User's Manual

VC3300
Wireless Communication Tester
GSM/GPRS/EDGE
Test Software

YOKOGAWA
Yokogawa Electric Corporation

IM 733021-01E
5th Edition

Thank you for purchasing the VC3300 Wireless Communication Tester.
This user's manual contains useful information about the instrument's functions and operating procedures and lists the handling precautions of the GSM/GPRS/EDGE test software. To ensure correct use, please read this manual thoroughly before beginning operation. Keep this manual in a safe place for quick reference in the event a question arises.

Three manuals, including this one, are provided as manuals for the VC3300. Please read all of them.

Manual Title	Manual No.	Description
VC3300 Wireless Communication Tester User's Manual	IM 733020-01E	Explains the functions of the VC3300 and their operating procedures.
VC3300 Wireless Communication Tester GSM/GPRS/EDGE Test Software User's Manual	IM 733021-01E	This manual. Explains all the functions and operating procedures including the communication function of the GSM/GPRS/EDGE test software.
VC3300 Wireless Communication Tester WCDMA/HSDPA Test Software User's Manual	IM 733022-01E	Explains all the functions and operating procedures including the communication function of the WCDMA/HSDPA test software.

Notes

- The contents of this manual are subject to change without prior notice as a result of continuing improvements to the instrument's performance and functions. The figures given in this manual may differ from those that actually appear on your screen.
- Every effort has been made in the preparation of this manual to ensure the accuracy of its contents. However, should you have any questions or find any errors, please contact your nearest YOKOGAWA dealer.
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Safety Precautions

This instrument is an IEC safety class I instrument (provided with a terminal for protective earth grounding).
The general safety precautions described in the *VC3300 User's Manual (IM733020-01E)* and this manual (IM733021-01E) must be observed during all phases of operation. If the instrument is used in a manner not specified in these manuals, the protection provided by the instrument may be impaired. Yokogawa Electric Corporation assumes no liability for the customer's failure to comply with these requirements.

Conventions Used in This Manual

Markings

The following markings are used in this manual.

Improper handling or use can lead to injury to the user or damage to the instrument. This symbol appears on the instrument to indicate that the user must refer to the user's manual for special instructions. The same symbol appears in the corresponding place in the user's manual to identify those instructions. In the manual, the symbol is used in conjunction with the word "WARNING" or "CAUTION."

WARNING Calls attention to actions or conditions that could cause serious or fatal injury to the user, and precautions that can be taken to prevent such occurrences.

CAUTION Calls attentions to actions or conditions that could cause light injury to the user or damage to the instrument or user's data, and precautions that can be taken to prevent such occurrences.

Note Calls attention to information that is important for proper operation of the instrument.

Subheadings

On pages that describe the operating procedures in chapters 2 through 5, the following symbols, displayed characters, and terminology are used to distinguish the procedures from their explanations.

Procedure Only a guide on the items that require operation is given. For details on the menu operation, see section 3.6, "Basic Menu Operation" in the VC3300 Uer's Maual (IM733020-01E).

Explanation This section describes the setup items and the limitations regarding the procedures. It may not give a detailed explanation of the function. For a detailed explanation of the function, see chapter 1.

Displayed Characters and Terminology Used in the Procedural Explanations

Panel Keys and Soft keys
Bold characters used in the procedural explanations indicate characters that are marked on the panel keys or the characters of the soft keys or menus displayed on the screen.

SHIFT+Key
SHIFT+key means you will press the SHIFT key to turn ON the SHIFT key followed by the panel key. The setup menu marked in purple above the panel key that you pressed appears on the screen.

Unit

k Denotes 1000. Example: 12 kg, 100 kHz

K Denotes 1024. Example: 459 KB (file data size)

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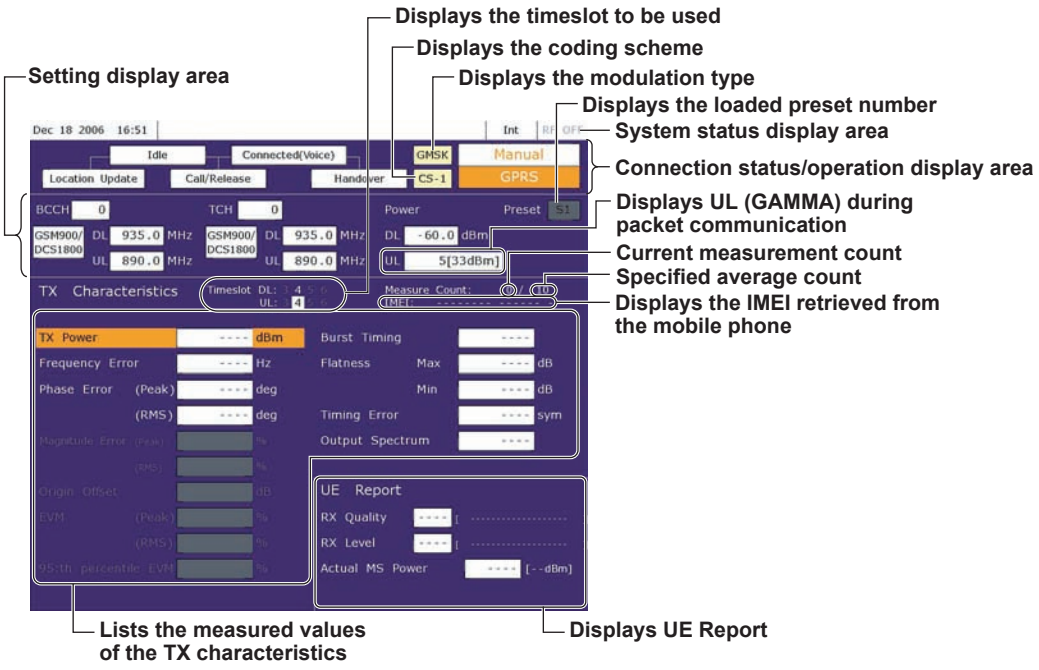
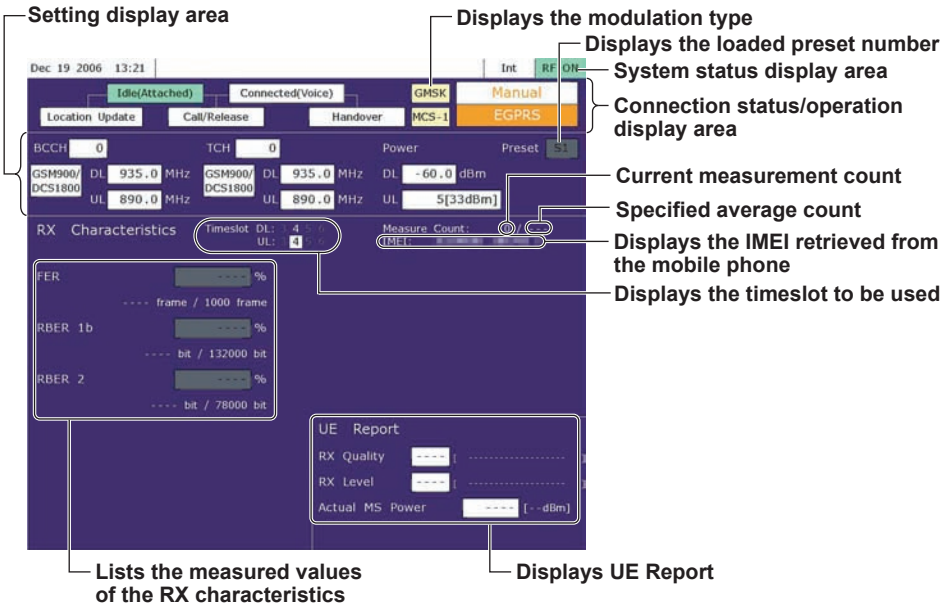
1.1 Measurement Display (List Display)

Transmitter (TX) Characteristics



Receiver (RX) Characteristics

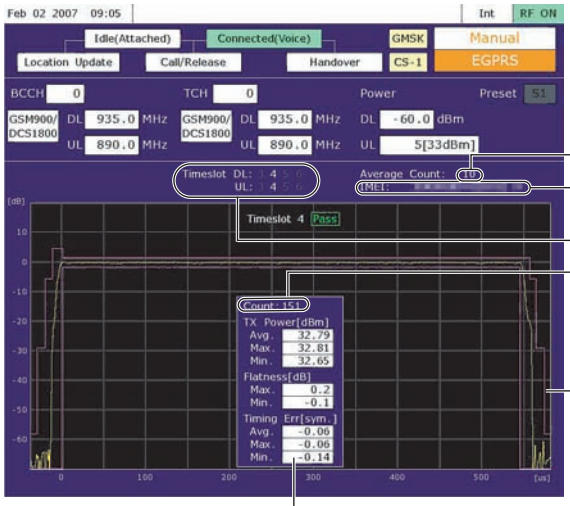


Note

In packet communication, the connection status displays Idle (attached) when the Attach request procedure is successful. In addition, the connection status switches from Idle (attached) to Idle when the Detach request procedure is successful.

1.2 Measurement Display (Detail Display)

TX Power/Burst Timing/Flatness/Timing Error (Single Slot Measurement)



Specified average count

Displays the IMEI retrieved from the mobile phone

Displays the timeslot to be used

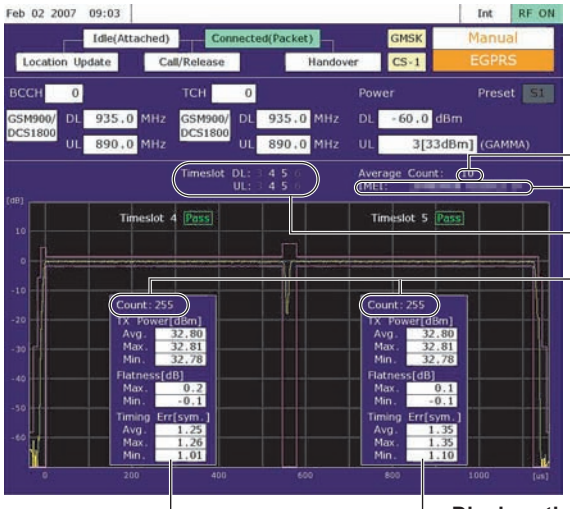
Current measurement count

Burst timing criteria

Displays the average, maximum, and minimum values of the TX power, flatness (Max/Min), and timing error*
(* only in manual mode)

Vertical axis: Burst timing (0 dB = Average power in the effective burst interval)
Horizontal axis: Time (0 μs = Start symbol of the effective burst interval)

TX Power/Burst Timing/Flatness/Timing Error (Multislot Measurement)



Specified average count

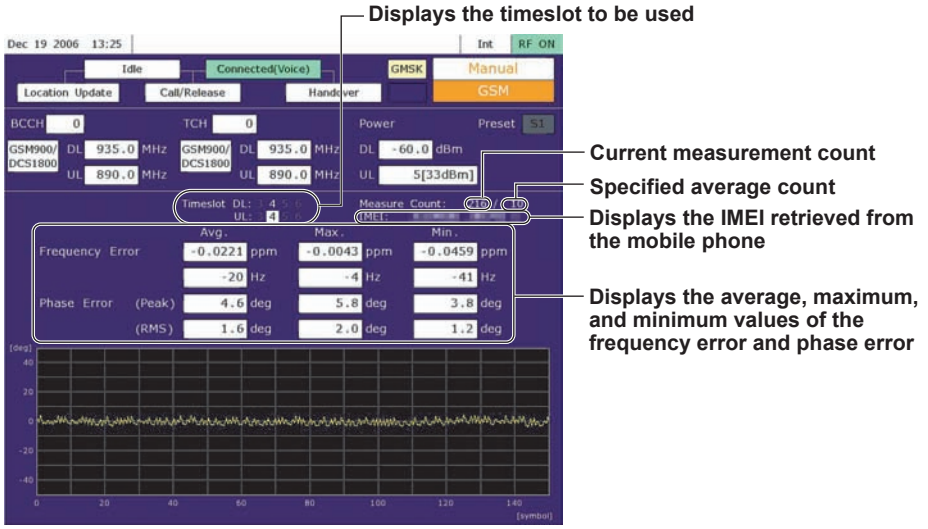
Displays the IMEI retrieved from the mobile phone

Displays the timeslot to be used

Current measurement count

Displays the average, maximum, and minimum values of the TX power, flatness (Max/Min), and timing error of the timeslot that is turned ON
(* only in manual mode)

Frequency Error/Phase Error(GMSK Modulation)



