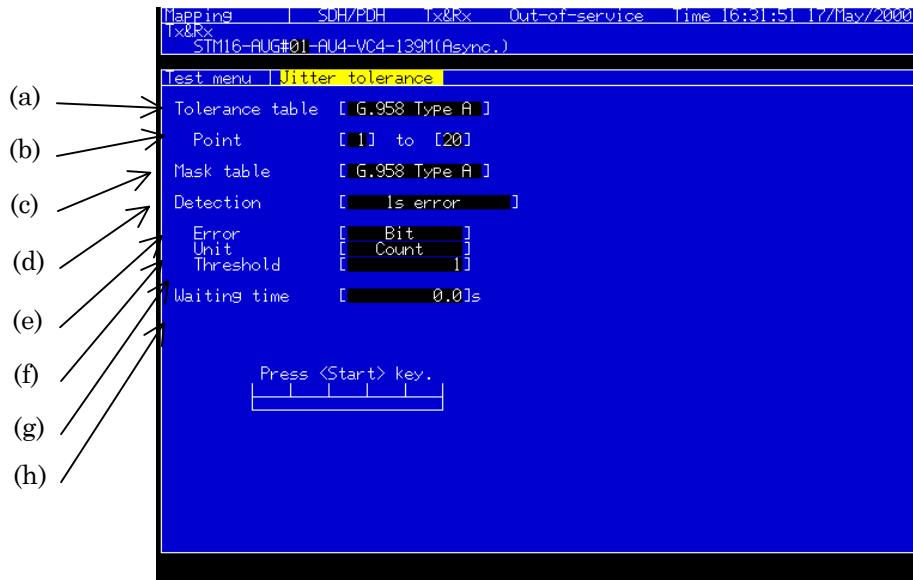
Mod. select : Wander



	Display	Description
(a)	Mod. freq.	Sets the modulation frequency. This is enabled when Mod. source of Jitter setting is set to Internal. (See Mapping subscreen of Setup main screen.)
(b)	Amplitude	Sets the transmission wander amplitude. - Move the cursor here and press Set . Set the transmission wander amplitude with ^ v < > . Press Set after setting the amplitude to return the cursor to the original operation. - This is enabled when Jitter modulation source is set to Internal. (See Setup:Jitter/Wander screen.)

2.3.2 Jitter tolerance Subscreen

Use this screen for settings relating to the jitter tolerance automatic measurement.



	Display	Description
(a)	Tolerance table **	Selects measurement points in the jitter tolerance measurement table.
(b)	Point **	Sets the start and end of measurement points. 1 to 20
(c)	Mask table **	Selects the mask line of jitter tolerance measurement.
(d)	Detection **	Sets the detection condition for jitter tolerance measurement.
(e)	Error **	Sets the detection condition for jitter tolerance measurement. (When Detection is set to 1s error.)
(f)	Unit **	Sets the threshold type for jitter tolerance measurement. (When Detection is set to 1s error.)
(g)	Threshold **	Sets the detection range for jitter tolerance measurement. (When Detection is set to 1s error.)
(h)	Waiting time *	Sets time to finish the measurement at one point and start the measurement again at the next point.

Notes :

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

Note :

** When an item setting is changed during measurement, Jitter Tolerance measurement is restarted.

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

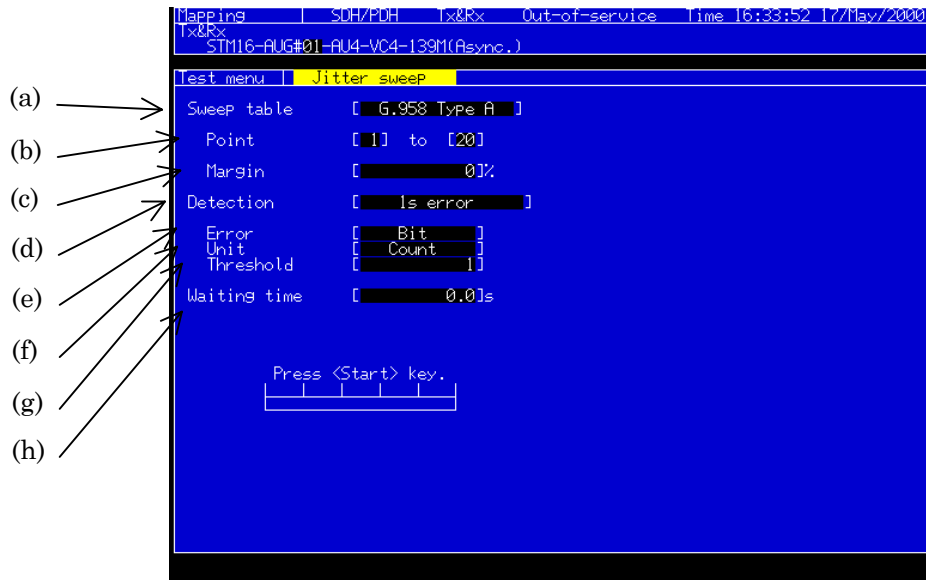
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter	MP0125A Jitter	MP0126A Jitter	MP0130A 2.5G Jitter *1
	MU150005A Jitter	MU150006A Jitter	MU150007A Jitter	MU150011A 2.5G Jitter *1
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.3.3 Jitter sweep Subscreen

Use this screen for settings relating to the jitter sweep automatic measurement.



	Display	Description
(a)	Sweep table **	Selects measurement points in the jitter sweep measurement table.
(b)	Point **	Sets the start and end of measurement points. 1 to 20
(c)	Margin *	Set the margin related to the jitter amplitude set on the Setup screen. Example - If "1.000UIp-p" is set on the Setup screen as the measurement points and "100%" is set for this parameter, "NG" will be displayed when the measurement result exceeds 3.000UIp-p and "OK" will be displayed when it doesn't exceed 3.000UIp-p.
(d)	Detection **	Sets the detection condition for jitter sweep measurement.
(e)	Error **	Sets the detection condition for jitter sweep measurement. (When Detection is set to "1s error", "Count", "Rate", "Onset of errors", or "1dB power penalty".)
(f)	Unit **	Sets the threshold type for jitter sweep measurement. (When Detection is set to "1s error".)
(g)	Threshold **	Sets the detection range for jitter sweep measurement. (When Detection is set to "1s error", "Count", or "Rate".)
(h)	Waiting time *	Sets time to finish the measurement at one point and start the measurement again at the next point.

Notes :

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

** When an item setting is changed during measurement, Jitter Sweep measurement is restarted.

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

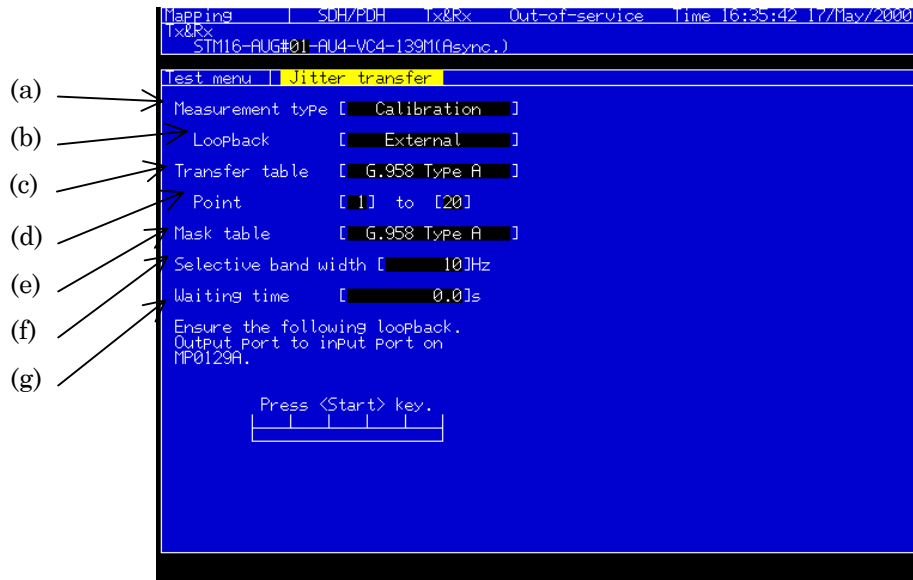
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter	MP0125A Jitter	MP0126A Jitter	MP0130A 2.5G Jitter ^{*1}
	MU150005A Jitter	MU150006A Jitter	MU150007A Jitter	MU150011A 2.5G Jitter ^{*1}
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.3.4 Jitter transfer Subscreen

Use this screen for settings relating to the jitter transfer automatic measurement.



	Display	Description
(a)	Measurement type	Selects Calibration or Measurement as the measurement type. Measurement, however, cannot be executed unless calibration is carried out beforehand.
(b)	Loop back *	When the transmission signal of this equipment is received by the receive section of this equipment, select the receive method. InternalThe signal is looped back internally. ExternalThe signal is looped back via an external cable. (When Measurement type is set to “Calibration”.)
(c)	Transfer table	Selects measurement points in the jitter transfer measurement output table.
(d)	Point	Sets the start and end of measurement points. 1 to 20
(e)	Mask table **	Selects the mask line of jitter transfer measurement judge.
(f)	Selective band width *	Sets the selective bandwidth.
(g)	Waiting time *	Sets time to finish the measurement at one point and start it again at the next point.

Notes :

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

** When an item setting is changed during measurement, Jitter transfer measurement is restarted only under Measurement Type:Measurement.

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

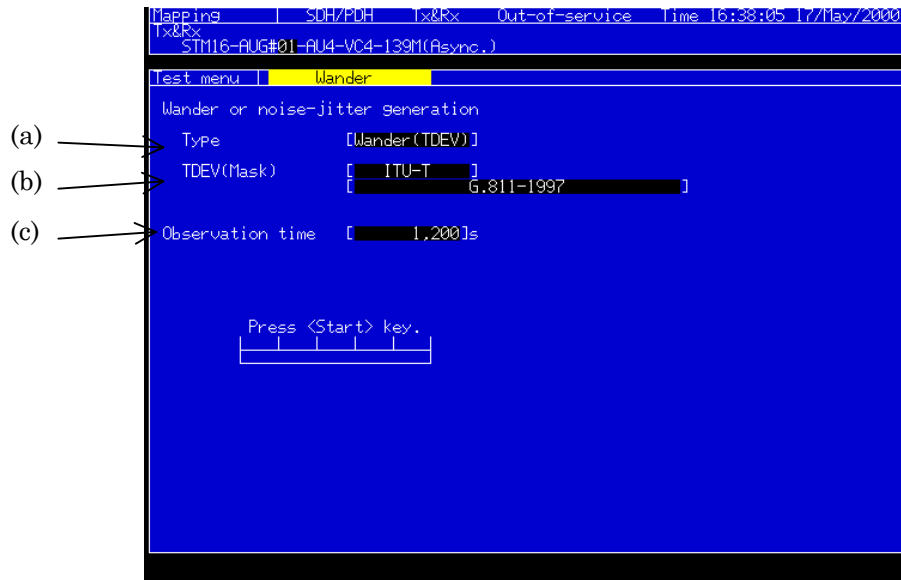
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter	MP0125A Jitter	MP0126A Jitter	MP0130A 2.5G Jitter *1
	MU150005A Jitter	MU150006A Jitter	MU150007A Jitter	MU150011A 2.5G Jitter *1
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.3.5 Wander Subscreen

Use this screen for settings related to wander measurement.



	Display	Description
(a)	Type *, **	Selects the type of a wander and a noise.
(b)	Mask *, **	Select a mask line to generate TDEV. (When “Type” is set to “Wander (TDEV)”.)
(c)	Observation time **	Sets the observation (measurement) time.

Notes:

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

** When an item setting is changed during measurement, Wander measurement is restarted.

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) and Wander measurement Option (02) is installed.

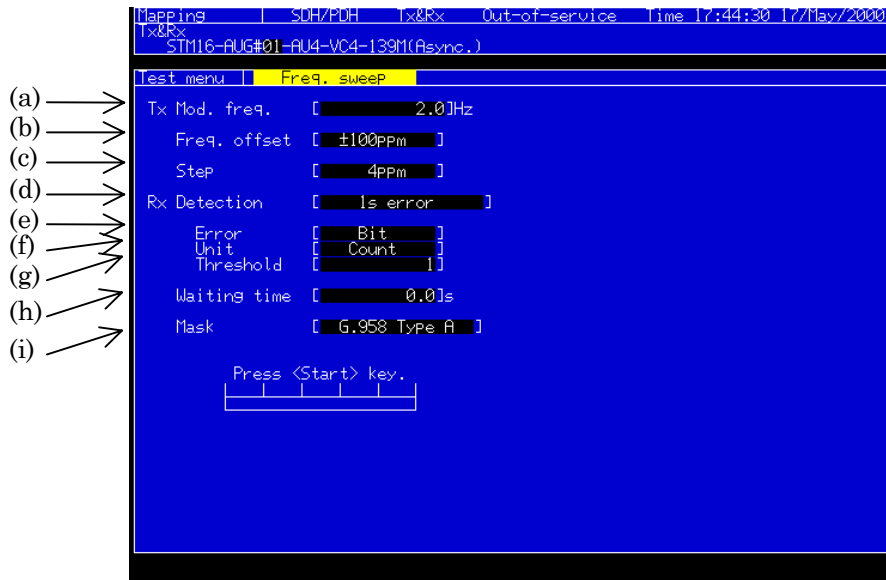
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Rx)	MP0124A Jitter	MP0125A Jitter	MP0126A Jitter	MP0130A* ¹ 2.5G Jitter
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.3.6 Freq. sweep Subscreen

Use this screen for settings relating to the frequency sweep automatic measurement.



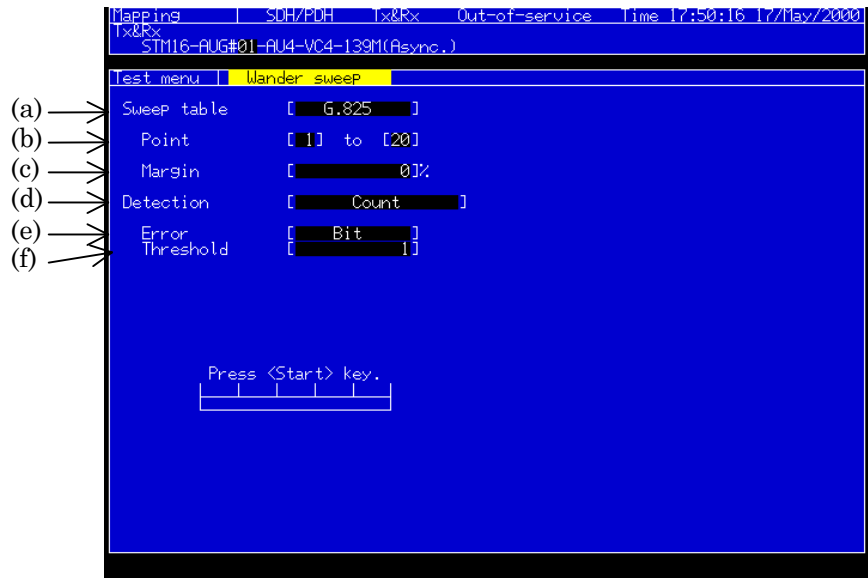
	Display	Description
(a)	Tx Mod.freq.	Sets the modulation frequency.
(b)	Freq. offset	Sets the offset value.
(c)	Step	Set the offset increment.
(d)	Rx Detection	Set the detection condition for frequency sweep measurement.
(e)	Error	Set the detection condition. (When Rx Detection is set to “1s error”, “Count”, “Rate”, “Onset of errors”, or “1dB power penalty”.)
(f)	Unit	Set the threshold type. (When Detection is set to “1s error”.)
(g)	Threshold	Set the detection range. (When Detection is set to “1s error”, “Count”, or “Rate”.)
(h)	Waiting time	Sets time to finish the measurement at one point and start it again at the next point.
(i)	Mask	Select a mask line for Selects a mask line for the jitter/frequency offset measurement.

Notes:

- This screen is displayed when a jitter unit (MU150005A, MU150006A, or MU150007A) is installed.
- When an item is changed during a measurement, the frequency sweep measurement is restarted.

2.3.7 Wander sweep Subscreen

Use this screen for settings relating to the wander sweep automatic measurement.



	Display	Description
(a)	Sweep table	Select a measurement point for the wander sweep measurement output table.
(b)	Point	Set the measurement start and end points. (1 to 20)
(c)	Margin	Set the margin related to the jitter amplitude set on the Setup screen. Example - If "1.000UIp-p" is set on the Setup screen as the measurement points and "100%" is set for this parameter, "NG" will be displayed when the measurement result exceeds 3.000UIp-p and "OK" will be displayed when it doesn't exceed 3.000UIp-p.
(d)	Detection	Set the detection condition for wander sweep measurement.
(e)	Error	Set the detection condition
(f)	Threshold	Set the detection range.

Notes:

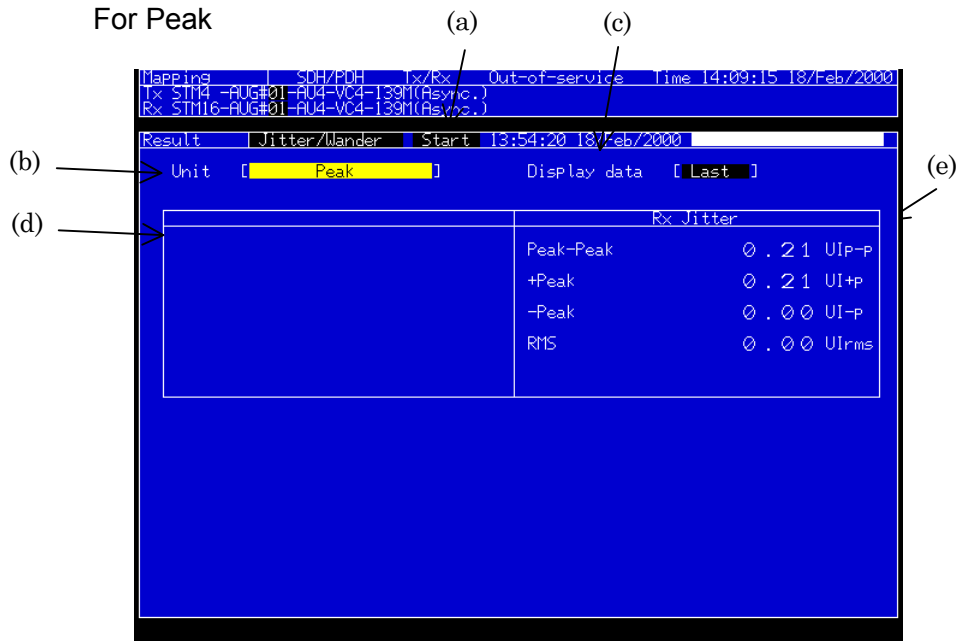
- This screen is displayed when a jitter unit (MU150005A, MU150006A, or MU150007A) and the wander measurement option are installed.
- When an item is changed during a measurement, the wander sweep measurement is restarted.

2.4 Result Main Screen

2.4.1 Jitter/Wander Subscreen

This screen indicates jitter/wander measurement results.

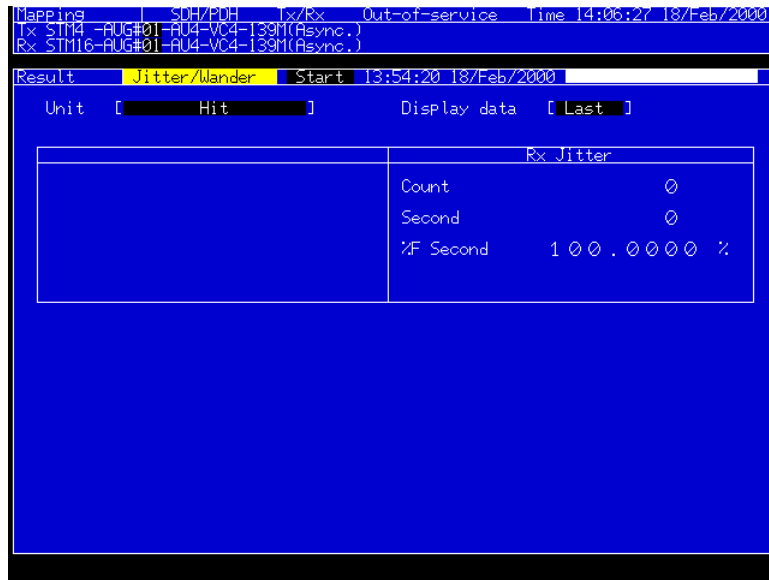
For Peak



	Display	Description
(a)		<p>Indicates the measurement starting time or measurement time which has elapsed. Move the cursor to this field, and press the Set key to switch the indication.</p> <p>Start:Indicates the measurement starting time.</p> <p>Elapsed:Indicates the elapsed measurement time.</p> <p>However, this is impossible when Meas. time is 0.5 s.</p> <p>The status of execution related to measurement time is shown in a bar graph.</p>
(b)	Unit	<p>Selects display type for jitter/wander measurement results.</p> <p>Peak:Indicates jitter peak-to-peak measurement results.</p> <p>Hit:.....Indicates jitter hit measurement results.</p> <p>Peak/RMS:.....Indicates jitter peak-to-peak and jitter RMS measurement results.</p> <p>- This item can be selected when RMS Option 01 is installed.</p> <p>Wander:Indicates wander measurement results. DC-10 Hz, DC-0.01 Hz* and 0.01 Hz-10 Hz* can be selected.</p> <p>When Wander option (02) is not supported, this item cannot be selected.</p> <p>* : The displays of the measurement results of DC-0.01 Hz and 0.01 Hz-10 Hz start after 120 seconds from the measurement start.</p>

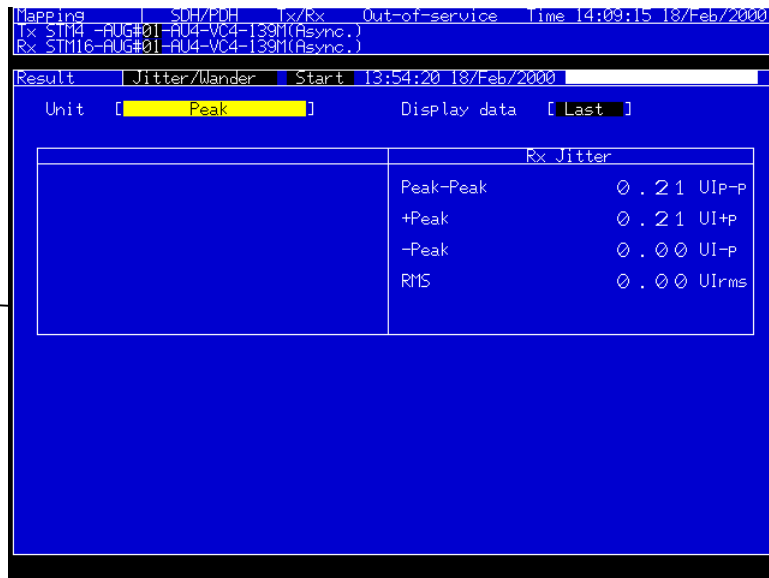
	Display	Description
(c)	Display data	Selects display type for measurement results. Current: Indicates results from start of to current measurement. Last: Indicates results at the end of measurement. This is effective for Repeat measurements at short time. When Wander is selected as Unit (b), Last cannot be selected.
(d)	Tx Jitter	Indicates monitored value of transmission jitter amplitude.
(e)	Rx Jitter (Rx Wander)	Indicates measured values of receive jitter or receive wander. When Wander measurement option (02) is installed, Wander is displayed.

For Hit



For RMS

(a) —



	Display	Description
(a)	Correction	Sets the RMS Correction. This item is displayed only when Rx Range is set to 2UI on Test menu screen (Manual (Jitter)).

For Wander

Mapping		Tx/Rx	Out-of-service	Time
Tx/Rx				04:15:51 01/Jan/95
STM16-AUG#01-AU4-VC4-TUG3#1-TUG2#1-TU12#1-VC12-21(Async.)				
Result		Jitter/Wander	Start	
			04:15:37 01/Jan/95	
Unit [Wander(DC-10Hz)]				
		Tx Jitter	Rx Wander	
Jitter	OFF		Peak-Peak	2.7 ns
			+Peak	1.4 ns
			-Peak	1.3 ns
			TIE	0.0 ns

Note:

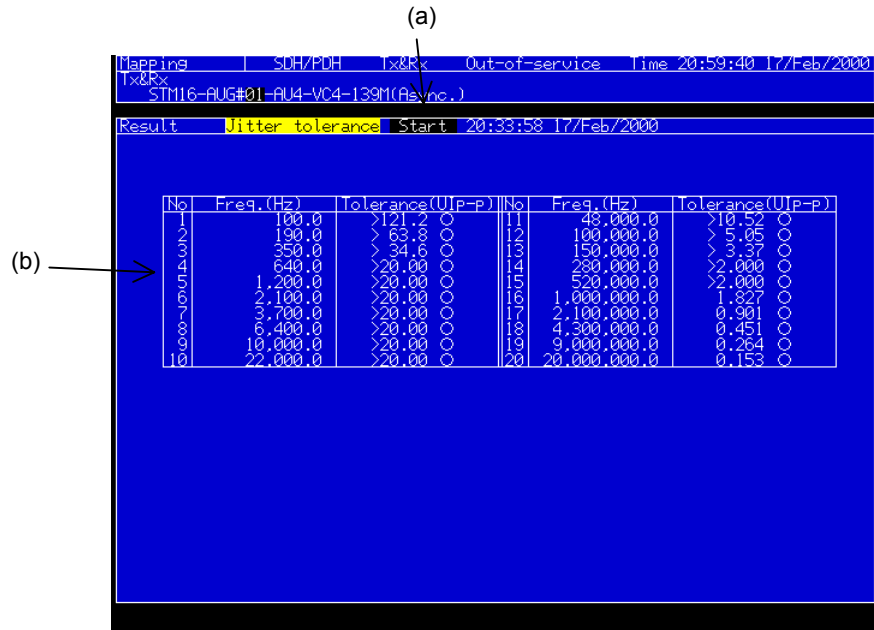
This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) is installed. The following restrictions are applied according to the units installed and the bit rates, as shown in the table below. (○ : Tx, × : Rx, displayed only at Select:Jitter)

Bit rate (Tx/Rx)	MP0124A Jitter	MP0125A Jitter	MP0126A Jitter	MU150011A 2.5G Jitter*1
	MU150005A Jitter	MU150006A Jitter	MU150007A Jitter	
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.4.2 Jitter tolerance Subscreen

The screen indicates results of jitter tolerance automatic measurements.



	Display	Description
(a)	Start	Indicates the measurement starting time.
(b)	[Result]	<p>Indicates jitter tolerance at each measurement point.</p> <p>When the MP0130A Jitter Unit is installed.</p> <ul style="list-style-type: none"> ○ indicates that the result is within the mask. ● indicates that the result is lower than the mask. -- indicates that no mask exists. <p>When the MU150011A Jitter Unit is installed.</p> <ul style="list-style-type: none"> OK indicates that the result is within the mask NG indicates that the result is lower than the mask. -- indicates that no mask exists.

Note:

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

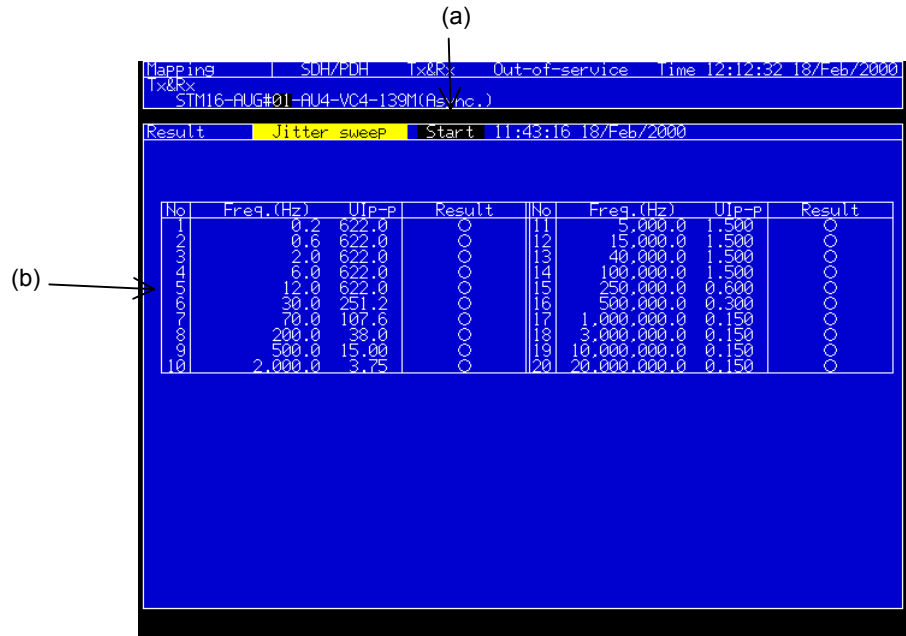
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter MU150005A Jitter	MP0125A Jitter MU150006A Jitter	MP0126A Jitter MU150007A Jitter	MU150011A 2.5G Jitter* ¹
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.4.3 Jitter sweep Subscreen

The screen indicates results of jitter tolerance automatic measurements.



	Display	Description
(a)	Start	Indicates the measurement starting time.
(b)	[Result]	<p>When the MP0124A, MP0125A, or MP0126A Jitter Unit is installed.</p> <ul style="list-style-type: none"> ○ indicates that the result is within the mask. ● indicates that the result is out of the mask. -- indicates that no mask exists. <p>When the MU150005A, MU150006A, or MU150007A Jitter Unit is installed.</p> <ul style="list-style-type: none"> OK indicates that the result is within the mask NG indicates that the result is out of the mask. -- indicates that no mask exists.

Note:

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

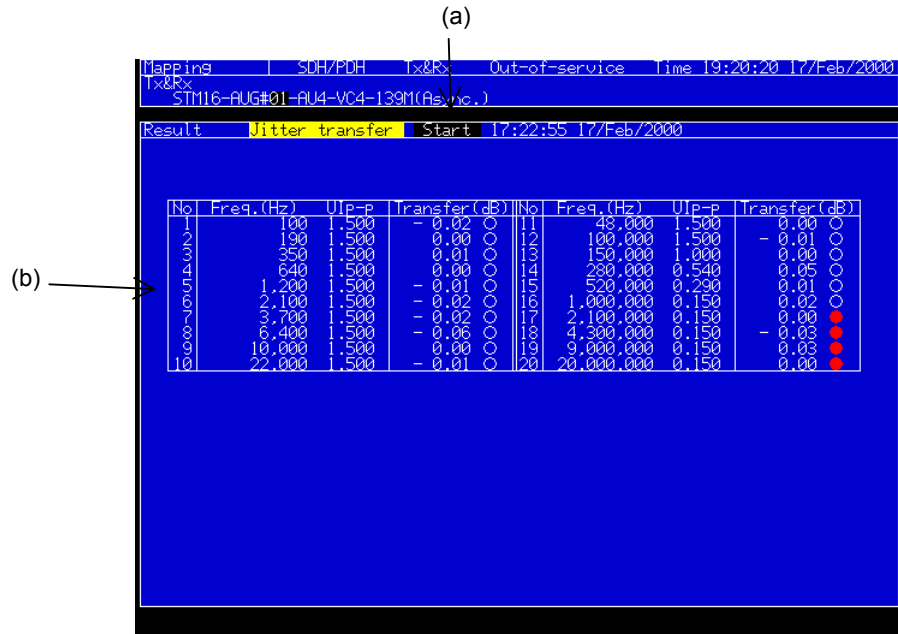
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter MU150005A Jitter	MP0125A Jitter MU150006A Jitter	MP0126A Jitter MU150007A Jitter	MU150011A 2.5G Jitter*1
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.4.4 Jitter transfer Subscreen

This screen indicates jitter transfer measurement results.



	Display	Description
(a)	Start	Indicates the measurement starting time.
(b)	[Result]	<p>Indicates jitter transfer at each measurement point.</p> <p>When the MP0124A, MP0125A, or MP0126A Jitter Unit is installed.</p> <p>○.....Indicates that the result is within the mask.</p> <p>●.....Indicates that the result is out of the mask.</p> <p>--Indicates that no mask exists.</p> <p>When the MU150005A, MU150006A, or MU150007A Jitter Unit is installed.</p> <p>OKindicates that the result is within the mask</p> <p>NGindicates that the result is out of the mask.</p> <p>--indicates that no mask exists.</p>

Notes :

If lock is pulled out during measurement, data of the occurrence point in the table flashes until Lock re-occurs. (Measurement of the point continues.)
If Lock re-occurs before the timeout, measurement continues. If Lock does not re-occur, the following is displayed and the next measurement is performed.

- With mask: "○"
- Without mask: "-"

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

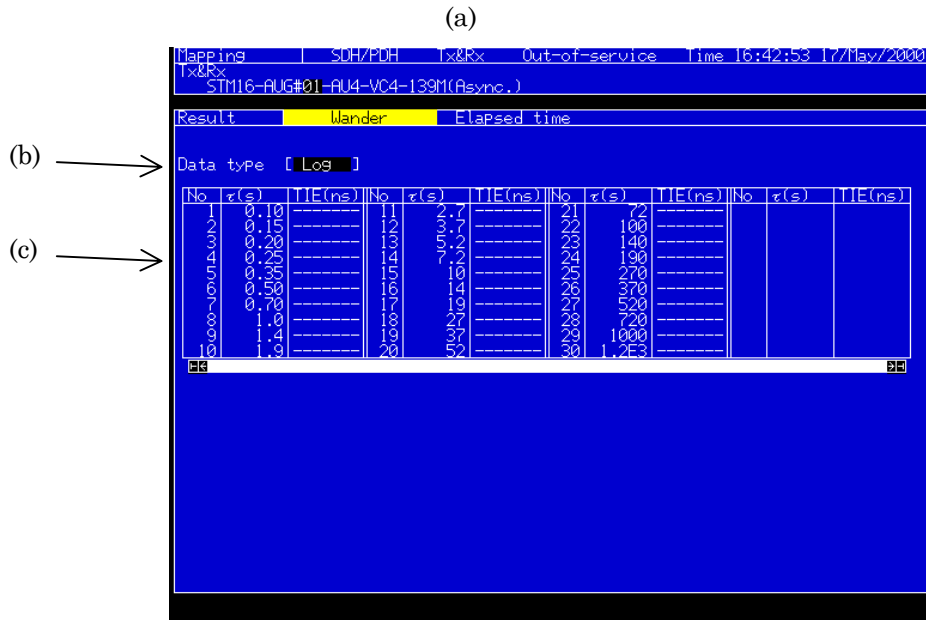
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter MU150005A Jitter	MP0125A Jitter MU150006A Jitter	MP0126A Jitter MU150007A Jitter	MU150011A 2.5G Jitter*1
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.4.5 Wander Subscreen

This screen displays wander measurement results.



	Display	Description
(a)	Start	Indicates the measurement starting time.
(b)	Data type *	Selects the measurement results. Linear displays the measurement results in which the measurement points intervals of observation time are equal. Log displays the measurement results in which the measurement points of observation time are thinned out.
(c)	[Result]	Indicates wander measurement value at each measurement point.

Notes:

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

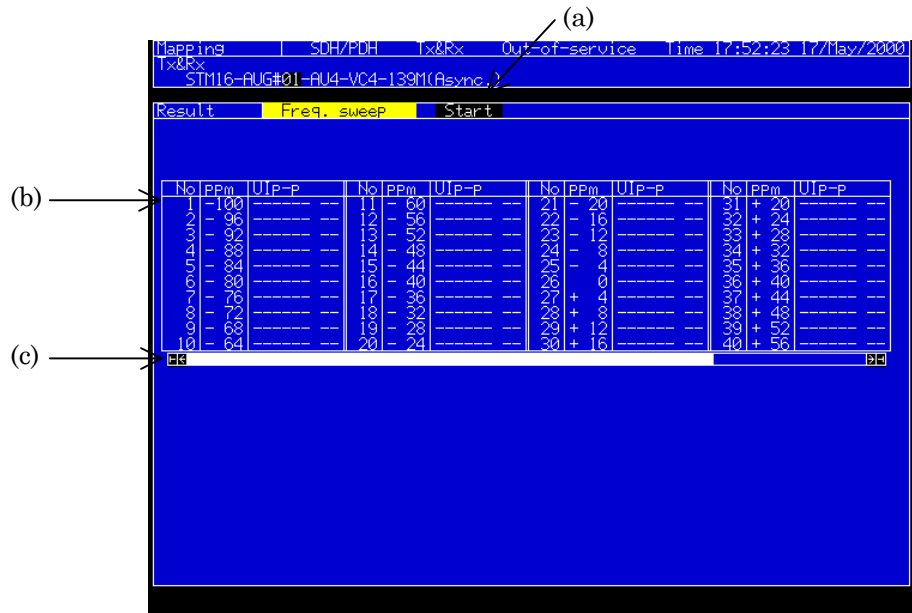
This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) and a Wander measurement Option (02) are installed. The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter MU150005A Jitter	MP0125A Jitter MU150006A Jitter	MP0126A Jitter MU150007A Jitter	MU150011A 2.5G Jitter*1
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.4.6 Freq. sweep Subscreen

This screen displays the result of automatic frequency sweep measurement.



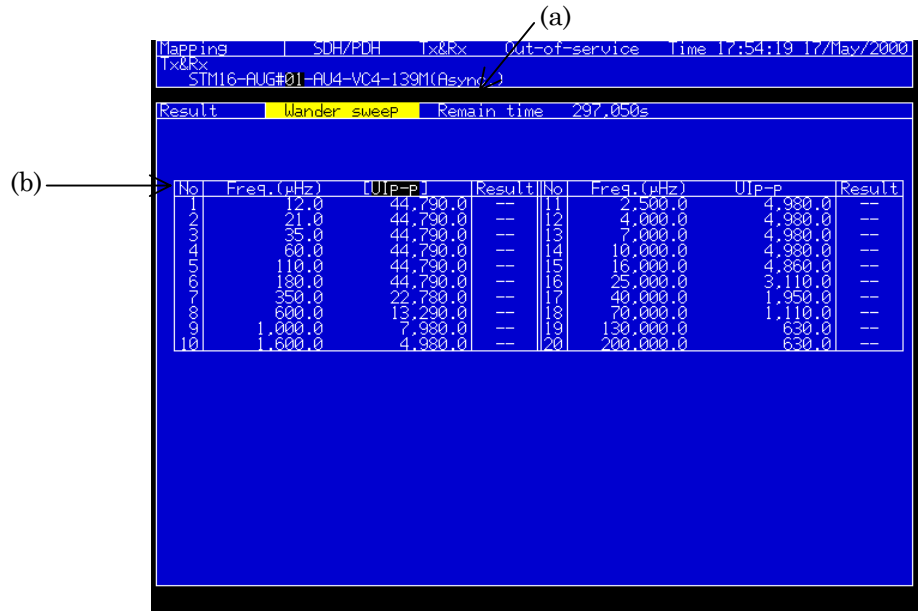
	Display	Description
(a)	Start	Displays the measurement start time.
(b)	[Result]	Displays the frequency sweep measurement value at each measurement point. OK.....The value is within the specification. NGThe value is out of the specification. --The value is out of the specification.
(c)	[Scroll]	Copies the sentence of Jitter/Freq.

Note:

This screen is displayed when a jitter unit (MU150005A, MU150006A, or MU150007A) is installed.

2.4.7 Wander sweep Subscreen

This screen displays the result of wander sweep automatic measurement.



	Display	Description
(a)	Remain time	Displays the time until the wander sweep automatic measurement ends.
(b)	[Result]	Displays the wander sweep measurement value at each measurement point. OK The value is within the specification. NG The value is out of the specification. -- No specified value exists.

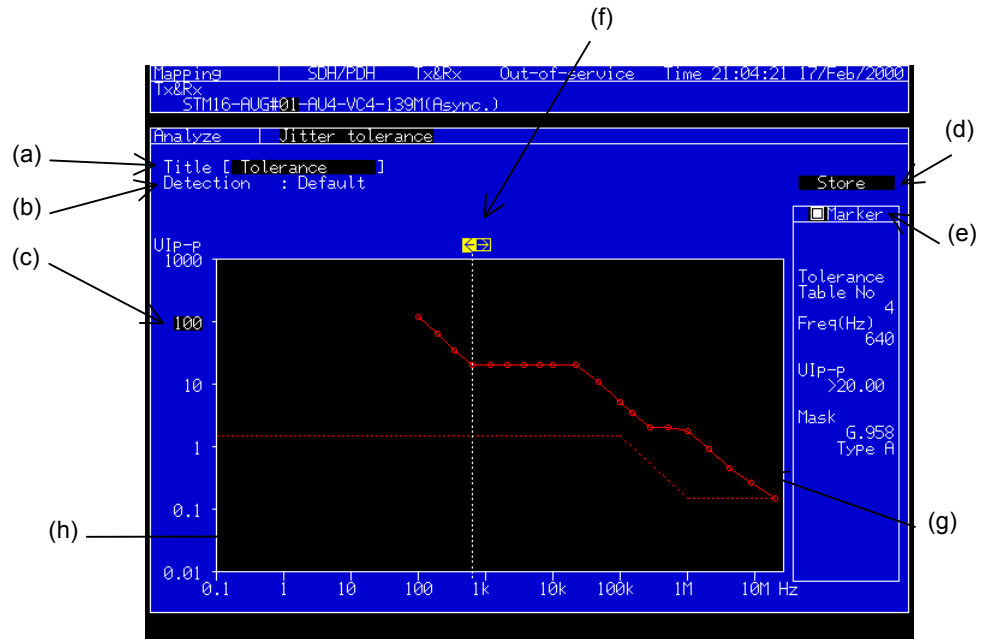
Note:

This screen is displayed when a jitter unit (MU150005A, MU150006A, or MU150007A) and the wander measurement option are installed.

2.5 Analyze Main Screen

2.5.1 Jitter Tolerance Subscreen

This screen analyzes results of jitter tolerance automatic measurements.



	Display	Description
(a)	Title	A graph title can be entered.
(b)	[Detection] [Error] [Unit] [Threshold] [Waiting time] * [Tx Freq. offset] *	Indicates the detection condition for Test menu: Jitter tolerance screen.
(c)	[Scale]	Switches graphic vertical axis. 100: Indicates range between 0.1 and 1000UI _{p.p.} . 10: Indicates range between 0.01 and 100 UI _{p.p.} . 1: Indicates range between 0.01 and 10 UI _{p.p.} .
(d)	Store	Saves graphic data to memory, which is possible only in the single screen mode. Character string input window appears upon pressing Set key here. A title entered here is saved in the memory.
(e)	Marker	Sets ON or OFF of the marker. Marker can only be indicated in the single screen mode. <input type="checkbox"/> : Marker is set to OFF. Press Set key to turn ON. <input checked="" type="checkbox"/> : Marker is set to ON. Press Set key to turn OFF. (One shot input)

Notes :

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

(f)	<>	Searches the measurement point. (Only when a marker is displayed.) < : Shifts marker to a measurement point in the forward direction. > : Shifts marker to a measurement point in the backward direction.
(g)		Indicates detailed data of the measurement point designated by the marker.
(h)	(Graph)	Indicates measurement results and mask line. Measurement points are plotted by ○.

Note:

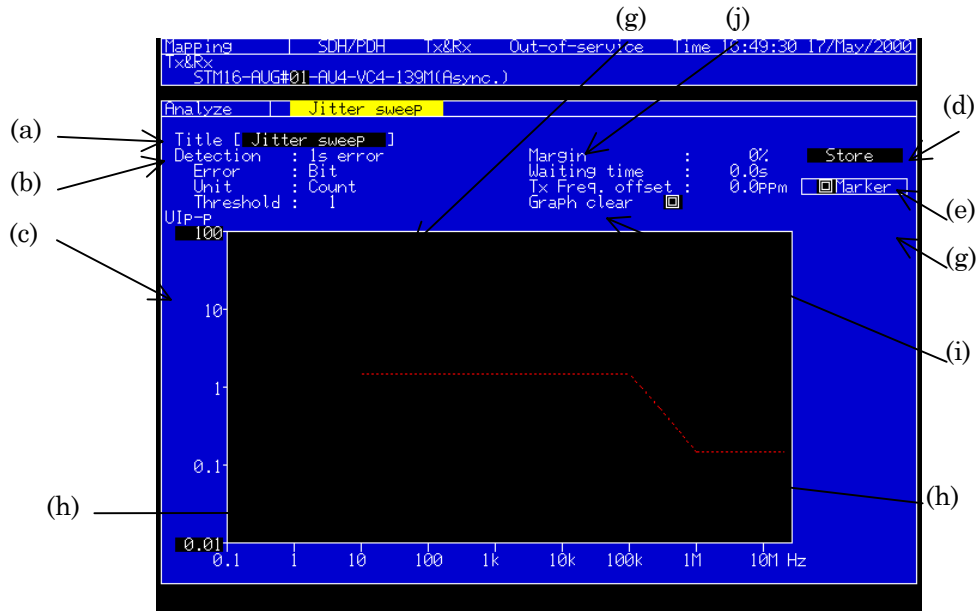
This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) is installed. The following restrictions are applied according to the units installed and the bit rates, as shown in the table below. (○ : Tx, × : Rx, displayed only at Mod. Select:Jitter on Test menu screen)

Bit rate (Tx/Rx)	MP0124A Jitter MU150005A Jitter	MP0125A Jitter MU150006A Jitter	MP0126A Jitter MU150007A Jitter	MU150011A 2.5G Jitter*1
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.5.2 Jitter sweep Subscreen

This screen analyzes results of jitter sweep automatic measurements.



	Display	Description
(a)	Title	A graph title can be entered.
(b)	[Detection] [Error] [Unit] [Threshold] [Margin] * [Waiting time] * [Tx Freq. offset]*	Indicates the detection condition for Test menu: Jitter sweep screen.
(c)	[Scale] [Scale: max] [Scale: min]	Switches graphic vertical axis (when the MP0130A is installed). 100: Indicates range between 0.1 and 1000 UI _{p,p} . 10: Indicates range between 0.01 and 100 UI _{p,p} . 1: Indicates range between 0.01 and 10 UI _{p,p} .
(d)	Store	Saves graphic data to memory, which is possible only in the single screen mode. Character string input window appears upon pressing Set key here. A title entered here is saved in the memory.
(e)	Marker	Sets ON or OFF of the marker. Marker can only be indicated in the single screen mode. <input type="checkbox"/> : Marker is set to OFF. Press Set key to turn ON. <input checked="" type="checkbox"/> : Marker is set to ON. Press Set key to turn OFF. (One shot input)

(f)	◁▷	Searches the measurement point. (Only when a marker is displayed.) < : Shifts marker to a measurement point in the forward direction. > : Shifts marker to a measurement point in the backward direction.
(g)		Indicates detailed data of the measurement point designated by the marker.
(h)	(Graph)	Indicates measurement results and mask line. Measurement points are plotted by ○.
(i)	Graph clear *	Deletes the graph data and the other measurement results displayed on the screen.
(j)	Margin (1)~(5) *	Selects whether to display each graph data. <input type="checkbox"/>indicates that graph data is not being displayed. The data is displayed by pressing <input type="button" value="Set"/> . <input checked="" type="checkbox"/>indicates that graph data is being displayed. The data is disappeared by pressing <input type="button" value="Set"/> . In this caes, the graph data and the measurement results are not deleted. - This parameter cannot be set when two- or threee-division screen is selected.

Notes :

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

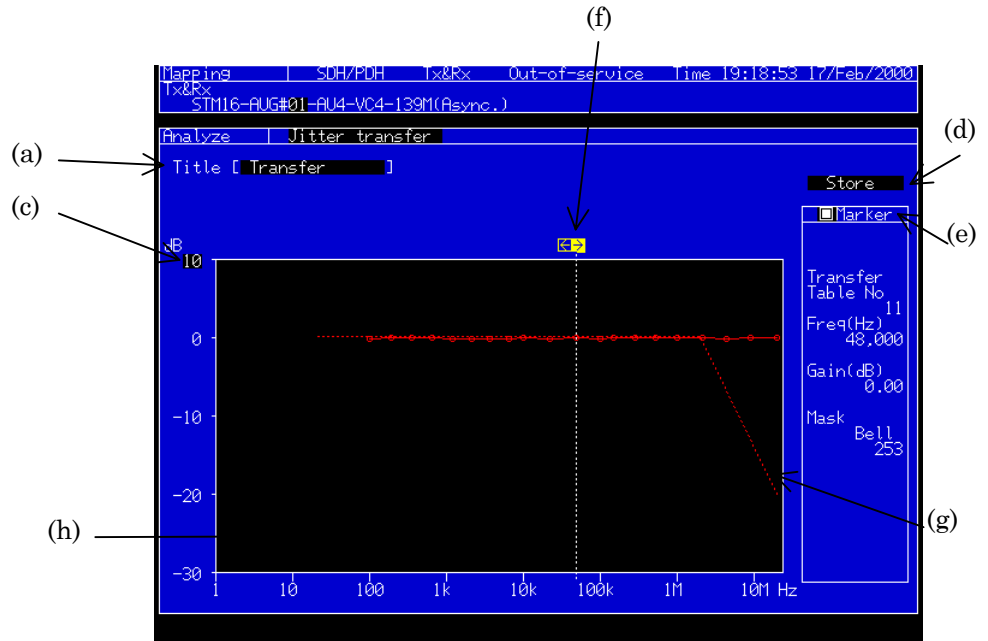
This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) is installed. The following restrictions are applied according to the units installed and the bit rates, as shown in the table below. (○ : Tx, × : Rx, displayed only at Mod. Select: Jitter on Test menu screen)

Bit rate (Tx/Rx)	MP0124A Jitter MU150005A Jitter	MP0125A Jitter MU150006A Jitter	MP0126A Jitter MU150007A Jitter	MU150011A 2.5G Jitter*1
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.5.3 Jitter transfer Subscreen

This screen analyzes results of jitter transfer automatic measurements.



	Display	Description
(a)	Title	A graph title can be entered.
(b)	[Selective band width] * [Waiting time] * [Tx Freq. offset] *	Displays the detection condition set on the Test menu:Jitter transfer screen.
(c)	[Scale]	Switches graphic vertical axis. 20 Indicates range between -60 and 20 dB. 10 Indicates range between -30 and 10 dB. 1 Indicates range between -3 and 1 dB.
(d)	Store	Saves graphic data to memory. • This is displayed only in the single screen mode.
(e)	Marker	Sets On/Off of the marker. <input type="checkbox"/> Indicates that the marker is set to OFF. Press <input type="button" value="Set"/> to turn ON. <input checked="" type="checkbox"/> Indicates that the marker is set to ON. Press <input type="button" value="Set"/> to turn OFF. • This can be set only in the single screen mode.
(f)		Indicates detailed data of the measurement point designated by the marker.
(h)	(Graph)	Indicates measurement results and mask line. • Measurement points are plotted by ○ . • Measurement results out of scale are plotted by ○ or × . × is plotted in the following cases: • When the unlock time limit is over. • When the result is lower than -60.00, × is plotted as -60.00. When the result is higher than 10.00, × is plotted as 10.00. • When the result is displayed as "****.***", × is plotted as 0.00

Notes :

* This parameter can be displayed when the MU150011A 2.5G Jitter unit is installed.

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

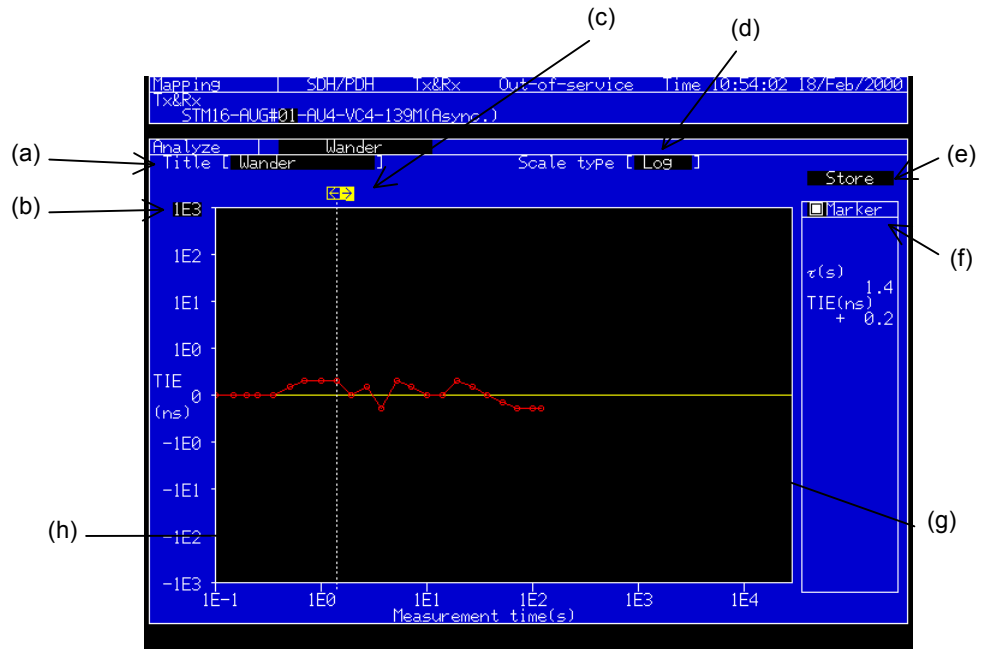
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter	MP0125A Jitter	MP0126A Jitter	MU150011A 2.5G Jitter*1
	MU150005A Jitter	MU150006A Jitter	MU150007A Jitter	
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.5.4 Wander Subscreen

This screen analyzes the results of wander automatic measurement.



	Display	Description
(a)	Title	A graph title can be entered.
(b)	[Scale]	Selects a vertical axis scale for the graph. The range of setting depends on the Scale type (d). Log: 1E3 to 1E9 Linear: 100 to 1E9
(c)	<>	Searches the measurement points. (only when a marker is displayed). < : Shifts the marker forward to a measurement point. > : Shifts marker backward to a measurement.
(d)	Scale type	Selects a vertical axis scale type of the graph scale. Log: Displays a logarithmic graph. Linear: Displays a linear graph.
(e)	Store	Saves graphic data in memory, which is possible only in single screen mode. The Character string input window appears when the Set key is pressed here. A title entered here is saved in memory.
(f)	Marker	Sets ON or OFF of the marker. Marker can only be indicated in the single screen mode. <input type="checkbox"/> : The marker is set OFF. Press the Set key to set it ON. <input checked="" type="checkbox"/> : The marker is set ON. Press the Set key to set it OFF. (One shot input)
(g)		Indicates detailed data of the measurement point designated by the marker.
(h)	(Graph)	Indicates the measurement results and mask line. A circle "○" is plotted at the end of measurement at each point. A half circle is plotted if the measurement result is out of the scale.

Note:

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) and a Wander measurement Option (02) is installed.

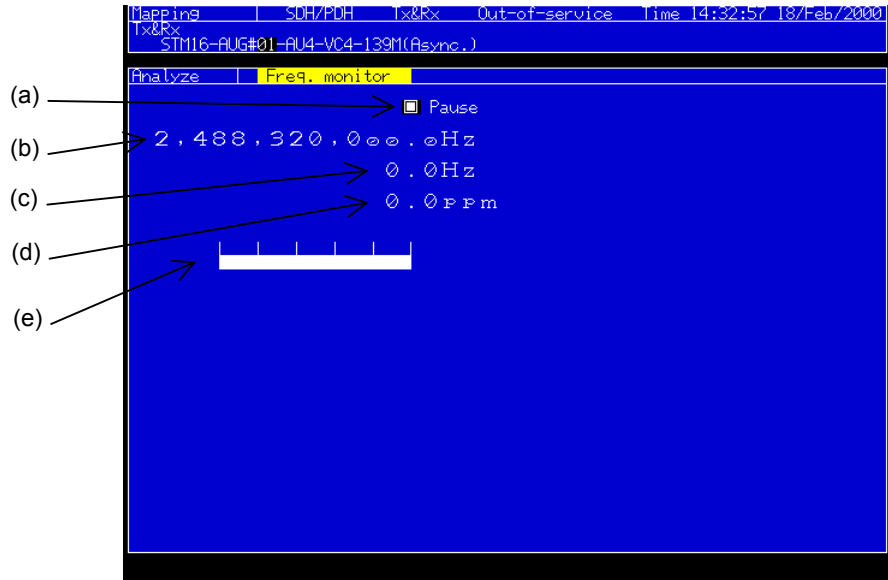
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Rx)	MP0124A Jitter MU150005A Jitter	MP0125A Jitter MU150006A Jitter	MP0126A Jitter MU150007A Jitter	MU150011A 2.5G Jitter* ¹
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.5.5 Frequency monitor Subscreen

This screen analyzes the frequency measurement monitor graph.



	Display	Description
(a)	Pause	Stops monitor display by one shot input.
(b)	[Freq.]	Indicates the frequency value monitored.
(c)	[Freq.]	Indicates the relative frequency. The relative frequency is calculated as follows: Relative frequency = measured frequency - nominal frequency
(d)	[ppm]	Indicates the relative frequency in ppm unit.
(e)		Indicates the gating time elapsed.

Note:

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

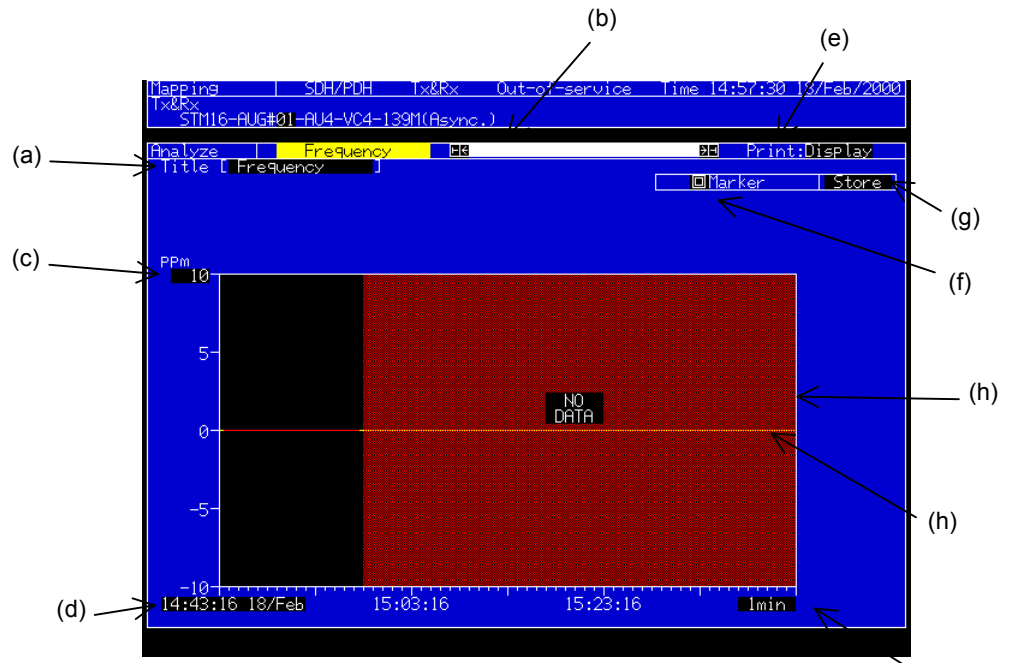
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter MU150005A Jitter	MP0125A Jitter MU150006A Jitter	MP0126A Jitter MU150007A Jitter	MU150011A 2.5G Jitter ^{*1}
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○

*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.5.6 Frequency Subscreen

This screen analyzes the frequency histogram.



	Display	Description
(a)	Title	A graph title can be entered.
(b)	<>	Searches the measurement point. < : Shifts the measurement point to forward. > : Shifts the measurement point to backward.
(c)	[Scale]	Sets the maximum vertical axis value of the graph.
(d)	[Graph start]	Sets the display start time.
(e)	Print	Print Sets the printing range.
(f)	Marker	Marker Sets the marker ON or OFF. The marker can only be displayed in single screen mode. <input type="checkbox"/> : The marker is set OFF. Press the Set key to set it ON. <input checked="" type="checkbox"/> : The marker is set ON. Press the Set key to set it OFF. (One shot input)
(g)	Store	Saves graphic data in memory, which is possible only in single screen mode. The character string input window appears when the Set key is pressed here. A title entered here is saved in memory.
(h)		Displays the detailed data of the measurement point at marker.
(i)	(Graph)	Indicates the measurement results and mask line.
(j)	[Interval]	Sets the horizontal axis interval of the analysis graph.

Note:

This screen is displayed only when a Jitter unit (MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A) or a 2.5G Jitter unit (MP0130A or MU150011A) is installed.

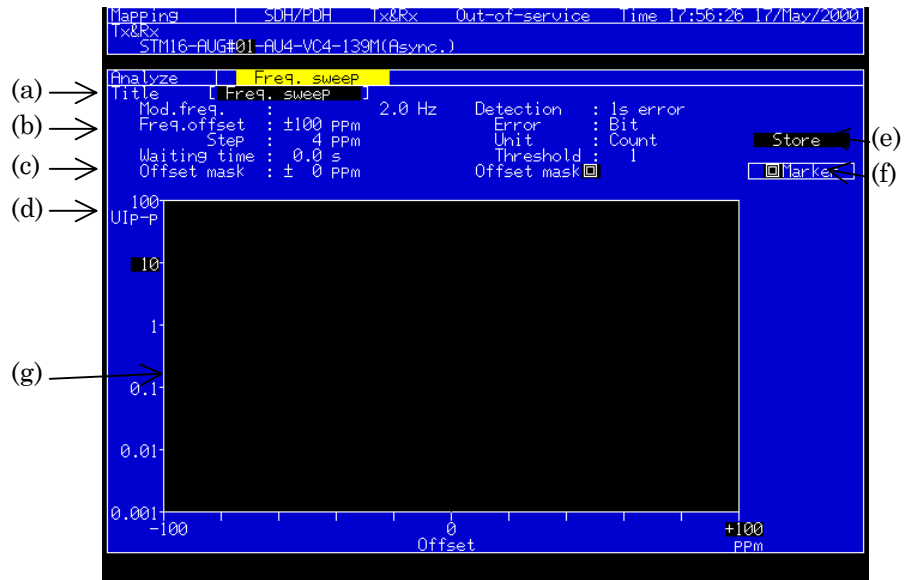
The following restrictions are applied according to the units installed and the bit rates, as shown in the table below.

Bit rate (Tx)	MP0124A Jitter MU150005A Jitter	MP0125A Jitter MU150006A Jitter	MP0126A Jitter MU150007A Jitter	MU150011A 2.5G Jitter*1
1.5M	×	○	○	×
2M	○	×	○	×
8M	○	×	○	×
34M	○	×	○	×
45M	×	○	○	×
139M	○	×	○	×
52M	×	○	○	×
156M	○	○	○	×
622M	○	○	○	×
2488M	×	×	×	○





*1 If it is installed with MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A, it is restricted by the logic sum of it and each unit.

2.5.7 Freq. sweep Subscreen

This screen analyzes the result of automatic frequency sweep measurement.



	Display	Description
(a)	Title	A graph title can be entered.
(b)	[Mod.freq.] [Freq.offset] [Step] [Waiting time] [Offset mask] [Detection] [Error] [Unit] [Hold time] [Threshold]	Displays the detection condition for the Test menu:Frequency sweep screen.
(c)	Offset mask	Sets whether to display an offset mask line. <input type="checkbox"/> indicates that the offset mask line is not being displayed. It is displayed by pressing <input type="button" value="Set"/> . <input checked="" type="checkbox"/> indicates that the offset mask line is being displayed. It is disappeared by pressing <input type="button" value="Set"/> . • This can be set only in the single screen mode.
(d)	[Scale]	Changes the vertical axis scale of the graph. 100..... Up to 100UIp-p is displayed. 10..... Up to 10UIp-p is displayed. 1..... Up to 1UIp-p is displayed.
(e)	Store	Stores graph data in memory. - This is displayed only in the single screen display

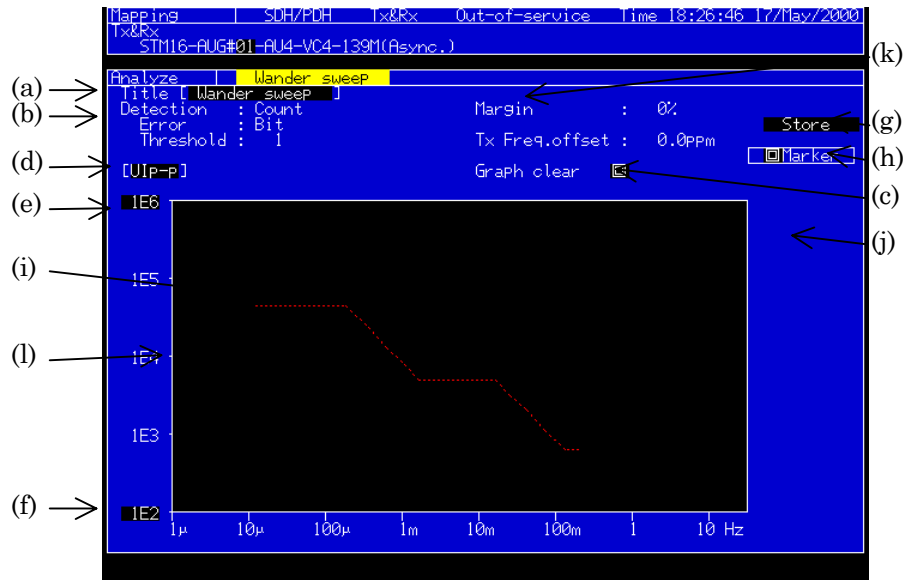
(f)	Marker	Sets On/Off of the marker.  Indicates that the marker is set to OFF. Press  to turn ON.  Indicates that the marker is set to ON. Press  to turn OFF. • This can be set only in the single screen mode.
(g)	(Graph)	Displays the measurement result and the mask line. Measurement points are plotted in “○”. When the measurement result is “Unlock”, “×” is plotted.

Note



This screen can be displayed when the MU150005A, MU150006A, or MU150007A is installed.

2.5.8 Wander sweep Subscreen

This screen analyzes the result of automatic wander sweep measurement.



	Display	Description
(a)	Title	A graph title can be entered.
(b)	[Detection] [Error] [Threshold] [Hold time] [Margin] [Measure type] [Tx.Freq.offset]	Displays the detection condition for the Test menu: Wander sweep screen.
(c)	Graph clear	Deletes the graph data and the other measurement results displayed on the screen.
(d)	[UIp-p] [ns]	Sets the vertical axis scale unit on the graph.
(e)	[Scale:max]	Changes the upper limit of the vertical axis scale on the graph.
(f)	[Scale:min]	Changes the lower limit of the vertical axis scale on the graph.
(g)	Store	Stores graph data in memory. - This is displayed only in the single screen display
(h)	Marker	Sets On/Off of the marker. <input type="checkbox"/> ··· Indicates that the marker is set to OFF. Press <input type="button" value="Set"/> to turn ON. <input checked="" type="checkbox"/> ··· Indicates that the marker is set to ON. Press <input type="button" value="Set"/> to turn OFF. • This can be set only in the single screen mode.

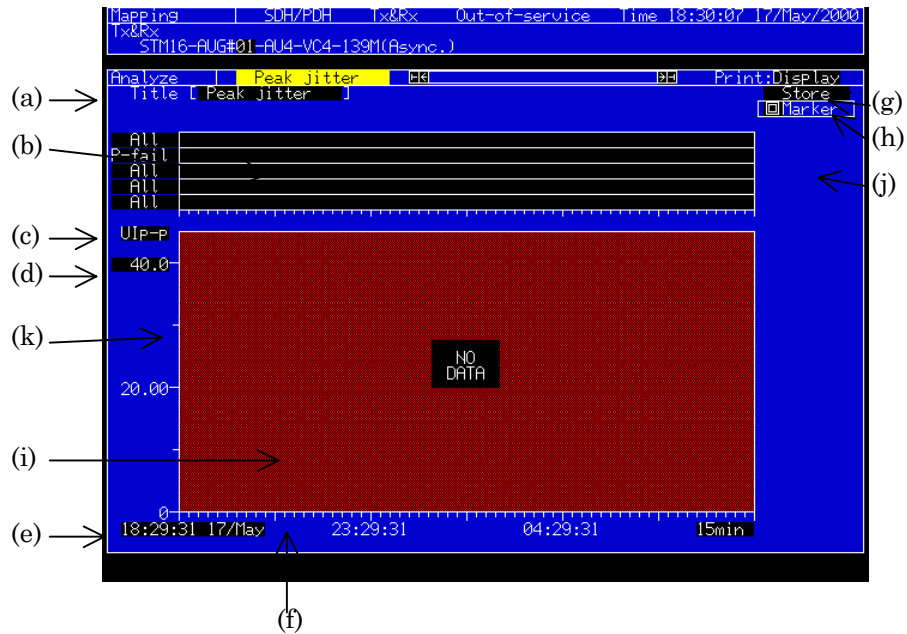
(i)	Search	Searches a measurement point. Shifts the marker to a measurement point in the forward direction. Shifts the marker to a measurement point in the backward direction.
(j)		Displays the detailed data of the measurement point designated by the marker.
(k)	(Margin)	Set the margin related to the jitter amplitude set on the Setup screen.
(l)	(Graph)	Displays the measurement result and the mask line. - Measurement points are plotted in “○”. When the measurement result is “Unlock”, “×” is plotted.

Note

This screen can be displayed when the MU150005A, MU150006A, or MU150007A is installed.

2.5.9 Peak jitter Subscreen

This screen analyzes the result of jitter measurement.



	Display	Description
(a)	Title	Enter the graph title.
(b)	[Alarm]	Set the graph display alarm.
(c)	[UI _{P-P}] [UI _{+P}] [UI _{-P}] [UI _{rms}]	Set the unit of the vertical axis scale on the graph.
(d)	[Scale]	Changes the vertical axis scale of the graph.
(e)		Set the display graph start time.
(f)		Set the time interval of the horizontal axis scale on the graph.
(g)	Store	Stores graph data in memory. - This is displayed for the single screen display.
(h)	Marker	Sets On/Off of the marker. <input type="checkbox"/> Indicates that the marker is set to OFF. Press <input type="button" value="Set"/> to turn ON. <input checked="" type="checkbox"/> Indicates that the marker is set to ON. Press <input type="button" value="Set"/> to turn OFF. •This can be set only in the single screen mode.
(i)	Search	Searches a measurement point. ← <input type="checkbox"/> Shifts the marker to a measurement point in the forward direction. <input type="checkbox"/> → Shifts the marker to a measurement point in the backward direction.

(j)		Displays the detailed data of the measurement point at the marker.
(k)	(Graph)	Displays the jitter measurement result. No result is displayed when some alarm is detected.

Note

This screen can be displayed when the MU150005A, MU150006A, or MU150007A is installed.

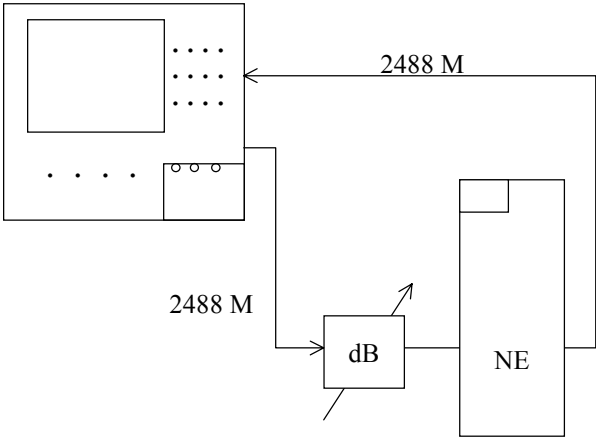
Section 3 Operation

This section describes 2.5G Jitter and Wander measurement examples.

- 3.1 Jitter Tolerance Measurement..... 3-3
- 3.2 Jitter Sweep Measurement 3-8
- 3.3 Jitter Transfer Measurement 3-13
- 3.4 Pattern Jitter Measurement and Pointer Sequence
Generation 3-18
- 3.5 Wander Measurement (Manual)..... 3-23
- 3.6 Wander Measurement (TIE: Time Interval Error)..... 3-27
- 3.7 Frequency Offset vs Jitter Measurement..... 3-32
- 3.8 Frequency Measurement..... 3-36
- 3.9 Frequency Sweep Measurement..... 3-41
- 3.10 Wander Sweep Measurement 3-46
- 3.11 Through Jitter Addition..... 3-51

3.1 Jitter Tolerance Measurement

The following explains an example of measuring a 2488 Mb/s NE using the MP0130A 2.5G Jitter unit.



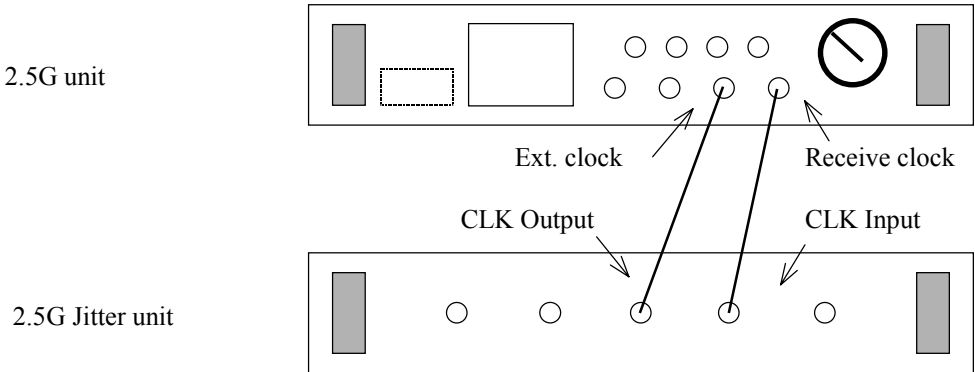
(1) Connection

Insert the three units of the MP0121A 2/8/34/139/156 M (CMI) unit, the MP0127A 2.5G unit and MP0130A 2.5G Jitter unit into the unit mounting slots.

⚠ CAUTION

In this example, connect the Ext. Clock of the 2.5G unit to the CLK Output of the 2.5G Jitter unit, and the Receive Clock of the 2.5G unit to the CLK Input of the 2.5G Jitter unit.

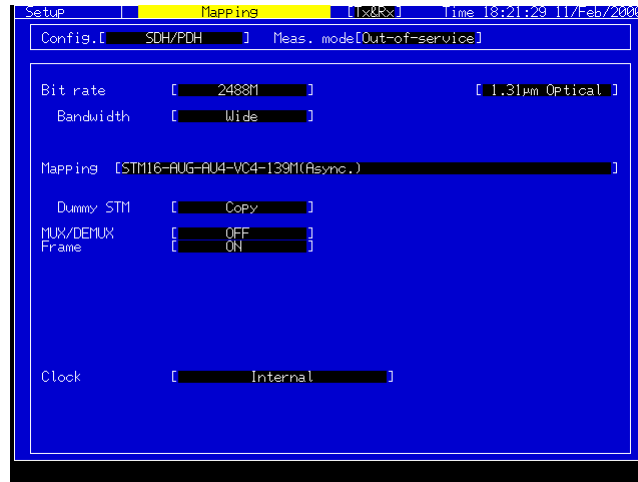
Connect as shown below and turn power on. Adjust the attenuator beforehand to select an input level 1 dB greater than that where an error occurs.



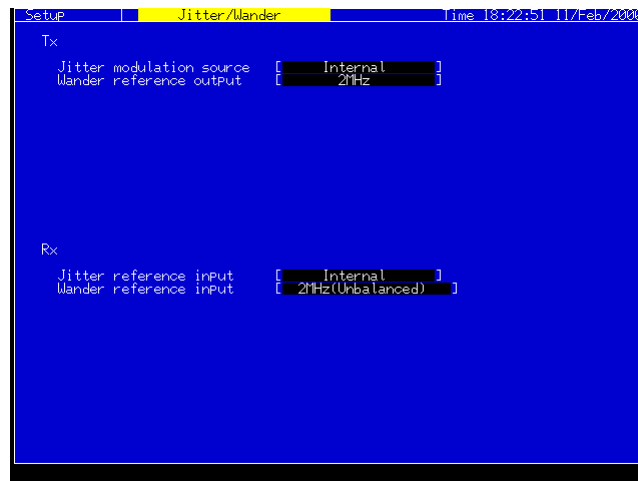
(2) Initial setting

(a) Set the Setup: Mapping screen as shown below, which is typical settings for measurements using the 2488 M interface.

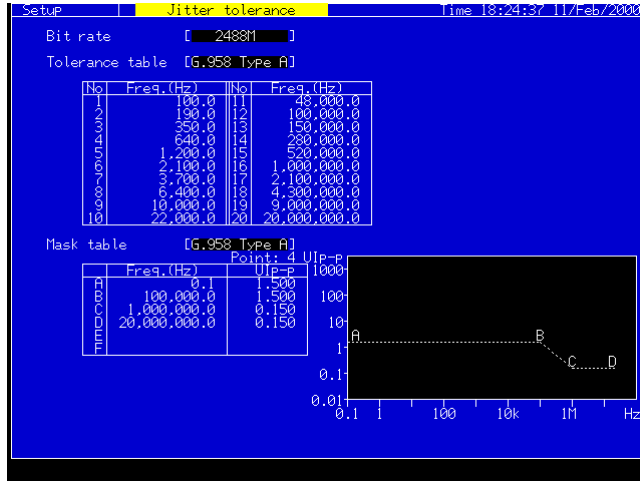
Select the input/output state (Optical 1.31 μm , or Electrical) at the right of Bit rate field. In this example, select Optical 1.31 μm .



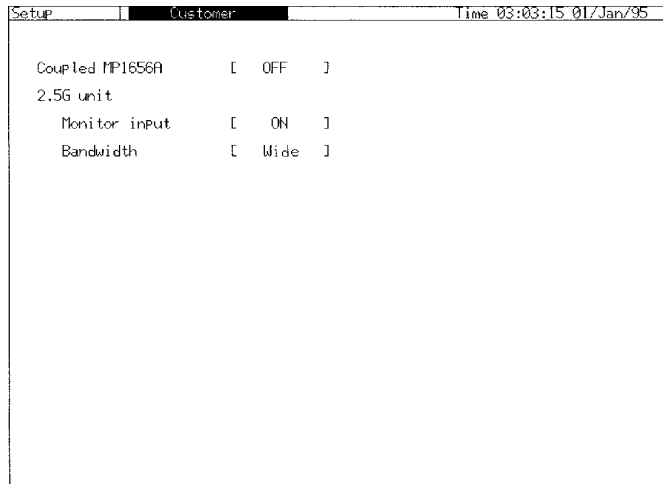
(b) Set the Setup: Jitter/Wander screen as shown below.



- (c) Sets the Tolerance and Mask tables on the Setup: Jitter tolerance screen as shown below. (Settings can be changed only when User is selected.)



- (d) Set the Setup: Customer screen, as shown below.
 When connecting to the monitor output of the DUT, set the Monitor input to ON. (Input Data connector on the unit front panel is connected to DUT.)
 Set the Bandwidth to Wide.



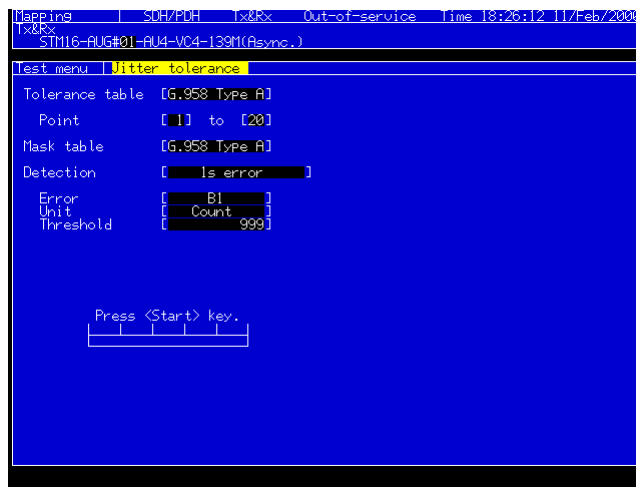
(3) Jitter tolerance measurement

With the Jitter tolerance measurement, jitter yield strength of up to 20 measurement points can be measured accurately at a high speed.

(a) Start of measurement

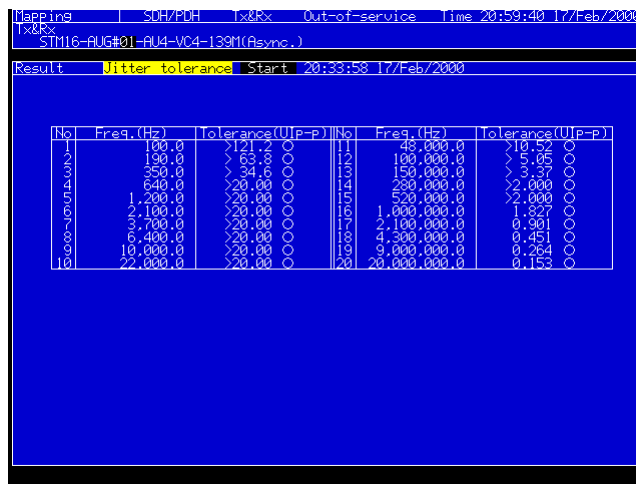
Select the Jitter tolerance on the Test menu main screen. Conduct selection for the Measurement Table and Mask Table. Press Start/stop key to resume a measurement.

Progress of the measurement is shown on the screen.



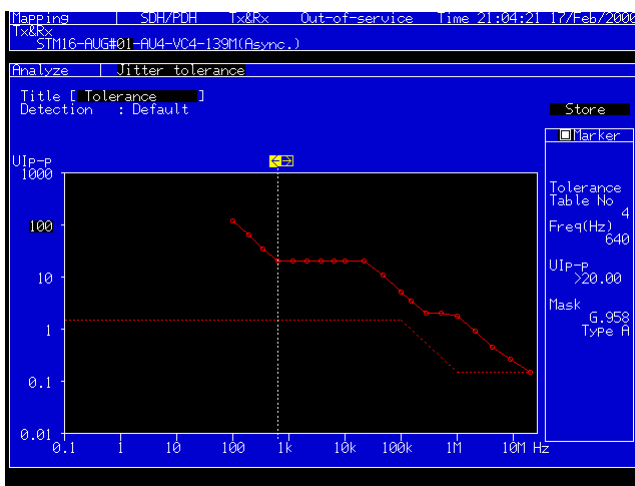
(b) Measurement result

When Jitter tolerance is selected on the Test menu main screen, the Result screen is also set to Jitter tolerance. Measurement results are indicated as numeric data together with measured frequencies as shown below. When a result is out of the specification, ● is indicated.



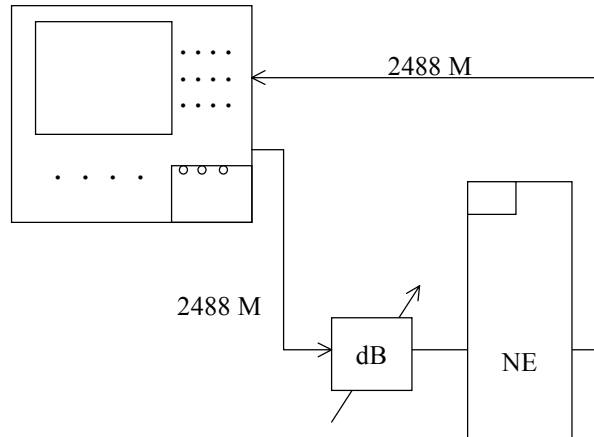
(c) Analysis

When Jitter tolerance is selected on the Analyze main screen, the measurement results can be analyzed graphically. Pressing Set key after aligning the cursor to < > on the screen indicates numeric data at the measurement point.



3.2 Jitter Sweep Measurement

The following explains an example of measuring a 2488 Mb/s NE using the MP0130A 2.5G Jitter unit.