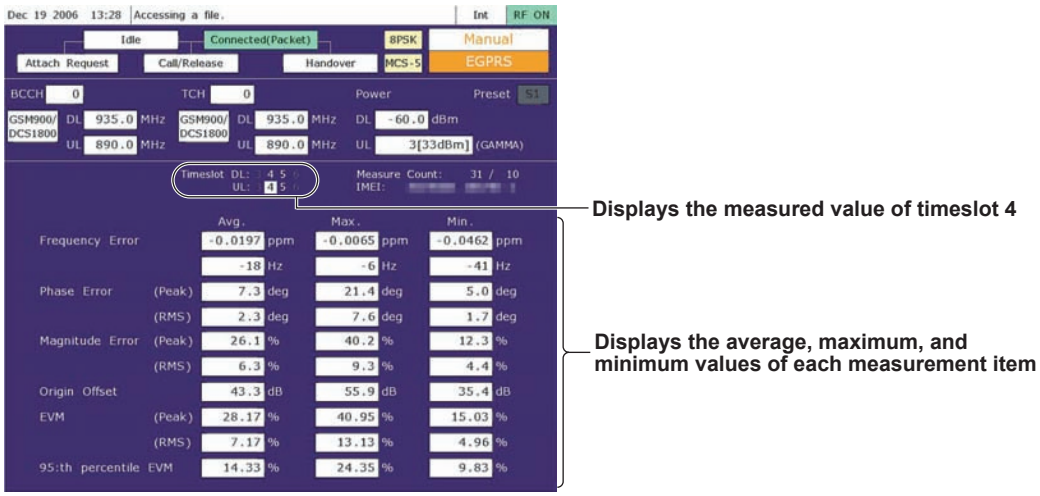
Vertical axis: Phase error

Horizontal axis: Number of symbols (0 = Start symbol of the effective burst interval)

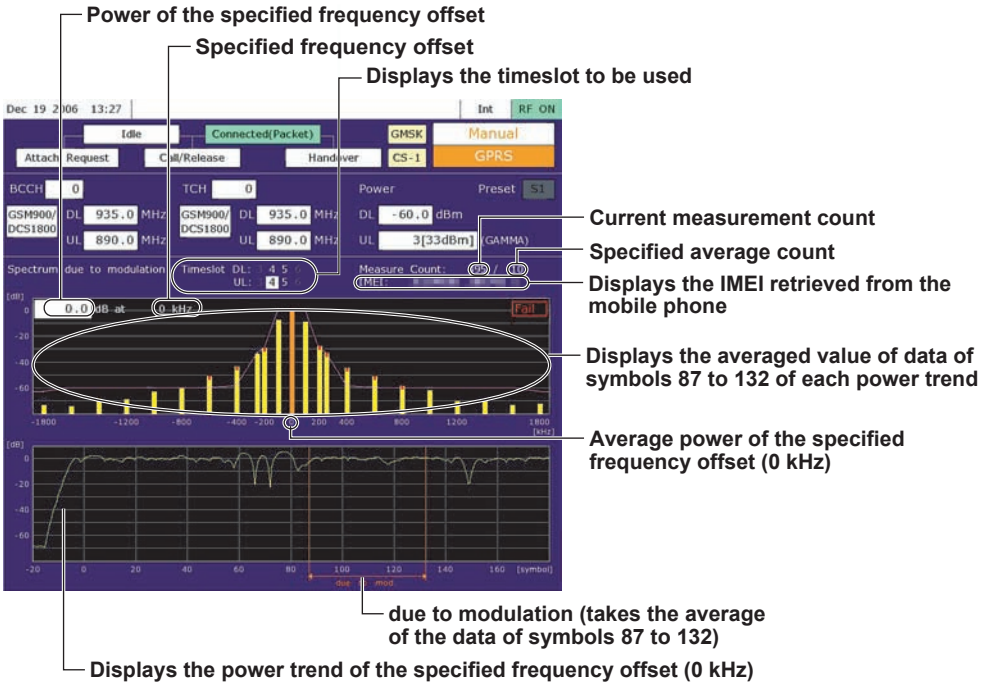
Note

The average display is "----" when averaging is OFF.

Frequency Error/Phase Error/Magnitude Error/Origin Offset/EVM/95:th percentile (8PSK Modulation)

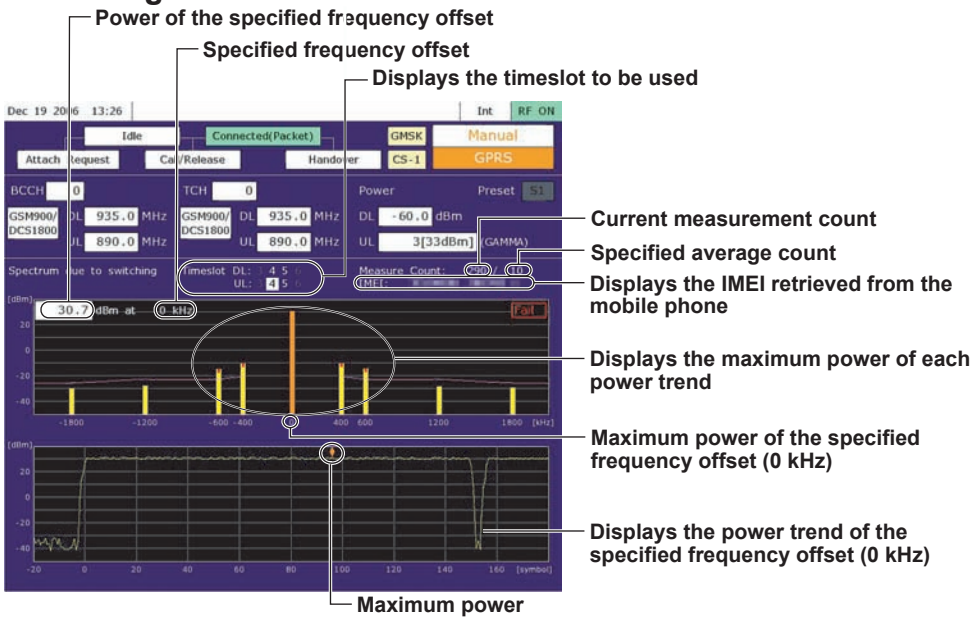


Spectrum due to Modulation



Vertical axis:	Power (0 dB = Carrier frequency power (spectrum due to modulation))
	The measurement bandwidth is 30 kHz.
Horizontal axis (upper section):	Frequency offset (0 kHz = carrier frequency)
Horizontal axis (lower section):	Number of symbols (0 = Start symbol of the effective burst interval)

Spectrum due to Switching Transients



Vertical axis:	Power (absolute level)
Horizontal axis (upper section):	Frequency offset (0 kHz = carrier frequency)
Horizontal axis (lower section):	Number of symbols (0 = Start symbol of the effective burst interval)

1.3 Measurements in Manual Mode (Signaling)

Communication Standard <<For procedures, see section 2.1.>>

Select the wireless standard to be used from the following:

- WCDMA: Allows measurements on mobile phones of the WCDMA system. This standard can be selected when the WCDMA test software is installed.
- GSM: Allows measurements on voice communication (voice loopback, Tch loop (A), burst-by-burst (C)).
- GPRS: Allows measurements on voice communication (voice loopback, Tch loop (A), burst-by-burst (C)) or GPRS packet communication (Test Mode A and Test Mode B).
- EGPRS: Allows measurements on voice communication (circuit SW), GPRS packet communication (Test Mode A and Test Mode B), or EGPRS packet communication (Test Mode A, Test Mode B, and EGPRS SRBL Symmetry).

Connection Conditions <<For procedures, see section 2.2.>>

IMSI

Set the IMSI number of the mobile phone.

MCC and MNC

Set the MCC and MNC numbers of system information.

Main Timeslot

Select the timeslot for performing communications between the VC3300 and the mobile phone.

Multislot Measurement

Multiple timeslots (Timeslot3 to 6) can be used to perform measurements on mobile phones of multislot class 1 to 12 during packet communication.
You can set up to four timeslots for downlink and uplink, separately.

Voice Payload

The following four types of downlink payload on voice communication are available.

ALL0: All transmission data are modulated as 0s.
ALL1: All transmission data are modulated as 1s.
PRBS9: The transmission data is modulated as a PRBS pattern (generated from 9-stage shift register).
Echo: The VC3300 loops the voice back.

Power Control

The following two methods of uplink power control during voice communication are available.

- Normal: Control using SACCH messages.
- Fast: Control using assignment commands.

Delay Time

Set the delay time (voice loopback time) when the voice payload is set to Echo.

Coding Scheme

Select the assembly method of packets during packet communication from below. The selectable method varies depending on the wireless standard setting.
CS-1, CS-2, CS-3, CS-4, MCS-1, MCS-2, MCS-3, MCS-4, MCS-5, MCS-6, MCS-7, MCS-8, or MCS-9

Test Loop Payload

The following four types of downlink payload are available during packet communication.

PRBS9: The transmission data is modulated as a PRBS pattern (generated from 9-stage shift register).

PRBS15: The transmission data is modulated as a PRBS pattern (generated from 15-stage shift register).

ALL0: All transmission data are modulated as 0 s.

ALL1: All transmission data are modulated as 1 s.

Turning ON/OFF the Message Output

You can select whether to output the “EGPRS Packet Uplink Ack/Nack” message that is issued periodically during loopback. This parameter is valid only when the wireless standard is set to EGPRS, the coding scheme is MCS-1 to MCS-9, and the test loop mode is set to Test Mode B.

Frequency <<For procedures, see section 2.3.>>

Set the downlink and uplink frequencies to be used in the measurement. The frequency can be changed while the measurement is in progress (frequency handover).

Frequency Band

Select the frequency band of the frequency or channel used in the measurement from the following groups.

GSM900/DCS1800 and GSM850/PCS1900

Downlink Frequency (BCCH/TCH)

Set the BCCH or TCH downlink frequency using a channel number (ARFCN) or actual frequency.

Uplink Frequency (BCCH/TCH)

Set the BCCH or TCH uplink frequency using a channel number (ARFCN) or actual frequency.

Saving and Loading the Preset

Frequency settings can be saved as preset settings. You can set the frequency settings back to the preset settings by loading a preset.

The current settings including the frequency and power settings are saved to the preset.

Power <<For procedures, see section 2.4.>>

Set the downlink and uplink powers and the power compensation to be used in the measurement. The power settings can be changed while the measurement is in progress.

DL Power

Set the RF power of the downlink signal.

UL Power

Set the RF power of the uplink signal on voice communication.

Power Compensation

Set the compensation values of the RF power of the downlink signal and the RF power of the uplink signal for each frequency band (GSM, DCS, and PCS).

Turning ON/OFF the DL RF

You can turn ON/OFF the downlink RF output.

GAMMA UL Power

Set the RF power of the uplink signal for packet communication using a GAMMA value.

Saving and Loading the Preset

Power settings can be saved as preset settings. You can set the power settings back to the preset settings by loading a preset.
The current settings including the frequency and power settings are saved to the preset.

Signaling <<For procedures, see section 2.5.>>

Location Update

Updates the location of the mobile phone. The completion of the location update sequence is indicated in the connection status/operation display area on the display. When the location update is complete, the display shows the IMSI of the mobile phone.

Test Loop Mode

Measurement is made on one of the modes below. The measured item varies depending on the selected mode.

Test Loop Mode	Measurement Item	Note
Voice communication (Circuit SW)		
Tch Loop(A)	TX/RX characteristics	Tch loopback in the mobile phone end.
Burst-by-burst(C)	TX/RX characteristics	Burst loopback in the mobile phone end.
Packet communication (Packet SW)		
Test Mode A*1	TX characteristics	The mobile phone sends the packet.
Test Mode B*1	TX/RX characteristics	Packet loopback in the mobile phone end.
EGPRS SRBL Symmetry*2	TX/RX characteristics	Radio block loopback in the mobile phone end.

*1 Selectable when the wireless standard is GPRS or EGPRS.
*2 Selectable when the wireless standard is EGPRS.

Connection Function

- **Call from NW**
  The VC3300 executes a call procedure when the mobile phone is idle. The ring tone is sounded on the mobile phone. When the talk button of the mobile phone is pressed and it receives the call resulting in the establishment of the call, the Connected (Voice) indicator in the connection status display area at the upper section of the display turns light green.

- **Call from UE**
  When the mobile phone is idle, execute the call procedure (dial the numbers and press the talk button) from the mobile phone. When the call is established, the display shows the dialed number and the IMSI of the mobile phone. The Connected (Voice) indicator in the connection status display area at the upper section of the display turns light green.

- **Release from NW**
  While the call is connected on the mobile phone (Connected state on the VC3300), the VC3300 executes a release procedure. When the call is released, the mobile phone returns to idle. The Idle indicator in the connection status display area at the upper section of the display turns light green.

- **Release from UE**
  While the call is connected on the mobile phone (Connected state on the VC3300), execute the release procedure from the mobile phone. When the call is released, the mobile phone returns to idle. The Idle indicator in the connection status display area at the upper section of the display turns light green.

- **Test Loop Close**
  While the call is connected on the mobile phone (Connected state on the VC3300), the VC3300 starts a test loop close procedure using Tch Loop (A) or Burst-by-burst. When the mobile phone is able to close the test loop normally and the loopback is established, the Connected (Loop) indicator in the connection status display area at the upper section of the display turns light green.

- **Test Loop Open**
  While the call is connected on the mobile phone (Connected state on the VC3300), the VC3300 starts a test loop open procedure. When the mobile phone is able to open the test loop normally, the Connected (Loop) indicator in the connection status display area at the upper section of the display turns light green.

- **Emergency Call**
  When the mobile phone is idle, execute the call procedure (dial the numbers and press the talk button) from the mobile phone. When the call is established, the display shows the dialed number and the IMSI of the mobile phone. The Connected indicator in the connection status display area at the upper section of the display turns light green.

- **Frequency Handover**
  When the mobile phone is in the Connected state, handover is made to the specified frequency. While the handover is in progress, the Handover indicator in the operation status display area turns to cream color. If the handover completes within a given time, the Connected indicator in the connection status display area turns light green. The handover destination frequency can be selected from presets or set arbitrarily.

- **Starting the Packet Communication**
  If Test Loop Close is executed from the VC3300 and the packet communication starts when the VC3300 is in the Idle (attached) state, the Connected (Packet) indicator in the connection status display area at the upper section of the display turns light green.
- **Stopping the Packet Communication**
  If Test Loop Open is executed from the VC3300 and the packet communication is stopped when the mobile phone is performing packet communication (Connected (Packet) state), the mobile phone returns to idle. The Idle (attached) indicator in the connection status display area at the upper section of the display turns light green.

Note

The emergency call may connect to the actual network. Test in an environment completely shielded from the actual network or use an emergency call number that is not supported by the actual network at the test location.

Measurement <<For procedures, see sections 2.1, 2.6, and 2.7.>>

Measurement Modes

The two modes below are available.

- Single: Makes a single measurement. A radio characteristics measurement is made each time you press the SINGLE key. When averaging is ON, the specified average count of measurements is made.
- Repeat: The measurement is repeated until you press the START/STOP or SINGLE key on the front panel.

Measurement Items

TX Characteristics

TX Power

Measures the output power from the mobile phone and shows the measured value on the display.

Frequency Error

Measures the relative error of the uplink output frequency of the mobile phone (frequency error) with respect to the downlink output frequency of the VC3300 and shows the measured value on the display.

Phase Error (RMS)/(Peak)

Measures the phase error (rms value and peak value) of the uplink output signal of the mobile phone.

Burst Timing

Determines whether the uplink transmission signal of the mobile phone is within the power burst template (specifications) and shows the result (pass or fail).

Flatness

Measures the maximum (Flatness Max) and minimum (Flatness Min) values of the uplink transmission signal (burst waveform) of the mobile phone.

Timing Error

Measures the difference from the time slot boundary based on the start symbol of the uplink transmission signal (burst waveform) from the mobile phone and the downlink transmission signal.

Output Spectrum

Measures the spectrum of the uplink transmission signal of the mobile phone.

EVM (RMS)/(Peak)
Measures the EVM (rms value and peak value) of the uplink output signal of the mobile phone.

Origin Offset
Measures the origin offset suppression (dB) of the uplink transmission signal from the mobile phone.

Magnitude Error (RMS)/(Peak)
Measures the magnitude error (%) of the uplink transmission signal from the mobile phone.

95:th percentile
Indicates that 95% of the individual EVM values of the uplink signal from the mobile phone, measured at each symbol interval, are below the value displayed for this measurement item.

RX Characteristics

FER
Measures the FER, RBER2, and RBER1b of the mobile phone and shows the results When the test loop mode is Tch Loop(A).

BER (Voice)
Measures the BER of the mobile phone and shows the results when the test loop mode is Burst-by-burst.

BLER
Measures the BLER of the mobile phone and displays the result when the wireless standard is set to GPRS or EGPRS and the test loop mode is set to Test Mode B or EGPRS SRBL Symmetry.

BER (Packet)
Measures the BER of the mobile phone and displays the result when the wireless standard is set to GPRS or EGPRS and the test loop mode is set to Test Mode B or EGPRS SRBL Symmetry.

CRC Error
Measures the CRC error of the mobile phone and displays the result when the wireless standard is set to GPRS or EGPRS and the test loop mode is set to Test Mode B or EGPRS SRBL Symmetry.

Data Rate
Measures the data rate of the mobile phone and displays the result when the wireless standard is set to GPRS or EGPRS and the test loop mode is set to Test Mode B or EGPRS SRBL Symmetry.

UE Report

Retrieves the measurement report from the mobile phone.
Sends Measurement Control to the mobile phone and shows on the display the Measurement Report value received from the mobile phone.

RX Quality
Displays a measurement report concerning the RX quality of the mobile phone.

RX Level
Displays a measurement report concerning the RX level of the mobile phone during voice communication.

Actual MS Power Level
Displays a measurement report concerning the actual MS power level of the mobile phone during voice communication.

C Value
Displays the C value that is reported by Packet Downlink Ack/Nack or EGPRS Packet Downlink Ack/Nack when the wireless standard is set to GPRS or EGPRS and the test loop mode is Test ModeB.

Signal VAR
Displays the Signal VAR value that is reported by Packet Downlink Ack/Nack when the wireless standard is set to GPRS or EGPRS, the test loop mode is Test ModeB, and the coding scheme is CS1 to CS4.

GMSK_MEAN_BEP
Displays the GMSK_MEAN_BEP value that is reported by EGPRS Packet Downlink Ack/Nack when the wireless standard is set to EGPRS, the test loop mode is Test ModeB, and the coding scheme is MCS-1 to MCS-4.

GMSK_CV_BEP
Displays the GMSK_CV_BEP value that is reported by EGPRS Packet Downlink Ack/Nack when the wireless standard is set to EGPRS, the test loop mode is Test ModeB, and the coding scheme is MCS-1 to MCS-4.

8PSK_MEAN_BEP
Displays the 8PSK_MEAN_BEP value that is reported by EGPRS Packet Downlink Ack/Nack when the wireless standard is set to EGPRS, the test loop mode is Test ModeB, and the coding scheme is MCS-5 to MCS-9.

8PSK_CV_BEP
Displays the 8PSK_CV_BEP value that is reported by EGPRS Packet Downlink Ack/Nack when the wireless standard is set to EGPRS, the test loop mode is Test ModeB, and the coding scheme is MCS-5 to MCS-9.

List of Measured Values and Detail Display

Measurement Item	Displayed Information	
	List (Overview)	Detail[*5]
TX Characteristics		
TX Power	Measured value[*1]	Maximum, minimum, and average values (TX power)[*1] Maximum and minimum values (flatness) Maximum, minimum, and average values (timing error)[*1] Time domain graph (flatness) Mask pattern
Frequency Error	Measured value[*1]	Maximum, minimum, and average values (frequency error)[*1] Maximum, minimum, and average values (phase error)[*1] Phase error graph[*3]
Phase Error	Measured value[*1]	Common with Frequency Error
Burst Timing	Pass/Fail	Common with TX power
Flatness	Maximum/Minimum value	Common with TX power
Timing Error	Measured value[*1]	Common with TX power
Output Spectrum	Pass/Fail	Average value of the frequency offset points[*1*2] Spectrum (simultaneously displays the mask pattern) Power trend graph of the specified frequency offset points
Magnitude Error	Measured value[*1]	Maximum, minimum, and average values of Frequency Error, Phase Error, Magnitude Error, Origin Offset, EVM, and 95th percentile[*1]
Origin Offset	Measured value[*1]	Common with Magnitude Error
EVM	Measured value[*1]	Common with Magnitude Error
95th percentile	Measured value[*1]	Common with Magnitude Error
RX Characteristics		
FER	Measured value	—
BER (voice)	Measured value	—
BLER	Measured value	—
BER (packet)	Measured value	—
CRC Error	Measured value	—
Data Rate	Measured value	—
UE Report[*4]		
RX Quality	Readout value (converted value) (%)	—
RX Level	Readout value (converted value) (dBm)	—
Actual MS Power Level	Readout value (converted value) (dBm)	—
C Value	Readout value (converted value) (dBm)	—
Signal VAR	Readout value (converted value) (dB^2)	—
GMSK_MEAN_BEP	Readout value (converted value)	—
GMSK_CV_BEP	Readout value (converted value)	—
8PSK_MEAN_BEP	Readout value (converted value)	—
8PSK_CV_BEP	Readout value (converted value)	—

*1 Displays the average value when averaging is ON and the measured value when averaging is OFF

*2 The measured value varies depending on the type of displayed spectrum as follows:
Average value of the data of symbols 87 to 132 of each power trend for spectrum due to modulation.
Maximum power of each power trend for spectrum due to switching transients.

*3 When the modulation type is GMSK: Common with Magnitude Error when the modulation is 8PSK.

*4 The displayed item varies (see page 2-13) depending on the test loop mode and coding scheme (set only during packet communication).

*5 Displays the measured values of all timeslots (UL) that are turned ON in the detail display of TX Power/Burst Timing/Flatness/Timing Error.

Turning ON/OFF Averaging

You can set whether to average the measured values. The measurement count number and the intermediate value are also displayed while averaging is in progress.

Measurement Items That Are Averaged

Measurement Item	Averaging
TX Characteristics	
TX Power	Yes
Frequency Error	Yes
Phase Error	Yes
Burst Timing	No
Flatness	No
Timing Error	Yes
Output Spectrum	Yes
EVM	Yes
Origin Offset	Yes
Magnitude Error	Yes
95th percentile	Yes
RX Characteristics	
FER	No
BER(voice)	No
BLER	No
BER(packet)	No
CRC Error	No
Data Rate	No
UE Report	
RX Quality	No
RX Level	No
Actual MS Power Level	No
C Value	No
Signal VAR	No
GMSK_MEAN_BEP	No
GMSK_CV_BEP	No
8PSK_MEAN_BEP	No
8PSK_CV_BEP	No

Yes: Averaged, No: Not averaged

Turning the Measurement Items ON/OFF

You can turn ON/OFF each measurement item.

1.4 Measurements in TXRX Mode (without Signaling)

Wireless Standard <<For procedures, see section 3.1.>>

Select the wireless standard to be used from the following:

- WCDMA: Allows measurements on mobile phones of the WCDMA system. This standard can be selected when the WCDMA test software is installed.
- GSM: Allows measurements on GMSK modulation.
- GPRS: Allows measurements on GMSK modulation.
- EGPRS: Allows measurements on GMSK modulation or 8PSK modulation.

Downlink Measurement Conditions <<For procedures, see section 3.2>>

Payload

Set the payload type of the downlink.

ALL0: All transmission data are modulated as 0s.

ALL1: All transmission data are modulated as 1s.

PRBS9: The transmission data is modulated as a PRBS pattern (generated from 9-stage shift register).

BCCH: The transmission data is modulated as BCCH.

DL Modulation

You can turn ON/OFF the downlink modulation.

Receive Mode

Selects the format of the signal to be applied to the VC3300.

Burst: Measures the burst waveform.

CW: Measures the CW (continuous waveform). If CW is selected, only the TX power is measured.

Multislot Measurement

Multiple timeslots (1st to 4th) can be used to perform measurements on mobile phones of multislot class 1 to 12.

You can set up to four timeslots for uplink.

Modulation Type <<For procedures, see section 3.2.>>

If the wireless standard is set to GSM or GPRS, measurements can be made on GMSK modulation.

If the wireless standard is set to EGPRS, measurements can be made on GMSK modulation or 8PSK modulation by setting Modulation in the PARAM menu.

Likewise, the downlink modulation type is also set to the type specified by Modulation in the PARAM menu. However, If Payload is set to BCCH and Modulation is set to 8PSK, the downlink modulation is set to GMSK modulation.

Frequency <<For procedures, see section 3.3.>>

Set the transmission or reception RF frequency. The frequency can be changed while the measurement is in progress.

Frequency Band

Select the frequency band to be used from the following groups.
GSM900/DCS1800 and GSM850/PCS1900

RF Transmission Frequency

Set the frequency using a channel (ARFCN) or actual frequency (downlink/uplink).