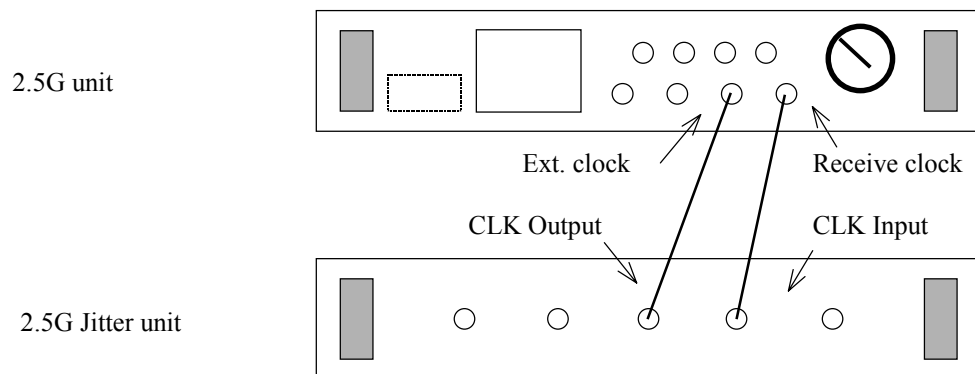
(1) Connection

Insert the three units of the MP0121A 2/8/34/139/156 M (CMI) unit, the MP0127A 2.5G unit and MP0130A 2.5G Jitter unit into the unit mounting slots.

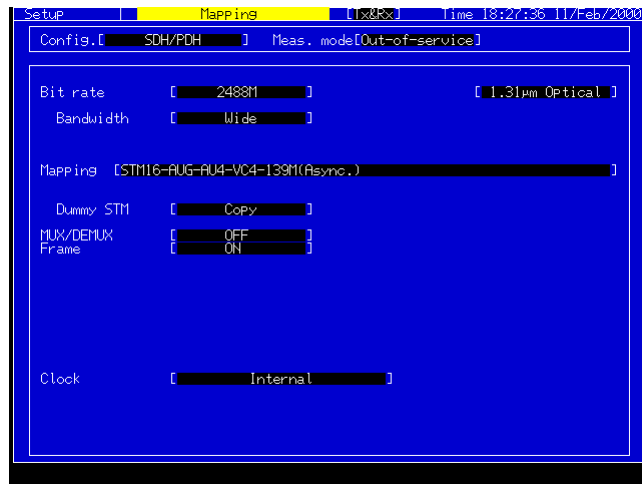
CAUTION

In this example, connect the Ext. Clock of the 2.5G unit to the CLK Output of the 2.5G Jitter unit, and the Receive Clock of the 2.5G unit to the CLK Input of the 2.5G Jitter unit.

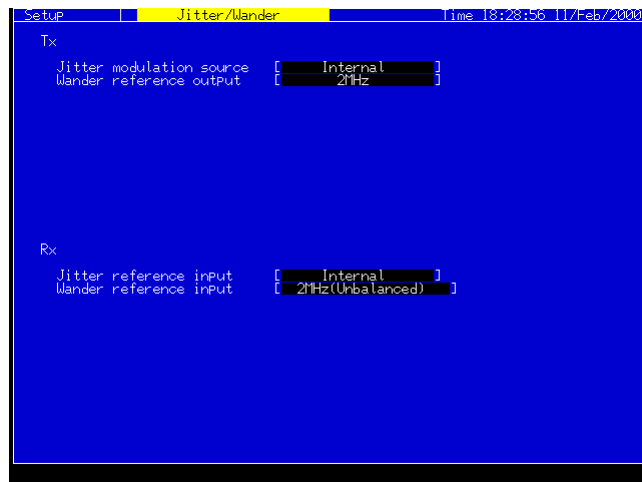
Connect as shown below and turn power on. Adjust the attenuator beforehand to select an input level 1 dB greater than that where an error occurs.



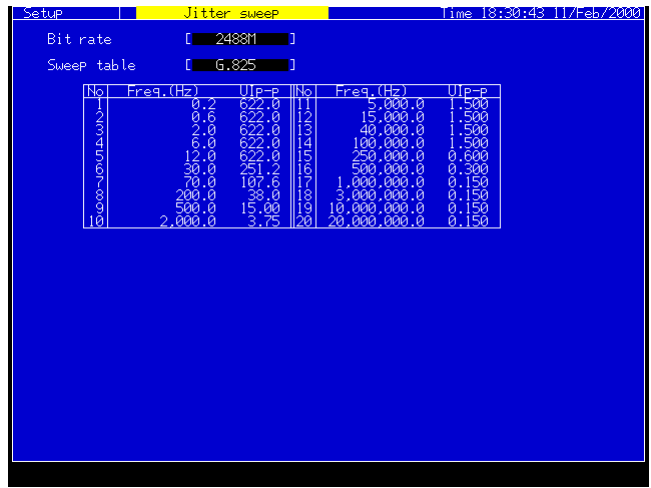
- (2) Initial setting
- (a) Set the Setup: Mapping screen as shown below, which is typical settings for measurements using the 2488 M interface.
- Select the input/output state (Optical 1.31 μm , or Electrical) at the right of Bit rate field. In this example, select Optical 1.31 μm .



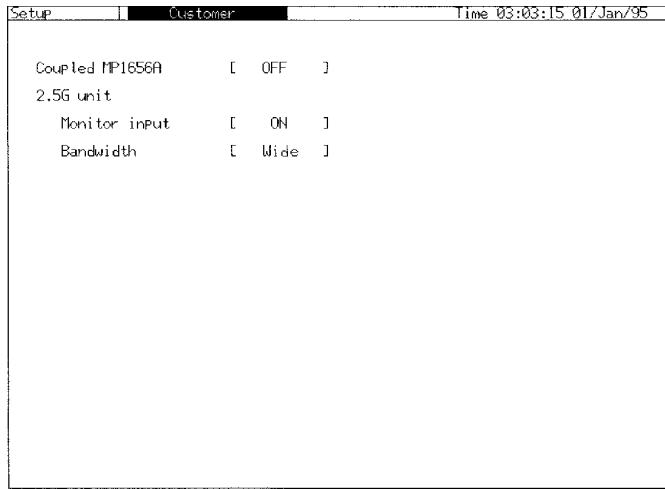
- (b) Set the Setup: Jitter/Wander screen as shown below.



- (c) Sets the Sweep mask on the Setup: Jitter sweep screen as shown below.
 (Settings can be changed only when User is selected.)



- (d) Set the Setup: Customer screen, as shown below.
 When connecting to the monitor output of the DUT, set the Monitor input to ON. (Input Data connector on the unit front panel is connected to DUT.)
 Set the Bandwidth to Wide.



(3) Jitter sweep measurement

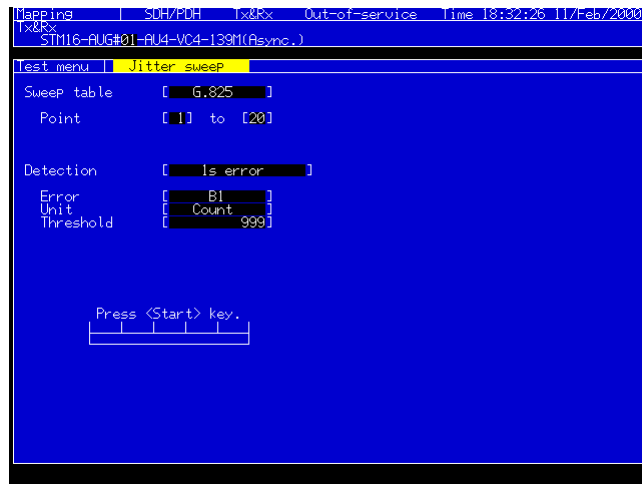
With the Jitter sweep measurement, jitter yield strength of up to 20 measurement points can be measured accurately at a high speed.

(a) Start of measurement

Select the Jitter sweep on the Test menu main screen.

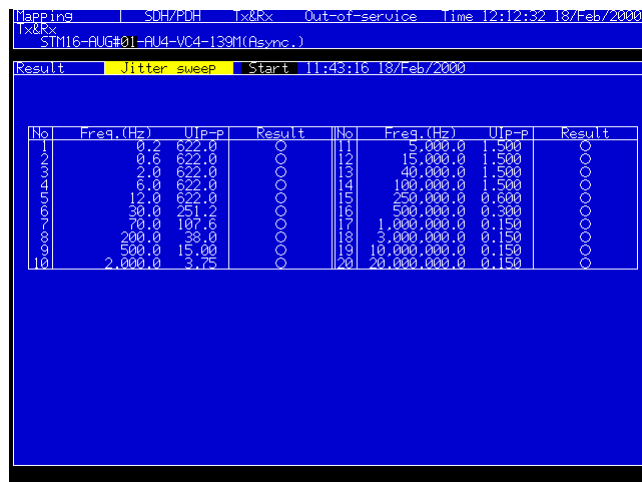
Conduct selection for the Sweep mask. Press Start/stop key to resume a measurement.

Progress of the measurement is shown on the screen.



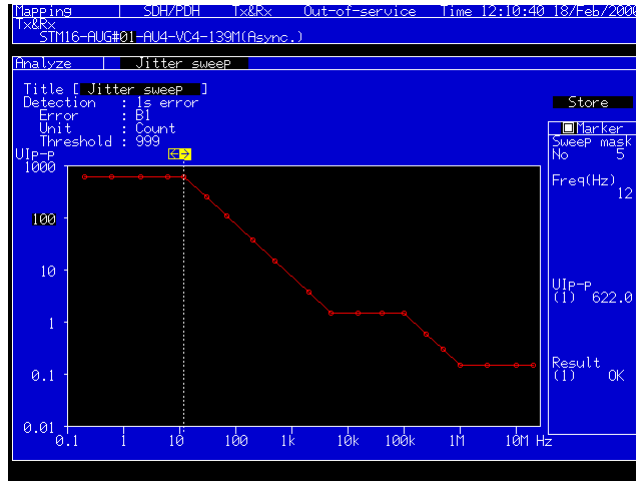
(b) Measurement result

When Jitter sweep is selected on the Test menu main screen, the Result screen is also set to Jitter sweep. Measurement results are indicated as numeric data together with measured frequencies as shown below. If the result is Not-OK under the error evaluation conditions, ● is indicated.



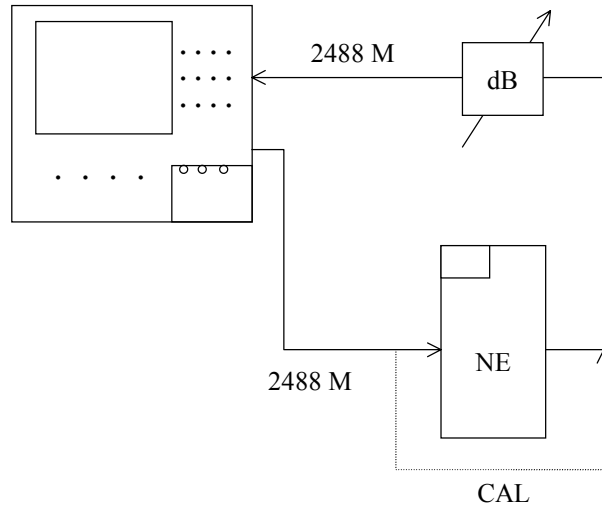
(c) Analysis

When Jitter sweep is selected on the Analyze main screen, the measurement results can be analyzed graphically. Pressing Set key after aligning the cursor to <> on the screen indicates numeric data at the measurement point.



3.3 Jitter Transfer Measurement

Operation procedures are explained using an example to measure a 2488 Mb/s NE using the MP0130A unit.



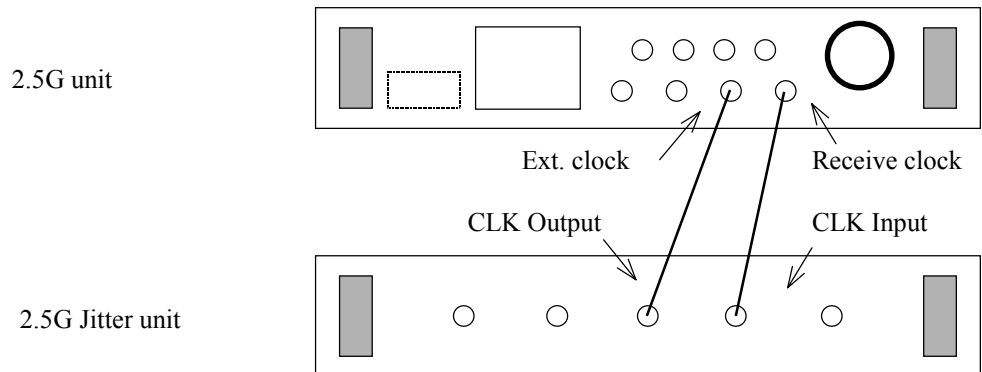
(1) Connection

Insert the three units of the MP0121A 2/8/34/139/156 M (CMI) unit, the MP0128A 2.5G unit and MP0130A 2.5G Jitter unit into the unit mounting slots.

⚠ CAUTION

In this example, connect the Ext. Clock of the 2.5G unit to the CLK Output of the 2.5G Jitter unit, and the Receive Clock of the 2.5G unit to the CLK Input of the 2.5G Jitter unit.

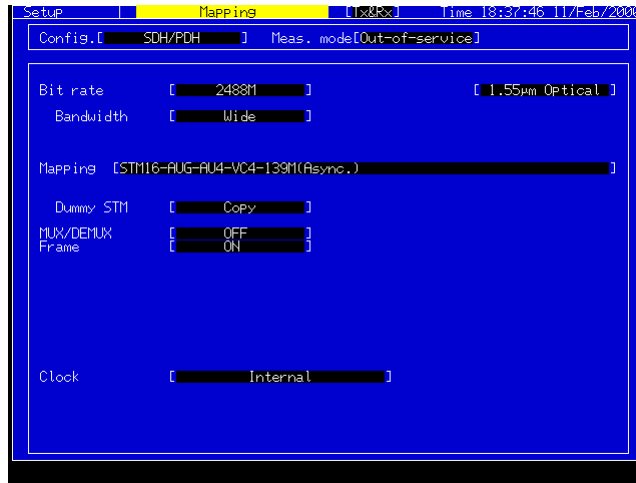
Connect as shown below and turn power on. Adjust the output levels of the NE and CAL lines with an attenuator so that the input levels for this unit can previously be equal at Calibration and Measurement.



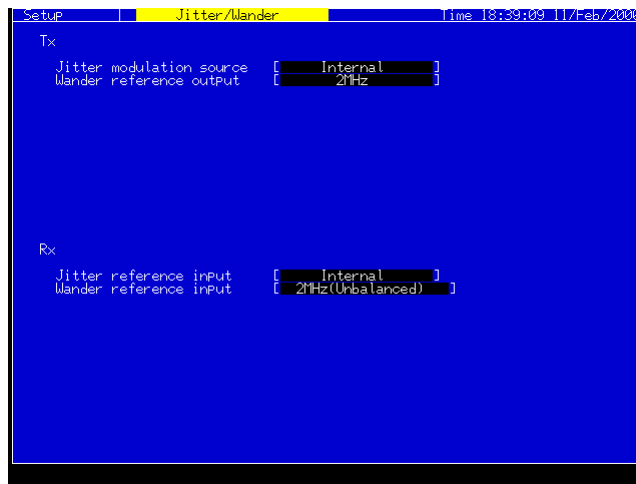
(2) Initial setting

(a) Set the Setup: Mapping screen as shown below, which is typical settings for measurements using the 2488 M interface.

Select the input/output state (Optical 1.55 μm , or Electrical) at the right of Bit rate field. In this example, select Optical 1.55 μm .

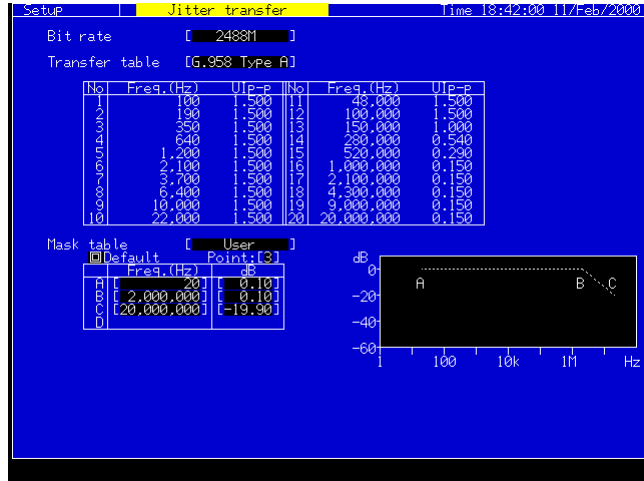


(b) Set the Setup: Jitter/Wander screen as shown below.



- (c) Conduct checks and settings of the Transfer and Mask tables on the Setup: Jitter transfer screen.

(Settings can be changed only when User is selected.)*

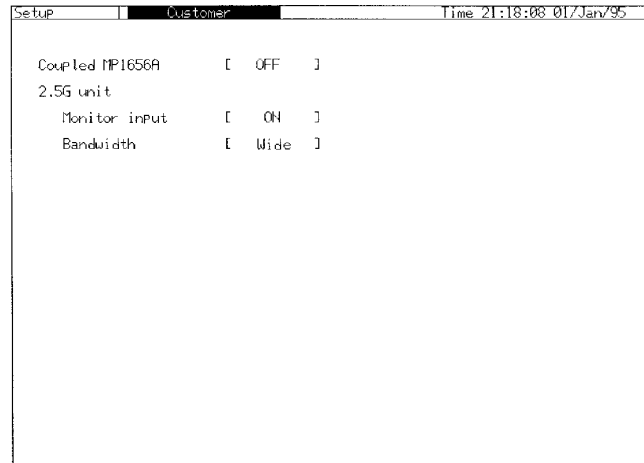


- (d) Set the Setup: Customer screen, as shown below.

When connecting to the monitor output of the DUT, set the Monitor input to ON.

(Input Data connector on the unit front panel is connected to DUT.)

Set the Bandwidth to Wide for the jitter measurement.



(3) Jitter transfer measurement

With the Jitter transfer measurement function, jitter transmission characteristics of up to 20 measurement points can be measured using the Selective method** in a wide dynamic range.

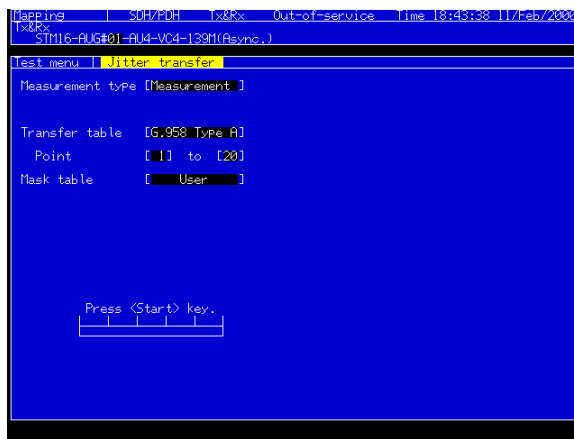
(a) Start of measurement

Select the Jitter transfer on the Test menu main screen. Conduct settings for Transfer and Mask tables.

Before connecting a unit to be measured, set the measurement unit to the loopback connection. Set the measurement type to Calibration and press Start/stop key to initiates calibration.***

When calibration is complete, change the measurement type to Measurement and press Start/stop key to initiate a measurement.

Progress of the measurement is shown on the screen.



(b) Measurement result

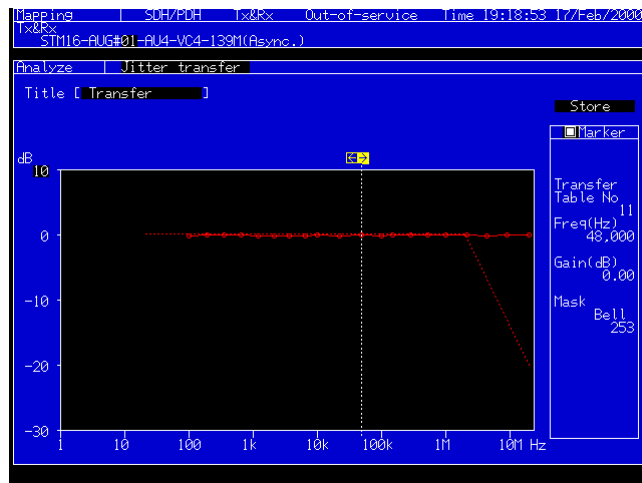
When Jitter transfer is selected on the Test menu main screen, the Result screen is also set to Jitter transfer. Measurement results are indicated as numeric data together with measured frequencies as shown below.****

When a result is out of the specification, ● is indicated.*****

No.	Freq.(Hz)	Ulp-p	Transfer(dB)	No.	Freq.(Hz)	Ulp-p	Transfer(dB)
1	100	1.500	-0.02 ○	11	48,000	1.500	-0.00 ○
2	190	1.500	0.00 ○	12	100,000	1.500	-0.01 ○
3	250	1.500	0.01 ○	13	150,000	1.000	0.00 ○
4	340	1.500	0.00 ○	14	200,000	0.500	0.00 ○
5	440	1.500	-0.01 ○	15	250,000	0.200	0.01 ○
6	560	1.500	-0.02 ○	16	300,000	0.150	0.02 ○
7	700	1.500	-0.02 ○	17	400,000	0.150	0.00 ○
8	880	1.500	-0.06 ○	18	500,000	0.150	-0.03 ●
9	1,100	1.500	-0.00 ○	19	600,000	0.150	0.03 ●
10	1,400	1.500	-0.01 ○	20	8,000,000	0.150	0.00 ●

(c) Analysis

When Jitter Transfer is selected on the Analyze main screen, measurement results can be analyzed graphically. Pressing Set key after aligning the cursor to <> on the screen indicates numeric data at the measurement point.

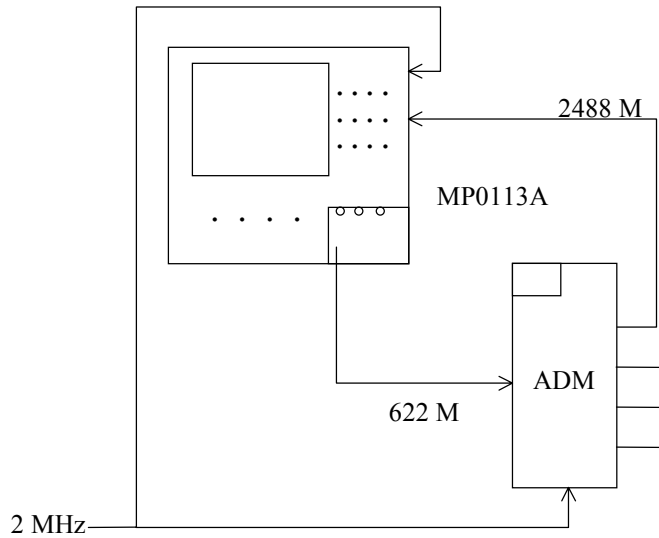


⚠ CAUTION

-
- * When the amplitude on the Transfer table is less than 1.7 UIpp, the receive side range is set to 2 UI range. When 1.7 UIpp or more, it is set to 32 UI range.
 - ** The bandwidth BW selection becomes as follows, depending on the modulation frequency fm.
 $f_m \geq 100 \text{ Hz} : \text{BW} < 10 \text{ Hz}$
 - *** The Cal data is deleted in the following cases:
 - When power is turned off
 - When the receive bit rate is changed
 - When the Transfer table is changed
 - When Calibration measurement is started
 - **** When the display field of the measurement point is blinking during measurement, it indicates that the loop of the jitter receive section is unlocked.
 - ***** When the measured result displays > 10 dB, the following cases are considered.
 1. The measured result is > 10 dB.
 2. The loop of the jitter receive section is unlocked.
 3. The measured result exceeds the measurement limit of the jitter receive section.
-

3.4 Pattern Jitter Measurement and Pointer Sequence Generation

An example to conduct a 2488 Mb/s ADM Pattern Jitter measurement using the MP0113A is explained.



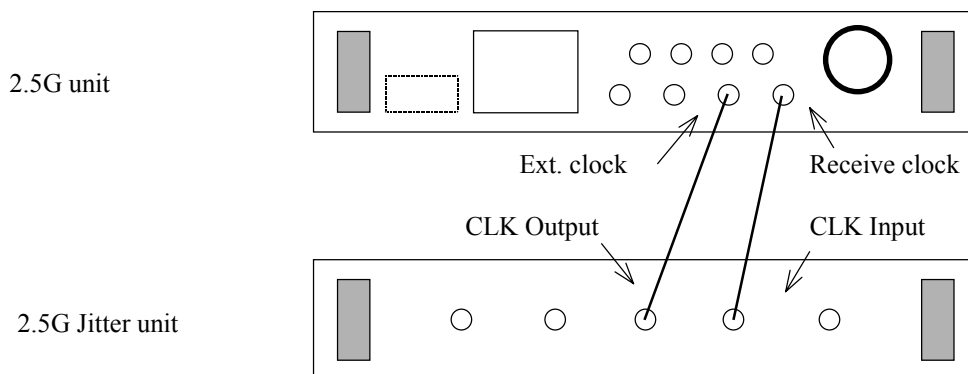
(1) Connection

For measurement at STM16-VC4-139M mapping, insert the five units of the MP0113A unit, the MP0121A 2/8/34/139/156 M (CMI) unit, the MP0124A/MP0125A/MP0126A Jitter unit, the MP0129A 2.5G unit, and the MP0130A 2.5G Jitter unit into each the unit mounting slot.

⚠ CAUTION

In this example, connect the Ext. Clock of the 2.5G unit to the CLK Output of the 2.5G Jitter unit, and the Receive Clock of the 2.5G unit to the CLK Input of the 2.5G Jitter unit.

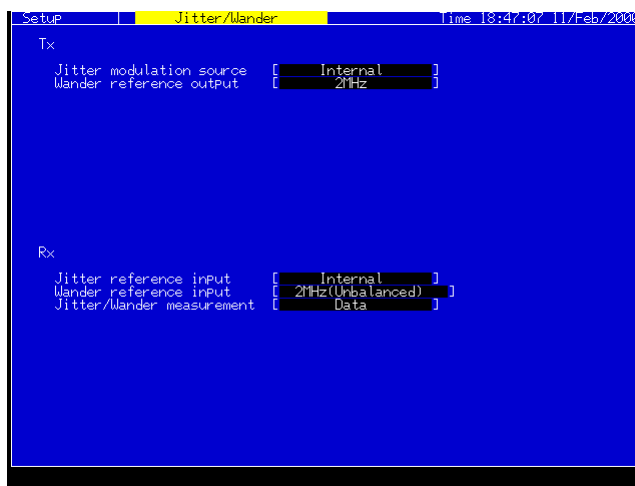
Connect as shown below and turn power on.



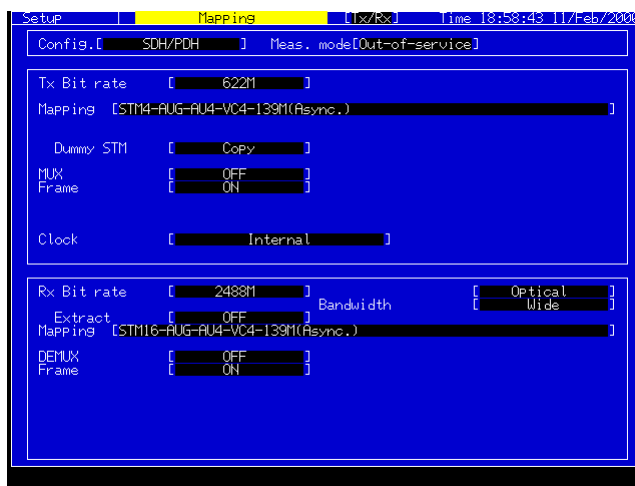
3.4 Pattern Jitter Measurement and Pointer Sequence Generation

(2) Initial setting

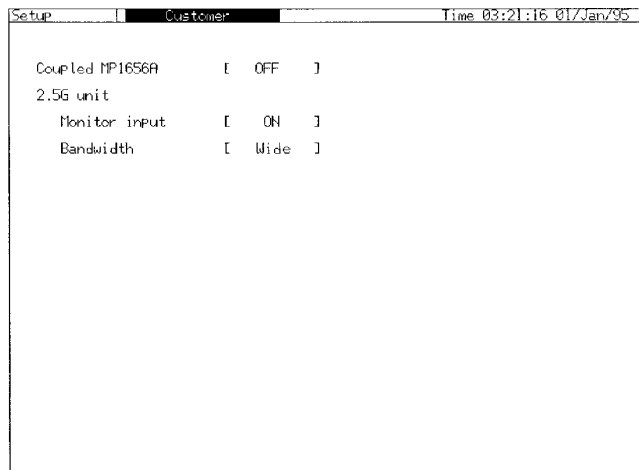
- (a) Set the Setup: Mapping screen as shown below, which shows typical settings for measurement at STM16-VC4-139 M mapping. In this case, synchronize the MP1570A and measuring unit by the 2 MHz timing signal. Select the input/output state (Optical 1.31/1.55 μm , or Electrical) at the right of Bit rate field. In this example, select Optical 1.55 μm .



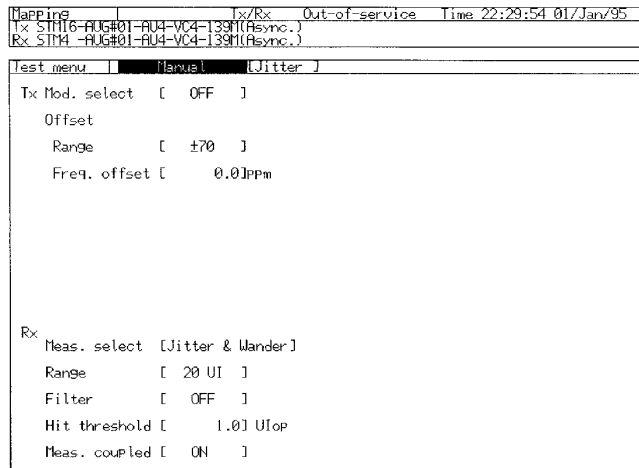
- (b) Set the Setup: Jitter/Wander screen as shown below.



- (c) Set the Setup: Customer screen, as shown below.
 When connecting to the monitor output of the DUT, set the Monitor input to ON. (Input Data connector on the unit front panel is connected to DUT.)
 Set the Bandwidth to Wide for the jitter measurement.



- (d) Select Manual (Jitter) on the Test menu main screen and conduct settings as shown below.
 Set the Jitter to OFF and the Freq. offset to 0 ppm. Set the Coupled to ON and set a measurement time in the Mode of Manual.



3.4 Pattern Jitter Measurement and Pointer Sequence Generation

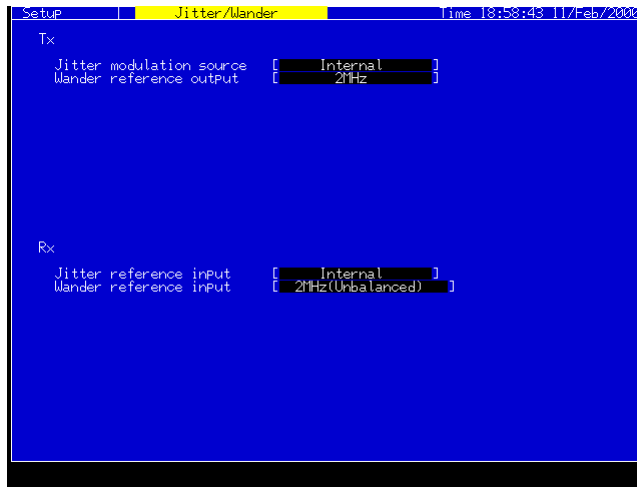
(3) Pattern Jitter measurement

The Pattern Jitter measurement can be carried out accurately under the SDH pointer test conditions.

(a) Start of measurement

Select Pointer sequence on the Test menu. The figure on the right shows an example for measurement of jitters at the AU pointer in the Regular with double sequence mode.

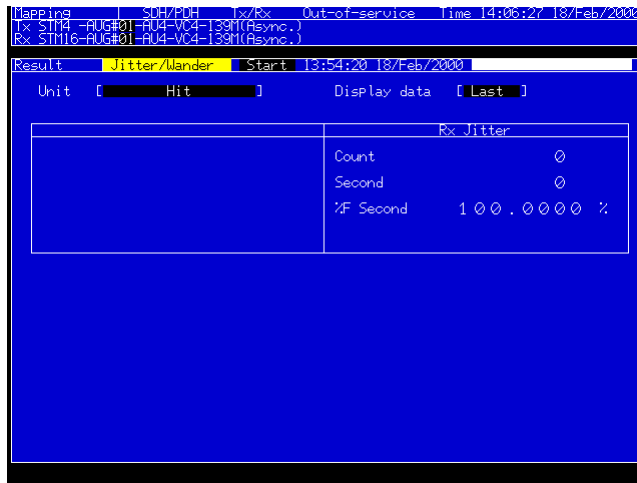
Press Start/stop key to initiate a measurement.



(b) Measurement result (Peak)

Select Jitter on the Result main screen and set the Unit to Peak. The maximum jitter values are indicated as UI_{P-P} , UI_{+P} and UI_{-P} as shown on the right.

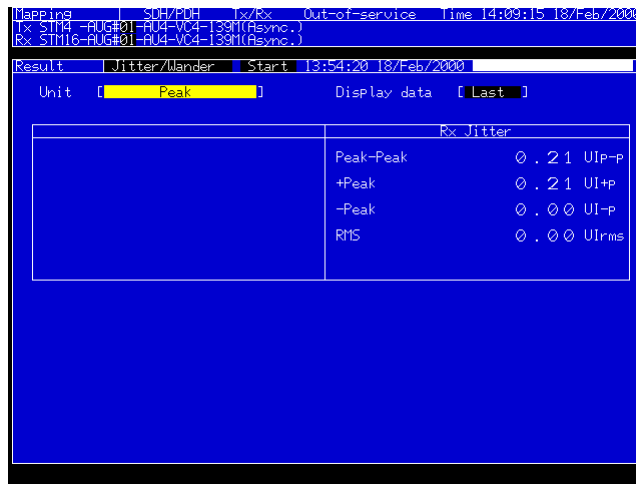
Results under measurement are indicated when the Display data is set to Current.



(c) Measurement result (Hit)

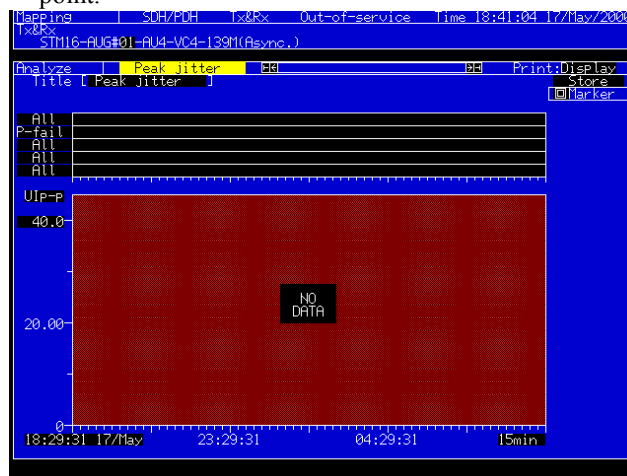
Select Jitter on the Result main screen and set the Unit to Hit. The number and seconds of jitters which exceed the preset Hit threshold are indicated as shown below.

Results under measurement are indicated when the Display data is set to Current.



(d) Analysis

When Peak jitter is selected at the Analyze main screen, the measurement result can be analyzed on a graph. Position the cursor to the <> button on the screen and press the Set key to display numeric data at the measurement point.

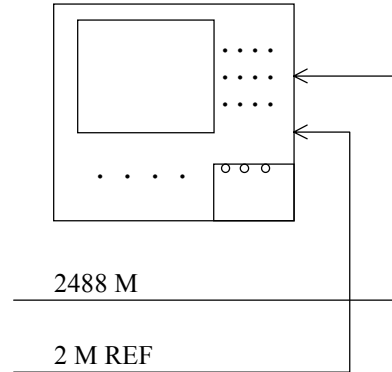


Notes:

- This screen is displayed when a jitter unit (MU150011A) is installed. The wander measurement option is also necessary.
- Recording automatically stops at the end of measurement or after ?? hours from the measurement start.

3.5 Wander Measurement (Manual)

Explanation is given using the Wander measurement at 2488 M as an example.



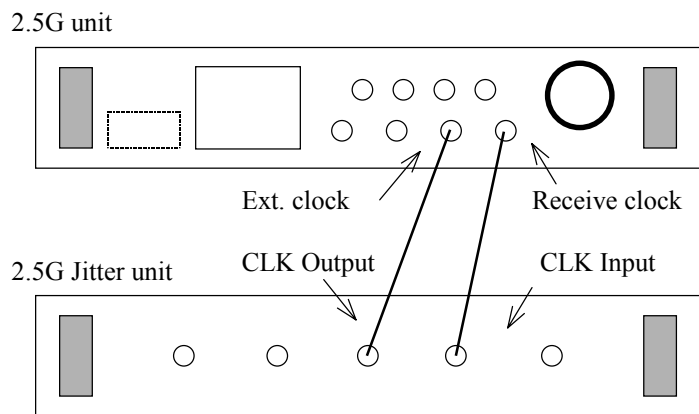
(1) Connection

Insert the four units of the MP0121A 2/8/34/139/156 M (CMI) unit, the MP0124A/MP0125A/MP0126A Jitter unit with the Wander measurement option (02) installed, the MP0129A 2.5G unit, and the MP0130A 2.5G Jitter unit into each the unit mounting slot.

⚠ CAUTION

In this example, connect the Ext. Clock of the 2.5G unit to the CLK Output of the 2.5G Jitter unit, and the Receive Clock of the 2.5G unit to the CLK Input of the 2.5G Jitter unit.

Connect as shown below and turn power on.



⚠ CAUTION

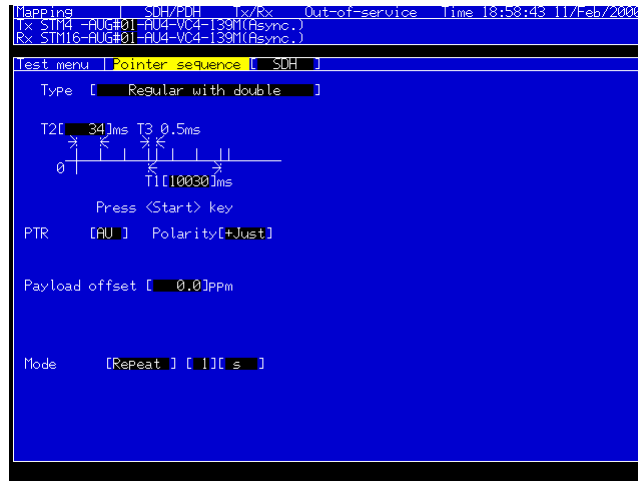
When the power is turned on, or the Clock interface or Wander Reference Output setting is changed, perform the enough heat-running of the MP1570A before measurement.

(2) Initial setting

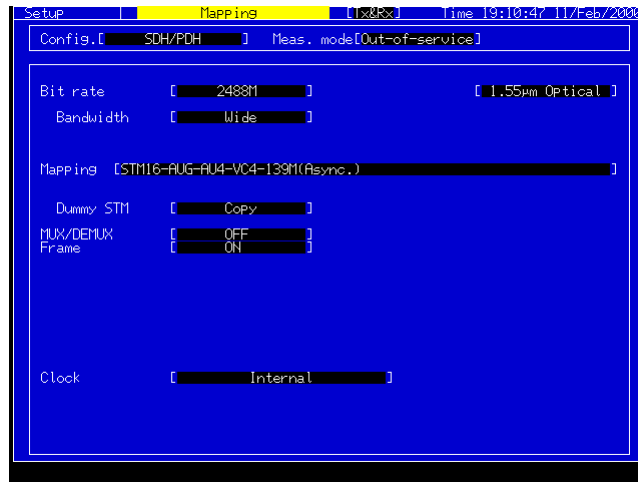
(a) Set the Setup: Mapping screen as shown below.

Set the bit rate to 2488 M. Select the input/output state (Optical 1.31/1.55 μm , or Electrical) at the right of Bit rate field.

In this example, select Optical 1.55 μm .

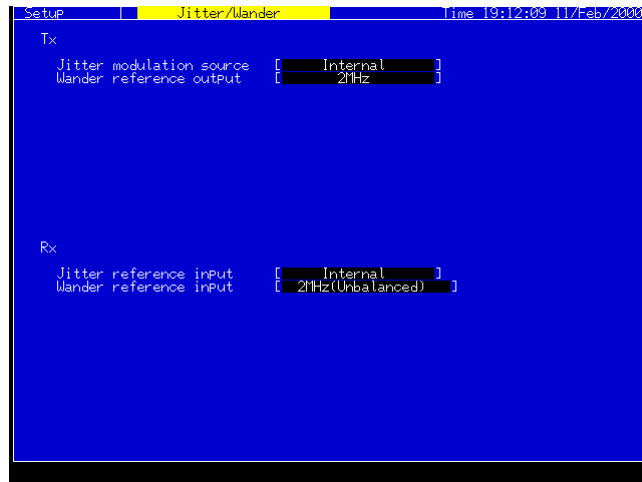


(b) Set the Setup: Jitter/Wander screen as shown below.



(c) Set the Setup: Customer screen, as shown below.

When connecting to the monitor output of the DUT, set the Monitor input to ON. (Input Data connector on the unit front panel is connected to DUT.)

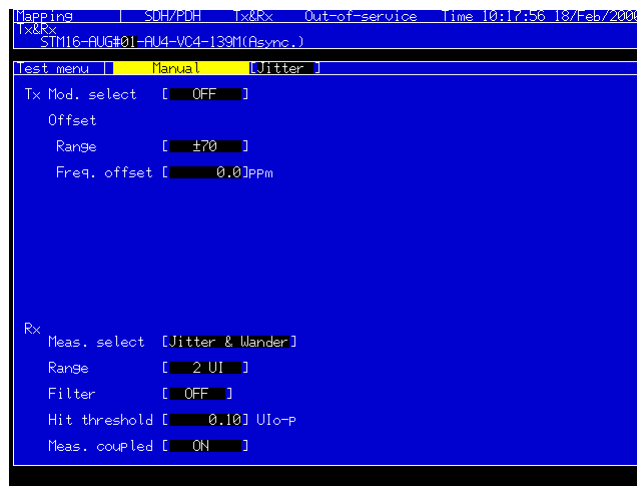


(3) Manual measurement

Wander measurement for up to 99 days are possible.

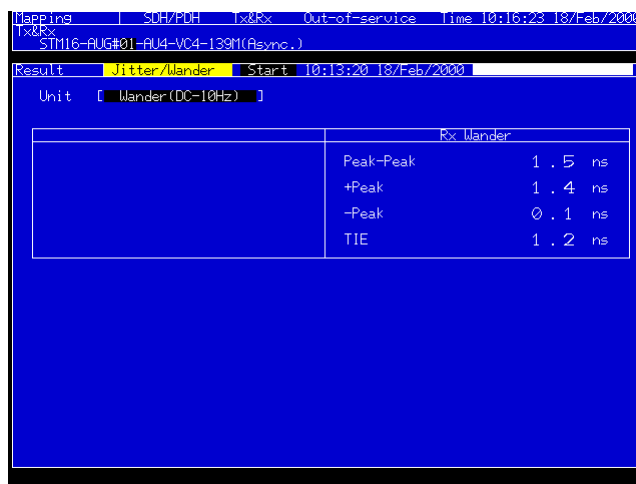
(a) Start of measurement

Select Manual (Jitter) on the Test menu main screen. Set the Rx Meas. select to Wander. An example of 1 hour measurement is shown below. Press Start/stop key to initiate the measurement. Progress of measurement is indicated on the screen.



(b) Measurement result (Wander)

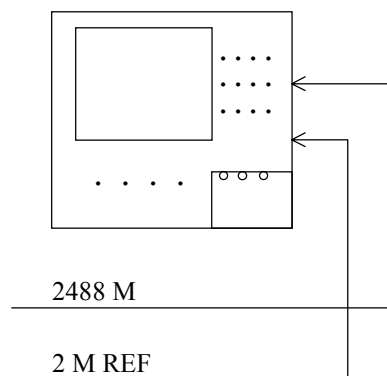
When Jitter & Wander is selected as Meas. select of Manual on the Test menu main screen, the Jitter/Wander subscreen of the Result main screen is aso set to Wander. On this screen, Peak-Peak, +Peak, -Peak and TIE numeric data are indicated.



* When Jitter & Wander is selected at Meas. select, Jitter and wander measurements are conducted, simultaneously. The measurement result is displayed alternatively by switching the Unit on the Result main screen.

3.6 Wander Measurement (TIE: Time Interval Error)

The following explains Wander measurement at 2488 M as an example. Measurement points are automatically set by Observation time.



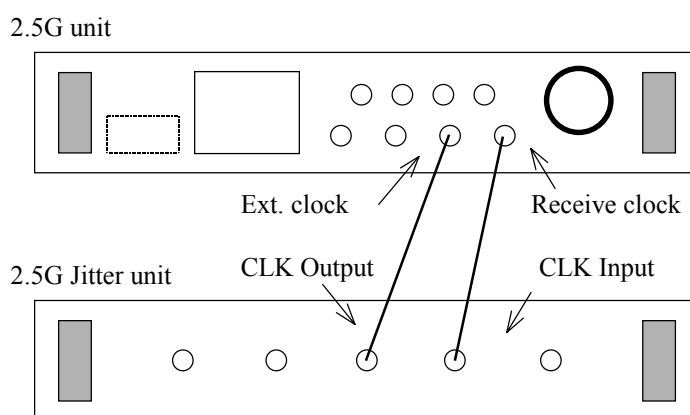
(1) Connection

Insert the four units of the MP0121A 2/8/34/139/156 M (CMI) unit, the MP0124A/MP0125A/MP0126A Jitter unit with the Wander measurement option (02) installed, the MP0129A 2.5G unit, and the MP0130A 2.5G Jitter unit into each the unit mounting slot.

⚠ CAUTION

In this example, connect the Ext. Clock of the 2.5G unit to the CLK Output of the 2.5G Jitter unit, and the Receive Clock of the 2.5G unit to the CLK Input of the 2.5G Jitter unit.

Connect as shown on the right, then turn the power on.



⚠ CAUTION

When the power is turned on, or the Clock interface or Wander Reference Output setting is change, perform the enough heat-running of the MP1570A before measurement.

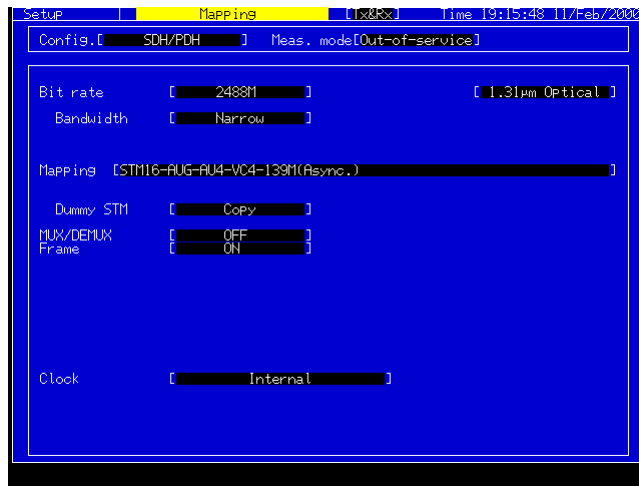
(2) Initial setting

(a) Set the Setup: Mapping screen as shown below.

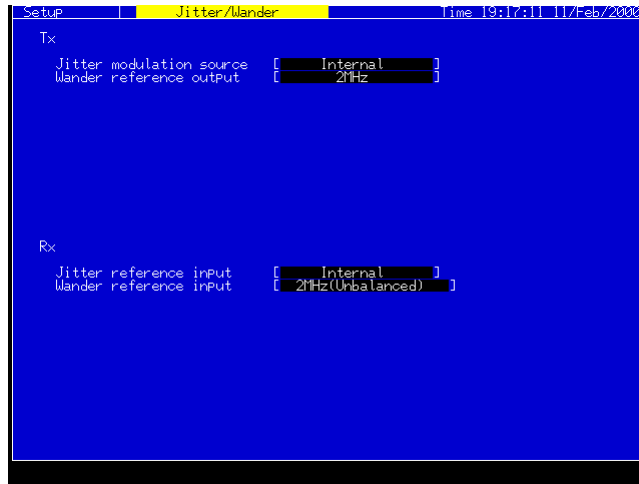
Typical settings for Wander measurement using the 2488M interface are shown.

Select the input/output state (Optical 1.31/1.55 μm , or Electrical) at the right of Bit rate field.

In this example, select Optical 1.31 μm .



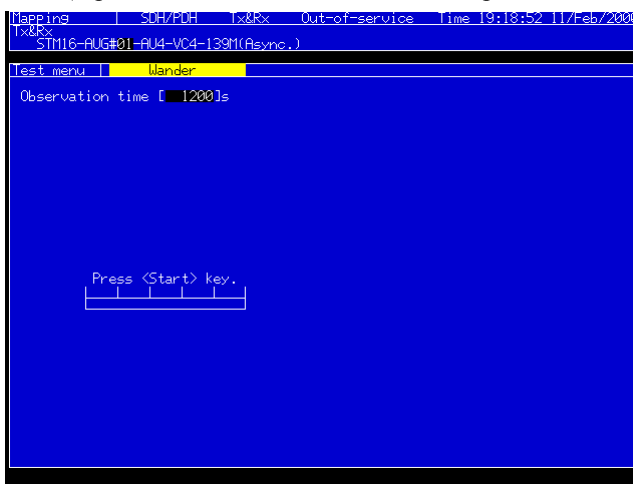
(b) Set the Setup:Jitter/Wander screen as shown below.



3.6 Wander Measurement (TIE: Time Interval Error)

(c) Set the Setup: Customer screen, as shown below.

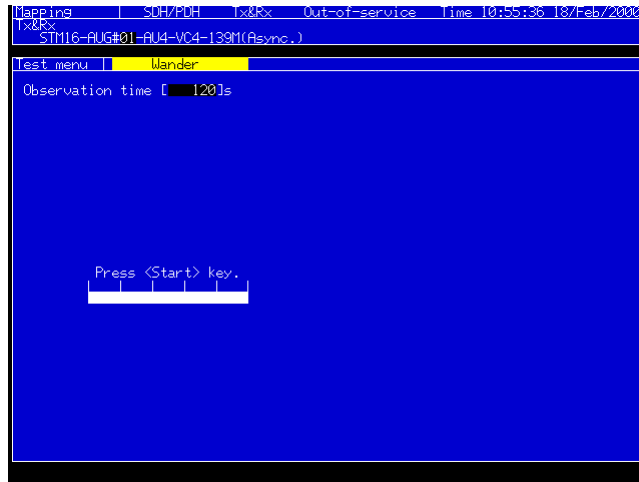
When connecting to the monitor output of the DUT, set the Monitor input to ON. (Input Data connector on the unit front panel is connected to DUT.)



(3) Wander measurement

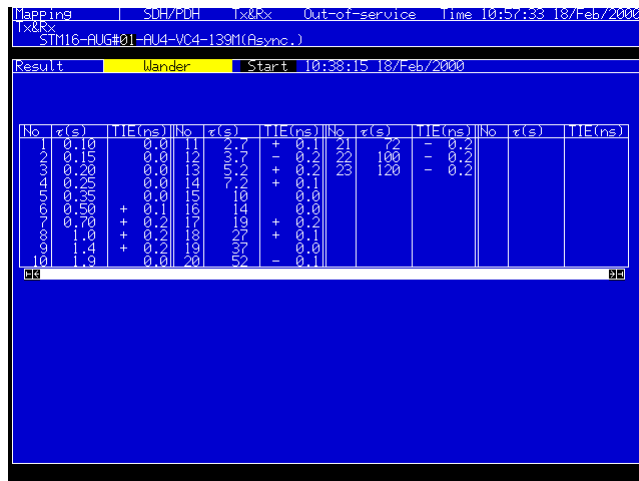
(a) Start of measurement

Select Wander on the Test menu main screen. Set the Observation time. Progress of measurement is displayed on the screen.



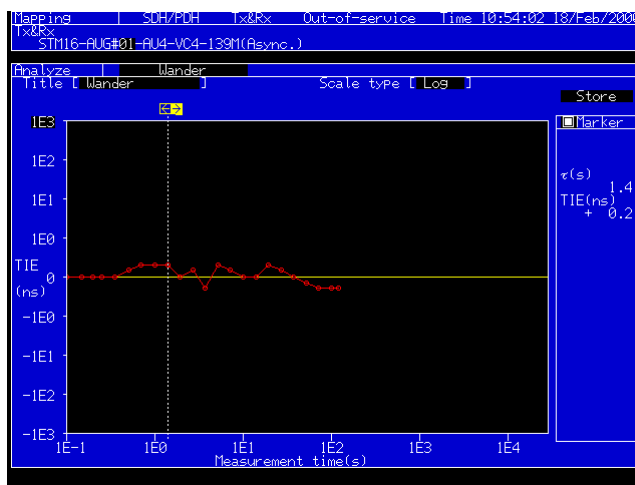
(b) Measurement result

When Wander is selected on the Test menu main screen, the Result screen is also set to Wander. Measurement results are indicated as original numeric data as shown below.



(c) Analysis

Measurement results can be analyzed graphically by selecting Wander on the Analyze main screen. Pressing the Set key after positioning the cursor to < > on the screen indicates numeric data at the measurement points. Graph data can be saved by saving analysis data.



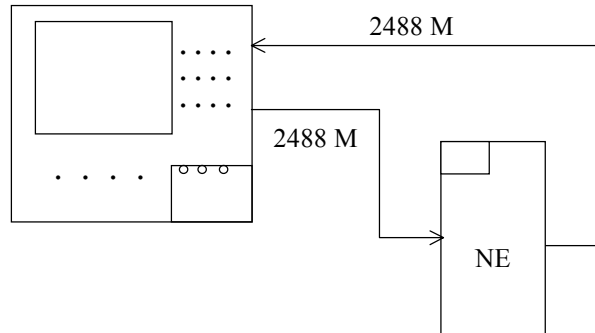
(4) <MTIE>, <TDEV> analysis

Analysis software (run on an external personal computer) can be used to analyze <TIE>, <MTIE>, and <TDEV>.

All data stored during the Observation time can be saved by using Wander data (TIE).

3.7 Frequency Offset vs Jitter Measurement

This section explains an example of Frequency Offset vs Jitter Measurement at 2488 Mbit/s.



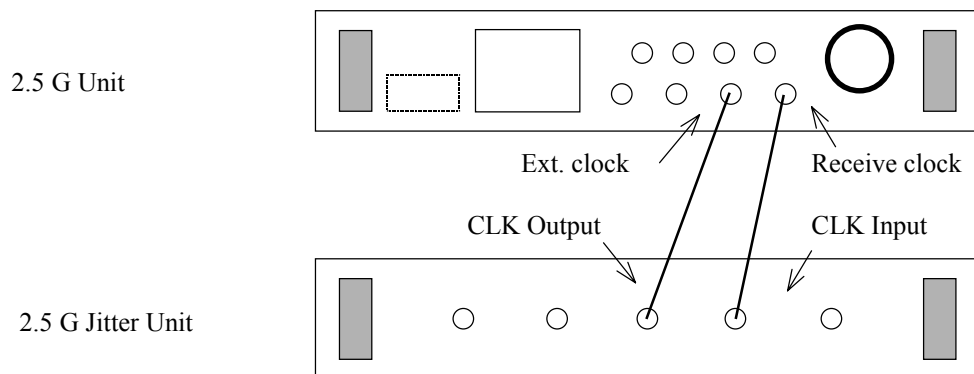
(1) Connection

Insert the three units of MP0121A 2/8/34/139/156M (CMI) Unit, 2.5G Unit (MP0128A or MU150009A), and MP0130A 2.5G Jitter Unit into the unit insertion slots.

⚠ CAUTION

In this example, connect the Ext. Clock and Receive Clock of 2.5G Unit to CLK Output and CLK Input of 2.5G Jitter Unit, respectively, as shown below.

Connect as shown below, and then turn the power on.



(2) Initial setting

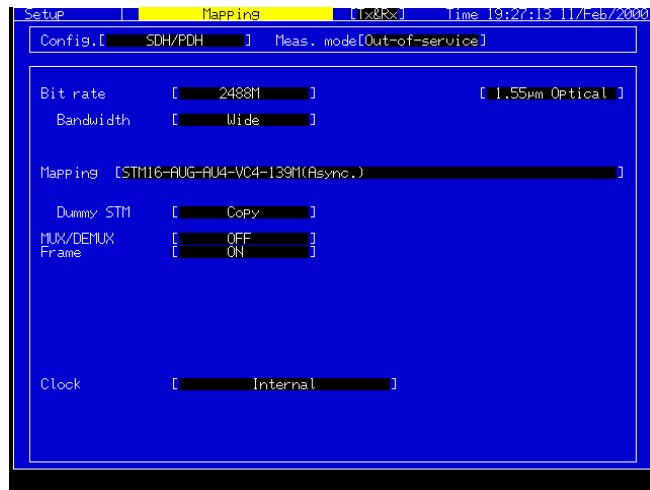
- (a) Set the Setup:Mapping screen as shown on below.

The following figure indicates a measurement example with 2488M.

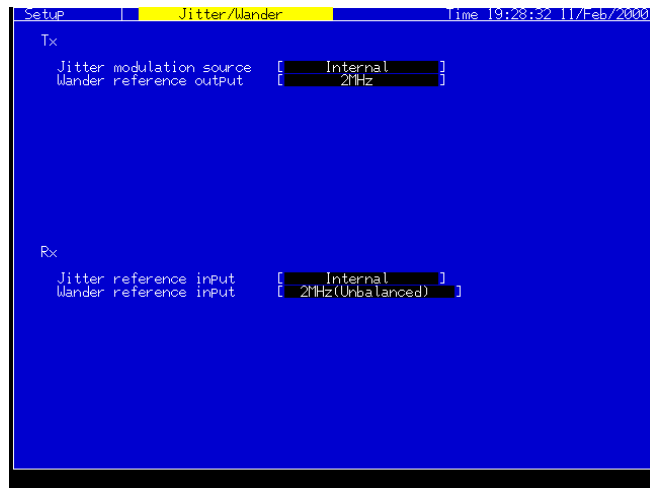
At the right of Bit rate setting, select input/output (Optical 1.55 μm , Electrical).

In this example, select Optical 1.55 μm .

Select Wide for Bandwidth at jitter measurement.



- (b) Set the Setup:Jitter/Wander screen as shown below.



(3) Frequency offset vs jitter measurement

The frequency offset vs jitter measurement measures the maximum jitter at each offset value in the range of 51 maximum of measurement points.

Note that the frequency offset vs jitter measurement cannot be performed when the MU150011A is used for the 2.5 G Unit.

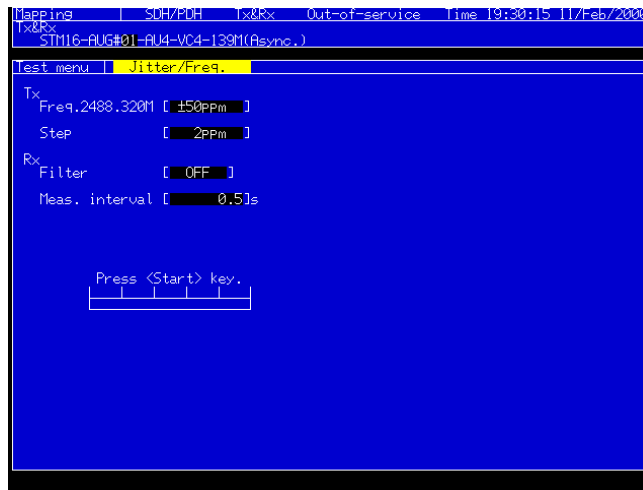
(a) Start of measurement start

Select Jitter/Freq. at Test menu main screen.

Set frequency offset value, step value, filter, and measurement interval.

Press Start/Stop key to start measurement.

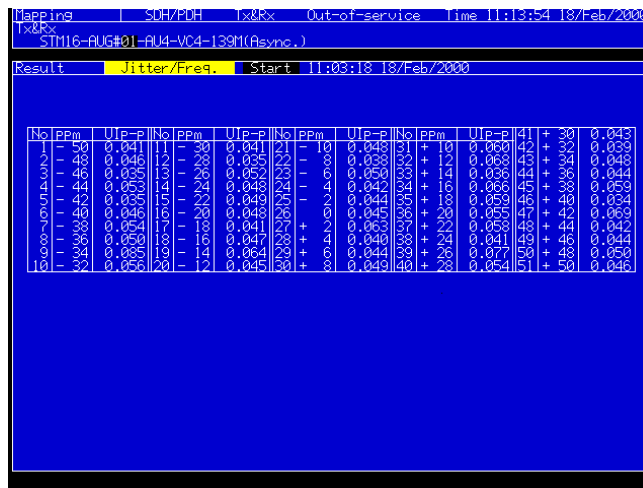
Progress of measurement is displayed on the screen.



(b) Measurement results

When Jitter/Freq. mode is selected at Test menu main screen, the Result screen also becomes at Jitter/Freq. mode.

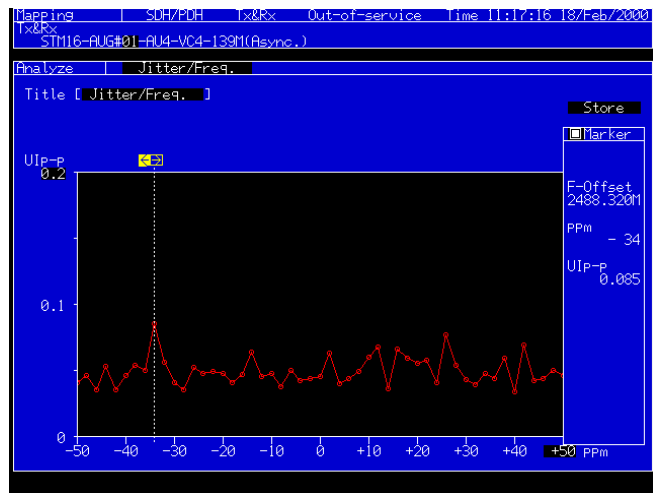
The measurement results are displayed as numerical data with ppm values, as shown below.



(c) Analysis

The measurement results can be analyzed by graphs on Analyze main screen.

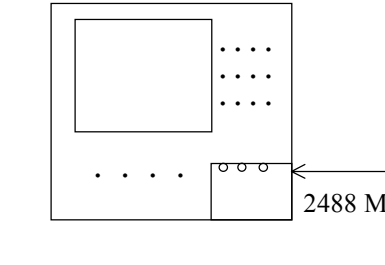
Numerical data is displayed at the measurement point by positioning the cursor at <> button on the screen and then pressing Set key.



The graph data and measurement results of the last five measurements can be displayed.

3.8 Frequency Measurement

The following explains frequency measurement.



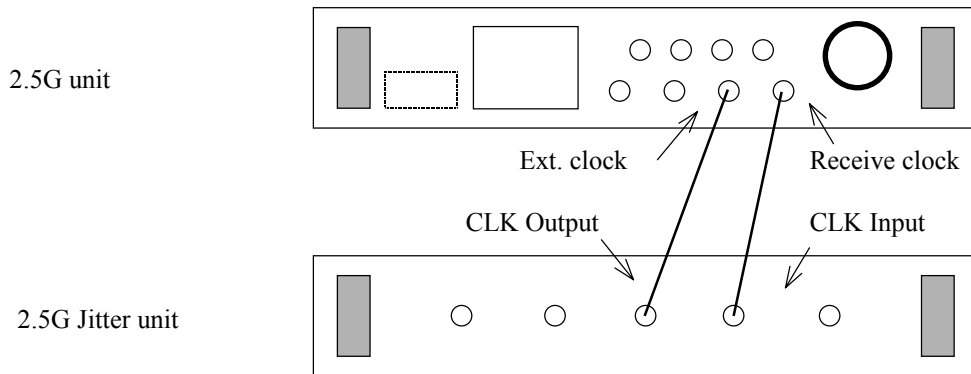
(1) Connection

Insert the three units of the MP0121A 2/8/34/139/156 M (CMI) unit, the MP0129A 2.5G unit and MP0130A 2.5G Jitter unit into each the unit mounting slot.

CAUTION

In this example, connect the Ext. Clock of the 2.5G unit to the CLK Output of the 2.5G Jitter unit, and the Receive Clock of the 2.5G unit to the CLK Input of the 2.5G Jitter unit.

Connect as shown on the below, then turn the power on.

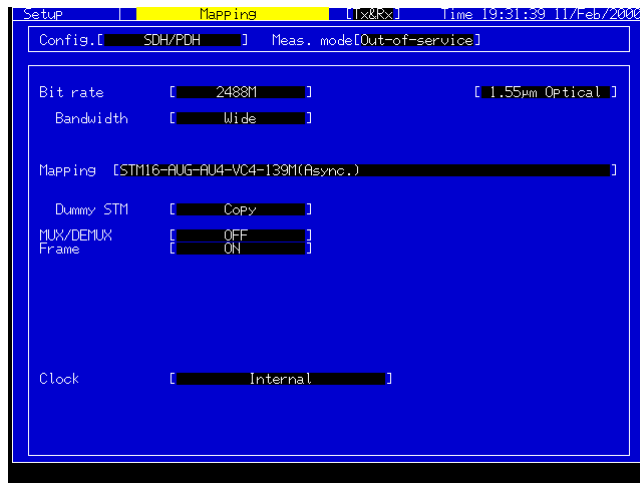


(2) Initial setting

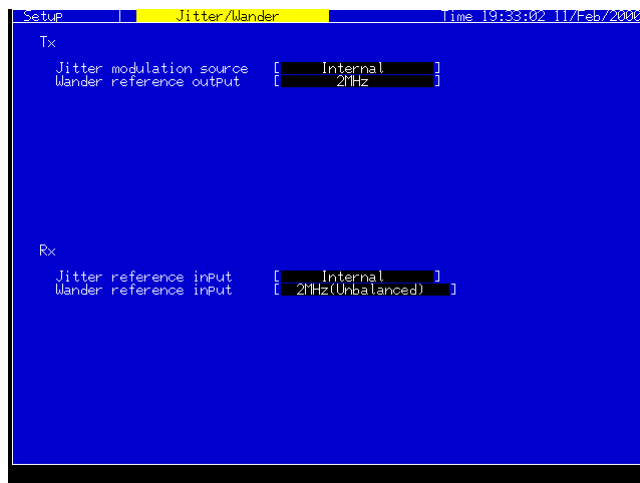
(a) Set the Setup: Mapping screen as shown on the below.

Select the input/output state (Optical 1.31/1.55 μm , or Electrical) at the right of Bit rate field.

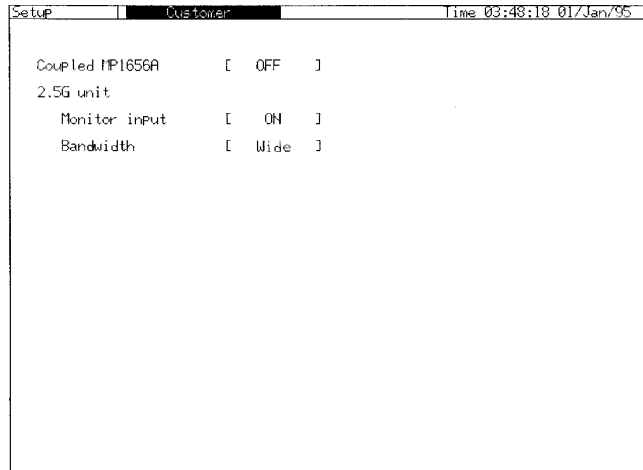
In this example, select Optical 1.55 μm .



(b) Set the Setup: Jitter/Wander screen as shown below.



- (c) Set the Setup: Customer screen, as shown below.
When connecting to the monitor output of the DUT, set the Monitor input to ON. (Input Data connector on the unit front panel is connected to DUT.)



(3) Frequency measurement

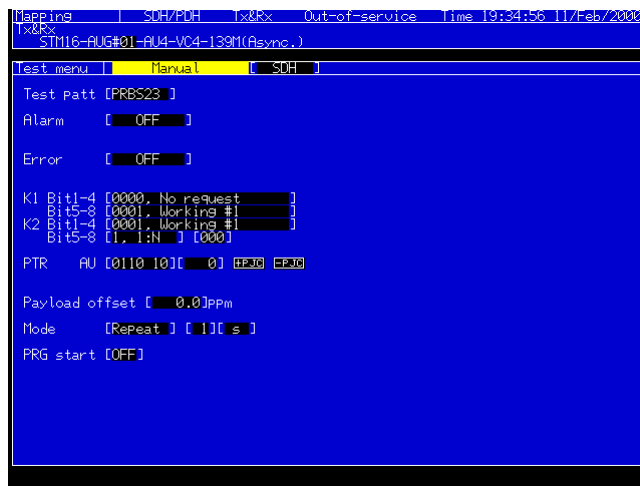
Measures the monitored frequency value to gather max. 60-hour data at Manual Jitter measurement.

(a) Start of measurement

Selects Manual at Test menu main screen.

Sets the measurement time, as shown below.

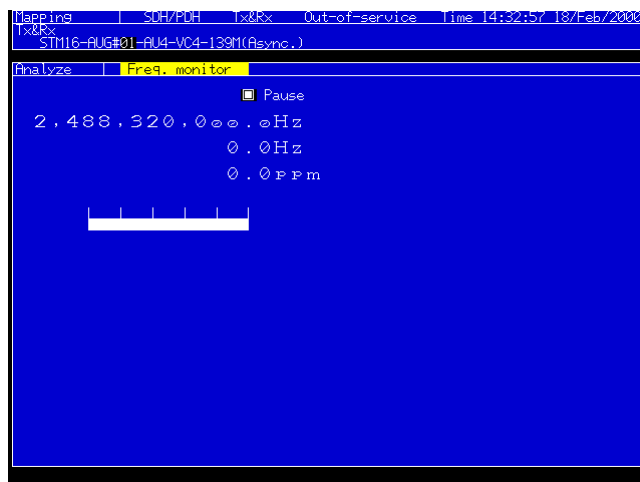
Press Start/Stop key. (Frequency measurement and histogram starts.)



(b) Measurement result

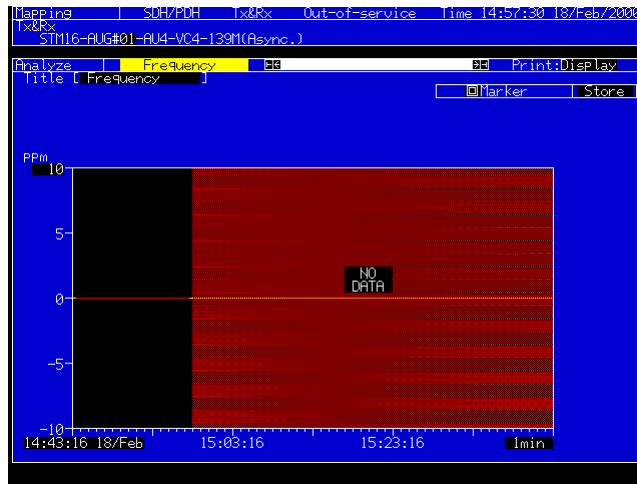
Select the Freq. monitor on the main Analyze screen to display the frequency being monitored and the value in ppm.

The gate time changes depending on the bit rate, automatically. The monitored value is updated every gate time.



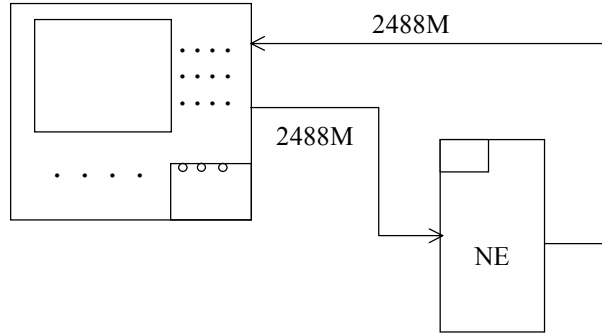
(c) Analysis

Select Frequency on the Analyze main screen, and press Start/Stop key to see the histogram of recording the frequency monitored value in ppm unit. The record stops at measurement end or after 60 hours elapsed, automatically with the set value.



3.9 Frequency Sweep Measurement

This section explains frequency sweep measurement at 2488 Mbits/s.



Note:

A jitter unit (MU150011A) is required to be installed for this measurement.

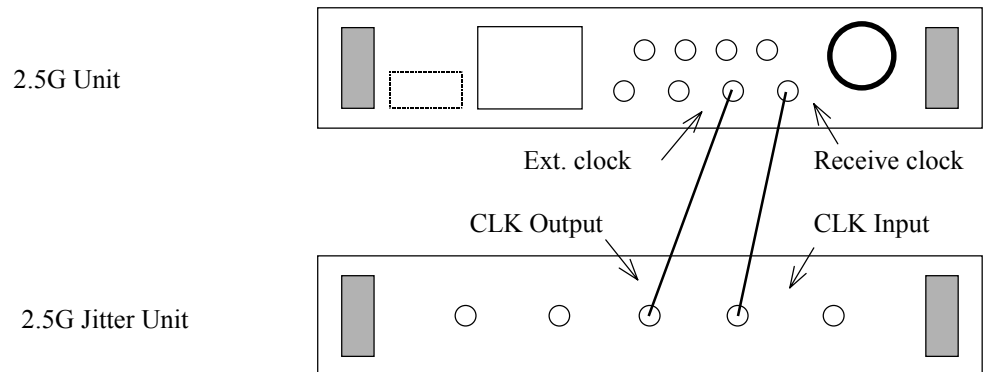
(1) Connection

Insert the MP0121A 2/8/34/139/156M (CMI) unit, MP0128A 2.5G unit, and MU150011A 2.5G jitter unit into the unit insertion slots.

! Caution

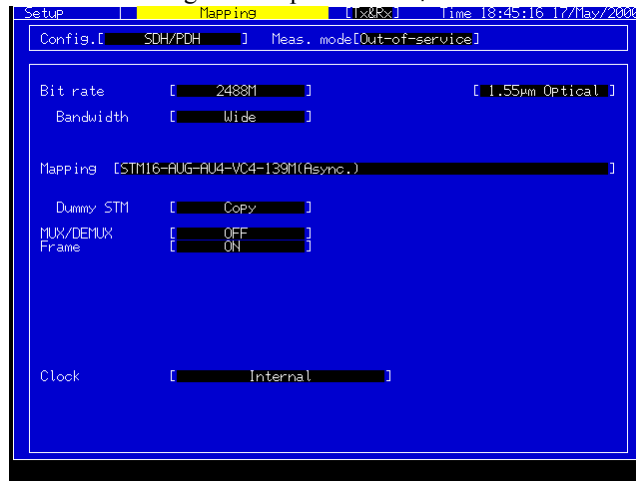
In this example, connect Ext. Clock of the 2.5G unit into CLK Output of the 2.5G jitter unit, and the Receive Clock of the 2.5G unit to CLK Input of the 2.5G jitter unit.

Connect as shown below and turn the power on:



(2) Initial settings

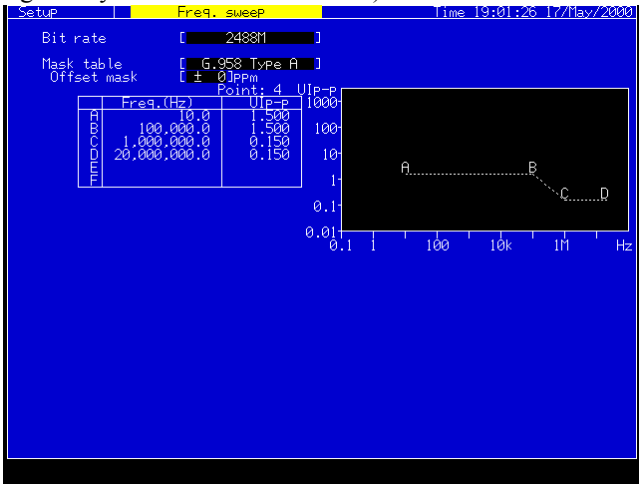
- (a) Set the Setup:Mapping screen as shown below, which shows typical settings for measurement at 2488M. Select input/output (Optical 1.55 μ m) at right of the bit rate setting. Set Optical 1.55 μ m here.



- (b) Set the Setup:Jitter/Wander screen as shown below:



(c) Set the Setup:freq. sweep screen as shown below (The set condition can be changed only when “User” is selected).

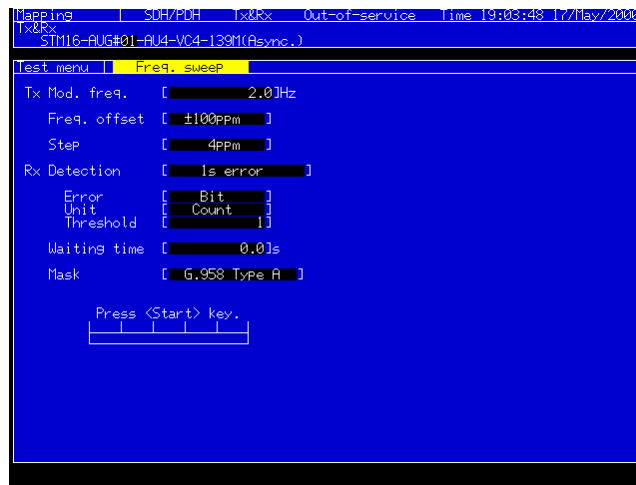


(3) Frequency sweep measurement

Measure the frequency sweep at each offset.

(a) Start of measurement

Select Freq. sweep on the Test menu main screen. Set the frequency offset value, step value, detection condition, and mask. Press the Start/Stop key to perform the measurement. The progress of measurement is displayed on the screen.



(b) Measurement result

When Freq. sweep is selected on the Test menu main screen, the Result screen is also in Frequency sweep mode. The measurement results are displayed as original numeric data with the ppm value as shown below. If the result is out of specifications of the error evaluation conditions, NG is displayed.



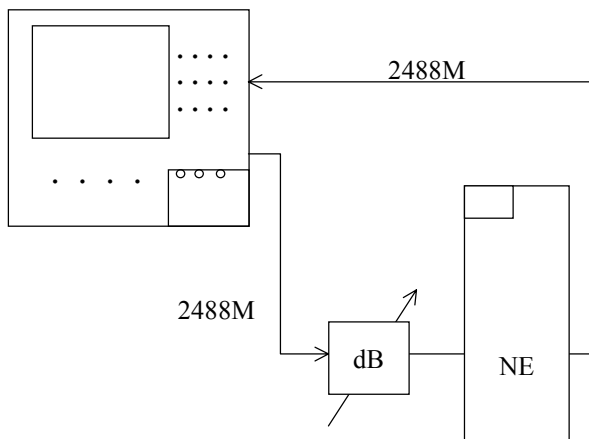
(c) Analysis

Measurement results can be analyzed graphically on the Analyze main screen. Pressing the Set key after positioning the cursor to the <> button on the screen displays numeric data at the measurement point.



3.10 Wander Sweep Measurement

This section explains wander sweep measurement.



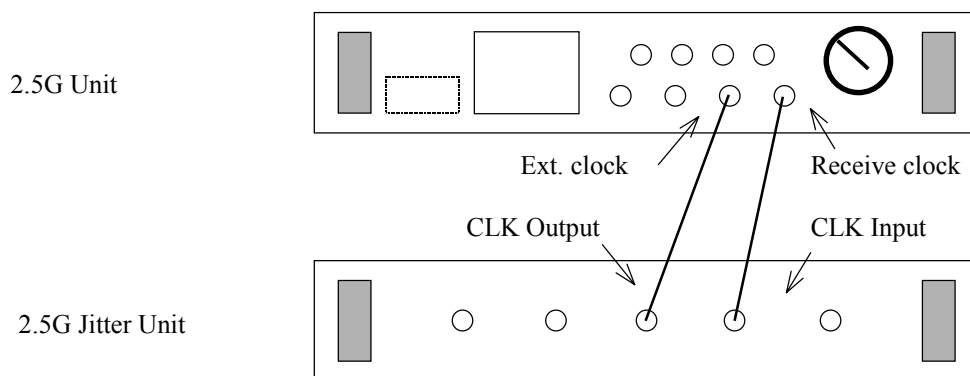
(1) Connection

Insert the MP0121A 2/8/34/139/156M (CMI) unit, MU150005A/150006A/150007A jitter unit with the wander measurement option (02), MP0129A 2.5G unit, and MU150011A 2.5G jitter unit into the unit insertion slots.

! Caution

In this example, connect Ext. Clock of the 2.5G unit into CLK Output of the 2.5G jitter unit, and the Receive Clock of the 2.5G unit to CLK Input of the 2.5G jitter unit.

Connect as shown below and turn the power on:



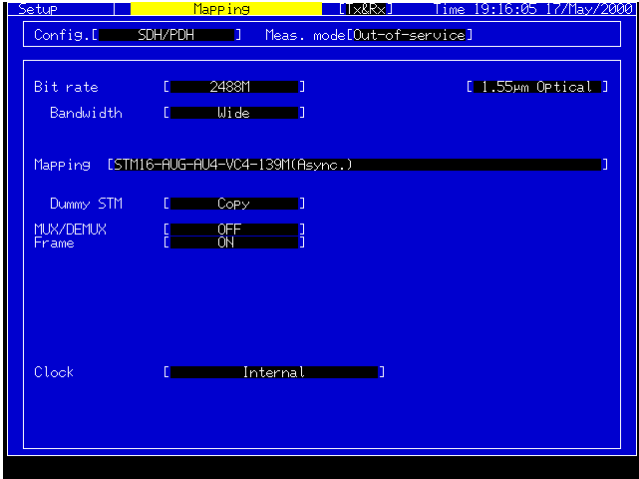
! Caution

When the power is turned on or when the Clock Interface or 2488M Wander Reference Output setting is changed, perform the enough heat-running of MP1570A before measurement.

(2) Initial settings

(a) Set the Setup:Mapping screen as shown below.

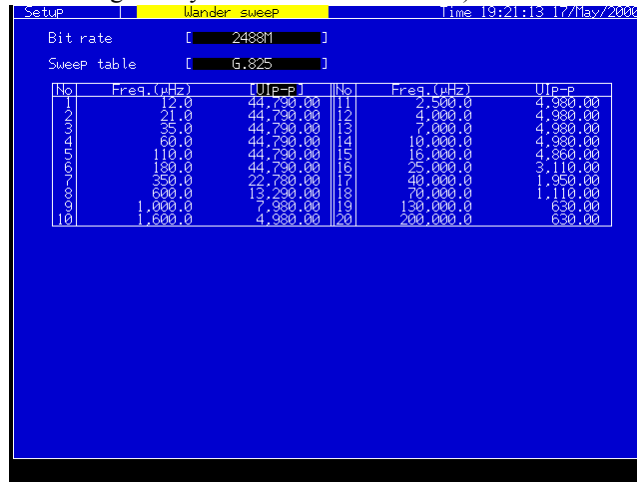
Set the bit rate to 2488M. Then select input/output (Optical 1.55 μ m) at right of the bit rate field. Set Optical 1.55 μ m here.



(b) Set the Setup:Jitter/Wander screen as follows:



(c) Set Sweep table on the Setup:Wander sweep screen. (The set condition can be changed only when “User” is selected).

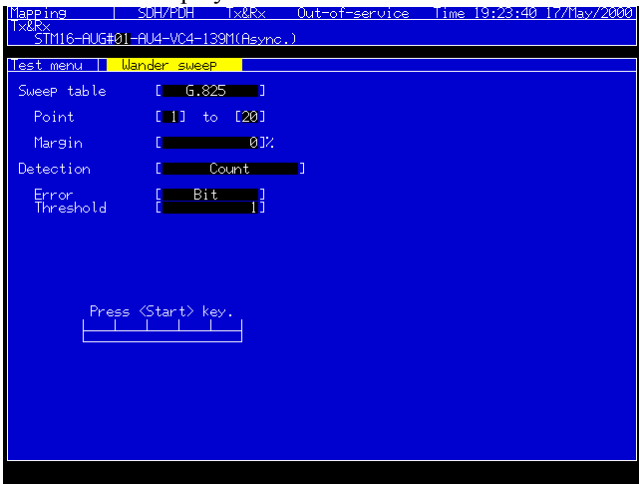


(3) Wander sweep measurement

In wander sweep measurement mode, wander sweep can be measured with high precision at up to 20 measurement points.

(a) Start of measurement

Select Wander sweep on the Test menu main screen. Set the sweep table. Press the Start/Stop key to perform the measurement. The progress of measurement is displayed on the screen.



(b) Measurement result

When Wander sweep is selected on the Test menu main screen, the Result screen is also set to Wander sweep mode. The measurement results are displayed as original numeric data with the measurement frequency as shown below. If the result is out of the specifications of the error evaluation conditions, NG is displayed.



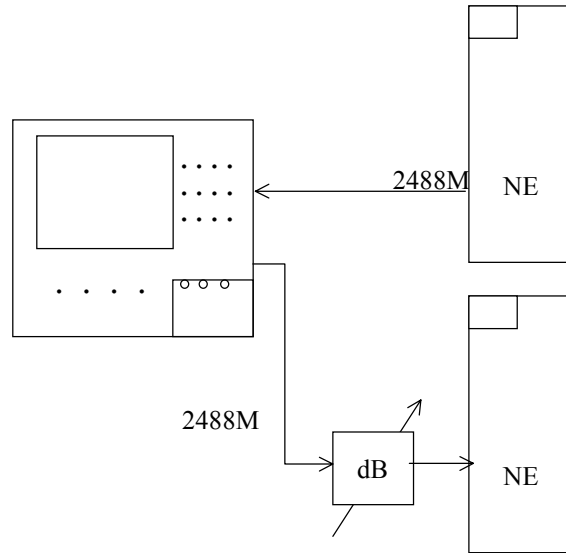
(c) Analysis

When Wander sweep is selected at the Analyze main screen, the measurement result can be analyzed on a graph. Pressing the Set key after positioning the cursor to the <> button on the screen displays numeric data at the measurement point



3.11 Through Jitter Addition

This unit can add a jitter to a clock signal generated from a receive signal by the interface unit.



Note:

- A jitter unit (MU150011A) is required to be installed for this measurement.

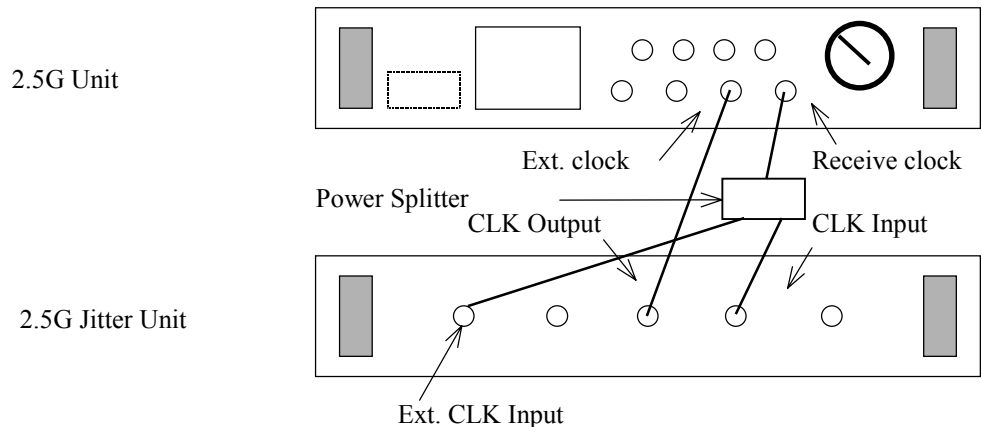
(1) Connection

Insert the MP0121A 2/8/34/139/156M (CMI) unit, MP0128A 2.5G unit, and MU150011A 2.5G jitter unit into the unit insertion slots.

⚠ Caution

In this example, connect Ext. Clock of the 2.5G unit into CLK Output of the 2.5G jitter unit, and the Receive Clock of the 2.5G unit to CLK Input of the 2.5G jitter unit.

Connect as shown below and turn the power on:

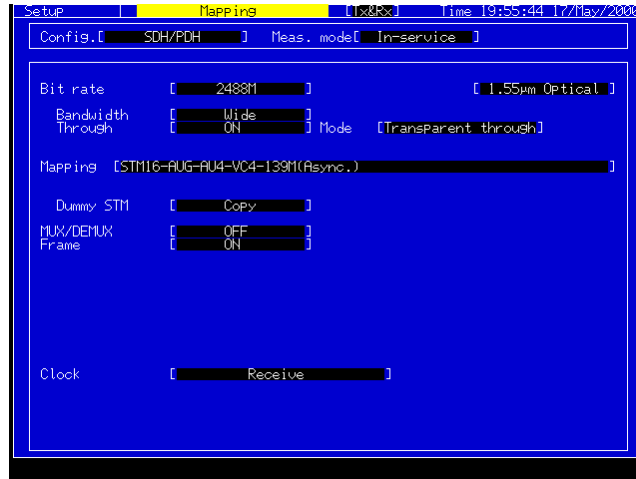


(2) Initial settings

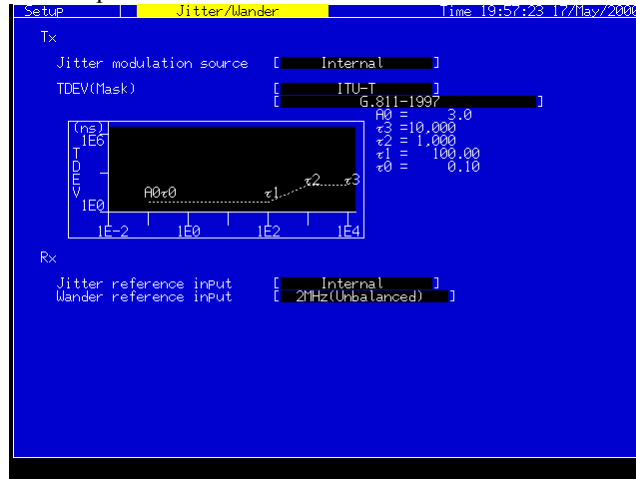
(a) Set the Setup:Mapping screen as shown below.

Set Clock to Received for adding a through jitter.

- Meas. Mode : In-service
- Through : ON
- Clock : Receive



(b) Set the Setup:Jitter/Wander screen as shown below:



(c) Open the Test menu : Manual screen.

Set Tx Mod. Select to "Jitter", and the jitter displayed on "Range", "Mod. Freq", "Amplitude" is added to the output signal.

```
Mapping 50Hz PCH Tx&Rx In-service Time 19:59:13 17/Nov/2000
Tx&Rx
STM16-AUG#01-AU4-VC4-139M(Async.)
Test menu Manual [Jitter]
Tx Mod. select [Jitter]
Offset
Range [±100]
Freq. offset [0.0]ppm
Jitter
Range [2 UI]
Mod. freq. [20,000,000.0]Hz
Amplitude [Manual]
[Adjust] 0.000 UIp-p
Rx
Meas. select [Jitter & Wander]
Range [32 UI]
Filter [LP] - 20M
Hit threshold [4] UIo-p
Meas. coupled [ON]
```


Section 4 Remote Control

This section describes remote control on the 2.5G Jitter measurement.

4.1	Common Command	4-3
4.2	MP1570A Unique Status Register	4-4
4.3	Detailed Device Message	4-7
4.3.1	Parameter Format	4-7
4.3.2	Response Format	4-8
4.4	Device Unique Command	4-12
4.4.1	INSTrument subsystem	4-13
4.4.2	SOURce subsystem	4-15
4.4.3	SENSE subsystem	4-66
4.4.4	DISPlay subsystem	4-112
4.4.5	CALCulate subsystem	4-221
4.4.6	SYSTem subsystem	4-226
4.4.7	TEST subsystem	4-232
4.4.8	STATus subsystem	4-234

4.1 Common Command

Here, explanation is given on IEEE488.2 common commands supported by the MP1570A. Common commands can be used commonly for the GPIB and RS-232C interface.

All common commands supported by the MP1570A are sequential commands.

IEEE488.2 Common Commands

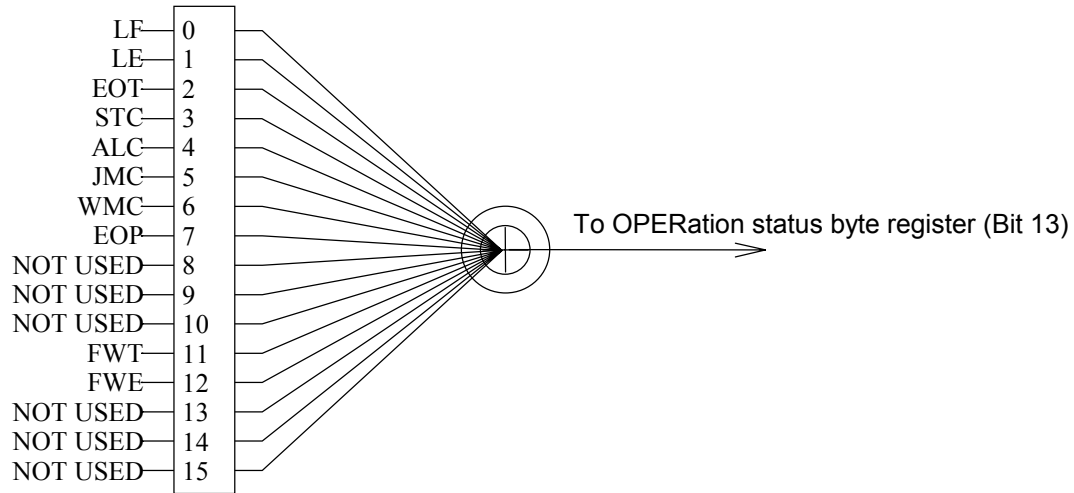
Plain language	Command full spelling
*IDN?	Identification Query
*RST	Reset Command
*TST?	Self Test Query
*OPC	Operation Complete Command
*OPC?	Operation Complete Query
*WAI	Wait Continue Command
*CLS	Clear Status Command
*ESE	Standard Event Status Enable Command
*ESE?	Standard Event Status Enable Query
*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

Note:

For other commands, refer to the “MP1570A SONET/SDH/PDH/ATM Analyzer Operation Manual Vol.2 Remote Control”.

4.2 MP1570A Unique Status Register

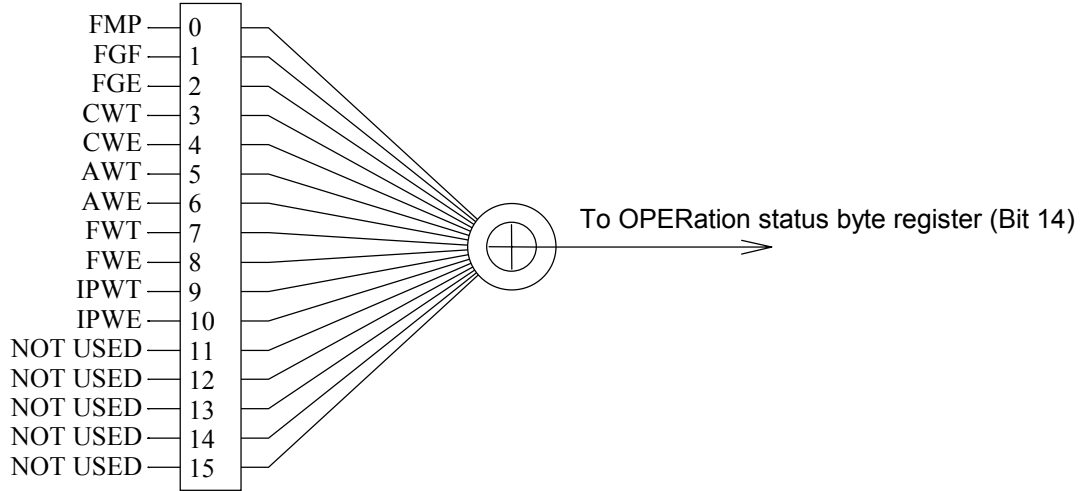
INSTRument Status Register



Bit Definition for INSTRument Status Register

Bit	Flag Name	Description
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)	Indicates that change has occurred to alarm.
DB5	JMC (Jitter Measurement Complete)	Indicates that a jitter measurement has completed.
DB6	WMC (Wander Measurement Complete)	Indicates that a wander measurement has completed.
DB7	EOP (End of Printer Period)	Indicates the intermediate printing timing.
DB11	FWT (64Frame Waiting for Trigger)	Indicates that a OH capture is being awaited.
DB12	FWE (64Frame Waiting for Capture End)	Indicates that a OH capture end is being awaited.

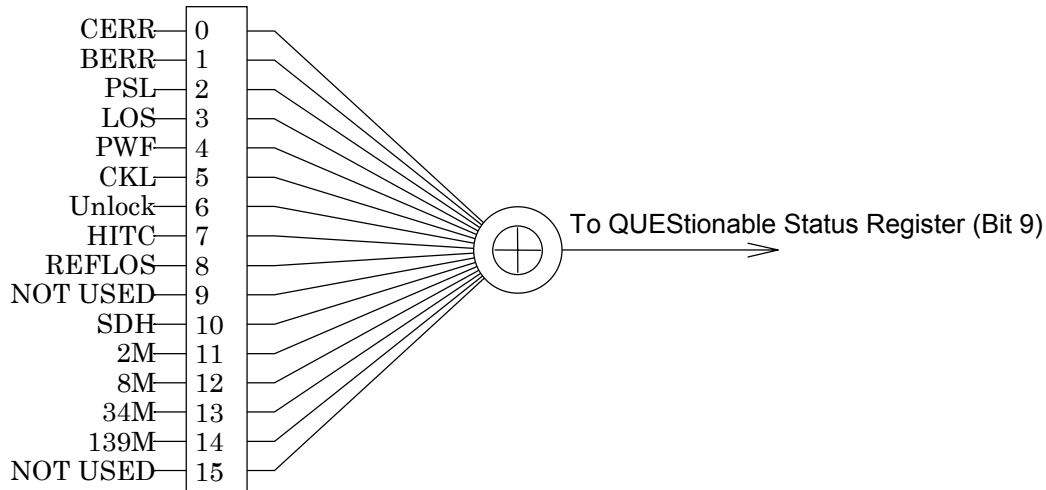
INSTRument2 Status Register



INSTRument2 Status Register

DB0	FMP	(Freq. Monitor Period)	Indicates the frequency monitor update timing.
DB1	FGF	(Freq. Graph Full)	Indicates that the Freq. graph is full of data.
DB2	FGE	(Freq. Graph Empty)	Indicates that no Freq. graph data exists.

TELEcom Status Register



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 locking is pulled out.
DB7	HITC (HIT Count)	Indicates that number of times in which threshold is exceeded for the jitter measurement has been counted.
DB8	REFLOS (REFerence LOS)	Indicates that a REF LOS has occurred during the wander measurement.
DB10	SDH (SDH status register summary)	SDH <input type="checkbox"/>
DB11	2M (2M status resister summary)	PDH:2M Status Register Summary
DB12	8M (8M status resister summary)	PDH:8M Status Register Summary
DB13	34M (34M status resister summary)	PDH:34M Status Register Summary
DB14	139M (139M status resister summary)	PDH:139M Status Register Summary

Note:

For other commands, refer to the “MP1570A SONET/SDH/PDH/ATM Analyzer Operation Manual Vol.2 Remote Control”.

4.3 Detailed Device Message

4.3.1 Parameter Format

The table below lists the types of parameter used for this measuring instrument.

In this manual, lowercase letters enclosed in <and> in the table below indicate a parameter type. The type of program data specified in IEEE488.2 (or SCPI) corresponding to a parameter type is shown in uppercase letters. The correspondence between each type of parameter and program data specified in IEEE488.2 (or SCPI) is described for each command.

Parameter Contents	
Parameter Type	Explanation
<numeric> <NON-DECIMAL NUMERIC PROGRAM DATA>	Indicates a decimal number (decimal fraction input).

Note:

For other parameters, refer to the “MP1570A SONET/SDH/PDH/ATM Analyzer Operation Manual Vol.2 Remote Control”.

4.3.2 Response Format

Here, explanation is given on response formats corresponding to queries. Formats are as listed in Table below.

Response Format (1/4)

Type	Format	Description
Form5 UI type	" X.XXX"	≤When $0.000 \leq \text{value} \leq 2.020$ at UIpp in 2 UI range When $0.000 \leq \text{value} \leq 1.010$ at UI+p, UI-p in 2 UI range When $0.000 \leq \text{value} \leq 0.714$ at UIrms in 2UI range 5 among 6 characters with right margin: Example: > :CALCulate:DATA? "AMPLitude:PP" < " 1.234"
	" XX.XX"	When $0.00 \leq \text{value} \leq 20.20$ at UIpp in 20 UI range When $0.00 \leq \text{value} \leq 10.10$ at UI+p, UI-p in 20 UI range When $0.00 \leq \text{value} \leq 7.14$ at UIrms in 20 UI range 5 among 6 characters with right margin: Example: > :CALCulate:DATA? "AMPLitude:RMS" < " 7.00"
	" XXX.X" (Jitter Tx)	When $0.0 \leq \text{value} \leq 50.5$ at UIpp in 50 UI range When $0.0 \leq \text{value} \leq 202.0$ at UIpp in 200 UI range When $0.0 \leq \text{value} \leq 808.0$ at UIpp in 800 UI range 5 among 6 characters with right margin: Example: > :SOURce:JITTer:MANual:AMPLitude:UIPP 7.0 < " 7.00"
	">2.020"	When value > 2.020 (2 UI range, UIpp)
	">20.20"	When value > 20.20 (20 UI range, UIpp)
	">50.50"	When value > 50.50 (50 UI range, UIpp)
	">202.0"	When value > 202.0 (200 UI range, UIpp)
	">808.0"	When value > 808.0 (800 UI range, UIpp)
	">1.010"	When value > 1.010 (2 UI range, UI+p/UI-p)
	">10.10"	When value > 10.10 (20 UI range, UI+p/UI-p)
	">0.714"	When value > 0.714 (2 UI range, UIrms)
	"> 7.14"	When value > 7.14 (20 UI range, UIrms)
	">X.XXX"	alue > Maximum amplitude value of frequency (2 UI range,Tolerance(UIpp))
	">XX.XX"	alue > Maximum amplitude value of frequency (20 UI range,Tolerance(UIpp))
	">XXX.X"	alue > Maximum amplitude value of frequency (50 UI range,Tolerance(UIpp)) (200 UI range,Tolerance(UIpp)) (800 UI range,Tolerance(UIpp))
"-----"	When no data corresponding to query exists	

Response Format (2/4)

Type	Format	Description
Form 5 UI Type	" X.XXX"	<p>\leqWhen $0.000 \leq \text{value} \leq 2.020$ at UIpp in 2 UI range When $0.000 \leq \text{value} \leq 1.010$ at UI+p, UI-p in 2 UI range When $0.000 \leq \text{value} \leq 0.714$ at UIrms in 2UI range 5 among 6 characters with right margin: Example: > :CALCulate:DATA? "AMPLitude:PP" < " 1.234"</p>
	" XX.XX"	<p>When $0.00 \leq \text{value} \leq 20.20$ at UIpp in 20 UI range When $0.00 \leq \text{value} \leq 10.10$ at UI+p, UI-p in 20 UI range When $0.00 \leq \text{value} \leq 7.14$ at UIrms in 20 UI range 5 among 6 characters with right margin: Example: > :CALCulate:DATA? "AMPLitude:RMS" < " 7.00"</p>
	" XXX.X" (Jitter Tx)	<p>When $0.00 \leq \text{value} \leq 52.2$ at UIp-p in 50 UI range When $0.00 \leq \text{value} \leq 202.0$ at UIp-p, UI-p in 200 UI range When $0.00 \leq \text{value} \leq 808.0$ at UIp-p in 800 UI range 5 among 6 characters with right margin: Example: > :CALCulate:DATA? "AMPLitude:RMS" < " 7.00"</p>
	" XXX.X " (Jitter Rx)	<p>5 among 6 characters with right margin: When $0.00 \leq \text{value} \leq 52.50$ UI_{p,p} in 50 UI range When $0.00 \leq \text{value} \leq 26.25$ UI+p, UI-p in 50 UI range When $0.00 \leq \text{value} \leq 18.56$ UIrms, UI_{p,p} in 50 UI range Example: > :CALCulate:DATA? "JAMPLitude:RMS" <: "7.00"</p>
	"-----"	When no data corresponding to query exists
Form 6 dB type	" XX.XX "	<p>When value > 0, 5 among 7 characters with right margin Example: > :CALCulate:DATA? "JTRansfer:POINT1" < "0.50", "Acceptable"</p>
	" 0.00"	When value = 0.
	" -XX.XX"	<p>When value > 0, 5 among 7 characters with right margin Example: > :CALCulate:DATA? "JRRansfer:POINT1" < "- 10.00", "Unacceptable"</p>
	"-----"	When no data corresponding to query exists.

Section 4 Remote Control

Response Format (3/4)

Type	Format	Description
Form 7 Time type 1	" X.X "	When $0 \leq \text{value} < 10$, 3 among 7 characters with right margin Example: > :CALCulate:DATA? "WANDer:TIE" < "5.0"
	" XXXXX "	When $10 \leq \text{value} < 10000$, 5 among 7 characters with right margin Example: > :CALCulate:DATA? "WANDer:PPEak" < "1000"
	" -X.X "	When $-10 \leq \text{value} < 10000$, 4 among 7 characters with right margin Example: > :CALCulate:DATA? "WANDer:TIE" < "-5.0"
	" -XXXXX "	When $-10000 \leq \text{value} < -100$, 6 among 7 characters with right margin Example: > :CALCulate:DATA? "WANDer:MPEak" < "-1000"
	"-----"	When no data corresponding to query exists.
Form 8 Time type 2	" X.X "	When $10 \leq \text{value} < 0$, 5 among 6 characters with right margin Example: > :CALCulate:DATA? "WANDer:POINT1" < "5.0", "Unacceptable"
	" XXXXX "	When $10 \leq \text{value} < 10000$, 5 among 6 characters with right margin Example: > :CALCulate:DATA ≤ "WANDer:POINT2" < "5.0", "Unacceptable"
	" X.XEEXX"	When $1.0E4 \leq \text{value} < 1.0E10$, 6 among 7 characters with right margin Example: > :CALCulate:DATA? "WANDer:POINT3" < " 4.0E04", " Acceptable"
	"-----"	When no data corresponding to query exists.
Form 10 Integer type 2	"XXXXXXXXXXXXX. X"	When $0 \leq \text{value} < 9,999,999,999.9$, 12 among 13 characters with right margin Example: > :DISPlay:ANALysis:FMONitor:FREQuency? < "120000.9", "+1000.0"
	"-----"	When no data corresponding to query exists.
Form 11 ppm type	" +XXXX.X"	When $\text{value} < 0$, 7 among 8 characters with right margin Example: > :DISPlay: ANALysis: FMONitor: FREQuency? < "120000000.9", "-1000.0"
	" -XXXX.X"	When $\text{value} < 0$, 6 among 7 characters with right margin Example: > :DISPlay: ANALysis: FMONitor: FREQuency?" < "120000000.9", "-1000.0"
	"-----"	When no data corresponding to query exists.

Response Format (4/4)

Type	Format	Description
Form 13 Integer type 3	"XXXXXXXX.X"	When $0 \leq \text{value} < 9,999,999.9$, 9 among 10 characters with right margin Example: > :DISPlay: NANLysis: FMONitor: FREQuency? < "120000000.9", "+1000.0", "0.0"
	" X.X"	When = 0, 9 among 10 characters with right margin Example: > :DISPlay: NANLysis: FMONitor: FREQuency? < "120000000.9", "+1000.0", "0.0"
	"-XXXXXXXX.X"	hen $-9,999,999.9 \leq \text{value} < 0$, 12 among 13 characters with right margin Example: > :DISPlay: NANLysis: FMONitor: FREQuency? < "120000000.9", "+1000.0", "-1000.0"
	"-----"	When no data corresponding to query exists.
Form 14 Judgement Type	"CLKLOSS"	When clock loss exists.
	LF+EIO	When does not clock loss exists.
	"-----"	When no data corresponding to query exists.

4.4 Device Unique Command

Here, explanation is given on details of device unique commands. For commands other than Jitter/Wander, refer to the “MP1570A SONET/SDH/PDH/ATM Analyzer Operation Manual Vol.2 Remote Control”.

4.4.1 INSTRument subsystem

Function	Command	Parameter
<i>Page 4-14</i>		
Sets a test item.	:INSTRument:CONFIg	type
Queries the test item.	:INSTRument:CONFIg?	

:INSTrument:CONFig <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	SDH_PDH Uses the SDH frame for jitter or wander measurement.
	SONET_PDH Uses the SONET frame for jitter or wander measurement.
	JITTER Jitter and wander measuring function (for measurement using a jitter unit only)
Function	Sets a test item.
Example use	To set SDH_PDH > INSTrument: CONFig SDH_PDH

:INSTrument:CONFig?

Response	<type> = <CHARACTER RESPONSE DATA>
	SDH_PDH Uses the SDH frame for jitter or wander measurement.
	SONET_PDH Uses the SONET frame for jitter or wander measurement.
	JITTER Jitter and wander measuring function (for measurement using a jitter unit only)
Function	Queries the test item.
Example use	> :INSTrument: CONFig? < SDH_PDH

4.4.2 SOURce subsystem

The SOURce subsystem is used to make settings of the sender.

Function	Command	Parameter
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Page 4-22

Sets a clock source for the send signal.	:SOURce:TELEcom:CLOCK:SOURce	csource
Sets a clock source for the send signal.	:SOURce:TELEcom:CLOCK:SOURce?	

Page 4-22

Sets the frequency offset.	:SOURce:TELEcom:OFFSet	numeric
Queries the frequency offset value.	:SOURce:TELEcom:OFFSet?	

Page 4-23

Sets whether jitter or wander is generated.	:SOURce:TELEcom:JWANder:MSElect	mode
Queries whether jitter or wander is generated.	:SOURce:TELEcom:JWANder:MSElect?	
Sets the frequency offset range.	:SOURce:TELEcom:JWANder:ORANge	numeric
Queries the frequency offset range.	:SOURce:TELEcom:JWANder:ORANge?	

Page 4-24

Sets the jitter modulation signal source for jitter generation.	:SOURce:JITTer:MANual:MODE	mode
Queires the modulation signal source for jitter generation	:SOURce:JITTer:MANual:MODE?	
Sets the jitter generation range for jitter generation.	:SOURce:JITTer:MANual:RANGe	numeric
Queries the jitter generation range for jitter generation.	:SOURce:JITTer:MANual:RANGe?	
Sets a jitter modulation frequency for jitter generation.	:SOURce:JITTer:MANual:FREQuency	freq1 freq2
Queries the jitter modulation frequency for jitter generation.	:SOURce:JITTer:MANual:FREQuency?	
Sets how to set the jitter amplitude value for jitter generation.	:SOURce:JITTer:MANual:AMPLitude:TYPE	type
Queries how to set the jitter amplitude value for jitter generation.	:SOURce:JITTer:MANual:AMPLitude:TYPE?	
Sets a set resolution of the jitter amplitude value for jitter generation.	:SOURce:JITTer:MANual:AMPLitude:STEP	step
Queries the set resolution of the jitter amplitude value for jitter generation.	:SOURce:JITTer:MANual:AMPLitude:STEP?	
Sets a jitter amplitude value for jitter generation.	:SOURce:JITTer:MANual:AMPLitude:DATA	data
Sets a jitter amplitude value for jitter generation.	:SOURce:JITTer:MANual:AMPLitude:UIPP	numeric
Queries the jitter amplitude value for jitter generation.	:SOURce:JITTer:MANual:AMPLitude:UIPP?	
Queries the output amplitude monitored value for jitter generation.	:SOURce:JITTer:MANual:AMPLitude:MONitor?	

Page 4-28

Sets Mask specifications for TDEV generation.	:SOURce:JITTer:MANual:TDEV:DTYPE	type
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Section 4 Remote Control

Queries the Mask specifications for TDEV generation.	:SOURce:JITTer:MANual:TDEV:DTYPE?	
Sets a TDEV Mask table when the Mask specifications are set to ITU-T.	:SOURce:JITTer:MANual:TDEV:ITYPE	type
Queries the setting of the TDEV Mask table when the Mask specifications are set to ITU-T.	:SOURce:JITTer:MANual:TDEV:ITYPE?	
Sets a TDEV Mask table when the Mask specifications are set to ETSI.	:SOURce:JITTer:MANual:TDEV:ETYPE	type
Queries the setting of the TDEV Mask table when the Mask specifications is ETSI.	:SOURce:JITTer:MANual:TDEV:ETYPE?	
Sets a TDEV Mask table when the Mask specifications are set to ANSI.	:SOURce:JITTer:MANual:TDEV:ATYPE	type
Queries the setting of the TDEV Mask table when the Mask specifications is ANSI.	:SOURce:JITTer:MANual:TDEV:ATYPE?	
Sets a TDEV Mask table when the Mask specifications are set to Bellecore.	:SOURce:JITTer:MANual:TDEV:BTYPe	type
Queries the setting of the TDEV Mask table when the Mask specifications is Bellecore	:SOURce:JITTer:MANual:TDEV:BTYPe?	
Sets TDEV initializing time (A0) when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:A0	s
Queries the TDEV initializing time (A0) when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:A0?	
Queries the set value of TDEV $\tau 0$ when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:VAT0?	
Sets $\tau 1$ value of TDEV when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:VAT1	numeric
Queries the $\tau 1$ set value of TDEV when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:VAT1?	
Sets $\tau 2$ of TDEV when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:VAT2	numeric
Queries the $\tau 2$ value of TDEV when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:VAT2?	
Sets $\tau 3$ value of TDEV when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:VAT3	numeric
Queries the $\tau 3$ value of TDEV when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:VAT3?	
Queries the $\tau 4$ set value of TDEV when the Mask specifications are set to User.	:SOURce:JITTer:MANual:TDEV:VAT4?	
Initializes Mask specifications of TDEV and Mask table when User is set.	:SOURce:JITTer:MANual:TDEV:DEFAult	type table

Page 4-36

Sets an execution table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:TOLerance:TYPE	type
Queries the execution table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:TOLerance:TYPE?	
Sets an edit table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:TOLerance:PTABLE:TYPE	brate type

Queries the edit table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:TOLerance:PTABLE:TYPE?	brate
Sets the table output point range for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:TOLerance:PTABLE:COUNT	numeric1 numeric2
Queries the table output point range for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:TOLerance:PTABLE:COUNT?	
Sets the contents of User define table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:TOLerance:PTABLE:DATA	brate point freq1 freq2
Queries the contents of User define table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:TOLerance:PTABLE:DATA?	brate point
Initializes the User define table contents for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:TOLerance:PTABLE:DEFAult	brate

Page 4-39

Sets an output table for jitter generation of jitter transfer characteristics measurement.	:SOURce:JITTer:TRANsfer:TYPE	type
Queries an output table for jitter generation of jitter transfer characteristics measurement.	:SOURce:JITTer:TRANsfer:TYPE?	
Sets an edit table for jitter generation of jitter transfer characteristics measurement.	:SOURce:JITTer:TRANsfer:PTABLE:TYPE	brate type
Queries the edit table for jitter generation in jitter transfer characteristic measurement.	:SOURce:JITTer:TRANsfer:PTABLE:TYPE?	brate
Sets the table output point range for jitter generation in the jitter transfer measurement.	:SOURce:JITTer:TRANsfer:PTABLE:COUNT	numeric1 numeric2
Queries the table output point range for jitter generation in jitter transfer measurement.	:SOURce:JITTer:TRANsfer:PTABLE:COUNT?	
Sets the contents of the User define table for jitter generation in jitter transfer characteristic measurement.	:SOURce:JITTer:TRANsfer:PTABLE:DATA	brate point freq1 freq2 ampl
Sets contents of the User table for jitter generation of jitter transfer characteristics measurement when the transfer table is User2.	:SOURce:JITTer:TRANsfer:PTABLE:DATA2	brate point freq1 freq2 ampl rxrange
Queries the contents of the User table for jitter generation of jitter transfer characteristics measurement when the transfer table is User2.	:SOURce:JITTer:TRANsfer:PTABLE:DATA2?	brate point
Initializes the contents of the User define table for jitter generation of jitter transfer characteristics measurement.	:SOURce:JITTer:TRANsfer:PTABLE:DEFAult	brate
Initializes the contents of the User define table for jitter generation of jitter transfer	:SOURce:JITTer:TRANsfer:PTABLE:DEFAult2	brate

Section 4 Remote Control

characteristics measurement when the transfer table is User 2.		
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Page 4-44

Sets the output table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:SWEEP:TYPE	type
Queries the output table for jitter generation in jitter tolerance.	:SOURce:JITTer:SWEEP:TYPE?	
Sets the edit table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:SWEEP:PTABLE:TYPE	brate type
Queries the edit table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:SWEEP:PTABLE:TYPE?	brate
Sets the table output point range for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:SWEEP:PTABLE:COUNT	numeric1 numeric2
Queries the table output point range for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:SWEEP:PTABLE:COUNT?	
Sets the contents of User define table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:SWEEP:PTABLE:DATA	brate point freq1 freq2 amp1
Queries the contents of User table for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:SWEEP:PTABLE:DATA?	brate point
Initializes the User table contents for jitter generation in jitter tolerance measurement.	:SOURce:JITTer:SWEEP:PTABLE:Default	brate
Sets the margin.	:SOURce:JITTer:SWEEP:MARGIN	margin
Queries the setting on the margin.	:SOURce:JITTer:SWEEP:MARGIN?	

Page 4-48

Sets a frequency for jitter modulation frequency measurement (send-side).	:SOURce:JITTer:FSWEEP:FREQUENCY	freq suffix
Queries the setting of the frequency for jitter modulation frequency measurement (send-side).	:SOURce:JITTer:FSWEEP:FREQUENCY?	
Sets offset frequency range for Freq. sweep measurement.	:SOURce:JITTer:FSWEEP:FOFFset	offset
Queries the setting state of offset frequency range for Freq. sweep measurement.	:SOURce:JITTer:FSWEEP:FOFFset?	
Sets increments of the offset frequency range for Freq. sweep measurement.	:SOURce:JITTer:FSWEEP:STEP	step
Queries the increments of the offset frequency range for Freq. sweep measurement.	:SOURce:JITTer:FSWEEP:STEP?	

Page 4-50

Sets the offset frequency range for Jitter/Freq. measurement.	:SOURce:JITTer:JFREQUENCY:FREQUENCY	numeric
Queries the offset frequency range for Jitter/Freq. measurement	:SOURce:JITTer:JFREQUENCY:FREQUENCY?	
Sets the offset increment for Jitter/Freq. measurement.	:SOURce:JITTer:JFREQUENCY:STEP	numeric
Queries the offset increment for Jitter/Freq. measurement.	:SOURce:JITTer:JFREQUENCY:STEP?	

Page 4-51

Sets wander reference output.	:SOURce:WANDer:MANual:MODE	mode
Queries the wander reference output.	:SOURce:WANDer:MANual:MODE?	
Sets the wander frequency for wander generation.	:SOURce:WANDer:MANual:FREQuency	numeric suffix
Queries the wander frequency for wander generation.	:SOURce:WANDer:MANual:FREQuency?	
Sets the wander amplitude value for wander generation.	:SOURce:WANDer:MANual:AMPLitude:UIPP	numeric
To set the wander amplitude value to 100:	:SOURce:WANDer:MANual:AMPLitude:UIPP?	

Page 4-53

Sets a wander generation type in automatic wander measurement.	:SOURce:WANDer:AUTO:TYPE	type
Queries the setting state of wander generation type.	:SOURce:WANDer:AUTO:TYPE?	
Sets a TDEV Mask specification in automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:DTYPE	type
Queries the TDEV Mask specifications for automatic wander measurement. Queries the TDEV Mask specifications for automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:DTYPE?	
Sets a TDEV Mask specification in automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:ITYPe	type
Queries the TDEV Mask specifications for automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:ITYPe?	
Sets a Mask table of TDEV Mask specifications ITU-T in automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:ETYPE	type
Queries the setting of Mask table of TDEV Mask specifications ETSI in automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:ETYPE?	
Sets a Mask table of TDEV Mask specifications ANSI in automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:ATYPE	type
Queries the setting of Mask table of TDEV Mask specifications ANSI in automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:ATYPE?	
Sets a Mask table of TDEV Mask specifications Bellcore in automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:BTYPe	type
Queries the setting of Mask table of TDEV Mask specifications Bellcore for automatic wander measurement.	:SOURce:WANDer:AUTO:TDEV:BTYPe?	
Sets a Maximum phase deviation value in automatic wander measurement.	:SOURce:WANDer:AUTO:MPDeviation	deviation
Queries the set value of Maximum phase deviation in automatic wander measurement.	:SOURce:WANDer:AUTO:MPDeviation?	

Page 4-57

Sets an output table type of wander tolerance measurement.	:SOURce:WANDer:WSWeep:TYPE	type
Queries the setting state of output table for wander tolerance measurement.	:SOURce:WANDer:WSWeep:TYPE?	

Section 4 Remote Control

Sets an edit table type of wander tolerance measurement.	:SOURce:WANDer:WSWeep:PTABLE:TYPE	brate type
Queries the setting state of edit table for wander tolerance measurement.	:SOURce:WANDer:WSWeep:PTABLE:TYPE?	brate
Sets an output point range of the table for wander generation of the wander transfer characteristics.	:SOURce:WANDer:WSWeep:PTABLE:COUNT	numeric1 numeric2
Queries the output point range of the table for wander generation of the wander transfer characteristics.	:SOURce:WANDer:WSWeep:PTABLE:COUNT?	
Sets a frequency and amplitude of each measuring point in wander measurement.	:SOURce:WANDer:WSWeep:PTABLE:DATA	brate point freq1 freq2 ampl
Queries the frequency and amplitude of each measuring point in wander measurement.	:SOURce:WANDer:WSWeep:PTABLE:DATA?	brate point
Initializes the setting of in wander measurement.	:SOURce:WANDer:WSWeep:PTABLE:DEFault	brate

Page 4-61

Sets a wander generation type.	:SOURce:JITTer:WANDgen:TYPE	type
Sets a TDEV Mask specification when the wander generation type is Wander (TDEV).	:SOURce:JITTer:WANDgen:TDEV:DTYPE	type
Queries the TDEV Mask specifications at the wander generation measurement	:SOURce:JITTer:WANDgen:TDEV:DTYPE?	
Set a Mask table in the TDEV Mask specification ITU-T at the wander generation measurement.	:SOURce:JITTer:WANDgen:TDEV:ITYPe	type
Queries the setting of Mask table in the TDEV Mask specification ITU-T in the wander generation measurement.	:SOURce:JITTer:WANDgen:TDEV:ITYPe?	
Sets a Mask table in the TDEV Mask specification ETSI in the wander generation measurement.	:SOURce:JITTer:WANDgen:TDEV:ETYPe	type
Queries the setting of Mask table in the TDEV Mask specification ETSI in the wander generation measurement.	:SOURce:JITTer:WANDgen:TDEV:ETYPe?	
Sets a Mask table in the TDEV Mask specification ANSI in the wander generation measurement.	:SOURce:JITTer:WANDgen:TDEV:ATYPe	type
Queries the setting of Mask table in the TDEV Mask specification ANSI at the wander generation measurement.	:SOURce:JITTer:WANDgen:TDEV:ATYPe?	
Sets a Mask table in the TDEV Mask specification Bellcore at the wander generation measurement.	:SOURce:JITTer:WANDgen:TDEV:BTYPe	type
Queries the setting of Mask table in the TDEV Mask specification Bellcore at the wander generation measurement.	:SOURce:JITTer:WANDgen:TDEV:BTYPe?	
Sets the Maximum phase deviation value when the wander generation type is Transient.	:SOURce:JITTer:WANDgen:MARGIn	margin

Queries the setting of Maximum phase deviation value when the wander generation type is Transient.	:SOURce:JITTer:WANDgen:MARGin?	
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:SOURCE:TELEcom:CLOCK:SOURce <csource>

Parameter	<csource> = <CHARACTER PROGRAM DATA>																								
	<table border="0"> <tr> <td>INTernal</td> <td>Internal</td> </tr> <tr> <td>EXTernal</td> <td>External</td> </tr> <tr> <td>LUNB_2MHZ</td> <td>Lock 2MHz Unbalanced</td> </tr> <tr> <td>LBAL_2MHZ</td> <td>Lock 2MHz Balanced</td> </tr> <tr> <td>LUNB_2MBPS</td> <td>Lock 2Mbit/s Unbalanced</td> </tr> <tr> <td>LBAL_2MBPS</td> <td>Lock 2Mbit/s Balanced</td> </tr> <tr> <td>LBAL_1_5MHZ</td> <td>Lock 1.5MHz Balanced</td> </tr> <tr> <td>LBAL_1_5MBPS</td> <td>Lock 1.5Mbit/s Balanced</td> </tr> <tr> <td>LBAL_64K</td> <td>Lock 64k+8kHz</td> </tr> <tr> <td>L10M</td> <td>Lock 10M</td> </tr> <tr> <td>RECeive</td> <td>Receive</td> </tr> <tr> <td>L5M</td> <td>Lock 5M</td> </tr> </table>	INTernal	Internal	EXTernal	External	LUNB_2MHZ	Lock 2MHz Unbalanced	LBAL_2MHZ	Lock 2MHz Balanced	LUNB_2MBPS	Lock 2Mbit/s Unbalanced	LBAL_2MBPS	Lock 2Mbit/s Balanced	LBAL_1_5MHZ	Lock 1.5MHz Balanced	LBAL_1_5MBPS	Lock 1.5Mbit/s Balanced	LBAL_64K	Lock 64k+8kHz	L10M	Lock 10M	RECeive	Receive	L5M	Lock 5M
INTernal	Internal																								
EXTernal	External																								
LUNB_2MHZ	Lock 2MHz Unbalanced																								
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LUNB_2MBPS	Lock 2Mbit/s Unbalanced																								
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LBAL_1_5MBPS	Lock 1.5Mbit/s Balanced																								
LBAL_64K	Lock 64k+8kHz																								
L10M	Lock 10M																								
RECeive	Receive																								
L5M	Lock 5M																								
Function	Sets a clock source for the send signal.																								
Restriction	Invalid when, <ul style="list-style-type: none"> • :INSTRument:COUPled is <NONE> and <RECeive> is set. 																								
Example use	To set the clock source to Internal > :SOURCE:TELEcom:CLOCK:SOURce INTernal																								

:SOURCE:TELEcom:CLOCK:SOURce?

Response	<csource> = <CHARACTER PROGRAM DATA>
Function	Sets a clock source for the send signal.
Example use	> :SOURCE:TELEcom:CLOCK:SOURce? < INT

:SOURCE:TELEcom:OFFSet <numeric>

Parameter	<numeric> = <DECIMAL NUMERIC PROGRAM DATA> -999.9 to +999.9 0.1 steps
Function	Sets the frequency offset.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is not<"MANual[:JOFF]"> or <"MANual:JON">. • :ROUTE:THROUGH is <ON>. • :SOURCE:TELEcom:CLOCK:SOURce is, <EXTernal> or <RECeive>. • :SOURCE:TELEcom:JWANDer:ORANge is <100>, and the value is not from -100.0 to +100.0.
Example use	To set the offset to +100: > :SOURCE:TELEcom:OFFSet 100

:SOURCE:TELEcom:OFFSet?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Function Queries the frequency offset value.
 Example use > :SOURce:TELEcom:OFFSet?
 < 100

:SOURce:TELEcom:JWANDer:MSElect <mode>

Parameter <mode> = <CHARACTER PROGRAM DATA>
 OFF Without generation.
 JITTER Jitter is generated
 WANDer Wander is generated.

Function Sets whether jitter or wander is generated.

Restriction Invalid when,
 - :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <"MANual:JON">.
 - :ROUTE:THROUGH is <ON>.
 - :SOURce:TELEcom:CLOCK:SOURce is <RECeive>.
 - :SOURce:TELEcom:CLOCK:SOURce is <EXTernal> and <WANDer> is set.

Example use To set jitter generation:
 > :SOURce:TELEcom:JWANDer:MSElect JITTER

:SOURce:TELEcom:JWANDer:MSElect?

Response <mode> = <CHARACTER RESPONSE DATA>
 OFF Without generation.
 JITTER Jitter is generated
 WANDer Wander is generated.

Function Queries whether jitter or wander is generated.

Example use > :SOURce:TELEcom:JWANDer:MSElect?
 < JITT

:SOURce:TELEcom:JWANDer:ORANge <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>
 70, 999, 100

Function Sets the frequency offset range.

Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is not <"MANual[:JOFF]"> or <"MANual:JON">
 • :ROUTE:THROUGH is <ON>
 • :SOURce:TELEcom:CLOCK:SOURce is <EXTernal> or <RECeive>.

- :SOURce:TELEcom:JWANder:MSElect is <JITTer> or <WANder>, and <999> is set.

Example use To set the frequency offset range to 999.
 > :SOURce:TELEcom:JWANder:ORANge 999

:SOURce:TELEcom:JWANder:ORANge?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Function Queries the frequency offset range.
 Example use > :SOURce:TELEcom:JWANder:ORANge?
 < 999

:SOURce:JITTer:MANual:MODE <mode>

Parameter <mode> = <CHARACTER PROGRAM DATA>
 INTernal Internal
 EXTernal External
 Function Sets the jitter modulation signal source for jitter generation.
 Restriction Invalid when,
 • :When DISPLAY:TMENu[:NAME] is<"JTOLerance"> or <"JTRansfer">,
 <EXTernal> is set.
 Example use Sets the modulation signal source to Internal.
 > :SOURce:JITTer:MANual:MODE INTernal

:SOURce:JITTer:MANual:MODE?

Response <mode> = <CHARACTER RESPONSE DATA>
 Function Queires the modulation signal source for jitter generation
 Example use > :SOURce:JITTer:MANual:MODE?
 < INT

:SOURce:JITTer:MANual:RANGe <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>
 800 800UI
 20 20UI
 2 2UI
 Function Sets the jitter generation range for jitter generation.
 Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is not <"MANual[:JOFF]"> or <"MANual:JON">.
 • :ROUTE:THROUGH is <ON>.

Function Queries the jitter modulation frequency for jitter generation.
 Example use > :SOURce:JITTer:MANual:FREQuency?
 < 12.0,KHZ

:SOURce:JITTer:MANual:AMPLitude:TYPE <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 MANual
 AUTO

Function Sets how to set the jitter amplitude value for jitter generation.

Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <"MANual:JON">.
 • :ROUte:THROugh is <ON>.
 • :SOURce:TELEcom:JWANder:MSElect is <OFF> or <WANDer>.
 • :SOURce:JITTer:MANual:MODE is <EXTernal>.

Example use To set the setting method to AUTO.
 > :SOURce:JITTer:MANual:AMPLitude:TYPE AUTO

:SOURce:JITTer:MANual:AMPLitude:TYPE?

Response <type> = <CHARACTER RESPONSE DATA>
 MAN
 AUTO

Function Queries how to set the jitter amplitude value for jitter generation.

Example use > :SOURce:JITTer:MANual:AMPLitude:TYPE?
 < AUTO

:SOURce:JITTer:MANual:AMPLitude:STEP <step>

Parameter <step> = <CHARACTER PROGRAM DATA>
 FINE Fine (fine adjustment)
 COAR coarse (coarse adjustment)

Function Sets a set resolution of the jitter amplitude value for jitter generation.

Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <"MANual:JON">.
 • :ROUte:THROugh is <ON>.
 • :SOURce:TELEcom:JWANder:MSElect is <OFF> or <WANDer>.
 • :SOURce:JITTer:MANual:MODE is <EXTernal>.

• :SOURce:JITTer:MANual:AMPLitude:TYPE is <AUTO>.
 • The MP0130 is not installed.

Example use To set the set resolution to Fine.

```
> :SOURce:JITTer:MANual:AMPLitude:STEP FINE
```

:SOURce:JITTer:MANual:AMPLitude:STEP?

Response <step> = <CHARACTER RESPONSE DATA>

Function Queries the set resolution of the jitter amplitude value for jitter generation.

Example use > :SOURce:JITTer:MANual:AMPLitude:STEP?
< FINE

:SOURce:JITTer:MANual:AMPLitude:DATA <data>

Parameter <data> = <CHARACTER PROGRAM DATA>

UP	Up (increase)
DOWN	Down (decrease)

Function Sets a jitter amplitude value for jitter generation.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <"MANual:JON">.
- :ROUte:THROugh is <ON>.
- :SOURce:TELEcom:JWANder:MSElect is <OFF> or <WANDer>.
- :SOURce:JITTer:MANual:MODE is <EXTernal>.
- :SOURce:JITTer:MANual:AMPLitude:TYPE is <AUTO>.

Example use To set an amplitude value to up.

```
> :SOURce:JITTer:MANual:AMPLitude:DATA UP
```

:SOURce:JITTer:MANual:AMPLitude:UIPP <numeric>

Parameter <numeric> = <NON-DECIMAL NUMERIC PROGRAM DATA>

0.000 to 808.000	:0.001 steps
------------------	--------------

Function Sets a jitter amplitude value for jitter generation.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <"MANual:JON">.
- :ROUte:THROugh is <ON>.
- :SOURce:TELEcom:JWANder:MSElect is <OFF> or <WANDer>.
- :SOURce:JITTer:MANual:MODE is <EXTernal>.
- :SOURce:JITTer:MANual:AMPLitude:TYPE is <MANual>.

• The setting is out of the range shown in the table below.

:SOURce:JITTer:MANual:RANGe	:SOURce:JITTer:MANual:AMPLitude:UIPP
<800>	<0.0> to <808.0>
<20>	<0.00> to <20.20>
<2>	<0.000> to <2.020>

Example use To set the amplitude value to 1.5.
 > :SOURce:JITTer:MANual:AMPLitude:UIPP 1.5

:SOURce:JITTer:MANual:AMPLitude:UIPP?

Response <numeric> = <NR2 NUMERIC RESPONSE DATA>
 Function Queries the jitter amplitude value for jitter generation.
 Example use > :SOURce:JITTer:MANual:AMPLitude:UIPP?
 < 1.5

:SOURce:JITTer:MANual:AMPLitude:MONitor?

Response <numeric> = <STRING RESPONSE DATA>
 Form5
 Function Queries the output amplitude monitored value for jitter generation.
 Example use > :SOURce:JITTer:MANual:AMPLitude:MONitor?
 < " 10.00"

:SOURce:JITTer:MANual:TDEV:DTYPE <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 ITUT ITU-T
 ETSI ETSI
 ANSI ANSI
 BELLcore Bellcore
 USER User
 Function Sets Mask specifications for TDEV generation.
 Restriction Invalid when,
 • The MU150011A is not installed.
 Example use To set the Mask specifications for TDEV generation.
 > :SOURce:MANual:TDEV:DTYPE ITUT

:SOURce:JITTer:MANual:TDEV:DTYPE?

Response <type> = <CHARACTER RESPONSE DATA>
 ITUT ITU-T

ETSI	ETSI
ANSI	ANSI
BEL	Bellecore
USER	User

Function Queries the Mask specifications for TDEV generation.

Example use >:SOURce:JITTer:MANual:TDEV:DTYPe?
<ITUT

:SOURce:JITTer:MANual:TDEV:ITYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

G811	G.811-1997
S81T6	Section 8.1 Table 6(G.812-1997)
S81T7	Section 8.1 Table 7(G.812-1997)
S91T11	Section 9.1 Table 11(G.812-1997)
S91T12	Section 9.1 Table 12(G.812-1997)
S10T18	Section 10 Table 18(G.812-1997)
S10T19	Section 10 Table 19(G.812-1997)
SA31	Section A.3.1(G.812-1997)
SA41	Section A.4.1(G.812-1997)
SA5	Section A.5(G.812-1997)
S71O1	Section 7.1 Option1(G.813-1996)
S71O2	Section 7.1 Option2(G.813-1996)

Function Sets a TDEV Mask table when the Mask specifications are set to ITU-T.

Restriction Invalid when,

- The MU150011A is not installed.
- :SOURce:JITTer:MANual:TDEV:DTYPe is other than <ITUT>.

Example use To set the TDEV Mask table to G.811-1997
> :SOURce:MANual:TDEV:ITYPe G811

:SOURce:JITTer:MANual:TDEV:ITYPe?

Response <type> = <CHARACTER RESPONSE DATA>

Function Queries the setting of the TDEV Mask table when the Mask specifications are set to ITU-T.

Example use >:SOURce:JITTer:MANual:TDEV:ITYPe?
<G811

:SOURce:JITTer:MANual:TDEV:ETYPe <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	S721 Section 7.2.1(ETS 300 462-3-1997)
	S722 Section 7.2.2(ETS 300 462-3-1997)
	S723 Section 7.2.3(ETS 300 462-3-1997)
	S724 Section 7.2.4(ETS 300 462-3-1997)
	S61_4 Section 6.1(ETS 300 462-4-1997)
	S61_5 Section 6.1(ETS 300 462-5-1996)
	S72_4 Section 7.2(ETS 300 462-4-1997)
	S72_5 Section 7.2(ETS 300 462-5-1996)
	S8 Section 8(ETS 300 462-4-1997)
	ETS300_6 ETS 300 462-6-1997
Function	Sets a TDEV Mask table when the Mask specifications are set to ETSI.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :SOURce:JITTer:MANual:TDEV:DTYPe is other than <ETSI>.
Example use	To set the TDEV Mask table to Section 7.2.1(ETS 300 462-3-1997). > :SOURce:MANual:TDEV:ETYPe S721

:SOURce:JITTer:MANual:TDEV:ETYPe?

Response	<type> = <CHARACTER RESPONSE DATA>
Function	Queries the setting of the TDEV Mask table when the Mask specifications is ETSI.
Example use	>:SOURce:JITTer:MANual:TDEV:ETYPe? <S721

:SOURce:JITTer:MANual:TDEV:ATYPe <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	S722 Section 7.2.2(ANSI T1.101-1994)
	S732 Section 7.3.2(ANSI T1.101-1994)
	SD21 Section D.2.1(ANSI T1.105.03-1994)
	SD221 Section D.2.2.1(ANSI T1.105.03-1994)
	SD222 Section D.2.2.2(ANSI T1.105.03-1994)
	ANSIT1_9 ANSI T1.105.09-1996
Function	Sets a TDEV Mask table when the Mask specifications are set to ANSI.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :SOURce:JITTer:MANual:TDEV:DTYPe is other than <ANSI>.
Example use	To set the TDEV Mask table to ANSI T1.105.09-1996. > :SOURce:MANual:TDEV:ATYPe ANSIT1_9

:SOURCE:JITTer:MANual:TDEV:ATYPe?

Response	<type> = <CHARACTER RESPONSE DATA>
Function	Queries the setting of the TDEV Mask table when the Mask specifications is ANSI.
Example use	>:SOURCE:JITTer:MANual:TDEV:ATYPe? <ANSIT1_9

:SOURCE:JITTer:MANual:TDEV:BTYPe <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	GR2830 GR-2830-CORE-1995
	S43 Section 4.3(GR-1244-CORE-1995)
	S53 Section 5.3(GR-1244-CORE-1995)
	S54S2 Section 5.4 Strarum 2&3E(GR-1244-CORE-1995)
	S54S3 Section 5.4 Strarum 3(GR-1244-CORE-1995)
	S54424F515 Section 5.4.4.2.4 Figure 5-15(GR-253-CORE-1995)
	S54425F516 Section 5.4.4.2.4 Figure 5-16(GR-253-CORE-1995)
	S54432 Section 5.4.4.3.2(GR-253-CORE-1995)
	S545 Section 5.4.5(GR-253-CORE-1995)
Function	Sets a TDEV Mask table when the Mask specifications are set to Bellecore.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :SOURCE:JITTer:MANual:TDEV:DTYPe is other than <BEL>.
Example use	To set the TDEV Mask table to GR-2830-CORE-1995. > :SOURCE:MANual:TDEV:BTYPe GR2830

:SOURCE:JITTer:MANual:TDEV:BTYPe?

Response	<type> = <CHARACTER RESPONSE DATA>
Function	Queries the setting of the TDEV Mask table when the Mask specifications is Bellecore.
Example use	>:SOURCE:JITTer:MANual:TDEV:BTYPe? <GR2830

:SOURCE:JITTer:MANual:TDEV:A0 <s>

Parameter	<s> = <DECIMAL NUMERIC PROGRAM DATA>
	1 to 200 Step value : 1
Function	Sets TDEV initializing time (A0) when the Mask specifications are set to User. * The specifications by :SOURCE:JITTer:MANual:TDEV:Default limit the setting

Section 4 Remote Control

value. (For a list of setting ranges, see the table below.)

Restriction

Invalid when,

- The MU150011A is not installed.
- :SOURCE:JITTer:MANual:TDEV:DTYPe is other than is other than <USER>.

Setting Ranges

Name of Mask specifications	Setting range of A0, $\tau 0$ to 4 when TDEV(Mask) : User is set.
G.811-1997	$1 \leq A0 \leq 40, \tau 0 = 0.1, \tau 0 * 40 \leq \tau 1, \tau 1 * 4 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
G.812-1997 Section 8.1 Table 6	$1 \leq A0 \leq 40, \tau 0 = 0.1, \tau 0 * 40 \leq \tau 1, \tau 1 * 4 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
G.812-1997 Section 8.1 Table 7	$5 \leq A0 \leq 20, \tau 0 = 0.1, \tau 1 = 2.5, \tau 2 = 40, \tau 3 = 1000, \tau 4 = 10000$
G.812-1997 Section 9.1 Table 11	$2 \leq A0 \leq 80, \tau 0 = 0.1, \tau 1 = 20, \tau 2 = 100, \tau 3 = 1000, \tau 4 = 10000$
G.812-1997 Section 9.1 Table 12	$5 \leq A0 \leq 200, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1 \leq 0.1 * \tau 2, \tau 2 \leq 10000$
G.812-1997 Section 10 Table 18	$1 \leq A0 \leq 40, \tau 0 = 0.1, \tau 1 = 13.1, 13.3, \tau 2 = 100, \tau 3 = 1000, \tau 4 = 10000$
G.812-1997 Section 10 Table 19	$5 \leq A0 \leq 20, \tau 0 = 0.1, \tau 0 * 10 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 1/3, \tau 3 \leq 10000$
G.812-1997 Section A.3.1	$5 \leq A0 \leq 20, \tau 0 = 0.1, \tau 1 = 2.5, \tau 2 = 40, \tau 3 = 1000, \tau 4 = 10000$
G.812-1997 Section A.4.1	$5 \leq A0 \leq 200, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1 \leq \tau 2 * 0.1, \tau 2 \leq 10000$
G.812-1997 Section A.5	$25 \leq A0 \leq 100, \tau 0 = 0.05, \tau 0 * 2 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
G.813-1996 Section 7.1 Option 1	$1 \leq A0 \leq 10, \tau 0 = 0.1, \tau 0 * 40 \leq \tau 1, \tau 1 * 4 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
G.813-1996 Section 7.1 Option 2	$5 \leq A0 \leq 20, \tau 0 = 0.1, \tau 1 = 2.5, \tau 2 = 40, \tau 3 = 1000, \tau 4 = 10000$
ETS 300 462-3-1997 Section 7.2.1	$1 \leq A0 \leq 80, \tau 0 = 0.1, \tau 1 = 100, 4.3, 17.14, 48, \tau 2 = 1000, 100, \tau 3 = 10000$
ETS 300 462-3-1997 Section 7.2.2	$1 \leq A0 \leq 80, \tau 0 = 0.1, \tau 1 = 100, 4.3, 17.14, 48, \tau 2 = 1000, 100, \tau 3 = 10000$
ETS 300 462-3-1997 Section 7.2.3	$1 \leq A0 \leq 80, \tau 0 = 0.1, \tau 1 = 100, 4.3, 17.14, 48, \tau 2 = 1000, 100, \tau 3 = 10000$
ETS 300 462-3-1997 Section 7.2.4	$1 \leq A0 \leq 80, \tau 0 = 0.1, \tau 1 = 100, 4.3, 17.14, 48, \tau 2 = 1000, 100, \tau 3 = 10000$
ETS 300 462-4-1997 Section 6.1	$1 \leq A0 \leq 10, \tau 0 = 0.1, \tau 0 * 40 \leq \tau 1, \tau 1 * 4 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
ETS 300 462-4-1997 Section 7.2	$2 \leq A0 \leq 80, \tau 0 = 0.1, \tau 1 = 20, \tau 2 = 100, \tau 3 = 1000, \tau 4 = 10000$
ETS 300 462-4-1997 Section 8	$1 \leq A0 \leq 40, \tau 0 = 0.1, \tau 1 = 13.1, 13.3, \tau 2 = 100, \tau 3 = 1000, \tau 4 = 10000$
ETS 300 462-5-1996 Section 6.1	$1 \leq A0 \leq 40, \tau 0 = 0.1, \tau 0 * 40 \leq \tau 1, \tau 1 * 4 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
ETS 300 462-5-1996 Section 7.2	$1 \leq A0 \leq 40, \tau 0 = 0.1, \tau 0 * 40 \leq \tau 1, \tau 1 * 4 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
ETS 300 462-6-1997	$1 \leq A0 \leq 40, \tau 0 = 0.1, \tau 0 * 40 \leq \tau 1, \tau 1 * 4 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
ANSI T1.101-1994 Section 7.2.2	$5 \leq A0 \leq 200, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1 \leq \tau 2 * 0.1, \tau 2 \leq 10000$
ANSI T1.101-1994 Section 7.3.2	$1 \leq A0 \leq 40, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
ANSI T1.105.03-1994 Section D.2.1	$1 \leq A0 \leq 40, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
ANSI T1.105.03-1994 Section D.2.2.1	$5 \leq A0 \leq 200, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1 \leq \tau 2 * 0.1, \tau 2 \leq 10000$
ANSI T1.105.03-1994 Section D.2.2.2	$1 \leq A0 \leq 40, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
ANSI T1.105.09-1996	$5 \leq A0 \leq 200, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1 \leq \tau 2 * 0.1, \tau 2 \leq 10000$
GR-2830-CORE-1995	$5 \leq A0 \leq 20, \tau 0 = 0.1, \tau 0 * 10 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
GR-1244-CORE-1995 Section 4.3	$5 \leq A0 \leq 200, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1 \leq \tau 2 * 0.1, \tau 2 \leq 10000$
GR-1244-CORE-1995 Section 5.3	$5 \leq A0 \leq 20, \tau 0 = 0.1, \tau 1 = 2.5, \tau 2 = 40, \tau 3 = 1000, \tau 4 = 10000$
GR-1244-CORE-1995 Section 5.4 Stratum 2&3E	$1 \leq A0 \leq 40, \tau 0 = 0.05, \tau 0 * 10 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 1/3, \tau 3 \leq 10000$
GR-1244-CORE-1995 Section 5.4 Stratum 3	$25 \leq A0 \leq 100, \tau 0 = 0.05, \tau 0 * 2 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
GR-253-CORE-1995 Section 5.4.4.2.4 Fig 5-15	$1 \leq A0 \leq 40, \tau 0 = 0.1, \tau 0 * 10 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
GR-253-CORE-1995 Section 5.4.4.2.4 Fig 5-16	$1 \leq A0 \leq 40, \tau 0 = 0.1, \tau 0 * 10 \leq \tau 1, \tau 1 * 10 \leq \tau 2 \leq \tau 3 * 0.1, \tau 3 \leq 10000$
GR-253-CORE-1995 Section 5.4.4.3.2	$5 \leq A0 \leq 20, \tau 0 = 0.1, \tau 1 = 2.5, \tau 2 = 40, \tau 3 = 1000, \tau 4 = 10000$
GR-253-CORE-1995 Section 5.4.5	$5 \leq A0 \leq 20, \tau 0 = 0.1, \tau 0 * 10 \leq \tau 1 \leq \tau 2 * 0.1, \tau 2 \leq 10000$

Example use

To set the value of A0 to 1.

>:SOURCE:JITTer:MANual:TDEV:A0 1

:SOURCE:JITTer:MANual:TDEV:A0?

Response

<s> = <NR1 NUMERIC RESPONSE DATA>

Same as :SOURCE:JITTer:MANual:TDEV:A0.

Function

Queries the TDEV initializing time (A0) when the Mask specifications are set to User.

Example use

To query the set value of A0.

```
>:SOURce:JITTer:MANual:TDEV:A0?
<1
```

:SOURce:JITTer:MANual:TDEV:VAT0?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 0.05
 0.1

Function Queries the set value of TDEV τ 0 when the Mask specifications are set to User.

Example use To query the set value of τ 0.
 >:SOURce:JITTer:MANual:TDEV:VAT0?
 <0.05

:SOURce:JITTer:MANual:TDEV:VAT1 <numeric>

Parameter <s> = <DECIMAL NUMERIC PROGRAM DATA>
 0.5 to 99.9 Step value : 0.1
 100 to 1000 Step value : 1

Function Sets τ 1 value of TDEV when the Mask specifications are set to User.
 * The specifications by :SOURce:JITTer:MANual:TDEV:DEFAult limit the setting
 value. See the table of SOURce:JITTer:MANual:TDEV:A0.

Restriction Invalid when,
 • The MU150011A is not installed.
 • :SOURce:JITTer:MANual:TDEV:DTYPe is other than <USER>.

Example use To set the value of τ 1 to 100.0.
 >:SOURce:JITTer:MANual:TDEV:VAT1 100.0

:SOURce:JITTer:MANual:TDEV:VAT1?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Same as :SOURce:JITTer:MANual:TDEV:VAT1.

Function Queries the τ 1 set value of TDEV when the Mask specifications are set to User.

Example use To query the set value of τ 1.
 >:SOURce:JITTer:MANual:TDEV:VAT1?
 <100.0

:SOURce:JITTer:MANual:TDEV:VAT2 <numeric>

Parameter <s> = <DECIMAL NUMERIC PROGRAM DATA>
 4 to 999 Step value : 1
 1000 to 10000 Step value : 10

Function	Sets $\tau 2$ of TDEV when the Mask specifications are set to User. * The specifications by :SOURCE:JITTer:MANual:TDEV:DEfAult limit the setting value. See the table of SOURCE:JITTer:MANual:TDEV:A0.
Restriction	Invalid when, • The MU150011A is not installed. • :SOURCE:JITTer:MANual:TDEV:DTYPe is other than <USER>.
Example use	To set the value of $\tau 2$ to 1000. >:SOURCE:JITTer:MANual:TDEV:VAT2 1000

:SOURCE:JITTer:MANual:TDEV:VAT2?

Response	<numeric> = <NR1 NUMERIC RESPONSE DATA> Same as :SOURCE:JITTer:MANual:TDEV:VAT2
Function	Queries the $\tau 2$ value of TDEV when the Mask specifications are set to User.
Example use	To query the set value of $\tau 2$. >:SOURCE:JITTer:MANual:TDEV:VAT2? <1000

:SOURCE:JITTer:MANual:TDEV:VAT3 <numeric>

Parameter	<s> = <DECIMAL NUMERIC PROGRAM DATA> 4 to 999 Step value : 1 1000 to 10000 Step value : 10
Function	Sets $\tau 3$ value of TDEV when the Mask specifications are set to User. * The specifications by :SOURCE:JITTer:MANual:TDEV:DEfAult limit the setting value. See the table of SOURCE:JITTer:MANual:TDEV:A0.
Restriction	Invalid when, • The MU150011A is not installed. • :SOURCE:JITTer:MANual:TDEV:DTYPe is other than <USER>.
Example use	To set the value of $\tau 3$ to 1000. >:SOURCE:JITTer:MANual:TDEV:VAT3 1000

:SOURCE:JITTer:MANual:TDEV:VAT3?

Response	<numeric> = <NR1 NUMERIC RESPONSE DATA> Same as :SOURCE:JITTer:MANual:TDEV:VAT3.
Function	Queries the $\tau 3$ value of TDEV when the Mask specifications are set to User.
Example use	To query the set value of $\tau 3$. >:SOURCE:JITTer:MANual:TDEV:VAT3? <1000

:SOURCE:JITTer:MANual:TDEV:VAT4?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 10000

Function Queries the τ 4 set value of TDEV when the Mask specifications are set to User.

Example use To query the set value of τ 4.
 >:SOURCE:JITTer:MANual:TDEV:VAT4?
 <10000

:SOURCE:JITTer:MANual:TDEV:DEFault <type>, <table>

Parameter <type> = <CHARACTER PROGRAM DATA>

IUTT	ITU-T
ETSI	ETSI
ANSI	ANSI
Belecore	Belecore

<table> = <CHARACTER PROGRAM DATA>

G811	G.811-1997
S81T6	Section 8.1 Table 6(G.812-1997)
S81T7	Section 8.1 Table 7(G.812-1997)
S91T11	Section 9.1 Table 11(G.812-1997)
S91T12	Section 9.1 Table 12(G.812-1997)
S10T18	Section 10 Table 18(G.812-1997)
S10T19	Section 10 Table 19(G.812-1997)
SA31	Section A.3.1(G.812-1997)
SA41	Section A.4.1(G.812-1997)
SA5	Section A.5(G.812-1997)
S71O1	Section 7.1 Option1(G.813-1996)
S71O2	Section 7.1 Option2(G.813-1996)
S721	Section 7.2.1(ETS 300 462-3-1997)
S722	Section 7.2.2(ETS 300 462-3-1997)
S723	Section 7.2.3(ETS 300 462-3-1997)
S724	Section 7.2.4(ETS 300 462-3-1997)
S61_4	Section 6.1(ETS 300 462-4-1997)
S61_5	Section 6.1(ETS 300 462-5-1996)
S72_4	Section 7.2(ETS 300 462-4-1997)
S72_5	Section 7.2(ETS 300 462-5-1996)
S8	Section 8(ETS 300 462-4-1997)

ETS300_6	ETS 300 462-6-1997
S722	Section 7.2.2(ANSI T1.101-1994)
S732	Section 7.3.2(ANSI T1.101-1994)
SD21	Section D.2.1(ANSI T1.105.03-1994)
SD221	Section D.2.2.1(ANSI T1.105.03-1994)
SD222	Section D.2.2.2(ANSI T1.105.03-1994)
ANSIT1_9	ANSI T1.105.09-1996
GR2830	GR-2830-CORE-1995
S43	Section 4.3(GR-1244-CORE-1995)
S53	Section 5.3(GR-1244-CORE-1995)
S54S2	Section 5.4 Stratum 2&3E(GR-1244-CORE-1995)
S54S3	Section 5.4 Stratum 3(GR-1244-CORE-1995)
S54424F515	Section 5.4.4.2.4 Figure 5-15(GR-253-CORE-1995)
S54425F516	Section 5.4.4.2.4 Figure 5-16(GR-253-CORE-1995)
S54432	Section 5.4.4.3.2(GR-253-CORE-1995)
S545	Section 5.4.5(GR-253-CORE-1995)

Function Initializes Mask specifications of TDEV and Mask table when User is set.

Restriction Invalid when,

- The MU150011A is not installed.
- :SOURCE:JITTER:MANual:TDEV:DTYPE is other than <USER>.

Example use To set TDEV Mask to ITU-T, and Mask table to G.811-1997 when Manual jitter measurement is performed.

 >:SOURCE:JITTER:MANual:TDEV:DEFault ITUT, G811

:SOURCE:JITTER:TOLERance:TYPE <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>	
	G958A	G.958 Type A
	G958B	G.958 Type B
	G825	G.825
	B253	Bell 253
	USER	User
	G813	G.813
	ANSIT1	ANSI T1.105.03
	G825_1_5M	G.825 1.5M

	G825_2M	G.825 2M
Function	Sets an execution table for jitter generation of jitter tolerance measurement.	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"JTOLerance">. • The 2.5G jitter unit is not installed. • The MU150011A is not installed; and <G813>, <ANSIT1>,<G825_1_5M> or <G825_2M> is set. 	
Example use	To set an execution table to G.958 Type A. >:SOURce:JITTer:TOLerance:TYPE G958A	

:SOURce:JITTer:TOLerance:TYPE?

Response	<type> = <CHARACTER RESPONSE DATA>
Function	Queries the execution table for jitter generation in jitter tolerance measurement.
Example use	> :SOURce:JITTer:TOLerance:TYPE? < G958A

:SOURce:JITTer:TOLerance:PTABLE:TYPE <brate>,<type>

Parameter	<brate> = <CHARACTER PROGRAM DATA> M2488 <type> = <CHARACTER PROGRAM DATA>
	G958A G.958 Type A
	G958B G.958 Type B
	G825 G.825
	B253 Bell 253
	USER User
	G813 G.813
	ANSIT1 ANSI T1.105.03
	G825_1_5M G.825 1.5M
	G825_2M G.825 2M
Function	Sets an edit table for jitter generation of jitter tolerance measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"JTOLerance">. • The 2.5G jitter unit is not installed. • The MU150011A is not installed; and <G813> or <ANSIT1> is set.
Example use	To set an edit table to 2488M, G.958 Type A. >:SOURce:JITTer:TOLerance:PTABLE:TYPE M2488,G958A

:SOURCE:JITTER:TOLERANCE:PTABLE:TYPE? <brate>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 Response <type> = <CHARACTER RESPONSE DATA>
 Function Queries the edit table for jitter generation in jitter tolerance measurement.
 Example use > :SOURCE:JITTER:TOLERANCE:PTABLE:TYPE? M2488
 < G958A

:SOURCE:JITTER:TOLERANCE:PTABLE:COUNT <numeric1>,<numeric2>

Parameter <numeric1>, <numeric2> = <DECIMAL NUMERIC PROGRAM DATA>
 1 to 20 :1 steps
 Function Sets the table output point range for jitter generation in jitter tolerance measurement.
 Restriction Invalid when,
 • <numeric1> > <numeric2>.
 Example use To set the output point range from 2 to 10:
 > :SOURCE:JITTER:TOLERANCE:PTABLE:COUNT 2,10

:SOURCE:JITTER:TOLERANCE:PTABLE:COUNT?

Response <numeric1>, <numeric2> = <NR1 NUMERIC RESPONSE DATA>
 Function Queries the table output point range for jitter generation in jitter tolerance measurement.
 Example use > :SOURCE:JITTER:TOLERANCE:PTABLE:COUNT?
 < 2,10

:SOURCE:JITTER:TOLERANCE:PTABLE:DATA <brate>,<point>,<freq1>,<freq2>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 M2488
 <point> = <DECIMAL NUMERIC PROGRAM DATA>
 1 to 20 : 1 steps
 <freq1> = <NON-DECIMAL NUMERIC PROGRAM DATA>
 0.1 to 999.0
 <freq2> = <CHARACTER PROGRAM DATA>
 HZ, KHZ, MHZ
 * <freq1> is changed to a value that can be set on the application side.
 Function Sets the contents of User define table for jitter generation in jitter tolerance measurement.
 Restriction Invalid when,
 • A frequency lower than that at the preceding point is set.

- The value is out of the ranges shown in the table below.

Tolerance Bit rate	Setting Range
2488M	0.1 Hz to 20.0 MHz

Example use To set No.5 data of 622 M table to 100 kHz:
> :SOURce:JITTer:TOLerance:PTABle:DATA M2488,5,100,KHZ

:SOURce:JITTer:TOLerance:PTABle:DATA? <brate>,<point>

Function Queries the contents of User define table for jitter generation in jitter tolerance measurement.

Example use > :SOURce:JITTer:TOLerance:PTABle:DATA? M2488,5
< 100.0,KHZ
* When no data exists at the designated point:
< 0.0,HZ

SOURce:JITTer:TOLerance:PTABle:DEFAult <brate> [,<type>]

Parameter <brate> = <CHARACTER PROGRAM DATA>
M2488
<type> = <CHARACTER PROGRAM DATA>
G958A G.958 Type A
G958B G.958 Type B
G825 G.825
B253 Bell 253
USER User
G813 G.813
ANSIT1 ANSI T1.105.03
G825_1_5M G.825 1.5M
G825_2M G.825 2M

Function Initializes the contents of User define table for jitter generation of jitter tolerance measurement.

Example use To initialize the contents of 2488M table to G.813.
> :SOURce:JITTer:TOLerance:PTABle:DEFAult M2488 G813

:SOURce:JITTer:TRANsfer:TYPE <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
G958A G.958 Type A
G958B G.958 Type B

B253	Bell 253 (SONET 用)
USER	User
G825	G.825
G813	G.813
ANSIT1	ANSI T1.105.03
TRESULT	Tolerance result
G825_1_5M	G.825 1.5M
G825_2M	G.825 2M

Function Sets an output table for jitter generation of jitter transfer characteristics measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"JTRansfer">.
- No jitter tolerance result exists; and TRESULT is set.

Example use To set an output table to G.958 Type A.

```
> :SOURce:JITTer:TRANsfer:TYPE G958A
```

:SOURce:JITTer:TRANsfer:TYPE?

Response <type> = <CHARACTER RESPONSE DATA>

Function Queries an output table for jitter generation of jitter transfer characteristics measurement.

Example use

```
> :SOURce:JITTer:TRANsfer:TYPE?
< G958A
```

:SOURce:JITTer:TRANsfer:PTABLE:TYPE <brate>,<type>

Parameter <brate> = <CHARACTER PROGRAM DATA>

M2488

<type> = <CHARACTER PROGRAM DATA>

G958A	G.958 Type A
G958B	G.958 Type B
B253	Bell 253
USER	User
G825	G.825
G813	G.813
ANSIT1	ANSI T1.105.03
TRESULT	Tolerance result
G825_1_5M	G.825 1.5M
G825_2M	G.825 2M

Function Sets an edit table for jitter generation of jitter transfer characteristics measurement.

Restriction	Invalid when, <ul style="list-style-type: none"> • No jitter tolerance result exists; and TRESULT is set.
Example use	To set an edit table to 2488M, G.958 Type A. > :SOURce:JITTer:TRANsfer:PTABle:TYPE M2488,G958A

:SOURce:JITTer:TRANsfer:PTABle:TYPE? <brate>

Parameter	<brate> = <CHARACTER PROGRAM DATA>
Response	<type> = <CHARACTER RESPONSE DATA>
Function	Queries the edit table for jitter generation in jitter transfer characteristic measurement.
Example use	> :SOURce:JITTer:TRANsfer:PTABle:TYPE? M2488 < G958A

:SOURce:JITTer:TRANsfer:PTABle:COUNt <numeric1>,<numeric2>

Parameter	<numeric1>, <numeric2> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 20 : 1 steps
Function	Sets the table output point range for jitter generation in the jitter transfer measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • <numeric1> is more than <numeric2>
Example use	To set the 2488M table output point range from 2 to 10: > :SOURce:JITTer:TRANsfer:PTABle:COUNt 2,10

:SOURce:JITTer:TRANsfer:PTABle:COUNt?

Response	<numeric1>, <numeric2> = <NR1 NUMERIC RESPONSE DATA>
Function	Queries the table output point range for jitter generation in jitter transfer measurement.
Example use	> :SOURce:JITTer:TRANsfer:PTABle:COUNt? < 2,10

:SOURce:JITTer:TRANsfer:PTABle:DATA <brate>,<point>,<freq1>,<freq2>,<ampl>

Parameter	<brate> = <CHARACTER PROGRAM DATA> M2488
	<point> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 20 : 1 steps
	<freq1> = <NON-DECIMAL NUMERIC PROGRAM DATA> 1.0 to 999.0
	<freq2> = <CHARACTER PROGRAM DATA>

HZ, KHZ, MHZ
 <amp1> = <NON-DECIMAL NUMERIC PROGRAM DATA>
 0.051 to 20.000 : 0.001 steps

* <freq1> is changed to a value that can be set on the application side.

Function Sets the contents of the User define table for jitter generation in jitter transfer characteristic measurement.

Restriction Invalid when,
 • A frequency lower than that at the preceding point is set.
 • The value is out of the range shown in the table below.

Transfer Bit rate	Setting Range
2488M	10.0 Hz to 20.0 MHz

Example use Set No.5 data of the 2488M table to 100kHz 0.5UI_{PP}.
 > :SOURce:JITTer:TRANsfer:PTABle:DATA M2488,5,100,KHZ,0.5

:SOURce:JITTer:TRANsfer:PTABle:DATA2

<brate>,<point>,<freq1>,<freq2>,<amp1>,<rxrange>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 M2488
 <point> = <DECIMAL NUMERIC PROGRAM DATA>
 1 to 20 Step value : 1
 <freq1> = <NON-DECIMAL NUMERIC PROGRAM DATA>
 1.0 to 999.0
 <freq2> = <CHARACTER PROGRAM DATA>
 HZ, KHZ, MHZ
 <amp1> = <NON-DECIMAL NUMERIC PROGRAM DATA>
 0.051 to 20.000 Step value : 0.001
 <rxrange> = <CHARACTER PROGRAM DATA>
 UI2, UI20, UI32

* The application changes <freq1> to a value in the setting range.

Function Sets contents of the User table for jitter generation of jitter transfer characteristics measurement when the transfer table is User2.

Restriction Invalid when,
 • The 2488M-type plug-in unit is not installed, and <M2488> is set.
 • The value is out of the range shown in the table below.

Transfer Bit rate	Setting range
2488M	100.0Hz to 20.0MHz

Example use To set 100.0 Hz, 0.051, and 2UI to No.1 of 2488M table.
 >:SOURce:JITTer:TRANsfer:PTABle:DATA M2488,1,100.0,HZ,0.051,UI2

:SOURce:JITTer:TRANsfer:PTABle:DATA2? <brate>,<point>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 <point> = <DECIMAL NUMERIC PROGRAM DATA>

Response <freq1> = <NR2 NUMERIC RESPONSE DATA>
 <freq2> = <CHARACTER RESPONSE DATA>
 <amp1> = <NR2 NUMERIC RESPONSE DATA>
 <rxrange> = <CHARACTER RESPONSE DATA>
 UI2, UI20, UI32

Function Queries the contents of the User table for jitter generation of jitter transfer characteristics measurement when the transfer table is User2.

Example use > :SOURce:JITTer:TRANsfer:PTABle:DATA? M2488,1
 < 100.0,HZ,0.051,UI2

:SOURce:JITTer:TRANsfer:PTABle:DEFault <brate>, [<type>]

Parameter <brate> = <CHARACTER PROGRAM DATA>
 M2488
 <type> = <CHARACTER PROGRAM DATA>
 G958A, G958B, G825, G813, B253, ANSIT1, TRESULT

Function Initializes the contents of the User define table for jitter generation of jitter transfer characteristics measurement.

Restriction Invalid when,
 • The 2488M-type unit is not installed; and <M2488> is set.
 • No jitter tolerance measurement result exists; and TRESULT is set.

Example use To initialize the contents of 2488M table.
 > :SOURce:JITTer:TRANsfer:PTABle:DEFault M2488

:SOURce:JITTer:TRANsfer:PTABle:DEFault2 <brate>, [<type>]

Parameter <brate> = <CHARACTER PROGRAM DATA>
 M2488
 <type> = <CHARACTER PROGRAM DATA>
 G958A, G958B, G825, G813, B253, ANSIT1, G825_1_5M, G825_2M

Function Initializes the contents of the User define table for jitter generation of jitter transfer characteristics measurement when the transfer table is User 2.

Restriction Invalid when,

- The 2488M-type unit is not installed; and <M2488> is set.
- No jitter tolerance measurement result exists; and TRESULT is set.

Example use To initialize the contents of 2488M, Bell253 table.
 > :SOURce:JITTer:TRANsfer:PTABle:DEFault2 M2488, B253

:SOURce:JITTer:SWEep:TYPE <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>	
	G958A	G.958 Type A
	G958B	G.958 Type B
	G813	G.813
	G825	G.825
	USER	User
	B253	Bell 253
	G825_1_5M	G.825 1.5M
	G825_2M	G.825 2M

Function Sets an output table for jitter generation of jitter tolerance measurement.