Frequency Offset

Set the frequency offset value.

Saving and Loading the Preset

Frequency settings can be saved as preset settings. You can set the frequency settings back to the preset settings by loading a preset.
The current settings including the frequency and power settings are saved to the preset.

Power <<For procedures, see section 3.4.>>

Set the downlink power and the power compensation to be used in the measurement.
The power setting can be changed while the measurement is in progress.

DL Power

Set the RF power of the downlink signal.

Power Compensation

Set the compensation values of the RF power of the downlink signal and the RF power of the uplink signal for each frequency band (GSM, DCS, and PCS).

Turning ON/OFF the DL RF

You can turn ON/OFF the downlink RF output.

Turning ON/OFF the UL RF

You can turn ON/OFF the uplink RF input.

Saving and Loading the Preset

Power settings can be saved as preset settings. You can set the power settings back to the preset settings by loading a preset.
The current settings including the frequency and power settings are saved to the preset.

Measurement <<For procedures, see sections 3.1 and 3.5.>>

Measurement Modes

The two modes below are available.

- Single: Makes a single measurement. A radio characteristics measurement is made each time you press the SINGLE key.
- Repeat: The measurement is repeated until you press the START/STOP or SINGLE key on the front panel.

Measurement Items

TX Characteristics

TX Power

Measures the output power from the mobile phone and shows the measured value on the display.

Frequency Error

Measures the relative error of the uplink output frequency of the mobile phone (frequency error) with respect to the downlink output frequency of the VC3300 and shows the measured value on the display.

Phase Error (RMS)/(Peak)

Measures the phase error (rms value and peak value) of the uplink output signal of the mobile phone.

Burst Timing

Determines whether the uplink transmission signal of the mobile phone is within the power burst template (specifications) and shows the result (pass or fail).

Flatness

Measures the maximum (Flatness Max) and minimum (Flatness Min) values of the uplink transmission signal (burst waveform) of the mobile phone.

Output Spectrum

Displays the spectrum of the uplink transmission signal of the mobile phone.

EVM (RMS)/(Peak)

Measures the EVM (rms value and peak value) of the uplink output signal of the mobile phone.

Origin Offset

Measures the origin offset suppression (dB) of the uplink transmission signal from the mobile phone.

Magnitude Error (RMS)/(Peak)

Measures the magnitude error (%) of the uplink transmission signal from the mobile phone.

95:th percentile

Indicates that 95% of the individual EVM values of the uplink signal from the mobile phone, measured at each symbol interval, are below the value displayed for this measurement item.

Dynamic Power

Continuously measures the power of the uplink signal from the mobile phone in unit of time slots (576.923 μs) and lists the absolute values and relative values (with respect to the first slot) of the measured results of each slot.
If the output signal from the mobile phone is controlled so that it changes in unit of time slots such as when calibrating the mobile phone, measurements can be performed at high speeds.

List of Measured Values and Detail Display

Measurement Item	Displayed Information List (Overview)	Detail[*4]
TX Characteristics		
TX Power	Measured value[*1]	Maximum, minimum, and average values (TX power)[*1] Maximum and minimum values (flatness) Time domain graph (flatness) Mask pattern
Frequency Error	Measured value[*1]	Maximum, minimum, and average values (frequency error)[*1] Maximum, minimum, and average values (phase error)[*1] Phase error graph[*3]
Phase Error	Measured value[*1]	Common with Frequency Error
Burst Timing	Pass/Fail	Common with TX power
Flatness	Maximum/Minimum value	Common with TX power
Output Spectrum	Pass/Fail	Average value of the frequency offset points[*1*2] Spectrum (simultaneously displays the mask pattern) Power trend graph of the specified frequency offset points
Magnitude Error	Measured value[*1]	Maximum, minimum, and average values of Frequency Error, Phase Error, Magnitude Error, Origin Offset, EVM, and 95th percentile[*1]
Origin Offset	Measured value[*1]	Common with Magnitude Error
EVM	Measured value[*1]	Common with Magnitude Error
95th percentile	Measured value[*1]	Common with Magnitude Error

*1 Displays the average value when averaging is ON and the measured value when averaging is OFF

*2 The measured value varies depending on the type of displayed spectrum as follows:
Average value of the data of symbols 87 to 132 of each power trend for spectrum due to modulation.
Maximum power of each power trend for spectrum due to switching transients.

*3 When the modulation type is GMSK: Common with Magnitude Error when the modulation is 8PSK.

*4 Displays the measured values of all timeslots (UL) that are turned ON in the detail display of TX Power/Burst Timing/Flatness/Timing Error.

Turning ON/OFF Averaging

You can set whether to average the measured values. The measurement count number and the intermediate value are also displayed while averaging is in progress.

Measurement Items That Are Averaged

Measurement Item	Averaging
TX Characteristics	
TX Power	Yes
Frequency Error	Yes
Phase Error	Yes
Burst Timing	No
Flatness	No
Output Spectrum	Yes
EVM	Yes
Origin Offset	Yes
Magnitude Error	Yes
95th percentile	Yes
Dynamic Power	No

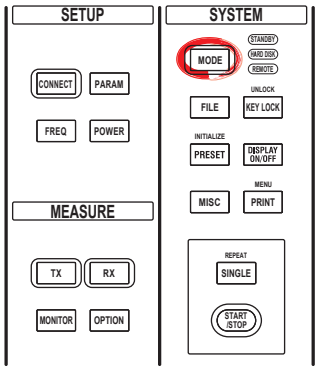
Yes: Averaged, No: Not averaged

Turning the Measurement Items ON/OFF

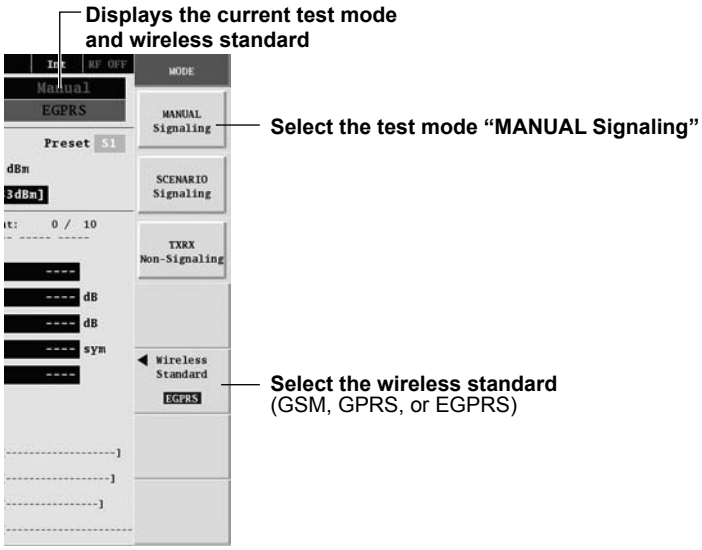
You can turn ON/OFF each measurement item.

2.1 Selecting the Test Mode

Procedure



Press **MODE**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Explanation

Test Mode

The VC3300 provides the following three test modes.

- Manual mode: Performs measurements manually while signaling.
- TXRX mode: Performs measurements without signaling.
- Scenario mode*: Automatically performs measurements while signaling according to the procedure specified in the scenario file and makes pass/fail judgements on the measured values.

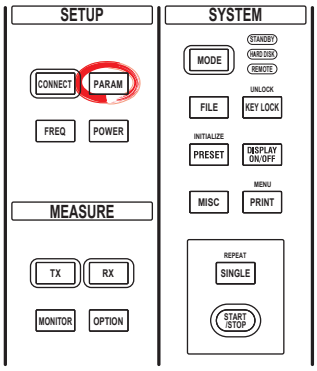
* For a description of scenario mode, see section 7 in the VC3300 User's Manual (IM733020-01E).

Wireless Standard

Select the wireless standard (GSM, GPRS, or EGPRS) to be used.

2.2 Setting the Connection Conditions

Procedure



Press **PARAM**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.

<Screen 1 of 2>

Set the IMSI
(enter the IMSI, MCC, and MNC numbers)

Set the timeslot
(Main Timeslot or Timeslot ON/OFF)

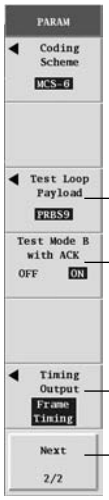
Select the payload
(All0, All1, PRBS9, or Echo)

Select the power control
(Normal or Fast)

Select the delay time
(0.5, 1.0, or 1.5)

Display the next screen
(Next 2/2)

<Screen 2 of 2>



Select the payload type

Turns ON/OFF the message output
(EGPRS only)

Select the timing output signal
(see section 4.1)

Display the next screen
(Next 1/2)

Explanation

IMSI

Set the IMSI code and the MCC/MNC code of the mobile phone.

Selectable range:

IMSI: 15 digits (in 1 steps, default value: 001010000000010)

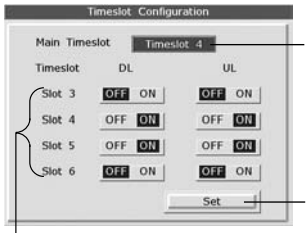
MCC: 3 digits (in 1 steps, default value: 001)

MNC: 2 digits (in 1 steps, default value: 01)

Setting the Timeslot (Timeslot Configuration)

- **Selecting the Main Timeslot**
  Select the timeslot used for communication between the VC3300 and the mobile phone from the following:
  Timeslot3 to 6

- **Turning the Timeslot ON/OFF**
  You can set whether to use each timeslot (Slot3 to 6) separately for downlink and uplink. You can perform multislot measurement by turning multiple slots ON. If you turn ON a single slot, single slot measurement is performed.
  The VC3300 can perform multislot measurement on mobile phones of multislot class 1 to 12.
  There are limitations to the number of slots that can be measured and the combination of slots depending on the multislot class of the mobile phones. For the combination of timeslots that can be measured for each multislot class, see appendix 5.



Selecting the main timeslot

Confirm all settings (press the SET key)

Turning the timeslot ON/OFF

Voice Payload

Select the downlink payload type on voice communication from the following:

ALL0: All transmission data are modulated as 0.
ALL1: All transmission data are modulated as 1.
PRBS9: The transmission data is modulated as a PRBS (9-stage shift register) pattern.
Echo: Loops back the speech data that is received in the uplink from the mobile phone and transmits the data

Power Control

Select the method of uplink power control on voice communication from the following:

Normal: Control using SACCH messages.
Fast: Control using assignment commands.

Speech Delay

Set the delay time (voice loopback time) when the payload is set to Echo from the following:

0.5, 1.0, and 1.5 (s)

Coding Scheme

Select the assembly method of packets during packet communication from below.

- **When the Wireless Standard Is Set to GPRS**
  CS-1, CS-2, CS-3, and CS-4
- **When the Wireless Standard Is Set to EGPRS**
  CS-1, CS-2, CS-3, CS-4, MCS-1, MCS-2, MCS-3, MCS-4, MCS-5, MCS-6, MCS-7, MCS-8, MCS-9

The uplink and downlink signal modulation is fixed depending on the selected coding scheme as follows:

CS-1 to 4, MCS-1 to 4: GMSK
MCS-5 to 9: 8PSK

Test Loop Payload

Select the downlink payload type during packet communication from the following:

PRBS9: The transmission data is modulated as a PRBS (9-stage shift register) pattern.
PRBS15: The transmission data is modulated as a PRBS (15-stage shift register) pattern.
ALL0: All transmission data are modulated as 0 s.
ALL1: All transmission data are modulated as 1 s.

Turning ON/OFF the Message Output (Test Mode B with ACK Enable)

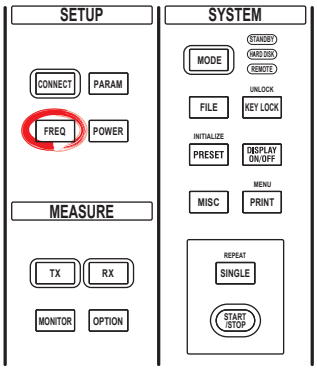
You can select whether to output the “EGPRS Packet Uplink Ack/Nack” message that is issued periodically during loopback when the wireless standard is set to EGPRS, the coding scheme is MCS-1 to MCS-9, and the test loop mode is Test Mode B.

Note

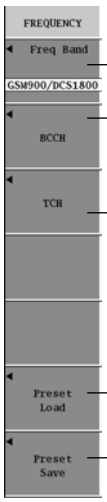
- You can check the multislot class of a mobile phone in UE Information (see section 2.5).
- The timeslot ON/OFF setting is valid during packet communication. The setting is invalid during voice communication.
- If you change the settings in the Timeslot Configuration dialog box, move the cursor to Set and press the SET key to confirm the settings.