Restriction Invalid when,

- The 2.5G Jitter is not installed; and :SOURce:TELEcom:BRATe is <M2488>.
- :DISPlay:TMENu[:NAME] is other than <"JSWeep">.
- The MU150011A unit is not installed; and <B253>, <G958A>, <G958B>, <G813>, <G825_1_5M> or <G825_2M> is set.
- :INSTrument:CONFig is <JITTER>.

Example use To set an output table to G.958 Type A.
 > :SOURce:JITTer:SWEep:TYPE G958A

:SOURce:JITTer:SWEep:TYPE?

Response <type> = <CHARACTER RESPONSE DATA>

Function Queries the output table for jitter generation in jitter tolerance.

Example use > :SOURce:JITTer:SWEep:TYPE?
 < G958A

:SOURce:JITTer:SWEep:PTABle:TYPE <brate>,<type>

Parameter	<brate> = <CHARACTER PROGRAM DATA>	
	M2488	
	<type> = <CHARACTER PROGRAM DATA>	
	G958A	G.958 Type A
	G958B	G.958 Type B

G813	G.813
G825	G.825
USER	User
B253	Bell 253
G825_1_5M	G.825 1.5M
G825_2M	G.825 2M

Function	Sets an edit table for jitter generation of jitter tolerance measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • The 2.5G Jitter is not installed; and :SOURCE:TELECOM:BRATE is <M2488>. • :DISPLAY:TMENU[:NAME] is other than <"JSweep">. • The MU150011A unit is not installed; and <B253>, <G958A>, <G958B>, <G813>, <G825_1_5M> or <G825_2M> is set. • :INSTRUMENT:CONFIG is <JITTER>.
Example use	To set an edit table M2488 of jitter tolerance measurement to G.958 Type A. > :SOURCE:JITTER:SWEep:PTABLE:TYPE M2488,G958A

:SOURCE:JITTER:SWEep:PTABLE:TYPE? <brate>

Parameter	<brate> = <CHARACTER PROGRAM DATA>
Response	<type> = <CHARACTER RESPONSE DATA>
Function	Queries the edit table for jitter generation in jitter tolerance measurement.
Example use	> :SOURCE:JITTER:SWEep:PTABLE:TYPE? M622 < G958A

:SOURCE:JITTER:SWEep:PTABLE:COUNT <numeric1>,<numeric2>

Parameter	<numeric1>, <numeric2> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 20 : 1 steps
Function	Sets the table output point range for jitter generation in jitter tolerance measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • Invalid when the following two cases are meet. <ol style="list-style-type: none"> (1) The Jitter/Wander unit is not installed. (2) The 2.5G unit is not installed, or the 2.5G Jitter unit is not installed. • <numeric1> > <numeric2>
Example use	To set the output point in the range of 2 to 10. > :SOURCE:JITTER:SWEep:PTABLE:COUNT 2,10

:SOURCE:JITTER:SWEep:PTABLE:COUNT?

Response <numeric1>, <numeric2> = <NR1 NUMERIC RESPONSE DATA>
 Same as :SOURCE:JITTer:SWEep:PTABLE:COUNT.

Function Queries the table output point range for jitter generation in jitter tolerance measurement.

Example use > :SOURCE:JITTer:SWEep:PTABLE:COUNT?
 < 2,10

:SOURCE:JITTer:SWEep:PTABLE:DATA <brate>,<point>,<freq1>,<freq2>,<amp1>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 M2488

<point> = <DECIMAL NUMERIC PROGRAM DATA>
 1 to 20 Step value : 1

<freq1> = <NON-DECIMAL NUMERIC PROGRAM DATA>
 0.1 to 999.0

<freq2> = <CHARACTER PROGRAM DATA>
 HZ, KHZ, MHZ

<amp1> = <NON-DECIMAL NUMERIC PROGRAM DATA>
 0.000 to 808.000 Step value : 0.001

* The application changes <freq1> to a value in the setting range.

Function Sets contents of the User table for jitter generation of jitter tolerance measurement.

Restriction Invalid when,

- The following conditions are all satisfied.
 - (1) Jitter/Wander unit is not installed.
 - (2) 2.5G unit or 2.5G Jitter unit is not installed.
- The 2.5G unit is not installed; and <M2488> is set.
- A frequency lower than that at the preceding point is set.
- The value is out of the range shown in the table below.

Sweep Bit rate	Setting range	
	<freq1>	<amp1>
2488M	0.1Hz to 20.0MHz	0 to 800UI _{p-p}

Example use To set 100.0 Hz and 0.051 to No.1 of 2488M table.
 > :SOURCE:JITTer:SWEep:PTABLE:DATA M2488,1,100.0,HZ,0.05

:SOURCE:JITTer:SWEep:PTABLE:DATA? <brate>,<point>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 <point> = <DECIMAL NUMERIC PROGRAM DATA>

Response <freq1> = <NR2 NUMERIC RESPONSE DATA>

	<freq2> = <CHARACTER RESPONSE DATA>
	<amp1> = <NR2 NUMERIC RESPONSE DATA>
Function	Queries the contents of User table for jitter generation in jitter tolerance measurement.
Example use	> :SOURce:JITTer:SWEep:PTABle:DATA? M622,1 < 100.0,HZ,0.051

:SOURce:JITTer:SWEep:PTABle:DEFault <brate>, [<type>]

Parameter	<brate> = <CHARACTER PROGRAM DATA> M2488
	<type> = <CHARACTER PROGRAM DATA> G958A, G958B, B253, G825, G813, G.755, G825_1_5M, G825_2M
Function	Initializes the contents of User table for jitter generation of jitter tolerance measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • The following conditions are all satisfied. <ol style="list-style-type: none"> (1) Jitter/Wander unit is not installed. (2) 2.5G unit or 2.5G Jitter unit is not installed. • The 2.5G unit is not installed; and <M2488> is set.
Example use	To initialize the contents of 2488M table. > :SOURce:JITTer:SWEep:PTABle:DEFault M2488 G958A

:SOURce:JITTer:SWEep:MARGin <margin>

Parameter	<margin> = <DECIMAL NUMERIC PROGRAM DATA> 0 to 100 : 10(%) steps
Function	Sets the margin.
Restriction	Invalid when, <ul style="list-style-type: none"> • Sweep mask is other than "User".
Example use	To set the margin to 20 %. > :SOURce:JITTer:SWEep:MARGin 20

:SOURce:JITTer:SWEep:MARGin?

Response	<margin> = <NR1 NUMERIC RESPONSE DATA>
Function	Queries the setting on the margin.
Example use	To queries the setting on the margin. > :SOURce:JITTer:SWEep:MARGin? < 20

:SOURce:JITTer:FSWeep:FREQuency <freq>, <suffix>

Parameter	<freq> = <NON-DECIMAL NUMERIC PROGRAM DATA> 0.1 to 990.0 Step value : 0.1 <suffix> = <CHARACTER PROGRAM DATA> HZ Hz KHZ kHz MHZ MHz
Function	Sets a frequency for jitter modulation frequency measurement (send-side). The range of setting value depends on Bit rate and Range of the send-side. For the setting range, refer to the specifications.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENU[:NAME] is other than <"FSW">. • The MU150011A is not installed.
Example use	To set the frequency to 880.0kHz. > :SOURce:JITTer:FSWeep:FREQuency 880.0, KHZ

:SOURce:JITTer:FSWeep:FREQuency?

Response	<freq> = <NR2 NUMERIC RESPONSE DATA> Same as :SOURce:JITTer:FSWeep:FREQuency. <suffix> = <CHARACTER RESPONSE DATA> Same as :SOURce:JITTer:FSWeep:FREQuency.
Function	Queries the setting of the frequency for jitter modulation frequency measurement (send-side).
Example use	To query the the setting state of the frequency for jitter modulation frequency measurement (send-side). > :SOURce:JITTer:FSWeep:FREQuency? < 880.0, KHZ

:SOURce:JITTer:FSWeep:FOFFset <offset>

Parameter	<offset> = <CHARACTER PROGRAM DATA> 100 ± 100ppm 90 ± 90ppm 80 ± 80ppm 70 ± 70ppm 60 ± 60ppm 50 ± 50ppm 40 ± 40ppm
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	30	$\pm 30\text{ppm}$
	20	$\pm 20\text{ppm}$
	10	$\pm 10\text{ppm}$
Function	Sets offset frequency range for Freq. sweep measurement.	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"FSW">. • The MU150011A is not installed. 	
Example use	To set the offset frequency range for Freq. sweep measurement to ± 60 ppm. > :SOURce:JITTer:FSWeep:FOFFset 60	

:SOURce:JITTer:FSWeep:FOFFset?

Response	<offset> = <CHARACTER RESPONSE DATA> Same as :SOURce:JITTer:FSWeep:FOFFset.
Function	Queries the setting state of offset frequency range for Freq. sweep measurement.
Example use	To query the offset frequency range. > :SOURce:JITTer:FSWeep:FOFFset? < 60

:SOURce:JITTer:FSWeep:STEP <step>

Parameter	<step> = <CHARACTER PROGRAM DATA> 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100 (ppm)
Function	Sets increments of the offset frequency range for Freq. sweep measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"FSW">. • The MU150011A is not installed. • The value is set to other than that in the following list by Freq. offset.

Freq. offset	Set value (ppm)
$\pm 100\text{ppm}$	4, 5, 10, 20, 25, 50, 100
$\pm 90\text{ppm}$	5, 10, 15, 30, 45, 90
$\pm 80\text{ppm}$	4, 5, 8, 10, 20, 40, 80
$\pm 70\text{ppm}$	5, 7, 10, 35, 70
$\pm 60\text{ppm}$	3, 4, 5, 6, 10, 12, 15, 20, 30, 60
$\pm 50\text{ppm}$	2, 4, 5, 10, 20, 25, 50
$\pm 40\text{ppm}$	2, 4, 5, 8, 10, 20, 40
$\pm 30\text{ppm}$	2, 3, 5, 6, 10, 15, 30
$\pm 20\text{ppm}$	1, 2, 4, 5, 10, 20
$\pm 10\text{ppm}$	1, 2, 5, 10

Example use To set the increment to 10 ppm.
 > :SOURce:JITTer:FSWeep:STEP 10

:SOURce:JITTer:FSWeep:STEP?

Response <step> = <CHARACTER RESPONSE DATA>
 Same as :SOURce:JITTer:FSWeep:STEP.
 Function Queries the increments of the offset frequency range for Freq. sweep measurement.
 Example use > :SOURce:JITTer:FSWeep:STEP?
 < 10

:SOURce:JITTer:JFRequency:FREQuency <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>
 50 ±50ppm
 40 ±40ppm
 30 ±30ppm
 20 ±20ppm
 10 ±10ppm
 Function Sets the offset frequency range for Jitter/Freq. measurement.
 Restriction Invalid when,
 - :DISPlay:TMENu[:NAME] is other than <"JFRequency">.
 - The MP0130A is not installed.
 Example use To set the offset frequency range for Jitter/Freq. measurement to ±50ppm.
 > :SOURce:JITTer:JFRequency:FREQuency 50

:SOURce:JITTer:JFRequency:FREQuency?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Function Queries the offset frequency range for Jitter/Freq. measurement.
 Example use > :SOURce:JITTer:JFRequency:FREQuency?
 < 50

:SOURce:JITTer:JFRequency:STEP <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>
 1, 2, 3, 4, 5, 6, 8, 10, 15, 20, 25,30, 40, 50, (ppm)
 Function Sets the offset increment for Jitter/Freq. measurement.
 Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"JFRequency">.
 • The MP0130A is not installed.
 • The value is other than the followings, according to Freq: □

Freq.	Values that can be set
50	2, 4, 5, 10, 20, 25, 50
40	2, 4, 5, 8, 10, 20, 40
30	2, 3, 5, 6, 10, 15, 30
20	1, 2, 4, 5, 10, 20
10	1, 2, 5, 10

Example use To set the offset increment for Jitter/Freq. measurement to 20:
 > :SOURce:JITTer:JFREquency:STEP 20

:SOURce:JITTer:JFREquency:STEP?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Function Queries the offset increment for Jitter/Freq. measurement.
 Example use > :SOURce:JITTer:JFREquency:STEP?
 < 20

:SOURce:WANDer:MANual:MODE <mode>

Parameter <mode> = <CHARACTER PROGRAM DATA>

M2	2M
M1_5	M1.5
M5	5M

Function Sets wander reference output.
 Example use To set the wander reference output to M2:
 > :SOURce:WANDer:MANual:MODE M2

:SOURce:WANDer:MANual:MODE?

Response <mode> = <CHARACTER RESPONSE DATA>
 Function Queries the wander reference output.
 Example use > :SOURce:WANDer:MANual:MODE?
 < M2

:SOURce:WANDer:MANual:FREQuency <numeric>,<suffix>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

1 to 990	Step value : 1
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The maximum value varies with the send-side bit rate.

<suffix> = <CHARACTER PROGRAM DATA>

UHZ	μ Hz
MLHZ	mHz
HZ	Hz

Function	Sets a wander frequency for wander generation.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">. • :ROUte:THROugh is <ON>. • :SOURce:TELEcom:JWANder:MSElect is <OFF> or <JITTer>. • The MU150011A is not installed.
Example use	To set the wander frequency for wander generation to 100mHz. > :SOURce:WANDer:MANual:FREQuency 100,MLHZ

:SOURce:WANDer:MANual:FREQuency?

Response	<numeric> = <NR1 NUMERIC RESPONSE DATA> <suffix> = <CHARACTER RESPONSE DATA>
Function	Queries the wander frequency for wander generation.
Example use	> :SOURce:WANDer:MANual:FREQuency? < 100,MLHZ

:SOURce:WANDer:MANual:AMPLitude:UIPP <numeric>

Parameter	<numeric> = <DECIMAL NUMERIC PROGRAM DATA> 0.0 to 57600.0 Step value : 0.1 When the MP0130A is installed. 0 to 400000 Step value : 10 When the MU150011A is installed.
Function	Sets a wander amplitude for wander generation.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> or <"MANual:JON">. • :ROUte:THROugh is <ON>. • :SOURce:TELEcom:JWANder:MSElect is <OFF> or <JITTer>. • The set value exceeds the Tx Bit rate or the upper limit of wander amplitude by the specifications.
Example use	To set the wander amplitude to 100. > :SOURce:WANDer:MANual:AMPLitude:UIPP 100

:SOURce:WANDer:MANual:AMPLitude:UIPP?

Response	<numeric> = <NR1 NUMERIC RESPONSE DATA>
Function	Queries the wander amplitude for wander generation.
Example use	> :SOURce:WANDer:MANual:AMPLitude:UIPP? < 100

:SOURCE:WANDer:AUTO:TYPE <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	OFF OFF
	WANDer Wander(TDEV)
	TRANSient Transient
	SIGNal Signal off
Function	Sets a wander generation type in automatic wander measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"WAND">. • The MU150011A is not installed.
Example use	To set the generation type to Wander. > :SOURCE:WANDer:Auto:TYPE WANDer

:SOURCE:WANDer:AUTO:TYPE?

Response	<type> = <CHARACTER RESPONSE DATA> Same as :SOURCE:WANDer:AUTO:TYPE .
Function	Queries the setting state of wander generation type.
Example use	> :SOURCE:WANDer:AUTO:TYPE? < OFF

:SOURCE:WANDer:AUTO:TDEV:DTYPe <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	ITUT ITU-T
	ETSI ETSI
	ANSI ANSI
	BELLcore Bellcore
	USER User
Function	Sets a TDEV Mask specification in automatic wander measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"WAND">. • The MU150011A is not installed.
Example use	To set the TDEV Mask specifications to ITU-T. > :SOURCE:WANDer:AUTO:TDEV:DTYPe ITUT

:SOURCE:WANDer:AUTO:TDEV:DTYPe?

Response	<type> = <CHARACTER RESPONSE DATA>
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Function Same as :SOURce:WANDer:AUTO:TDEV:DTYPe .
 Queries the TDEV Mask specifications for automatic wander measurement.
 Example use >:SOURce:WANDer:AUTO:TDEV:DTYPe?
 <ITUT

:SOURce:WANDer:AUTO:TDEV:ITYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

G811	G.811-1997
S81T6	Section 8.1 Table 6(G.812-1997)
S81T7	Section 8.1 Table 7(G.812-1997)
S91T11	Section 9.1 Table 11(G.812-1997)
S91T12	Section 9.1 Table 12(G.812-1997)
S10T18	Section 10 Table 18(G.812-1997)
S10T19	Section 10 Table 19(G.812-1997)
SA31	Section A.3.1(G.812-1997)
SA41	Section A.4.1(G.812-1997)
SA5	Section A.5(G.812-1997)
S71O1	Section 7.1 Option1(G.813-1996)
S71O2	Section 7.1 Option2(G.813-1996)

Function Sets a TDEV Mask specification in automatic wander measurement.
 Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"WAND">.
 • The MU150011A is not installed.
 • :SOURce:WANDer:AUTO:TDEV:DTYPe is other than <ITUT>.
 Example use To set the TDEV Mask specifications to ITU-T.
 > :SOURce:WANDer:AUTO:TDEV:ITYPe G811

:SOURce:WANDer:AUTO:TDEV:ITYPe?

Response <type> = <CHARACTER RESPONSE DATA>
 Same as :SOURce:WANDer:AUTO:TDEV:ITYPe .
 Function Queries the TDEV Mask specifications for automatic wander measurement.
 Example use >:SOURce:WANDer:AUTO:TDEV:ITYPe?
 <G811

:SOURce:WANDer:AUTO:TDEV:ETYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

S721	Section 7.2.1(ETS 300 462-3-1997)
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	S722	Section 7.2.2(ETS 300 462-3-1997)
	S723	Section 7.2.3(ETS 300 462-3-1997)
	S724	Section 7.2.4(ETS 300 462-3-1997)
	S61_4	Section 6.1(ETS 300 462-4-1997)
	S61_5	Section 6.1(ETS 300 462-5-1996)
	S72_4	Section 7.2(ETS 300 462-4-1997)
	S72_5	Section 7.2(ETS 300 462-5-1996)
	S8	Section 8(ETS 300 462-4-1997)
	ETS300_6	ETS 300 462-6-1997
Function	Sets a Mask table of TDEV Mask specifications ITU-T in automatic wander measurement.	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"WAND">. • The MU150011A is not installed. • :SOURce:WANDer:AUTO:TDEV:DTYPe is other than <ETSI>. 	
Example use	To set the TDEV Mask table of ETSI to Section 7.2.1(ETS 300 462-3-1997). > :SOURce:WANDer:AUTO:TDEV:ETYPe S721	

:SOURce:WANDer:AUTO:TDEV:ETYPe?

Response	<type> = <CHARACTER PROGRAM DATA> Same as :SOURce:WANDer:AUTO:TDEV:ETYPe .	
Function	Queries the setting of Mask table of TDEV Mask specifications ETSI in automatic wander measurement.	
Example use	>:SOURce:WANDer:AUTO:TDEV:ETYPe? <S721	

:SOURce:WANDer:AUTO:TDEV:ATYPe <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>	
	S722	Section 7.2.2(ANSI T1.101-1994)
	S732	Section 7.3.2(ANSI T1.101-1994)
	SD21	Section D.2.1(ANSI T1.105.03-1994)
	SD221	Section D.2.2.1(ANSI T1.105.03-1994)
	SD222	Section D.2.2.2(ANSI T1.105.03-1994)
	ANSIT1_9	ANSI T1.105.09-1996
Function	Sets a Mask table of TDEV Mask specifications ANSI in automatic wander measurement.	
Restriction	Invalid when,	

- :DISPlay:TMENu[:NAME] is other than <“WAND”>.
- The MU150011A is not installed.
- :SOURce:WANDer:AUTO:TDEV:DTYPe is other than <ANSI>.

Example use To set TDEV Mask table of ANSI to ANSI T1.105.09-1996.
 > :SOURce:WANDer:AUTO:TDEV:ATYPe ANSIT1_9

:SOURce:WANDer:AUTO:TDEV:ATYPe?

Response <type> = <CHARACTER PROGRAM DATA>

Same as :SOURce:WANDer:AUTO:TDEV:ATYPe .

Function Queries the setting of Mask table of TDEV Mask specifications ANSI in automatic wander measurement.

Example use >:SOURce:WANDer:AUTO:TDEV:ATYPe?
 <ANSIT1_9

:SOURce:WANDer:AUTO:TDEV:BTYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

GR2830	GR-2830-CORE-1995
S43	Section 4.3(GR-1244-CORE-1995)
S53	Section 5.3(GR-1244-CORE-1995)
S54S2	Section 5.4 Strarum 2&3E(GR-1244-CORE-1995)
S54S3	Section 5.4 Strarum 3(GR-1244-CORE-1995)
S54424F515	Section 5.4.4.2.4 Figure 5-15(GR-253-CORE-1995)
S54425F516	Section 5.4.4.2.4 Figure 5-16(GR-253-CORE-1995)
S54432	Section 5.4.4.3.2(GR-253-CORE-1995)
S545	Section 5.4.5(GR-253-CORE-1995)

Function Sets a Mask table of TDEV Mask specifications Bellcore in automatic wander measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <“WAND”>.
- The MU150011A is not installed.
- :SOURce:WANDer:AUTO:TDEV:DTYPe is other than <BELLcore>.

Example use To set TDEV Mask table of Bellcore to GR-2830-CORE-1995.
 > :SOURce:WANDer:AUTO:TDEV:BTYPe GR2830

:SOURce:WANDer:AUTO:TDEV:BTYPe?

Response <type> = <CHARACTER PROGRAM DATA>

Same as :SOURce:WANDer:AUTO:TDEV:BTYPe .

Function	Queries the setting of Mask table of TDEV Mask specifications Bellcore for automatic wander measurement.
Example use	>:SOURce:WANDer:AUTO:TDEV:BTYPe? <GR2830

:SOURce:WANDer:AUTO:MPDeviation <deviation>

Parameter	<deviation> = <DECIMAL NUMERIC PROGRAM DATA> 100 to 2000 Step value : 100
Function	Sets a Maximum phase deviation value in automatic wander measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"WAND">. • :SOURce:WANDer:AUTO:TYPE is other than <TRANsient> . • The MU150011A is not installed.
Example use	To set Maximum phase deviation value to 100. > :SOURce:WANDer:Auto: MPDeviation 100

:SOURce:WANDer:AUTO:MPDeviation?

Response	<deviation> = <NR1 NUMERIC RESPONSE DATA> Same as :SOURce:WANDer:AUTO:MPDeviation.
Function	Queries the set value of Maximum phase deviation in automatic wander measurement.
Example use	> :SOURce:WANDer:AUTO: MPDeviation? < 2000

:SOURce:WANDer:WSweep:TYPE <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	G813 G.813
	G825 G.825
	G812T1 G.812 Type1
	G812T2 G.812 Type2
	G812T3 G.812 Type3
	USER User
Function	Sets an output table type of wander tolerance measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"WSW">. • The MU150011A is not installed. • The Table type is set to other than that in the following list by Bit rate.

Bit rate	Table type
2488M	G.812 Type1, G.812 Type2, G.812 Type3, G.813, G.825, User

Example use To set the output table type to G.825.
 > :SOURce:WANDer:SWEep:TYPE G825

:SOURce:WANDer:WSWeep:TYPE?

Response <type> = <CHARACTER RESPONSE DATA>
 Same as :SOURce:WANDer:WSWeep:TYPE .

Function Queries the setting state of output table for wander tolerance measurement.

Example use To query the setting state of output table.
 > :SOURce:WANDer:SWEep:TYPE?
 < G825

:SOURce:WANDer:WSWeep:PTABLE:TYPE <brate>,<type>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 M2488
 <type> = <CHARACTER PROGRAM DATA>
 G813 G.813
 G825 G.825
 G812T1 G.812 Type1
 G812T2 G.812 Type2
 G812T3 G.812 Type3
 USER User

Function Sets an edit table type of wander tolerance measurement.

Restriction Invalid when,
 • The MU150011A is not installed.
 • :INSTrument:CONFig is <JITTER>.
 • The Table type is set to other than that in the following list by Bit rate.

Bit rate	Table type
2488M	G.812 Type1, G.812 Type2, G.812 Type3, G.813, G.825, User

Example use To set the edit table 2488M for wander tolerance measurement to G825.
 > :SOURce:WANDer:WSWeep:PTABLE:TYPE M2488,G825

:SOURce:WANDer:WSWeep:PTABLE:TYPE? <brate>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 Same s :SOURce:WANDer:WSWeep:PTABLE:TYPE .

Response	<type> = <CHARACTER RESPONSE DATA> Same as :SOURce:WANDer:WSWeep:PTABLE:TYPE .
Function	Queries the setting state of edit table for wander tolerance measurement.
Example use	> :SOURce:WANDer:WSWeep:PTABLE:TYPE? M2488 < G825

:SOURce:WANDer:WSWeep:PTABLE:COUNT <numeric1>,<numeric2>

Parameter	<numeric1>, <numeric2> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 20 Step value : 1
Function	Sets an output point range of the table for wander generation of the wander transfer characteristics.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :DISPlay:TMENu[:NAME] is other than <"WSW">. • :SOURce:WANDer:WSWeep:TYPE is other than <USER>.
Example use	To set the output point in the range of 2 to 10. > :SOURce:WANDer:WSWeep:PTABLE:COUNT 2,10

:SOURce:WANDer:WSWeep:PTABLE:COUNT?

Response	<numeric1>, <numeric2> = <NR1 NUMERIC RESPONSE DATA> Same as :SOURce:WANDer:WSWeep:PTABLE:COUNT .
Function	Queries the output point range of the table for wander generation of the wander transfer characteristics.
Example use	> :SOURce:WANDer:WSWeep:PTABLE:COUNT? < 2,10

:SOURce:WANDer:WSWeep:PTABLE:DATA

<brate>,<point>,<freq1>,<freq2>,<ampl>

Parameter	<brate> = <CHARACTER PROGRAM DATA> M2488
	<point> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 20 Step value : 1
	<freq1> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 999 Step value : 1
	<freq2> = <CHARACTER PROGRAM DATA> UHz μ HZ MHz mHZ

	<ampl> = <NON-DECIMAL NUMERIC PROGRAM DATA> 8.0 to 4,000,000.0 Step value : 0.1
Function	Sets a frequency and amplitude of each measuring point in wander measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :SOURce:WANDer:WSWeep:TYPE is other than <USER>. • :INSTrument:CONFig is <JITTER>.
Example use	To set No15 of Bit rate 2488M to 100 μ HZ, and UIp-p value to 18.0. > :SOURce:WANDer:WSWeep:DATA M2488, 15, 100,UHZ, 18.0

:SOURce:WANDer:WSWeep:PTABLE:DATA? <brate>, <point>

Parameter	<brate> = <CHARACTER PROGRAM DATA> Same as :SOURce:WANDer:WSWeep:DATA . <point> = <DECIMAL NUMERIC PROGRAM DATA> Same as :SOURce:WANDer:WSWeep:DATA .
Response	<freq1> = <NR2 NUMERIC RESPONSE DATA> Same as :SOURce:WANDer:WSWeep:DATA . <freq2> = <CHARACTER RESPONSE DATA> Same as :SOURce:WANDer:WSWeep:DATA . <ampl> = <NR2 NUMERIC RESPONSE DATA> Same as :SOURce:WANDer:WSWeep:DATA .
Function	Queries the frequency and amplitude of each measuring point in wander measurement.
Example use	To query the frequency of No15 of Bit rate 2488M and UIp-p value. > :SOURce:WANDer:WSWeep:DATA? M2488, 15 < 100.0, UHz, 18.0

:SOURce:WANDer:WSWeep:PTABLE:DEFault <brate>[,<type>]

Parameter	<brate> = <CHARACTER PROGRAM DATA> M2488 <type> = <CHARACTER PROGRAM DATA>
	G813 G.813
	G825 G.825
	G812T1 G.812 Type1
	G812T2 G.812 Type2
	G812T3 G.812 Type3
	USER User

Function Initializes the setting of in wander measurement.

Restriction

Invalid when,

- The MU150011A is not installed.
- :INSTRument:CONFIg is <JITTER>.
- :SOURce:WANDer:WSWeep:TYPE is other than <USER>.
- The Table type is set to other than that in the following list by Bit rate.

Bit rate	Table type
2488M	G.812 Type1,G.812 Type2,G.812 Type3,G.813,G.825,User

Example use

To initialize the table in Bit rate 2488M to G.825.

```
> :SOURce:WANDer:WSWeep:DEFault M2488 G825
```

:SOURce:JITTer:WANDgen:TYPE <type>

Parameter

<type> = <CHARACTER PROGRAM DATA>

OFF	OFF
WANDer	Wander(TDEV)
TRANSient	Transient
SIGNal	Signal off

Function

Sets a wander generation type.

Restriction

Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"MANual:WANDgen">.
- The MU150011A is not installed.

Example use

To set the wander generation type to Wander(TDEV).

```
> :SOURce:JITTer:WANDgen:TYPE WAND
```

:SOURce:JITTer:WANDgen:TDEV:DTYPE <type>

Parameter

<type> = <CHARACTER PROGRAM DATA>

ITUT	ITU-T
ETSI	ETSI
ANSI	ANSI
BELLcore	Bellcore
USER	User

Function

Sets a TDEV Mask specification when the wander generation type is Wander (TDEV).

Restriction

Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"MANual:WANDgen">.
- :SOURce:JITTer:WANDgen:TYPE is other than <WAND> .
- The MU150011A is not installed.

Example use To set the TDEV Mask specifications to ITU-T.
 > :SOURce:JITTer:WANDgen:TDEV:DTYPe ITUT

:SOURce:JITTer:WANDgen:TDEV:DTYPe?

Response <type> = <CHARACTER RESPONSE DATA>
 Same as :SOURce:JITTer:WANDgen:TDEV:DTYPe .

Function Queries the TDEV Mask specifications at the wander generation measurement.

Example use >:SOURce:JITTer:WANDgen:TDEV:DTYPe?
 <ITUT

:SOURce:JITTer:WANDgen:TDEV:ITYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

G811	G.811-1997
S81T6	Section 8.1 Table 6(G.812-1997)
S81T7	Section 8.1 Table 7(G.812-1997)
S91T11	Section 9.1 Table 11(G.812-1997)
S91T12	Section 9.1 Table 12(G.812-1997)
S10T18	Section 10 Table 18(G.812-1997)
S10T19	Section 10 Table 19(G.812-1997)
SA31	Section A.3.1(G.812-1997)
SA41	Section A.4.1(G.812-1997)
SA5	Section A.5(G.812-1997)
S71O1	Section 7.1 Option1(G.813-1996)
S71O2	Section 7.1 Option2(G.813-1996)

Function Set a Mask table in the TDEV Mask specification ITU-T at the wander generation measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"MANual:WANDgen">.
- :SOURce:JITTer:WANDgen:TYPE is other than <WAND> .
- :SOURce:JITTer:WANDgen:TDEV:DTYPe is other than <ITUT>.
- The MU150011A is not installed.

Example use To set a TDEV Mask table of ITU-T to G.811-1997.
 > :SOURce:JITTer:WANDgen:TDEV:ITYPe G811

:SOURce:JITTer:WANDgen:TDEV:ITYPe?

Response <type> = <CHARACTER RESPONSE DATA>
 Same as :SOURce:JITTer:WANDgen:TDEV:ITYPe .

Function	Queries the setting of Mask table in the TDEV Mask specification ITU-T in the wander generation measurement.
Example use	>:SOURce:JITTer:WANDgen:TDEV:ITYPE? <G811

:SOURce:JITTer:WANDgen:TDEV:ETYPe <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	S721 Section 7.2.1(ETS 300 462-3-1997)
	S722 Section 7.2.2(ETS 300 462-3-1997)
	S723 Section 7.2.3(ETS 300 462-3-1997)
	S724 Section 7.2.4(ETS 300 462-3-1997)
	S61_4 Section 6.1(ETS 300 462-4-1997)
	S61_5 Section 6.1(ETS 300 462-5-1996)
	S72_4 Section 7.2(ETS 300 462-4-1997)
	S72_5 Section 7.2(ETS 300 462-5-1996)
	S8 Section 8(ETS 300 462-4-1997)
	ETS300_6 ETS 300 462-6-1997
Function	Sets a Mask table in the TDEV Mask specification ETSI in the wander generation measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual:WANDgen">. • :SOURce:JITTer:WANDgen:TYPE is other than <WAND> . • :SOURce:JITTer:WANDgen:TDEV:DTYPe is other than <ETSI>. • The MU150011A is not installed.
Example use	To set a TDEV Mask table of ETSI to Section 7.2.1(ETS 300 462-3-1997). > :SOURce:JITTer:WANDgen:TDEV:ETYPe S721

:SOURce:JITTer:WANDgen:TDEV:ETYPe?

Response	<type> = <CHARACTER RESPONSE DATA> Same as :SOURce:JITTer:WANDgen:TDEV:ETYPe .
Function	Queries the setting of Mask table in the TDEV Mask specification ETSI in the wander generation measurement.
Example use	>:SOURce:JITTer:WANDgen:TDEV:ETYPe? <S721

:SOURce:JITTer:WANDgen:TDEV:ATYPe <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
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S722	Section 7.2.2(ANSI T1.101-1994)
S732	Section 7.3.2(ANSI T1.101-1994)
SD21	Section D.2.1(ANSI T1.105.03-1994)
SD221	Section D.2.2.1(ANSI T1.105.03-1994)
SD222	Section D.2.2.2(ANSI T1.105.03-1994)
ANSIT1_9	ANSI T1.105.09-1996

Function Sets a Mask table in the TDEV Mask specification ANSI in the wander generation measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"MANual:WANDgen">.
- :SOURce:JITTer:WANDgen:TYPE is other than <WAND> .
- :SOURce:JITTer:WANDgen:TDEV:DTYPE is other than <ANSI>.
- The MU150011A is not installed.

Example use Sets a TDEV Mask table of ANSI to ANSI T1.105.09-1996.
 > :SOURce:JITTer:WANDgen:TDEV:ATYPE ANSIT1_9

:SOURce:JITTer:WANDgen:TDEV:ATYPE?

Response <type> = <CHARACTER RESPONSE DATA>
 :SOURce:JITTer:WANDgen:TDEV:ATYPE.

Function Queries the setting of Mask table in the TDEV Mask specification ANSI at the wander generation measurement.

Example use >:SOURce:JITTer:WANDgen:TDEV:ATYPE?
 <ANSIT1_9

:SOURce:JITTer:WANDgen:TDEV:BTYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

GR2830	GR-2830-CORE-1995
S43	Section 4.3(GR-1244-CORE-1995)
S53	Section 5.3(GR-1244-CORE-1995)
S54S2	Section 5.4 Strarum 2&3E(GR-1244-CORE-1995)
S54S3	Section 5.4 Strarum 3(GR-1244-CORE-1995)
S54424F515	Section 5.4.4.2.4 Figure 5-15(GR-253-CORE-1995)
S54425F516	Section 5.4.4.2.4 Figure 5-16(GR-253-CORE-1995)
S54432	Section 5.4.4.3.2(GR-253-CORE-1995)
S545	Section 5.4.5(GR-253-CORE-1995)

Function Sets a Mask table in the TDEV Mask specification Bellcore at the wander generation measurement.

Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual:WANDgen">. • :SOURce:JITTer:WANDgen:TYPE is other than <WAND>. • :SOURce:JITTer:WANDgen:TDEV:DTYPE is other than <BELL>. • The MU150011A is not installed.
Example use	To set a TDEV Mask table of Bellcore to GR-2830-CORE-1995. > :SOURce:JITTer:WANDgen:TDEV:BTYPe GR2830

:SOURce:JITTer:WANDgen:TDEV:BTYPe?

Response	<type> = <CHARACTER PROGRAM DATA> Same as :SOURce:WANDer:AUTO:TDEV:BTYPe .
Function	Queries the setting of Mask table in the TDEV Mask specification Bellcore at the wander generation measurement.
Example use	>:SOURce:JITTer:WANDgen:TDEV:BTYPe? <GR2830

:SOURce:JITTer:WANDgen:MARGin <margin>

Parameter	<margin> = <DECIMAL NUMERIC PROGRAM DATA> 100 to 2000 Step value : 100
Function	Sets the Maximum phase deviation value when the wander generation type is Transient.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual:WANDgen">. • :SOURce:JITTer:WANDgen:TYPE is other than <TRANsient> . • The MU150011A is not installed.
Example use	To set the Transient mergin to 100. > :SOURce:JITTer:WANDgen:MARGin 100

:SOURce:JITTer:WANDgen:MARGin?

Response	<deviation> = <NR1 NUMERIC RESPONSE DATA> Same as :SOURce:JITTer:WANDgen:MARGin.
Function	Queries the setting of Maximum phase deviation value when the wander generation type is Transient.
Example use	> :SOURce:JITTer:WANDgen:MARGin? < 100

4.4.3 SENSE subsystem

The SENSE subsystem is used to make settings of the receiver and measurement conditions.

Function	Command	Parameter
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Page 4-72

Queries the measurement status.	:SENSE:MEASURE:STATE?	
Queries the measurement starting time.	:SENSE:MEASURE:STIME?	type

Page 4-72

Queries the time elapsed for progress of measurement.	:SENSE:MEASURE:ELAPSED?	type
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Page 4-72

Switches the jitter or wander measurement.	:SENSE:MEASURE:JWANDER:MSELECT	type
Queries the status of Jitter/Wander manual measurement.	:SENSE:MEASURE:JWANDER:MSELECT?	
Sets a jitter reference signal source for Jitter manual measurement.	:SENSE:MEASURE:JWANDER:JITTER:MODE	mode
Queries the jitter reference signal source for Jitter manual measurement.	:SENSE:MEASURE:JWANDER:JITTER:MODE?	
Sets a wander reference signal source.	:SENSE:MEASURE:JWANDER:WANDER:MODE	mode
Queries the wander reference signal source for Wander manual measurement.	:SENSE:MEASURE:JWANDER:WANDER:MODE?	
Sets the jitter measurement (RMS) correction value.	:SENSE:MEASURE:JWANDER:CORRECTION:OFFSET	numeric
Queries the jitter measurement (RMS) correction value.	:SENSE:MEASURE:JWANDER:CORRECTION:OFFSET?	

Page 4-75

Sets the receive range for the jitter manual measurement.	:SENSE:JITTER:MANUAL:RANGE	numeric
Queries the receive range for the jitter manual measurement.	:SENSE:JITTER:MANUAL:RANGE?	
Sets a filter type inserted for Jitter manual measurement.	:SENSE:JITTER:MANUAL:FILTER	filter
Queries the filter type inserted for Jitter manual measurement.	:SENSE:JITTER:MANUAL:FILTER?	
Sets a threshold value for Hit measurement of Jitter manual measurement.	:SENSE:JITTER:MANUAL:THRESHOLD	numeric
Queries the threshold value for Hit measurement of Jitter manual measurement.	:SENSE:JITTER:MANUAL:THRESHOLD?	
Sets a measurement state for Jitter manual measurement.	:SENSE:JITTER:MANUAL:COUPLED	boolean
Queries a measurement state for Jitter manual measurement.	:SENSE:JITTER:MANUAL:COUPLED?	
Sets a measurement interval for Jitter manual measurement.	:SENSE:JITTER:MANUAL:INTERVAL	numeric
Queries the measurement interval for Jitter manual measurement.	:SENSE:JITTER:MANUAL:INTERVAL?	

Sets a User filter value.	:SENSe:JITTer:MANual:USER:FILTer	hp hpsuffix lp lpsuffix
Queries the setting of User filter value.	:SENSe:JITTer:MANual:USER:FILTer?	

Page 4-78

Sets a mask line table for judgment use of jitter tolerance measurement.	:SENSe:JITTer:TOLerance:MASK	type
Queries the mask line table for judgment use of jitter tolerance measurement.	:SENSe:JITTer:TOLerance:MASK?	
Sets the detection condition for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:TYPE	type
Queries the detection condition for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:TYPE?	
Sets the detection condition error for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:ERRor	error
Queries the detection condition error for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:ERRor?	
Sets the threshold type for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:UNIT	unit
Queries the threshold type for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:UNIT?	
Sets the threshold count detection range for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:THReshold:EC	numeric
Queries the threshold count detection range for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:THReshold:EC?	
Sets the threshold rate detection range for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:THReshold:ER	erate
Queries the threshold rate detection range for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:DETection:THReshold:ER?	
Sets Hold time.	:SENSe:JITTer:TOLerance:DETection:HTIME	s
Queries the Hold time setting.	:SENSe:JITTer:TOLerance:DETection:HTIME?	
Sets Waiting time.	:SENSe:JITTer:TOLerance:WTIME	wait
Queries the Waiting time setting.	:SENSe:JITTer:TOLerance:WTIME?	
Sets an editing mask line table for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:MTABLE:TYPE	brate type
Queries the editing mask line table for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:MTABLE:TYPE?	brate
Sets the mask table output point range for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:MTABLE:POINT	brate numeric
Queries the mask table output point range for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:MTABLE:POINT?	brate
Sets the User define mask line data for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:MTABLE:DATA	brate point freq1 freq2 ampl
Queries the User define mask line data for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:MTABLE:DATA?	brate point
Initializes the User define mask line data for jitter tolerance measurement.	:SENSe:JITTer:TOLerance:MTABLE:DEfault	brate

Page 4-86

Section 4 Remote Control

Sets a measurement mode for jitter transfer characteristic measurement.	:SENSe:JITTer:TRANsfer:MODE	mode
Queries the measurement mode setting for jitter transfer Characteristic measurement.	:SENSe:JITTer:TRANsfer:MODE?	
Sets a mask line table for judgment use of jitter transfer characteristic measurement.	:SENSe:JITTer:TRANsfer:MASK	type
Queries the mask line table for judgment use of jitter transfer characteristic measurement.	:SENSe:JITTer:TRANsfer:MASK?	
Sets an editing mask line table for jitter transfer characteristic measurement.	:SENSe:JITTer:TRANsfer:MTABLE:TYPE	brate type
Queries the editing mask line table for jitter transfer characteristic measurement.	:SENSe:JITTer:TRANsfer:MTABLE:TYPE?	brate
Sets the mask table output point range for jitter tolerance measurement.	:SENSe:JITTer:TRANsfer:MTABLE:POINt	brate numeric
Queries the mask table output point range for jitter tolerance measurement.	:SENSe:JITTer:TRANsfer:MTABLE:POINt?	brate
Sets the User define mask line data for jitter transfer characteristic measurement.	:SENSe:JITTer:TRANsfer:MTABLE:DATA	brate point freq1 freq2 ampl
Queries the User define mask line data for jitter transfer characteristic measurement.	:SENSe:JITTer:TRANsfer:MTABLE:DATA?	brate point
Initializes the mask table contents for jitter transfer characteristic measurement.	:SENSe:JITTer:TRANsfer:MTABLE:DEfault	brate
Sets changes between internal loop and external connection for Calibration measurement.	:SENSe:JITTer:TRANsfer:LOOPback	type
Queries the changes between internal loop and external connection for Calibration measurement.	:SENSe:JITTer:TRANsfer:LOOPback?	
Sets a Selective band width value.	:SENSe:JITTer:TRANsfer:SElectband	band
Queries the Selective band width value.	:SENSe:JITTer:TRANsfer:SElectband?	
Sets Waiting time	:SENSe:JITTer:TRANsfer:WTIME	wait
Queries the Waiting time setting.	:SENSe:JITTer:TRANsfer:WTIME?	

Page 4-91

Sets the detection condition for the jitter tolerance measurement.	:SENSe:JITTer:SWEEp:DETEction:TYPE	type
Queries the detection condition for the jitter tolerance measurement.	:SENSe:JITTer:SWEEp:DETEction:TYPE?	
Sets the detection condition error for the jitter tolerance measurement.	:SENSe:JITTer:SWEEp:DETEction:ERRor	error
Queries the detection condition error for the jitter tolerance measurement.	:SENSe:JITTer:SWEEp:DETEction:ERRor?	
Sets the threshold type for the jitter tolerance measurement.	:SENSe:JITTer:SWEEp:DETEction:UNIT	unit
Queries the threshold type for the jitter tolerance measurement.	:SENSe:JITTer:SWEEp:DETEction:UNIT?	
Sets the detection range of the threshold count for the jitter tolerance measurement.	:SENSe:JITTer:SWEEp:DETEction:THREshold:EC	numeric

Queries the threshold count detection range for jitter tolerance measurement.	:SENSe:JITTer:SWEEP:DETECTION:THRESHOLD:EC?	
Sets the threshold rate detection range for jitter tolerance measurement.	:SENSe:JITTer:SWEEP:DETECTION:THRESHOLD:ER	erate
Queries the threshold rate detection range for jitter tolerance measurement.	:SENSe:JITTer:SWEEP:DETECTION:THRESHOLD:ER?	
Sets Hold time for jitter sweep measurement.	:SENSe:JITTer:SWEEP:DETECTION:HTIME	s
Queries the Hold time setting state for jitter sweep measurement.	:SENSe:JITTer:SWEEP:DETECTION:HTIME?	
Sets Waiting time for jitter sweep measurement.	:SENSe:JITTer:SWEEP:WTIME	wait
Queries the Waiting time setting state.	:SENSe:JITTer:SWEEP:WTIME?	

Page 4-96

Sets the filter for Jitter/Freq. measurement.	:SENSe:JITTer:JFREQUENCY:FILTer	filter
Queries the filter for Jitter/Freq. Measurement.	:SENSe:JITTer:JFREQUENCY:FILTer?	
Sets the measurement interval for Jitter/Freq. measurement.	:SENSe:JITTer:JFREQUENCY:INTerval	numeric
Queries the measurement interval for Jitter/Freq. measurement.	:SENSe:JITTer:JFREQUENCY:INTerval?	

Page 4-97

Set a mask table for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:MTABLE:TYPE	brate type
Queries the mask table setting state for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:MTABLE:TYPE?	brate
Sets an output point range when the Mask table is User for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:MTABLE:POINT	brate point
Queries the output point range when the Mask table is User for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:MTABLE:POINT?	brate
Sets contents of point when the Mask table is User for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:MTABLE:DATA	brate ptype freq1 freq2 uipp
Queries the setting state of point contents when the Mask table is User for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:MTABLE:DATA?	brate ptype
Initializes the edit contents when the Mask table is User for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:MTABLE:Default	brate
Sets offset data for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:MTABLE:OFFSet	offset
Queries the offset data for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:MTABLE:OFFSet?	
Sets a detection condition for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:DETECTION:TYPE	type
Queries the setting state of detection condition for jitter modulation frequency measurement.	:SENSe:JITTer:FSWEEP:DETECTION:TYPE?	

Section 4 Remote Control

Sets a detection condition error for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:ERRor	error
Queries the setting state of detection condition error for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:ERRor?	
Sets a detection type for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:UNIT	unit
Queries the setting state of detection type for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:UNIT?	
Sets a detection range of Threshold count for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:THReshold:EC	numeric
Queries the detection range of Threshold count for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:THReshold:EC?	
Sets a detection range of Threshold count for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:THReshold:ER	erate
Queries the setting state of Threshold count detection range for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:THReshold:ER?	
Sets Hold time for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:HTIME	s
Queries the setting state of Hold time for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:DETection:HTIME?	
Sets Waiting time for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:WTIME	wait
Queries the setting state of Waiting time for jitter modulation frequency measurement.	:SENSe:JITTer:FSWeep:WTIME?	
Sets a mask line table for judgement use of jitter modulation characteristics measurement.	:SENSe:JITTer:FSWeep:MASK	mask
Queries the setting state of mask line table for judgement use of jitter modulation characteristics measurement.	:SENSe:JITTer:FSWeep:MASK?	

Page 4-106

Sets a measurement state for Wander manual measurement.	:SENSe:WANDer:MANual:COUPled	boolean
Queries the measurement state setting for Wander manual measurement.	:SENSe:WANDer:MANual:COUPled?	

Page 4-107

Sets the measurement interval for automatic Wander measurement.	:SENSe:WANDer:AUTO:INTerval	numeric suffix
Queries the measurement interval for automatic Wander measurement.	:SENSe:WANDer:AUTO:INTerval?	
Sets measurement time (Observation time) for automatic wander measurement(When User is set).	:SENSe:WANDer:AUTO:USER	numeric
Queries the setting state of measurement time (Observation time) of automatic wander measurement.(When User is set.)	:SENSe:WANDer:AUTO:USER?	

Page 4-108

Sets a the detection condition for wander sweep measurement.	:SENSe:WANDer:WSWeep:DETection:TYPE	type
Queries the setting state of detection condition for wander sweep measurement.	:SENSe:WANDer:WSWeep:DETection:TYPE?	
Sets a the detection condition error for wander sweep measurement.	:SENSe:WANDer:WSWeep:DETection:ERRor	error
Queries the setting state of detection condition error for wander sweep measurement.	:SENSe:WANDer:WSWeep:DETection:ERRor?	
Sets a detection range of Threshold count for wander sweep measurement.	:SENSe:WANDer:WSWeep:DETection:THReshold:EC	numeric
Queries the setting state of Threshold count detection range for wander sweep measurement.	:SENSe:WANDer:WSWeep:DETection:THReshold:EC?	
Sets a detection range of Threshold count for wander sweep measurement.	:SENSe:WANDer:WSWeep:DETection:THReshold:ER	erate
Queries the setting state of Threshold count detection range for wander sweep measurement.	:SENSe:WANDer:WSWeep:DETection:THReshold:ER?	
Sets mergin(%) for wander sweep measurement.	:SENSe:WANDer:WSWeep:MARGin	margin
Queries the setting state of mergin(%) for wander sweep measurement.	:SENSe:WANDer:WSWeep:MARGin?	

Parameter	<type> = <CHARACTER PROGRAM DATA> JWANder Elapsed time for progress of jitter/wander manual measurement (Omitted) Elapsed time for other measurements
Response	<day>, <hour>, <minute>, <second> = <NR1 NUMERIC RESPONSE DATA>
Function	Queries the time elapsed for progress of measurement.
Example use	> :SENSE:MEASure:ELAPsed? JWANder < 5,19,50,34 * When no measurement progress time exists: < -, -, -, -

:SENSE:MEASure:JWANder:MSElect <type>

Parameter	<type> = <CHARACTER PROGRAM DATA> JITTER Jitter JWANder Jitter and Wander
Function	Switches the jitter or wander measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • The Wander measurement option is not installed, and <JWANder> is set. • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"/>, <"MANual:JON"/>, <"PSEquence[:JOFF]"/>, and <"PSEquence[:JON]"/>.
Example use	To set to the Jitter measurement: > :SENSE:MEASure:JWANder:MSElect JITTER

:SENSE:MEASure:JWANder:MSElect?

Response	<type> = <CHARACTER RESPONSE DATA>
Function	Queries the status of Jitter/Wander manual measurement.
Example use	> :SENSE:MEASure:JWANder:MSElect? < JITT

:SENSE:MEASure:JWANder:JITTER:MODE <mode>

Parameter	<mode> = <CHARACTER PROGRAM DATA> INTernal Internal signal EXTernal External signal
Function	Sets a jitter reference signal source for Jitter manual measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is <"JTRansfer"/> or <"JFREquency"/>, and <EXTernal> is set.

- :SENSe:MEASure:JWANder:MEASure is <clock>, and External is set.

Example use To set the reference signal source to Internal:
 > :SENSe:MEASure:JWANder:JITTer:MODE INTernal

:SENSe:MEASure:JWANder:JITTer:MODE?

Response <mode> = <CHARACTER RESPONSE DATA>
 Function Queries the jitter reference signal source for Jitter manual measurement.
 Example use > :SENSe:MEASure:JWANder:JITTer:MODE?
 < INT

:SENSe:MEASure:JWANder:WANDer:MODE <mode>

Parameter <mode> = <CHARACTER PROGRAM DATA>

UNB_2MHZ	2MHz(Unbalanced)
UNB_2MBPS	2Mbit/s(Unbalanced)
BAL_2MBPS	2Mbit/s(Balanced)
UNB_1.5MHZ	1.5MHz(Unbalanced)
UNB_1.5MBPS	1.5Mbit/s(Unbalanced)
BAL_1.5MBPS	1.5Mbit/s(Balanced)
H64_8	64k+8kHz
H5M	5MHz
H10M	10MHz

Function Sets a wander reference signal source.
 Example use To set the wander reference signal source to 2MHz(Unbalanced).
 > :SENSe:MEASure:JWANder:WANDer:MODE UNB_2M HZ

:SENSe:MEASure:JWANder:WANDer:MODE?

Response <mode> = <CHARACTER RESPONSE DATA>
 Function Queries the wander reference signal source for Wander manual measurement.
 Example use > :SENSe:MEASure:JWANder:WANDer:MODE?
 < UNB_2MHZ

:SENSe:MEASure:JWANder:CORRection:OFFSet <numeric>

Parameter <numeric> = <NON-DECIMAL NUMERIC PROGRAM DATA>
 0.000 to 1.000 2UI range

* The digits lower than the resolutions are cut off.

Function Sets a jitter measurement(RMS) correction value.
 Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEquence[:JOFF]">, or <"PSEquence:JON">.
- The setting of Range on receive-side is other than 2UI.
- The setting of Unit on the Result screen is other than Peak/RMS.

Example use To set the jitter measurement(RMS) correction value to 1.00.
> :SENSe:MEASure:JWANder:CORRection:OFFSet 1.00

:SENSe:MEASure:JWANder:CORRection:OFFSet?

Response <numeric> = <NR2 NUMERIC RESPONSE DATA>
Function Queries the jitter measurement(RMS) correction value.
Example use > :SENSe:MEASure:JWANder:CORRection:OFFSet?
< 1.00

:SENSe:JITTer:MANual:RANGe <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
32 32UI range
2 2UI range
Function Sets the receive range for the jitter manual measurement.
Restriction Invalid when,
• :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEquence[:JOFF]">, and <"PSEquence:JON">.
• :SENSe:MEASure:JWANder:MSElect is <WANDer>.
Example use To set the receive range to 2UI.
> :SENSe:JITTer:MANual:RANGe 2

:SENSe:JITTer:MANual:RANGe?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
Function Queries the receive range for the jitter manual measurement.
Example use > :SENSe:JITTer:MANual:RANGe?
< 2

:SENSe:JITTer:MANual:FILTer <filter>

Parameter <filter> = <CHARACTER PROGRAM DATA>
OFF Filter is not inserted.
HP High-pass filter is inserted.
HP1 High-pass filter 1 is inserted.
HP21 High-pass filter 2 is inserted.
HP22 High-pass filter 2' is inserted.
LP Low-pass filter is inserted.

LPHP	Low-pass filter and High-pass filter are inserted.
LPHP1	Low-pass filter and High-pass filter 1 are inserted.
LPHP21	Low-pass filter and High-pass filter 2 are inserted.
LPHP22	Low-pass filter and High-pass filter 2' are inserted.
LPHP0	Low-pass filter and High-pass filter 0 are inserted.
USER	

Function	Sets a filter type inserted for Jitter manual measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEQUence[:JOFF]">, and <"PSEQUence:JON"> • :SENSe:TELEcom:BRATe is <M8> or <M2>, <HP22>, or <LPHP22> is set.
Example use	To insert High-passfilter 1. > :SENSe:JITTer:MANual:FILTer HP1

:SENSe:JITTer:MANual:FILTer?

Response	<filter> = <CHARACTER RESPONSE DATA>
Function	Queries the filter type inserted for Jitter manual measurement.
Example use	> :SENSe:JITTer:MANual:FILTer? < HP1

:SENSe:JITTer:MANual:THReshold <numeric>

Parameter	<numeric> = <NON-DECIMAL PROGRAM DATA> 0.05 to 1.00 : 0.01 steps (2UI range) 0.5 to 16.0 : 0.1 steps (32UI range) * The digits lower than the resolution are cut off.
Function	Sets a threshold value for Hit measurement of Jitter manual measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEQUence[:JOFF]">, and <"PSEQUence:JON">.
Example use	To set the threshold to 0.5: > :SENSe:JITTer:MANual:THReshold 0.5

:SENSe:JITTer:MANual:THReshold?

Response	<numeric> = <NR2 NUMERIC RESPONSE DATA>
Function	Queries the threshold value for Hit measurement of Jitter manual measurement.
Example use	> :SENSe:JITTer:MANual:THReshold? < 0.5

:SENSe:JITTer:MANual:COUPled <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Asynchronized with Error/alarm measurement ON or 1 Synchronized with Error/alarm measurement
Function	Sets a measurement state for Jitter manual measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEquence[:JOFF]">, and <"PSEquence:JON">. • :SENSe:MEASure:JWANder:MSElect is <JWANder>, and <OFF> is set. When :SENSe:MEASure:JWANder:MSElect is <WANDer>, the <OFF> setting is invalid.
Example use	To set the measurement state to Asynchronous: > :SENSe:JITTer:MANual:COUPled OFF

:SENSe:JITTer:MANual:COUPled?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA> 0 or 1
Function	Queries a measurement state for Jitter manual measurement.
Example use	> :SENSe:JITTer:MANual:COUPled? < 0

:SENSe:JITTer:MANual:INTerval <numeric>

Parameter	<numeric> = <NON-DECIMAL NUMERIC PROGRAM DATA> 0.5 to 99.5 : 0.5 steps * The digits lower than the resolution are cut off.
Function	Sets a measurement interval for Jitter manual measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEquence[:JOFF]">, and <"PSEquence:JON">. • :SENSe:JITTer:MANual:COUPled is <ON>.
Example use	To set the measurement interval to 10 seconds: > :SENSe:JITTer:MANual:INTerval 10

:SENSe:JITTer:MANual:INTerval?

Response	<numeric> = <NR2 NUMERIC RESPONSE DATA>
Function	Queries the measurement interval for Jitter manual measurement.
Example use	> :SENSe:JITTer:MANual:INTerval? < 10.0

:SENSe:JITTer:MANual:USER:FILTer <hp>,<hpsuffix>,<lp>,<lpsuffix>

Parameter	<p><hp> = <NON-DECIMAL NUMERIC PROGRAM DATA> 0.0 to 999.9 Step value : 0.1 * 0.0 is regarded as OFF</p> <p><hpsuffix> = <CHARACTER PROGRAM DATA> HZ Hz KHZ KHz MHZ MHz</p> <p><lp> = <NON-DECIMAL NUMERIC PROGRAM DATA> 0.0 to 999.9 Step value : 0.1 * 0.0 is regarded as OFF</p> <p><lpsuffix> = <CHARACTER PROGRAM DATA> HZ Hz KHZ KHz MHZ MHz</p>
Function	Sets a User filter value.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]"> and <"MANual:JON">. • The setting of filter on the Test menu:Manual screen is other than User.
Example use	To set User filter value for HP to 12 KHz, for LP to 1.3 MHz. > :SENSe:JITTer:MANual:USER:FILTer 12.0,KHZ,1.3,MHZ

:SENSe:JITTer:MANual:USER:FILTer?

Response	<p><hp> = <NR2 NUMERIC RESPONSE DATA> <hpsuffix> = <CHARACTER RESPONSE DATA> <lp> = <NR2 NUMERIC RESPONSE DATA> <lpsuffix> = <CHARACTER RESPONSE DATA></p>
Function	Queries the setting of User filter value.
Example use	To query the setting of User filter value. > :SENSe:JITTer:MANual:USER:FILTer? < 12.0,KHZ,1.3,MHZ

:SENSe:JITTer:TOLerance:MASK <type>

Parameter	<p><type> = <CHARACTER PROGRAM DATA> G958A G.958 Type A</p>
-----------	---

G958B	G.958 Type B
G825	G.825
B253	Bell 253
USER	User
G813	G.813
ANSIT1	ANSI T1.105.03
G825_1_5M	G.825 1.5M
G825_2M	G.825 2M

Function Sets a mask line table for judgment use of jitter tolerance measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"JTOLerance">.
- Invalid in the following cases:

Bit rate	Table type
2488M	G.958 Type A, G.958 Type B, G.825, Bell 253, User, ANSI T1.105.03, G.825 1.5M, G.825 2M

Example use To set the mask line table to G.958 Type A

```
> :SENSe:JITTer:TOLerance:MASK G958A
```

:SENSe:JITTer:TOLerance:MASK?

Response <type> = <CHARACTER RESPONSE DATA>

Function Queries the mask line table for judgment use of jitter tolerance measurement.

Example use > :SENSe:JITTer:TOLerance:MASK?

```
< G958A
```

:SENSe:JITTer:TOLerance:DETection:TYPE <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

SEC1	1s error
DEFault	Default
ON	On set of errors
DB1	1dB power penalty
COUNt	Count
RATE	Rate

Function Sets a detection condition for jitter tolerance measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"JTOLerance">.

Example use To set the detection condition to 1s error.

```
:SENSe:JITTer:TOLerance:DETection:TYPE S1
```

SENSe:JITTer:TOLerance:DETection:TYPE?

Response <type> = <CHARACTER RESPONSE DATA>

SEC1	1s error
DEFault	Default
ON	On set of errors
DB1	1dB power penalty
COUNt	Count
RATE	Rate

Function Queries the detection condition for jitter tolerance measurement.

Example use > :SENSe:JITTer:TOLerance:DETection:TYPE?
< S1

:SENSe:JITTer:TOLerance:DETection:ERRor <error>

Parameter <error> = <CHARACTER PROGRAM DATA>

(SDH) "B1"	B1 error (SONET)	"B1"	B1 error
"B2"	B2 error	"B2"	B2 error
"HB3"	HP-B3 error	"HB3"	HP-B3 error
"LB3"	LP-B3 error	"LB3"	LP-B3 error
"BIP2"	BIP-2 error	"BIP2"	BIP-2 error
"MREI" (SDH)	MS-REI error	"REIL" (SONET)	REI-L error
"HREI" (SDH)	HP-REI error	"REIP" (SONET)	REI-P error
"HIEC"	HP-IEC error	"HIEC"	HP-IEC error
"HTREI"	HP-TC-REI error	"HTREI"	HP-TC-REI error
"HOEI"	HP-OEI error	"HOEI"	HP-OEI error
"LREI" (SDH)	LP-REI error	"REIV" (SONET)	REI-V error
"LIEC"	LP-IEC error	"LIEC"	LP-IEC error
"LTREI"	LP-TC-REI error	"LTREI"	LP-TC-REI error
"LOEI"	LP-OEI error	"LOEI"	LP-OEI error
"N2BIP2"	N2_BIP2 error	"N2BIP2"	N2_BIP2 error
"BIT"	Bit error	"BIT"	Bit error
"CODE"	Code error	"CODE"	Code error
"FAS139"	FAS 139M error	"FAS139"	FAS 139M error
"FAS45"	FAS 45M error	"FAS45"	FAS 45M error
"FAS34"	FAS 34M error	"FAS34"	FAS 34M error
"FAS8"	FAS 8M error	"FAS8"	FAS 8M error
"FAS2"	FAS 2M error	"FAS2"	FAS 2M error
"FAS1_5"	FAS 1.5M error	"FAS1_5"	FAS 1.5M error
"REI139"	REI 139M error	"REI139"	REI 139M error
"REI45"	REI 45M error	"REI45"	REI 45M error
"REI34"	REI 34M error	"REI34"	REI 34M error
"BIP8"	BIP8 error	"BIP8"	BIP8 error
"PARITY"	Parity error	"PARITY"	Parity error
"CBIT"	CBIT error	"CBIT"	CBIT error
"CRC6"	CRC6 error	"CRC6"	CRC6 error
"CORRECT"	Correct error	"CORRECT"	Correct error
"DISCARD"	Discard error	"DISCARD"	Discard error
"NONCONF"	Nonconf error	"NONCONF"	Nonconf error

	"ERRORED" Errored error	"ERRORED" Errored error
	"LOST" Lost error	"LOST" Lost error
	"MISINS" Misinserted error	"MISINS" Misinserted error
	"SECB" SECB error	"SECB" SECB error
Function	Sets the detection condition error for jitter tolerance measurement.	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"JTOLerance">. • :SENSe:JITTer:TOLerance:DETection:TYPE is <DEFault>. 	
Example use	To set the detection condition error to B1: > :SENSe:JITTer:TOLerance:DETection:ERRor "B1"	

:SENSe:JITTer:TOLerance:DETection:ERRor?

Response	<error> = <CHARACTER RESPONSE DATA>
Function	Queries the detection condition error for jitter tolerance measurement.
Example use	> :SENSe:JITTer:TOLerance:DETection:ERRor? < B1

:SENSe:JITTer:TOLerance:DETection:UNIT <unit>

Parameter	<unit> = <CHARACTER PROGRAM DATA>
	COUNt Displays the count value
	RATE Displays the rate value.
Function	Sets the threshold type for jitter tolerance measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"JTOLerance">. • :SENSe:JITTer:TOLerance:DETection:TYPE is <DEFault>.
Example use	To set the threshold type to Count: > :SENSe:JITTer:TOLerance:DETection:UNIT COUNt

:SENSe:JITTer:TOLerance:DETection:UNIT?

Response	<unit> = <CHARACTER RESPONSE DATA>
Function	Queries the threshold type for jitter tolerance measurement.
Example use	> :SENSe:JITTer:TOLerance:DETection:UNIT? < COUN

SENSe:JITTer:TOLerance:DETection:THReshold:EC <numeric>

Parameter	<numeric> = <DECIMAL NUMERIC PROGRAM DATA>
	1 to 99999 Step value : 1
Function	Sets a Threshold count detection range for jitter tolerance measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"JTOLerance">.
- :SENSe:JITTer:TOLerance:DETection:TYPE is other than <SEC1>, <COUN>.
- :SENSe:JITTer:TOLerance:DETection:TYPE is <SEC1>; and
SENSe:JITTer:TOLerance:DETection:UNIT is other than <COUN>.

Example use To set the Threshold count detection range to 100.

```
> :SENSe:JITTer:TOLerance:DETection:THReshold:EC 100
```

:SENSe:JITTer:TOLerance:DETection:THReshold:EC?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function Queries the threshold count detection range for jitter tolerance measurement.

Example use > :SENSe:JITTer:TOLerance:DETection:THReshold:EC?
< 100

:SENSe:JITTer:TOLerance:DETection:THReshold:ER <erate>

Parameter <erate> = <CHARACTER PROGRAM DATA>

R1E_3	>1E-3
R1E_4	>1E-4
R1E_5	>1E-5
R1E_6	>1E-6
R1E_7	>1E-7

Function Queries the Threshold count detection range for jitter tolerance measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"JTOLerance">.
- :SENSe:JITTer:TOLerance:DETection:TYPE is other than <SEC1>, <RATE>.
- :SENSe:JITTer:TOLerance:DETection:TYPE is <SEC1>; and
SENSe:JITTer:TOLerance:DETection:UNIT is other than <RATE>.

Example use To set the Threshold rate detection range to 1E-3.

```
> :SENSe:JITTer:TOLerance:DETection:THReshold:ER R1E_3
```

:SENSe:JITTer:TOLerance:DETection:THReshold:ER?

Response <unit> = <CHARACTER RESPONSE DATA>

Function Queries the Threshold rate for jitter tolerance measurement.

Example use > :SENSe:JITTer:TOLerance:DETection:THReshold:ER?
< R1E_3

:SENSe:JITTer:TOLerance:DETection:HTIME <s>

Parameter	<s> = <NON-DECIMAL NUMERIC PROGRAM DATA> 1.0 to 99.5 Step value : 0.5
Function	Sets Hold time.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"JTolerance">. • :SENSe:JITTer:TOLerance:DETection:TYPE is other than <COUNT> or <RATE>.
Example use	To set the Hold time to 5.5 second. > :SENSe:JITTer:TOLerance:DETection:HTIME 5.5

:SENSe:JITTer:TOLerance:DETection:HTIME?

Response	<s> = <NR2 NUMERIC RESPONSE DATA>
Function	Queries the Hold time setting.
Example use	> :SENSe:JITTer:TOLerance:DETection:HTIME? < 5.5

:SENSe:JITTer:TOLerance:WTime <wait>

Parameter	<wait> = <NON-DECIMAL NUMERIC PROGRAM DATA> 1.0 to 99.5 Step value : 0.5
Function	Sets Waiting time.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"JTolerance">.
Example use	To set the Waiting time to 1.5 second. > :SENSe:JITTer:TOLerance:WTime 1.5

:SENSe:JITTer:TOLerance:WTime?

Response	<wait> = <NR2 NUMERIC RESPONSE DATA>
Function	Queries the Waiting time setting.
Example use	> :SENSe:JITTer:TOLerance:WTime? < 1.5

:SENSe:JITTer:TOLerance:MTABLE:TYPE <brate>,<type>

Parameter	<brate> = <CHARACTER PROGRAM DATA> M2488 2488Mbit/s
	<type> = <CHARACTER PROGRAM DATA> G958A G.958 Type A G958B G.958 Type B

G825	G.825
B253	Bell 253
USER	User define
G813	G.813
ANSIT1	ANSI T1.105.03
G825_1_5M	G.825 1.5M
G825_2M	G.825 2M

Function Sets an editing mask line table for jitter tolerance measurement.

Restriction Invalid when,
 • The value is other than the followings, according to the Bit rate on receive side.

Bit rate	Table type
2488M	G.958 Type A, G.958 Type B, G.825, Bell 253, User, ANSI T1.105.03, G.825 1.5M, G.825 2M

Example use To set the editing mask line table to 2488M G958 Type A.
 >:SENSe:JITTer:TOLerance:MTABLE:TYPE M2488,G958A

:SENSe:JITTer:TOLerance:MTABLE:TYPE? <brate>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 Response <type> = <CHARACTER PROGRAM DATA>
 Function Queries the editing mask line table for jitter tolerance measurement.
 Example use > :SENSe:JITTer:TOLerance:MTABLE:TYPE? M2488
 < G958A

:SENSe:JITTer:TOLerance:MTABLE:POINT <brate>,<numeric>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 M2488 2488Mbit/s
 <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
 2 to 7 : 1 steps
 Function Sets the mask table output point range for jitter tolerance measurement.
 Example use To set the 2488M table output point range to 2:
 > :SENSe:JITTer:TOLerance:MTABLE:POINT M2488,2

:SENSe:JITTer:TOLerance:MTABLE:POINT? <brate>

Parameter <brate> = <CHARACTER PROGRAM DATA>
 Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Function Queries the mask table output point range for jitter tolerance measurement.

Example use > :SENSe:JITTer:TOLerance:MTABle:POINt? M2488
< 2

:SENSe:JITTer:TOLerance:MTABle:DATA <brate>,<point>,<freq1>,<freq2>,<ampl>

Parameter <brate> = <CHARACTER PROGRAM DATA>
M2488 2488Mbit/s

<point> = <CHARACTER PROGRAM DATA>
A Mask line A coordinate point
B Mask line B coordinate point
C Mask line C coordinate point
D Mask line D coordinate point
E Mask line E coordinate point
F Mask line F coordinate point
G Mask line G coordinate point

<freq1> = <NON-DECIMAL NUMERIC PROGRAM DATA>
0.1 to 999.0

<freq2> = <CHARACTER PROGRAM DATA>
HZ, KHZ, MHZ

<ampl> = <NON-DECIMAL NUMERIC PROGRAM DATA>
0.000 to 800.000 : 0.001 steps

* The maximum value varies depending on the Bit rate.

* <freq1> is changed to a value that can be set on the application side. (Upper 2 digits are effective, the lower digits are discarded.)

Function Sets the User define mask line data for jitter tolerance measurement.

Restriction

Invalid when,

- A frequency lower than that at the preceding point is set.
- The value is out of the range shown in the table below.(<freq1>)

Tolerance Bit rate	Setting Range
2488M	0.1 Hz to 20.0 MHz

Example use To set the 2488M table A coordinates to 100 Hz, 2 UIpp:
> :SENSe:JITTer:TOLerance:MTABle:DATA M2488,A,100,HZ,2

:SENSe:JITTer:TOLerance:MTABle:DATA? <brate>,<point>

Parameter <brate> = <CHARACTER PROGRAM DATA>
<point> = <CHARACTER PROGRAM DATA>

Response <freq1>,<freq2>,<ampl>
<freq1> = <NR2 NUMERIC RESPONSE DATA>
<freq2> = <CHARACTER RESPONSE DATA>

Function <ampl> = <NR2 NUMERIC RESPONSE DATA>
 Queries the User define mask line data for jitter tolerance measurement.
 Example use > :SENSe:JITTer:TOLerance:MTABle:DATA? M2488,A
 < 100.0,HZ,2.000

:SENSe:JITTer:TOLerance:MTABle:DEFault <brate> [,<type>]

Parameter <brate> = <CHARACTER PROGRAM DATA>
 M2488 2488Mbit/s
 <type> = <CHARACTER PROGRAM DATA>
 G958A G.958 Type A
 G958B G.958 Type B
 G825 G.825
 B253 Bell 253
 G813 G.813
 ANSIT1 ANSI T1.105.03
 G825_1_5M G.825 1.5M
 G825_2M G.825 2M

Function Initializes a User define mask line data for jitter tolerance measurement.
 Restriction Invalid when,
 • :SENSe:JITTer:TOLerance:MTABle:TYPE <type> is other than <USER>.
 Example use To initialize 2488M mask line data to G.958 Type A
 > :SENSe:JITTer:TOLerance:MTABle:DEFault M2488 G958A

:SENSe:JITTer:TRANsfer:MODE <mode>

Parameter <mode> = <CHARACTER PROGRAM DATA>
 CAL Calibration
 MEAS Measurement

Function Sets a measurement mode for jitter transfer characteristic measurement.
 Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"JTRansfer">.
 Example use To set the measurement mode to Measurement:
 > :SENSe:JITTer:TRANsfer:MODE MEAS

:SENSe:JITTer:TRANsfer:MODE?

Parameter <mode> = <CHARACTER RESPONSE DATA>
 Function Queries the measurement mode setting for jitter transfer characteristic measurement.
 Example use > :SENSe:JITTer:TRANsfer:MODE?

< MEAS

:SENSe:JITTer:TRANsfer:MASK <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

G958A G958 Type A

G958B G958 Type B

B253 Bell 253

USER User define

ANSIT1 ANSI T1.105.03

Function Sets a mask line table for judgement use of jitter transfer characteristics measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"JTRansfer">.
- The value is other than the followings, according to the Rx Bit rate on the Setup:Mapping screen, and installed unit.

When MP0130 is installed

Bit rate	Table type
2488M	G.958 TypeA, G.958 TypeB, User, Bell253(SONET 時)

When MU150011A is installed

Bit rate	Table type
2488M	G.958 TypeA, G.958 TypeB, User, Bell253, ANSI T1.105.03

Example use To set the mask line table to G.958 Type A.

> :SENSe:JITTer:TRANsfer:MASK G958A

:SENSe:JITTer:TRANsfer:MASK?

Response <type> = <CHARACTER RESPONSE DATA>

Function Queries the mask line table for judgment use of jitter transfer characteristic measurement.

Example use > :SENSe:JITTer:TRANsfer:MASK?

< G958A

:SENSe:JITTer:TRANsfer:MTABLE:TYPE <brate>,<type>

Parameter <brate> = <CHARACTER PROGRAM DATA>

M2488 2488Mbit/s

<type> = <CHARACTER PROGRAM DATA>

G958A G958 Type A

G958B G958 Type B

B253	Bell 253
USER	User define
ANSIT1	ANSI T1.105.03

Function Sets a mask edit table for jitter transfer characteristics measurement.

Restriction Invalid when,
 • The value is other than the followings, according to the Rx Bit rate on the Setup:Mapping screen, and installed unit.

When MP0130A is installed

Bit rate	Table type
2488M	G.958 TypeA, G.958 TypeB, User, Bell253(SONET)

When MU150011A is installed

Bit rate	Table type
2488M	G.958 TypeA, G.958 TypeB, User, Bell253, ANSI T1.105.03

Example use To set the mask line table to G.958 Type A.

> :SENSe:JITTer:TRANsfer:MTABLE:TYPE M2488,G958A

:SENSe:JITTer:TRANsfer:MTABLE:TYPE? <brate>

Parameter <brate> = <CHARACTER PROGRAM DATA>

Response <type> = <CHARACTER PROGRAM DATA>

Function Queries the editing mask line table for jitter transfer characteristic measurement.

Example use > :SENSe:JITTer:TRANsfer:MTABLE:TYPE? M2488
< G958A

:SENSe:JITTer:TRANsfer:MTABLE:POINT <brate>,<numeric>

Parameter <brate> = <CHARACTER PROGRAM DATA>
M2488 2488Mbit/s

<numeric> = <DECIMAL NUMERIC PROGRAM DATA>
2 to 4 : 1 steps

Function Sets the mask table output point range for jitter tolerance measurement.

Example use To set the 622M table output point range to 2:
> :SENSe:JITTer:TRANsfer:MTABLE:POINT M2488,2

:SENSe:JITTer:TRANsfer:MTABLE:POINT? <brate>

Parameter <brate> = <CHARACTER PROGRAM DATA>

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function Queries the mask table output point range for jitter tolerance measurement.

Example use > :SENSe:JITTer:TRANsfer:MTABLE:POINT? M2488
< 2

:SENSe:JITTer:TRANsfer:MTABLE:DATA <brate>,<point>,<freq1>,<freq2>,<ampl>

Parameter <brate> = <CHARACTER PROGRAM DATA>
M2488 2488Mbit/s
<point> = <CHARACTER PROGRAM DATA>
A Mask line A coordinate point
B Mask line B coordinate point
C Mask line C coordinate point
D Mask line D coordinate point
<freq1> = <NON-DECIMAL NUMERIC PROGRAM DATA>
1.0 to 999.0
<freq2> = <CHARACTER PROGRAM DATA>
HZ, KHZ, MHZ
<ampl> = <NON-DECIMAL NUMERIC PROGRAM DATA>
-60.00 to 10.00 : 0.01 steps

* <freq1> is changed to a value that can be set on the application side.
(Upper 2 digits are effective, the lower digits are discarded.)

Function Sets the User define mask line data for jitter transfer characteristic measurement.

Restriction Invalid when,

- A frequency lower than that at the preceding point is set.
- The value is out of the range shown in the table below.(<freq1>)

Transfer Bit rate	Setting Range
2488M	10.0 Hz to 20.0 MHz

Example use To set the 2488M mask table A contents to 100.0 Hz, -30.00:
> :SENSe:JITTer:TRANsfer:MTABLE:DATA M2488,A,100.0,HZ,-30.00

:SENSe:JITTer:TRANsfer:MTABLE:DATA? <brate>,<point>

Parameter <brate> = <CHARACTER PROGRAM DATA>
<point> = <CHARACTER PROGRAM DATA>
Response <freq1>,<freq2>,<ampl>
<freq1> = <NR2 NUMERIC RESPONSE DATA>
<freq2> = <CHARACTER RESPONSE DATA>
<ampl> = <NR2 NUMERIC RESPONSE DATA>

Function Queries the User define mask line data for jitter transfer characteristic measurement.

Example use > :SENSe:JITTer:TRANsfer:MTABLE:DATA? M2488,A

< 100.0,HZ,2.00

:SENSe:JITTer:TRANsfer:MTABLE:DEFault <brate> [,<type>]

Parameter <brate> = <CHARACTER PROGRAM DATA>
 M2488 2488Mbit/s

 <type> = <CHARACTER PROGRAM DATA>
 G958A G958 Type A
 G958B G958 Type B
 B253 Bell 253
 ANSIT1 ANSI T1.105.03

Function Initializes the mask table contents for jitter transfer characteristics measurement.

Example use To initialize the mask table contents to G.958 Type A.
 > :SENSe:JITTer:TRANsfer:MTABLE:DEFault M2488 G958A

:SENSe:JITTer:TRANsfer:LOOPback <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 INTernal Internal
 EXTernal External

Function Sets changes between internal loop and external connection for Calibration measurement.

Restriction Invalid when,
 • :DISPlay:TMENu is other than <JTRansfer>

Example use To set internal loop for Calibration measurement.
 > :SENSe:JITTer:TRANsfer:LOOPback INT

:SENSe:JITTer:TRANsfer:LOOPback?

Response <type> = <CHARACTER RESPONSE DATA>

Function Queries the changes between internal loop and external connection for Calibration measurement.

Example use > :SENSe:JITTer:TRANsfer:LOOPback?
 < INT

:SENSe:JITTer:TRANsfer:SELEctband <band>

Parameter <band> = <CHARACTER PROGRAM DATA>
 H_1 1Hz
 H_3 3Hz
 H_10 10Hz

	H_30 30Hz
Function	Sets a Selective band width value.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu is other than <JTRansfer>. • The MU150011A is not installed.
Example use	To set Selective band width value to 10MHz. > :SENSe:JITTer:TRANsfer:SElectband H_10

:SENSe:JITTer:TRANsfer:SElectband?

Response	<band> = <NR2 NUMERIC RESPONSE DATA>
Function	Queries the Selective band width value.
Example use	> :SENSe:JITTer:TRANsfer:SElectband? < H_10

:SENSe:JITTer:TRANsfer:WTIME <wait>

Parameter	<wait> = <NON-DECIMAL NUMERIC PROGRAM DATA> 0.0 to 99.5 Step value : 0.5
Function	Sets Waiting time
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu is other than <JTRansfer>.
Example use	To set the Waiting time to 1.5 second. > :SENSe:JITTer:TRANsfer:WTIME 1.5

:SENSe:JITTer:TRANsfer:WTIME?

Response	<wait> = <NR2 NUMERIC RESPONSE DATA>
Function	Queries the Waiting time setting.
Example use	> :SENSe:JITTer:TRANsfer:WTIME? < 1.5

:SENSe:JITTer:SWEEp:DETection:TYPE <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	SEC1 1sec error
	DEFault Default
	ON On set of errors
	DB1 1dB power penalty
	COUNt Count
	RATE Rate

Function Sets a detection condition for jitter sweep measurement.

Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"JSWep">.

Example use To set the detection condition to 1s error.
 > :SENSe:JITTer:SWEep:DETection:TYPE SEC1

:SENSe:JITTer:SWEep:DETection:TYPE?

Response <type> = <CHARACTER RESPONSE DATA>

SEC1	1s error
DEFault	Default
ON	On set of errors
DB1	1dB power penalty
COUNt	Count
RATE	Rate

Function Queries the detection condition for jitter sweep measurement.

Example use > :SENSe:JITTer:SWEep:DETection:TYPE?
 < SEC1

:SENSe:JITTer:SWEep:DETection:ERRor <error>

Parameter <error> = <STRING PROGRAM DATA>

(SDH) "B1"	B1 error	(SONET) "B1"	B1 error
"B2"	B2 error	"B2"	B2 error
"HB3"	HP-B3 error	"HB3"	HP-B3 error
"LB3"	LP-B3 error	"LB3"	LP-B3 error
"BIP2"	BIP-2 error	"BIP2"	BIP-2 error
"MREI" (SDH)	MS-REI error	"REIL" (SONET)	REI-L error
"HREI" (SDH)	HP-REI error	"REIP" (SONET)	REI-P error
"HIEC"	HP-IEC error	"HIEC"	HP-IEC error
"HTREI"	HP-TC-REI error	"HTREI"	HP-TC-REI error
"HOEI"	HP-OEI error	"HOEI"	HP-OEI error
"LREI" (SDH)	LP-REI error	"REIV" (SONET)	REI-V error
"LIEC"	LP-IEC error	"LIEC"	LP-IEC error
"LTREI"	LP-TC-REI error	"LTREI"	LP-TC-REI error
"LOEI"	LP-OEI error	"LOEI"	LP-OEI error
"N2BIP2"	N2_BIP2 error	"N2BIP2"	N2_BIP2 error
"BIT"	Bit error	"BIT"	Bit error
"CODE"	Code error	"CODE"	Code error
"FAS139"	FAS 139M error	"FAS139"	FAS 139M error
"FAS45"	FAS 45M error	"FAS45"	FAS 45M error
"FAS34"	FAS 34M error	"FAS34"	FAS 34M error
"FAS8"	FAS 8M error	"FAS8"	FAS 8M error
"FAS2"	FAS 2M error	"FAS2"	FAS 2M error
"FAS1_5"	FAS 1.5M error	"FAS1_5"	FAS 1.5M error

"REI139"	REI 139M error	"REI139"	REI 139M error
"REI45"	REI 45M error	"REI45"	REI 45M error
"REI34"	REI 34M error	"REI34"	REI 34M error
"BIP8"	BIP8 error	"BIP8"	BIP8 error
"PLCPREI"	REI PLCP error	"PLCPREI"	REI PLCP error
"PARITY"	Parity error	"PARITY"	Parity error
"CBIT"	CBIT error	"CBIT"	CBIT error
"CRC6"	CRC6 error	"CRC6"	CRC6 error
"CORRECT"	Correct error	"CORRECT"	Correct error
"DISCARD"	Discard error	"DISCARD"	Discard error
"NONCONF"	Nonconf error	"NONCONF"	Nonconf error
"ERRORED"	Errored error	"ERRORED"	Errored error
"LOST"	Lost error	"LOST"	Lost error
"MISINS"	Misinserted error	"MISINS"	Misinserted error
"SECB"	SECB error	"SECB"	SECB error

Function Sets a detection condition error for jitter sweep measurement.