2.3 Setting the Frequency

Procedure



Press **FREQ**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



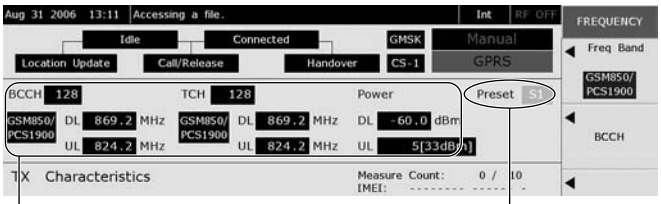
Select the frequency band (common to BCCH/TCH)
(GSM900/DCS1800 or GSM850/PCS1900)

Set the BCCH
(Freq Band, ARFCN and DL Freq/UL Freq)
Enter the setting using the Frequency Setup soft key

Set the TCH (ARFCN and DL Freq/UL Freq)
(Freq Band, ARFCN and DL Freq/UL Freq)
Enter the setting using the Frequency Setup soft key
Execute the frequency handover with the Handover Execute soft key

Load a preset
(S1 to S6)

Save the preset
(S1 to S6)



Displays the current settings

Displays the loaded preset file number

Explanation

Frequency Band

Select the frequency band of the frequency or channel used in the measurement from the following groups.

You can set the frequency band collectively for BCCH and TCH or separately.

Set collectively: Use the Freq Band soft key menu.

Set separately: Use the BCCH > Freq Band soft key menu or TCH > Freq Band soft key menu.

Operating Band	TX-RX Frequency Separation	Frequency Band
GSM900/DCS1800	45 MHz	DL: 921.2 to 959.8 MHz UL: 876.2 to 914.8 MHz
	95 MHz	DL: 1805.2 to 1879.8 MHz UL: 1710.2 to 1784.8 MHz
GSM850/PCS1900	45 MHz	DL: 869.2 to 893.8 MHz UL: 824.2 to 848.8 MHz
	80 MHz	DL: 1930.2 to 1989.8 MHz UL: 1850.2 to 1909.8 MHz

Downlink Frequency (BCCH/TCH)

Set the BCCH and TCH downlink frequencies using channel numbers (ARFCN) or actual frequencies. The selectable range is as follows:

- **When Setting Using the Actual Frequency**

Operating Band	Lower Limit	Upper Limit	Step	Default	Unit
GSM900/DCS1800	935.0	959.8	0.2	935.0 MHz	MHz
	921.2	934.8	0.2		MHz
	1805.2	1879.8	0.2		MHz
GSM850/PCS1900	869.2	893.8	0.2	869.2 MHz	MHz
	1930.2	1989.8	0.2		MHz

- **When Setting Using the Channel Number (ARFCN)**

Operating Band	Lower Limit	Upper Limit	Step	Default	Unit
GSM900/DCS1800	0	124	1	0	—
	955	1023	1		—
	512	885	1		—
GSM850/PCS1900	128	251	1	128	—
	512	810	1		—

Uplink Frequency (BCCH/TCH)

Set the BCCH and TCH uplink frequencies using channel numbers (ARFCN) or actual frequencies. The selectable range is as follows:

- **When Setting Using the Actual Frequency**

Operating Band	Lower Limit	Upper Limit	Step	Default	Unit
GSM900/DCS1800	890.0	914.8	0.2	890.0 MHz	MHz
	876.2	889.8	0.2		MHz
	1710.2	1784.8	0.2		MHz
GSM850/PCS1900	824.2	848.8	0.2	824.2 MHz	MHz
	850.2	1909.8	0.2		MHz

- **When Setting Using the Channel Number (ARFCN)**

Operating Band	Lower Limit	Upper Limit	Step	Default	Unit
GSM900/DCS1800	0	124	1	0	—
	955	1023	1		—
	512	885	1		—
GSM850/PCS1900	128	251	1	128	—
	512	810	1		—

Entering the Frequency Setting and Executing the Frequency Handover (Frequency Setup/Handover Execute)

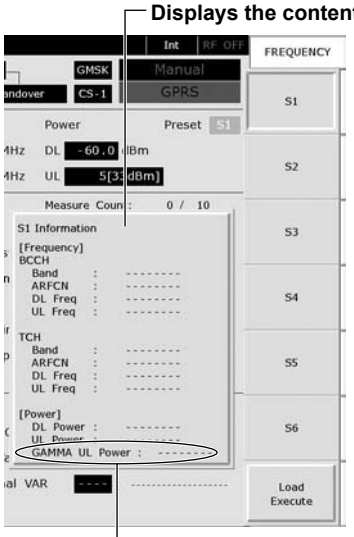
A frequency handover can be carried out by setting the frequency band, downlink frequency, or uplink frequency in the connected state or during packet communication. The soft key display varies depending on the connection state.

- When the connection state is idle, the **Frequency Setup** is displayed. If you press the Frequency Setup soft key after setting the frequency band (Freq Band), downlink frequency (DL Freq), and uplink frequency (UL Freq), the value in the setup display area in the upper section of the display is set to the specified frequency band and frequency.
- When the connection state is connected, the **Handover Execute** is displayed. If you press the Handover Execute soft key after changing the frequency band (Freq Band), downlink frequency (DL Freq), and uplink frequency (UL Freq), the value in the setup display area in the upper section of the display is set to the specified frequency band and frequency, and the frequency handover is executed.

Saving and Loading the Preset

- **Saving the Preset**
  Select the save destination preset number, and then press the **Save Execute** soft key. Up to six presets (S1 to S6) can be registered. If you specify a preset number containing preset settings, the existing settings are overwritten.

- **Load a Preset**
  Select the preset number to be loaded, and press the **Load Execute** soft key.

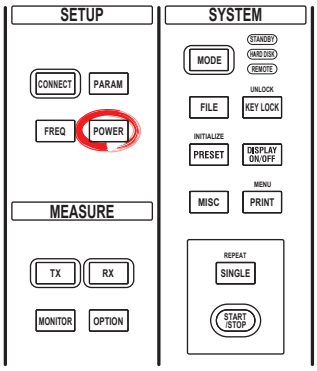


Note

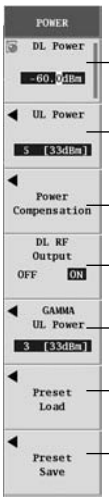
- If you set the downlink frequency channel, the uplink frequency channel value is also automatically set. Likewise, if you set the uplink frequency channel, the downlink frequency channel value is also automatically set.
- The presets in the FREQ key menu are common with those of the POWER key menu.
- When you save a preset, the current settings including the frequency and power settings are saved. For the items that are saved to the preset, see appendix 1.
- If the frequency band of BCCH and TCH differ and you press the FREQ key, the Freq Band soft key displayed on the screen shows "*****."

2.4 Setting the Power

Procedure



Press **POWER**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Set the DL power

Set the UL power
(during voice communication)

Set the power compensation

Turn ON/OFF the DL RF output

Set the UL power
(during packet communication)

Load a preset
(S1 to S6)

Save the preset
(S1 to S6)

Explanation

DL Power

Set the RF power of the downlink signal.
–120.0 to –10.0 dBm (in 0.1 steps, default value: –60.0)

UL Power

Set the RF power of the uplink signal on voice communication using a power control level value. For the relationship between the power control level and output power, see appendix 4.
0 to 31 (in 1 steps, default value: 0)

Power Compensation

Set the compensation values of the RF power of the downlink signal and the RF power of the uplink signal for each frequency band (GSM, DCS, and PCS).
Selectable range: 0.0 to 40.0 dB (in 0.1 steps, default value: 0.0 dB)

Turn ON/OFF the DL RF output (DL RF Output)

You can turn ON/OFF the downlink RF output.

GAMMA UL Power

Set the RF power of the uplink signal for packet communication using a GAMMA value. For the relationship between the GAMMA value and output power, see appendix 4.
0 to 31 (in 1 steps, default value: 3)

Saving and Loading the Preset (Preset Save/Preset Load)

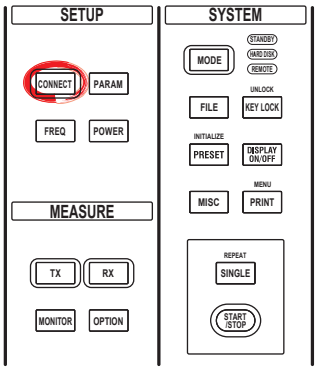
- **Saving the Preset**
  Select the save destination preset number, and then press the **Save Execute** soft key. Up to six presets (S1 to S6) can be registered. If you specify a preset number containing preset settings, the existing settings are overwritten.
- **Load a Preset**
  Select the preset number to be loaded, and press the **Load Execute** soft key.

Note

- Set the UL power (set using the power control level or GAMMA) to a value less than or equal to the maximum output power of the mobile phone. You can check the maximum output power of a mobile phone under power class in UE Information (see section 2.5).
- If the RF power compensation value of the downlink/uplink is not correct, a protocol error (error code: 518) may occur even in the connected state or during packet communication. If this happens, set a correct power compensation value.
- The presets in the POWER key menu are common with those of the FREQ key menu.
- When you save a preset, the current settings including the frequency and power settings are saved. For the items that are saved to the preset, see appendix 1.

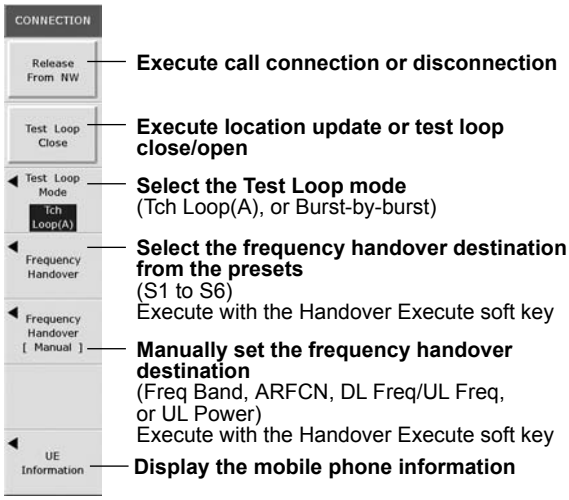
2.5 Selecting and Executing Signaling

Procedure

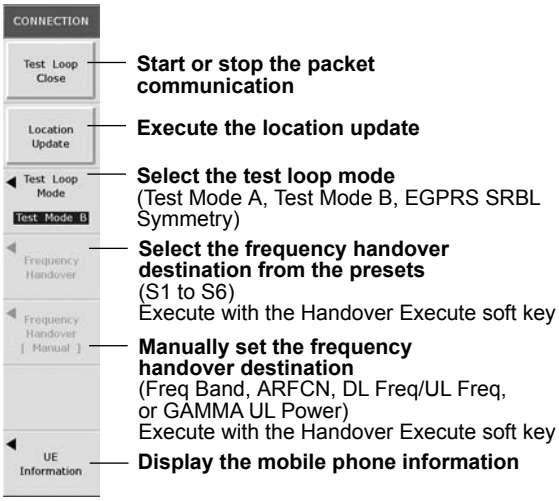


Press **CONNECT**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.

<Voice communication>



<Packet communication>



Explanation

Location Update

This can be executed when the VC3300 is in the idle state.

Test Loop (voice communication)

The test loop can be closed or opened while the call is connected (Connected state).

Call Setup/Release (voice communication)

Select from the following:

- Call from NW
- Release from NW

Starting/Stopping the Packet Communication (Test Loop Close/Test Loop Open)

Starts or stops the packet communication.

Test Loop Mode

Select the mode for opening/closing the test loop from below. The measured item varies depending on the selected mode.

Test Loop Mode	Measured Item	Note
Voice communication (Circuit SW)		
Tch Loop(A)	TX/RX characteristics	Tch loopback in the mobile phone end.
Burst-by-burst(C)	TX/RX characteristics	Burst loopback in the mobile phone end.
Packet communication (Packet SW)		
Test Mode A*1	TX characteristics	The mobile phone sends the packet.
Test Mode B*1	TX/RX characteristics	Packet loopback in the mobile phone end.
EGPRS SRBL Symmetry*2	TX/RX characteristics	Radio block loopback in the mobile phone end.

*1 Selectable when the wireless standard is GPRS or EGPRS.
*2 Selectable when the wireless standard is EGPRS.