Restriction Invalid when,

- The 2.5G Jitter is not installed; and :SENSe:TELEcom:BRATe is <M2488>.
- :DISPlay:TMENu[:NAME] is other than <"JSWeep">.
- :SENSe:JITTer:SWEep:DETection:TYPE is <DEFault>.

Example use To set the detection condition error to B1.
> :SENSe:JITTer:SWEep:DETection:ERRor B1

:SENSe:JITTer:SWEep:DETection:ERRor?

Response <Error> = <CHARACTER RESPONSE DATA>
Same as :SENSe:JITTer:SWEep:DETection:ERRor.

Function Queries the detection condition error for jitter sweep measurement.

Example use > :SENSe:JITTer:SWEep:DETection:ERRor?
< B1

:SENSe:JITTer:SWEep:DETection:UNIT <unit>

Parameter <unit> = <CHARACTER PROGRAM DATA>
COUNT
RATE

Function Sets a Threshold type for jitter sweep measurement.

Restriction Invalid when,

- The 2.5G Jitter is not installed; and :SENSe:TELEcom:BRATe is <M2488>.
- :DISPlay:TMENu[:NAME] is other than <"JSWeep">.
- :SENSe:JITTer:SWEep:DETection:TYPE is other than <SEC1>.

Example use To set the Threshold type to Count.
> :SENSe:JITTer:SWEep:DETection:UNIT COUNT

:SENSe:JITTer:SWEEp:DETEction:UNIT?

Response <unit> = <CHARACTER RESPONSE DATA>
 COUN
 RATE

Function Queries the Threshold type for jitter sweep measurement.

Example use > :SENSe:JITTer:SWEEp:DETEction:UNIT?
 < COUN

:SENSe:JITTer:SWEEp:DETEction:THREshold:EC <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
 1 to 99999 Step:1

Function Sets a detection range of Threshold count for jitter sweep measurement.

Restriction Invalid when,

- The 2.5G Jitter is not installed; and :SENSe:TELEcom:BRATe is <M2488>.
- :DISPlay:TMENu[:NAME] is other than <"JSWep">.
- :SENSe:JITTer:SWEEp:DETEction:TYPE is other than <SEC1> or <COUN>.
- :SENSe:JITTer:SWEEp:DETEction:TYPE is <SEC1>;
 and :SENSe:JITTer:SWEEp:DETEction:UNIT is other than <COUN>.

Example use To set the detection range of Threshold count to 100.
 > :SENSe:JITTer:SWEEp:DETEction:THREshold:EC 100

:SENSe:JITTer:SWEEp:DETEction:THREshold:EC?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Same as :SENSe:JITTer:SWEEp:DETEction:THREshold:EC.

Function Queries the detection range of Threshold count for jitter tolerance measurement.

Example use > :SENSe:JITTer:SWEEp:DETEction:THREshold:EC?
 < 100

:SENSe:JITTer:SWEEp:DETEction:THREshold:ER <erate>

Parameter <erate> = <CHARACTER PROGRAM DATA>
 R1E_3 > 1E-3
 R1E_4 > 1E-4
 R1E_5 > 1E-5
 R1E_6 > 1E-6
 R1E_7 > 1E-7

Function Sets a detection range of Threshold rate for jitter tolerance measurement.

Restriction Invalid when,

- The 2.5G Jitter is not installed; and :SENSe:TELEcom:BRATe is <M2488>.
- :DISPlay:TMENu[:NAME] is other than <"JSweep">.
- :SENSe:JITTer:SWEEp:DETEction:TYPE is other than <SEC1>, <RATE>.
- :SENSe:JITTer:SWEEp:DETEction:TYPE is <SEC1>; and
:SENSe:JITTer:SWEEp:DETEction:UNIT is other than <RATE>.

Example use To set the detection range of Threshold count to 1E-3.
> :SENSe:JITTer:SWEEp:DETEction:THREshold:ER R1E_3

:SENSe:JITTer:SWEEp:DETEction:THREshold:ER?

Response <unit> = <CHARACTER RESPONSE DATA>
Same as :SENSe:JITTer:SWEEp:DETEction:THREshold:ER.

Function Queries the detection range of Threshold rate for jitter tolerance measurement.

Example use > :SENSe:JITTer:SWEEp:DETEction:THREshold:ER?
< R1E_3

:SENSe:JITTer:SWEEp:DETEction:HTIME <s>

Parameter <s> = <NON-DECIMAL NUMERIC PROGRAM DATA>
1.0 to 99.5 Step value : : 0.5(s)

Function Sets Hold time for jitter sweep measurement.

Restriction Invalid when,
• :DISPlay:TMENu[:NAME] is other than <"JSweep">.
• :SENSe:JITTer:SWEEp:DETEction:TYPE is other than <COUN> or <RATE>.

Example use To set the Hold time to 5.5 seconds.
> :SENSe:JITTer:SWEEp:DETEction:HTIME 5.5

:SENSe:JITTer:SWEEp:DETEction:HTIME?

Response <s> = <NR2 NUMERIC RESPONSE DATA>
Same as :SENSe:JITTer:SWEEp:DETEction:HTIME.

Function Queries the Hold time setting state for jitter sweep measurement.

Example use > :SENSe:JITTer:SWEEp:DETEction:HTIME?
< 5.5

:SENSe:JITTer:SWEEp:WTIME <wait>

Parameter <wait> = <NON-DECIMAL NUMERIC PROGRAM DATA>
0.0 to 99.5 Step value : : 0.5(s)

Function Sets Waiting time for jitter sweep measurement.

Restriction Invalid when,

• :DISPlay:TMENu[:NAME] is other than <"JSweep">.

Example use To set the Waiting time to 1.5 seconds.
 > :SENSe:JITTer:SWEEp:WTIME 1.5

:SENSe:JITTer:SWEEp:WTIME?

Response <wait> = <NR2 NUMERIC RESPONSE DATA>
 Same as :SENSe:JITTer:SWEEp:WTIME.

Function Queries the Waiting time setting state.

Example use > :SENSe:JITTer:SWEEp:WTIME?
 < 1.5
 Se:JITTer:SWEEp:DETEction:THREshold:EC?
 < 100

:SENSe:JITTer:JFREquency:FILTer <filter>

Parameter <filter> = <CHARACTER PROGRAM DATA>

OFF	No filters are inserted.
HP	High-pass filter is inserted.
HP1	High-pass filter 1 is inserted.
HP21	High-pass filter 2 is inserted.
HP22	High-pass filter 2 is inserted.
LP	Low-pass filter is inserted.
LPHP	Low-pass filter and High-pass filter are inserted.
LPHP1	Low-pass filter and High-pass filter 1 are inserted.
LPHP21	Low-pass filter and High-pass filter 2 are inserted.
LPHP22	Low-pass filter and High-pass filter 2 are inserted.

Function Sets the filter for Jitter/Freq. measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"JFREquency">.
- :SENSe:TELEcom:BRATe is other than <M8> and <M2>, and <HP22> or <LPHP22> is set.
- The MP0130A is not installed.

Example use To set the filter for Jitter/Freq. measurement to HP1:
 > :SENSe:JITTer:JFREquency:FILTer HP1

:SENSe:JITTer:JFREquency:FILTer?

Response <filter> = <CHARACTER RESPONSE DATA>

Function Queries the filter for Jitter/Freq. measurement.

Example use > :SENSe:JITTer:JFREquency:FILTer?
 < HP1

:SENSe:JITTer:JFRequency:INTerval <numeric>

Parameter	<numeric> = <NON-DECIMAL NUMERIC PROGRAM DATA> 0.5 to 99.5 : 0.5 steps * The digits lower than the resolution are cut off.
Function	Sets the measurement interval for Jitter/Freq. measurement.
Restriction	Invalid when, • :DISPlay:TMENu[:NAME] is other than <"JFRequency">.
Example use	To set the measurement interval for Jitter/Freq. measurement to 0.5: > :SENSe:JITTer:JFRequency:INTerval 0.5

:SENSe:JITTer:JFRequency:INTerval?

Response	<numeric> = <NR2 NUMERIC RESPONSE DATA>
Function	Queries the measurement interval for Jitter/Freq. measurement.
Example use	> :SENSe:JITTer:JFRequency:INTerval? < 0.5

SENSe:JITTer:FSWeep:MTABle:TYPE <brate>,<type>

Parameter	<brate> = <CHARACTER PROGRAM DATA> M2488 2488M <type> = <CHARACTER PROGRAM DATA> G958A G.958 Type A G958B G.958 Type B G825 G.825 B253 Bell 253 G813 G.813 USER User ANSIT1 ANSI T1.105.03 G825_1_5M G.825 1.5M G825_2M G.825 2M
Function	Set a mask table for jitter modulation frequency measurement.
Restriction	Invalid when, • The MU150011A is not installed. • :INSTrument:CONFig is <JITTER>.
Example use	To set the mask table with Bit rate 2488M to G.958. > :SENSe:JITTer:FSWeep:MTABle:TYPE M2488,G958A

:SENSe:JITTer:FSWeep:MTABLE:TYPE? <brate>

Parameter	<brate> = <CHARACTER PROGRAM DATA> Same as :SENSe:JITTer:FSWeep:MTABLE:TYPE .
Response	<type> = <CHARACTER RESPONSE DATA> Same as :SENSe:JITTer:FSWeep:MTABLE:TYPE .
Function	Queries the mask table setting state for jitter modulation frequency measurement.
Example use	To query the setting state of mask table with Bit rate 622M. > :SENSe:JITTer:FSWeep:MTABLE:TYPE? M2488 < G958A

:SENSe:JITTer:FSWeep:MTABLE:POINt <brate>,<point>

Parameter	<brate> = <CHARACTER PROGRAM DATA> M2488 <point> = <DECIMAL NUMERIC PROGRAM DATA> 2 to 7 Step value : : 1
Function	Sets an output point range when the Mask table is User for jitter modulation frequency measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :INSTrument:CONFIg is <JITTER>. • :SENSe:JITTer:FSWeep:MTABLE:TYPE <type> is other than <USER>.
Example use	To set the output point of table in Bit rate 2488M to 2. > :SENSe:JITTer:FSWeep:MTABLE:POINt M2488,2

:SENSe:JITTer:FSWeep:MTABLE: POINt?<brate>

Parameter	<brate> = <CHARACTER PROGRAM DATA> Same as :SENSe:JITTer:FSWeep:MTABLE:POINt .
Response	<point> = <NR1 NUMERIC RESPONSE DATA> Same as :SENSe:JITTer:FSWeep:MTABLE:POINt .
Function	Queries the output point range when the Mask table is User for jitter modulation frequency measurement.
Example use	> :SENSe:JITTer:FSWeep:MTABLE:POINt?M2488 < 2

:SENSe:JITTer:FSWeep:MTABLE:DATA <brate>,<ptype>,<freq1>,<freq2>,<uipp>

Parameter	<brate> = <CHARACTER PROGRAM DATA> M2488
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	<pre><ptype> = <CHARACTER PROGRAM DATA> A,B,C,D,E,F,G <freq1> = <NON-DECIMAL NUMERIC PROGRAM DATA> 0.1 to 990.0 Step value : : 0.1 <freq2> = <CHARACTER PROGRAM DATA> HZ,KHZ,MHZ <uipp > = <NON-DECIMAL NUMERIC PROGRAM DATA> 0.000 to 800.000</pre>
Function	Sets contents of point when the Mask table is User for jitter modulation frequency measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :INSTrument:CONFig is <JITTER>. • :SENSe:JITTer:FSWeep:MTABle:TYPE <type> is other than <USER>. • The value is out of the set point.
Example use	To set Freq=100Hz and Uip-p=0.123 as Mask table point A of Bit rate 2488M. > :SENSe:JITTer:FSWeep:MTABle:DATA M2488,A,100.0,HZ,0.123

:SENSe:JITTer:FSWeep:MTABle:DATA? <brate>,<ptype>

Parameter	<pre><brate> = <CHARACTER PROGRAM DATA> Same as :SENSe:JITTer:FSWeep:MTABle:DATA . <ptype> = <CHARACTER PROGRAM DATA> Same as :SENSe:JITTer:FSWeep:MTABle:DATA .</pre>
Response	<pre><freq1> = <NR2 NUMERIC RESPONSE DATA> Same as :SENSe:JITTer:FSWeep:MTABle:DATA. <freq2> = <CHARACTER RESPONSE DATA> Same as :SENSe:JITTer:FSWeep:MTABle:DATA . <uipp > = <NR2 NUMERIC RESPONSE DATA> Same as :SENSe:JITTer:FSWeep:MTABle:DATA .</pre>
Function	Queries the setting state of point contents when the Mask table is User for jitter modulation frequency measurement.
Example use	To query the Mask table point A of Bit rate 2488M. > :SENSe:JITTer:FSWeep:MTABle:DATA? M2488,A < 100.0,HZ,0.123

:SENSe:JITTer:FSWeep:MTABle:DEFault <brate> [,<type>]

Parameter	<brate> = <CHARACTER PROGRAM DATA>
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M2488	2488M
 <type> = <CHARACTER PROGRAM DATA>	
G958A	G.958 Type A
G958B	G.958 Type B
G825	G.825
B253	Bell 253
G813	G.813
ANSIT1	ANSI T1.105.03
G825_1_5M	G.825 1.5M
G825_2M	G.825 2M

Function Initializes the edit contents when the Mask table is User for jitter modulation frequency measurement.

Restriction Invalid when,

- The MU150011A is not installed.
- :SENSe:JITTer:FSWeep:MTABle:TYPE <type> is other than <USER>.
- :INSTrument:CONFig is <JITTER>.

Example use To initialize the mask table contents of Bit rate 2488M to G.813.
> :SENSe:JITTer:FSWeep:MTABle:DEFault M2488,G813

:SENSe:JITTer:FSWeep:MTABle:OFFSet <offset>

Parameter <offset> = <DECIMAL NUMERIC PROGRAM DATA>
 0 to 100 Step value : 1

Function Sets offset data for jitter modulation frequency measurement.

Restriction Invalid when,

- The MU150011A is not installed.
- :INSTrument:CONFig is <JITTER>.

Example use To set the offset value to 100.
> :SENSe:JITTer:FSWeep:MTABle:OFFSet 100

:SENSe:JITTer:FSWeep:MTABle:OFFSet?

Response <offset> = <NR1 NUMERIC RESPONSE DATA>
 Same as :SENSe:JITTer:FSWeep:MTABle:OFFSet.

Function Queries the offset data for jitter modulation frequency measurement.

Example use > :SENSe:JITTer:FSWeep:MTABle:OFFSet?
 < 0

:SENSe:JITTer:FSWeep:DETection:TYPE <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>												
	<table border="0"> <tr> <td>DEFault</td> <td>Default</td> </tr> <tr> <td>SEC1</td> <td>1s error</td> </tr> <tr> <td>ON</td> <td>On set of errors</td> </tr> <tr> <td>DB1</td> <td>1dB power penalty</td> </tr> <tr> <td>COUNT</td> <td>Count</td> </tr> <tr> <td>RATE</td> <td>Rate</td> </tr> </table>	DEFault	Default	SEC1	1s error	ON	On set of errors	DB1	1dB power penalty	COUNT	Count	RATE	Rate
DEFault	Default												
SEC1	1s error												
ON	On set of errors												
DB1	1dB power penalty												
COUNT	Count												
RATE	Rate												
Function	Sets a detection condition for jitter modulation frequency measurement.												
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"FSWeep">. • The MU150011A is not installed. 												
Example use	To set the detection condition to 1s error. > :SENSe:JITTer:FSWeep:DETection:TYPE SEC1												

:SENSe:JITTer:FSWeep:DETection:TYPE?

Response	<type> = <CHARACTER RESPONSE DATA>												
	<table border="0"> <tr> <td>DEFault</td> <td>Default</td> </tr> <tr> <td>SEC1</td> <td>1s error</td> </tr> <tr> <td>ON</td> <td>On set of errors</td> </tr> <tr> <td>DB1</td> <td>1dB power penalty</td> </tr> <tr> <td>COUNT</td> <td>Count</td> </tr> <tr> <td>RATE</td> <td>Rate</td> </tr> </table>	DEFault	Default	SEC1	1s error	ON	On set of errors	DB1	1dB power penalty	COUNT	Count	RATE	Rate
DEFault	Default												
SEC1	1s error												
ON	On set of errors												
DB1	1dB power penalty												
COUNT	Count												
RATE	Rate												
Function	Queries the setting state of detection condition for jitter modulation frequency measurement.												
Example use	> :SENSe:JITTer:FSWeep:DETection:TYPE? < SEC1												

:SENSe:JITTer:FSWeep:DETection:ERRor <error>

Parameter	<error> = < STRING PROGRAM DATA>			
(SDH) "B1"	B1 error	(SONET) "B1"	B1 error	
"B2"	B2 error	"B2"	B2 error	
"HB3"	HP-B3 error	"HB3"	HP-B3 error	
"LB3"	LP-B3 error	"LB3"	LP-B3 error	
"BIP2"	BIP-2 error	"BIP2"	BIP-2 error	
"MREI" (SDH)	MS-REI error	"REIL" (SONET)	REI-L error	
"HREI" (SDH)	HP-REI error	"REIP" (SONET)	REI-P error	
"HIEC"	HP-IEC error	"HIEC"	HP-IEC error	
"HTREI"	HP-TC-REI error	"HTREI"	HP-TC-REI error	
"HOEI"	HP-OEI error	"HOEI"	HP-OEI error	
"LREI" (SDH)	LP-REI error	"REIV" (SONET)	REI-V error	

"LIEC"	LP-IEC error	"LIEC"	LP-IEC error
"LTREI"	LP-TC-REI error	"LTREI"	LP-TC-REI error
"LOEI"	LP-OEI error	"LOEI"	LP-OEI error
"N2BIP2"	N2_BIP2 error	"N2BIP2"	N2_BIP2 error
"BIT"	Bit error	"BIT"	Bit error
"CODE"	Code error	"CODE"	Code error
"FAS139"	FAS 139M error	"FAS139"	FAS 139M error
"FAS45"	FAS 45M error	"FAS45"	FAS 45M error
"FAS34"	FAS 34M error	"FAS34"	FAS 34M error
"FAS8"	FAS 8M error	"FAS8"	FAS 8M error
"FAS2"	FAS 2M error	"FAS2"	FAS 2M error
"FAS1_5"	FAS 1.5M error	"FAS1_5"	FAS 1.5M error
"REI139"	REI 139M error	"REI139"	REI 139M error
"REI45"	REI 45M error	"REI45"	REI 45M error
"REI34"	REI 34M error	"REI34"	REI 34M error
"BIP8"	BIP8 error	"BIP8"	BIP8 error
"PLCPREI"	REI PLCP error	"PLCPREI"	REI PLCP error
"PARITY"	Parity error	"PARITY"	Parity error
"CBIT"	CBIT error	"CBIT"	CBIT error
"CRC6"	CRC6 error	"CRC6"	CRC6 error
"CORRECT"	Correct error	"CORRECT"	Correct error
"DISCARD"	Discard error	"DISCARD"	Discard error
"NONCONF"	Nonconf error	"NONCONF"	Nonconf error
"ERRORED"	Errored error	"ERRORED"	Errored error
"LOST"	Lost error	"LOST"	Lost error
"MISINS"	Misinserted error	"MISINS"	Misinserted error
"SECB"	SECB error	"SECB"	SECB error

Function Sets a detection condition error for jitter modulation frequency measurement.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"FSWeep">.
- The MU150011A is not installed.
- :SENSe:JITTer:FSWeep:DETection:TYPE is <DEFault>.

Example use To set the detection condition error to B1.
 > :SENSe:JITTer:FSWeep:DETection:ERRor B1

:SENSe:JITTer:FSWeep:DETection:ERRor?

Response <error> = <CHARACTER RESPONSE DATA>
 Same as :SENSe:JITTer:FSWeep:DETection:ERRor.

Function Queries the seting state of detection condition error for jitter modulation frequency measurement.

Example use > :SENSe:JITTer:FSWeep:DETection:ERRor?
 < B1

:SENSe:JITTer:FSWeep:DETection:UNIT <unit>

Parameter	<unit> = <CHARACTER PROGRAM DATA> COUNT RATE
Function	Sets a detection type for jitter modulation frequency measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"FSWeep">. • :SENSe:JITTer:FSWeep:DETection:TYPE is <SEC1>. • The MU150011A is not installed.
Example use	To set the type to Count > :SENSe:JITTer:FSWeep:DETection:UNIT COUNT

:SENSe:JITTer:FSWeep:DETection:UNIT?

Response	<unit> = <CHARACTER RESPONSE DATA> COUN RATE
Function	Queries the setting state of detection type for jitter modulation frequency measurement.
Example use	> :SENSe:JITTer:FSWeep:DETection:UNIT? < COUN

:SENSe:JITTer:FSWeep:DETection:THReshold:EC <numeric>

Parameter	<numeric> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 99999 Step:1
Function	Sets a detection range of Threshold count for jitter modulation frequency measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :DISPlay:TMENu[:NAME] is other than <"FSWeep">. • :SENSe:JITTer:FSWeep:DETection:TYPE is other than <SEC1>, <COUN>. • :SENSe:JITTer:FSWeep:DETection:TYPE is <SEC1>; and :SENSe:JITTer:FSWeep:DETection:UNIT is other than <COUN>.
Example use	To set the detection range of Threshold count to 100 > :SENSe:JITTer:FSWeep:DETection:THReshold:EC 100

:SENSe:JITTer:FSWeep:DETection:THReshold:EC?

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

Function Same as :SENSe:JITTer:FSWeep:DETection:THReshold:EC.
 Queries the detection range of Threshold count for jitter modulation frequency measurement.

Example use > :SENSe:JITTer:FSWeep:DETection:THReshold:EC?
 < 100

:SENSe:JITTer:FSWeep:DETection:THReshold:ER <erate>

Parameter <erate> = <CHARACTER PROGRAM DATA>
 R1E_3 >1E-3
 R1E_4 >1E-4
 R1E_5 >1E-5
 R1E_6 >1E-6
 R1E_7 >1E-7

Function Sets a detection range of Threshold count for jitter modulation frequency measurement.

Restriction Invalid when,
 • The MU150011A is not installed.
 • :DISPlay:TMENu[:NAME] is other than <"FSWeep">.
 • :SENSe:JITTer:FSWeep:DETection:TYPE is other than <SEC1> or <RATE>.
 • :SENSe:JITTer:FSWeep:DETection:TYPE is <SEC1>; and
 :SENSe:JITTer:FSWeep:DETection:UNIT is other than <RATE>.

Example use To set the detection range of Threshold rate to 1E-3.
 > :SENSe:JITTer:FSWeep:DETection:THReshold:ER R1E_3

:SENSe:JITTer:FSWeep:DETection:THReshold:ER?

Response <erate> = <CHARACTER RESPONSE DATA>
 Same as :SENSe:JITTer:FSWeep:DETection:THReshold:ER.

Function Queries the setting state of Threshold count detection range for jitter modulation frequency measurement.

Example use > :SENSe:JITTer:FSWeep:DETection:THReshold:ER?
 < R1E_3

:SENSe:JITTer:FSWeep:DETection:HTIME <s>

Parameter <s> = <NON-DECIMAL NUMERIC PROGRAM DATA>
 1.0 to 99.5 Step value : : 0.5(s)

Function Sets Hold time for jitter modulation frequency measurement.

Restriction Invalid when,

- The MU150011A is not installed.
- :DISPlay:TMENu[:NAME] is other than <"FSweep">.
- :SENSe:JITTer:FSweep:DETection:TYPE is other than <SEC1> or <RATE>.
- :SENSe:JITTer:FSweep:DETection:TYPE is <SEC1>; and
:SENSe:JITTer:FSweep:DETection:UNIT is other than <COUN> or <RATE>.

Example use To set Hold time to 5.5 seconds.
> :SENSe:JITTer:FSweep:DETection:HTIME 5.5

:SENSe:JITTer:FSweep:DETection:HTIME?

Response <s> = <NR2 NUMERIC RESPONSE DATA>
Same as :SENSe:JITTer:FSweep:DETection:HTIME.

Function Queries the setting state of Hold time for jitter modulation frequency measurement.

Example use > :SENSe:JITTer:FSweep:DETection:HTIME?
< 5.5

:SENSe:JITTer:FSweep:WTIME <wait>

Parameter <wait> = <NON-DECIMAL NUMERIC PROGRAM DATA>
0.0 to 99.5 Step value : 0.5

Function Sets Waiting time for jitter modulation frequency measurement.

Restriction Invalid when,

- The MU150011A is not installed.
- :DISPlay:TMENu[:NAME] is other than <"FSweep">.

Example use To set Waiting time to 1.5 seconds.
> :SENSe:JITTer:FSweep:WTIME 1.5

:SENSe:JITTer:FSweep:WTIME?

Response <wait> = <NR2 NUMERIC RESPONSE DATA>
Same as :SENSe:JITTer:FSweep:WTIME.

Function Queries the setting state of Waiting time for jitter modulation frequency measurement.

Example use > :SENSe:JITTer:FSweep:WTIME?
< 1.5

:SENSe:JITTer:FSweep:MASK <mask>

Parameter <mask> = <CHARACTER PROGRAM DATA>

G958A	G.958 Type A
G958B	G.958 Type B
G825	G.825

B253	Bell 253
G813	G.813
USER	User
ANSIT1	ANSI T1.105.03
G825_1_5M	G.825 1.5M
G825_2M	G.825 2M

Function	Sets a mask line table for judgement use of jitter modulation characteristics measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :DISPlay:TMENu[:NAME] is other than <"FSWeep">. • :INSTrument:CONFig is <JITTER>.
Example use	To set the mask line table for judgement use to G.958 Type A. > :SENSe:JITTer:FSWeep:MASK G958A

:SENSe:JITTer:FSWeep:MASK?

Response	<type> = <CHARACTER RESPONSE DATA> Same as :SENSe:JITTer:FSWeep:MASK .
Function	Queries the setting state of mask line table for judgement use of jitter modulation characteristics measurement.
Example use	> :SENSe:JITTer:FSWeep:MASK? < G958A

:SENSe:WANDer:MANual:COUPled <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> ON or 1 Synchronized with error/alarm measurement.
Function	Sets a measurement state for Wander manual measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"PSEQuence[:JOFF]">, or <"PSEQuence:JON">. • :SENSe:MEASure:JWANDer:MSElect is <JITTer>.
Example use	To set the measurement state to Asynchronous: > :SENSe:WANDer:MANual:COUPled OFF

:SENSe:WANDer:MANual:COUPled?

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

Function	Queries the measurement state setting for Wander manual measurement.
Example use	> :SENSe:WANDer:MANual:COUPled? < 1

:SENSe:WANDer:AUTO:INTerval <otime>

Parameter	<otime> = <CHARACTER PROGRAM DATA>	
	SEC12	12s
	SEC120	120s
	SEC1200	1200s
	SEC12000	12000s
	SEC120000	120000s
	USER	User

Function	Sets measurement time (Observation time) of automatic wander measurement.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"WANDer">. • MU150011A is not installed, and <SEC120000>or <USER> is set.
Example use	To set the measurement time (Observation time) of automatic wander measurement to 12 sconds. > :SENSe:WANDer:AUTO:INTerval 12,SEC

:SENSe:WANDer:AUTO:INTerval?

Response	<otime> = <CHARACTER RESPONSE DATA> Same as :SENSe:WANDer:AUTO:INTerval.
Function	Queries the setting state of measurement time (Observation time) of automatic wander measurement.
Example use	> :SENSe:WANDer:AUTO:INTerval? < SEC12

:SENSe:WANDer:AUTO:USER <numeric>

Parameter	<numeric> = <DECIMAL NUMERIC PROGRAM DATA>	
	12 to 100000000	Step value : : 1(s) The top 2-digits are valid.
Function	Sets measurement time (Observation time) for automatic wander measurement(When User is set).	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"WANDer">. • The MU150011A is not installed. 	

- :SENSe:WANDer:AUTO:INTerval is other than <USER>.

Example use To set the measurement time (Observation time) for automatic wander measurement to 800 sconds.
 > :SENSe:WANDer:AUTO:USER 800

:SENSe:WANDer:AUTO:USER?

Response <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
 12 to 100000000 Step value : : 1(s)

Function Queries the setting state of measurement time (Observation time) of automatic wander measurement.(When User is set.)

Example use > :SENSe:WANDer:AUTO:USER?
 < 800

:SENSe:WANDer:WSweep:DETection:TYPE <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 COUNT Count
 RATE Rate

Function Sets a the detection condition for wander sweep measurement.

Restriction Invalid when,
 • The MU150011A is not installed.
 • :DISPlay:TMENu[:NAME] is other than <"WSweep">.

Example use To set the detection condition to Count.
 > :SENSe:WANDer:WSweep:DETection:TYPE COUN

:SENSe:WANDer:WSweep:DETection:TYPE?

Response <type> = <CHARACTER RESPONSE DATA>
 COUNT Count
 RATE Rate

Function Queries the setting state of detection condition for wander sweep measurement.

Example use > :SENSe:WANDer:WSweep:DETection:TYPE?
 < SEC1

:SENSe:WANDer:WSweep:DETection:ERRor <error>

Parameter <error> = < STRING PROGRAM DATA>

(SDH)	"B1"	B1 error	(SONET)	"B1"	B1 error
	"B2"	B2 error		"B2"	B2 error
	"HB3"	HP-B3 error		"HB3"	HP-B3 error
	"LB3"	LP-B3 error		"LB3"	LP-B3 error

"BIP2"	BIP-2 error	"BIP2"	BIP-2 error
"MREI"	MS-REI error	"REIL"	REI-L error
"HREI"	HP-REI error	"REIP"	REI-P error
"HIEC"	HP-IEC error	"HIEC"	HP-IEC error
"HTREI"	HP-TC-REI error	"HTREI"	HP-TC-REI error
"HOEI"	HP-OEI error	"HOEI"	HP-OEI error
"LREI"	LP-REI error	"REIV"	REI-V error
"LIEC"	LP-IEC error	"LIEC"	LP-IEC error
"LTREI"	LP-TC-REI error	"LTREI"	LP-TC-REI error
"LOEI"	LP-OEI error	"LOEI"	LP-OEI error
"N2BIP2"	N2_BIP2 error	"N2BIP2"	N2_BIP2 error
"BIT"	Bit error	"BIT"	Bit error
"CODE"	Code error	"CODE"	Code error
"FAS139"	FAS 139M error	"FAS139"	FAS 139M error
"FAS45"	FAS 45M error	"FAS45"	FAS 45M error
"FAS34"	FAS 34M error	"FAS34"	FAS 34M error
"FAS8"	FAS 8M error	"FAS8"	FAS 8M error
"FAS2"	FAS 2M error	"FAS2"	FAS 2M error
"FAS1_5"	FAS 1.5M error	"FAS1_5"	FAS 1.5M error
"REI139"	REI 139M error	"REI139"	REI 139M error
"REI45"	REI 45M error	"REI45"	REI 45M error
"REI34"	REI 34M error	"REI34"	REI 34M error
"PLCPREI"	REI PLCP error	"PLCPREI"	REI PLCP error
"BIP8"	BIP8 error	"BIP8"	BIP8 error
"PARITY"	Parity error	"PARITY"	Parity error
"CBIT"	CBIT error	"CBIT"	CBIT error
"CRC6"	CRC6 error	"CRC6"	CRC6 error
"CORRECT"	Correct error	"CORRECT"	Correct error
"DISCARD"	Discard error	"DISCARD"	Discard error
"NONCONF"	Nonconf error	"NONCONF"	Nonconf error
"ERRORED"	Errored error	"ERRORED"	Errored error
"LOST"	Lost error	"LOST"	Lost error
"MISINS"	Misinserted error	"MISINS"	Misinserted error
"SECB"	SECB error	"SECB"	SECB error

Function Sets a the detection condition error for wander sweep measurement.

Restriction Invalid when,

- The MU150011A is not installed.
- :DISPlay:TMENu[:NAME] is other than <"WSWeep">.

Example use To set the detection condition error to B1.

```
> :SENSe:WANDer:WSWeep:DETection:ERRor B1
```

:SENSe:WANDer:WSWeep:DETection:ERRor?

Response <error> = <CHARACTER RESPONSE DATA>

Same as :SENSe:WANDer:WSWeep:DETection:ERRor.

Function Queries the setting state of detection condition error for wander sweep measurement.
 Example use > :SENSe:WANDer:WSWeep:DETection:ERRor?
 < B1

:SENSe:WANDer:WSWeep:DETection:THReshold:EC <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
 1 to 99999 Step value : : 1

Function Sets a detection range of Threshold count for wander sweep measurement.

Restriction Invalid when,
 • The MU150011A is not installed.
 • :DISPlay:TMENu[:NAME] is other than <"WSWeep">.
 • :SENSe:WANDer:WSWeep:DETection:TYPE is other than <COUN>.

Example use To set the detection range of Threshold count to 100.
 > :SENSe:WANDer:WSWeep:DETection:THReshold:EC 100

:SENSe:WANDer:WSWeep:DETection:THReshold:EC?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Same as :SENSe:WANDer:WSWeep:DETection:THReshold:EC.

Function Queries the setting state of Threshold count detection range for wander sweep measurement.

Example use > :SENSe:WANDer:WSWeep:DETection:THReshold:EC?
 < 100

:SENSe:WANDer:WSWeep:DETection:THReshold:ER <erate>

Parameter <erate> = <CHARACTER PROGRAM DATA>

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
R1E_10	>1E-9
R1E_11	>1E-10

Function Sets a detection range of Threshold count for wander sweep measurement.

Restriction Invalid when,
 • The MU150011A is not installed.

- :DISPlay:TMENu[:NAME] is other than <"WSweep">.
 - :SENSe:WANDer:WSweep:DETection:TYPE is other than <RATE>.
- Example use To set the detection range of Threshold rate to 1E-3.
- ```
> :SENSe:WANDer:WSweep:DETection:THReshold:ER R1E_3
```

**:SENSe:WANDer:WSweep:DETection:THReshold:ER?**

- Response <erate> = <CHARACTER RESPONSE DATA>  
Same as :SENSe:WANDer:WSweep:DETection:THReshold:ER.
- Function Queries the setting state of Threshold count detection range for wander sweep measurement.
- Example use > :SENSe:WANDer:WSweep:DETection:THReshold:ER?  
< R1E\_3

**:SENSe:WANDer:WSweep:MARGin <margin>**

- Parameter <wait> = <DECIMAL NUMERIC PROGRAM DATA>  
0 to 100 Step value : : 1(%)
- Function Sets mergin(%) for wander sweep measurement.
- Restriction Invalid when,
- The MU150011A is not installed.
  - :DISPlay:TMENu[:NAME] is other than <"WSweep">.
- Example use To set mergin to 10%.
- ```
> :SENSe:WANDer:WSweep:MARGin 10
```

:SENSe:WANDer:WSweep:MARGin?

- Response <wait> = <DECIMAL NUMERIC RESPONSE DATA>
Same as :SENSe:WANDer:WSweep:MARGin.
- Function Queries the setting state of mergin(%) for wander sweep measurement.
- Example use > :SENSe:WANDer:WSweep:MARGin?
< 100

4.4.4 DISPlay subsystem

The DISPlay subsystem is used to make settings on the Result and Analyze screens.

Function	Command	Parameter
<i>Page 4-125</i>		
Sets a subscreen for the Test menu main screen.	:DISPlay:TMENU[:NAME]	display
Queries the subscreen of the Test menu main screen.	:DISPlay:TMENU[:NAME]?	
<i>Page 4-126</i>		
Sets a subscreen of the Result main screen.	:DISPlay:RESult[:NAME]	display
Queries the selected subscreen of the Result main screen.	:DISPlay:RESult[:NAME]?	
<i>Page 4-127</i>		
Sets the display mode of the Result:Jitter/Wander screen.	:DISPlay:RESult:JWANder:MODE	mode
Queries the display mode of the Result:Jitter/Wander screen.	:DISPlay:RESult:JWANder:MODE?	
Sets the data type to be displayed of the Result:Jitter/Wander screen.	:DISPlay:RESult:JWANder:UNIT	unit
Queries the data type of the Result:Jitter/Wander screen.	:DISPlay:RESult:JWANder:UNIT?	
<i>Page 4-129</i>		
Controls the scroll of the Freq. sweep measurement result table.	:DISPlay:RESult:FSWEEP:SCROLL	type
<i>Page 4-129</i>		
Changes wander measurement result display.	:DISPlay:RESult:WANder:DISPtype	type
Queries the state of wander measurement result display type.	:DISPlay:RESult:WANder:DISPtype?	
Controls the scroll of the Wander measurement result table.	:DISPlay:RESult:WANder:SCROLL	type
Changes wander sweep measurement result display unit.	:DISPlay:RESult:WSWEEP:UNIT	unit
<i>Page 4-130</i>		
Sets a subscreen of the Analyze main screen.	:DISPlay:ANALysis[:NAME]	display
Queries the subscreen of the Analyze main screen.	:DISPlay:ANALysis[:NAME]?	
<i>Page 4-132</i>		
Queries the data indicated by marker on the Analyze:Error/Alarm screen.	:DISPlay:ANALysis:TGRaph:DATA?	
Sets error item display on the Error/Alarm graph.	:DISPlay:ANALysis:TGRaph:ERRor	error1 error2
Queries the error item displayed on the graph of the Analyze:Error/Alarm screen.	:DISPlay:ANALysis:TGRaph:ERRor?	

Sets an alarm item to be graphically displayed to alarm1 of the Analyze:Error/Alarm screen.	:DISPlay:ANALysis:TGRaph:ALARm1	alarm
Queries an alarm item graphically displayed to alarm1 of the Analyze:Error/Alarm screen.	:DISPlay:ANALysis:TGRaph:ALARm1?	
Sets an alarm item to be graphically displayed to alarm2 of the Analyze:Error/Alarm screen.	:DISPlay:ANALysis:TGRaph:ALARm2	alarm
Queries an alarm item graphically displayed to alarm2 of the Analyze:Error/Alarm screen	:DISPlay:ANALysis:TGRaph:ALARm2?	
Sets an alarm item to be graphically displayed to alarm3 of the Analyze:Error/Alarm screen.	:DISPlay:ANALysis:TGRaph:ALARm3	alarm
Queries an alarm item graphically displayed to alarm3 of the Analyze:Error/Alarm screen	:DISPlay:ANALysis:TGRaph:ALARm3?	
Sets an alarm item to be graphically displayed to alarm4 of the Analyze:Error/Alarm screen.	:DISPlay:ANALysis:TGRaph:ALARm4	alarm
Queries an alarm item graphically displayed to alarm4 of the Analyze:Error/Alarm screen	:DISPlay:ANALysis:TGRaph:ALARm4?	
Sets an alarm item to be graphically displayed to alarm5 of the Analyze:Error/Alarm screen.	:DISPlay:ANALysis:TGRaph:ALARm5	alarm
Queries an alarm item graphically displayed to alarm5 of the Analyze:Error/Alarm screen	:DISPlay:ANALysis:TGRaph:ALARm5?	
Sets a trace graph title.	:DISPlay:ANALysis:TGRaph:TITLe	title
Queries the graph title for the Analyze:Error/Alarm screen.	:DISPlay:ANALysis:TGRaph:TITLe?	

Page 4-138

Queries Freq. Monitor data.	:DISPlay:ANALysis:FMONitor:FREQuency?	
Sets Pause at Freq. Monitor.	:DISPlay:ANALysis:FMONitor:PAUSe	boolean
Queries the Pause state at Freq. Monitor.	:DISPlay:ANALysis:FMONitor:PAUSe?	

Page 4-139

Sets whether to display a marker on the Analyze:Jitter tolerance screen.	:DISPlay:ANALysis:JTOLerance:MDISplay	boolean
Queries the marker display state for the .Analyze:Jitter tolerance screen.	:DISPlay:ANALysis:JTOLerance:MDISplay?	
Instructs a marker search for the Analyze:Jitter tolerance screen.	:DISPlay:ANALysis:JTOLerance:SEARCh	type
Queries the data indicated by marker for the Analyze:Jitter tolerance screen.	:DISPlay:ANALysis:JTOLerance:DATA?	
Sets a graph vertical axis scale for the Analyze:Jitter tolerance screen.	:DISPlay:ANALysis:JTOLerance:SCALe	numeric
Queries the graph vertical axis scale for the Analyze:Jitter tolerance screen.	:DISPlay:ANALysis:JTOLerance:SCALe?	
Sets at title for the Analyze:Jitter tolerance screen.	:DISPlay:ANALysis:JTOLerance:TITLe	title

Section 4 Remote Control

Queries the graph title for the Analyze:Jitter tolerance screen.	:DISPlay:ANALysis:JTOLerance:TITLe?	
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Page 4-141

Sets whether to display a marker on Analyze:Jitter transfer screen.	:DISPlay:ANALysis:JTRansfer:MDISplay	boolean
Queries the marker display state for the Analyze:Jitter transfer screen.	:DISPlay:ANALysis:JTRansfer:MDISplay?	
Instructs the marker search for the Analyze:Jitter transfer screen.	:DISPlay:ANALysis:JTRansfer:SEARCh	type
Queries the data indicated by marker for Analyze:Jitter transfer screen.	:DISPlay:ANALysis:JTRansfer:DATA?	
Sets a graph vertical axis scale for Analyze:Jitter transfer screen.	:DISPlay:ANALysis:JTRansfer:SCALe	numeric
Queries the vertical axis scale for Analyze:Jitter transfer screen.	:DISPlay:ANALysis:JTRansfer:SCALe?	
Sets a title for Analyze:Jitter transfer screen.	:DISPlay:ANALysis:JTRansfer:TITLe	title
Queries the graph title for Analyze:Jitter transfer screen.	:DISPlay:ANALysis:JTRansfer:TITLe?	

Page 4-143

Sets whether to display a marker on the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:MDISplay	boolean
Queries the marker display status for the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:MDISplay?	
Instructs a marker search type for Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:SEARCh	type
Queries the data indicated by the marker for the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:DATA?	
Sets a graph vertical axis scale for the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:SCALe	scale
Queries the graph vertical axis scale for the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:SCALe?	
Sets a title for the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:TITLe	title
Queries the title for the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:TITLe?	
Queries a graph vertical axis scale (lower stage) for the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:SCALe2?	
Operates Margin display buttons (1) to (5) in the Marker display on the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:MARGIn	number boolean
Queries the statues of Margin display buttons (1) to (5) in the Marker display on the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:JSWeep:MARGIn?	number

Page 4-147

Sets a marker display status for the Analyze:Freq.sweep screen.	:DISPlay:ANALysis:FSWeep:MDISplay	boolean
Queries the marker display status for the Analyze:Freq.sweep screen.	:DISPlay:ANALysis:FSWeep:MDISplay?	
Sets a direction to shift a marker on the Analyze:Freq.sweep screen.	:DISPlay:ANALysis:FSWeep:SEARCh	type

Queries the data indicated by marker on the Analyze:Freq. sweep screen.	:DISPlay:ANALysis:FSweep:DATA?	
Sets the maximum value of graph vertical axis scale (Up-p) on the Analyze:Jitter sweep screen.	:DISPlay:ANALysis:FSweep:SCALE	numeric
Queries the maximum value of graph vertical axis scale on the Analyze:Freq sweep screen.	:DISPlay:ANALysis:FSweep:SCALE?	
Sets a title of Freq. sweep measurement result.	:DISPlay:ANALysis:FSweep:TITLe	title
Queries the title of Freq. sweep measurement result.	:DISPlay:ANALysis:FSweep:TITLe?	
Sets the maximum value of graph horizontal axis scale (ppm) on the Analyze:Freq.sweep screen.	:DISPlay:ANALysis:FSweep:PPMScale	numeric
Queries the maximum value of graph horizontal axis scale (ppm) on the Analyze:Freq.sweep screen	:DISPlay:ANALysis:FSweep:PPMScale?	
Changes a offset mask display on the Analyze:Freq.sweep screen.	:DISPlay:ANALysis:FSweep:OMASK	boolean
Queries changing state of the offset mask display on the Analyze:Freq.sweep screen.	:DISPlay:ANALysis:FSweep:OMASK?	

Page 4-150

Sets the marker display for the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:JFRequency:MDISplay	boolean
Queries the marker display status for the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:JFRequency:MDISplay?	
Instructs a marker search type for the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:JFRequency:SEARCh	type
Queries the data indicated by the marker for the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:JFRequency:DATA?	
Sets the graph vertical axis scale for the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:JFRequency:SCALE	numeric
Queries the graph vertical axis scale for the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:JFRequency:SCALE?	
Sets a title for the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:JFRequency:TITLe	title
Queries the title for the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:JFRequency:TITLe?	
Sets the horizontal axis scale of Jitter/Freq. data.	:DISPlay:ANALysis:JFRequency:PPMScale	numeric
Queries the maximum value of the horizontal scale of the Jitter/Freq. data.	:DISPlay:ANALysis:JFRequency:PPMScale?	

Page 4-153

Scrolls the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:SCRoll	scroll
Moves the marker on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:MARKER	marker
Queries the data indicated by 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

Section 4 Remote Control

Queries the width of one scale on the time axis on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:INTerval ?	
Sets whether to display a marker on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:MDISplay	boolean
Queries the marker display status for the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:MDISplay ?	
Sets the display starting point of the graph on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:FROM	time
Queries the display starting point of the graph on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:FROM ?	
Sets the printing range on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:PRINt	type
Queries the printing range on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:PRINt ?	
Sets the title on the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:TITLe	title
Queries the title for the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:TITLe ?	
Sets a graph vertical axis scale for the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:SCALe	scale
Queries the vertical axis scale for the frequency monitoring (graph) screen.	:DISPlay:ANALysis:FGRaph:SCALe ?	

Page 4-157

Sets whether to display a marker on the Analyze:Wander screen.	:DISPlay:ANALysis:WANDer:MDISplay	boolean
Queries the marker display status for the Analyze:Wander screen.	:DISPlay:ANALysis:WANDer:MDISplay?	
Instructs a marker search type for the Analyze:Wander screen.	:DISPlay:ANALysis:WANDer:SEARCh	type
Sets the vertical scale type for the Analyze:Wander screen.	:DISPlay:ANALysis:WANDer:STYPe	type
Queries the vertical axis scale type of Analyze:Wander screen.	:DISPlay:ANALysis:WANDer:STYPe?	
Queries the data indicated by the marker on the Analyze:Wander screen.	:DISPlay:ANALysis:WANDer:DATA?	
Sets the maximum value of the vertical scale when the wander data is displayed in Log scale.	:DISPlay:ANALysis:WANDer:LOG:SCALe	<scale>
Queries the maximum value of the vertical scale when the wander data is displayed in Log scale.	:DISPlay:ANALysis:WANDer:LOG:SCALe?	
Sets the maximum value of the vertical scale when the wander	:DISPlay:ANALysis:WANDer:LINear:SCALe	scale
Queries the maximum value of the vertical scale when the wander data is displayed in Liner scale.	:DISPlay:ANALysis:WANDer:LINear:SCALe?	
Sets the maximum value of the horizontal scale when the wander data is displayed in Liner scale.	:DISPlay:ANALysis:WANDer:MEAStime	scale

Queries the maximum value of the horizontal scale when the wander data is displayed in Linear scale.	:DISPlay:ANALysis:WANDer:MEAStime?	
Sets the maximum value of graph horizontal axis scale of horizontal axis scale when the Wander data is displayed in Linear scale.	:DISPlay:ANALysis:WANDer:USER	scale
Sets a title for the Analyze:Wander screen.	:DISPlay:ANALysis:WANDer:TITLe	title
Queries the title for the Analyze:Wander screen.	:DISPlay:ANALysis:WANDer:TITLe?	

Page 4-161

Sets whether to display a marker on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:MDISplay	boolean
Queries the marker display state on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:MDISplay?	
Sets a direction to shift a marker on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:SEARch	type
Queries the data indicated by marker on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:DATA?	
Set the the graph vertical axis scale of theAnalyze:Wander sweep screen.	:DISPlay:ANALysis:WSWeep:STYPe	type
Queries the the graph vertical axis scale of theAnalyze:Wander sweep screen.	:DISPlay:ANALysis:WSWeep:STYPe?	
Sets the maximum value of graph vertical axis scale (UIp-p, ns) on the Analyze:Freq.sweep screen.	:DISPlay:ANALysis:WSWeep:SCALE	numeric
Queries the graph vertical axis scale value (upper stage) on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:SCALE?	
Sets the minimum value of graph vertical axis scale (lower stage) on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:SCALE2	numeric
Queries the graph vertical axis scale value (lower stage) on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:SCALE2?	
Sets a title on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:TITLe	title
Queries the title of Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:TITLe?	
Operates Margin display buttons (1) to (5) in the Marker display on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:MARGIn	number boolean
Queries the statues of Margin display buttons (1) to (5) in the Marker display on the Analyze:Wander.sweep screen.	:DISPlay:ANALysis:WSWeep:MARGIn?	number

Page 4-166

Scrolls the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:SCRoll	scroll
Sets a marker display state on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:MARKer	marker
Queries the data indicated by marker on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:DATA?	
Sets an interval of the time axis on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:INTerval	numeric suffix

Section 4 Remote Control

Queries the width of one scale on the time axis on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:INTerval?	
Sets a marker display state on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:MDISplay	boolean
Queries the marker display state on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:MDISplay?	
Sets a direction to shift a marker on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:SEARch	type
Sets a display starting point of the Peak jitter measurement result graph.	:DISPlay:ANALysis:PEAK:FROM	numeric1 numeric2 numeric3 numeric4 numeric5
Queries the display starting point of the Peak jitter graph.	:DISPlay:ANALysis:PEAK:FROM?	
Sets an Alarm item to be displayed to Alarm 1 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm1	alarm
Queries Alarm item to be displayed to Alarm 1 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm1?	
Sets Alarm 2 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm2	alarm
Queries Alarm 2 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm2?	
Sets Alarm 3 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm3	alarm
Queries Alarm 3 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm3?	
Sets Alarm 4 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm4	alarm
Queries Alarm 4 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm4?	
Sets Alarm 5 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm5	alarm
Queries Alarm 5 for graph display on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:ALARm5?	
Sets a printing range of the Analyze:Peak jitter measurement result.	:DISPlay:ANALysis:PEAK:PRINt	type
Queries the printing range of the Analyze:Peak jitter measurement result.	:DISPlay:ANALysis:PEAK:PRINt?	
Sets a title for the Peak jitter measurement result.	:DISPlay:ANALysis:PEAK:TITLe	title
Queries the title of Peak jitter measurement result.	:DISPlay:ANALysis:PEAK:TITLe?	
Sets a graph vertical axis display unit for Analyze:Peak jitter measurement result.	:DISPlay:ANALysis:PEAK:DTYPe	type
Queries the graph vertical axis display unit for Analyze:Peak jitter measurement result.	:DISPlay:ANALysis:PEAK:DTYPe?	
Sets a graph vertical axis scale value on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:SCALe	numeric
Queries the the graph vertical axis scale value on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:PEAK:SCALe?	

Page 4-178

Queries the data type displayed on the Analyze:Recall screen.	:DISPlay:ANALysis:RECall:TYPE?	
Operates Margin display buttons (1) to (5) in the Marker display on the Analyze:Recall screen.	:DISPlay:ANALysis:RECall:MARGin	number boolean
Queries the display statues of Margin (1) to (5) in the Marker display on the Analyze:Recall screen.	:DISPlay:ANALysis:RECall:MARGin?	number
Queries the data indicated by marker on Analyze:Recall screen (Error/Alarm).	:DISPlay:ANALysis:RECall:TGRaph:DATA?	
Sets the error item subject to graphic Error/Alarm display on Analyze:Recall screen.	:DISPlay:ANALysis:RECall:TGRaph:ERRor	error1 error2
Queries the error item subject to graphic Error/Alarm display on 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 the 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 the 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 the 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 the 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 the alarm item displayed to alarm5 of the Analyze:Recall screen.	:DISPlay:ANALysis:RECall:TGRaph:ALARm5?	
Queries the trace graph title for Analyze:Recall screen.	:DISPlay:ANALysis:RECall:TGRaph:TITLe?	
Sets whether to display a marker on the Analyze:Recall screen	:DISPlay:ANALysis:RECall:JTOLerance:MDISpla y	boolean
Queries the marker display status for the Analyze:Recall screen (jitter tolerance).	:DISPlay:ANALysis:RECall:JTOLerance:MDISpla y?	
Instructs a marker search type for the Analyze:Recall screen (jitter tolerance).	:DISPlay:ANALysis:RECall:JTOLerance:SEARCh	type
Queries the data indicated by marker on the Analyze:Recall screen (jitter tolerance).	:DISPlay:ANALysis:RECall:JTOLerance:DATA?	
Sets a graph vertical axis scale for the Analyze:Recall screen (jitter tolerance).	:DISPlay:ANALysis:RECall:JTOLerance:SCALE	numeric
Queries the graph vertical axis scale for the Analyze:Recall screen (jitter tolerance).	:DISPlay:ANALysis:RECall:JTOLerance:SCALE?	

Section 4 Remote Control

Queries the title for the Analyze:Recall screen (jitter tolerance).	:DISPlay:ANALysis:RECall:JTOLerance:TITLe?	
Sets whether to display a marker on the Analyze:Recall screen (jitter transfer).	:DISPlay:ANALysis:RECall:JTTransfer:MDISplay	boolean
Queries the marker display status for the Analyze:Recall screen (jitter transfer).	:DISPlay:ANALysis:RECall:JTTransfer:MDISplay?	
Instructs a marker search type for the Analyze:Recall screen (jitter transfer).	:DISPlay:ANALysis:RECall:JTTransfer:SEARCh	type
Queries the data indicated by marker on the Analyze:Recall screen (jitter transfer).	:DISPlay:ANALysis:RECall:JTTransfer:DATA?	
Sets a graph vertical axis scale for the Analyze:Recall screen (jitter transfer).	:DISPlay:ANALysis:RECall:JTTransfer:SCALE	numeric
Queries the graph vertical axis scale for the Analyze:Recall screen (jitter transfer).	:DISPlay:ANALysis:RECall:JTTransfer:SCALE?	
Queries the title for the Analyze:Recall screen (jitter transfer).	:DISPlay:ANALysis:RECall:JTTransfer:TITLe?	
Sets whether to display a marker on the Analyze:Recall screen (Jitter sweep).	:DISPlay:ANALysis:RECall:JSweep:MDISplay	boolean
Queries the marker display status for the Analyze:Recall screen (Jitter sweep).	:DISPlay:ANALysis:RECall:JSweep:MDISplay?	
Sets whether to display a marker on the Analyze:Recall screen (Jitter sweep)	:DISPlay:ANALysis:RECall:JSweep:SEARCh	type
Queries the data instructed by marker from the Analyze:Recall screen (Jitter sweep).	:DISPlay:ANALysis:RECall:JSweep:DATA?	
Sets a graph vertical axis scale for the Analyze:Recall screen (Jitter sweep).	:DISPlay:ANALysis:RECall:JSweep:SCALE	scale
Queries the graph vertical axis scale for the Analyze:Recall screen (Jitter sweep).	:DISPlay:ANALysis:RECall:JSweep:SCALE?	
Sets a graph vertical axis scale value (lower stage) on the Analyze:Recall (Jitter sweep) screen.	:DISPlay:ANALysis:RECall:JSweep:SCALE2	scale
Queries the graph vertical axis scale (lower stage) on the Analyze:Recall (Jitter.sweep) screen.	:DISPlay:ANALysis:RECall:JSweep:SCALE2?	
Queries the title for the Analyze:Recall screen (Jitter sweep).	:DISPlay:ANALysis:RECall:JSweep:TITLe?	
Queries the title on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSweep:TITLe?	
Sets a display state of the marker on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSweep:MDISplay	boolean
Queries the marker display state on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSweep:MDISplay?	
Sets a direction to shift a marker on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSweep:SEARCh	type
Queries the data indicated by marker on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSweep:DATA?	
Sets the maximum value of graph vertical axis scale (UIp-p) on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSweep:SCALE	numeric
Queries the maximum value of graph vertical axis scale on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSweep:SCALE?	

Sets the maximum value of graph horizontal axis scale (ppm) on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSWeep:PPMScale	numeric
Queries the maximum value of graph horizontal axis scale (ppm) on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSWeep:PPMScale?	
Changes a offset mask display on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSWeep:OMASK	boolean
Queries changing state of the offset mask display on the Analyze:Recall(Freq. sweep) screen.	:DISPlay:ANALysis:RECall:FSWeep:OMASK?	
Sets whether to display a marker on the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:RECall:JFRequency:MDISplay	boolean
Queries the marker display status for the Analyze:Jitter/Freq. screen.	:DISPlay:ANALysis:RECall:JFRequency:MDISplay?	
Instructs a marker search type for the Analyze:Recall screen (Jitter/Freq.).	:DISPlay:ANALysis:RECall:JFRequency:SEARCh	type
Queries the data indicated by the marker for the Analyze:Recall screen (Jitter/Freq.).	:DISPlay:ANALysis:RECall:JFRequency:DATA?	
Sets a graph vertical axis scale for the Analyze:Recall screen (Jitter/Freq.).	:DISPlay:ANALysis:RECall:JFRequency:SCALE	numeric
Queries the graph vertical axis scale for the Analyze:Recall screen (Jitter/Freq.).	:DISPlay:ANALysis:RECall:JFRequency:SCALE?	
Queries the title for the Analyze:Recall screen (Jitter/Freq.).	:DISPlay:ANALysis:RECall:JFRequency:TITLe?	
Scrolls the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:SCRoll	scroll
Moves the marker on the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:MARKer	marker
Queries the data indicated by marker on the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:DATA ?	
Sets the interval of the graph on the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:INTerval	numeric suffix
Queries the width of one scale on the time axis on the Analysis:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:INTerval ?	
Sets whether to display a marker on the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:MDISplay	boolean
Queries the marker display status for the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:MDISplay ?	
Sets the display starting point of the graph on the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:FROM	time
Queries the display starting point of the graph on the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:FROM ?	

Section 4 Remote Control

Sets the printing range on the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:PRINt	type
Queries the printing range on the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:PRINt ?	
Queries the title on the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:TITLe ?	
Sets a graph vertical axis scale for the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:SCALe	scale
Queries the vertical axis scale for the Analyze:Recall screen (frequency monitoring graph).	:DISPlay:ANALysis:RECall:FGRaph:SCALe ?	
Sets whether to display a marker on the Analyze:Recall screen (Wander).	:DISPlay:ANALysis:RECall:WANDer:MDISplay	boolean
Queries the marker display status for the Analyze:Recall screen (Wander).	:DISPlay:ANALysis:RECall:WANDer:MDISplay?	
Instructs a marker search type for the Analyze:Recall screen (Wander).	:DISPlay:ANALysis:RECall:WANDer:SEARCh	type
Specifies the vertical axis scale type on Analyze:RECall screen (Wander).	:DISPlay:ANALysis:RECall:WANDer:STYPe	type
Queries the vertical axis scale type of Analyze:Recall screen (Wander).	:DISPlay:ANALysis:RECall:WANDer:STYPe?	
Sets the maximum value of the vertical scale of the Wander data graph displayed in Log type.	:DISPlay:ANALysis:RECall:WANDer:LOG:SCALe	scale
Queries the maximum value of the vertical scale of the Wander data graph displayed in Log type.	:DISPlay:ANALysis:RECall:WANDer:LOG:SCALe?	
Sets the maximum value of the vertical scale of the Wander data graph displayed in Liner type.	:DISPlay:ANALysis:RECall:WANDer:LINear:SCALe	scale
Queries query the maximum value of the vertical scale of the Wander data graph displayed in Liner type.	:DISPlay:ANALysis:RECall:WANDer:LINear:SCALe?	
Sets the maximum value of the horizontal scale of the Wander data graph displayed in Liner type.	:DISPlay:ANALysis:RECall:WANDer:MEAStime	scale
Queries the maximum value of the horizontal scale of the Wander data graph displayed in Liner type.	:DISPlay:ANALysis:RECall:WANDer:MEAStime?	
Sets the maximum value of graph (when "User" is set) horizontal axis scale for Wander data Linear type.	:DISPlay:ANALysis:RECall:WANDer:USER<scale>	
Queries the data indicated by the marker on the Analyze:Recall screen (Wander).	:DISPlay:ANALysis:RECall:WANDer:DATA?	
Queries the title for the Analyze:Recall screen (Wander).	:DISPlay:ANALysis:RECall:WANDer:TITLe?	
Queries the title of Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:TITLe?	
Sets whether to display a marker on the Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:MDISplay	boolean

Queries the marker display state on the Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:MDISplay?	
Shifts the marker on the Analyze:Recall(Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:SEARch	type
Queries the data indicated by marker on the Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:DATA?	
Sets the maximum value of graph vertical axis scale on the Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:SCALE	numeric
Queries the graph vertical axis scale (upper stage) on the Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:SCALE?	
Sets a graph vertical axis scale value (lower stage) on the Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:SCALE2	numeric
Queries the graph vertical axis scale (lower stage) on the Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:SCALE2?	
Specifies a graph vertical axis scale unit on the Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:STYPe	type
Queries the graph vertical axis scale unit on the Analyze:Recall (Wander.sweep) screen.	:DISPlay:ANALysis:RECall:WSWeep:STYPe?	
Scrolls agraph of the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:SCRoll	scroll
Sets a marker display state on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:MARKer	marker
Queries the data indicated by marker on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:DATA?	
Sets an interval of the graph on the Analyze:Peak jitter screen.	:DISPlay:ANALysis:RECall:PEAK:INTerval	numeric suffix
Queries the width of one scale on the time axis on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:INTerval?	
Sets a marker display state on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:MDISplay	boolean
Queries the marker display state on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:MDISplay?	
Sets a direction to shift a marker on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:SEARch	type
Sets a display starting point on the Analyze:Recall (Peak jitter) screen graph.	:DISPlay:ANALysis:RECall:PEAK:FROM	numeric1 numeric2 numeric3 numeric4 numeric5
Queries the display starting point on the Analyze:Recall (Peak jitter) screen graph.	:DISPlay:ANALysis:Recall:PEAK:FROM?	
Sets an alarm item of alarm 1 to be graph-displayed on the Analyze:Recall(Peak jitter) screen.	:DISPlay:ANALysis:Recall:PEAK:ALARm1	alarm

Section 4 Remote Control

Queries the alarm item of alarm 1 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:ALARm1?	
Sets an alarm item of alarm 2 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:ALARm2	alarm
Queries the alarm item of alarm 2 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:ALARm2?	
Sets an alarm item of alarm 3 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:ALARm3	alarm
Queries the alarm item of alarm 3 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:ALARm3?	
Sets an alarm item of alarm 4 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:ALARm4	alarm
Queries the alarm item of alarm 4 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:ALARm4?	
Sets an alarm item of alarm 5 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:ALARm5	alarm
Queries the alarm item of alarm 5 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:ALARm5?	
Sets a printing range on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:PRINt	type
Queries the printing range on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:PRINt?	
Queries the title on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:TITLe?	
Sets a graph vertical axis display unit for the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:DTYPE	type
Queries the graph vertical axis display unit for the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:DTYPE?	
Sets a graph vertical axis scale value on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:SCALE	numeric
Queries the the graph vertical axis scale value on the Analyze:Recall (Peak jitter) screen.	:DISPlay:ANALysis:RECall:PEAK:SCALE?	

Page 4-219

Selects an item to be displayed on the Setup screen.	:DISPlay:SETup[:NAME]	sdisplay
Queries the item displayed on the Setup screen.	:DISPlay:SETup[:NAME]?	

:DISPlay:TMENu[:NAME] <display>

Parameter	<display> = <STRING PROGRAM DATA>																														
	<table border="0"> <tr><td>"TSEarch"</td><td>Trouble search screen</td></tr> <tr><td>"MANual"</td><td>Manual(STM) screen</td></tr> <tr><td>"MANual:JOFF"</td><td>Manual(STM) screen</td></tr> <tr><td>"MANual:JON"</td><td>Manual:jitter screen</td></tr> <tr><td>"PSEQuence"</td><td>Pointer sequence screen</td></tr> <tr><td>"PSEQuence:JOFF"</td><td>Pointer sequence screen</td></tr> <tr><td>"PSEQuence:JON"</td><td>Pointer sequence:jitter screen</td></tr> <tr><td>"DELay"</td><td>Delay screen</td></tr> <tr><td>"JTOLerance"</td><td>Jitter tolerance screen</td></tr> <tr><td>"JTRansfer"</td><td>Jitter transfer screen</td></tr> <tr><td>"JSWeep"</td><td>Jitter sweep screen</td></tr> <tr><td>"JFRequency"</td><td>Jitter/Freq. screen</td></tr> <tr><td>"WANDer"</td><td>Wander screen</td></tr> <tr><td>"FSWeep"</td><td>Freq. sweep screen</td></tr> <tr><td>"WSWeep"</td><td>Wander sweep screen</td></tr> </table>	"TSEarch"	Trouble search screen	"MANual"	Manual(STM) screen	"MANual:JOFF"	Manual(STM) screen	"MANual:JON"	Manual:jitter screen	"PSEQuence"	Pointer sequence screen	"PSEQuence:JOFF"	Pointer sequence screen	"PSEQuence:JON"	Pointer sequence:jitter screen	"DELay"	Delay screen	"JTOLerance"	Jitter tolerance screen	"JTRansfer"	Jitter transfer screen	"JSWeep"	Jitter sweep screen	"JFRequency"	Jitter/Freq. screen	"WANDer"	Wander screen	"FSWeep"	Freq. sweep screen	"WSWeep"	Wander sweep screen
"TSEarch"	Trouble search screen																														
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"DELay"	Delay screen																														
"JTOLerance"	Jitter tolerance screen																														
"JTRansfer"	Jitter transfer screen																														
"JSWeep"	Jitter sweep screen																														
"JFRequency"	Jitter/Freq. screen																														
"WANDer"	Wander screen																														
"FSWeep"	Freq. sweep screen																														
"WSWeep"	Wander sweep screen																														
Function	Sets a subscreen for the Test menu main screen.																														
Restriction	<p>Invalid when,</p> <ul style="list-style-type: none"> • :SENSe:TELEcom:MMODE is <ISERvice>; and <"DELay">, <"DELay">, or <"JTOLerance"> is set. • :ROUTE:THROUGH is <ON>; and <"JTOLerance">, <"JTRansfer">, or <"JFRequency"> is set. • The MU150011A is not installed; and <"FSWeep"> or <"WSWeep"> is set. • The MU150011A is installed; and <"JFRequency"> is set. 																														
Example use	<p>To set "Jitter" display to ON on the Manual subscreen.</p> <pre>> :DISPlay:TMENu:NAME "MANual:JON" or :DISPlay:TMENu "MANual:JON"</pre>																														

:DISPlay:TMENu[:NAME]?

Response	<display> = <STRING RESPONSE DATA>												
	<table border="0"> <tr><td>"TSE"</td><td>Trouble search screen</td></tr> <tr><td>"MAN"</td><td>Manual screen</td></tr> <tr><td>"MAN:JOFF"</td><td>Manual screen</td></tr> <tr><td>"MAN:JON"</td><td>Manual:jitter screen</td></tr> <tr><td>"PSEQ"</td><td>Pointer sequence screen</td></tr> <tr><td>"PSEQ:JOFF"</td><td>Pointer sequence screen</td></tr> </table>	"TSE"	Trouble search screen	"MAN"	Manual screen	"MAN:JOFF"	Manual screen	"MAN:JON"	Manual:jitter screen	"PSEQ"	Pointer sequence screen	"PSEQ:JOFF"	Pointer sequence screen
"TSE"	Trouble search screen												
"MAN"	Manual screen												
"MAN:JOFF"	Manual screen												
"MAN:JON"	Manual:jitter screen												
"PSEQ"	Pointer sequence screen												
"PSEQ:JOFF"	Pointer sequence screen												

"PSEQ:JON"	Pointer sequence:jitter screen
"DEL"	Delay screen
"JTOL"	Jitter tolerance screen
"JTR"	Jitter transfer screen
"JSW"	Jitter sweep screen
"JFR"	Jitter/Freq. screen
"WAND"	Wander screen
"FSW"	Freq. sweep screen
"WSW"	Wander sweep screen

Function Queries the subscreen for the Test menu main screen.

Example use > :DISPlay:TMENu:NAME?
 or :DISPlay:TMENu?
 < "MAN:JON"

:DISPlay:RESult[:NAME] <display>

Parameter	<display> = <STRING PROGRAM DATA>
	"TSEarch" Trouble search subscreen
	"EALarm" Error/Alarm subscreen
	"JUSTificat" Justification subscreen
	"ZOOM" Zoom subscreen
	"PERFormance" Performance subscreen
	"DELay" Delay subscreen
	"JWANDer" Jitter/Wander subscreen
	"JTOLerance" Jitter tolerance subscreen
	"JTRansfer" Jitter transfer subscreen
	"JSWeep" Jitter sweep screen
	"JFRequency" Jitter/Freq. screen
	"WANDer" Wander screen
	"B2" B2 error screen
	"FSWeep" Freq. sweep screen
	"WSWeep" Wander sweep screen

Function Sets a subscreen for the Result main screen.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEQuence[:JOFF]">, or <"PSEQuence:JON">; and <"EALarm">, <"JUSTificat">, <"ZOOM">, <"PERFormance">, or <"JWANDer"> is set.
- :DISPlay:TMENu[:NAME] is other than <"MANual:JON">, or <"PSEQuence:JON">; and <"JWANDer"> is set.
- The MU150011A is not installed; and <"FSWeep"> or <"WSWeep"> is set.

- The MU150011A is installed; and <"JFrequency"> is set.
- :DISPlay:RESult[:NAME] is the value other than the followings for :DISPlay:TMENu[:NAME]

:DISPlay:TMENu[:NAME]	:DISPlay:RESult[:NAME]
TSEarch	TSEarch
DELay	DELay
JTOLeraance	JTOLerance
JTRansfer	JTRansfer
JFRequency	JFRequency
JSWEEP	JSWEEP
WANer	WANDer
WSWEEP	WSWEEP
FSWEEP	FSWEEP

Example use

To set the Jitter/Wander subscreen.

```
>:DISPlay:RESult:NAME "JWANDer"
```

```
or :DISPlay:RESult "JWANDer"
```

:DISPlay:RESult[:NAME]?

Response

```
<display> = <STRING RESPONSE DATA>
```

"TSE"	Trouble search screen
"EAL"	Error/Alarm screen
"JUST"	Justification screen
"ZOOM"	Zoom screen
"PERF"	Performance screen
"DEL"	Delay screen
"JWAN"	Jitter/Wander screen
"JTOL"	Jitter Tolerance screen
"JTR"	Jitter Transfer screen
"JSW"	Jitter sweep screen
"JFR"	Jitter/Freq. screen
"WAND"	Wander screen
"B2"	B2 error screen
"FSW"	Freq. sweep screen
"WSW"	Wander sweep screen

Function

Queries the selected subscreen for the Result main screen.

Example use

```
>:DISPlay:RESult:NAME?
```

```
or :DISPlay:RESult?
```

```
< "JWAN"
```

:DISPlay:RESult:JWANDer:MODE <mode>

Parameter	<p><mode> = <CHARACTER PROGRAM DATA></p> <p>CURRent current measurement result</p> <p>LAST Immediately previous measurement result</p>
Function	Sets the display mode of the Result:Jitter/Wander screen.
Restriction	<p>Invalid when,</p> <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEQUence[:JOFF]">, and <"PSEQUence:JON">. • Parameter is <LAST>, and :DISPlay:RESult:JWANder:UNIT is <WANDer>.
Example use	<p>To display the current measurement result.</p> <p>> :DISPlay:RESult:JWANder:MODE CURRent</p>

:DISPlay:RESult:JWANder:MODE?

Response	<mode> = <CHARACTER RESPONSE DATA>
Function	Queries the display mode of the Result:Jitter/Wander screen.
Example use	<p>> :DISPlay:RESult:JWANder:MODE?</p> <p>< CURR</p>

:DISPlay:RESult:JWANder:UNIT <unit>

Parameter	<p><unit> = <CHARACTER PROGRAM DATA></p> <p>PEAKRMS Peak/RMS</p> <p>HIT Jitter hit measurement result</p> <p>WANDer1 Wander (DC-10Hz)</p> <p>WANDer2 Wander (DC-0.01Hz)</p> <p>WANDer3 Wander (0.01Hz-10Hz)</p>
Function	Sets data type to be displayed of the Result:Jitter/Wander screen.
Restriction	<p>Invalid when,</p> <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEQUence[:JOFF]">, or <"PSEQUence:JON">. • :SENSe:MEASure:JWANder:MSElect is <JITTer>: and <WANDer1>, <WANDer2> or <WANDer3> is set. • :DISPlay:RESult is other than <"JWANder">. • :SENSe:MEASure:JWANder:MSElect is <WANDer>: and <PEAKRMS> or <HIT> is set. • <WANDer> is set, and :SENSe:MEASure:JWANder:MSElect is <JITTer>.
Example use	<p>To display the Jitter Peak-Peak measurement result.</p> <p>> :DISPlay:RESult:JWANder:UNIT PEAKRMS</p>

:DISPlay:RESult:JWANDer:UNIT?

Response	<unit> = <CHARACTER RESPONSE DATA>	
	PEAKRMS	Peak/RMS
	HIT	Jitter hit measurement result
	WANDer1	Wander (DC-10Hz)
	WANDer2	Wander (DC-0.01Hz)
	WANDer3	Wander (0.01Hz-10Hz)
Function	Queries the data type to be displayed of the Result:Jitter/Wander screen.	
Example use	> :DISPlay:RESult:JWANDer:UNIT? < PEAK	

:DISPlay:RESult:FSWeep:SCRoll <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>	
	TOP	Jump to the top table
	END	Jump to the last table
	NEXT	Proceed to the next table
	BEFOR	Back to the table before
Function	Controls the scroll of the Freq. sweep measurement result table.	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"FSWeep">. • The MU150011A is not installed. 	
Example use	To proceed one table to display the result. > :DISPlay:RESult:FSWeep:SCRoll NEXT	

:DISPlay:RESult:WANDer:DISPtype <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>	
	LOG	Log
	LINear	Linear
Function	Changes wander measurement result display.	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"WANDer">. • The MU150011A is not installed. 	
Example use	To display LOG result. > :DISPlay:RESult:WANDer LOG	

:DISPlay:RESult:WANDer:DISPtype?

Response	<type> = <CHARACTER RESPONSE DATA>	
----------	------------------------------------	--

Function Same as :DISPlay:RESult:WANDer:DISPtype.
 Queries the state of wander measurement result display type.
 Example use > :DISPlay:RESult:WANDer:DISPtype?
 < LIN

:DISPlay:RESult:WANDer:SCRoll <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

TOP	Jump to the top table
END	Jump to the last table
NEXT	Proceed to the next table (1 to 10 unit)
BEFOR	Back to the table before

Function Controls the scroll of the Wander measurement result table.
 Example use To proceed to the next table.
 > :DISPlay:RESult:WANDer:SCRoll NEXT

:DISPlay:RESult:WSWeep:UNIT <unit>

Parameter <unit> = <CHARACTER PROGRAM DATA>

UIPP	UIp-p display
NS	ns display

Function Changes wander sweep measurement result display unit.
 Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"WSWeep">.
 • The MU150011A is not installed.
 Example use To set the display data of the Result screen to Up-p.
 > :DISPlay:RESult:WSWeep:UNIT UIPP

:DISPlay:ANALysis[:NAME] <display>

Parameter <display> = <STRING PROGRAM DATA>

"TSEarch"	Trouble search screen
"EALarm"	Error/Alarm screen
"OHMonitor"	OH monitor screen
"FMONitor"	Freq. monitor screen
"FREQuency"	Frequency screen
"JTOLerance"	Jitter tolerance screen
"JTRansfer"	Jitter transfer screen
"JSWeep"	Jitter sweep screen
"JFREquency"	Jitter/Freq. screen
"WANDer"	Wander screen
"OHCapture"	OH capture screen
"OPMeter"	Opt. power meter screen
"RECall"	Recall screen

	"FSweep"	Freq. sweep screen
	"WSweep"	Wander sweep screen
	"PEAKjitter"	Peak jitter screen
Function	Sets a subscreen for the Analyze main screen.	
Restriction	Invalid when,	
	<ul style="list-style-type: none"> • DISPLAY:ANALYSIS[:NAME] is set to the value other than the followings for :DISPLAY:TMENU[:NAME] 	

:DISPLAY:TMENU[:NAME]	:DISPLAY:ANALYSIS[:NAME]
TSEarch	TSEarch
DELay	RECall
JTOLerance	JTOLerance RECall
JTRansfer	JTRansfer RECall
JFRequency	JFRequency RECall
JSweep	JSweep RECall
WANDer	WANDer RECall
WSweep	WSweep RECall
FSweep	FSweep RECall

- The MU150005A, MU150006A, or MU150007A is not installed; and <"FSweep">, <"WSweep">, or <"PEAKjitter"> is set.
- :DISPLAY:TMENU[:NAME] is other than <"MANual[:JOFF]"> or <"MANual:JON">; and <"PEAKjitter" > is set.
- The MP0130A is not installed; and <"JFRequency"> is set.

Example use

To set the Jitter tolerance subscreen.
 > :DISPLAY:ANALYSIS:NAME "JTOLerance"
 or :DISPLAY:ANALYSIS "JTOLerance"

:DISPLAY:ANALYSIS[:NAME]?

Response	<display> = <STRING RESPONSE DATA>	
	"TSE"	Trouble search screen
	"EAL"	Error/Alarm screen
	"OHM"	OH monitor screen
	"FMON"	Freq. monitor screen
	"FREQ"	Frequency screen
	"JTOL"	Jitter tolerance screen
	"JTR"	Jitter transfer screen
	"JSW"	Jitter sweep screen
	"JFR"	Jitter/Freq. screen
	"WAND"	Wander screen

	Alarm 3 occurrence time (s) of data indicated by marker	Form1
	<alarm3c> = <STRING RESPONSE DATA>	
	Alarm 3 occurrence count of data indicated by marker	Form1
	<alarm4s> = <STRING RESPONSE DATA>	
	Alarm 4 occurrence time (s) of data indicated by marker	Form1
	<alarm4c> = <STRING RESPONSE DATA>	
	Alarm 4 occurrence count of data indicated by marker	Form1
	<alarm5s> = <STRING RESPONSE DATA>	
	Alarm 5 occurrence time (s) of data indicated by marker	Form1
	<alarm5c> = <STRING RESPONSE DATA>	
	Alarm 5 occurrence count of data indicated by marker	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 the data indicated by marder on the Analyze:Error/Alarm screen.	
Example use	<pre>> :DISPlay:ANALysis:TGRaph:DATA? < 2000,12,25,12,54,30," 1"," 1"," 0"," 0", " 104"," 10"," 1"," 1"," 1", " 1"," 189"," 3.3E-04"</pre>	

:DISPlay:ANALysis:TGRaph:ERRor <error1>,<error2>

Parameter	<error1>, <error2>	
	<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"	MS-REI error
	"REI:HP"	HP-REI error
	"REI:LP"	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
"CRC4"	CRC-4 error
"EBIT"	E-Bit
"PARITY"	Parity error
"CBIT"	C-Bit
"COUNT"	Count
"BIT"	Bit error
"HIT"	Hit

<error2> = <CHARACTER PROGRAM DATA>
 EC Count
 ER Rate

Function Sets error item display on the Error/Alarm graph.
 Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">,
 <"MANual:JON">, <"PSEquence[:JOFF]">, and <"PSEquence:JON">.
 • <"HIT"> is set, and <ER> is set.
 Example use To display the error rate of the Bit error.
 > :DISPlay:ANALysis:TGRaph:ERRor "BIT",ER

:DISPlay:ANALysis:TGRaph:ERRor?

Response <error1>, <error2>
 <error1> = <STRING RESPONSE DATA>
 <error2> = <CHARACTER RESPONSE DATA>
 Function Queries the error item diplayed on the graph of the Analyze:Error/Alarm screen.
 Example use > :DISPlay:ANALysis:TGRaph:ERRor?
 < "HIT",EC

:DISPlay:ANALysis:TGRaph:ALARm1 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>
 "ALL" ALL
 "POWER" Power fail
 "LOS" LOS

"LOF"		LOF
"OOF"		OOF
"AIS:MS"		MS-AIS
"RDI:MS"		MS-RDI
"AIS:AU"		AU-AIS
"LOP:AU"		AU-LOP
"RDI:HP"		HP-RDI
"SLM:HP"		HP-SLM
"AIS:TU"		TU-AIS
"LOP:TU"		TU-LOP
"RDI:LP"		LP-RDI
"SLM:LP"		LP-SLM
"RFI:LP"		LP-RFI
"LOM:TU"		TU-LOM
"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
"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: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
"LCD"	Lost of cell sync
"PATTern"	Sync. loss
"JUNLock"	Jitter Unlock

Function	Sets an alarm item to be graphically displayed to alarm1 of the Analyze:Error/Alarm screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual:JON">, <"PSEQUence[:JOFF]">, or <"PSEQUence:JON">.
Example use	To dispay the Jitter Unlock on the graph. > :DISPlay:ANALysis:TGRaph:ALARm1 "JUNLock"

:DISPlay:ANALysis:TGRaph:ALARm1?

Response	<alarm> = <STRING RESPONSE DATA>
Function	Queries an alarm item graphically displayed to alarm1 of the Analyze:Error/Alarm screen.
Example use	> :DISPlay:ANALysis:TGRaph:ALARm1? < "JUNL"

: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 graphically displayed to alarm2 of the Analyze:Error/Alarm screen.

:DISPlay:ANALysis:TGRaph:ALARm2?

Response	<alarm> = <STRING RESPONSE DATA> Same as those of :DISPlay:ANALysis:TGRaph:ALARm1?
Function	Queries an alarm item graphically displayed to alarm2 of the Analyze:Error/Alarm screen

: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 graphically displayed to alarm3 of the Analyze:Error/Alarm screen.

:DISPlay:ANALysis:TGRaph:ALARm3?

Response	<alarm> = <STRING RESPONSE DATA> Same as those of:DISPlay:ANALysis:TGRaph:ALARm1?
Function	Queries an alarm item graphically displayed to alarm3 of the Analyze:Error/Alarm screen

: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 graphically displayed to alarm4 of the Analyze:Error/Alarm screen.

:DISPlay:ANALysis:TGRaph:ALARm4?

Response	<alarm> = <STRING RESPONSE DATA> Same as those of:DISPlay:ANALysis:TGRaph:ALARm1?
Function	Queries an alarm item graphically displayed to alarm4 of the Analyze:Error/Alarm screen

: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 graphically displayed to alarm5 of the Analyze:Error/Alarm screen.

:DISPlay:ANALysis:TGRaph:ALARm5?

Response	<alarm> = <STRING RESPONSE DATA> Same as those of :DISPlay:ANALysis:TGRaph:ALARm1?
Function	Queries an alarm item graphically displayed to alarm5 of the Analyze:Error/Alarm screen

:DISPlay:ANALysis:TGRaph:TITLe <title>

Parameter	<title> = <STRING PROGRAM DATA> "Title characters" titel characters (up to 15 characters)
Function	Sets a trace graph title.
Restriction	Invalid when, • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">.

<"MANual:JON">, <"PSEquence[:JOFF]">, <"PSEquence:JON">.

Example use To display "TITLE-DISP" as the trace graph title.
 > :DISPlay:ANALysis:TGRaph:TITLe "TITLE-DISP"

:DISPlay:ANALysis:TGRaph:TITLe?

Response <title> = <STRING RESPONSE DATA>
 Function Queries the graph title for the Analyze:Error/Alarm screen.
 Example use > :DISPlay:ANALysis:TGRaph:TITLe?
 < "TITLE-DISP "

:DISPlay:ANALysis:FMONitor:FREQuency?

Response <freq>, <ppm>, <relative>
 <freq> = <STRING RESPONSE DATA>
 Form10
 <ppm> = <STRING RESPONSE DATA>
 Form11
 <relative>=<STRING RECEPONCE DATA>
 Form13
 Function Queries Freq. Monitor data.
 Example use > :DISPlay:ANALysis:FMONitor:FREQuency?
 < " 100.0", "+1000.0", "+100.0"
 For no data
 < "-----", "-----", "-----"

:DISPlay:ANALysis:FMONitor:PAUSE <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
 OFF or 0 Pause OFF
 ON or 1 Pause ON
 Function Sets Pause at Freq. Monitor.
 Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">,
 <"MANual:JON">, <"PSEquence[:JOFF]">, or <"PSEquence:JON">.
 Example use To set Pause state at 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 Freq. Monitor.	
Example use	> :DISPlay:ANALysis:FMONitor:PAUSE? < 1	

:DISPlay:ANALysis:JTOLerance:MDISplay <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Marker Off ON or 1 Marker ON	
Function	Sets whether to display a marker on the Analyze:Jitter tolerance screen.	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu is other than <"JTOLerance">. • No analyze data exists. 	
Example use	To set to display the marker. > :DISPlay:ANALysis:JTOLerance:MDISplay ON	

:DISPlay:ANALysis:JTOLerance:MDISplay?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA> 0 or 1	
Function	Queries the marker display state for the .Analyze:Jitter tolerance screen.	
Example use	> :DISPlay:ANALysis:JTOLerance:MDISplay? < 1	

:DISPlay:ANALysis:JTOLerance:SEARCh <type>

Parameter	<type> = <CHARACTER PROGRAM DATA> BEFOre Before search NEXT Next search	
Function	Instructs a marker search for the Analyze:Jitter tolerance screen.	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:JTOLerance:MDISplay is <OFF>. • :DISPlay:TMENu is set to other than <"JTOLerance">. • No analyze data exists. 	
Example use	To instruct Next search. > :DISPlay:ANALysis:JTOLerance:SEARCh NEXT	

:DISPlay:ANALysis:JTOLerance:DATA?

Response <point>, <freq1>, <freq2>, <amp1>
 <point> = <NR1 NUMERIC RESPONSE DATA>
 measurement points
 1 to 20
 <freq1> = <NR2 NUMERIC RESPONSE DATA>
 modulation frequency (numeral)
 1.0 to 990.0
 <freq2> = <CHARACTER RESPONSE DATA>
 modulation frequency (unit)
 HZ, KHZ, MHZ
 <amp1> = <STRING RESPONSE DATA>
 jitter tolerance measurement result (UI_{p-p})
 Form5

Function Queries the data indicated by marker for the Analyze:Jitter tolerance screen.

Example use > :DISPlay:ANALysis:JTOLerance:DATA?
 < 15,100,HZ," 15.00"
 * When no analyze data exists or the marker is set to Off
 < 0,0.0,HZ,"-----"

:DISPlay:ANALysis:JTOLerance:SCALE <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

100	100UI _{pp}
10	10UI _{pp}
1	1UI _{pp}

Function Sets a graph vertical axis scale for the Analyze:Jitter tolerance screen.

Restriction Invalid when,
 • :DISPlay:TMENU[:NAME] is other than <"JTOLerance">.

Example use To the graph vertical axis scale to 10UI_{pp}.
 > :DISPlay:ANALysis:JTOLerance:SCALE 10

:DISPlay:ANALysis:JTOLerance:SCALE?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function Queries the graph vertical axis scale for the Analyze:Jitter tolerance screen.

Example use > :DISPlay:ANALysis:JTOLerance:SCALE?
 < 10

:DISPlay:ANALysis:JTOLerance:TITLe <title>

Parameter	<title> = <STRING PROGRAM DATA> "Title characters" Title characters (up to 15 characters)
Function	Sets at title for the Analyze:Jitter tolerance screen.
Restriction	Invalid when, • :DISPlay:TMENu[:NAME] is other than <"JTOLerance">.
Example use	> :DISPlay:ANALysis:JTOLerance:TITLe "TITLE-DISP "

:DISPlay:ANALysis:JTOLerance:TITLe?

Response	<title> = <STRING RESPONSE DATA>
Function	Queries the graph title for the Analyze:Jitter tolerance screen.
Example use	> :DISPlay:ANALysis:JTOLerance:TITLe? < "TITLE-DISP "

:DISPlay:ANALysis:JTRansfer:MDISplay <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Marker Off ON or 1 Marker ON
Function	Sets whether to display a marker on Analyze:Jitter transfer screen.
Restriction	Invalid when, • :DISPlay:TMENu[:NAME] is other than <"JTRansfer">. • No analyze data exists.
Example use	To display the marker. > :DISPlay:ANALysis:JTRansfer:MDISplay ON

:DISPlay:ANALysis:JTRansfer:MDISplay?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA> 0 or 1
Function	Queries the marker display state for the Analyze:Jitter transfer screen.
Example use	> :DISPlay:ANALysis:JTRansfer:MDISplay? < 1

:DISPlay:ANALysis:JTRansfer:SEARCh <type>

Parameter	<type> = <CHARACTER PROGRAM DATA> BEFOre Before search NEXT Next search
Function	Instructs the marker search for the Analyze:Jitter transfer screen.
Restriction	Invalid when,

- :DISPlay:ANALysis:JTRansfer:MDISplay is <OFF>.
- :DISPlay:TMENu is other than <"JTRansfer">.
- No analyze data exists.

Example use To instruct next search.
 > :DISPlay:ANALysis:JTRansfer:SEARch NEXT

:DISPlay:ANALysis:JTRansfer:DATA?

Response <point>, <freq1>, <freq2>, <ampl>
 <point> = <NR1 NUMERIC RESPONSE DATA>
 measurement point
 1 to 20
 <freq1> = <NR2 NUMERIC RESPONSE DATA>
 Modulation frequency (numeral)
 1.0 to 990.0
 <freq2> = <CHARACTER RESPONSE DATA>
 Modulation frequency (unit)
 HZ, KHZ, MHZ
 <ampl> = <STRING RESPONSE DATA>
 Jitter transfer measurement result (dB)
 Form6

Function Queries the data indicated by marker for Analyze:Jitter transfer screen.

Example use > :DISPlay:ANALysis:JTRansfer:DATA?
 < 15,100.0,HZ," -15.00"
 * When no analyze data exists or marker is set to Off:
 < 0,0.0,HZ,"-----"

:DISPlay:ANALysis:JTRansfer:SCALe <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
 20 20dB
 10 10dB
 1 1dB

Function Sets a graph vertical axis scale for Analyze:Jitter transfer screen.

Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"JTRansfer">.

Example use To set the scale of the jitter tolerance measurement graph to 10.
 > :DISPlay:ANALysis:JTRansfer:SCALe 10

:DISPlay:ANALysis:JTRansfer:SCALE?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Function Queries the vertical axis scale for Analyze:Jitter transfer screen.
 Example use > :DISPlay:ANALysis:JTRansfer:SCALE?
 < 10

:DISPlay:ANALysis:JTRansfer:TITLe <title>

Parameter <title> = <STRING PROGRAM DATA>
 "Title characters" Title characters (up to 15 characters)
 Function Sets a title for Analyze:Jitter transfer screen.
 Restriction Invalid when,
 • :DISPlay:TMENU[:NAME] is other than <"JTRansfer">.
 Example use To display "TITLE-DISP" as the jitter transfer measurement:
 > :DISPlay:ANALysis:JTRansfer:TITLe "TITLE-DISP"

:DISPlay:ANALysis:JTRansfer:TITLe?

Response <title> = <STRING RESPONSE DATA>
 Function Queries the graph title for Analyze:Jitter transfer screen.
 Example use > :DISPlay:ANALysis:JTRansfer:TITLe?
 < "TITLE-DISP "

:DISPlay:ANALysis:JSWeep:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
 OFF or 0 Marker Off:
 ON or 1 Marker On
 Function Sets whether to display a marker on the Analyze:Jitter sweep screen.
 Restriction Invalid when,
 • When the following two cases are meet.
 (1) The Jitter/Wander unit is not installed.
 (2) The 2.5G unit is not installed, or the 2.5G Jitter unit is not installed.
 • No Jitter sweep data exists.
 Example use To set to display the marker for the jitter tolerance measurement.
 > :DISPlay:ANALysis:JSWeep:MDISplay 1

:DISPlay:ANALysis:JSWeep:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>

0 Marker Off:
1 Marker On

Function Queries the marker display status for the Analyze:Jitter sweep screen.
Example use > :DISPlay:ANALysis:JSWeep:MDISplay?
< 1

:DISPlay:ANALysis:JSWeep:SEARch <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
BEFore Before search
NEXT Next search

Function Instructs a marker search type for Analyze:Jitter sweep screen.

Restriction Invalid when,
• When the following two cases are meet.
(1) The Jitter/Wander unit is not installed.
(2) The 2.5G unit is not installed, or the 2.5G Jitter unit is not installed.
• :DISPlay:ANALysis:JSWeep:MDISplay is <OFF>.
• When no measurement point exists forward, <BEFore> is set.
• When no measurement point exist backward, <NEXT> is set.

Example use To instruct Before search for the jitter tolerance measurement.
> :DISPlay:ANALysis:JSWeep:SEARch BEFore

:DISPlay:ANALysis:JSWeep:DATA?

Response <point>, <freq1>, <freq2>, <margin>, <amp1>, <result>
<point> = <NR1 NUMERIC RESPONSE DATA>
1 to 20 measurement point
<freq1> = <NR2 NUMERIC RESPONSE DATA>
0.1 to 990.0 modulation frequency (numeral)
<freq2> = <CHARACTER RESPONSE DATA>
HZ, KHZ, MHZ modulation frequency (unit)
<margin> = <NR1 NUMERIC RESPONSE DATA>
0 to 100 (value for five)
<amp1> = <NR2 NUMERIC RESPONSE DATA>
0.000 to 808.000 amplitude value (UIp-p) (value for five)
<result> = <STRING RESPONSE DATA>
Form4 jitter tolerance measurement result(value for five)

* When no Jitter sweep data exists or marker is OFF, the following contents are

output.

```
< 0,0.0,HZ,0,0,0,0,0,0.000,0.000,0.000,0.000,0.000,
"-----","-----","-----","-----","-----"
```

Function Queries the data indicated by marker on the Analyze:Jitter sweep screen.

Example use > :DISPlay:ANALysis:JSWeep:DATA?
 < 15,100.0,HZ,0,10,20,30,100,80.000,20.000,15.000,12.000,8.000,
 " Acceptable"," Acceptable"," Acceptable"," Acceptable",
 " Acceptable"

:DISPlay:ANALysis:JSWeep:SCALE <scale>

Parameter <scale> = <CHARACTER PROGRAM DATA>

1000	1000UIp-p
100	100UIp-p
10	10UIp-p
1	1UIp-p
0.1	0.1UIp-p
0.01	0.01UIp-p

Function Sets a graph vertical axis scale (upper stage) for the Analyze:Jitter sweep screen.

Restriction Invalid when,

- The following conditions are all satisfied.
 - (1) The Jitter/Wander unit is not installed.
 - (2) The 2.5G unit or 2.5G Jitter unit is not installed.
- :DISPlay:TMENu[:NAME] is other than <"JSWeep">.

Example use To set the graph vertical axis scale (upper stage) for jitter tolerance measurement to 10.

```
> :DISPlay:ANALysis:JSWeep:SCALE 10
```

:DISPlay:ANALysis:JSWeep:SCALE?

Response <scale> = <NR1 NUMERIC RESPONSE DATA>

Same as :DISPlay:ANALysis:JSWeep:SCALE.

Function Queries the graph vertical axis scale value (upper stage) for the Analyze:Jitter sweep screen.

Example use > :DISPlay:ANALysis:JSWeep:SCALE?
 < 10

:DISPlay:ANALysis:JSWeep:TITLe <title>

Parameter <title> = <STRING PROGRAM DATA>

"Title characters"	Title characters (up to 15 characters)
--------------------	--

The length of the characters is 0 to 15, and " " can be inputted.

When the length is less than 15 characters, " "(space) is added.

Function	Sets a title for the Analyze:Jitter sweep screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • When the following two conditons are meet. <ol style="list-style-type: none"> (1) The Jitter/Wander unit is not installed. (2) The 2.5G unit is not installed, or the 2.5G Jitter unit is not installed. • :DISPlay:TMENu[:NAME] is other than <"JSWeep">.
Example use	To display "TITLE-DISP" for the title of jitter tolerance measurement. > :DISPlay:ANALysis:JSWeep:TITLe "TITLE-DISP"

:DISPlay:ANALysis:JSWeep:TITLe?

Response	<title> = <STRING RESPONSE DATA> Same as those of :DISPlay:ANALysis:JSWeep:TITLe.
Function	Queries the title for the .Analyze:Jitter sweep screen.
Example use	> :DISPlay:ANALysis:JSWeep:TITLe? < "TITLE-DISP "

:DISPlay:ANALysis:JSWeep:SCALE2?

Response	<scale> = <CHARACTER RESPONSE DATA> Same as :DISPlay:ANALysis:JSWeep:SCALE2 .
Function	Queries a graph vertical axis scale (lower stage) for the Analyze:Jitter sweep screen.
Example use	> :DISPlay:ANALysis:JSWeep:SCALE2? < 10

:DISPlay:ANALysis:JSWeep:MARGin <number>,<boolean>

Parameter	<number> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 5 <boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Display OFF ON or 1 Display ON
Function	Operates Margin display buttons (1) to (5) in the Marker display on the Analyze:Jitter sweep screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"JSWeep">. • No measurement data exists.

• When the MP0130A is not installed.

Example use To set Margin (1) to ON in the Marker display of Jitter sweep measurement.
> :DISPlay:ANALysis:JSWeep:MARGin 1,ON

:DISPlay:ANALysis:JSWeep:MARGin? <number>

Parameter <number> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 5

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Display OFF
1 Display ON

Function Queries the statues of Margin display buttons (1) to (5) in the Marker display on the Analyze:Jitter sweep screen.

Example use > :DISPlay:ANALysis:JSWeep:MARGin? 1
< 1

:DISPlay:ANALysis:FSWeep:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Marker OFF
ON or 1 Marker ON

Function Sets a marker display status for the Analyze:Freq.sweep screen.

Restriction Invalid when,
• :DISPlay:TMENu[:NAME] is other than <"FSWeep">.
• No measurement data exists.
• When the MP0130A is not installed.

Example use To display the marker on the Analyze:Freq.sweep screen.
> :DISPlay:ANALysis:FREQsweep:MDISplay ON

:DISPlay:ANALysis:FSWeep:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Marker OFF
1 Marker ON

Function Queries the marker display status for the Analyze:Freq.sweep screen.

Example use > :DISPlay:ANALysis:FREQsweep:MDISplay?
< 1

:DISPlay:ANALysis:FSWeep:SEARch <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

	BEFore	Before search (when ← is pressed.)
	NEXt	Next search (when → is pressed.)
Function		Sets a direction to shift a marker on the Analyze:Freq.sweep screen.
Restriction		Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"FSWeep">. • No measurement data exists. • When the MP0130A is not installed.
Example use		To shift the marker to the left side of the graph. > :DISPlay:ANALysis:FSWeep:SEARch BEFore

:DISPlay:ANALysis:FSWeep:DATA?

Response	<ppm1>, <ppm2> <ppm1> = <NR2 NUMERIC RESPONSE DATEA> -100 to 100 ppm value <ppm2> = <STRING RESPONSE DATA> Form6 Measurement result (UIp-p)
Function	Queries the data indicated by marker on the Analyze:Freq. sweep screen.
Example use	To query the data indicated by marker on the screen. > :DISPlay:ANALysis:FSWeep:DATA < 80,"80.8" < 0,"----" (..... outputs when no Freq. sweep data exists or marker is OFF)

:DISPlay:ANALysis:FSWeep:SCALe <numeric>

Parameter	<numeric> = <CHARACTER PROGRAM DATA> 100 10 1 (UIp-p)
Function	Sets the maximum value of graph vertical axis scale (Up-p) on the Analyze:Jitter sweep screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:TMENu[:NAME] is other than <"FSWeep">. • When the MP0130A is not installed.
Example use	To set the maximum value of graph vertical axis scale to 100. > :DISPlay:ANALysis:FSWeep:SCALe 100

:DISPlay:ANALysis:FSWeep:SCALe?

Response	<numeric> = <CHARACTER RESPONSE DATA>
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Function	Same as :DISPlay:ANALysis:FSWeep:SCALe. Queries the maximum value of graph vertical axis scale on the Analyze:Freq sweep screen.
Example use	> :DISPlay:ANALysis:FSWeep:SCALe? < 100

:DISPlay:ANALysis:FSWeep:TITLe <title>

Parameter	<title> = <STRING PROGRAM DATA> "Title characters" Title characters (up to 15 characters) * The length of the characters is 0 to 15, and " can be inputted. When the length is less than 15 characters, "_" (space) is added. The remaining digits shall be padded with spaces.
Function	Sets a title of Freq. sweep measurement result.
Example use	To display "TITLE-DISP" in Freq. sweep measurement title. > :DISPlay:ANALysis:FSWeep:TITLe "TITLE-DISP"

:DISPlay:ANALysis:FSWeep:TITLe?

Response	<title> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:FSWeep:TITLe.
Function	Queries the title of Freq. sweep measurement result.
Example use	To query the title of Freq. sweep screen. > :DISPlay:ANALysis:FSWeep:TITLe? < "TITLE-DAT "

:DISPlay:ANALysis:FSWeep:PPMScale <numeric>

Parameter	<numeric> = <CHARATER PROGRAM DATA> 10,20,30,40,50,60,70,80,90,100 (ppm)
Function	Sets the maximum value of graph horizontal axis scale (ppm) on the Analyze:Freq.sweep screen.
Restriction	Invalid when, • :DISPlay:TMENu[:NAME] is other than <"FSWeep">. • When the MP0130A is not installed.
Example use	To set the maximum value of graph horizontal axis scale to 80. > :DISPlay:ANALysis:FSWeep:PPMScale 80

:DISPlay:ANALysis:FSWeep:PPMScale?

Response	<numeric> = <CHARACTER RESPONSE DATA>
----------	---------------------------------------

Function Same as :DISPlay:ANALysis:FSWEEP:PPMScale.
 Queries the maximum value of graph horizontal axis scale (ppm) on the Analyze:Freq.sweep screen.

Example use > :DISPlay:ANALysis:FSWEEP:PPMScale?
 < 80

:DISPlay:ANALysis:FSWEEP:OMASK <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
 OFF or 0 Display ON (button OFF state)
 ON or 1 Display OFF (button ON state)

Function Changes a offset mask display on the Analyze:Freq.sweep screen.

Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"FSWEEP">.
 • When the MP0130A is not installed.

Example use To set the offset mask display of Freq. sweep measurement to ON.
 > :DISPlay:ANALysis:FSWEEP:OMASK ON

:DISPlay:ANALysis:FSWEEP:OMASK?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
 0 Display OFF
 1 Display ON

Function Queries changing state of the offset mask display on the Analyze:Freq.sweep screen.

Example use > :DISPlay:ANALysis:FSWEEP:OMASK?
 < 1

:DISPlay:ANALysis:JFREQUENCY:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
 OFF or 0 Marker Off
 ON or 1 Marker ON

Function Sets the marker display for the Analyze:Jitter/Freq. Screen.

Restriction Invalid when,
 • No analyze data exists.
 • The MP0130A is not installed.

Example use To set to display the marker for jitter frequency measurement.
 > :DISPlay:ANALysis:JFREQUENCY:MDISplay ON

:DISPlay:ANALysis:JFREQUENCY:MDISplay?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA>
	0 Marker Off
	1 Marker ON
Function	Queries the marker display status for the Analyze:Jitter/Freq. screen.
Example use	> :DISPlay:ANALysis:JFRequency:MDISplay? < 1

:DISPlay:ANALysis:JFRequency:SEARCh <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	BEFore Before search
	NEXT Next search
Function	Instructs a marker search type for the Analyze:Jitter/Freq. screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:JFRequency:MDISplay is <OFF>. • The MP0130A is not installed.
Example use	To instruct Before search. > :DISPlay:ANALysis:JFRequency:SEARCh BEFore

:DISPlay:ANALysis:JFRequency:DATA?

Response	<brate>, <ppm>, <ampl>
	<brate> = <CHARACTER RESPONSE DATA>
	M2488, M622, M156, M52, M139, M45, M34, M8, M2, M1_5
	<ppm> = <NR1 NUMERIC RESPONSE DATA>
	-50 to 50
	<ampl> = <STRING RESPONSE DATA>
	Form5 jitter toFreq. offset measurement result (UI _{pp})
Function	Queries the data indicated by the marker for the Analyze:Jitter/Freq. screen.
Example use	> :DISPlay:ANALysis:JFRequency:DATA? < M139,+30," 15.00" * When no analyze data exists or the marker is set to OFF. < 0,0.0,HZ,"-----"

:DISPlay:ANALysis:JFRequency:SCALE <numeric>

Parameter	<numeric> = <CHARACTER PROGRAM DATA>
	2.0 2.0UIp-p
	1.0 1.0UIp-p
	0.2 0.2UIp-p

Function Sets the graph vertical axis scale for the Analyze:Jitter/Freq. screen.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"JFrequency">.
- The MP0130A is not installed.

Example use To set the graph vertical axis scale of jitter frequency measurement to 20.Uipp.

```
> :DISPlay:ANALysis:JFrequency:SCALE 2.0
```

:DISPlay:ANALysis:JFrequency:SCALE?

Response <numeric> = <NR2 NUMERIC RESPONSE DATA>

Function Queries the graph vertical axis scale for the Analyze:Jitter/Freq. screen.

Example use > :DISPlay:ANALysis:JFrequency:SCALE?

```
< 2.0
```

:DISPlay:ANALysis:JFrequency:TITLe <title>

Parameter <title> = <STRING PROGRAM DATA>

"Title characters" Title characters (up to 15 characters)

Function Sets a title for the Analyze:Jitter/Freq. screen.

Restriction Invalid when,

- :DISPlay:TMENu[:NAME] is other than <"JFrequency">.
- The MP0130A is not installed.

Example use To set "TITLE-DISP" as the title of jitter frequency measurement.

```
> :DISPlay:ANALysis:JFrequency:TITLe "TITLE-DISP"
```

:DISPlay:ANALysis:JFrequency:TITLe?

Response <title> = <STRING RESPONSE DATA>

Function Queries the title for the Analyze:Jitter/Freq. screen.

Example use > :DISPlay:ANALysis:JFrequency:TITLe?

```
< "TITLE-DISP      "
```

:DISPlay:ANALysis:JFrequency:PPMScale <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>

10, 20, 30, 40, 50, 60, 70, 80, 90, 100
(unit : dB, characters without "'')

Function Sets the horizontal axis scale of Jitter/Freq. data.

Restriction Invalid when,

:DISPlay:TMENu[:NAME] is other than <"JFrequency">.

Example use To set the maximum value of the horizontal axis scale of the Jitter /Freq. data to 80.

```
> :DISPlay:ANALysis:JFrequency:PPMScale 80
```

:DISPlay:ANALysis:JFRequency:PPMScaLe?

Response <numeric> = <CHARACTER RESPONSE DATA>
 :DISPlay:ANALysis:JFRequency:PPMScaLe .

Function Queries the maximum value of the horizontal scale of the Jitter/Freq. data.

Example use > :DISPlay:ANALysis:JFRequency:PPMScaLe?
 < 80

:DISPlay:ANALysis:FGRaph:SCRoll <scroll>

Parameter <scroll> = <CHARACTER PROGRAM DATA>

LEFT	Scroll leftward
RIGHT	Scroll rightward
TOP	Move to the top
BOPPom	Move to the bottom

Function Scrolls the frequency monitoring (graph) screen.

Restriction Invalid when,

- No analyze data exists.

Example use Scrolls rightward

> :DISPlay:ANALysis:FGRaph:SCRoll RIGHT

:DISPlay:ANALysis:FGRaph:MARKer <marker>

Parameter <marker> = <CHARACTER PROGRAM DATA>

LEFT	Move leftward by 1 div.
RIGHT	Move rightward by 1 div.

Function Moves the marker on the frequency monitoring (graph) screen.

Restriction Invalid when,

- No analyze data exists.

Example use Moves the marker rightward by 1 div.

> :DISPlay:ANALysis:FGRaph:MARKer RIGHT

:DISPlay:ANALysis:FGRaph:DATA ?

Response <time> = <year>, <month>, <day>, <hour>, <minute>,[<second>]

<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
<freq> = <STRING RESPONSE DATA>
    Frequency value
    From10
<ppm> = <STRNG RESPONSE DATA>
    ppm value
    From11
    
```

Function Queries the data indicated by marker on the frequency monitoring (graph) screen.

Example use > :DISPlay:ANALysis:FGRaph:DATA ?
 < 2000,1,1,11,30,0," 120000.9","-1000.0"
 * When no analyze data exists
 < "No data"
 When marker is OFF:
 < 0,0,0,0,0,0,"-----","-----"

:DISPlay:ANALysis:FGRaph:INTerval <numeric>,<suffix>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
 1,15,60
 <suffix> = <CHARACTER PROGRAM DATA>
 M minute

Function Sets the interval of the graph on the frequency monitoring (graph) screen.

Restriction Invalid when,
 • :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">,
 <"MANual[:JON]">.

Example use To set the width of one scale at 1 minute:
 > :DISPlay:ANALysis:FGRaph:INTerval 1,M

:DISPlay:ANALysis:FGRaph:INTerval ?

Response <numeric> = <CHARACTER RESPONSE DATA>
 1,15,60
 <suffix> = <CHARACTER RESPONSE DATA>
 M minute

Function	Queries the width of one scale on the time axis 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 to display a marker on the frequency monitoring (graph) screen.
Restriction	Invalid when, • No analyze data exists.
Example use	To set the marker display to "ON" > :DISPlay:ANALysis:FGRaph:MDISplay ON

:DISPlay:ANALysis:FGRaph:MDISplay ?

Response	<NR1 NUMERIC RESPONSE DATA> 0 or 1
Function	Queries the marker display status for the frequency monitoring (graph) screen.
Example use	> :DISPlay:ANALysis:FGRaph:MDISplay ? < 1

:DISPlay:ANALysis:FGRaph:FROM <time>

Parameter	<time> = <year>, <month>, <day>, <hour>, <minute>[,<second>] <year> = <DECIMAL NUMERIC PROGRAM DATA> 0,1994 to 2093 <month> = <DECIMAL NUMERIC PROGRAM DATA> 0,1 to 12 <day> = <DECIMAL NUMERIC PROGRAM DATA> 0,1 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 display starting point of the graph on the frequency monitoring (g

raph) screen.

Restriction Invalid when,

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

Example use When displaying from 11:30, January 1, 2000

```
> :DISPlay:ANALysis:FGRaph:FROM 2000,1,1,11,30
```

:DISPlay:ANALysis:FGRaph:FROM ?

Response <time> = <NR1 NUMERIC RESPONSE DATA>

<time> = <year>, <month>, <day>, <hour>, <minute>, <second>

Function Queries the display starting point of the graph on the frequency monitoring (graph) screen.

Example use > :DISPlay:ANALysis:FGRaph:FROM ?

```
< 1994,1,1,11,30,0
```

:DISPlay:ANALysis:FGRaph:PRINt <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

DISPlay	Display
ALL	All
AFTer	After
BEFore	Before

Function Sets the printing range on the frequency monitoring (graph) screen.

Example use To set the currently-displayed screen as the printing range.

```
> :DISPlay:ANALysis:FGRaph:PRINt DISPlay
```

:DISPlay:ANALysis:FGRaph:PRINt ?

Response <type> = <CHARACTER RESPONSE DATA>

Function Queries the printing range on the frequency monitoring (graph) screen.

Example use > :DISPlay:ANALysis:FGRaph:PRINt ?

```
< DISP
```

:DISPlay:ANALysis:FGRaph:TITLe <title>

Parameter <title> = <STRING PROGRAM DATA>

"Title characters" Title characters (up to 15 characters)

The length of the character string must be 0 to 15 characters; "" is possible.

Function Sets the title on the frequency monitoring (graph) screen.

Restriction Invalid when,

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

Example use To set "TITLE-DISP" as the title of the frequency monitoring (graph).
> :DISPlay:ANALysis:FGRaph:TITLe "TITLE-DISP"

:DISPlay:ANALysis:FGRaph:TITLe ?

Response <title> = <STRING RESPONSE DATA>
Function Queries the title for the frequency monitoring (graph) screen.
Example use > :DISPlay:ANALysis:FGRaph:TITLe ?
< "TITLE-DISP"

:DISPlay:ANALysis:FGRaph:SCALE <scale>

Parameter <scale> = <DECIMAL NUMERIC PROGRAM DATA>
10 10ppm
100 100ppm
1000 1000ppm
Function Sets a graph vertical axis scale for the frequency monitoring (graph) screen.
Restriction Invalid when,
• :DISPlay:TMENu[:NAME] is other than <"MANual[:JOFF]">, <"MANual[:JON]">.
Example use To set the graph vertical axis of the frequency monitoring (graph) to 10.
> :DISPlay:ANALysis:FGRaph:SCALE 10

:DISPlay:ANALysis:FGRaph:SCALE ?

Response <scale> = <NR1 NUMERIC RESPONSE DATA>
Function Queries the vertical axis scale for the frequency monitoring (graph) screen.
Example use > :DISPlay:ANALysis:FGRaph:SCALE ?
< 10

:DISPlay:ANALysis:WANDer:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Marker Off:
ON or 1 Marker On
Function Sets whether to display a marker on the Analyze:Wander screen.
Restriction Invalid when,
• No analyze data exists.
Example use To set to display the marker for wander measurement:

> :DISPlay:ANALysis:WANDer:MDISplay ON

:DISPlay:ANALysis:WANDer:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
 0 Marker Off.
 1 Marker On

Function Queries the marker display status for the Analyze:Wander screen.

Example use > :DISPlay:ANALysis:WANDer:MDISplay?
 < 1

:DISPlay:ANALysis:WANDer:SEARCh <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 BEFore Before search
 NEXT Next search

Function Instructs a marker search type for the Analyze:Wander screen.

Restriction Invalid when,
 • :DISPlay:ANALysis:WANDer:MDISplay is <OFF>.

Example use To instruct Before search:
 > :DISPlay:ANALysis:WANDer:SEARCh BEFore

:DISPlay:ANALysis:WANDer:STYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 LOG Log
 LINear Linear

Function Sets the vertical scale type for the Analyze:Wander screen.

Restriction Invalid when,
 • DISPlay:TMENu[:NAME] is other than <"WANDer">.

Example use To set the vertical scale type for tha Wander screen to Log.
 > :DISPlay:ANALysis:WANDer:STYPe LOG

:DISPlay:ANALysis:WANDer:STYPe?

Response <type> = <CHARACTER PROGRAM DATA>

Function Queries the vertical axis scale type of Analyze:Wander screen.

Example use >:DISPlay:ANALysis:WANDer:STYPe?

:DISPlay:ANALysis:WANDer:DATA?

Response <time1>, <time2>

	<time1> = <NR1 NUMERIC RESPONSE DATA> Form8 τ (s)
	<time2> = <NR2 NUMERIC RESPONSE DATA> Form7 (ns)
Function	Queries the data indicated by the marker on the Analyze:Wander screen.
Example use	> :DISPlay:ANALysis:WANDer:DATA? < 10,3.0 * When no analyze data exists or marker is set to Off: < 0,0.0,HZ,"-----"

:DISPlay:ANALysis:WANDer:LOG:SCALE <scale>

Parameter	<scale> = <CHARACTER PROGRAM DATA> 1E12 (unit : ns) 1E9 1E6 1E3
Function	Sets the maximum value of vertical axis scale when the Wander data is displayed in Log type.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:WANDer:STYPe is <LINEar>. • :DISPlay:TMENu[:NAME] is other than <"WANDer">. • The MU150011A is not installed; and <1E12> is set.
Example use	To set the maximum value of graph vertical axis scale to 1E6. > :DISPlay:ANALysis:WANDer:LOG:SCALE 1E6

:DISPlay:ANALysis:WANDer:LOG:SCALE?

Response	<scale> = <CHARACTER RESPONSE DATA>
Function	Queries the maximum value of vertical axis scale when the Wander data is displayed in Log type.
Example use	> :DISPlay:ANALysis:WANDer:LOG:SCALE? < 1E6

:DISPlay:ANALysis:WANDer:LINEar:SCALE <scale>

Parameter	<scale> = <CHARACTER PROGRAM DATA> 1E12 (unit : ns) 1E9
-----------	--

	1E6
	1E3
	100
Function	Sets the maximum value of vertical axis scale when the Wander data is displayed in Linear type.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:WANDer:STYPe is <LOG>. • :DISPlay:TMENu[:NAME] is other than <"WANDer">. • The MU150011A is not installed; and <1E12> is set.
Example use	To set the maximum value of graph vertical axis scale to 1E6. > :DISPlay:ANALysis:WANDer:LINEar:SCALE 1E6

:DISPlay:ANALysis:WANDer:LINEar:SCALE?

Response	<scale> = <CHARACTER RESPONSE DATA>
Function	Queries the maximum value of graph vertical axis scale of vertical axis scale when the Wander data is displayed in Linear type.
Example use	> :DISPlay:ANALysis:WANDer:LINEar:SCALE? < 1E6

:DISPlay:ANALysis:WANDer:MEAStime <scale>

Parameter	<scale> = <CHARACTER PROGRAM DATA>
	120000
	12000
	1200
	120
	12
	USER
Function	Sets the maximum value of horizontal axis scale when the Wander data is displayed in Linear type.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:WANDer:STYPe is <LOG>. • The MU150011A is not installed; and , <120000> or <USER> is set.
Example use	To set the maximum value of graph horizontal axis scale in Linear type to 1200. > :DISPlay:ANALysis:WANDer:MEAStime 1200

:DISPlay:ANALysis:WANDer:MEAStime?

Response	<scale> = <CHARACTER RESPONSE DATA>
----------	-------------------------------------

Function	Queries the maximum value of graph horizontal axis scale of horizontal axis scale when the Wander data is displayed in Linear type.
Example use	> :DISPlay:ANALysis:WANDer:MEAStime? < 1200

:DISPlay:ANALysis:WANDer:USER <scale>

Parameter	<scale> = <DECIMAL NUMERIC PROGRAM DATA> 12 to 120000 * fractions are dropped as follows. 1280 -> 1200 12006 -> 12000
Function	Sets the maximum value of graph horizontal axis scale of horizontal axis scale when the Wander data is displayed in Linear scale.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:WANDer:STYPe is <LOG>. • The MU150011A is not installed. • :DISPlay:ANALysis:WANDer:MEAStime is other than <USER>.
Example use	Sets the maximum value of graph horizontal axis scale of horizontal axis scale to 1200. >:DISPlay:ANALysis:WANDer:USER 12000

:DISPlay:ANALysis:WANDer:TITLe <title>

Parameter	<title> = <STRING PROGRAM DATA> "Title characters" Title characters (up to 15 characters)
Function	Sets a title for the Analyze:Wander screen.
Restriction	Invalid when, :DISPlay:TMENu[:NAME] is other than <"WANDer">.
Example use	To set "TITLE-DISP" as the title of wander measurement: > :DISPlay:ANALysis:WANDer:TITLe "TITLE-DISP"

:DISPlay:ANALysis:WANDer:TITLe?

Response	<title> = <STRING RESPONSE DATA>
Function	Queries the title for the Analyze:Wander screen.
Example use	> :DISPlay:ANALysis:WANDer:TITLe? < "TITLE-DISP "

:DISPlay:ANALysis:WSWeep:MDISplay <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Marker Off ON or 1 Marker On
Function	Sets whether to display a marker on the Analyze:Wander.sweep screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :DISPlay:TMENu[:NAME] is other than <"WSweep">. • No measurement data exists.
Example use	To display the marker on the Wander.sweep screen. > :DISPlay:ANALysis:WSweep:MDISplay ON

:DISPlay:ANALysis:WSweep:MDISplay?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA> 0 Marker Off 1 Marker On
Function	Queries the marker display state on the Analyze:Wander.sweep screen.
Example use	> :DISPlay:ANALysis:WSweep:MDISplay? < 1

:DISPlay:ANALysis:WSweep:SEARch <type>

Parameter	<type> = <CHARACTER PROGRAM DATA> BEFore Before search (when <- is pressed.) NEXT Next search (when -> is pressed.)
Function	Sets a direction to shift a marker on the Analyze:Wander.sweep screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :DISPlay:TMENu[:NAME] is other than <"WSweep">. • No measurement data exists.
Example use	To shift the marker to the left side of the graph. > :DISPlay:ANALysis:WSweep:SEARch BEFore

:DISPlay:ANALysis:WSweep:DATA?

Response	<point>, <freq1>, <freq2>, <margin>, <amp1>, <result> <point> = <NR1 NUMERIC RESPONSE DATA> 1 to 20 measurement point <freq1> = <NR2 NUMERIC RESPONSE DATA> 1.0 to 990.0 modulation frequency (numeral)
----------	---

<freq2> = <CHARACTER RESPONSE DATA>
 μ HZ,mHZ,HZ modulation frequency (unit)

<margin> = <NR1 NUMERIC RESPONSE DATA>
 0 to 100 (value for five)

<amp1> = <STRING RESPONSE DATA>
 Form6 Wandersweep measurement result (UIp-p)(value for five)

<result> = <STRING RESPONSE DATA>
 Form4 Wandersweep measurement result (value for five)
 “ Acceptable”
 “Unacceptable”

* When no Wandersweep data exist or marker is OFF, the following contents are output.

0,0.0,Hz,0,0,0,0,0, each "-----", "-----"

Function Queries the data indicated by marker on the Analyze:Wander.sweep screen.

Example use > :DISPlay:ANALysis:WSWeep:DATA?
 < 15,100,HZ,0,10,20,50,100," -15.00"," -14.00"," -13.00"," -12.00",
 " -15.00"," Acceptable"," Acceptable"," Acceptable"," Acceptable",
 " Acceptable"

:DISPlay:ANALysis:WSWeep:STYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 UIPP UIp-p display
 NS ns display

Function Set the the graph vertical axis scale of theAnalyze:Wander sweep screen.

Restriction Invalid when,
 • The MU150011A is not installed.
 • :DISPlay:TMENu[:NAME] is other than <"WSWeep">.

Example use Set the scale to ns.
 > :DISPlay:ANALysis:WSWeep:STYPe NS

:DISPlay:ANALysis:WSWeep:STYPe?

Response <type> = <CHARACTER RESPONSE DATA>
 UIPP UIp-p display
 NS ns display

Function Queries the the graph vertical axis scale of theAnalyze:Wander sweep screen.

Example use > :DISPlay:ANALysis:WSWeep:STYPe?
 < NS

:DISPlay:ANALysis:WSWeep:SCALe <numeric>

Parameter	<numeric> = <CHARACTER PROGRAM DATA> 1E11 1E10 1E9 1E8 1E7 1E6 1E5 1E4 1E3 1E2 1E1 1E0
Function	Sets the maximum value of graph vertical axis scale (UIp-p, ns) on the Analyze:Freq.sweep screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :DISPlay:TMENu[:NAME] is other than <"WSWeep">.
Example use	To set vertical axis scale unit to 1E4. > :DISPlay:ANALysis:WSWeep:SCALe 1E4

:DISPlay:ANALysis:WSWeep:SCALe?

Response	<numeric> = <CHARACTER RESPONSE DATA> Same as :DISPlay:ANALysis:WSWeep:SCALe.
Function	Queries the graph vertical axis scale value (upper stage) on the Analyze:Wander.sweep screen.
Example use	> :DISPlay:ANALysis:WSWeep:SCALe? < 1E4

:DISPlay:ANALysis:WSWeep:SCALe2 <numeric>

Parameter	<numeric> = <CHARACTER PROGRAM DATA> 1E10 1E9 1E8 1E7 1E6 1E5 1E4 1E3
-----------	---

	1E2
	1E1
	1E0
	1E-1
Function	Sets the minimum value of graph vertical axis scale (lower stage) on the Analyze:Wander.sweep screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150011A is not installed. • :DISPlay:TMENu[:NAME] is other than <"WSweep">.
Example use	To set the graph vertical axis scale value (lower stage) to IE3. > :DISPlay:ANALysis:WSweep:SCALe2 1E3

:DISPlay:ANALysis:WSweep:SCALe2?

Response	<numeric> = <CHARACTER RESPONSE DATA> Same as :DISPlay:ANALysis:WSweep:SCALe2.
Function	Queries the graph vertical axis scale value (lower stage) on the Analyze:Wander.sweep screen.
Example use	> :DISPlay:ANALysis:WSweep:SCALe2? < 1E-1

:DISPlay:ANALysis:WSweep:TITLe <title>

Parameter	<title> = <STRING PROGRAM DATA> "Title characters" Title characters (up to 15 characters) The length of the characters is 0 to 15, and " can be inputted. When the length is less than 15 characters, "_" (space) is added.
Function	Sets a title on the Analyze:Wander.sweep screen.
Example use	To display "TITLE-DISP" in Wander.sweep measurement title. > :DISPlay:ANALysis:WSweep:TITLe "TITLE-DISP"

:DISPlay:ANALysis:WSweep:TITLe?

Response	<title> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:WSweep:TITLe.
Function	Queries the title of Analyze:Wander.sweep screen.
Example use	> :DISPlay:ANALysis:WSweep:TITLe? < "TITLE-DISP "

:DISPlay:ANALysis:WSweep:MARGin <number>,<boolean>

Parameter	<number> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 5 <boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Display Off ON or 1 Display On
Function	Operates Margin display buttons (1) to (5) in the Marker display on the Analyze:Wander.sweep screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150005A, MU150006A, or MU150007A is not installed. • :DISPlay:TMENu[:NAME] is other than <"WSWeep">. • No measurement data exists.
Example use	To set Margin (1) to ON in the Marker display of Wander.sweep measurement. > :DISPlay:ANALysis:WSWeep:MARGin 1,ON

:DISPlay:ANALysis:WSWeep:MARGin? <number>

Parameter	<number> = <DECIMAL NUMERIC PROGRAM DATA> 1 to 5
Response	<boolean> = <NR1 NUMERIC RESPONSE DATA> 0 Display Off 1 Display On
Function	Queries the statues of Margin display buttons (1) to (5) in the Marker display on the Analyze:Wander.sweep screen.
Example use	> :DISPlay:ANALysis:WSWeep:MARGin? 1 < 1

:DISPlay:ANALysis:PEAK:SCRoll <scroll>

Parameter	<scroll> = <CHARACTER PROGRAM DATA> LEFT Scroll leftward RIGHT Scroll rightward TOP Move to the top BOTTom Move to the bottom
Function	Scrolls the Analyze:Peak jitter screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150005A, MU150006A, or MU150007A is not installed. • :DISPlay:TMENu[:NAME] is other than <"MAN?>, <"MAN:JOFF?>, or <"MAN:JON?>. • The on the Analyze screen is set to other than Peak jitter.

- The Analyze one-division screen is not selected (two- or three division screen is selected).
 - No measurement data exists.
- Example use To scroll rightward
- ```
> :DISPlay:ANALysis:PEAK:SCRoll RIGHt
```

### **:DISPlay:ANALysis:PEAK:MARKer <marker>**

- Parameter <marker> = <CHARACTER PROGRAM DATA>
- |      |                |
|------|----------------|
| LEFT | Move leftward  |
| RIGH | Move rightward |
- Function Sets a marker display state on the Analyze:Peak jitter screen.
- Restriction Invalid when,
- The MU150005A, MU150006A, or MU150007A is not installed.
  - :DISPlay:TMENu[:NAME] is other than <"MAN">, <"MAN:JOFF">, or <"MAN:JON">.
  - The on the Analyze screen is set to other than Peak jitter.
  - The Analyze one-division screen is not selected (two- or three division screen is selected).
  - No measurement data exists.
- Example use To move rightward
- ```
> :DISPlay:ANALysis:PEAK:MARKer RIGHt
```

:DISPlay:ANALysis:PEAK:DATA?

- Response <time>, <alarm1s>, <alarm1c>, <alarm2s>, <alarm2c>, <alarm3s>, <alarm3c>, <alarm4s>, <alarm4c>, <alarm5s>, <alarm5c>, <Uipp>, <Ui+p>, <Uirms>
- <time> = <year>, <month>, <day>, <hour>, <minute>, <second>
- Time indicated by the 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>

<Uirms> = <STRING RESPONSE DATA>
 Jitter value indicated by marker (Uirms)
 Form 1 or Form 2 (depending on the display scale)

* When no Peak jitter analyze data exists or marker is OFF, the following contents are output.

```
< 0,0,0,0,0,0,"-----","-----","-----","-----","-----",
"-----","-----","-----","-----","-----"

```

- When Alarm is other than <"SVP AIS">, <"SVPRDI">, <"SVPLOC">, <"EVPAIS">, <"EVPRDI">, <"EVPLOC">, <"SVCAIS">, <"SVCRDI">, <"SVCLOC">, <"EVCAIS">, <"EVCARDI">, and <"EVCLOC">, "-----" is output to alarm(1 to 5) count.

```
< 1994,12,25,12,54,30,"      1","-----","      0","-----",
"      104","-----","      1","-----","      1","-----",
"      189",

```

Function Queries the data indicated by marker on the Analyze:Peak jitter screen.

Example use > :DISPlay:ANALysis:PEAK:DATA?

```
< 1994,12,25,12,54,30,"      1","      1","      0","      0",
"      104","      10","      1","      1","      1",
"      189",

```

:DISPlay:ANALysis:PEAK:INTerval <numeric>,<suffix>

Parameter <numeric> = <CHARACTER PROGRAM DATA>
 1, 15, 60

<suffix> = <CHARACTER PROGRAM DATA>
 M minute
 S s

Function Sets an interval of the time axis on the Analyze:Peak jitter screen.

Restriction Invalid when,

- The MU150005A, MU150006A, or MU150007A is not installed.
- :DISPlay:TMENu[:NAME] is other than <"MAN">, <"MAN:JOFF">, or <"MAN:JON">.
- The on the Analyze screen is set to other than Peak jitter.
- The Analyze one-division screen is not selected (two- or three division screen is selected).
- No measurement data exists.
- The value other than the followings, according to the Graph resolution set on the System screen.

Graph resolution	Analyze graph interval
1s	1s, 1min, 15min, 60min
1min	1min, 15min, 60min
15min	15min, 60min
60min	60min

Example use To set the width for one scale at 1 minute:

> :DISPlay:ANALysis:PEAK:INTerval 1,M

:DISPlay:ANALysis:PEAK:INTerval?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>
 Same as :DISPlay:ANALysis:PEAK:INTerval .
 <suffix> = <CHARACTER RESPONSE DATA>
 Same as :DISPlay:ANALysis:PEAK:INTerval .

Function Queries the width of one scale on the time axis on the Analyze:Peak jitter screen.

Example use > :DISPlay:ANALysis:PEAK:INTerval?
 < 1,M

:DISPlay:ANALysis:PEAK:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
 OFF or 0 Marker Off
 ON or 1 Marker On

Function Sets a marker display state on the Analyze:Peak jitter screen.

Restriction Invalid when,

- The MU150005A, MU150006A, or MU150007A is not installed.
- :DISPlay:TMENu[:NAME] is other than <"MAN">, <"MAN:JOFF">, or <"MAN:JON">.
- The on the Analyze screen is set to other than Peak jitter.
- The Analyze one-division screen is not selected (two- or three division screen is selected).
- No measurement data exists.

Example use To display the marker.
 > :DISPlay:ANALysis:PEAK:MDISplay ON

:DISPlay:ANALysis:PEAK:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
 0 Marker Off
 1 Marker On

Function Queries the marker display state on the Analyze:Peak jitter screen.

Example use > :DISPlay:ANALysis:PEAK:MDISplay?
 < 1

:DISPlay:ANALysis:PEAK:SEARch <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

	BEFore	Before search (when <- is pressed.)
	NEXt	Next search (when -> is pressed.)
Function	Sets a direction to shift a marker on the Analyze:Peak jitter screen.	
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150005A, MU150006A, or MU150007A is not installed. • :DISPlay:TMENu[:NAME] is other than <"MAN">, <"MAN:JOFF">, or <"MAN:JON">. • The on the Analyze screen is set to other than Peak jitter. • The Analyze one-division screen is not selected (two- or three division screen is selected). • No measurement data exists. 	
Example use	To shift the marker to the left side of the graph. > :DISPlay:ANALysis:PEAK:SEARCh BEFore	

:DISPlay:ANALysis:PEAK: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 parameter-specified time does not exists, the closest time after the s pecified one is set. If the specified time is before the measurement star t time, the measurement start time is set. If the specified time is after the logging end time, the logging end time is set.The default of <nume ric6> is 0.	
Function	Sets a display starting point of the Peak jitter measurement result graph.	
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150005A, MU150006A, or MU150007A is not installed. • :DISPlay:TMENu[:NAME] is other than <"MAN">, <"MAN:JOFF">, or <"MAN:JON">. • The on the Analyze screen is set to other than Peak jitter. • The Analyze one-division screen is not selected (two- or three division screen is selected). 	
Example use	When displaying from 11:30:40, July 28, 2000.	

> :DISPlay:ANALysis:PEAK:FROM 2000,7,28,11,30,40

:DISPlay:ANALysis:PEAK:FROM?

Response <numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, <numeric6>=
 <NR1 NUMERIC RESPONSE DATA>
 Same as :DISPlay:ANALysis:PEAK:FROM .
 * When no Peak jitter analyze data exists, the following contents are output.
 < -,-,-,-,->

Function Queries the display starting point of the Peak jitter graph.

Example use > :DISPlay:ANALysis:PEAK:FROM?
 < 2000,7,28,11,30,40

:DISPlay:ANALysis:PEAK:ALARm1 <alarm>

Parameter	<alarm> = <STRING PROGRAM DATA>	
	"ALL"	ALL
	"POWer"	Power fail
	"LOS"	LOS
	"LOF"	LOF
	"OOF"	OOF
	"AIS:MS"	MS-AIS
	"RDI:MS"	MS-RDI
	"AIS:AU"	AU-AIS
	"LOP:AU"	AU-LOP
	"RDI:HP"	HP-RDI
	"SLM:HP"	HP-SLM
	"AIS:TU"	TU-AIS
	"LOP:TU"	TU-LOP
	"RDI:LP"	LP-RDI
	"SLM:LP"	LP-SLM
	"RFI:LP"	LP-RFI
	"LOM:TU"	TU-LOM
	"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
“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: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
"LCD"	Lost of cell sync
"PATtern"	Sync. loss
"JUNLock"	Jitter Unlock

Function	Sets an Alarm item to be displayed to Alarm 1 for graph display on the Analyze:Peak jitter screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • The MU150005A, MU150006A, or MU150007A is not installed. • :DISPlay:TMENu[:NAME] is other than <"MAN">, <"MAN:JOFF">, <"MAN:JON">.
Example use	To display Power fail on Alarm 1. > :DISPlay:ANALysis:PEAK:ALARm1 "POWer"

:DISPlay:ANALysis:PEAK:ALARm1?

Response	<alarm> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:PEAK:ALARm1 .
Function	Queries Alarm item to be displayed to Alarm 1 for graph display on the Analyze:Peak jitter screen.
Example use	> :DISPlay:ANALysis:PEAK:ALARm1? < "POW"

:DISPlay:ANALysis:PEAK:ALARm2 <alarm>

Parameter	<alarm> = <STRING PROGRAM DATA> Same as :DISPlay:ANALysis:PEAK:ALARm1 .
Function	Sets Alarm 2 for graph display on the Analyze:Peak jitter screen.
Example use	To display Power fail on Alarm 2. > :DISPlay:ANALysis:PEAK:ALARm2 "POWer"

:DISPlay:ANALysis:PEAK:ALARm2?

Response	<alarm> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:PEAK:ALARm1 .
Function	Queries Alarm 2 for graph display on the Analyze:Peak jitter screen.
Example use	> :DISPlay:ANALysis:PEAK:ALARm2? < "JUNLock"

:DISPlay:ANALysis:PEAK:ALARm3 <alarm>

Parameter	<alarm> = <STRING PROGRAM DATA> Same as :DISPlay:ANALysis:PEAK:ALARm1 .
Function	Sets Alarm 3 for graph display on the Analyze:Peak jitter screen.
Example use	To display Power fail on Alarm 3. > :DISPlay:ANALysis:PEAK:ALARm3 "POWer"

:DISPlay:ANALysis:PEAK:ALARm3?

Response	<alarm> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:PEAK:ALARm1 .
Function	Queries Alarm 3 for graph display on the Analyze:Peak jitter screen.
Example use	> :DISPlay:ANALysis:PEAK:ALARm3? < "JUNLock"

:DISPlay:ANALysis:PEAK:ALARm4 <alarm>

Parameter	<alarm> = <STRING PROGRAM DATA> :DISPlay:ANALysis:PEAK:ALARm1 .
Function	Sets Alarm 4 for graph display on the Analyze:Peak jitter screen.
Example use	To display Power fail on Alarm 4. > :DISPlay:ANALysis:PEAK:ALARm4 "POWer"

:DISPlay:ANALysis:PEAK:ALARm4?

Response	<alarm> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:PEAK:ALARm1 .
Function	Queries Alarm 4 for graph display on the Analyze:Peak jitter screen.
Example use	> :DISPlay:ANALysis:PEAK:ALARm4? < "JUNLock"

:DISPlay:ANALysis:PEAK:ALARm5 <alarm>

Parameter	<alarm> = <STRING PROGRAM DATA> Same as :DISPlay:ANALysis:PEAK:ALARm1 .
Function	Sets Alarm 5 for graph display on the Analyze:Peak jitter screen.
Example use	To display LOF on Alarm 5. > :DISPlay:ANALysis:PEAK:ALARm5 "LOF"

:DISPlay:ANALysis:PEAK:ALARm5?

Response	<alarm> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:PEAK:ALARm1 .
----------	---

Function Queries Alarm 5 for graph display on the Analyze:Peak jitter screen.
 Example use > :DISPlay:ANALysis:PEAK:ALARm5?
 < "JUNLock"

:DISPlay:ANALysis:PEAK:PRINt <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

DISPlay	Display
ALL	All
AFTer	After
BEFore	Before

Function Sets a printing range of the Analyze:Peak jitter measurement result.
 Restriction Invalid when,
 • The MU150005A, MU150006A, or MU150007A is not installed.
 Example use To set the currently-displayed screen as the printing range.
 > :DISPlay:ANALysis:PEAK:PRINt DISPlay

:DISPlay:ANALysis:PEAK:PRINt?

Response <type> = <CHARACTER RESPONSE DATA>

DISP	Display
ALL	All
AFT	After
BEF	Before

Function Queries the printing range of the Analyze:Peak jitter measurement result.
 Example use > :DISPlay:ANALysis:PEAK:PRINt?
 < DISP

:DISPlay:ANALysis:PEAK:TITLe <title>

Parameter <title> = <STRING PROGRAM DATA>

"Title characters" Title characters (up to 15 characters)
 The length of the characters is 0 to 15, and " " can be inputted.
 When the length is less than 15 characters, " " (space) is added.

Function Sets a title for the Peak jitter measurement result.
 Example use To display "TITLE-DISP" in Peak jitter graph title.
 > :DISPlay:ANALysis:PEAK:TITLe "TITLE-DISP"

:DISPlay:ANALysis:PEAK:TITLe?

Response <title> = <STRING RESPONSE DATA>

Function Same as :DISPlay:ANALysis:PEAK:TITLe .
 Queries the title of Peak jitter measurement result.
 Example use > :DISPlay:ANALysis:PEAK:TITLe?
 < "TITLE-DISP "

:DISPlay:ANALysis:PEAK:DTYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

UIPTp	UIp-p
UIPP	UI+p
UIMP	UI-p
UIRMs	UIrms

Function Sets a graph vertical axis display unit for Analyze:Peak jitter measurement result.
 Restriction Invalid when,

- The MU150005A, MU150006A, or MU150007A is not installed.
- :DISPlay:TMENu[:NAME] is other than <"MAN">, <"MAN:JOFF">, or <"MAN:JON">.
- The on the Analyze screen is set to other than Peak jitter.
- The Analyze one-division screen is not selected (two- or three division screen is selected).
- Range(Rx range) on receive side is other than 400UI or 800UI, and <UIRMs> is set.

Example use To set the display unit on the screen to UIp-p.
 > :DISPlay:ANALysis:PEAK:DTYPe UITPp

:DISPlay:ANALysis:PEAK:DTYPe?

Response <type> = <CHARACTER RESPONSE DATA>

UIPT	UIp-p
UIPP	UI+p
UIMP	UI-p
UIRM	UIrms

Function Queries the graph vertical axis display unit for Analyze:Peak jitter measurement result.
 Example use > :DISPlay:ANALysis:PEAK:DTYPe?
 < UIRM

:DISPlay:ANALysis:PEAK:SCALE <numeric>

Parameter <numeric> = <NON-DECIMAL NUMERIC PROGRAM DATA>

0.002 to 800.0 step : 0.02

- Function Sets a graph vertical axis scale value on the Analyze:Peak jitter screen.
- Restriction Invalid when,
- The MU150005A, MU150006A, or MU150007A is not installed.
 - :DISPlay:TMENu[:NAME] is other than <"MAN">, <"MAN:JOFF">, or <"MAN:JON">.
 - The on the Analyze screen is set to other than Peak jitter.
 - The Analyze one-division screen is not selected (two- or three division screen is selected).
 - The value other than settings shown in the table below are invalid, according to Range(Rx range) on receive side.

Rx Range	UIp-p	UI+p	UI-p	UIrms
2 UI	0.002 to 2.000/0.002	0.002 to 1.000/0.002	0.002 to 1.000/0.002	0.002 to 0.700/0.002
20 UI	0.02 to 20.00/0.02	0.02 to 10.00/0.02	0.02 to 10.00/0.02	0.02 to 7.00/0.02
400 UI	0.4 to 400.0/0.4	0.4 to 200.0/0.4	0.4 to 200.0/0.4	No setting
800 UI	1.0 to 800.0/1.0	1.0 to 400.0/1.0	1.0 to 400.0/1.0	No setting

Example use To set the scale to 0.02
 > :DISPlay:ANALysis:PEAK:SCALe 0.02

:DISPlay:ANALysis:PEAK:SCALE?

- Response <numeric> = <NON-DECIMAL NUMERIC RESPONSE DATA>
- Function Queries the the graph vertical axis scale value on the Analyze:Peak jitter screen.
- Example use > :DISPlay:ANALysis:PEAK:SCALe?
 < 20.0

:DISPlay:ANALysis:RECall:TYPE?

- Response <type> = <STRING RESPONSE DATA>
- "EAL" Error/Alarm measurement data
 - "JTOL" Jitter tolerance measurement data
 - "JTR" Jitter transfer measurement data
 - "JFR" Jitter/Freq. measurement data
 - "WAND" Wander measurement data
 - "FGR" Frequency measurement data
 - "JSW" Jitter sweep measurement data
 - "WSW" Wander sweep measurement data
 - "FSW" Freq. sweep measurement data
 - "PEAK" Peak jitter measurement data
- Function Queries the data type displayed on the Analyze:Recall screen.

* When no Recall data exists, the following contents are output.

```
< "No data"
Example use > :DISPlay:ANALysis:RECall:TYPE?
< "EAL"
```

:DISPlay:ANALysis:RECall:MARGin <number>,<boolean>

Parameter <number> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 5
<boolean> = <BOOLEAN PROGRAM DATA>
OFF or 0 Display Off
ON or 1 Display On

Function Operates Margin display buttons (1) to (5) in the Marker display on the Analyze:Recall screen.

Restriction Invalid when,
• No recall data exists.

Example use To set Margin (1) to ON in the Marker display on the Recall screen.
> :DISPlay:ANALysis:RECall:MARGin 1,ON

:DISPlay:ANALysis:RECall:MARGin? <number>

Parameter <number> = <DECIMAL NUMERIC PROGRAM DATA>
1 to 5
Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
0 Display Off
1 Display On

Function Queries the display statues of Margin (1) to (5) in the Marker display on the Analyze:Recall screen.

Example use > :DISPlay:ANALysis:RECall:MARGin? 1
< 1

:DISPlay:ANALysis:RECall:TGRaph:DATA?

Response <time>, <alarm1s>, <alarm1c>, <alarm2s>, <alarm2c>, <alarm3s>,
<alarm3c>, <alarm4s>, <alarm4c>, <alarm5s>, <alarm5c>, <error1>,
<error2>
Time indicated by the marker
<year> = <NR1 NUMERIC RESPONSE DATA>
Year 0, 1994 to 2093
<month> = <NR1 NUMERIC RESPONSE DATA>


```

"      189"," 3.3E-04"
* When no analyze data exists
< "No  data"
When Marker is Off
< 0,0,0,0,0,0,"-----","-----","-----","-----","-----",
"-----","-----","-----","-----","-----","-----",
"-----"
< 0,0.0,HZ,"-----"

```

:DISPlay:ANALysis:RECall:TGRaph:ERRor <error1>,<error2>

Parameter <error1> = <STRING PROGRAM DATA>
 <error2> = <CHARACTER PROGRAM DATA>
 Same as those of :DISPlay:ANALysis:TGRaph:ERRor <error1>, <error2>.

Function Sets the error item subject to graphic Error/Alarm display on Analyze:Recall screen.

Restriction Invalid when,

- :DISPlay:ANALysis:RECall:TYPE? is other than <"EAL">.
- The specified measurement result is not found
- <ER> is set at <"HIT"> setting.

Example use To display the error rate of bit errors:
 > :DISPlay:ANALysis:RECall:TGRaph:ERRor "BIT",ER

:DISPlay:ANALysis:RECall:TGRaph:ERRor?

Response <error1>, <error2>
 <error1> = <STRING RESPONSE DATA>
 <error2> = <CHARACTER RESPONSE DATA>
 Same as those of :DISPlay:ANALysis:TGRaph:ERRor?

Function Queries the error item subject to graphic Error/Alarm display on Analyze:Recall screen.

Example use > :DISPlay:ANALysis:RECall:TGRaph:ERRor?
 < "BIT",ER
 * When no analyze data exists
 < "No data"

:DISPlay:ANALysis:RECall:TGRaph:ALARm1 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>
 Same as those of :DISPlay:ANALysis:TGRaph:ALARm1.

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 the alarm item displayed to alarm1 of the Analyze:Recall screen.

Example use > :DISPlay:ANALysis:RECall:TGRaph:ALARm1?
 < "POW"
 * When no analyze data exists
 < "No data"

: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 those of :DISPlay:ANALysis:RECall:TGRaph:ALARm1..

:DISPlay:ANALysis:RECall:TGRaph:ALARm2?

Response <alarm> = <STRING RESPONSE DATA>

Same as those of :DISPlay:ANALysis:RECall:TGRaph:ALARm1?.

Function Queries the 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 those of :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 the alarm item displayed to alarm3 of the Analyze:Recall screen.

:DISPlay:ANALysis:RECall:TGRaph:ALARm4 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>

	:DISPlay:ANALysis:RECall:TGRaph:ALARm1.
Function	Sets an alarm item to be displayed to alarm4 of the Analyze:Recall screen.
Restriction	Same as those of :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 the 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	restriction :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 the alarm item displayed to alarm5 of the Analyze:Recall screen.

:DISPlay:ANALysis:RECall:TGRaph:TITLe?

Response	<title> = <STRING RESPONSE DATA>
Function	Queries the trace graph title for Analyze:Recall screen.
Example use	> :DISPlay:ANALysis:RECall:TGRaph:TITLe? < "TITLE-DISP " * When no analyze data exists < "No data"

:DISPlay:ANALysis:RECall:JTOLerance:MDISplay <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Marker Off: ON or 1 Marker On
Function	Sets whether to display a marker on the Analyze:Recall screen (jitter tolerance).
Restriction	Invalid when, • :DISPlay:ANALysis:RECall:TYPE? is other than <"JTOL">.
Example use	To set to display the marker for jitter tolerance measurement: > :DISPlay:ANALysis:RECall:JTOLerance:MDISplay 1

:DISPlay:ANALysis:RECall:JTOLerance:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
 0 Marker Off.
 1 Marker On

Function Queries the marker display status for the Analyze:Recall screen (jitter tolerance).

Example use > :DISPlay:ANALysis:RECall:JTOLerance:MDISplay?
 < 1
 * When no analyze data exists
 < "No data"

:DISPlay:ANALysis:RECall:JTOLerance:SEARch <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 BEFore Before search
 NEXT Next search

Function Instructs a marker search type for the Analyze:Recall screen (jitter tolerance).

Restriction Invalid when,
 • :DISPlay:ANALysis:RECall:TYPE? is other than <"JTOL">.
 • :DISPlay:ANALysis:RECall:JTOLerance:MDISplay is <OFF>.

Example use To instruct Before search for jitter tolerance measurement:
 > :DISPlay:ANALysis:RECall:JTOLerance:SEARch BEFore

:DISPlay:ANALysis:RECall:JTOLerance:DATA?

Response<point>, <freq1>, <freq2>, <amp1>
 <point> = <NR1 NUMERIC RESPONSE DATA>
 1 to 20 Measurement point
 <freq1> = <NR2 NUMERIC RESPONSE DATA>
 0.1 to 990.0 Modulation frequency (numeral)
 <freq2> = <CHARACTER RESPONSE DATA>
 HZ, KHZ, MHZ Modulation frequency (unit)
 <amp1> = <STRING RESPONSE DATA>
 Form5 Jitter tolerance measurement result (UI_{pp})

Function Queries the data indicated by marker on the Analyze:Recall screen (jitter tolerance).

Example use > :DISPlay:ANALysis:RECall:JTOLerance:DATA?
 < 15,100.0,HZ," 15.00"
 * When no analyze data exists

```
< "No data"
* When Marker is Off:
< 0,0.0,HZ,"-----"
```

:DISPlay:ANALysis:RECall:JTOLerance:SCALE <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>

100	100UIp-p
10	10UIp-p
1	1UIp-p

Function Sets a graph vertical axis scale for the Analyze:Recall screen (jitter tolerance).

Restriction Invalid when,

- :DISPlay:ANALysis:RECall:TYPE? is other than <"JTOL">.

Example use To set the graph vertical axis scale of Jitter tolerance measurement to 10 UIp-p:

```
> :DISPlay:ANALysis:RECall:JTOLerance:SCALE 10
```

:DISPlay:ANALysis:RECall:JTOLerance:SCALE?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>

Function Queries the graph vertical axis scale for the Analyze:Recall screen (jitter tolerance).

Example use > :DISPlay:ANALysis:RECall:JTOLerance:SCALE?

```
< 10
* When no analyze data exists
< "No data"
```

:DISPlay:ANALysis:RECall:JTOLerance:TITLe?

Response <title> = <STRING RESPONSE DATA>

Function Queries the title for the Analyze:Recall screen (jitter tolerance).

Example use > :DISPlay:ANALysis:RECall:JTOLerance:TITLe?

```
< "TITLE-DISP      "
* When no analyze data exists
< "No data"
```

:DISPlay:ANALysis:RECall:JTTransfer:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Marker Off:
ON or 1	Marker On

Function Sets whether to display a marker on the Analyze:Recall screen (jitter transfer).

Restriction Invalid when,

- :DISPlay:ANALysis:RECall:TYPE? is other than <"JTR">.

Example use To set to display the marker for jitter transfer measurement:

```
> :DISPlay:ANALysis:RECall:JTRansfer:MDISplay ON
```

:DISPlay:ANALysis:RECall:JTRansfer:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Marker Off:
1	Marker On

Function Queries the marker display status for the Analyze:Recall screen (jitter transfer).

Example use > :DISPlay:ANALysis:RECall:JTRansfer:MDISplay?

```
< 1
```

* When no analyze data exists

```
< "No data"
```

:DISPlay:ANALysis:RECall:JTRansfer:SEARch <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

BEFore	Before search
NEXt	Next search

Function Instructs a marker search type for the Analyze:Recall screen (jitter transfer).

Restriction Invalid when,

- :DISPlay:ANALysis:RECall:TYPE? is other than <"JTR">.
- :DISPlay:ANALysis:RECall:JTRansfer:MDISplay is <OFF>.

Example use To instruct Before search:

```
> :DISPlay:ANALysis:RECall:JTRansfer:SEARch BEFore
```

:DISPlay:ANALysis:RECall:JTRansfer:DATA?

Response <point>, <freq1>, <freq2>, <amp1>

```
<point> = <NR1 NUMERIC RESPONSE DATA>
```

1 to 20	measurement point
---------	-------------------

```
<freq1> = <NR2 NUMERIC RESPONSE DATA>
```

1.0 to 990.0	Modulation frequency (numeral)
--------------	--------------------------------

```
<freq2> = <CHARACTER RESPONSE DATA>
```

HZ, KHZ, MHZ	Modulation frequency (unit)
--------------	-----------------------------