Selecting the Connection Function

Select from the following:

- **Call from NW/Release form NW**
  Press the desired soft key to execute call from NW or release from NW.
- **Call from UE/Release from UE**
  Execute the call (dial the numbers and press the talk button) or release procedure from the mobile phone.
- **Frequency Handover/Frequency Handover [Manual]**
  The handover destination frequency can be selected from presets or set manually.
  - **Specifying using a preset**
    Select a preset from S1 to S6 Use preset in the FREQ key menu to set S1 to S6.
  - **Specifying manually**
    Set the frequency band, frequency and uplink power (UL power or GAMMA UL power). Set the frequency using a channel (ARFCN) or an actual frequency (DL Freq/UL Freq). For the selectable range of each value, see the explanation in section 2.3 and 2.4.
    The same operation can be carried out on the FREQ key menu.
  - **Starting/Stopping the Packet Communication (Test Loop Close/Test Loop Open)**
    Press the corresponding soft key to start or stop the packet communication from the VC3300.

UE Information

Displays the following information about the connected mobile phone.

- IMSI
- IMEI
- Power class*1: Displays the power class and maximum output power for each frequency band used and modulation type.
- Multislot class*2: Displays the multislot class for each communication standard to be used and the number of slots that can be used (DL/UL/Sum).
- Dialed number

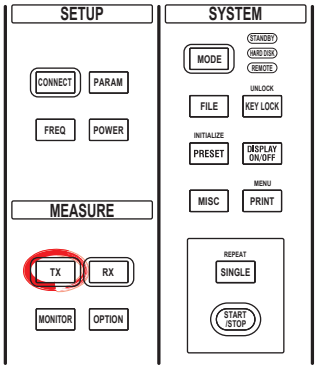
*1 Displays the value for 8PSK modulation only during packet communication.
*2 Displays the information only during packet communication.

Note

- If the handover destination frequency is specified using a preset, the BCCH value registered in the preset is not used.
- If you are specifying the frequency handover manually and you change the frequency, be sure to also set the UL power.

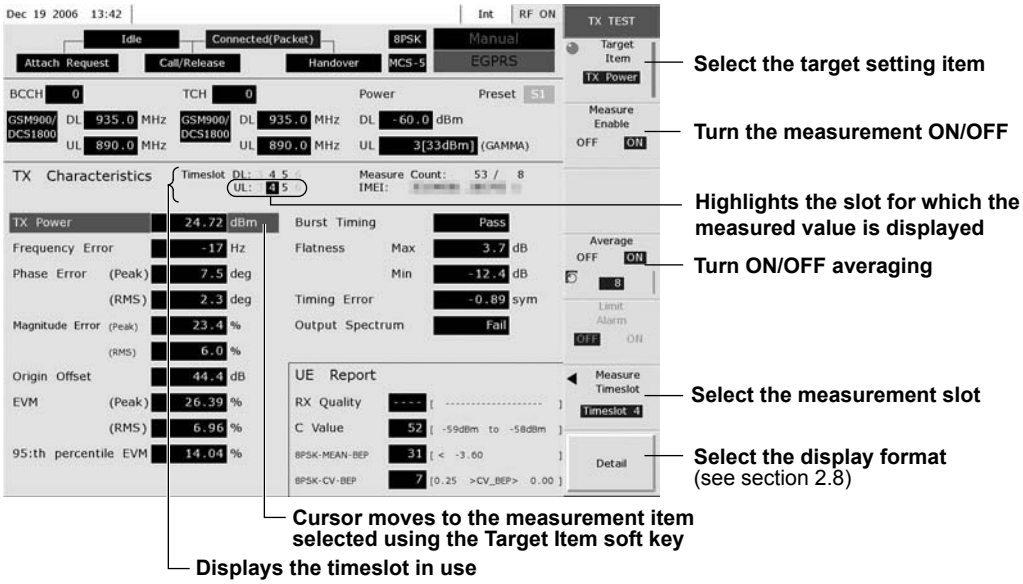
2.6 Setting the Transmitter (TX) Characteristics Measurement Conditions

Procedure

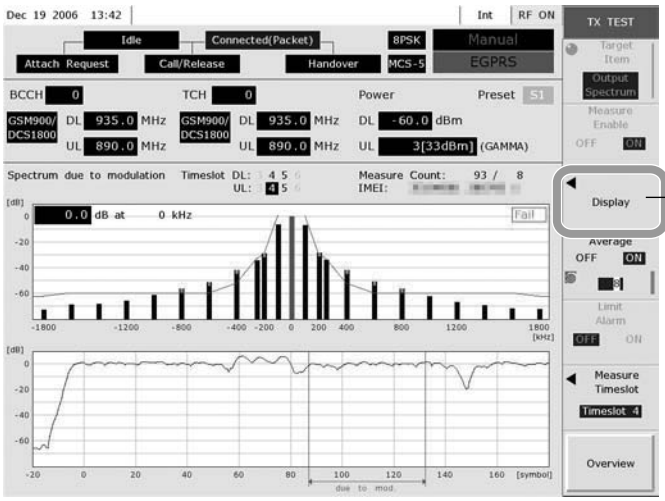


Press **TX**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.

List Display



Detail Display (Output Spectrum)



Explanation

Set the conditions of the TX characteristics measurement. Press **TX** to show the TX characteristics measurement display.

Selecting the Target Item

You can set the following on the selected measurement item.

- Turn the measurement ON/OFF.
- Detail display (see section 2.8).

Measurement Items

TX Power:	Measures the transmission power of the mobile phone.
Frequency Error:	Measures the frequency error.
Phase Error (RMS)/(Peak):	Measures the phase error (rms and peak values).
Burst Timing:	Determines whether the uplink transmission signal is within the power burst template (specifications) and shows the result (pass or fail).
Flatness:	Measures the maximum (Flatness Max) and minimum (Flatness Min) values of the uplink transmission signal (burst waveform).
Timing Error:	Measures the difference from the synchronization point based on the rising edge of the uplink transmission signal (burst waveform) and the downlink transmission signal.
Output Spectrum:	Measures the spectrum of the uplink transmission signal of the mobile phone.
Magnitude Error (RMS)/(Peak):	Measures the magnitude error (%) of the uplink transmission signal from the mobile phone.
Origin Offset:	Measures the origin offset suppression (dB) of the uplink transmission signal from the mobile phone.
EVM (RMS)/(Peak):	Measures the EVM (rms value and peak value) of the uplink output signal of the mobile phone.
95:th percentile:	Indicates that 95% of the individual EVM values of the uplink signal from the mobile phone, measured at each symbol interval, are below the value displayed for this measurement item.

Turning the Measurement ON/OFF (Measure Enable)

Set whether to measure the item selected in the Target Item soft key menu.

ON: Measure.

OFF: Not measure.

Turning ON/OFF Averaging

Set whether to perform averaging and the averaging count (attenuation constant).

Selectable range of the averaging count: 1 to 255

* When the measurement mode is single, set the averaging count. When the measurement mode is repeat, set the attenuation constant.

Selecting the Measurement Slot (Measure Timeslot)

Displays the measured value of the selected timeslot on the screen.

Select the timeslots (UL) whose timeslot ON/OFF setting is set to ON (see section 2.2).

This setting is valid during packet communication.

The measured values of the following items are displayed for all timeslots (UL) that are turned ON regardless of the measurement slot selection.

TX Power, Burst Timing, Flatness, and Timing Error

UE Report

Displays the measurement report from the mobile phone. The contents of the report that is displayed vary depending on the test loop mode (see section 2.5) and the coding scheme (only during packet communication, see section 2.2) as follows:

- **Circuit SW (Tch Loop A, Burst-by-burst)**
  Rx Quality, Rx Level, and Actual MS Power
- **Packet SW (Test Mode A/B, EGPRS SRBL Symmetry)**
  coding Scheme = CS1 to 4: Rx Quality, C Value, and Signal Var
  coding Scheme = MCS1 to 4: Rx Quality, C Value, GMSK-MEAN-BEP, and GMSK-CV-BEP
  coding Scheme = MCS5 to 9: Rx Quality, C Value, , 8PSK-MEAN-BEP, and 8PSK-CV-BEP

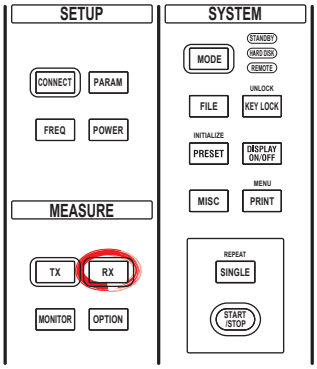
Settings While Displaying the Output Spectrum (Display)

You can specify the following settings when the detail display is shown.

- **Selecting the Spectrum Type (Spectrum)**
  Select the type of spectrum to be displayed from the following:
  Modulation: Displays the average power of symbols 87 to 132 of each power trend and the power trend of the specified frequency offset.
  Switch transients: Displays the maximum power* of each power trend and the power trend of the specified frequency offset.
  * The maximum power is determined from the interval including the effective burst interval and the rising and falling edges around it.
- **Selecting the Frequency Offset (Frequency Offset)**
  Select the power trend to be displayed in the lower section of the detail display from the following:
  When Set to Modulation
  –1800 kHz/–1600 kHz/–1400 kHz/–1200 kHz/–1000 kHz/–800 kHz/–600 kHz/–400 kHz/–250 kHz/–200 kHz/–100 kHz/0 kHz/100 kHz/200 kHz/250 kHz/400 kHz/600 kHz/800 kHz/1000 kHz/1200 kHz/1400 kHz/1600 kHz/1800 kHz
  When Set to Switch Transients
  –1800 kHz/–1200 kHz/–600 kHz/–400 kHz/0 kHz/400 kHz/600 kHz/1200 kHz/1800 kHz

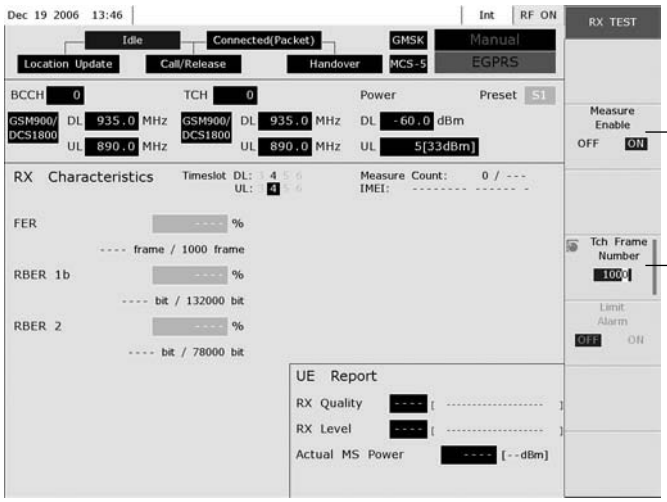
2.7 Setting the Receiver (RX) Characteristics Measurement Conditions

Procedure



Press **RX**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.

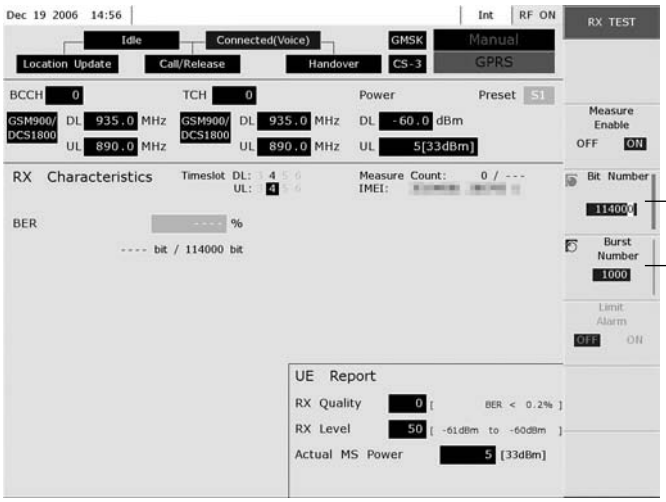
<When the test loop mode (section 2.5) is Tch Loop(A)>



Turn the measurement ON/OFF

Set the number of frames

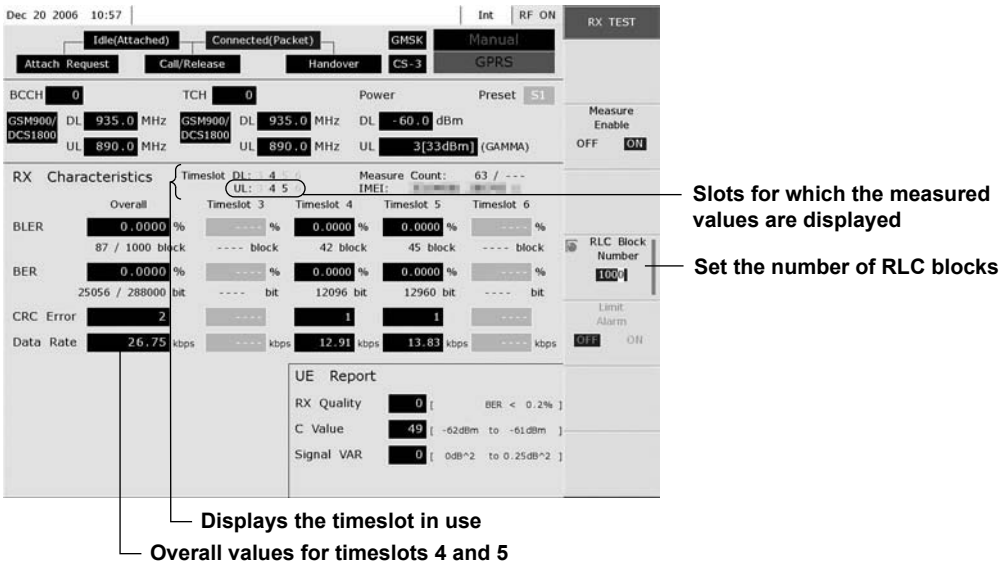
<When the test loop mode is Burst-by-burst>



Set the number of bits

Set the number of bursts

<When the test loop mode is Test Mode B, or EGPRS SRBL Symmetry>



Explanation

Set the conditions of the RX characteristics measurement. Press **RX** to show the RX characteristics measurement display.