```
<amp1> = <STRING RESPONSE DATA>
```

Form6	jitter tolerance measurement	measurement result (dB)
-------	------------------------------	-------------------------

Function	Queries the data indicated by marker on the Analyze:Recall screen (jitter transfer).
Example use	> :DISPlay:ANALysis:RECall:JTRansfer:DATA? < 15,100.0,HZ," -15.00" * When no analyze data exists < "No data" * When marker is Off. < 0,0.0,HZ,"-----"

:DISPlay:ANALysis:RECall:JTRansfer:SCALE <numeric>

Parameter	<numeric> = <CHARACTER PROGRAM DATA>
	20 20dB
	10 10dB
	1 1dB
Function	Sets a graph vertical axis scale for the Analyze:Recall screen (jitter transfer).
Restriction	Invalid when, • :DISPlay:ANALysis:RECall:TYPE? is other than <"JTR">.
Example use	To set the graph vertical axis scale of Jitter transfer measurement to 10 dB. > :DISPlay:ANALysis:RECall:JTRansfer:SCALE 10

:DISPlay:ANALysis:RECall:JTRansfer:SCALE?

Response	<numeric> = <NR1 NUMERIC RESPONSE DATA>
Function	Queries the graph vertical axis scale for the Analyze:Recall screen (jitter transfer).
Example use	> :DISPlay:ANALysis:RECall:JTRansfer:SCALE? < 10 * When no analyze data exists < "No data"

:DISPlay:ANALysis:RECall:JTRansfer:TITLE?

Response	<title> = <STRING RESPONSE DATA>
Function	Queries the title for the Analyze:Recall screen (jitter transfer).
Example use	> :DISPlay:ANALysis:RECall:JTRansfer:TITLE? < "TITLE-DISP " * When no analyze data exists < "No data"

:DISPlay:ANALysis:RECall:JSWeep:MDISplay <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA>
-----------	------------------------------------

	OFF or 0	Marker Off:
	ON or 1	Marker On
Function	Sets whether to display a marker on the Analyze:Recall screen (Jitter sweep).	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:TYPE? is other than <"JSW">. • A selftest is in progress.◦ • An auto setup is in progress.◦ 	
Example use	To set to display the marker for jitter sweep measurement. > :DISPlay:ANALysis:RECall:JSWeep:MDISplay 1	

:DISPlay:ANALysis:RECall:JSWeep:MDISplay?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA>	
	0	Marker Off:
	1	Marker On
	* When no Recall:Jitter sweep analyze data exists <"No data">	
Function	Queries the marker display status for the Analyze:Recall screen (Jitter sweep).	
Example use	> :DISPlay:ANALysis:RECall:JSWeep:MDISplay? < 1	

:DISPlay:ANALysis:RECall:JSWeep:SEARCh <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>	
	BEFore	Before search
	NEXT	Next search
Function	Sets whether to display a marker on the Analyze:Recall screen (Jitter sweep)	
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:TYPE? is other than <"JSW">. • :DISPlay:ANALysis:RECall:JSWeep:MDISplay is <OFF>. • When no measurement point exists forward, <BEFore> is set. • When no measurement point exists backward, <NEXT> is set. • A selftest is in progress.◦ • An auto setup is in progress.◦ 	
Example use	To instruct BEFore search of jitter tolerance measurement. > :DISPlay:ANALysis:RECall:JSWeep:SEARCh BEFore	

:DISPlay:ANALysis:RECall:JSWeep:DATA?

Response	<point>, <freq1>, <freq2>, <amp1>, <result>
----------	---

<point> = <NR1 NUMERIC RESPONSE DATA>
 1 to 20 measurement point

<freq1> = <NR2 NUMERIC RESPONSE DATA>
 0.1 to 990.0 Modulation frequency (numeral)

<freq2> = <CHARACTER RESPONSE DATA>
 HZ, KHZ, MHZ Modulation frequency (unit)

<amp1> = <NR2 NUMERIC RESPONSE DATA>
 0.000 to 808.000 Amplitude width (UI_{pp})

<result> = <STRING RESPONSE DATA>
 Form4 Jitter tolerance measurement result

* When no Recall:Jitter sweep analyze data exists

< "No data"

* When marker is Off

< 0,0.0,HZ,0.000,"-----"

Function Queries the data instructed by marker fro the Analyze:Recall screen (Jitter sweep).

Example use > :DISPlay:ANALysis:RECall:JSWeep:DATA?

< 15,100.0,HZ,15.000," Acceptable"

:DISPlay:ANALysis:RECall:JSWeep:SCALE <scale>

Parameter <scale> = <CHARACTER PROGRAM DATA>

1000	1000UIp-p
100	100UIp-p
10	10UIp-p
1	1UIp-p
0.1	0.1UIp-p
0.01	0.01UIp-p

Function Sets a graph vertical axis scale value (upper stage) on the Analyze:Recall (Jitter sweep) screen.

Example use To set the graph vertical axis scale of jitter tolerance measurement to 10.

> :DISPlay:ANALysis:RECall:JSWeep:SCALE 10

:DISPlay:ANALysis:RECall:JSWeep:SCALE?

Response <scale> = <CHARACTER RESPONSE DATA>

Function Queries the graph vertical axis scale (upper stage) on the Analyze:Recall (Jitter sweep) screen.

Example use > :DISPlay:ANALysis:RECall:JSWeep:SCALE?

< 10

:DISPlay:ANALysis:RECall:JSWeep:SCALe2 <scale>

Parameter	<scale> = <CHARACTER PROGRAM DATA>
	100 100UIp-p
	10 10UIp-p
	1 1UIp-p
	0.1 0.1UIp-p
	0.01 0.01UIp-p
	0.001 0.001UIp-p
Function	Sets a graph vertical axis scale value (lower stage) on the Analyze:Recall (Jitter sweep) screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed.
Example use	To set the graph vertical axis scale of jitter tolerance measurement to 10. > :DISPlay:ANALysis:RECall:JSWeep:SCALe2 10

:DISPlay:ANALysis:RECall:JSWeep:SCALe2?

Response	<scale> = <CHARACTER RESPONSE DATA> Same as :DISPlay:ANALysis:RECall:JSWeep:SCALe2 .
Function	Queries the graph vertical axis scale (lower stage) on the Analyze:Recall (Jitter.sweep) screen.
Example use	> :DISPlay:ANALysis:RECall:JSWeep:SCALe2? < 100

:DISPlay:ANALysis:RECall:JSWeep:TITLe?

Response	<title> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:JSWeep:TITLe. * When no Recall:Jitter sweep analyze data exists. < "No data"
Function	Queries the title for the Analyze:Recall screen (Jitter sweep).
Example use	> :DISPlay:ANALysis:RECall:JSWeep:TITLe? < "TITLE-DISP "

:DISPlay:ANALysis:RECall:FSWeep:TITLe?

Response	<title> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:RECall:FSWeep:TITLe.
----------	--

Function Queries the title on the Analyze:Recall(Freq. sweep) screen.
 Example use > :DISPlay:ANALysis:RECall:FSWeep:TITLe?
 < "TITLE-DAT "

:DISPlay:ANALysis:RECall:FSWeep:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
 OFF or 0 Marker Off
 ON or 1 Marker On

Function Sets a display state of the marker on the Analyze:Recall(Freq. sweep) screen.
 Restriction Invalid when,
 • The MU150011A is not installed.
 • No recall data exists.
 Example use To display the marker.
 > :DISPlay:ANALysis:RECall:FREQsweep:MDISplay ON

:DISPlay:ANALysis:RECall:FSWeep:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
 0 Marker Off
 1 Marker On

Function Queries the marker display state on the Analyze:Recall(Freq. sweep) screen.
 Example use > :DISPlay:ANALysis:RECall:FREQsweep:MDISplay?
 < 1

:DISPlay:ANALysis:RECall:FSWeep:SEARch <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 BEFore Before search (when <- is pressed.)
 NEXT Next search (when -> is pressed.)

Function Sets a direction to shift a marker on the Analyze:Recall(Freq. sweep) screen.
 Restriction Invalid when,
 • The MU150011A is not installed.
 • No recall data exists.
 Example use To shift the marker to the left side of the graph.
 > :DISPlay:ANALysis:RECall:FSWeep:SEARch BEFore

:DISPlay:ANALysis:RECall:FSWeep:DATA?

Response <ppm1>, <ppm2>, <amp1>
 <ppm1> = <NR2 NUMERIC RESPONSE DATEA>

-100 to 100 ppm value

<ppm2> = <STRING RESPONSE DATA>

Form6 measurement result (UIp-p)

Function Queries the data indicated by marker on the Analyze:Recall(Freq. sweep) screen.

Example use To query the data indicated by marker on the screen.

> :DISPlay:ANALysis:RECall:FSWeep:DATA

< 80,"80.8"

< 0,"----" ← * Output when no Freq. sweepdata exists or marker is OFF.

:DISPlay:ANALysis:RECall:FSWeep:SCALE <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>

100

10

1

Function Sets the maximum value of graph vertical axis scale (UIp-p) on the Analyze:Recall(Freq. sweep) screen.

Restriction Invalid when,

- The MU150011A is not installed.
- No recall data exists.

Example use To set the maximum value of graph vertical axis scale to 100.

> :DISPlay:ANALysis:RECall:FSWeep:SCALE 100

:DISPlay:ANALysis:RECall:FSWeep:SCALE?

Response <numeric> = <CHARACTER RESPONSE DATA>

Same as :DISPlay:ANALysis:RECall:FSWeep:SCALE.

Function Queries the maximum value of graph vertical axis scale on the Analyze:Recall(Freq. sweep) screen.

Example use > :DISPlay:ANALysis:RECall:FSWeep:SCALE?

< 100

:DISPlay:ANALysis:RECall:FSWeep:PPMScale <numeric>

Parameter <numeric> = <CHARATER PROGRAM DATA>

10,20,30,40,50,60,70,80,90,100

Function Sets the maximum value of graph horizontal axis scale (ppm) on the Analyze:Recall(Freq. sweep) screen.

Restriction Invalid when,

- The MU150011A is not installed.

- No recall data exists.

Example use To set the maximum value of graph horizontal axis scale of Freq. sweep data to 80.
> :DISPlay:ANALysis:RECall:FSWeep:PPMScale 80

:DISPlay:ANALysis:RECall:FSWeep:PPMScale?

Response <numeric> = <CHARACTER RESPONSE DATA>

Same as :DISPlay:ANALysis:RECall:FSWeep:PPMScale.

Function Queries the maximum value of graph horizontal axis scale (ppm) on the Analyze:Recall(Freq. sweep) screen.

Example use > :DISPlay:ANALysis:RECall:FSWeep:PPMScale?
< 80

:DISPlay:ANALysis:RECall:FSWeep:OMASk <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0 Display Off

ON or 1 Display On

Function Changes a offset mask display on the Analyze:Recall(Freq. sweep) screen.

Restriction Invalid when,

- The MU150011A is not installed.
- No recall data exists.

Example use To set the offset mask display of Freq. sweep measurement on the Analyze:Recall(Freq. sweep) screen to ON.
> :DISPlay:ANALysis:RECall:FSWeep:OMASk ON

:DISPlay:ANALysis:RECall:FSWeep:OMASk?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>

0 Display Off

1 Display On

Function Queries changing state of the offset mask display on the Analyze:Recall(Freq. sweep) screen.

Example use > :DISPlay:ANALysis:RECall:FSWeep:OMASk?
< 1

:DISPlay:ANALysis:RECall:JFRequency:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0 Marker Off:

ON or 1 Marker On

Function	Sets whether to display a marker on the Analyze:Jitter/Freq. screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:TYPE? is other than <"JFR">. • The MP0130A is not installed.
Example use	To set to display the marker for jitter frequency measurement: > :DISPlay:ANALysis:RECall:JFRrequency:MDISplay ON

:DISPlay:ANALysis:RECall:JFRrequency:MDISplay?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA> 0 Marker Off. 1 Marker On
Function	Queries the marker display status for the Analyze:Jitter/Freq. screen.
Example use	> :DISPlay:ANALysis:RECall:JFRrequency:MDISplay? < 1 * When no analyze data exists < "No data"

:DISPlay:ANALysis:RECall:JFRrequency:SEARCh <type>

Parameter	<type> = <CHARACTER PROGRAM DATA> BEFore Before search NEXT Next search
Function	Instructs a marker search type for the Analyze:Recall screen (Jitter/Freq.).
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:TYPE? is other than <"JFR">. • :DISPlay:ANALysis:RECall:JFRrequency:MDISplay is <OFF>. • The MP0130A is not installed.
Example use	To instruct Before search: > :DISPlay:ANALysis:RECall:JFRrequency:SEARCh BEFore

:DISPlay:ANALysis:RECall:JFRrequency:DATA?

Response	<brate>, <ppm>, <amp1> <brate> = <CHARACTER RESPONSE DATA> M2488 <ppm> = <NR1 NUMERIC RESPONSE DATA> -50 to +50: 1 steps <amp1> = <STRING RESPONSE DATA> Form5 Jitter toFreq. offset measurement result (UI _{p,p})
----------	---

Function Queries the data indicated by the marker for the Analyze:Recall screen (Jitter/Freq.).

Example use > :DISPlay:ANALysis:RECall:JFREquency:DATA?
 < M139,+30," 15.00"
 * When no analyze data exists
 < "No data"
 * When marker is Off.
 < 0,0.0,HZ,"-----"

:DISPlay:ANALysis:RECall:JFREquency:SCALE <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>

2.0	2.0UI _{pp}
1.0	1.0UI _{pp}
0.2	0.2UI _{pp}

Function Sets a graph vertical axis scale for the Analyze:Recall screen (Jitter/Freq.).

Restriction Invalid when,

- :DISPlay:ANALysis:RECall:TYPE? is other than <"JFR">.
- The MP0130A is not installed.

Example use To set the graph vertical axis scale of jitter frequency measurement to 2.0 UI_{p-p}:
 > :DISPlay:ANALysis:RECall:JFREquency:SCALE 2.0

:DISPlay:ANALysis:RECall:JFREquency:SCALE?

Response <numeric> = <NR2 NUMERIC RESPONSE DATA>

Function Queries the graph vertical axis scale for the Analyze:Recall screen (Jitter/Freq.).

Example use > :DISPlay:ANALysis:RECall:JFREquency:SCALE?
 < 2.0
 * When no analyze data exists
 < "No data"

:DISPlay:ANALysis:RECall:JFREquency:TITLE?

Response <title> = <STRING RESPONSE DATA>

Function Queries the title for the Analyze:Recall screen (Jitter/Freq.).

Example use > :DISPlay:ANALysis:RECall:JFREquency:TITLE?
 < "TITLE-DISP "
 * When no analyze data exists
 < "No data"

:DISPlay:ANALysis:RECall:FG Raph:SCRoll <scroll>

Section 4 Remote Control

Parameter	<scroll> = <CHARACTER PROGRAM DATA>
	LEFT Scroll leftward
	RIGHT Scroll rightward
	TOP Move to the top
	BOPPom Move to the bottom
Function	Scrolls the Analyze:Recall screen (frequency monitoring graph).
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:TYPE is other than <"FGR">.
Example use	Scroll rightward. > :DISPlay:ANALysis:RECall:FGRaph:SCRoll RIGHT

:DISPlay:ANALysis:RECall:FGRaph:MARKer <marker>

Parameter	<marker> = <CHARACTER PROGRAM DATA>
	LEFT Move leftward by 1 div.
	RIGHT Move rightward by 1 div.
Function	Moves the marker on the Analyze:Recall screen (frequency monitoring graph).
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:TYPE is other than <"FGR">. • :DISPlay:ANALysis:RECall:FGRaph:MDISplay is <OFF>.
Example use	Move the marker rightward by 1 div: > :DISPlay:ANALysis:RECall:FGRaph:MARKer RIGHT

:DISPlay:ANALysis:RECall:FGRaph:DATA ?

Response	<time> = <year>, <month>, <day>, <hour>, <minute>,[<second>]
	<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

	<freq> = <STRING RESPONSE DATA> Frequency value From10
	<ppm> = <STRING RESPONSE DATA> ppm value From11
Function	Queries the data indicated by marker on the Analyze:Recall screen (frequency monitoring graph).
Example use	> :DISPlay:ANALysis:RECall:FGRaph:DATA ? < 2000,1,1,1,30,0," 120000.9","-1000.0" * When no analyze data exists < "No data" When marker is OFF: < 0,0,0,0,0,0,"-----","-----"

:DISPlay:ANALysis:RECall:FGRaph:INTerval <numeric>,<suffix>

Parameter	<numeric> = <DECIMAL NUMERIC PROGRAM DATA> 1,15,60 <suffix> = <CHARACTER PROGRAM DATA> M minute
Function	Sets the interval of the graph on the Analyze:Recall screen (frequency monitoring graph).
Restriction	Invalid when, • :DISPlay:ANALysis:RECall:TYPE is other than <"FGR">.
Example use	To set the width for one scale at 1 minute: > :DISPlay:ANALysis:RECall:FGRaph:INTerval 1,M

:DISPlay:ANALysis:RECall:FGRaph:INTerval ?

Response	<numeric> = <CHARACTER RESPONSE DATA> 1,15,60 <suffix> = <CHARACTER RESPONSE DATA> M minute
Function	Queries the width of one scale on the time axis on the Analysis:Recall screen (frequency monitoring graph).
Example use	> :DISPlay:ANALysis:RECall:FGRaph:INTerval ? < 1,M * When no analyze data exists

< "No data"

:DISPlay:ANALysis:RECall:FGRaph:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
 OFF or 0 Marker Off.
 ON or 1 Marker On

Function Sets whether to display a marker on the Analyze:Recall screen (frequency monitoring graph).

Restriction Invalid when,
 • :DISPlay:ANALysis:RECall:TYPE is other than <"FGR">.

Example use To set the marker display to "ON":
 > :DISPlay:ANALysis:RECall:FGRaph:MDISplay ON

:DISPlay:ANALysis:RECall:FGRaph:MDISplay ?

Response <NR1 NUMERIC RESPONSE DATA>
 0 or 1

Function Queries the marker display status for the Analyze:Recall screen (frequency monitoring graph).

Example use > :DISPlay:ANALysis:RECall:FGRaph:MDISplay ?
 < 1
 * When no analyze data exists
 < "No data"

:DISPlay:ANALysis:RECall:FGRaph:FROM <time>

Parameter <time> = <year>, <month>, <day>, <hour>, <minute>[,<second>]
 <year> = <DECIMAL NUMERIC PROGRAM DATA>
 0,1994 to 2093
 <month> = <DECIMAL NUMERIC PROGRAM DATA>
 0,1 to 12
 <day> = <DECIMAL NUMERIC PROGRAM DATA>
 0,1 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 display starting point of the graph on the Analyze:Recall screen (frequency monitoring graph).
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:TYPE is other than <"FGR">.
Example use	When displaying from 11:30, January 1, 2000 > :DISPlay:ANALysis:RECall:FGRaph:FROM 2000,1,1,11,30

:DISPlay:ANALysis:RECall:FGRaph:FROM ?

Response	<time> = <NR1 NUMERIC RESPONSE DATA> <time> = <year>, <month>, <day>, <hour>, <minute>, <second>
Function	Queries the display starting point of the graph on the Analyze:Recall screen (frequency monitoring graph).
Example use	> :DISPlay:ANALysis:RECall:FGRaph:FROM ? < 2000,1,1,11,30,0 * When no analyze data exists < "No data"

:DISPlay:ANALysis:RECall:FGRaph:PRINt <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>								
	<table> <tr> <td>DISPlay</td> <td>Display</td> </tr> <tr> <td>ALL</td> <td>All</td> </tr> <tr> <td>AFTer</td> <td>After</td> </tr> <tr> <td>BEFore</td> <td>Before</td> </tr> </table>	DISPlay	Display	ALL	All	AFTer	After	BEFore	Before
DISPlay	Display								
ALL	All								
AFTer	After								
BEFore	Before								
Function	Sets the printing range on the Analyze:Recall screen (frequency monitoring graph).								
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:TYPE is other than <"FGR">. 								
Example use	To set the currently-displayed screen as the printing range. > :DISPlay:ANALysis:RECall:FGRaph:PRINt DISPlay								

:DISPlay:ANALysis:RECall:FGRaph:PRINt ?

Response	<type> = <CHARACTER RESPONSE DATA>
Function	Queries the printing range on the Analyze:Recall screen (frequency monitoring graph).
Example use	> :DISPlay:ANALysis:RECall:FGRaph:PRINt ? < DISP * When no analyze data exists < "No data"

:DISPlay:ANALysis:RECall:FGRaph:TITLe ?

Response <title> = <STRING RESPONSE DATA>

Function Queries the title on the Analyze:Recall screen (frequency monitoring graph).

Example use > :DISPlay:ANALysis:RECall:FGRaph:TITLe ?

< "TITLE-DISP"

* When no analyze data exists

< "No data"

:DISPlay:ANALysis:RECall:FGRaph:SCALE <scale>

Parameter <scale> = <DECIMAL NUMERIC PROGRAM DATA>

10	10ppm
100	100ppm
1000	1000ppm

Function Sets a graph vertical axis scale for the Analyze:Recall screen (frequency monitoring graph).

Restriction Invalid when,

- :DISPlay:ANALysis:RECall:TYPE is other than <"FGR">.

Example use To set the graph vertical axis of the frequency monitoring (graph) to 10.

> :DISPlay:ANALysis:RECall:FGRaph:SCALE 10

:DISPlay:ANALysis:RECall:FGRaph:SCALE ?

Response <scale> = <NR1 NUMERIC RESPONSE DATA>

Function Queries the vertical axis scale for the Analyze:Recall screen (frequency monitoring graph).

Example use > :DISPlay:ANALysis:RECall:FGRaph:SCALE ?

< 10

* When no analyze data exists

< "No data"

:DISPlay:ANALysis:RECall:WANDer:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>

OFF or 0	Marker Off:
ON or 1	Marker On

Function Sets whether to display a marker on the Analyze:Recall screen (Wander).

Restriction Invalid when,

- :DISPlay:ANALysis:RECall:TYPE? is other than <"WAND">.

Example use To set to display the marker for wander measurement:

> :DISPlay:ANALysis:RECall:WANDer:MDISplay ON

:DISPlay:ANALysis:RECall:WANDer:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>

0	Marker Off:
1	Marker On

Function Queries the marker display status for the Analyze:Recall screen (Wander).

Example use > :DISPlay:ANALysis:RECall:WANDer:MDISplay?

< 1

* When no analyze data exists

< "No data"

:DISPlay:ANALysis:RECall:WANDer:SEARCh <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

BEFore	Before search
NEXt	Next search

Function Instructs a marker search type for the Analyze:Recall screen (Wander).

Restriction Invalid when,

- :DISPlay:ANALysis:RECall:TYPE? is other than <"WAND">.
- :DISPlay:ANALysis:RECall:WANDer:MDISplay is <OFF>.

Example use To instruct Before search:

> :DISPlay:ANALysis:RECall:WANDer:SEARCh BEFore

:DISPlay:ANALysis:RECall:WANDer:STYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

LOG	Log
LINear	Linear

Function Specifies the vertical axis scale type on Analyze:RECall screen (Wander).

Restriction Invalid when,

- DISPlay:ANALysis:RECall:TYPE is other than <"WANDer">.

Example use To set the vertical axis scale type of Wander screen to Log:

> :DISPlay:ANALysis:RECall:WANDer:STYPe LOG

:DISPlay:ANALysis:RECall:WANDer:STYPe?

Response <type> = <CHARACTER PROGRAM DATA>

Function Queries the vertical axis scale type of Analyze:Recall screen (Wander).

Example use >:DISPlay:ANALysis:RECall:WANDer:STYPe?

:DISPlay:ANALysis:RECall:WANDer:LOG:SCALe <scale>

Parameter	<scale> = <CHARACTER PROGRAM DATA> 1E12 (unit : ns) 1E9 1E6 1E3
Function	Sets the maximum value of vertical axis scale when the Wander data is displayed in Log scale.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:WANDer:STYPe is <LINEar>. • :DISPlay:TMENU[:NAME] is other than <"WANDer">. • The MU150011A is not installed; and <1E12> is set.
Example use	To set the graph vertical axis scale of Wander measurement to 100. >:DISPlay:ANALysis:RECall:WANDer:SCALe 100
Example use	To set the maximum value of graph vertical axis scale to 1E6. > :DISPlay:ANALysis:RECall:WANDer:LOG:SCALe 1E6

:DISPlay:ANALysis:RECall:WANDer:LOG:SCALE?

Response	<scale> = <CHARACTER RESPONSE DATA> Same as :DISPlay:ANALysis:RECall:WANDer:LOG:SCALe .
Function	Queries the maximum value of vertical axis scale when the Wander data is displayed in Log scale.
Example use	> :DISPlay:ANALysis:RECall:WANDer:LOG:SCALE? < 1E6

:DISPlay:ANALysis:RECall:WANDer:LINEar:SCALe <scale>

Parameter	<scale> = <CHARACTER PROGRAM DATA> 1E12 (unit : ns) 1E9 1E6 1E3 100
Function	Sets the maximum value of vertical axis scale when the Wander data is displayed in Linear scale.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:RECall:WANDer:STYPe is <LOG>.

- :DISPlay:TMENu[:NAME] is other than <"WANDer">.
 - The MU150011A is not installed; and <1E12> is set.
- Example use To set the maximum value of vertical axis scale 1E6.
> :DISPlay:ANALysis:RECall:WANDer:LINear:SCALe 1E6

:DISPlay:ANALysis:RECall:WANDer:LINear:SCALe?

- Response <scale> = <CHARACTER RESPONSE DATA>
Same as :DISPlay:ANALysis:RECall:WANDer:LINear:SCALe .
- Function Queries the maximum value of vertical axis scale when the Wander data is displayed in Linear type.
- Example use > :DISPlay:ANALysis:RECall:WANDer:Linear:SCALe?
< 1E6

:DISPlay:ANALysis:RECall:WANDer:MEAStime <scale>

- Parameter <scale> = <CHARACTER PROGRAM DATA>
120000
12000
1200
120
12
USER
- Function Sets the maximum value of horizontal axis scale when the Wander data is displayed in Linear type.
- Restriction Invalid when,
 - :DISPlay:ANALysis:RECall:WANDer:STYPe is <LOG>.
 - The MU150011A is not installed; and <120000>, <USER> is set.
- Example use To set the maximum value of graph horizontal axis scale Linear type to 100.
> :DISPlay:ANALysis:RECall:WANDer:MEAStime 1200

:DISPlay:ANALysis:RECall:WANDer:MEAStime?

- Response <scale> = <CHARACTER RESPONSE DATA>
Same as :DISPlay:ANALysis:RECall:WANDer:MEAStime .
- Function Queries the maximum value of horizontal axis scale when the Wander data is displayed in Linear type.
- Example use > :DISPlay:ANALysis:RECall:WANDer:MEAStime?
< 1200

:DISPlay:ANALysis:RECall:WANDer:USER <scale>

Parameter	<scale> = <DECIMAL NUMERIC PROGRAM DATA> 12 to 120000 * If fractions are input, they are omitted as shown below. 1280 → 1200 12006 → 12000
Function	Sets the maximum value of graph (when "User" is set) horizontal axis scale for Wander data Linear type.
Restriction	Invalid when, <ul style="list-style-type: none"> • :DISPlay:ANALysis:WANDer:STYPe <LOG> is set. • The MU150011A is not installed. • :DISPlay:ANALysis:WANDer:MEAStime is other than <USER>.
Example use	To set the maximum value of the graph horizontal axis scale for Linear type to 12000: > :DISPlay:ANALysis:RECall:WANDer:USER 12800

:DISPlay:ANALysis:RECall:WANDer:DATA?

Response	<time1>, <time2> <time1> = <NR1 NUMERIC RESPONSE DATA> Form8 τ (s) <time2> = <NR2 NUMERIC RESPONSE DATA> Form7 (ns)
Function	Queries the data indicated by the marker on the Analyze:Recall screen (Wander).
Example use	> :DISPlay:ANALysis:RECall:WANDer:DATA? < 10,3.0 * When no analyze data exists < "No data" * When marker is Off. < 0,0.0

:DISPlay:ANALysis:RECall:WANDer:TITLe?

Response	<title> = <STRING RESPONSE DATA>
Function	Queries the title for the Analyze:Recall screen (Wander).
Example use	> :DISPlay:ANALysis:RECall:WANDer:TITLe? < "TITLE-DISP " * When no analyze data exists < "No data"

:DISPlay:ANALysis:RECall:WSWeep:TITLe?

Response	<title> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:WSWeep:TITLe.
Function	Queries the title of Analyze:Recall (Wander.sweep) screen.
Example use	> :DISPlay:ANALysis:RECall:WSWeep:TITLe? < "TITLE-DISP "

:DISPlay:ANALysis:RECall:WSWeep:MDISplay <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Marker Off ON or 1 Marker On
Function	Sets whether to display a marker on the Analyze:Recall (Wander.sweep) screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed.
Example use	To display the marker on the Wander.sweep screen. > :DISPlay:ANALysis:RECall:WSWeep:MDISplay ON

:DISPlay:ANALysis:RECall:WSWeep:MDISplay?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA> 0 Marker Off 1 Marker On
Function	Queries the marker display state on the Analyze:Recall (Wander.sweep) screen.
Example use	> :DISPlay:ANALysis:RECall:WSWeep:MDISplay? < 1

:DISPlay:ANALysis:RECall:WSWeep:SEARCh <type>

Parameter	<type> = <CHARACTER PROGRAM DATA> BEFORE Before search (when <- is pressed.) NEXT Next search (when -> is pressed.)
Function	Shifts the marker on the Analyze:Recall(Wander.sweep) screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed.
Example use	To shift the marker to the left side of the graph. > :DISPlay:ANALysis:RECall:WSWeep:SEARCh BEFore

:DISPlay:ANALysis:RECall:WSWeep:DATA?

Response <point>, <freq1>, <freq2>, <margin>, <amp1>, <result>
 <point> = <NR1 NUMERIC RESPONSE DATA>
 1 to 20 measurement point
 <freq1> = <NR2 NUMERIC RESPONSE DATA>
 1.0 to 990.0 modulation frequency (numeral)
 <freq2> = <CHARACTER RESPONSE DATA>
 μ HZ,mHZ,HZ modulation frequency (unit)
 <margin> = <NR1 NUMERIC RESPONSE DATA>
 0 to 100 (value for five)
 <amp1> = <STRING RESPONSE DATA>
 Form6 Wandersweep measurement result (UIp-p)(value for five)
 <result> = <STRING RESPONSE DATA>
 Form4 Wandersweep measurement result (value for five)
 "Acceptable"
 "Unacceptable"
 * When no Wandersweep data exists or marker is OFF, the following contents are output.
 0,0.0,Hz,0,0,0,0,0, each "-----","-----"
 Function Queries the data indicated by marker on the Analyze:Recall (Wander.sweep) screen.
 Example use > :DISPlay:ANALysis:RECall:WSWeep:DATA?
 < 15,100,Hz,0,10,20,50,100," -15.00"," -14.00"," -13.00"," -12.00",
 "-15.00"," Acceptable"," Acceptable"," Acceptable"," Acceptable",
 " Acceptable"

:DISPlay:ANALysis:RECall:WSWeep:SCALe <numeric>

Parameter <numeric> = <CHARACTER PROGRAM DATA>
 1E11
 1E10
 1E9
 1E8
 1E7
 1E6
 1E5
 1E4
 1E3
 1E2

	1E1
	1E0
Function	Sets the maximum value of graph vertical axis scale on the Analyze:Recall (Wander.sweep) screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed.
Example use	To set the graph vertical axis scale value to 1E4. > :DISPlay:ANALysis:RECall:WSWeep:SCALe 1E4

:DISPlay:ANALysis:RECall:WSWeep:SCALe?

Response	<numeric> = <CHARACTER RESPONSE DATA> Same as :DISPlay:ANALysis:WSWeep:SCALe.
Function	Queries the graph vertical axis scale (upper stage) on the Analyze:Recall (Wander.sweep) screen.
Example use	> :DISPlay:ANALysis:RECall:WSWeep:SCALe? < 1E4

:DISPlay:ANALysis:RECall:WSWeep:SCALe2 <numeric>

Parameter	<numeric> = <CHARACTER PROGRAM DATA> 1E10 1E9 1E8 1E7 1E6 1E5 1E4 1E3 1E2 1E1 1E0 1E-1
Function	Sets a graph vertical axis scale value (lower stage) on the Analyze:Recall (Wander.sweep) screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed.
Example use	To set the graph vertical axis scale of Wandersweep measurement to 1E3. > :DISPlay:ANALysis:RECall:WSWeep:SCALe2 1E3

:DISPlay:ANALysis:RECall:WSWeep:SCALe2?

Response <numeric> = <CHARACTER RESPONSE DATA>
 Same as :DISPlay:ANALysis:RECall:WSWeep:SCALe2.

Function Queries the graph vertical axis scale (lower stage) on the Analyze:Recall (Wander.sweep) screen.

Example use > :DISPlay:ANALysis:RECall:WSWeep:SCALe2?
 < 1E-1

:DISPlay:ANALysis:RECall:WSWeep:STYPe <type>

Parameter <type> = <CHARACTER PROGRAM DATA>

UIPP	UIp-p display
NS	ns display

Function Specifies a graph vertical axis scale unit on the Analyze:Recall (Wander.sweep) screen.

Restriction Invalid when,

- No recall data exists.
- The MU150011A is not installed.

Example use To set vertical axis scale unit to ns.
 > :DISPlay:ANALysis:RECall:WSWeep:STYPe NS

:DISPlay:ANALysis:RECall:WSWeep:STYPe?

Response <type> = <CHARACTER RESPONSE DATA>

UIPP	UIp-p display
NS	ns display

Function Queries the graph vertical axis scale unit on the Analyze:Recall (Wander.sweep) screen.

Example use > :DISPlay:ANALysis:RECall:WSWeep:STYPe?
 < LOG

:DISPlay:ANALysis:RECall:PEAK:SCRoll <scroll>

Parameter <scroll> = <CHARACTER PROGRAM DATA>

LEFT	Scroll leftward
RIGHT	Scroll rightward
TOP	Move to the top
BOTTOM	Move to the bottom

Function Scrolls agraph of the Analyze:Recall (Peak jitter) screen.

Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed.
Example use	To scroll rightward > :DISPlay:ANALysis:RECall:PEAK:SCRoll RIGHt

:DISPlay:ANALysis:RECall:PEAK:MARKer <marker>

Parameter	<marker> = <CHARACTER PROGRAM DATA> <table> <tr> <td>LEFT</td> <td>Move leftward</td> </tr> <tr> <td>RIGHT</td> <td>Move rightward</td> </tr> </table>	LEFT	Move leftward	RIGHT	Move rightward
LEFT	Move leftward				
RIGHT	Move rightward				
Function	Sets a marker display state on the Analyze:Recall (Peak jitter) screen.				
Example use	To move rightward > :DISPlay:ANALysis:RECall:PEAK:MARKer RIGHt				

:DISPlay:ANALysis:RECall:PEAK:DATA?

Response	<time>, <alarm1s>, <alarm1c>, <alarm2s>, <alarm2c>, <alarm3s>, <alarm3c>, <alarm4s>, <alarm4c>, <alarm5s>, <alarm5c>, <uipp>, <ui+p>, <ui-p>, <uirms> <time> = <year>, <month>, <day>, <hour>, <minute>, <second> Time indicated by the 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 <alarm1s> = <STRING RESPONSE DATA> Alarm 1 occurrence time (s) of data indicated by marker Form1 <alarm1c> = <STRING RESPONSE DATA> Alarm 1 occurrence count of data indicated by marker
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Form1
 <alarm2s> = <STRING RESPONSE DATA>
 Alarm 2 occurrence time (s) of data indicated by marker
 Form1
 <alarm2c> = <STRING RESPONSE DATA>
 Alarm 2 occurrence count of data indicated by marker
 Form1
 <alarm3s> = <STRING RESPONSE DATA>
 Alarm 3 occurrence time (s) of data indicated by marker
 Form1
 <alarm3c> = <STRING RESPONSE DATA>
 Alarm 3 occurrence count of data indicated by marker
 Form1
 <alarm4s> = <STRING RESPONSE DATA>
 Alarm 4 occurrence time (s) of data indicated by marker
 Form1
 <alarm4c> = <STRING RESPONSE DATA>
 Alarm 4 occurrence count of data indicated by marker
 Form1
 <alarm5s> = <STRING RESPONSE DATA>
 Alarm 5 occurrence time (s) of data indicated by marker
 Form1
 <alarm5c> = <STRING RESPONSE DATA>
 Alarm 5 occurrence count of data indicated by marker
 Form1
 <Ui+p> = <STRING RESPONSE DATA>
 Jitter value indicated by marker (UI+p)
 Form 1 or Form 2 (depending on the display scale)
 <Ui-p> = <STRING RESPONSE DATA>
 Jitter value indicated by marker (UI-p)
 Form 1 or Form 2 (depending on the display scale)
 <Uirms> = <STRING RESPONSE DATA>
 Jitter value indicated by marker (Uirms)
 Form 1 or Form 2 (depending on the display scale)
 * When no Peak jitter analyze data exists or marker is OFF, the following contents are output.
 < 0,0,0,0,0,0,"-----","-----","-----","-----","-----",
 "-----","-----","-----","-----","-----","-----"
 • When Alarm is other than <"SVPAIS">, <"SVPRDI">, <"SVPLOC">, <"EVPAIS">,
 <"EVPRDI">, <"EVPLOC">, <"SVCAIS">, <"SVCRDI">, <"SVCLOC">,
 <"EVCAIS">, <"EVCRDI">, and <"EVCLOC">, "-----" is output to alarm(1 to 5)
 count.
 < 2000,12,25,12,54,30," 1","-----"," 0","-----",
 " 104","-----"," 1","-----"," 1","-----",

Function " 189", " 1.41", " 2.44", " 0.75"

Example use > :DISPlay:ANALysis:RECall:PEAK:DATA?

 < 2000,12,25,12,54,30," 1"," 1"," 0"," 0",

 " 104"," 10"," 1"," 1"," 1"," 1",

 " 189", " 1.41", " 2.44", " 0.75"

:DISPlay:ANALysis:RECall:PEAK:INTerval <numeric>,<suffix>

Parameter <numeric> = <CHARACTER PROGRAM DATA>

 1, 15, 60

 <suffix> = <CHARACTER PROGRAM DATA>

 M minute

 S s

Function Sets an interval of the graph on the Analyze:Peak jitter screen.

Restriction Invalid when,

- No recall data exists.
- The MU150011A is not installed.
- The value other than settings shown in the table below are invalid, according to the Graph resolution set on the System screen.

Graph resolution	Analyze graph interval
1s	1s, 1min, 15min, 60min
1min	1min, 15min, 60min
15min	15min, 60min
60min	60min

Example use To set the width for one scale at 1 minute:

 > :DISPlay:ANALysis:RECall:PEAK:INTerval 1,M

:DISPlay:ANALysis:RECall:PEAK:INTerval?

Response <numeric> = <NR1 NUMERIC RESPONSE DATA>

 Same as :DISPlay:ANALysis:RECall:PEAK:INTerval .

 <suffix> = <CHARACTER RESPONSE DATA>

 Same as :DISPlay:ANALysis:RECall:PEAK:INTerval .

Function Queries the width of one scale on the time axis on the Analyze:Recall (Peak jitter) screen.

Example use > :DISPlay:ANALysis:RECall:PEAK:INTerval?

 < 1,M

:DISPlay:ANALysis:RECall:PEAK:MDISplay <boolean>

Parameter <boolean> = <BOOLEAN PROGRAM DATA>
 OFF or 0 Marker Off
 ON or 1 Marker On

Function Sets a marker display state on the Analyze:Recall (Peak jitter) screen.

Restriction Invalid when,
 • No recall data exists.
 • The MU150011A is not installed.

Example use To display the marker.
 > :DISPlay:ANALysis:RECall:PEAK:MDISplay ON

:DISPlay:ANALysis:RECall:PEAK:MDISplay?

Response <boolean> = <NR1 NUMERIC RESPONSE DATA>
 0 Marker Off
 1 Marker On

Function Queries the marker display state on the Analyze:Recall (Peak jitter) screen.

Example use > :DISPlay:ANALysis:RECall:PEAK:MDISplay?
 < 1

:DISPlay:ANALysis:RECall:PEAK:SEARCh <type>

Parameter <type> = <CHARACTER PROGRAM DATA>
 BEFore Before search (when <- is pressed.)
 NEXt Next search (when -> is pressed.)

Function Sets a direction to shift a marker on the Analyze:Recall (Peak jitter) screen.

Restriction Invalid when,
 • No recall data exists.
 • The MU150011A is not installed.

Example use To shift the marker to the left side of the graph
 > :DISPlay:ANALysis:RECall:PEAK:SEARCh BEFore

:DISPlay:ANALysis:RECall:PEAK: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 parameter-specified time does not exist, the closest time after the specified one is set. If the specified time is before the measurement start time, the measurement start time is set. If the specified time is after the logging end time, the logging end time is set.

The default of <numeric6> is 0.

Function	Sets a display starting point on the Analyze:Recall (Peak jitter) screen graph.
Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed.
Example use	When displaying from 11:30:40, July 28, 2000. > :DISPlay:ANALysis:RECall:PEAK:FROM 2000,7,28,11,30,40

:DISPlay:ANALysis:Recall:PEAK:FROM?

Response	<numeric1>, <numeric2>, <numeric3>, <numeric4>, <numeric5>, <numeric6>= <NR1 NUMERIC RESPONSE DATA> Same as :DISPlay:ANALysis:RECall:PEAK:FROM . * When no Peak jitter analyze data exists, the following contents are output. < -,,-,-,-,-
----------	---

Function	Queries the display starting point on the Analyze:Recall (Peak jitter) screen graph.
Example use	> :DISPlay:ANALysis:RECall:PEAK:FROM? < 2000,7,28,11,30,40

:DISPlay:ANALysis:Recall:PEAK:ALARm1 <alarm>

Parameter	<alarm> = <STRING PROGRAM DATA>
	"ALL" ALL
	"POWER" Power fail
	"LOS" LOS
	"LOF" LOF
	"OOF" OOF
	"AIS:MS" MS-AIS
	"RDI:MS" MS-RDI
	"AIS:AU" AU-AIS
	"LOP:AU" AU-LOP
	"RDI:HP" HP-RDI
	"SLM:HP" HP-SLM
	"AIS:TU" TU-AIS

"LOP:TU"		TU-LOP
"RDI:LP"		LP-RDI
"SLM:LP"		LP-SLM
"RFI:LP"		LP-RFI
"LOM:TU"		TU-LOM
"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
"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: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
"LCD"	Lost of cell sync
"PATTern"	Sync. loss
"JUNLock"	Jitter Unlock

Function Sets an alarm item of alarm 1 to be graph-displayed on the Analyze:Recoll(Peak jitter) screen.

Restriction Invalid when,

- No recall data exists.
- The MU150011A is not installed.

Example use To display Power fail on Alarm 1.
> :DISPlay:ANALysis:RECall:PEAK:ALARm1 "POWer"

:DISPlay:ANALysis:RECall:PEAK:ALARm1?

Response <alarm> = <STRING RESPONSE DATA>
Same as :DISPlay:ANALysis:RECall:PEAK:ALARm1 .

Function Queries the alarm item of alarm 1 to be graph-displayed on the Analyze:Recoll(Peak jitter) screen.

Example use > :DISPlay:ANALysis:RECall:PEAK:ALARm1?
< "POW"

:DISPlay:ANALysis:RECall:PEAK:ALARm2 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>
Same as :DISPlay:ANALysis:RECall:PEAK:ALARm1 .

Function Sets an alarm item of alarm 2 to be graph-displayed on the Analyze:Recoll(Peak jitter) screen.

:DISPlay:ANALysis:RECall:PEAK:ALARm2?

Response <alarm> = <STRING RESPONSE DATA>
Same as :DISPlay:ANALysis:RECall:PEAK:ALARm1 .

Function Queries the alarm item of alarm 2 to be graph-displayed on the Analyze:Recoll(Peak jitter) screen.

:DISPlay:ANALysis:RECall:PEAK:ALARm3 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>
Same as :DISPlay:ANALysis:RECall:PEAK:ALARm1 .

Function Sets an alarm item of alarm 3 to be graph-displayed on the Analyze:Recoll(Peak jitter) screen.

:DISPlay:ANALysis:RECall:PEAK:ALARm3?

Response <alarm> = <STRING RESPONSE DATA>
Same as :DISPlay:ANALysis:RECall:PEAK:ALARm1 .

Function Queries the alarm item of alarm 3 to be graph-displayed on the Analyze:Recoll(Peak jitter) screen.

:DISPlay:ANALysis:RECall:PEAK:ALARm4 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>
Same as :DISPlay:ANALysis:RECall:PEAK:ALARm1 .

Function Sets an alarm item of alarm 4 to be graph-displayed on the Analyze:Recoll(Peak jitter) screen.

:DISPlay:ANALysis:RECall:PEAK:ALARm4?

Response <alarm> = <STRING RESPONSE DATA>
Same as :DISPlay:ANALysis:RECall:PEAK:ALARm1 .

Function Queries the alarm item of alarm 4 to be graph-displayed on the Analyze:Recoll(Peak jitter) screen.

:DISPlay:ANALysis:RECall:PEAK:ALARm5 <alarm>

Parameter <alarm> = <STRING PROGRAM DATA>
Same as :DISPlay:ANALysis:RECall:PEAK:ALARm1 .

Function Sets an alarm item of alarm 5 to be graph-displayed on the Analyze:Recoll(Peak jitter) screen.

:DISPlay:ANALysis:RECall:PEAK:ALARm5?

Response	<alarm> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:RECall:PEAK:ALARm1 .
Function	Queries the alarm item of alarm 5 to be graph-displayd on the Analyze:Recoll(Peak jitter) screen.

:DISPlay:ANALysis:RECall:PEAK:PRINt <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>
	DISPlay Display
	ALL All
	AFTer After
	BEFore Before
Function	Sets a printing range on the Analyze:Recall (Peak jitter) screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed.
Example use	To set the currently-displayed screen as the printing range. > :DISPlay:ANALysis:RECall:PEAK:PRINt DISPlay

:DISPlay:ANALysis:RECall:PEAK:PRINt?

Response	<type> = <CHARACTER RESPONSE DATA>
	DISP Display
	ALL All
	AFT After
	BEF Before
Function	Queries the printing range on the Analyze:Recall (Peak jitter) screen.
Example use	> :DISPlay:ANALysis:RECall:PEAK:PRINt? < DISP

:DISPlay:ANALysis:RECall:PEAK:TITLe?

Response	<title> = <STRING RESPONSE DATA> Same as :DISPlay:ANALysis:RECall:PEAK:TITLe .
Function	Queries the title on the Analyze:Recall (Peak jitter) screen.
Example use	> :DISPlay:ANALysis:RECall:PEAK:TITLe? < "TITLe-DISP "

:DISPlay:ANALysis:RECall:PEAK:DTYPe <type>

Parameter	<type> = <CHARACTER PROGRAM DATA>								
	<table border="0"> <tr> <td>UIPTp</td> <td>UIp-p</td> </tr> <tr> <td>UIPP</td> <td>UI+p</td> </tr> <tr> <td>UIMP</td> <td>UI-p</td> </tr> <tr> <td>UIRMs</td> <td>UIrms</td> </tr> </table>	UIPTp	UIp-p	UIPP	UI+p	UIMP	UI-p	UIRMs	UIrms
UIPTp	UIp-p								
UIPP	UI+p								
UIMP	UI-p								
UIRMs	UIrms								
Function	Sets a graph vertical axis display unit for the Analyze:Recall (Peak jitter) screen.								
Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed. 								
Example use	To set the display unit on the screen to UIp-p. > :DISPlay:ANALysis:RECall:PEAK:DTYPe UITPp								

:DISPlay:ANALysis:RECall:PEAK:DTYPe?

Response	<type> = <CHARACTER RESPONSE DATA>								
	<table border="0"> <tr> <td>UIPT</td> <td>UIp-p</td> </tr> <tr> <td>UIPP</td> <td>UI+p</td> </tr> <tr> <td>UIMP</td> <td>UI-p</td> </tr> <tr> <td>UIRM</td> <td>UIrms</td> </tr> </table>	UIPT	UIp-p	UIPP	UI+p	UIMP	UI-p	UIRM	UIrms
UIPT	UIp-p								
UIPP	UI+p								
UIMP	UI-p								
UIRM	UIrms								
Function	Queries the graph vertical axis display unit for the Analyze:Recall (Peak jitter) screen.								
Example use	> :DISPlay:ANALysis:RECall:PEAK:DTYPe? < UIRM								

:DISPlay:ANALysis:RECall:PEAK:SCALE <numeric>

Parameter	<numeric> = <NON-DECIMAL NUMERIC PROGRAM DATA>
	0.002 to 800.0 step : 0.02
Function	Sets a graph vertical axis scale value on the Analyze:Recall (Peak jitter) screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • No recall data exists. • The MU150011A is not installed.
Example use	To set the scale to 0.02 > :DISPlay:ANALysis:RECall:PEAK:SCALE 0.02

:DISPlay:ANALysis:RECall:PEAK:SCALE?

Response	<numeric> = <NON-DECIMAL NUMERIC RESPONSE DATA>
Function	Queries the the graph vertical axis scale value on the Analyze:Recall (Peak jitter) screen.
Example use	> :DISPlay:ANALysis:RECall:PEAK:SCALE?

< 800.0

:DISPlay:SETup[:NAME] <sdisplay>

Parameter	<sdisplay> = <STRING PROGRAM DATA>
	"MAPPING" Mapping screen
	"MEMory" Memory screen
	"PRINT" Print screen
	"JTOLerance" Jitter tolerance screen
	"JTRansfer" Jitter transfer screen
	"JSWEEP" Jitter sweep screen
	"JWANDer" Jitter Wander screen
	"WSWEEP" Wander sweep screen
	"JFREQUENCY" Jitter/Freq. screen
	"FSWEEP" Freq. sweep screen
	"ASETup" Auto setup screen
	"STEST" Selftest screen
Function	Selects a display item on the Setup screen.
Restriction	Invalid when, <ul style="list-style-type: none"> • <"STEST"> is set during the measurement set on the Test menu main screen. • The MU150011A is not installed; and <"WSWEEP">, <"FSWEEP">, or <"JFREQUENCY"> is set.
Example use	To select "PRINT" as a display item on the Setup screen. > :DISPlay:SETup:NAME "PRINT" , or > :DISPlay:SETup "PRINT"

:DISPlay:SETup[:NAME]?

Response	<sdisplay> = <STRING RESPONSE DATA>
	"MAPPING" Mapping screen
	"MEMory" Memory screen
	"PRINT" Print screen
	"JTOLerance" Jitter tolerance screen
	"JTRansfer" Jitter transfer screen
	"JSWEEP" Jitter sweep screen
	"JWANDer" Jitter Wander screen
	"WSWEEP" Wander sweep screen
	"JFREQUENCY" Jitter/Freq. screen
	"FSWEEP" Freq. sweep screen
	"ASETup" Auto setup screen
	"STEST" Selftest screen
Function	Queries the item displayed on the Setup screen
Example use	> :DISPlay:SETup:NAME?

or

> :DISPlay:SETup?

< "PRIN"

4.4.5 CALCulate subsystem

The CALCulate subsystem is used to make settings on the Performance measurement and to display the measurement results.

Function	Command	Parameter
<i>Page 4-222</i> Queries the measurement result corresponding to the parameter.	:CALCulate:DATA?	string
<i>Page 4-224</i> Queries graph data on the frequency monitoring screen.	:CALCulate:FGRaph:DATA ?	
<i>Page 4-225</i> Queries the TIE data (TIE raw data) saved in the memory of the measuring instrument.	:CALCulate:TIE:DATA?	numeric1 numeric2

:CALCulate:DATA? <string>

Parameter <string> = <STRING PROGRAM DATA>
 "[CURRENT:]<result>" Current measurement result
 "LAST:<result>" Immediately previous measurement result
 As for <result> contents, see "Contents of Measurement Result Queries" on the next page

Response <string> = <STRING RESPONSE DATA>
 See "Contents of Measurement Result Queries" shown below.

Function Queries the measurement result corresponding to the parameter.

Example use To query the current Peak-Peak value of the jitter manual measurement.
 > :CALCulate:DATA? "CUUrent:JAMplitude:PTPeak"
 or :CALCulate:DATA? "JAMplitude:PTPeak"
 < " 10.00"

Contents of Measurement Result Queries
 Jitter Manual Measurement

Item	<result>	Response/Format
Peak to Peak	"JAMplitude:PTPeak"	Form5
+Peak	"JAMplitude:PPEak"	Form5
-Peak	"JAMplitude:MPEak"	Form5
RMS	"JAMplitude:RMS"	Form5
Hit Count	"JHIT:COUNt"	Form1
Hit Second	"JHIT:SECond"	Form1
Hit %Free Second	"JHIT:FS"	Form3
Status	"JMANual:STATus"	Form9
Status	"JMANual:TSTAtus"	Form9
Status	"JMANual:RTATtus"	Form9
Status	"JMANual:TCLock"	Form14
Status	"JMANual:RCLock"	Form14

Wander Manual Measurement

Item	<result>	Response/Format
Wander (DC-10Hz)	Peak to Peak	"WANDer:PTPeak[:FULL]"
	+Peak	"WANDer:PPEak[:FULL]"
	-Peak	"WANDer:MPEak[:FULL]"
	TIE	"WANDer:TIE[:FULL]"
Wander (DC-0.01Hz)	Peak to Peak	"WANDer:PTPeak:LOW"
	+Peak	"WANDer:PPEak:LOW"
	-Peak	"WANDer:MPEak:LOW"
	TIE	"WANDer:TIE:LOW"
Wander (0.01-10Hz)	Peak to Peak	"WANDer:PTPeak:HIGh"
	+Peak	"WANDer:PPEak:HIGh"
	-Peak	"WANDer:MPEak:HIGh"
	TIE	"WANDer:TIE:HIGh"

Jitter tolerance measurement		
Item	<result>	Response/Format
Measurement result	"JTOLerance:POINt1" : "JTOLerance:POINt20"	Form5 Form4
Jitter transfer measurement		
Item	<result>	Response/Format
Measurement result	"JTRansfer:POINt1" : "JTRansfer:POINt20"	Form6 Form4
Jitter/Freq. measurement		
Item	<result>	Response/Format
Measurement result	"JFRequency:POINt1" : "JFRequency:POINt51"	Form5 Form4
Measurement result of Filter2 when Filter is set to Double	"JFRequency:DOUBle:POINt1" : "JFRequency:DOUBle:POINt51"	Form5 Form4
Freq. sweep measurement		
Item	<result>	Response/Format
Measurement result	"FSWeep:POINt1" : "FSWeep:POINt51"	Form5
Jitter sweep measurement		
Item	<result>	Response/Format
Measurement result	"JSWeep:LINE1:POINt1" : "JSWeep:LINE5:POINt20"	Form4
Wander (TIE) measurement (LOG)		
Item	<result>	Response/Format
Measurement result	"WANDer:POINt1" : "WANDer:POINt44"	Form8
Wander (TIE) measurement (Linear)		
Item	<result>	Response/Format
Measurement result	"WANDer:LINEar:POINt1" : "WANDer:LINEar:POINt120"	Form8

Wander sweep measurement		
Item	<result>	Response/Format
Measurement result	"WSWeep:POINt1" : "WSWeep:POINt20"	Form4

:CALCulate:FGRaph:DATA? <time>[,<number>]

Parameter <time> = <year>, <month>, <day>, <hour>, <minute>[,<second>]

<year> = <DECIMAL NUMERIC PROGRAM DATA>

0,1994 to 2093

<month> = <DECIMAL NUMERIC PROGRAM DATA>

0,1 to 12

<day> = <DECIMAL NUMERIC PROGRAM DATA>

0,1 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

[<number>] = <DECIMAL NUMERIC PROGRAM DATA>

Number of data to be queried

0 to 3600

Response <time> = <year>, <month>, <day>, <hour>, <minute>[,<second>]

Year, month, day, hour and minute of read data

If data of parameter-specified time does not exists, the closest time after the specified one is set. If the specified time is before the measurement start time, the measurement start time is set. If the specified time is after the logging end time, the logging end time is set.

<freq> = <STRING RESPONSE DATA>

Frequency (numerical)

From10

<ppm> = <STRING RESPONSE DATA>

ppm value

From11

* When no data exists, the following contents are output.

< 0,0,0,0,0,0,"-----", "-----"

Function Queries a graph data on the frequency monitoring screen

Example use > :CALCulate:FGRaph:DATA ? 2000,1,1,11,30,1
 < 2000,1,1,11,30,0," 300.9"," -10.0"

:CALCulate:TIE:DATA? <numeric1>,<numeric2>

Parameter <numeric1>, <numeric2> = <DECIMAL NUMERIC PROGRAM DATA>
 1 to 960000

Response <time> = <year>, <month>, <day>, <hour>, <minute>[,<second>]
 measurement start time

<interval> = <STRING RESPONSE DATA>
 sampling interval

<total> = <STRING RESPONSE DATA>
 Number of total samples

<s/n> = <STRING RESPONSE DATA>
 Displays the next data's order number of sample

<tie> = <STRING RESPONSE DATA>
 Outputs the specified number of TIE raw data with signed integer in ps unit

Function Queries the TIE data (TIE raw data) saved in the memory of the measuring instrument.
 (Output the specified TIE data after the management data.)

Restriction Invalid when,

- Measurement is being executed.
- MU150011A is not installed.

Example use To query the samples of the 2nd to 3rd:
 > :CALCulate:TIE:DATA? 2,3
 < "2000,6,6,8,23,40","08:23:40","25.0ms","9600","2","3200","-400"

4.4.6 SYSTem subsystem

The SYSTem subsystem is used to make settings on printer, memory and buzzer.

Function	Command	Parameter
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Page 4-227

Sets whether or not jitter hit occurrence is printed.	:SYSTem:PRINt:JITTer:SET	boolean
Queries whether or not jitter hit occurrence is printed.	:SYSTem:PRINt:JITTer:SET?	

Page 4-227

Sets whether or not jitter/wander data is printed for the measurement result printing.	:SYSTem:PRINt:LDAa:JWANDer	boolean
Queries whether or not jitter/wander data is printed for the measurement result printing.	:SYSTem:PRINt:LDAa:JWANDer?	

Page 4-227

Queries the Analyze memory registration status.	:SYSTem:MEMory:ANALySis:LABel?	numeric
Writes data into the Analyze memory.	:SYSTem:MEMory:ANALySis:STORe	type title

Page 4-229

Recalls data to a file on the current directory of floppy disk.	:SYSTem:MMEMory:RECall	file_name
---	------------------------	-----------

Page 4-229

Writes data to a file on the current directory of floppy disk.	:SYSTem:MMEMory:STORe	type file_name
--	-----------------------	-------------------

:SYSTem:PRINt:JITTer:SET <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Jitter hit data is not printed. ON or 1 Jitter hit data is printed.
Function	Sets whether or not jitter hit occurrence is printed.
Restriction	Invalid when, • :SYSTem:PRINt:LDATa:SET is <OFF>.
Example use	To enable the printing at jitter hit occurrence: > :SYSTem:PRINt:JITTer:SET ON

:SYSTem:PRINt:JITTer:SET?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA> 0 or 1
Function	Queries whether or not jitter hit occurrence is printed.
Example use	> :SYSTem:PRINt:JITTer:SET? < 1

:SYSTem:PRINt:LDATa:JWANder <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Jitter/wander data is not printed. ON or 1 Jitter/wander data is printed.
Function	Sets whether or not jitter/wander data is printed for the measurement result printing.
Restriction	Invalid when, • :SYSTem:PRINt:LDATa:SET is <OFF>.
Example use	To enable the jitter/wander data printing: > :SYSTem:PRINt:LDATa:JWANder ON

:SYSTem:PRINt:LDATa:JWANder?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA> 0 or 1
Function	Queries whether or not jitter/wander data is printed for the measurement result printing.
Example use	> :SYSTem:PRINt:LDATa:JWANder? < 1

:SYSTem:MEMory:ANALysis:LABel? <numeric>

Parameter	<numeric> = <DECIMAL PROGRAM DATA>
-----------	------------------------------------

	1 to 15	MemoryNo.1 to No.15																				
Response	<p><title>, <gtype>, <stime>, <use></p> <p><title> = <STRING RESPONSE DATA></p> <p>Memory name (fixed to 8 characters)</p> <p><gtype> = <CHARACTER RESPONSE DATA></p> <p>Graph type</p> <table border="0"> <tr> <td>EALarm</td> <td>Error/Alarm data</td> </tr> <tr> <td>JTOLerance</td> <td>Jitter tolerance</td> </tr> <tr> <td>JTRansfer</td> <td>Jitter transfer characteristic</td> </tr> <tr> <td>JFREquency</td> <td>Jitter/Freq.</td> </tr> <tr> <td>WANDer</td> <td>Wander data</td> </tr> <tr> <td>JSweep</td> <td>Jitter sweep data</td> </tr> <tr> <td>FREQuency</td> <td>Frequency data</td> </tr> <tr> <td>WSweep</td> <td>Wander sweep data</td> </tr> <tr> <td>FSweep</td> <td>Freq. sweep data</td> </tr> <tr> <td>PEAK</td> <td>Peak jitter data</td> </tr> </table> <p><stime> = <STRING RESPONSE DATA></p> <p>Measurement start time (fixed to 19 characters)</p> <p>"2000.12.25 18:40:30"</p> <p><use> = <STRING RESPONSE DATA></p> <p>Used memory area (percentage indication)</p> <p>Form3</p>		EALarm	Error/Alarm data	JTOLerance	Jitter tolerance	JTRansfer	Jitter transfer characteristic	JFREquency	Jitter/Freq.	WANDer	Wander data	JSweep	Jitter sweep data	FREQuency	Frequency data	WSweep	Wander sweep data	FSweep	Freq. sweep data	PEAK	Peak jitter data
EALarm	Error/Alarm data																					
JTOLerance	Jitter tolerance																					
JTRansfer	Jitter transfer characteristic																					
JFREquency	Jitter/Freq.																					
WANDer	Wander data																					
JSweep	Jitter sweep data																					
FREQuency	Frequency data																					
WSweep	Wander sweep data																					
FSweep	Freq. sweep data																					
PEAK	Peak jitter data																					
Function	Queries the Analyze memory registration status.																					
Example use	<p>To query memory No.1 registration status:</p> <p>> :SYSTem:MEMory:ANALysis:LABel? 1</p> <p>< "JITTER ",JTOL,, "2000.12.25 18:40:30", " 30.0000"</p> <p>* When no data exists at the specified memory</p> <p>< "-----",---, "-----", "-----"></p>																					

:SYSTem:MEMory:ANALysis:STORe <type>,<title>

Parameter	<p><type> = <CHARACTER PROGRAM DATA></p> <table border="0"> <tr> <td>EALarm</td> <td>Error/Alarm data</td> </tr> <tr> <td>JTOLerance</td> <td>Jitter tolerance</td> </tr> <tr> <td>JTRansfer</td> <td>Jitter transfer characteristic</td> </tr> <tr> <td>JFREquency</td> <td>Jitter/Freq.</td> </tr> <tr> <td>WANDer</td> <td>Wander data</td> </tr> <tr> <td>JSweep</td> <td>Jitter sweep data</td> </tr> </table>		EALarm	Error/Alarm data	JTOLerance	Jitter tolerance	JTRansfer	Jitter transfer characteristic	JFREquency	Jitter/Freq.	WANDer	Wander data	JSweep	Jitter sweep data
EALarm	Error/Alarm data													
JTOLerance	Jitter tolerance													
JTRansfer	Jitter transfer characteristic													
JFREquency	Jitter/Freq.													
WANDer	Wander data													
JSweep	Jitter sweep data													

	FREQuency	Frequency data
	WSWeep	Wander sweep data
	FSWeep	Freq. sweep data
	PEAK	Peak jitter data
	<title> = <STRING PROGRAM DATA>	
	"ABCabc..."	Memory name (fixed to 8 characters)
Function	Writes data into the Analyze memory.	
Restriction	Invalid when, <ul style="list-style-type: none"> • No analyze data exists. • <EALarm> is set when DISPlay:TMENU is other than <"MANual:JON">, <MANual[:JOFF]>, <PSEQuence:JON"> or <PSEQuence[:JOFF]> • The value of <JTOLerance>, <JTRansfer>, <JFREquency>, <WANDer>, <JSWeep>, <WSWeep>, <FSWeep> or <PEAK> and the :DISPlay:TMENU settings do not match. • The MP0130A is not installed; and <JFREquency> is set. 	
Example use	To write Jitter tolerance data under a name of "DEMO1". < :SYSTem:MEMory:ANALysis:STORe JTOLerance,"DEMO1"	

:SYSTem:MMEMory:RECall <file_name>[,<memorized>]

Parameter	<file_name> = <STRING PROGRAM DATA>	
	File name (no identification of capital and small letters, including extension). The length of the characters is 1 to 12, and " cannot be inputted.	
	<memorized> = <CHARACTER PROGRAM DATA>	
	JTOLerance	Recalls to the Jitter tolerance screen
	JTRAansfer	Recalls to the Jitter transfer screen
	JSWeep	Recalls to the Jitter sweep screen
	WSWeep	Recalls to the Wander sweep screen
	FSWeep	Recalls to the Freq sweep screen
Function	Recalls data to a file on the current directory of floppy disk.	
Restriction	Invalid when, <ul style="list-style-type: none"> • No data exists. 	
Example use	To write the data in a "DEMO1.CND" file: > :SYSTem:MMEMory:RECall "DEMO1.CND"	

:SYSTem:MMEMory:STORe <type>,<file_name>

Parameter	<type> = <STRING PROGRAM DATA>	
	"CONDition"	Setting state data

"EALarm:EALarm"	Error/Alarm data
"EALarm:EAText"	Error/Alarm data(text format)
"JTOLerance:JTOLerance"	Jitter Tolerance screen analyze data (binary format)
"JTOLerance:JTOText"	Jitter Tolerance screen analyze data (text format)
"JTRansfer:JTRansfer"	Jitter Transfer screen analyze data (binary format)
"JTRansfer:JTRText"	Jitter Transfer screen analyze data (text format)
"JFREquency:JFREquency"	Jitt/Freq. screen analyze data (binary format)
"JFREquency:JFRText"	Jitt/Freq. screen analyze data (text format)
"JSWeep:JSWeep"	Jitter/Sweep screen analyze data (binary format)
"JSWeep:JSWText"	Jitter/Sweep screen analyze data (text format)
"FSWeep:FSWeep"	Freq. sweep screen analyze data (binary format)
" FSWeep:FSWText"	Freq. sweep screen analyze data (text format)
"WANDer:WANDer"	Wander screen analyze data (binary format)
"WANDer:WTEXT"	Wander screen analyze data (text format)
"WANDer:TIE"	TIE screen の Wander data (binary format)
"WSWeep:WSWeep"	Wander sweep screen analyze data (binary format)
"WSWeep:WSWText"	Wander sweep screen analyze data (text format)
"PEAK:PJTData"	Peak jitter screen analyze data (binary format)
"PEAK:PJTText"	Peak jitter screen analyze data (text format)
"RECall:RECall"	Recall data

	"RECall:RTEXT" Recall data(text format)
	<file_name> = <STRING PROGRAM DATA>
	File name (no identification of capital and small letters, including extension). Up to 12 characters (excluding "'")
Function	Writes data to a file on the current directory of floppy disk.
Restriction	Invalid when, <ul style="list-style-type: none"> • No analyze data exists. • <"EALarm:EALarm"> and <"EALarm:EAText"> are set when DISPLAY:TMENu is other than <"MANual:JON">, <MANual[:JOFF]"> ,<PSEquence:JON"> or <PSEquence[:JOFF]"> • The value of the followings and the :DISPlay:TMENu settings do not match <ul style="list-style-type: none"> "JTOLerance:JTOLerance" "JTOLerance:JTOText" "JTRansfer:JTRansfer" "JTRansfer:JTRText" "JFREquency:JFREquency" "JFREquency:JFRText" "JSWeep:JSWeep" "JSWeep:JSWText" "FSWeep:FSWeep" "FSWeep:FSWText" "WANDer:WANDer" "WANDer:WTEXT" "WANDer:TIE" "WSWeep:WSWeep" "WSWeep:WSWText" "PEAK:PJTData" "PEAK:PJTText"
Example use	To write Jitter tolerance data in a "DEMO1. TXT" file: >:SYStem:MMEMory:STORe "JTOLerance:JTOLerance", "DEMO1.TXT"

4.4.7 TEST subsystem

The TEST subsystem is used for displaying the self-test results, etc.

Function	Command	Parameter
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Page 4-233

Sets the Jitter/Wander items to be tested at main-body function test.	:TEST:CONTent:JWANder	boolean
Queries the setting state of Jitter/Wander items at main-body function test.	:TEST:CONTent:JWANder ?	

Page 4-233

Sets the Jitter (STM-16) items to be tested at main-body function test.	:TEST:CONTent:JSTM16	boolean
Queries the setting state of Jitter (STM-16) items at main-body function test.	:TEST:CONTent:JSTM16 ?	

:TEST:CONTent:JWANDer <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Does not perform Jitter/Wander test. ON or 1 Performs Jitter/Wander test.
Function	Sets the Jitter/Wander items to be tested at main-body function test.
Restriction	Invalid when, <ul style="list-style-type: none"> • jitter unit is not installed. • :TEST:TYPE is other than <MFT>. • :TEST:CONTent:TYPE is other than <ISEL>.
Example use	To set the Jitter/Wander item to be tested. >:TEST:CONTent:JWANDer ON

:TEST:CONTent:JWANDer ?

Response	<boolean> = <NR1 NUMERIC RESPONSE DATA>
Function	Queries the setting state of Jitter/Wander items at main-body function test.
Example use	>:TEST:CONTent:JWANDer ? < 1

:TEST:CONTent:JSTM16 <boolean>

Parameter	<boolean> = <BOOLEAN PROGRAM DATA> OFF or 0 Does not perform Jitter (STM-16) test. ON or 1 Performs Jitter (STM-16) test.
Function	Sets the Jitter (STM-16) items to be tested at main-body function test.
Restriction	Invalid when, <ul style="list-style-type: none"> • :TEST:TYPE is other than <MFT>. • :TEST:CONTent:TYPE is other than <ISEL>. • The 2.5G Jitter unit is not installed.
Example use	> :TEST:CONTent:JSTM16 ON

:TEST:CONTent:JSTM16 ?

Response	<boolean> = <NR1 RESPONSE DATA>
Function	Queries the setting state of Jitter (STM-16) items at main-body function test.
Example use	> :TEST:CONTent:JSTM16 ? < 1

4.4.8 STATUS subsystem

The STATUS subsystem is used for controlling (setting and displaying) status registers.

Function	Command	Parameter
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Page 4-235

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:CONDtion?	
Sets mask for the Event Enable Register.	:STATUS:QUESTIONable:TELEcom:ENABLE	numeric
Queries the current mask setting of the Event Enable Register.	:STATUS:QUESTIONable:TELEcom:ENABLE?	
Sets the Positive Transition Filter.	:STATUS:QUESTIONable:TELEcom:PTRansition	numeric
Queries the current mask setting of the Positive Transition Filter.	:STATUS:QUESTIONable:TELEcom:PTRansition?	
Sets the Negative Transition Filter.	:STATUS:QUESTIONable:TELEcom:NTRansition	numeric
Queries the current mask setting of the Negative Transition Filter.	:STATUS:QUESTIONable:TELEcom:NTRansition?	

Page 4-238

Queries the Condition register content of the INSTRument status register.	:STATUS:OPERation:INSTRumentEVENT?	EVENT
Queries the Condition register content of the INSTRument status register.	:STATUS:OPERation:INSTRument:CONDtion?	
Sets mask for the Event Enable Register.	:STATUS:OPERation:INSTRument:ENABLE	numeric
Queries the current mask setting of the Event Enable Register.	:STATUS:OPERation:INSTRument:ENABLE?	
Sets the Positive Transition Filter.	:STATUS:OPERation:INSTRument:PTRansition	numeric
Queries the current mask setting of the Positive Transition Filter.	:STATUS:OPERation:INSTRument:PTRansition?	
Sets the Negative Transition Filter.	:STATUS:OPERation:INSTRument:NTRansition	numeric
Queries the current mask setting of the Negative Transition Filter.	:STATUS:OPERation:INSTRument:NTRansition?	

< TELEcom Status Register >

Supplies 139M, 34M, 8M and 2M Status Register summaries and indicates a power loss etc.

: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:CONDtion?

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:CONDtion?
< 4100 (Indicates that bits 2 and 12 are set.)

:STATus:QUESTionable:TELEcom:ENABLE <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

64 (Bit 6)	Jitter Unlock occurrence
128 (Bit 7)	Jitter Hit count occurrence
256 (Bit 8)	Wander REF LOS 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 is 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 becomes true.

Example use To set bits 6 and 7:
> :STATus:QUESTionable:TELEcom:EBABLE 192

: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 setting of the Event Enable Register.

Example use > :STATus:QUESTionable:TELEcom:ENABLE?

< 192

:STATus:QUESTionable:TELEcom:PTRansition <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

64 (Bit 6)	Jitter Unlock occurrence
128(Bit 7)	Jitter Hit count occurrence
256(Bit 8)	Wander REF LOS 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.
If the Positive Transition Filter bit is set, 1 is written to the corresponding TELEcom Event Register bit when the corresponding TELEcom Condition Register bit goes from 0 to 1.

Example use To set bits 6 and 7:
> :STATus:QUESTionable:TELEcom:PTRansition 192

: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 mask setting of the Positive Transition Filter.

Example use > :STATus:QUESTionable:TELEcom:PTRansition?
< 192

:STATus:QUESTionable:TELEcom:NTRansition <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>

64 (Bit 6)	Jitter Unlock occurrence
128(Bit 7)	Jitter Hit count occurrence
256(Bit 8)	Wander REF LOS 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.
If the Negative Transition Filter bit is set, 1 is written to the corresponding TELEcom Event Register bit when the corresponding TELEcom Condition Register bit goes from 1 to 0.

Example use To set bits 6 and 7.
> :STATus:QUESTionable:TELEcom:NTRansition 192

: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 mask setting of the Negative Transition Filter.
Example use	> :STATus:QUEStionable:TELEcom:NTRansition? < 192

< INSTRument Status Register >

Indicates the end of self-test or 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 Condition register content of the INSTRument status register.

Example use > :STATus:OPERation:INSTRument:EVENT?
 or :STATus:OPERation:INSTRument?
 < 3 (Indicates that bits 0 and 1 are set.)

:STATus:OPERation:INSTRument:CONDtion?

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:CONDtion?
 < 6 (Indicates that bits 1 and 2 are set.)

:STATus:OPERation:INSTRument:ENABLE <numeric>

Parameter <numeric> = <DECIMAL NUMERIC PROGRAM DATA>
 32 (Bit 5) End of jitter measurement
 64 (Bit 6) End of Wander measurement
 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 is 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 becomes true.

Example use To set bit 5:
 > :STATus:OPERation:INSTRument:EBABLE 32

: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 setting of the Event Enable Register.
Example use	> :STATus:OPERation:INSTRument:ENABLE? < 32

:STATus:OPERation:INSTRument:PTRansition <numeric>

Parameter	<numeric> = <DECIMAL NUMERIC PROGRAM DATA> 32 (Bit 5) End of jitter measurement 64 (Bit 6) End of Wander measurement 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. If 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 bit 5. > :STATus:OPERation:INSTRument:PTRansition 32

: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 mask setting of the Positive Transition Filter.
Example use	> :STATus:OPERation:INSTRument:PTRansition? < 32

:STATus:OPERation:INSTRument:NTRansition <numeric>

Parameter	<numeric> = <DECIMAL NUMERIC PROGRAM DATA> 32 (Bit 5) End of Jitter measurement 64 (Bit 6) End of Wander measurement 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. If 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 1 to 0.

Example use To set bit 5.
 > :STATus:OPERation:INSTrument:NTRansition 32

: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 mask setting of the Negative Transition Filter.

Example use > :STATus:OPERation:INSTrument:NTRansition?
 < 32

Appendix A Specifications of 2.5G Jitter Unit

A.1 Specifications of MP0130A 2.5G Jitter Unit

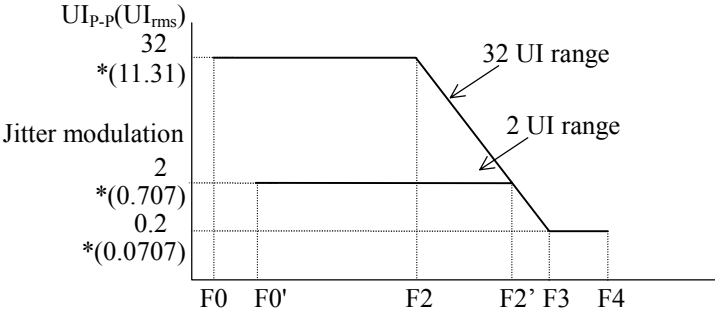
	Item	Specification
1	Clock Output	
1.1	Frequency	2488.32 MHz
1.2	Level	$0.8 \pm 0.25 V_{(P-P)}$
1.3	Connector	SMA 50 Ω
2	Clock Input	
2.1	Frequency	2488.32 MHz \pm 50 ppm
2.2	Level	$0.8 \pm 0.25 V_{(P-P)}$
2.3	Connector	SMA 50 Ω
3	Ref Clock Output	
3.1	Frequency	2488.32 MHz
3.2	Level 0.8	$0.8 \pm 0.25 V_{(P-P)(AC)}$
3.3	Connector	SMA 50 Ω
4	Ref Clock Input	
4.1	Frequency	2488.32 MHz
4.2	Level 0.8	$0.8 \pm 0.25 V_{(P-P)(AC)}$
4.3	Connector	SMA 50 Ω
5.	Ext. Mod Input	Valid only when MP0124A, MP0125A, or MP0126A is installed.
5.1	Mod Freq. range	2 Hz to 20 MHz
5.2	Wave form	Sine wave
5.3	Sensitivity	2 UI range: $2 UI_{P-P} \pm 10\% / 1 V_{(P-P)}$ 20 UI range: $20 UI_{P-P} \pm 10\% / 1 V_{(P-P)}$ 800 UI range: $800 UI_{P-P} \pm 10\% / 1 V_{(P-P)}$
5.4	Connector	BNC 75 Ω (Sharing Ext. Mod Input of MP0124A, MP0125A, or MP0126A)
6	Jitter Demodulation Output	Valid only when MP0124A, MP0125A, or MP0126A is installed.
6.1	Sensitivity	2 UI range: $1 V_{(P-P)} \pm 10\% / 2 UI_{P-P}$
6.2	Connector	32 UI range: $1 V_{(P-P)} \pm 10\% / 32 UI_{P-P}$ BNC 75 Ω (Sharing Jitter Demodulation Output of MP0124A, MP0125A, or MP0126A)
7	External Clock Input	Applies jitter to external clock.
7.1	Frequency	2488.32 MHz
7.2	Level	$0.8 \pm 0.25 V_{(P-P)(AC)}$
7.3	Connector	SMA 50 Ω
8	Wander Ref Clock Output	Valid only when MP0124A, MP0125A, or MP0126A is installed.
8.1	Frequency	1.544 MHz, 2.048 MHz
8.2	Level	$1.125 V_{(0-P)} \pm 34\%$
8.3	Connector	BNC 75 Ω (Sharing Wander Ref Clock Output of MP0124A, MP0125A, or MP0126A)

Appendix A Specifications of 2.5G Jitter Unit

	Item	Specification
9	Wander Ref Input	Valid only when MP0124A, MP0125A, or MP0126A is installed with Wander measurement option installed.
9.1	Frequency	2.048 Mbit/s \pm 50 ppm(HDB3), 2.048 MHz \pm 50 ppm(Clock)
9.2	Interface	1.544 Mbit/s \pm 50 ppm(AMI/B8ZS), 1.544 MHz \pm 50 ppm(Clock) Unbalance: 1.544 MHz, 2.048 MHz (CLOCK); 1.125 V _(0-P) \pm 34 % G.703 2.048 Mbit/s (HDB3); 2.37 V _(0-P) \pm 10 % G.703
9.3	Connector	Balance: 1.544 Mbit/s, 2.048 Mbit/s; 3.0 V _{0-P} \pm 24 % ANSI T1,102-1987 Unbalance: 75 Ω /BNC Balance: 100 Ω /Weco310 compatible (1.544 Mbit/s) 120 Ω /3-Pole CF (2.048 Mb/s) (Commonly used with Wander reference clock input connector of MP0124A/MP0125A/MP0126A)
10.1	Clock mode	Internal/Lock/Lock (10 M)
10.2	Clock frequency	1.544 MHz \pm 50 ppm, 2.048 MHz \pm 50 ppm
10.3	Clock (10 M)	
10.3.1	Frequency	10 MHz \pm 50 ppm
10.3.2	Interface	0 to +10 dBm
10.3.3	Connector	BNC 50 Ω (Commonly used with external 10 MHz reference input connector of MP0124A/MP0125A/MP0126A)
11	Frequency variable	Jitter ON/OFF
11.1	Frequency	2488.32 MHz
11.2	Variable range/step	\pm 70 ppm / 0.1 ppm (Internal Jitter "ON/OFF")
11.3	Accuracy	\pm 0.1 ppm

	Item	Specification																
12	Bit rate	Jitter ON																
12.1	Modulation signal	2488.32 Mbit/s																
12.2	generator	0.1 Hz to 20 MHz (Frequency) 0.1 Hz to 1 Hz/ Step 0.1 Hz 1 Hz to 99 Hz/ Step 1 Hz 100 Hz to 990 Hz/ Step 10 Hz 1 kHz to 9.9 kHz/ Step 0.1 kHz 10 kHz to 99 kHz/ Step 1 kHz 100 kHz to 990 kHz/ Step 10 kHz 1 MHz to 20 MHz/ Step 0.1 MHz																
	Frequency accuracy	± 100 ppm																
12.3	Range	2 UI(0.000 to 2.020 UI _{P-P} / Step 0.001 UI _{P-P})																
12.4		20 UI(0.00 to 20.20 UI _{P-P} / Step 0.01 UI _{P-P})																
		800 UI(0.0 to 808.0 UI _{P-P} / Step 0.5 UI _{P-P})																
12.5	Modulation	AUTO (at Auto measurement)																
		<p style="text-align: center;">Modulation Frequency</p> <table border="1" data-bbox="628 1375 1394 1496"> <thead> <tr> <th>Bit rate (Mbit/s)</th> <th>F1 (Hz)</th> <th>F1' (Hz)</th> <th>F2* (kHz)</th> <th>F2'* (Hz)</th> <th>F3* (kHz)</th> <th>F4* (kHz)</th> <th>F5* (kHz)</th> </tr> </thead> <tbody> <tr> <td>2488.32</td> <td>0.1</td> <td>15</td> <td>25</td> <td>600</td> <td>500</td> <td>2,000</td> <td>20,000</td> </tr> </tbody> </table>	Bit rate (Mbit/s)	F1 (Hz)	F1' (Hz)	F2* (kHz)	F2'* (Hz)	F3* (kHz)	F4* (kHz)	F5* (kHz)	2488.32	0.1	15	25	600	500	2,000	20,000
Bit rate (Mbit/s)	F1 (Hz)	F1' (Hz)	F2* (kHz)	F2'* (Hz)	F3* (kHz)	F4* (kHz)	F5* (kHz)											
2488.32	0.1	15	25	600	500	2,000	20,000											
		*: Typical																
12.6	Monitor Accuracy	2 UI range: ± 5 % ± 0.05 UI _{P-P} /at 100 kHz 20 UI range: ± 5 % ± 0.3 UI _{P-P} /at 10 kHz 800 UI range: ± 5 % ± 3.2 UI _{P-P} /at 10Hz																
12.7	Frequency response error	Additional error referring to error at 100 kHz 0.1 Hz to 2 Hz: ± 10 % 2 Hz to 20 Hz: ± 5 % 20 Hz to 300 kHz: ± 2 % 300 kHz to 1 MHz: ± 3 % 1 MHz to 3 MHz: ± 5 % 3 MHz to 20 MHz: ± 10 %																

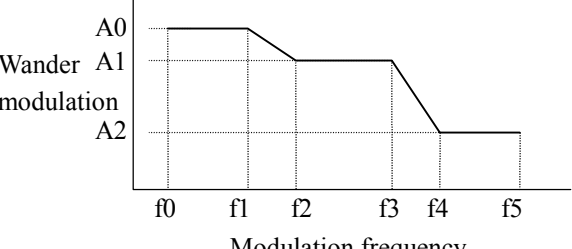
Appendix A Specifications of 2.5G Jitter Unit

	Item	Specification																				
13	Jitter Measurement																					
13.1	Bit rate	2488.32 Mbit/s																				
13.2	Unit	$UI_{p-p}, UI_{+p}, UI_{-p}/UI_{rms}$																				
13.3	Reference signal	INT / EXT																				
13.4	Resolution (range)	<p>2 UI range (0.000 to 2.020 UI_{p-p} /Step 0.001 UI_{p-p}) 32 UI range (0.00 to 32.20 UI_{p-p} /Step 0.02 UI_{p-p}) 2 UI range (0.000 to 0.714 UI_{rms} /Step 0.001 UI_{rms}) 32 UI range (0.00 to 11.38 UI_{rms} /Step 0.02 UI_{rms})</p> <p>Correction of UI_{rms} value Assuming that expression "$n\sqrt{x^2 - []^2}$" is the measurement result, a correction value is substituted to display the result. (x = measured value)</p>																				
13.5	Measurement coupled	ON/OFF																				
13.6	Measurement interval	0.5 to 99.5 sec (0.5 sec/step)																				
13.7	Filter	<p>OFF, HP, HP1, HP2, LP, HP0+LP, HP1+LP, HP2+LP, HP+LP</p> <table border="1" data-bbox="587 1086 1225 1243"> <thead> <tr> <th>Bit rate</th> <th>HP0 (Hz)</th> <th>HP1 (Hz)</th> <th>HP2 (Hz)</th> <th>HP (Hz)</th> <th>LP (Hz)</th> </tr> </thead> <tbody> <tr> <td>2488.32 Mbit/s</td> <td>10</td> <td>5 k</td> <td>1 M</td> <td>12 k</td> <td>20 M</td> </tr> <tr> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Bit rate	HP0 (Hz)	HP1 (Hz)	HP2 (Hz)	HP (Hz)	LP (Hz)	2488.32 Mbit/s	10	5 k	1 M	12 k	20 M	-							
Bit rate	HP0 (Hz)	HP1 (Hz)	HP2 (Hz)	HP (Hz)	LP (Hz)																	
2488.32 Mbit/s	10	5 k	1 M	12 k	20 M																	
-																						
13.8	Measurement range	 <p>The graph shows Jitter modulation on the y-axis and Modulation Frequency on the x-axis. The y-axis has values 32, 2, and 0.2, with corresponding multipliers * (11.31), * (0.707), and * (0.0707). The x-axis has points F0, F0', F2, F2', F3, and F4. A horizontal line at 32 UI range extends from F0 to F2. A horizontal line at 2 UI range extends from F0' to F2'. A horizontal line at 0.2 UI range extends from F3 to F4. A diagonal line connects (F2, 32) to (F2', 2). Arrows point to these lines with labels '32 UI range' and '2 UI range'.</p> <table border="1" data-bbox="529 1624 1289 1787"> <thead> <tr> <th>Bit rate (Mbit/s)</th> <th>F0 (Hz)</th> <th>F0' (Hz)</th> <th>F2 (kHz)</th> <th>F2' (Hz)</th> <th>F3 (kHz)</th> <th>F4 (kHz)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2488.32</td> <td>2UI</td> <td>-</td> <td>100</td> <td>-</td> <td>100 k</td> <td>20 M</td> </tr> <tr> <td>32UI</td> <td>10</td> <td>-</td> <td>6.25 k</td> <td>-</td> <td>20 M</td> </tr> </tbody> </table> <p>*: rms: F0 (F0') = 100 Hz</p>	Bit rate (Mbit/s)	F0 (Hz)	F0' (Hz)	F2 (kHz)	F2' (Hz)	F3 (kHz)	F4 (kHz)	2488.32	2UI	-	100	-	100 k	20 M	32UI	10	-	6.25 k	-	20 M
Bit rate (Mbit/s)	F0 (Hz)	F0' (Hz)	F2 (kHz)	F2' (Hz)	F3 (kHz)	F4 (kHz)																
2488.32	2UI	-	100	-	100 k	20 M																
	32UI	10	-	6.25 k	-	20 M																

	Item	Specification																										
13.9	Measurement accuracy	<p>【UI_{p-p}, UI_{+p}, UI_{-p}】 2 UI Range : ± 5 % ± X UI_{p-p}/at 100 kHz 32 UI Range : ± 5 % ± X UI_{p-p}/at 1 kHz</p> <table border="1" data-bbox="667 555 1394 689"> <thead> <tr> <th rowspan="2">Bit rate (b/s)</th> <th rowspan="2">Range</th> <th colspan="2">Additional error (UI_{p-p})</th> </tr> <tr> <th>Clock</th> <th>*SDH Internal</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2488.32 M</td> <td>2UI</td> <td>0.030</td> <td>0.110</td> </tr> <tr> <td>32UI</td> <td>0.60</td> <td>2.20</td> </tr> </tbody> </table> <p>with: HP1 + LP * SDH Internal: VC4, Info; PRBS 2²³ - 1, Scramble "ON" + 10 °C to + 40 °C Input level: within the range from -12 to -10 dBm, add 0.01 UI_{p-p} for each 1dB.</p> <p>【UI_{rms}】 2 UI range: ± 5 % ± Y UI_{rms}/at 100 kHz 32 UI range: ± 5 % ± Y UI_{rms}/at 1 kHz</p> <table border="1" data-bbox="667 1043 1394 1178"> <thead> <tr> <th rowspan="2">Bit rate (b/s)</th> <th rowspan="2">Range</th> <th colspan="2">Additional error (UI_{rms})</th> </tr> <tr> <th>Clock</th> <th>*SDH Internal</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2488.32M</td> <td>2UI</td> <td>0.007</td> <td>0.027</td> </tr> <tr> <td>32UI</td> <td>0.35</td> <td>0.55</td> </tr> </tbody> </table> <p>with: HP1 + LP * SDH Internal: VC4, Info; PRBS 2²³ - 1, Scramble "ON" + 10 °C to + 40 °C Input level: within the range from -12 to -10 dBm, add 0.002 UI_{rms} for each 1 dB.</p>	Bit rate (b/s)	Range	Additional error (UI _{p-p})		Clock	*SDH Internal	2488.32 M	2UI	0.030	0.110	32UI	0.60	2.20	Bit rate (b/s)	Range	Additional error (UI _{rms})		Clock	*SDH Internal	2488.32M	2UI	0.007	0.027	32UI	0.35	0.55
Bit rate (b/s)	Range	Additional error (UI _{p-p})																										
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2488.32 M	2UI	0.030	0.110																									
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Bit rate (b/s)	Range	Additional error (UI _{rms})																										
		Clock	*SDH Internal																									
2488.32M	2UI	0.007	0.027																									
	32UI	0.35	0.55																									
13.10	Frequency response error	Additional error referring to error at 100 kHz 10 Hz to 20 Hz : ± 5 % 20 Hz to 300 kHz : ± 2 % 300 kHz to 1 MHz : ± 3 % 1 MHz to 3 MHz : ± 5 % 3 MHz to 20 MHz : ± 10 %																										
13.11	Hit measurement	Counts the number of the jitter which exceeds the threshold of a jitter amplitude which has been set.																										
13.11.1	Count	Total of a second when one HIT or more exists.																										
13.11.2	Hit second	Ratio of seconds (when no HIT exists) to the measuring period.																										
13.11.3	%																											
13.11.4	Hit threshold	2 UI Range : 0.05 to 1.0 UI _{0-p} /Step 0.01 UI _{0-p} 32 UI Range : 0.50 to 16 UI _{0-p} /Step 0.1 UI _{0-p} Threshold setting error: Sensitivity ± 5 %																										
13.11.5	Jitter signal half width	Typical > 100 ns pulse width counted																										
13.11.6	Display range	Hit count, Hit second : 0 to 999999 to 9.9E15, > 9.9E15 % : 0.0000 to 100.0000 %																										

Appendix A Specifications of 2.5G Jitter Unit

	Item	Specification												
14	Jitter Tolerance measurement	Performs the Jitter Tolerance measurement for a device under test (DUT). 14.1 Display Graphic & Numerical 14.2 Mask table 2488 M ---- ITU-T G.825, G.958 Type A/B, User 14.3 Error 1 sec error : Count : 1 > 999 Rate : > 1E-3, > 1E-4, > 1E-5, > 1E-6, > 1E-7 Default: Judges under the condition in which all the errors or the alarms continue for two seconds. 14.4 Tolerance table Max 20 points (Default or User)												
15	Jitter Transfer	Performs the Jitter Transfer measurement for DUT. 15.1 Display Graphic & Numerical 15.2 Mask table 2488 M ---- ITU-T G.958 Type A/B, User 15.3 Transfer table Max 20 points (Default to User)												
<table border="1"> <thead> <tr> <th data-bbox="549 1010 842 1055">Modulation frequency</th> <th data-bbox="842 1010 1203 1055">Bandwidth selection (-3 dB)</th> </tr> </thead> <tbody> <tr> <td data-bbox="549 1055 842 1093">fm ≥ 100 Hz</td> <td data-bbox="842 1055 1203 1093">Bw < 10 Hz</td> </tr> </tbody> </table>		Modulation frequency	Bandwidth selection (-3 dB)	fm ≥ 100 Hz	Bw < 10 Hz									
Modulation frequency	Bandwidth selection (-3 dB)													
fm ≥ 100 Hz	Bw < 10 Hz													
16	Frequency offset vs Jitter	Performs the Frequency offset vs Jitter measurement for DUT. 16.1 Frequency valuable 16.2 Measurement interval Max ± 50 ppm/step 1 to 50 ppm 16.3 Built-in filter 0.5 to 99.5 sec OFF, HP, HP1, HP2, LP, HP0+LP, HP1+LP, HP2+LP, HP+LP												
<table border="1"> <thead> <tr> <th data-bbox="644 1368 858 1451">Bit rate</th> <th data-bbox="858 1368 948 1451">HP0 (Hz)</th> <th data-bbox="948 1368 1037 1451">HP1 (Hz)</th> <th data-bbox="1037 1368 1142 1451">HP2 (Hz)</th> <th data-bbox="1142 1368 1232 1451">HP (Hz)</th> <th data-bbox="1232 1368 1350 1451">LP (Hz)</th> </tr> </thead> <tbody> <tr> <td data-bbox="644 1451 858 1491">2488.32 Mbit/s</td> <td data-bbox="858 1451 948 1491">10</td> <td data-bbox="948 1451 1037 1491">5 k</td> <td data-bbox="1037 1451 1142 1491">1 M</td> <td data-bbox="1142 1451 1232 1491">12 k</td> <td data-bbox="1232 1451 1350 1491">20 M</td> </tr> </tbody> </table>		Bit rate	HP0 (Hz)	HP1 (Hz)	HP2 (Hz)	HP (Hz)	LP (Hz)	2488.32 Mbit/s	10	5 k	1 M	12 k	20 M	
Bit rate	HP0 (Hz)	HP1 (Hz)	HP2 (Hz)	HP (Hz)	LP (Hz)									
2488.32 Mbit/s	10	5 k	1 M	12 k	20 M									
16.4	Display	Graphic & Numerical												

	Item	Specification																													
17	Wander Generation (W*)																														
17.1	Frequency	2488.32 MHz																													
17.2	Modulation signal generator	<p>10 uHz to 0.2 Hz (sine-wave)</p> <p>10 u to 99 uHz/Step 1 uHz</p> <p>100 u to 990 uHz/Step 10 uHz</p> <p>1 m to 9 mHz/Step 0.1 mHz</p> <p>10 m to 99 mHz/Step 1 mHz</p> <p>100 m to 200 mHz/Step 10 mHz</p> <p>±100 ppm</p>																													
17.3	Frequency accuracy	0 to 57600 UI _{P-P} /Step 10 UI _{P-P} (2488.32 Mbit/s)																													
17.4	Range																														
17.5	Amplitude	 <p style="text-align: center;">Modulation frequency</p> <table border="1" data-bbox="628 1097 1445 1223"> <thead> <tr> <th rowspan="2">Bit rate</th> <th colspan="3">Amplitude (UI_{P-P})</th> <th colspan="6">Frequency (Hz)</th> </tr> <tr> <th>A0</th> <th>A1</th> <th>A2</th> <th>f0</th> <th>f1</th> <th>f2</th> <th>f3</th> <th>f4</th> <th>f5</th> </tr> </thead> <tbody> <tr> <td>2488.32 Mbit/s</td> <td>57600</td> <td>6480</td> <td>810</td> <td>10u</td> <td>180u</td> <td>1.6m</td> <td>16m</td> <td>0.13</td> <td>0.2</td> </tr> </tbody> </table>	Bit rate	Amplitude (UI _{P-P})			Frequency (Hz)						A0	A1	A2	f0	f1	f2	f3	f4	f5	2488.32 Mbit/s	57600	6480	810	10u	180u	1.6m	16m	0.13	0.2
Bit rate	Amplitude (UI _{P-P})			Frequency (Hz)																											
	A0	A1	A2	f0	f1	f2	f3	f4	f5																						
2488.32 Mbit/s	57600	6480	810	10u	180u	1.6m	16m	0.13	0.2																						

Appendix A Specifications of 2.5G Jitter Unit

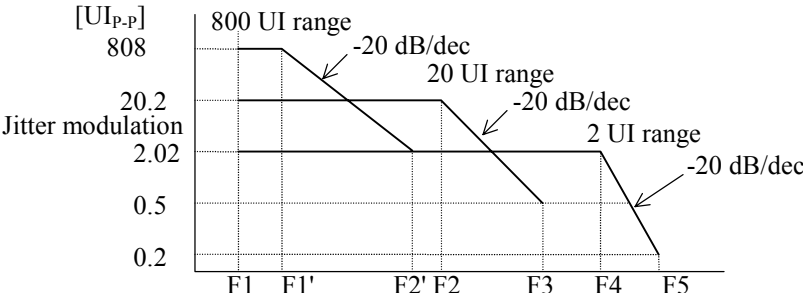
	Item	Specification
18	Wander Measurement (*W)	
18.1	Bit rate	2488.32 Mbit/s
18.2	Evaluation Mode	P-P, +P, -P, TIE
18.3	Measurement frequency	< 10 Hz
18.4	range	25 ms
18.5	Sampling period	P-P 0.0 to 3.2E5 ns
	Measurement range	+P,-P 0.0 to 1.6E5 ns TIE 0.0 to ±1.6E5 ns
18.6	Resolution	0.1 ns
18.7	Accuracy	±5 % ± 20 ns (Measurement result: 0.0 to ± 9999 ns) ±5 % ± 1E3 ns (Measurement result > ± 1.6E5 ns)
18.8	Filter table	DC to 0.01 Hz DC to 10 Hz 0.01 Hz to 10 Hz
18.9	Wander auto measurement	TIE, MTIE*, TDEV* * For MTIE/TDEV measurement, software (MS150001A Wander (MTIE, TDEV) Measurement Application Software) running on an external PC is required.
19	Frequency Measurement	
19.1	Frequency	2488.32 Mbit/s ± 0.1 %
19.2	Resolution	0.1 ppm
19.3	Accuracy	±0.1 ppm (After calibration at 60 minutes after power on, at 23 ± 5 °C)
19.4	Range	[Hz] : Displays up to ± (nominal frequency × 10 ⁻⁷). [ppm] : 0.0 to ±100.0 [ppm]
20	General	
20.1	Dimensions/mass	21 (H) × 255 (W) × 137.6 (D) (mm) (Excluding projections)/1.2 kg or less
20.2	Environmental performance	100 to 220Vac (max. 250 Vac, automatic switching), 47.5 to 63 Hz, 300 VA (max.)
20.3	Temperature	0 to 40 °C Operating - 20 to 60 °C Storage

A.2 Specifications of MU150011A 2.5G Jitter Unit

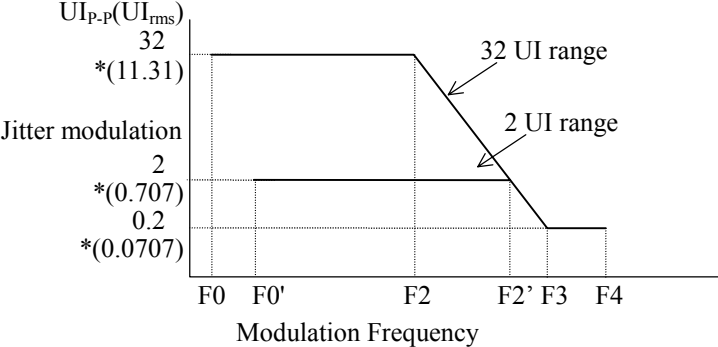
	Item	Specification
1	Clock Output	
1.1	Frequency	2488.32 MHz
1.2	Level	$0.8 \pm 0.25 V_{(P-P)}$
1.3	Connector	SMA 50 Ω
2	Clock Input	
2.1	Frequency	2488.32 MHz \pm 100 ppm
2.2	Level	$0.8 \pm 0.25 V_{(P-P)}$
2.3	Connector	SMA 50 Ω
3	Ref Clock Output	
3.1	Frequency	2488.32 MHz
3.2	Level 0.8	$0.8 \pm 0.25 V_{(P-P)(AC)}$
3.3	Connector	SMA 50 Ω
4	Ref Clock Input	
4.1	Frequency	2488.32 MHz \pm 50 ppm
4.2	Level 0.8	$0.8 \pm 0.25 V_{(P-P)(AC)}$
4.3	Connector	SMA 50 Ω
5.	Ext. Mod Input	Valid only when MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A is installed.
5.1	Mod Freq. range	0.1 Hz to 20 MHz
5.2	Wave form	Sine wave
5.3	Sensitivity	2 UI range: $2 UI_{P-P} \pm 10 \% / 1 V_{(P-P)}$ 20 UI range: $20 UI_{P-P} \pm 15 \% / 1 V_{(P-P)}$
5.4	Connector	800 UI range: $800 UI_{P-P} \pm 15 \% / 1 V_{(P-P)}$ BNC 75 Ω (Sharing Ext. Mod Input of MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A)
6	Jitter Demodulation Output	Valid only when MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A is installed.
6.1	Sensitivity	2 UI range: $1 V_{(P-P)} \pm 15 \% / 2 UI_{P-P}$
6.2	Connector	32 UI range: $1 V_{(P-P)} \pm 15 \% / 32 UI_{P-P}$ BNC 75 Ω (Sharing Jitter Demodulation Output of MP0124A, MP0125A, MP0126A , MU150005A, MU150006A, or MU150007A)
7	External Clock Input	Applies jitter to external clock.
7.1	Frequency	2488.32 MHz
7.2	Level	$0.8 \pm 0.25 V_{(P-P)(AC)}$
7.3	Connector	SMA 50 Ω

Appendix A Specifications of 2.5G Jitter Unit

	Item	Specification
8	Wander Ref Clock Output	Valid only when MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A is installed.
8.1	Frequency	1.544 MHz, 2.048 MHz
8.2	Level	1.125 V _(0-P) ± 34 %
8.3	Connector	BNC 75 Ω (Sharing Wander Ref Clock Output of MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A)
9	Wander Ref Input	Valid only when MP0124A, MP0125A, or MP0126A is installed with Wander measurement option installed.
9.1	Frequency	2.048Mbit/s ± 50ppm(HDB3) 2.048MHz ± 50ppm(Clock) 1.544Mbit/s ± 50ppm(AMI/B8ZS) 1.544MHz ± 50ppm(Clock) 64k+8kHz ± 50ppm 10MHz ± 50ppm
9.2	Interface	Unbalanced 2.048MHz (Clock): 1.125Vo-p ± 34% G.703 2.048Mbit/s (HDB3): 2.37Vo-p ± 10% G.703 5MHz*, 10MHz: 0 to +10dBm Balanced 64k+8kHz, 1.544Mbit/s, 2.048Mbit/s: 3.0Vo-p ± 24% ANSI T1, 102-1987 1.544MHz (Clock): 1.125Vo-p ± 34% G.703 2.048MHz (Clock): 1.45Vo-p ± 24% G.703 * Valid only when MU150005A, MU150006A, or MU150007A is installed.
9.3	Connector	Unbalance : 75 Ω/BNC Balanced : 100 Ω/Weco310 compatible (1.544Mbit/s) 120 Ω/3pin sequence (2.048Mbit/s) (Commonly used with Wander reference clock input connector of MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A.)
10.1	Clock mode	Internal/Lock/Lock (10 M)
10.2	Clock frequency	1.544 MHz ± 50 ppm, 2.048 MHz ± 50 ppm
10.3	Clock (10 M)	
10.3.1	Frequency	10 MHz ± 50 ppm
10.3.2	Interface	0 to +10 dBm
10.3.3	Connector	BNC 50 Ω (Commonly used with external 10 MHz reference input connector of MP0124A, MP0125A, MP0126A, MU150005A, MU150006A, or MU150007A.)
11	Frequency variable	Jitter ON/OFF
11.1	Frequency	2488.32 MHz
11.2	Variable range/step	± 100 ppm / 0.1 ppm (Internal Jitter "ON/OFF")
11.3	Accuracy	± 0.1 ppm

	Item	Specification																
12	Jitter generation	Jitter ON																
12.1	Bit rate	2488.32 Mbit/s																
12.2	Internal modulation	0.1 Hz to 20 MHz (Frequency) 0.1 Hz to 1 Hz/ Step 0.1 Hz 1 Hz to 99 Hz/ Step 1 Hz 100 Hz to 990 Hz/ Step 10 Hz 1 kHz to 9.9 kHz/ Step 0.1 kHz 10 kHz to 99 kHz/ Step 1 kHz 100 kHz to 990 kHz/ Step 10 kHz 1 MHz to 20 MHz/ Step 0.1 MHz																
12.3	Frequency accuracy	± 100 ppm																
12.4	Range	2 UI(0.000 to 2.020 UI _{P-P} / Step 0.001 UI _{P-P}) 20 UI(0.00 to 20.20 UI _{P-P} / Step 0.01 UI _{P-P}) 800 UI(0.0 to 808.0 UI _{P-P} / Step 0.4 UI _{P-P})																
12.5	Modulation	AUTO (at Auto measurement)  <table border="1" data-bbox="630 1377 1396 1489"> <thead> <tr> <th>Bit rate (Mbit/s)</th> <th>F1 (Hz)</th> <th>F1' (Hz)</th> <th>F2* (kHz)</th> <th>F2'* (Hz)</th> <th>F3* (kHz)</th> <th>F4* (kHz)</th> <th>F5* (kHz)</th> </tr> </thead> <tbody> <tr> <td>2488.32</td> <td>0.1</td> <td>60</td> <td>2.5</td> <td>30</td> <td>1,200</td> <td>2,000</td> <td>20,000</td> </tr> </tbody> </table> <p style="text-align: right;">*: Typical</p>	Bit rate (Mbit/s)	F1 (Hz)	F1' (Hz)	F2* (kHz)	F2'* (Hz)	F3* (kHz)	F4* (kHz)	F5* (kHz)	2488.32	0.1	60	2.5	30	1,200	2,000	20,000
Bit rate (Mbit/s)	F1 (Hz)	F1' (Hz)	F2* (kHz)	F2'* (Hz)	F3* (kHz)	F4* (kHz)	F5* (kHz)											
2488.32	0.1	60	2.5	30	1,200	2,000	20,000											
12.6	Monitor Accuracy	2 UI range: $\pm Q \% \pm 0.02$ UI _{P-P} 20 UI range: $\pm Q \% \pm 0.3$ UI _{P-P} 800 UI range: $\pm Q \% \pm 12.5$ UI _{P-P} See table below for Q value. <table border="1" data-bbox="630 1702 1101 1892"> <thead> <tr> <th>Error Q</th> <th>Frequency range (Hz)</th> </tr> </thead> <tbody> <tr> <td>$\pm 12\%$</td> <td>0.1 to 5k</td> </tr> <tr> <td>$\pm 8\%$</td> <td>5 to 500k</td> </tr> <tr> <td>$\pm 12\%$</td> <td>500k to 2M</td> </tr> <tr> <td>$\pm 15\%$</td> <td>2M to 20M</td> </tr> </tbody> </table>	Error Q	Frequency range (Hz)	$\pm 12\%$	0.1 to 5k	$\pm 8\%$	5 to 500k	$\pm 12\%$	500k to 2M	$\pm 15\%$	2M to 20M						
Error Q	Frequency range (Hz)																	
$\pm 12\%$	0.1 to 5k																	
$\pm 8\%$	5 to 500k																	
$\pm 12\%$	500k to 2M																	
$\pm 15\%$	2M to 20M																	

Appendix A Specifications of 2.5G Jitter Unit

	Item	Specification																												
13	Jitter Measurement																													
13.1	Bit rate	2488.32 Mbit/s																												
13.2	Unit	$UI_{p-p}, UI_{+p}, UI_p/UI_{rms}$																												
13.3	Reference signal	Internal / External																												
13.4	Resolution (range)	<p>2 UI range (0.000 to 2.020 UI_{p-p} /Step 0.001 UI_{p-p}) 32 UI range (0.00 to 32.20 UI_{p-p} /Step 0.02 UI_{p-p}) 2 UI range (0.000 to 0.714 UI_{rms} /Step 0.001 UI_{rms}) 32 UI range (0.00 to 11.38 UI_{rms} /Step 0.02 UI_{rms})</p> <p>Correction of UI_{rms} value Assuming that expression "$n\sqrt{x^2 - []^2}$" is the measurement result, a correction value is substituted to display the result. (x = measured value)</p>																												
13.5	Measurement coupled	ON/OFF																												
13.6	Measurement interval	0.5 to 99.5 sec (0.5 sec/step)																												
13.7	Filter	<p>LP, HP0+LP, HP1+LP, HP2+LP, HP+LP</p> <table border="1" data-bbox="584 1070 1227 1227"> <thead> <tr> <th>Bit rate</th> <th>HP0 (Hz)</th> <th>HP1 (Hz)</th> <th>HP2 (Hz)</th> <th>HP (Hz)</th> <th>LP (Hz)</th> </tr> </thead> <tbody> <tr> <td>2488.32 Mbit/s</td> <td>10</td> <td>5 k</td> <td>1 M</td> <td>12 k</td> <td>20 M</td> </tr> </tbody> </table>	Bit rate	HP0 (Hz)	HP1 (Hz)	HP2 (Hz)	HP (Hz)	LP (Hz)	2488.32 Mbit/s	10	5 k	1 M	12 k	20 M																
Bit rate	HP0 (Hz)	HP1 (Hz)	HP2 (Hz)	HP (Hz)	LP (Hz)																									
2488.32 Mbit/s	10	5 k	1 M	12 k	20 M																									
13.8	Filter accuracy	$\pm 10\%$ (3dB point)																												
13.9	Measurement range	 <p>The graph shows Jitter modulation on the y-axis and Modulation Frequency on the x-axis. The y-axis has values 32, 2, and 0.2, with multipliers $UI_{p-p}(UI_{rms})$, $*(11.31)$, $*(0.707)$, and $*(0.0707)$ respectively. The x-axis has points F0, F0', F2, F2', F3, and F4. Two ranges are shown: a 32 UI range (higher modulation) and a 2 UI range (lower modulation).</p> <table border="1" data-bbox="528 1630 1289 1787"> <thead> <tr> <th rowspan="2">Bit rate (Mbit/s)</th> <th colspan="6">Modulation Frequency</th> </tr> <tr> <th>F0 (Hz)</th> <th>F0' (Hz)</th> <th>F2 (kHz)</th> <th>F2' (Hz)</th> <th>F3 (kHz)</th> <th>F4 (kHz)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2488.32</td> <td>2UI</td> <td>-</td> <td>100</td> <td>-</td> <td>100 k</td> <td>1 M</td> <td>20 M</td> </tr> <tr> <td>32UI</td> <td>10</td> <td>-</td> <td>6.25 k</td> <td>-</td> <td>1 M</td> <td>20 M</td> </tr> </tbody> </table> <p>*: rms: F0 (F0') = 100 Hz</p>	Bit rate (Mbit/s)	Modulation Frequency						F0 (Hz)	F0' (Hz)	F2 (kHz)	F2' (Hz)	F3 (kHz)	F4 (kHz)	2488.32	2UI	-	100	-	100 k	1 M	20 M	32UI	10	-	6.25 k	-	1 M	20 M
Bit rate (Mbit/s)	Modulation Frequency																													
	F0 (Hz)	F0' (Hz)	F2 (kHz)	F2' (Hz)	F3 (kHz)	F4 (kHz)																								
2488.32	2UI	-	100	-	100 k	1 M	20 M																							
	32UI	10	-	6.25 k	-	1 M	20 M																							

	Item	Specification																																																																								
13.9	Measurement accuracy	<p>【UI_{p-p}, UI_{+p}, UI_{-p}】 2 UI Range : ± R % ± W UI_{p-p} 32 UI Range : ± R % ± W UI_{p-p} See table below for W value.</p> <table border="1" data-bbox="660 591 1406 719"> <thead> <tr> <th rowspan="3">Bit rate (bit/s)</th> <th colspan="5">Structured signal</th> </tr> <tr> <th colspan="2">HP1+LP</th> <th colspan="2">HP2+LP</th> <th rowspan="2">Container</th> </tr> <tr> <th>2UI</th> <th>32UI</th> <th>2UI</th> <th>32UI</th> </tr> </thead> <tbody> <tr> <td>2488.32M</td> <td>0.100</td> <td>2.2</td> <td>0.050</td> <td>1.40</td> <td>VC4-16C</td> </tr> </tbody> </table> <p style="text-align: right;">Info: 2²³-1</p> <table border="1" data-bbox="660 781 1286 909"> <thead> <tr> <th rowspan="3">Bit rate (bit/s)</th> <th colspan="4">Clock signal</th> </tr> <tr> <th colspan="2">HP1+LP</th> <th colspan="2">HP2+LP</th> </tr> <tr> <th>2UI</th> <th>32UI</th> <th>2UI</th> <th>32UI</th> </tr> </thead> <tbody> <tr> <td>2488.32M</td> <td>0.050</td> <td>0.60</td> <td>0.030</td> <td>0.50</td> </tr> </tbody> </table> <p>Input level: within the range from -12 to -10 dBm, add 0.01 UI_{p-p} for each 1dB.</p> <p>【UI_{rms}】 2 UI range: ± R % ± Y UI_{rms} 32 UI range: ± R % ± Y UI_{rms}</p> <table border="1" data-bbox="660 1176 1406 1303"> <thead> <tr> <th rowspan="3">Bit rate (bit/s)</th> <th colspan="3">Structured signal</th> <th colspan="2">Clock signal</th> </tr> <tr> <th colspan="2">HP+LP</th> <th rowspan="2">Container</th> <th colspan="2">HP+LP</th> </tr> <tr> <th>2UI</th> <th>32UI</th> <th>2UI</th> <th>32UI</th> </tr> </thead> <tbody> <tr> <td>2488.32M</td> <td>0.012</td> <td>0.08</td> <td>VC4-16C</td> <td>0.010</td> <td>0.06</td> </tr> </tbody> </table> <p style="text-align: right;">Info: 2²³-1</p> <p>Input level: within the range from -12 to -10 dBm, add 0.002 UI_{rms} for each 1 dB.</p> <p>Frequency response error (R value)</p> <table border="1" data-bbox="644 1458 1230 1653"> <thead> <tr> <th>Additional Error</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>± 7%</td> <td>5 – 300kHz</td> </tr> <tr> <td>± 8%</td> <td>300kHz – 1MHz</td> </tr> <tr> <td>± 10%</td> <td>1 – 3MHz</td> </tr> <tr> <td>± 15%</td> <td>3 – 10MHz</td> </tr> <tr> <td>± 20%</td> <td>10 – 20MHz</td> </tr> </tbody> </table>	Bit rate (bit/s)	Structured signal					HP1+LP		HP2+LP		Container	2UI	32UI	2UI	32UI	2488.32M	0.100	2.2	0.050	1.40	VC4-16C	Bit rate (bit/s)	Clock signal				HP1+LP		HP2+LP		2UI	32UI	2UI	32UI	2488.32M	0.050	0.60	0.030	0.50	Bit rate (bit/s)	Structured signal			Clock signal		HP+LP		Container	HP+LP		2UI	32UI	2UI	32UI	2488.32M	0.012	0.08	VC4-16C	0.010	0.06	Additional Error	Frequency	± 7%	5 – 300kHz	± 8%	300kHz – 1MHz	± 10%	1 – 3MHz	± 15%	3 – 10MHz	± 20%	10 – 20MHz
Bit rate (bit/s)	Structured signal																																																																									
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± 20%	10 – 20MHz																																																																									
13.10	Hit measurement	Counts the number of the jitter which exceeds the threshold of a jitter																																																																								
13.10.1	Count	amplitude which has been set.																																																																								
13.10.2	Hit second	Total of a second when one HIT or more exists.																																																																								
13.10.3	%	Ratio of seconds (when no HIT exists) to the measuring period.																																																																								
13.10.4	Hit threshold	2 UI Range : 0.05 to 1.0 UI _{0-p} /Step 0.01 UI _{0-p} 32 UI Range : 0.50 to 16 UI _{0-p} /Step 0.1 UI _{0-p} Threshold setting error: Sensitivity ± 5 %																																																																								
13.10.5	Jitter signal half width	Typical > 100 ns pulse width counted																																																																								
13.10.6	Display range	Hit count, Hit second : 0 to 999999 to 9.9E15, > 9.9E15 % : 0.0000 to 100.0000 %																																																																								

Appendix A Specifications of 2.5G Jitter Unit

	Item	Specification				
14	Jitter Tolerance measurement	Performs the Jitter Tolerance measurement for a device under test (DUT).				
14.1	Display	Graphic & Numerical				
14.2	Mask table	2488 M ---- ITU-T G.825, G.958 Type A/B, G.813, Bell253, User				
14.3	Error detect condition	<p>1 second errorJudges under the condition in which 1 second of the error is detected. The number of the error to be detected can be set as follows.</p> <p>Count : 1 to 99999</p> <p>Rate : >1E-3, >1E-4, >1E-5, >1E-6, or >1E-7</p> <p>Onset of errorsJudges under the condition in which the error detection for two seconds or more during 30 seconds.</p> <p>1dB power penalty ..Judges under the condition in which 100 or more errors are detected for 1 second.</p> <p>CountJudges under the condition in which 1 to 99,999 errors are detected independent of measurement time.</p> <p>RateJudges under the condition in which the error is detected independent of measurement time. The rate of the error to be detected can be set as follows.</p> <p>Rate : >1E-3, >1E-4, >1E-5, >1E-6, or >1E-7</p> <p>DefaultJudges under the condition in which all the errors or alarms continue for two seconds.</p> <p>Sets time to generate jitter at each point.</p>				
14.4	Hold time	Range : 1.0 to 99.5 s Step : 0.5 s				
14.5	Waiting time	Sets time to change a measurement point and generate jitter again.				
14.6	Tolerance table	Range : 0.0 to 99.5 s Step : 0.5 s				
		Max 20 points (Default or User)				
15	Jitter Transfer	Performs the Jitter Transfer measurement for DUT.				
15.1	Display	Graphic & Numerical				
15.2	Mask table	2488 M ---- ITU-T G.958 Type A/B, Bell253, ANSI T1.105.03, User				
15.3	Transfer table	Max 20 points (Default to User)				
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Modulation frequency</td> <td style="width: 50%; text-align: center;">Bandwidth selection (-3 dB)</td> </tr> <tr> <td style="text-align: center;">$f_m \geq 100 \text{ Hz}$</td> <td style="text-align: center;">$B_w < 10 \text{ Hz}$</td> </tr> </table>	Modulation frequency	Bandwidth selection (-3 dB)	$f_m \geq 100 \text{ Hz}$	$B_w < 10 \text{ Hz}$
Modulation frequency	Bandwidth selection (-3 dB)					
$f_m \geq 100 \text{ Hz}$	$B_w < 10 \text{ Hz}$					

	Item	Specifications
16	Jitter sweep	Performs the Jitter Sweep measurement for DUT.
16.1	Display	Graphic & Numerical
16.2	Mask table	ITU-T G958A/B, G.825, G.813, Bell253
16.3	Sweep table	Max. 20 points (Default or User)
16.4	Error detect condition	<p>1 second errorJudges under the condition in which 1 second of the error is detected. The number of the error to be detected can be set as follows.</p> <p>Count : 1 to 99999</p> <p>Rate : >1E-3, >1E-4, >1E-5, >1E-6, or >1E-7</p> <p>Onset of errorsJudges under the condition in which the error detection for two seconds or more during 30 seconds.</p> <p>1dB power penalty ..Judges under the condition in which 100 or more errors are detected for 1 second.</p> <p>CountJudges under the condition in which 1 to 99,999 errors are detected independent of measurement time.</p> <p>RateJudges under the condition in which the error is detected independent of measurement time. The rate of the error to be detected can be set as follows.</p> <p>Rate : >1E-3, >1E-4, >1E-5, >1E-6, or >1E-7</p> <p>DefaultJudges under the condition in which all the errors and alarms continue for two seconds.</p>
16.5	Hold time	<p>Sets time to generate jitter at each point.</p> <p>Range : 1.0 to 99.5 s Step : 0.5 s</p>
16.6	Waiting time	<p>Sets time to change a measurement point and generate jitter again.</p> <p>Range : 0.0 to 99.5 s Step : 0.5 s</p>

Appendix A Specifications of 2.5G Jitter Unit

	Item	Specifications
17	Frequency sweep	Performs the Jitter Sweep measurement for DUT.
17.1	Frequency	Up to ± 100 ppm, Step : 1 to 50ppm
17.2	Display	Graphic & Numerical
17.3	Error detect Condition	<p>1 second error Judges under the condition in which 1 second of the error is detected. The number of the error to be detected can be set as follows.</p> <p>Count : 1 to 99999</p> <p>Rate : $>1E-3$, $>1E-4$, $>1E-5$, $>1E-6$, or $>1E-7$</p> <p>Onset of errors Judges under the condition in which the error detection for two seconds or more during 30 seconds.</p> <p>1dB power penalty . Judges under the condition in which 100 or more errors are detected for 1 second.</p> <p>Count Judges under the condition in which 1 to 99,999 errors are detected independent of measurement time.</p> <p>Rate Judges under the condition in which the error is detected independent of measurement time. The rate of the error to be detected can be set as follows.</p> <p>Rate : $>1E-3$, $>1E-4$, $>1E-5$, $>1E-6$, or $>1E-7$</p> <p>Default Judges under the condition in which all the errors and alarms continue for two seconds.</p>
17.4	Hold time	Sets time to generate jitter at each point.
		Range : 1.0 to 99.5 s Step : 0.5 s
17.5	Waiting time	Sets time to change a measurement point and generate jitter again.
		Range : 0.0 to 99.5 s Step : 0.5 s

Item		Specifications																													
18	Wander sweep	Performs the Wander Sweep measurement for DUT.																													
18.1	Display	Graphic & Numerical																													
18.2	Sweep table	ITU-T G.812 Type1/Type2/Type3/Type3, G813, G825, User																													
18.3	Mask table	Max. 20 points (Default or User)																													
18.4	Error detect condition	Count Judges under the condition in which 1 to 99,999 errors are detected independent of measurement time. Rate Judges under the condition in which the error is detected independent of measurement time. The rate of the error to be detected can be set as follows. Rate : >1E-3, >1E-4, >1E-5, >1E-6, >1E-7, >1E-8, >1E-9, >1E-10, >1E-11																													
19	Wander Generation (W*)																														
19.1	Frequency	2488.32 MHz																													
19.2	Modulation signal generator	10 uHz to 0.2 Hz (sine-wave) 10 u to 99 uHz/Step 1 uHz 100 u to 990 uHz/Step 10 uHz 1 m to 9 mHz/Step 0.1 mHz 10 m to 99 mHz/Step 1 mHz 100 m to 200 mHz/Step 10 mHz																													
19.3	Frequency accuracy	±100 ppm																													
19.4	Range	0 to 57600 UI _{P-P} /Step 30 UI _{P-P} (2488.32 Mbit/s)																													
19.5	Amplitude	<table border="1"> <thead> <tr> <th rowspan="2">Bit rate</th> <th colspan="3">Amplitude (UI_{P-P})</th> <th colspan="6">Frequency (Hz)</th> </tr> <tr> <th>A0</th> <th>A1</th> <th>A2</th> <th>f0</th> <th>f1</th> <th>f2</th> <th>f3</th> <th>f4</th> <th>f5</th> </tr> </thead> <tbody> <tr> <td>2488.32 Mbit/s</td> <td>57600</td> <td>6480</td> <td>810</td> <td>10u</td> <td>180u</td> <td>1.6m</td> <td>16m</td> <td>0.13</td> <td>0.2</td> </tr> </tbody> </table>	Bit rate	Amplitude (UI _{P-P})			Frequency (Hz)						A0	A1	A2	f0	f1	f2	f3	f4	f5	2488.32 Mbit/s	57600	6480	810	10u	180u	1.6m	16m	0.13	0.2
Bit rate	Amplitude (UI _{P-P})			Frequency (Hz)																											
	A0	A1	A2	f0	f1	f2	f3	f4	f5																						
2488.32 Mbit/s	57600	6480	810	10u	180u	1.6m	16m	0.13	0.2																						

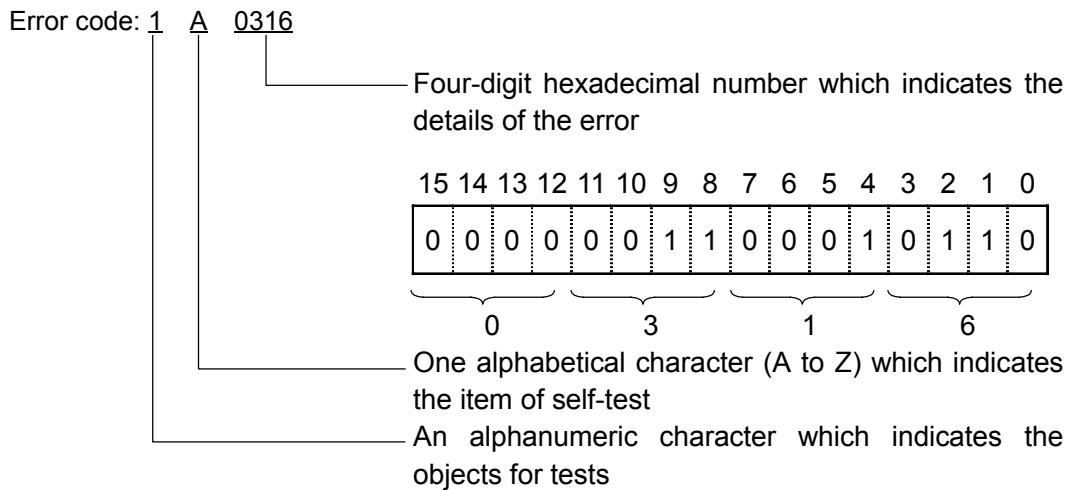
Appendix A Specifications of 2.5G Jitter Unit

	Item	Specification															
20	Wander Measurement (*W)																
20.1	Bit rate	2488.32 Mbit/s															
20.2	Evaluation Mode	P-P, +P, -P, TIE															
20.3	Measurement frequency range	< 10 Hz															
20.4	Sampling period	25 ms, 1s, 10s (selected by MX150001B)															
20.5	Measurement range	<table border="0"> <tr> <td>P-P</td> <td>0.0 to</td> <td>2E10 ns</td> </tr> <tr> <td>+P,-P</td> <td>0.0 to</td> <td>1E10 ns</td> </tr> <tr> <td>TIE</td> <td>0.0 to</td> <td>±1E10 ns</td> </tr> <tr> <td>MTIE*</td> <td>0.0 to</td> <td>1E10 ns</td> </tr> <tr> <td>TDEV*</td> <td>0.0 to</td> <td>1E10 ns</td> </tr> </table>	P-P	0.0 to	2E10 ns	+P,-P	0.0 to	1E10 ns	TIE	0.0 to	±1E10 ns	MTIE*	0.0 to	1E10 ns	TDEV*	0.0 to	1E10 ns
P-P	0.0 to	2E10 ns															
+P,-P	0.0 to	1E10 ns															
TIE	0.0 to	±1E10 ns															
MTIE*	0.0 to	1E10 ns															
TDEV*	0.0 to	1E10 ns															
20.6	Resolution	0.1 ns															
20.7	Accuracy	<p>TIE</p> <p>$\pm 5\% \pm Z0(\tau)$</p> <table border="1"> <thead> <tr> <th>Z0(τ)(ns)</th> <th>Observation time τ (s)</th> </tr> </thead> <tbody> <tr> <td>$2.5 + 0.0275 \tau$</td> <td>$0.05 \leq \tau \leq 1000$</td> </tr> <tr> <td>$29 + 0.001 \tau$</td> <td>$\tau > 1000$</td> </tr> </tbody> </table>	Z0(τ)(ns)	Observation time τ (s)	$2.5 + 0.0275 \tau$	$0.05 \leq \tau \leq 1000$	$29 + 0.001 \tau$	$\tau > 1000$									
Z0(τ)(ns)	Observation time τ (s)																
$2.5 + 0.0275 \tau$	$0.05 \leq \tau \leq 1000$																
$29 + 0.001 \tau$	$\tau > 1000$																
20.8	Filter table	<p>DC to 0.01 Hz</p> <p>DC to 10 Hz</p> <p>0.01 Hz to 10 Hz</p>															
20.9	Wander auto measurement	<p>TIE, MTIE*, TDEV*</p> <p>* For MTIE/TDEV measurement, software (MS150001A/B Wander (MTIE, TDEV) Measurement Application Software) running on an external PC is required.</p>															
21	Frequency Measurement																
21.1	Frequency	2488.32 Mbit/s \pm 0.1 %															
21.2	Resolution	0.1 ppm															
21.3	Accuracy	\pm 0.1 ppm (After calibration at 60 minutes after power on, at 23 ± 5 °C)															
21.4	Range	<p>[Hz] : Displays up to \pm (nominal frequency $\times 10^{-7}$).</p> <p>[ppm] : 0.0 to \pm1000.0 [ppm]</p>															
22	General																
22.1	Dimensions/mass	21 (H) \times 255 (W) \times 137.6 (D) (mm) (Excluding projections)/1.2 kg or less															
22.2	Environmental performance	AC100 to 220V (max. AC250 V, automatic switching), 47.5 to 63 Hz, 300 VA (max.)															
22.3	Temperature	<p>0 to 40 °C Operating</p> <p>- 20 to 60 °C Storage</p>															

Appendix B Self Test Error Code List

The self test function of this unit displays error codes corresponding to errors that are occurred.

An error code is a string of two alphanumeric characters and a four-digit hexadecimal number.



- 0,1 :MP0121A 2/8/34/139/156M(CMI) Unit
- 2,3 :MP0122A 1.5/45/52M Unit
- 4 :MP0124A 2/8/34/139M 156/622M Jitter Unit
- 5 :MP0125A 1.5/45/52M 156/622M Jitter Unit
- 6,7 :MP0126A 2/8/34/139M 1.5/45/52M 156/662M Jitter Unit
- 8,9 :MP0123A ATM Unit
- A :MP0127A/MP0128A/MP0129A 2.5G Unit
- B :MP0130A 2.5G Jitter Unit
- C :MP0131A Add/Drop Unit
- D to V : None.
- W :MP0111A,MP0112A
- X :MP0113A(1.31),MP0113A(1.55)
- Y :MP0109A,MP0110A
- Z :MP0104A,MP0104B,AMP0105A,MP0106A,MP0108A

Appendix B Self Test Error Code List

The table below lists the displayed messages and the details of errors indicated by the individual bit.

Alphabets	Message	Bit	Details of error
BA	Jitter (Tx Intrinsic)	b0 b1 b2	Following abnormality occurred: Abnormal residual jitter at BRate = 2488 M, Range = 2 UI Abnormal residual jitter at BRate = 2488 M, Range = 20 UI Abnormal residual jitter at BRate = 2488 M, Range = 800 UI
BB	Jitter (Tolerance)	b0 b1	Following abnormality occurred: Abnormal jitter tolerance at BRate = 2488 M, Mod.freq: 20 kHz, Ampl. = 2 UI _{p,p} Abnormal jitter tolerance at BRate = 2488 M, Mod.freq: 20 MHz, Ampl. = 0.2 UI _{p,p}
BC	Jitter (Rx Intrinsic:Peak)	b0 b1	Following abnormality occurred: Abnormal residual jitter at BRate = 2488 M, Range=2 UI, Unit = Peak Abnormal residual jitter at BRate = 2488 M, Range=32 UI, Unit = Peak
BD	Jitter (Rx Intrinsic:RMS)	b0 b1	Following abnormality occurred: Abnormal residual jitter at BRate = 2488 M, Range = 2 UI, Unit = RMS Abnormal residual jitter at BRate = 2488 M, Range = 32 UI, Unit = RMS
BE	Jitter (Rx Measure)	b1 b2	Following abnormality occurred: Abnormal measurement error at BRate = 2488 M, Range = 20 UI, Mod.freq. = 10 kHz, Ampl. = 10 UI _{p,p} Abnormal measurement error at BRate = 2488 M, Range = 20 UI, Mod.freq. = 100 kHz, Ampl. = 10 UI _{p,p}
BF	Jitter (Hit Count)	b0 b1	Following abnormality occurred: Abnormal Hit count at BRate = 2488 M, Mod.freq. = 100 kHz Abnormal Hit count at BRate = 2488 M, Mod.freq. = 1 MHz
BG	Wander	b0	Following abnormality occurred: Abnormal wander at BRate = 2488 M, Mod.freq. = 0.2 Hz, Ampl. = 50 UI _{p,p}
BH	Frequency	b0	Following abnormality occurred: Abnormal frequency at BRate = 2488 M

Note:

This Appendix only shows error codes of the 2.5G Jitter unit (MP0130A). For error codes of other units, refer to the MP1570A SONET/SDH/PDH/ATM Analyzer operation manual Vol.1.

Appendix C Text File Format

This device can store analysis graph data in a floppy disk in text format.

The data can then be edited using spreadsheet software such as Excel.

This section explains the measurement when installing the jitter unit and the text file format related to the wander measurement option.

Note:

- See MP1570A SONET/SDH/PDH/ATM Analyzer operation manual Vol. 1 for details of items other than jitter and wander.
- See MP1570A SONET/SDH/PDH/ATM Analyzer operation manual Vol.1 for details of how to use the floppy disk.
- A data file that was stored in text format cannot be recalled to the Analyze: Recall screen. If a data file is to be recalled to the Analyze: Recall screen, save it in binary format.

C.1 Jitter Tolerance Measurement

Analysis graph data (including the title) is displayed on the tolerance subscreen or the Recall subscreen (when displaying jitter tolerance data).

(1) "ANRITSU;MP1570A;01.00;A;A_JTLR","J-Tolerance No1",
"G.958 Type A","1sec error;B1;Count;230"↓

(2) "Freq.,""Amplitude","Amplitude(Mask)",""↓

(3) { 20.0,10.01,"" , ""↓
29.0,10.00,"" , ""↓
43.0,9.00,"" , ""↓
63.0,8.00,"" , ""↓
93.0,7.00,"" , ""↓
130.00,6.00,"" , ""↓
180.0,3.00,"" , ""↓
260.0,2.06,"" , ""↓
360.0,2.07,"" , ""↓
500.0,2.08,"" , ""↓
700.0,2.09,"" , ""↓
1200.0,2.010,"" , ""↓
2100.0,2.002,"" , ""↓
3700.0,1.003,"" , ""↓
6400.0,0.304,"" , ""↓
10000.0,0.010,"" , ""↓
" , " , " , "↓
" , " , " , "↓
" , " , " , "↓
" , " , " , "↓

(4) { 100.0,"" ,1.501,""↓
6500.0,"" ,1.501,""
65000.0,"" ,0.152,""↓
130000.0,"" ,0.152,""↓
" , " , " , "↓
" , " , " , "↓

- Each item is separated by a comma.
- Symbol (↓) represents a line feed.

(5) : Management information

- First item: Management information
- Second item: Title characters (15 characters fixed)
- Third item: Type of Mask table
- Fourth item: Setting condition of Detection

(6) : The name of the item is shown in the order of frequency, jitter amount, and jitter amount (mask table).

- (7) : The analysis data is shown in the order of items (shown in the (2) above), 20 lines is fixed. The data is shown in the order of items set in the Tolerance table.
- (8) : The Mask table data is shown in the order of items (shown in the (2) above).

Note:

If there are no measurement results, saving cannot be performed.

C.2 Jitter Transfer Measurement

Analysis graph data (including the title) is displayed on the transfer sub-screen or the Recall sub-screen (when displaying the jitter transfer data).

- (1) "ANRITSU;MP1570A;01.00;A;A_JTRF","J-Transfer No1 ",
"G.958 Type A"↓
- (2) "Freq.,"Gain","Gain(Mask)"↓
- (3)
 - 20,+1.01,""↓
 - 29,0.00,""↓
 - 43,-3.01,""↓
 - 63,-4.01,""↓
 - 93,-4.01,""↓
 - 130,-4.01,""↓
 - 180,-4.01,""↓
 - 260,-4.01,""↓
 - 360,-4.01,""↓
 - 500,-4.01,""↓
 - 700,-4.01,""↓
 - 1200,-4.01,""↓
 - 2100,-4.01,""↓
 - 3700,-3.01,""↓
 - 6400,-10.01,""↓
 - 1000000,-21.11,""↓
 - ",""↓
 - ",""↓
 - ",""↓
 - ",""↓
- (4)
 - 5,"",0.52↓
 - 300,"",0.52↓
 - 3000,"",-19.52↓
 - 1300000,"",-19.52↓

- Each item is separated by a comma.
- Symbol (↓) represents a line feed.

- (1) : Management information
 - First item: Management information
 - Second item: Title characters (15 characters fixed)
 - Third item: Type of Mask table
- (2) : The name of the item is shown in the order of frequency, gain, and gain (mask table).

- (3) : The data is shown in the order of modulation frequency, gain, gain (mask table).
Each line represents 1 measurement point. If there are fewer than 20 measurement points, dummy lines are inserted.
- (4) : The Mask table data is shown in the order of items (shown in the paragraph (2) above).
Four lines fixed

Note:

If there are no measurement results, saving cannot be performed.

C.3 Frequency Offset/Jitter Measurement

Analysis graph data (including the title) is displayed on the Jitter/Frequency subscreen of the Analyze screen or the Recall sub-screen (when displaying the jitter and frequency data).

(1) "ANRITSU;MP1570A;01.00;A;A_JFRQ","J-Frequency No1"↓

(2) "Freq. Offset", "Amplitude"↓

(3) (

-50,0.101↓
-48,0.102↓
-46,0.103↓
-44,0.104↓
-42,0.105↓
-40,0.106↓
-38,0.127↓
-36,0.148↓
-34,0.169↓
-32,0.181↓
-30,0.202↓
-28,0.203↓
-26,0.204↓
-24,0.205↓
-22,0.206↓
-20,0.207↓
-18,0.228↓
-16,0.249↓
-14,0.260↓
-12,0.281↓
-10,0.302↓
-8,0.323↓
-6,0.344↓
-4,0.365↓
-2,0.386↓
0,0.407↓
+2,0.388↓
+4,0.369↓
+6,0.340↓
+8,0.321↓
+10,0.302↓
+12,0.283↓
+14,0.264↓
+16,0.245↓
+18,0.226↓
+20,0.207↓
+22,0.208↓