Selecting the Target Item

You can set the following on the selected measurement item.

- Turn the measurement ON/OFF (see section 2.6).
- Detail display (see section 2.8).

Measurement Items

FER: Measures the FER, RBER2, and RBER1b and shows the results when the test loop mode is Tch Loop(A).

BER (voice): Measures the BER and shows the results when the test loop mode is Burst-by-burst.

BLER*1: Measures the BLER and shows the results when the test loop mode is Test Mode B or EGPRS SRBL Symmetry.

BER (packet)*1: Measures the BER and shows the results when the test loop mode is Test Mode B or EGPRS SRBL Symmetry.

CRC Error*1: Measures the CRC error and shows the results when the test loop mode is Test Mode B or EGPRS SRBL Symmetry.

Data Rate*2: Measures the data rate (kbps) and shows the results when the test loop mode is Test Mode B or EGPRS SRBL Symmetry.

*1 In the BLER, BER (packet), CRC error, and data rate measurements, the value for each timeslot (UL) that is turned ON as well as the overall value are displayed.

*2 Maximum data rate

The maximum value (during single slot) of the data rate for each coding scheme is as follows:

GPRS			EGPRS		
Coding Scheme	Modulation	Data Rate (kbps)	Coding Scheme	Modulation	Data Rate (kbps)
CS-1	GMSK	8.0	MCS-1	GMSK	8.4
CS-2	GMSK	12.0	MCS-2	GMSK	10.8
CS-3	GMSK	14.4	MCS-3	GMSK	14.4
CS-4	GMSK	20.0	MCS-4	GMSK	17.2
			MCS-5	8PSK	22.0
			MCS-6	8PSK	29.2
			MCS-7	8PSK	44.0
			MCS-8	8PSK	53.6
			MCS-9	8PSK	58.4

Number of Frames (Tch Frame Number)

Set the number of frames of the FER measurement source when the test loop mode is Tch Loop (A).
Selectable range: 1 to 3000 frames (in 1 steps, default value: 1000)

Number of Bits (Bit Number)

Set the number of bits on which to measure the BER when the test loop mode is Burst-by-burst.
Selectable range: 1 to 1140000 (in 1 steps, default value: 5200)

Number of Burst (Burst Number)

Set the number of bursts of the BER measurement source when the test loop mode is Burst-by-burst.
Selectable range: 1 to 10000 (in 1 steps, default value: 50)

Number of RLC Blocks (RLC Block Number)

Set the number of RLC blocks of the BLER measurement when the test loop mode is Packet SW (Test Mode B/EGPRS SRBL Symmetry).
Selectable range: 1 to 3000 (in 1 steps, default value: 1000)

UE Report

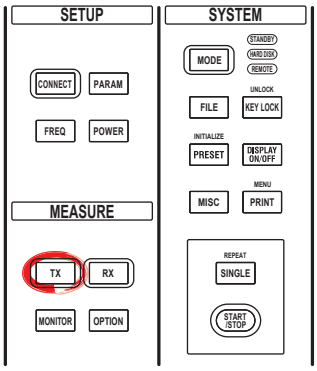
Displays the measurement report from the mobile phone. The displayed item varies depending on the test loop mode and coding scheme (set only during packet communication). For details, see section 2.6.

Note

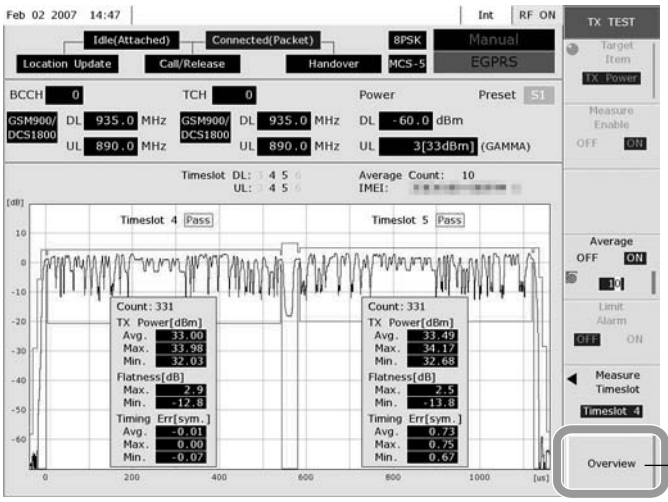
If the test loop mode is set to Test Mode A (packet communications), RX characteristics are not measured. Therefore, you cannot operate the soft key menu.

2.8 Selecting the Display Format

Procedure



Press **TX**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Explanation

Select the following display formats.

List (Overview)

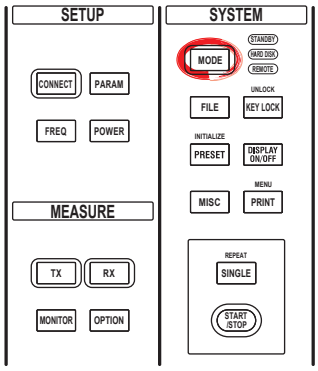
Lists the measured values of all measurement items.

Detail Display

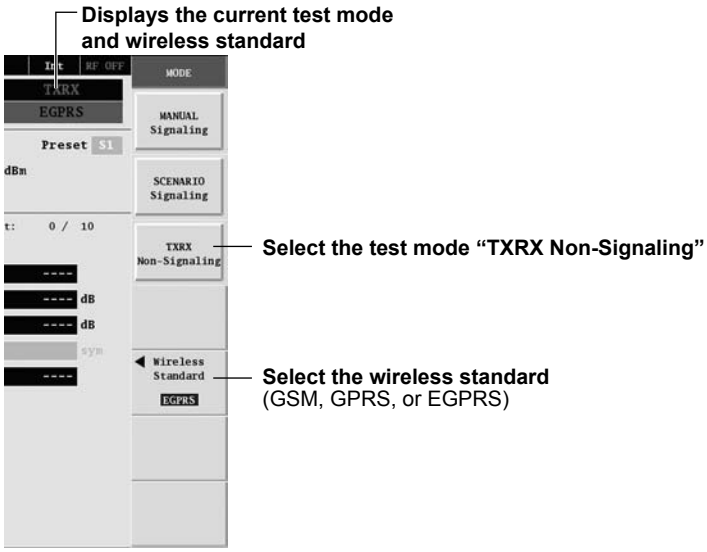
Displays the details on the measured values of the selected measurement item. The displayed contents vary depending on the measurement item. For a description of the detail display of each measurement item, see section 1.2.

3.1 Selecting the Test Mode

Procedure



Press **MODE**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Explanation

Test Mode

The VC3300 provides the following three test modes.

- Manual mode: Performs measurements manually while signaling.
- TXRX mode: Performs measurements without signaling.
- Scenario mode:* Automatically performs measurements while signaling according to the procedure specified in the scenario filee and makes pass/fail judgements on the measured values.

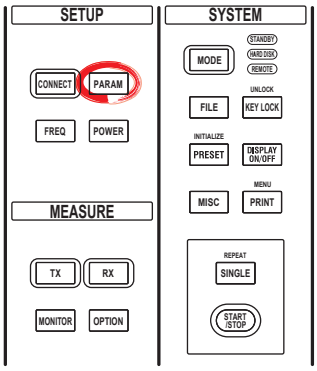
* For a description of scenario mode, see section 7 in the VC3300 User's Manual (IM733020-01E).

Wireless Standard

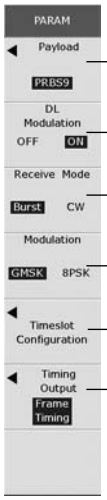
Select the wireless standard (GSM, GPRS, or EGPRS) to be used.

3.2 Setting the Downlink Parameters

Procedure



Press **PARAM**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Select the payload
(PRBS9, ALL0, ALL1, or BCCH)

Turn DL modulation ON/OFF

Turn the receive mode
(Burst or CW)

Select the modulation
(GMSK, 8PSK)

Turn each timeslot ON/OFF

Set the timing output signal
(see section 4.1)

Explanation

Set the following items related to the downlink.

Payload

Select the downlink payload type from the following:

- ALL0: All transmission data are modulated as 0s.
- ALL1: All transmission data are modulated as 1s.
- PRBS9: The transmission data is modulated as a PRBS (9-stage shift register) pattern.
- BCCH: The transmission data is modulated as BCCH.

DL Modulation

Turn ON/OFF the downlink modulation.

- ON: Transmits a modulated signal.
- OFF: Transmits unmodulated carrier.

Receive Mode

Set the format of the signal to be applied to the VC3300 from the following:

- Burst: Measures the burst waveform.
- CW: Measures the CW (continuous waveform). If CW is selected, only the TX power is measured.

Modulation

Select the uplink/downlink signal modulation from below. However, if the payload type is set to BCCH and the modulation is set to 8PSK, the downlink signal modulation is set to GMSK.

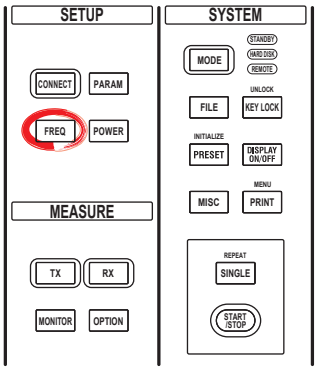
GMSK
8PSK

Setting the Timeslot (Timeslot Configuration)

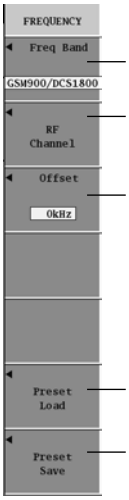
- **Turning the Timeslot ON/OFF**
  Set whether to use each timeslot (1st to 4th) of the uplink.

3.3 Setting the Frequency

Procedure



Press **FREQ**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Select the frequency band
(GSM900/DCS1800 or GSM850/PCS1900)

Set the transmission or reception RF frequency
(ARFCN and DL Freq/UL Freq)
Enter the setting using the Frequency Setup soft key

Set the frequency offset value

Load a preset
(S1 to S6)

Save the preset
(S1 to S6)

Explanation

Frequency Band

Select the frequency band of the frequency or channel used in the measurement from the following two groups. For details on each frequency band, see the explanation in section 2.3.

GSM900/DCS1800 and GSM850/PCS1900

RF transmission or reception frequency (RF Channel)

Set the frequency using a channel (ARFCN) or an actual frequency (DL Freq/UL Freq). For the selectable range, see the explanation in section 2.3.

Frequency Offset

Set the frequency offset value. The setting is valid when the DL modulation is set to OFF (unmodulated).

Selectable range: –75 to 75 kHz (in 1 steps, default value: 0)

Saving and Loading the Preset

- **Saving the Preset**
  Select the save destination preset number, and then press the **Save Execute** soft key. Up to six presets (S1 to S6) can be registered. If you specify a preset number containing preset settings, the existing settings are overwritten.

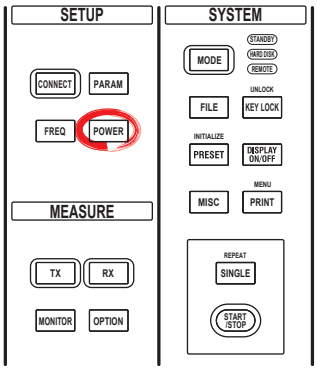
- **Load a Preset**
  Select the preset number to be loaded, and press the **Load Execute** soft key.