```
+24,0.209↓  
+26,0.200↓  
+28,0.201↓  
+30,0.202↓  
+32,0.183↓  
+34,0.164↓  
+36,0.145↓  
+38,0.126↓  
+40,0.107↓  
+42,0.108↓  
+44,0.109↓  
+46,0.100↓  
+48,0.101↓  
+50,0.102↓
```

- Each item is separated by a comma.
- Symbol (↓) represents a line feed.

(1) : Management information

First item: Management information

Second item: Title characters (15 characters fixed)

(2) : Two items, frequency offset and jitter quantity, are displayed.

(3) : The analysis data is shown according to how the items are shown in (2).

Up to 51 items are output according to the frequency offset ascending order.

Frequency offset: (unit: ppm)

The frequency offset value which was set both in TX Offset range and in Tx offset step is output.

Jitter quantity: (unit: Ulpp)

The measured jitter quantity is output.

Note:

If there are no measurement results, saving cannot be performed.

C.4 Wander (TIE) Measurement

Analysis graph data (including the title) is displayed on the Wander (TIE) sub-screen of the Analyze screen or the Recall sub-screen (when displaying the Wander (TIE) data)

- (1) "ANRITSU;MP1570A;01.00;A;A_TIE","Wander TIE No1 "↓
- (2) "11/Dec/95","08:23:40","12.5ms","37","1"↓
- (3) "139M","1.5Mbps(Unbalanced)","1200sec"↓
- (4) "Observ. time","TIE"↓
- (5)
 - 0.5,-0.5↓
 - 1.0,1.0↓
 - 1.5,1.5↓
 - 2.5,2.5↓
 - 4.0,4.0↓
 - 6.5,-6.5↓
 - 10,10↓
 - 16,16↓
 - 25,25↓
 - 40,40↓
 - 63,-63↓
 - 100,100↓
 - 160,160↓
 - 250,250↓
 - 400,400↓
 - 630,-630↓
 - 1000,1000↓
 - 1.6E3,1600↓
 - 2.5E3,2500↓
 - 4.0E3,4000↓
 - 6.3E3,6300↓
 - 1.0E4,-10000↓
 - 1.6E4,1.6E4↓
 - 2.5E4,2.5E4↓
 - 4.0E4,4.0E4↓
 - 6.3E4,6.3E4↓
 - 1.0E5,1.0E5↓
 - 1.6E5,-1.6E5↓
 - 2.5E5,2.5E5↓
 - 4.0E5,4.0E5↓
 - 6.3E5,6.3E5↓
 - 1.0E6,1.0E6↓
 - 1.6E6,1.6E6↓
 - 2.5E6,2.5E6↓
 - 4.0E6,4.0E6↓
 - 6.3E6,6.3E6↓
 - 1.0E7,1.0E7↓

- Each item is separated by a comma.
- Symbol (↓) represents a line feed.

(1) Management information

First item: Management information

Second item: Title characters (15 characters fixed)

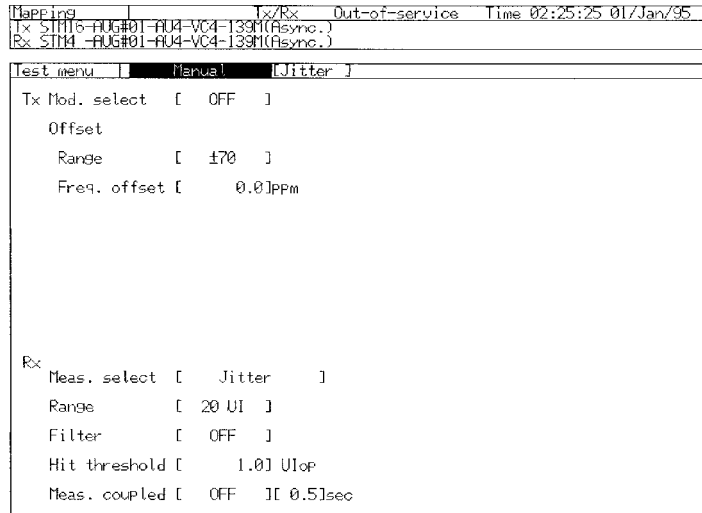
- (2) : The name of the item is shown in the order of measurement starting date, measurement starting hour, sampling interval, number of and S/N.
- (3) : The name of the item is shown in the order of Bit rate (Rx), Wander Ref. input, and Observation time.
- (4) : Two items, observation time (s) and wander quantity TIE (ns), are displayed.
- (5) : The analysis data is shown according to how the items are shown in (2).
Up to 37 items are output according to the observation time (s) ascending order.
Observation time: (unit: sec)
TIE: (unit: ns)

Appendix D Relation Between Screen and Commands

The relation between to the program commands and the screen displayed on the panel are shown below. Refer to paragraph 4.4, "Commands specific to the equipment," for details of the program commands.

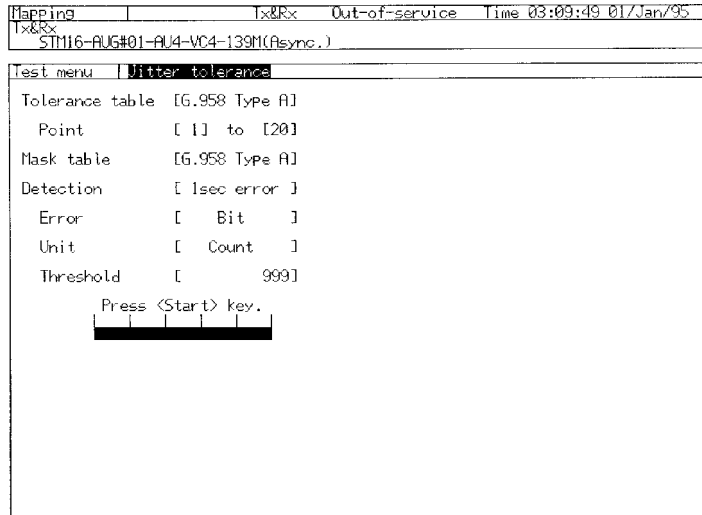
D.1 Test Menu Main Screen and Commands

D.1.1 Manual Sub Screen



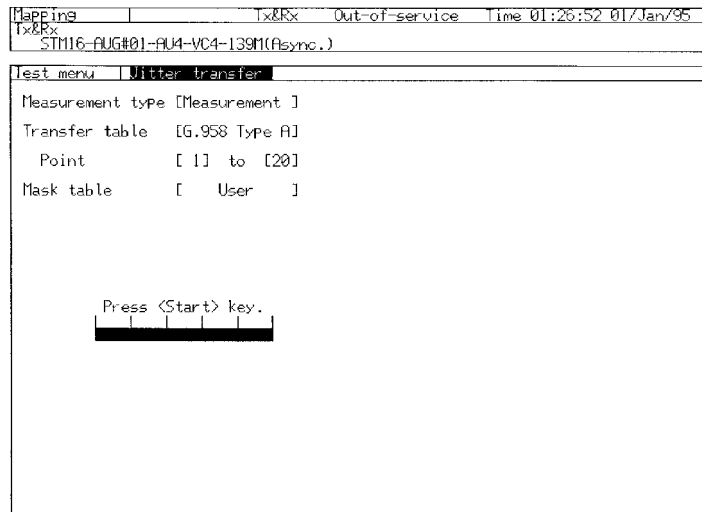
- (1) :SOURce:TELEcom:JWANder:MSElect
- (2) :SOURce:TELEcom:JWANder:ORANge
- (3) :SOURce:TELEcom:OFFSet
- (4) :SOURce:JITTer:MANual:RANGe
- (5) :SOURce:JITTer:MANual:FREQuency
- (6) :SOURce:JITTer:MANual:AMPLitude:TYPE
- (7) :SOURce:JITTer:MANual:AMPLitude:STEP
- (8) :SOURce:JITTer:MANual:AMPLitude:DATA
- (9) :SOURce:JITTer:MANual:AMPLitude:UIPP
- (10) :SOURce:JITTer:MANual:AMPLitude::MONitor?
- (11) :SOURce:WANDer:MANual:FREQuency
- (12) :SOURce:WANDer:MANual:AMPLitude:UIPP
- (13) :SENSe:MEASure:JWANder:MSElect
- (14) :SENSe:JITTer:MANual:RANGe?
- (15) :SENSe:JITTer:MANual:FILTer
- (16) :SENSe:JITTer:MANual:THReshold
- (17) :SENSe:JITTer:MANual:COUPled
- (18) :SENSe:JITTer:MANual:INTerval

D.1.2 Tolerance Sub Screen



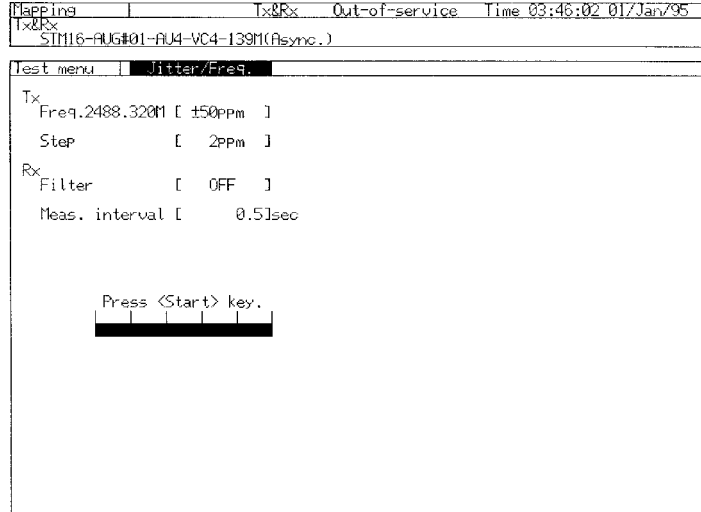
- (1) :SENSe:JITTer:TOLerance:MASK
- (2) :SENSe:JITTer:TOLerance:DETection:TYPE
- (3) :SENSe:JITTer:TOLerance:DETection:ERROr
- (4) :SENSe:JITTer:TOLerance:DETection:UNIT
- (5) :SENSe:JITTer:TOLerance:DETection:THReShold:EC
- (6) :SENSe:JITTer:TOLerance:DETection:THReShold:ER
- (7) :SOURce:JITTer:TOLerance:TYPE
- (8) :SOURce:JITTer:TOLerance:PTABLE:COUNT

D.1.3 Transfer Sub Screen



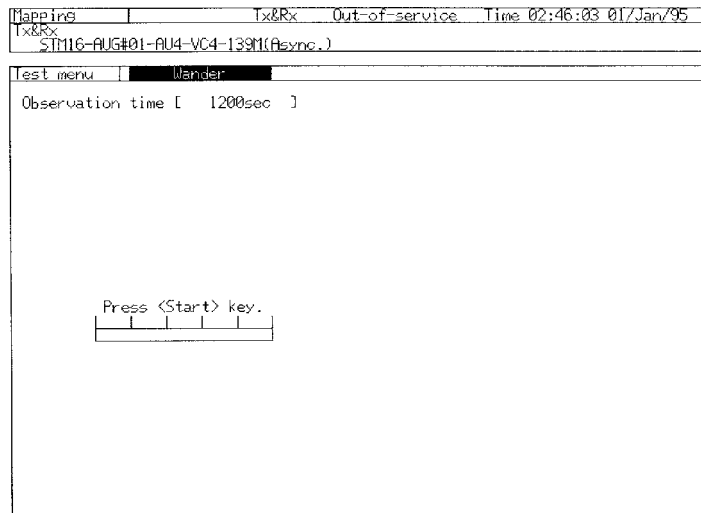
- (1) :SENSe:JITTer:TRANsfer:MODE
- (2) :SENSe:JITTer:TRANsfer:MASK
- (3) :SENSe:JITTer:TRANsfer:TYPE
- (4) :SOURce:JITTer:TRANsfer:PTABLE:COUNT
- (5) :DISPlay:TMENu[:NAME]

D.1.4 Jitter/Freq. Sub Screen



- (1) :SOURce:JITTer:JFREquency:FREQuency
- (2) :SOURce:JITTer:JFREquency:STEP
- (3) :SENSe:JITTer:jfrequency:FILTer
- (4) :SENSe:JITTer:jfrequency:INTerval
- (5) :DISPlay:TMENu[:NAME]

D.1.5 Wander Sub Screen



- (1) :SENSe:WANDer:MANual:COUPlEd
- (2) :SENSe:WANDer:AUTO:INTerval
- (3) :DISPlay:TMENu[:NAME]

D.2 Result Main Screen and Commands

D.2.1 Jitter/Wander Sub Screen

Mapping		Tx&Rx		Out-of-service		Time 02:50:21 01/Jan/95	
Tx&Rx		STM16-AUG#01-AU4-VC4-139M(Async.)					
Result		Jitter/Wander		Start 02:50:06 01/Jan/95			
Unit [Hit]		Display data [Last]			
Tx Jitter				Rx Jitter			
Amplitude		0.27 Uipp		Count		0	
				Second		0	
				2F Second		100.00000%	

- (1) :DISPlay:RESult[:NAME]
- (2) :DISPlay:RESult:JWANder:MODE
- (3) :DISPlay:RESult:JWANder:UNIT
- (4) :DISPlay:RESult:JWANder:TIME
- (5) :SENSe:MEASuer:STATe
- (6) :SENSe:JWANder:CORRection:OFFSet

D.2.2 Result Main Screen And Commands

Mapping		Tx&Rx		Out-of-service		Time 03:10:18 01/Jan/95		
Tx&Rx		STM16-AUG#01-AU4-VC4-139M(Async.)						
Result		Jitter tolerance		Start 03:04:10 01/Jan/95				
No	Freq.(Hz)	Tolerance(UIPP)	No	Freq.(Hz)	Tolerance(UIPP)	No	Freq.(Hz)	Tolerance(UIPP)
1	100.0	>242.4	11	48,000.0	>10.52	1	100.0	>242.4
2	190.0	>127.6	12	100,000.0	>5.05	2	190.0	>127.6
3	350.0	>69.3	13	150,000.0	>3.37	3	350.0	>69.3
4	640.0	>20.00	14	200,000.0	>2.000	4	640.0	>20.00
5	1,200.0	>20.00	15	520,000.0	>2.000	5	1,200.0	>20.00
6	2,100.0	>20.00	16	1,000,000.0	>2.000	6	2,100.0	>20.00
7	3,700.0	>20.00	17	2,100,000.0	>1.923	7	3,700.0	>20.00
8	6,400.0	>20.00	18	4,300,000.0	>0.959	8	6,400.0	>20.00
9	10,000.0	>20.00	19	9,000,000.0	>0.448	9	10,000.0	>20.00
10	22,000.0	>20.00	20	20,000,000.0	>0.201	10	22,000.0	>20.00

- (1) :DISPlay:RESult[:NAME]

D.2.3 Tolerance Sub Screen

Mapping		Tx&Rx		Out-of-service		Time 01:27:17 01/Jan/95	
Tx&Rx							
STM16-AUG#01-AU4-VC4-139M(Async.)							
Result		Jitter transfer		Start 01:18:15 01/Jan/95			
No	Freq.(Hz)	Ujpp	Transfer(dB)	No	Freq.(Hz)	Ujpp	Transfer(dB)
1	100	1.500	0.05 ○	11	48.000	1.500	- 0.01 ○
2	190	1.500	0.01 ○	12	100.000	1.500	- 0.01 ○
3	350	1.500	0.01 ○	13	150.000	1.000	0.00 ○
4	640	1.500	- 0.01 ○	14	280.000	0.540	0.01 ○
5	1.200	1.500	0.00 ○	15	520.000	0.290	0.02 ○
6	2.100	1.500	0.00 ○	16	1.000.000	0.150	0.04 ○
7	3.700	1.500	- 0.02 ○	17	2.100.000	0.150	0.05 ●
8	6.400	1.500	- 0.01 ○	18	4.300.000	0.150	0.05 ●
9	10.000	1.500	- 0.00 ○	19	9.000.000	0.150	0.00 ●
10	22.000	1.500	- 0.02 ○	20	20.000.000	0.150	0.02 ●

(1) :DISPlay:RESult[:NAME]

D.2.4 Jitter/Freq. Sub Screen

Mapping		Tx&Rx		Out-of-service		Time 03:46:32 01/Jan/95	
Tx&Rx							
STM16-AUG#01-AU4-VC4-139M(Async.)							
Result		Jitter/Freq.		Start 03:35:17 01/Jan/95			
No	Ppm	Ujpp	No	Ppm	Ujpp	No	Ppm
1	-50	0.082	11	-30	0.201	21	-10
2	-48	0.175	12	-28	0.194	22	-8
3	-46	0.250	13	-26	0.133	23	-6
4	-44	0.161	14	-24	0.176	24	-4
5	-42	0.182	15	-22	0.255	25	-2
6	-40	0.179	16	-20	0.151	26	0
7	-38	0.289	17	-18	0.159	27	+2
8	-36	0.172	18	-16	0.166	28	+4
9	-34	0.148	19	-14	0.131	29	+6
10	-32	0.199	20	-12	0.118	30	+8
						31	+10
						32	+12
						33	+14
						34	+16
						35	+18
						36	+20
						37	+22
						38	+24
						39	+26
						40	+28
						41	+30
						42	+32
						43	+34
						44	+36
						45	+38
						46	+40
						47	+42
						48	+44
						49	+46
						50	+48
						51	+50
							0.191
							0.185
							0.182
							0.180
							0.163
							0.180
							0.142
							0.162
							0.145
							0.117
							0.117

(1) :DISPlay:RESult[:NAME]

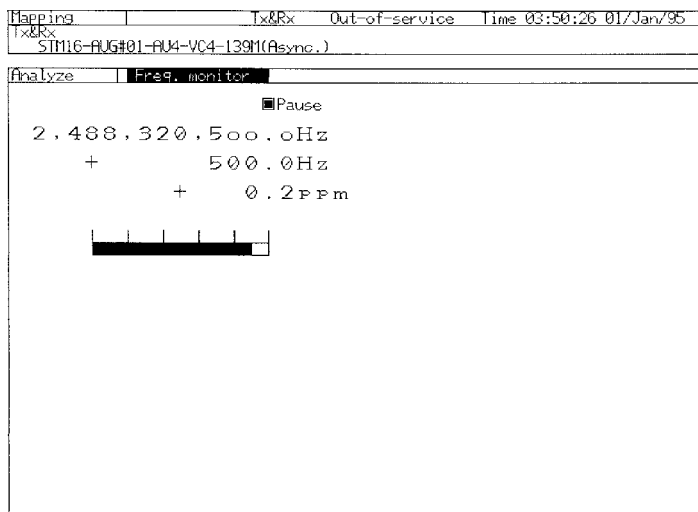
D.2.5 Wander Sub Screen

Mapping		Tx&Rx		Out-of-service		Time 23:54:41 01/Jan/95	
Tx&Rx		STM16-AUG#01-AU4-VC4-139M(Async.)					
Result		Wander		Start 22:49:56 01/Jan/95			
No	τ (s)	TIE (ns)	No	τ (s)	TIE (ns)	No	τ (s)
1	0.10	+ 0.1	11	3.7	+ 0.9	21	100
2	0.15	- 0.1	12	5.2	+ 1.5	22	140
3	0.20	+ 0.2	13	7.2	+ 2.0	23	190
4	0.25	+ 0.2	14	10	+ 2.5	24	270
5	0.35	+ 0.2	15	14	+ 3.0	25	370
6	0.50	+ 0.3	16	19	+ 3.5	26	520
7	0.70	+ 0.4	17	27	+ 4.5	27	720
8	1.0	+ 0.4	18	37	+ 6.0	28	1,000
9	1.4	+ 0.4	19	52	+ 9.0	29	1,253
10	1.9	+ 0.5	20	72	+ 12	30	1,253

(1) :DISPlay:RESult[:NAME]

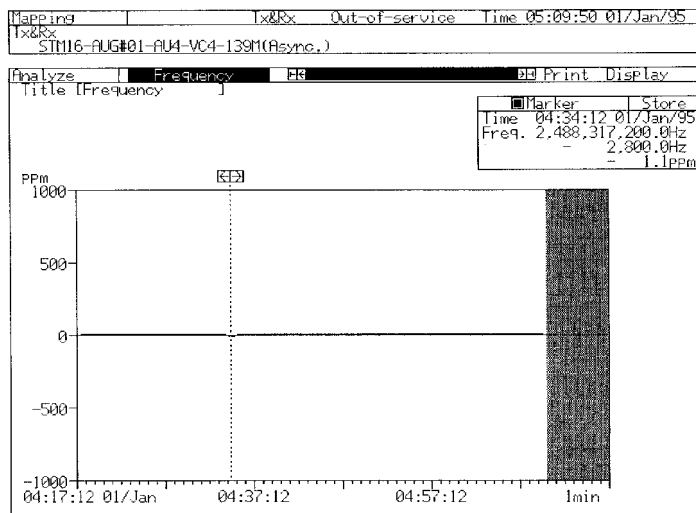
D.3 Analyze Main Screen And Commands

D.3.1 Freq. Monitor Sub Screen



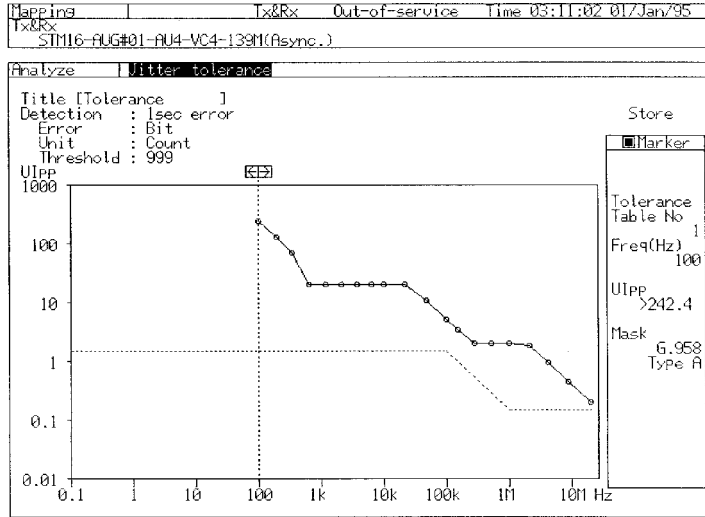
- (1) :DISPlay:ANALysis[:NAME]
- (2) :DISPlay:ANALysis:FMONitor:FREQuency?
- (3) :DISPlay:ANALysis:FMONitor:PAUSe

D.3.2 Frequency Sub Screen



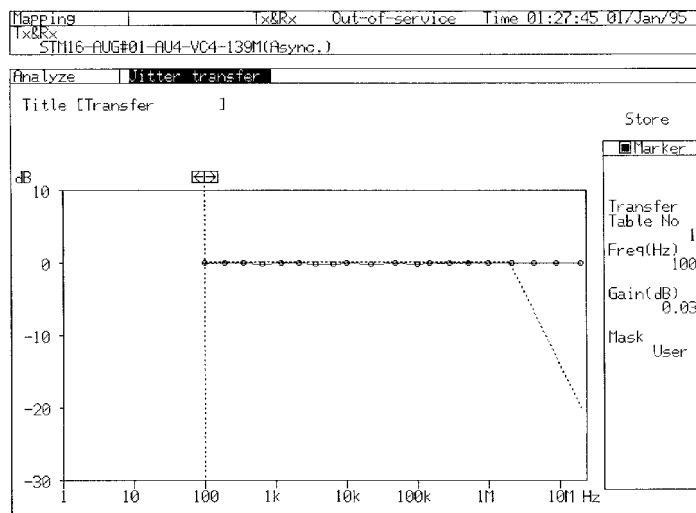
- (1) :DISPlay:ANALysis[:NAME]
- (2) :DISPlay:ANALysis:FGRaph:SCRoll
- (3) :DISPlay:ANALysis:FGRaph:MARKer
- (4) :DISPlay:ANALysis:FGRaph:DATA?
- (5) :DISPlay:ANALysis:FGRaph:INTerval
- (6) :DISPlay:ANALysis:FGRaph:MDISplay
- (7) :DISPlay:ANALysis:FGRaph:FROM
- (8) :DISPlay:ANALysis:FGRaph:PRINt
- (9) :DISPlay:ANALysis:FGRaph:TITLe
- (10) :DISPlay:ANALysis:FGRaph:SCALe

D.3.3 Tolerance Subscreen



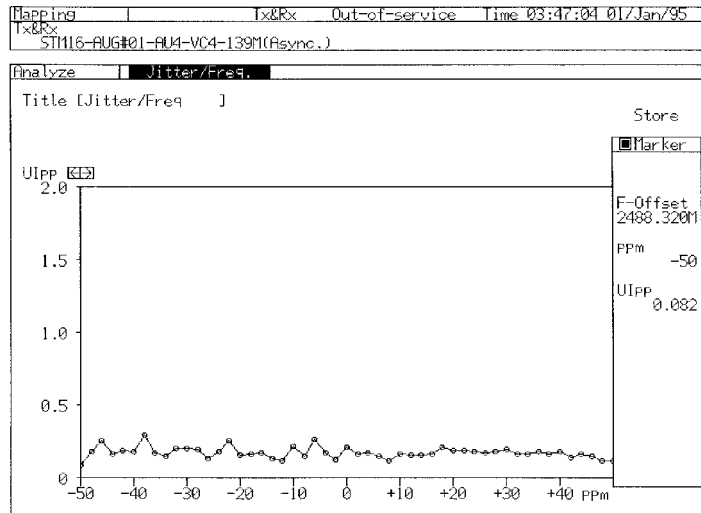
- (1) :DISPlay:ANALysis:[:NAME]
- (2) :DISPlay:ANALysis:JTOLerance:TITLe
- (3) :DISPlay:ANALysis:JTOLerance:MDISplay
- (4) :DISPlay:ANALysis:JTOLerance:SEARCh
- (5) :DISPlay:ANALysis:JTOLerance:SCALE
- (6) :DISPlay:ANALysis:JTOLerance:DATA?
- (7) :CALCulate :DATA?

D.3.4 Transfer Subscreen



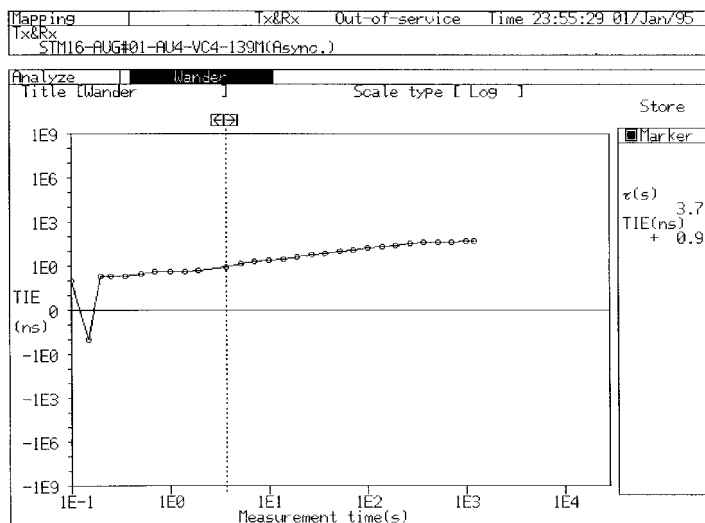
- (1) :DISPlay:ANALysis[:NAME]
- (2) :DISPlay:ANALysis:JTRansfer:TITLe
- (3) :DISPlay:ANALysis:JTRansfer:MDISplay
- (4) :DISPlay:ANALysis:JTRansfer:SEARCh
- (5) :DISPlay:ANALysis:JTRansfer:DATA
- (6) :DISPlay:ANALysis:JTRansfer:SCALE
- (7) :CALCulate:DATA?

D.3.5 Jitter/Freq. Subscreen



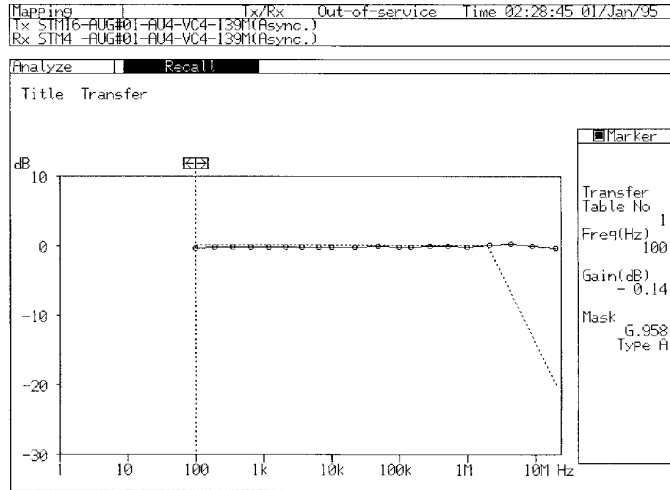
- (1) :DISPlay:ANALysis:[:NAME]
- (2) :DISPlay:ANALysis:JFRequency:TITLe
- (3) :DISPlay:ANALysis:JFRequency:MDSIplay
- (4) :DISPlay:ANALysis:JFRequency:SEARCh
- (5) :DISPlay:ANALysis:JFRequency:DATA?
- (6) :DISPlay:ANALysis:JFRequency:SCALE
- (7) :CALCulate:DATA?

D.3.6 Wander Sub Screen



- (1) :DISPlay:ANALysis[:NAME]
- (2) :DISPlay:ANALysis:WANDer:MDISplay
- (3) :DISPlay:ANALysis:WANDer:SEARch
- (4) :DISPlay:ANALysis:WANDer:DATA?
- (5) :DISPlay:ANALysis:WANDer:TITLe
- (6) :CALCulate:DATA?
- (7) :CALCulate:TIE:DATA

D.3.7 Recall Subscreen

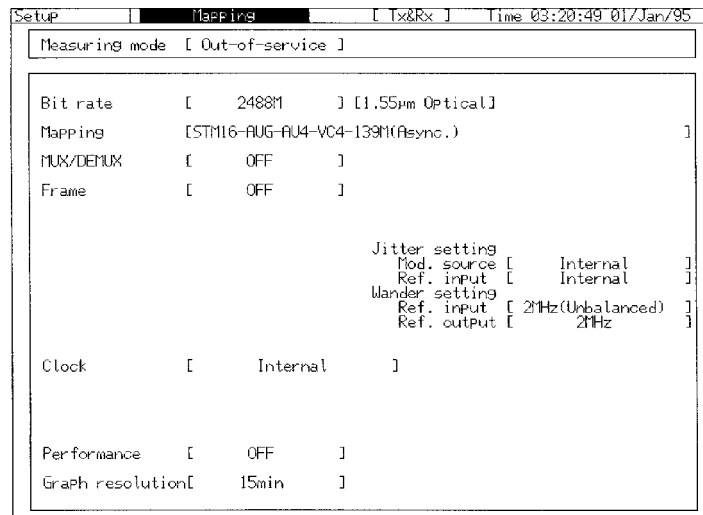


- (1) :DISPlay:ANALysis[:NAME]
- (2) :DISPlay:ANALysis:RECall:JTOLerance:MDISplay
- (3) :DISPlay:ANALysis:RECall:JTOLerance:SEARCh
- (4) :DISPlay:ANALysis:RECall:JTOLerance:DATA?
- (5) :DISPlay:ANALysis:RECall:JTOLerance:SCALE
- (6) :DISPlay:ANALysis:RECall:JTOLerance:TITLe
- (7) :DISPlay:ANALysis:RECall:JTRansfer:MDISplay
- (8) :DISPlay:ANALysis:RECall:JTRansfer:SEARCh
- (9) :DISPlay:ANALysis:RECall:JTRansfer:DATA?
- (10) :DISPlay:ANALysis:RECall:JTRansfer:SCALE
- (11) :DISPlay:ANALysis:RECall:JTRansfer:TITLe
- (12) :DISPlay:ANALysis:RECall:JFREquency:MDISplay
- (13) :DISPlay:ANALysis:RECall:JFREquency:SEARCh
- (14) :DISPlay:ANALysis:RECall:JFREquency:DATA?
- (15) :DISPlay:ANALysis:RECall:JFREquency:SCALE
- (16) :DISPlay:ANALysis:RECall:JFREquency:TITLe
- (17) :DISPlay:ANALysis:RECall:FGRaph:MDISplay
- (18) :DISPlay:ANALysis:RECall:FGRaph:SCRoll
- (19) :DISPlay:ANALysis:RECall:FGRaph:INTerval
- (20) :DISPlay:ANALysis:RECall:FGRaph:DATA?
- (21) :DISPlay:ANALysis:RECall:FGRaph:FROM
- (22) :DISPlay:ANALysis:RECall:FGRaph:PRINt
- (23) :DISPlay:ANALysis:RECall:FGRaph:MARKer
- (24) :DISPlay:ANALysis:RECall:FGRaph:SCALE
- (25) :DISPlay:ANALysis:RECall:FGRaph:TITLe
- (26) :DISPlay:ANALysis:RECall:WANDer:MDISplay
- (27) :DISPlay:ANALysis:RECall:WANDer:SEARCh
- (28) :DISPlay:ANALysis:RECall:WANDer:DATA?
- (29) :DISPlay:ANALysis:RECall:WANDer:TITLe
- (30) :DISPlay:ANALysis:RECall:TGRaph:DATA?

- (31) :DISPlay:ANALysis:RECall:TGRaph:ERRor
- (32) :DISPlay:ANALysis:RECall:TGRaph:ALARm1
- (33) :DISPlay:ANALysis:RECall:TGRaph:ALARm2
- (34) :DISPlay:ANALysis:RECall:TGRaph:ALARm3
- (35) :DISPlay:ANALysis:RECall:TGRaph:ALARm4
- (36) :DISPlay:ANALysis:RECall:TGRaph:ALARm5
- (37) :DISPlay:ANALysis:RECall:TGRaph:TITLe
- (38) :DISPlay:ANALysis:RECall:TGRaph:SCALe

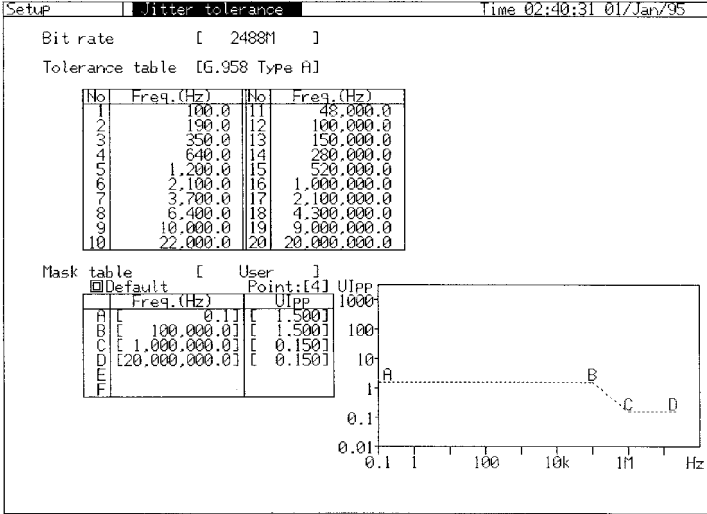
D.4 Setup Main Screen And Commands

D.4.1 Mapping Sub Screen



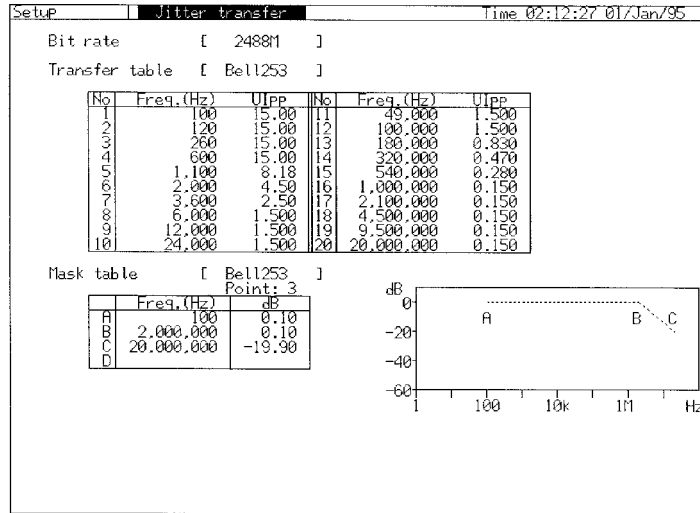
- (1) :DISPlay:SETup[:NAME]
- (2) :INSTrument:COUPlE
- (3) :SOURce:TELEcom:CLOCK:SOURce
- (4) :SOURce:JITTer:MANual:MODE
- (5) :SOURce:WANDer:MANual:MODE
- (6) :SENSe:MEASuer:JWANDer:JITTer:MODE
- (7) :SENSe:MEASuer:JWANDer:WANDer:MODE

D.4.2 Tolerance Subscreen



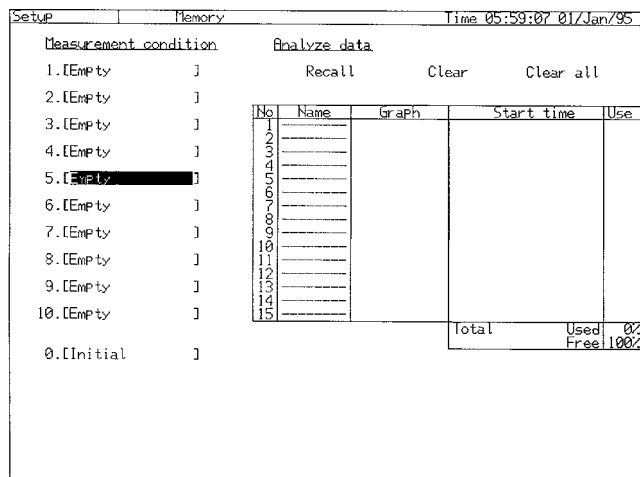
- (1) :DISPlay:SETup[:NAME]
- (2) :SOURce:JITTer:TOLerance:PTABLE:TYPE
- (3) :SOURce:JITTer:TOLerance:PTABLE:DATA
- (4) :SOURce:JITTer:TOLerance:PTABLE:DEFAult
- (5) :SENSe:JITTer:TRANsfer:MTABLE:TYPE
- (6) :SENSe:JITTer:TRANsfer:MTABLE:POINt
- (7) :SENSe:JITTer:TRANsfer:NTABLE:DATA
- (8) :SENSe:JITTer:TRANsfer:NTABLE:DEFAult

D.4.3 Transfer Subscreen

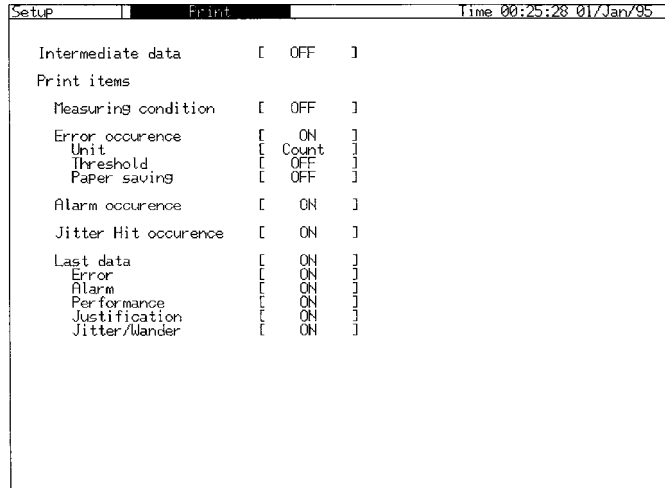


- (1) :DISPlay:SETup[:NAME]
- (2) :SOURce:JITTer:TRANsfer:PTABLE:TYPE
- (3) :SOURce:JITTer:TRANsfer:PTABLE:DATA
- (4) :SOURce:JITTer:TRANsfer:PTABLE:DEfault
- (5) :SENSe:JITTer:TOLerance:MTABLE:TYPE
- (6) :SENSe:JITTer:TOLerance:MTABLE:POINt
- (7) :SENSe:JITTer:TOLerance:MTABLE:DATA
- (8) :SENSe:JITTer:TOLerance:MTABLE:DEfault

D.4.4 Memory Subscreen

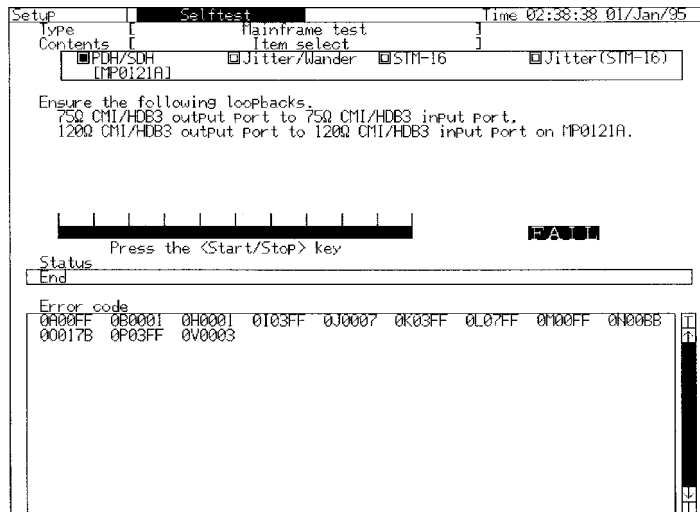


D.4.5 Print Subscreen



- (1) :DISPlay:SETup[:NAME]
- (2) :SYSTem:PRINt:JITTer:SET
- (3) :SYSTem:PRINt:LDATa:JWANder

D.4.6 Self Test Subscreen



- (1) :DISPlay:SETup[:NAME]
- (2) :TEST:CONTent:JSTM16

D.5 Front-Panel/Others Commands

Table D-23 Front-panel/others commands

Each key	Start/Stop Key Measurement	: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:COPIY
	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	

Note:

For other commands, refer to the MP1570A SONET/SDH/PDH/ATM Analyzer operation manuals (Vol.2: Remote Control, Vol.4: 2.5 GHz and 10 GHz Measurement, or Vol.6 Jitter Wander measurement).