Note

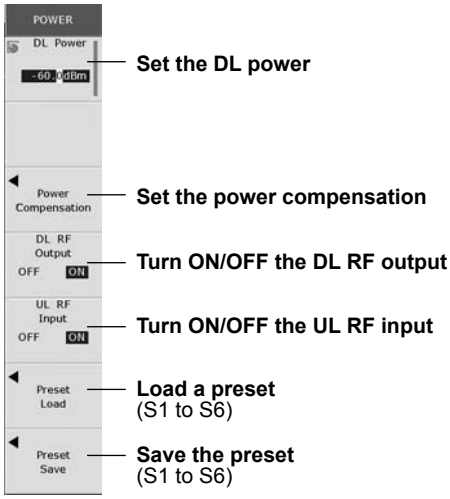
- If you set the downlink frequency channel, the uplink frequency channel value is also automatically set. Likewise, if you set the uplink frequency channel, the downlink frequency channel value is also automatically set.
- The frequency band, downlink frequency channel, or uplink frequency channel can be changed while the measurement is in progress.
- When you save a preset, the current settings including the frequency and power settings are saved. For the items that are saved to the preset, see appendix 1.

3.4 Setting the Power

Procedure



Press **POWER**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Explanation

DL Power

Set the RF power of the downlink signal.
–120.0 to –10.0 dBm (in 0.1 steps, default value: –60.0)

Power Compensation

Set the compensation value of the RF power of the downlink signal for each frequency band (GSM, DCS, and PCS).
Selectable range: 0.0 to 40.0 dB (in 0.1 steps, default value: 0.0 dB)

Turn ON/OFF the DL RF output

You can turn ON/OFF the downlink RF output.

Turn ON/OFF the UL RF input (UL RF Input)

You can also turn ON/OFF the uplink RF input.
If you turn OFF the uplink RF input when calibrating the VC3300 or when using only the VC3300 output, the power accuracy at a low RF output power level can be improved.
Note that measurements cannot be performed when this setting is OFF.

Saving and Loading the Preset (Preset Save/Preset Load)

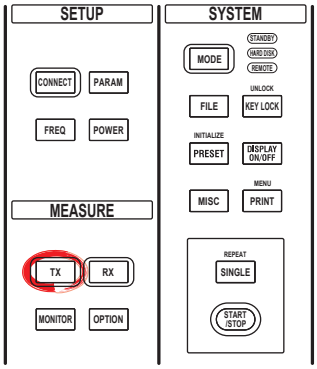
- **Saving the Preset**
  Select the save destination preset number, and then press the **Save Execute** soft key. Up to six presets (S1 to S6) can be registered. If you specify a preset number containing preset settings, the existing settings are overwritten.
- **Load a Preset**
  Select the preset number to be loaded, and press the **Load Execute** soft key.

Note

When you save a preset, the current settings including the frequency and power settings are saved. For the items that are saved to the preset, see appendix 1.

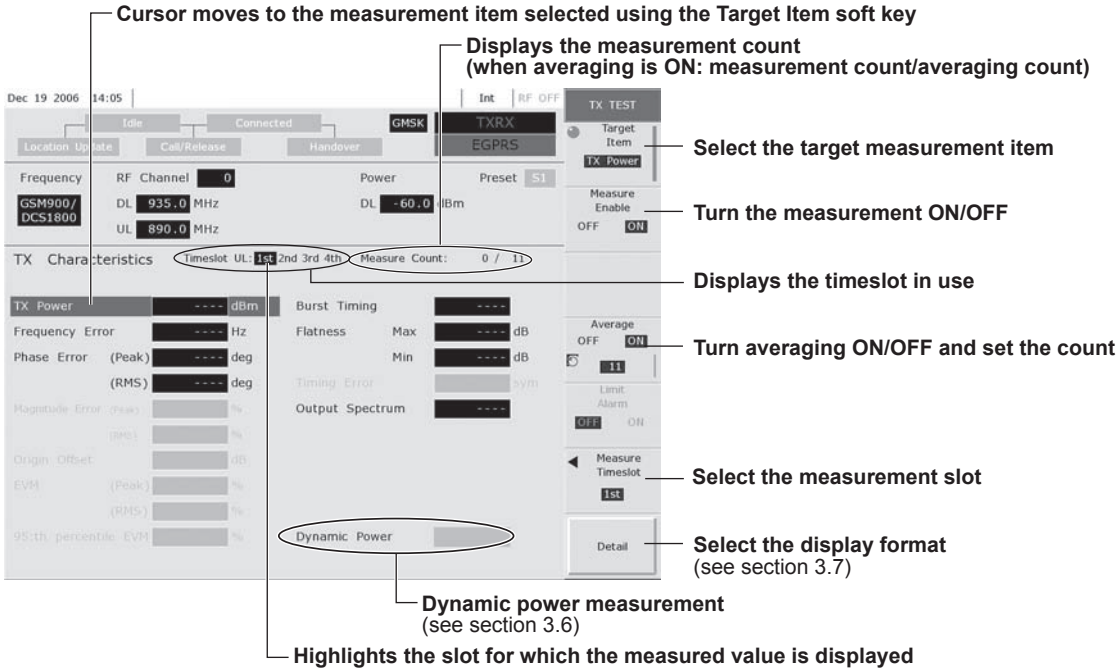
3.5 Setting the Transmitter (TX) Characteristics Measurement Conditions

Procedure

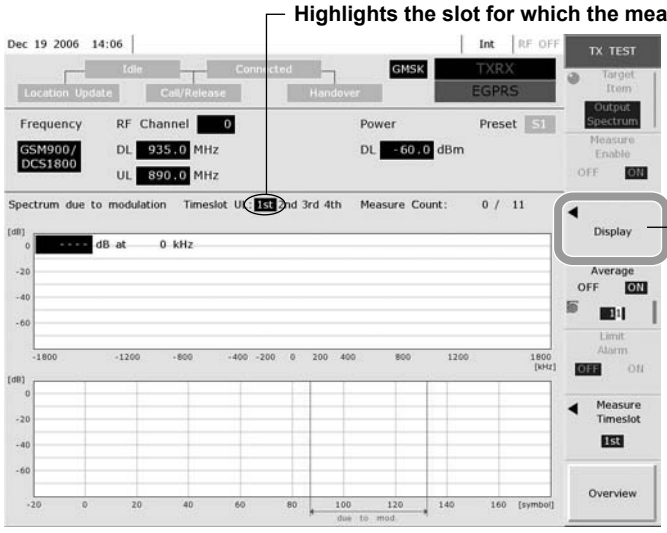


Press **TX**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.

List Display



Detail Display (Output Spectrum)



Explanation

Set the conditions of the TX characteristics measurement. Press **TX** to show the TX characteristics measurement display.

Selecting the Target Item

You can set the following on the selected measurement item.

- Turn the measurement ON/OFF.
- Detail display (see section 3.7).

Measurement Items

TX Power:	Measures the output power.
Frequency Error:	Measures the frequency error.
Phase Error (RMS)/(Peak):	Measures the phase error (rms and peak values).
Burst Timing:	Determines whether the uplink transmission signal is within the power burst template (specifications) and shows the result (pass or fail).
Flatness:	Measures the maximum (Flatness Max) and minimum (Flatness Min) values of the uplink transmission signal (burst waveform).
Output Spectrum:	Measures the spectrum of the uplink transmission signal of the mobile phone.
Magnitude Error (RMS)/(Peak):	Measures the magnitude error (%) of the uplink transmission signal from the mobile phone.
Origin Offset:	Measures the origin offset suppression (dB) of the uplink transmission signal from the mobile phone.
EVM (RMS)/(Peak):	Measures the EVM (rms value and peak value) of the uplink output signal of the mobile phone.
95:th percentile:	Indicates that 95% of the individual EVM values of the uplink signal from the mobile phone, measured at each symbol interval, are below the value displayed for this measurement item.
Dynamic Power*:	Measures the transmission power in unit of slots. For setting the dynamic power measurement, see section 3.6.

* If you turn ON the dynamic power measurement, a screen different from other TX characteristics measurement screens opens.

Turning the Measurement ON/OFF (Measure Enable)

Set whether to measure the item selected in the Target Item soft key menu.

ON: Measure.

OFF: Not measure.

Turning ON/OFF Averaging (Average)

Set whether to perform averaging and the averaging count (attenuation constant).

Selectable range of the averaging count: 1 to 255

* When the measurement mode is single, set the averaging count. When the measurement mode is repeat, set the attenuation constant.

Selecting the Measurement Slot (Measure Timeslot)

Displays the measured value of the selected timeslot on the screen.

Select the timeslots whose timeslot ON/OFF setting is set to ON (see section 3.2).

The measured values of the following items are displayed for all timeslots that are turned ON regardless of the measurement slot selection.

TX Power, Burst Timing, and Flatness

Settings While Displaying the Output Spectrum (Display)

You can specify the following settings when the detail display is shown.

- **Selecting the Spectrum Type (Spectrum)**

  Select the type of spectrum to be displayed from the following:

  Modulation: Displays the average power of symbols 87 to 132 of each power trend and the power trend of the specified frequency offset.

  Switch transients: Displays the maximum power* of each power trend and the power trend of the specified frequency offset.

  * The maximum power is determined from the interval including the effective burst interval and the rising and falling edges around it.

- **Selecting the Frequency Offset (Frequency Offset)**

  Select the power trend to be displayed in the lower section of the detail display from the following:

  When Set to Modulation

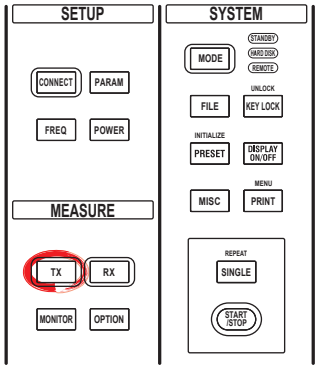
  –1800 kHz/–1600 kHz/–1400 kHz/–1200 kHz/–1000 kHz/–800 kHz/–600 kHz/–400 kHz/–250 kHz/–200 kHz/–100 kHz/0 kHz/100 kHz/200 kHz/250 kHz/400 kHz/600 kHz/800 kHz/1000 kHz/1200 kHz/1400 kHz/1600 kHz/1800 kHz

  When Set to Switch Transients

  –1800 kHz/–1200 kHz/–600 kHz/–400 kHz/0 kHz/400 kHz/600 kHz/1200 kHz/1800 kHz

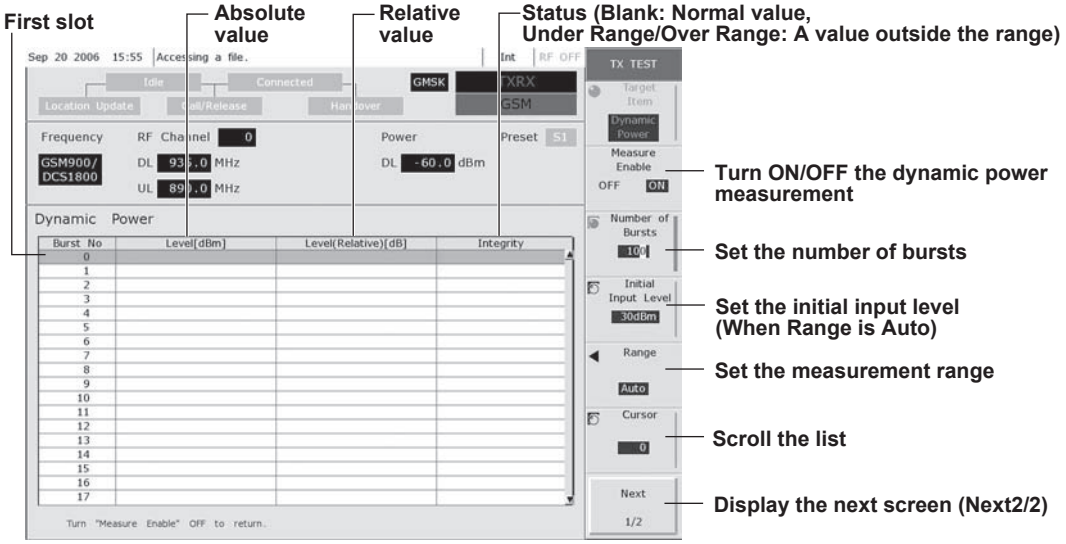
3.6 Setting the Dynamic Power Measurement

Procedure

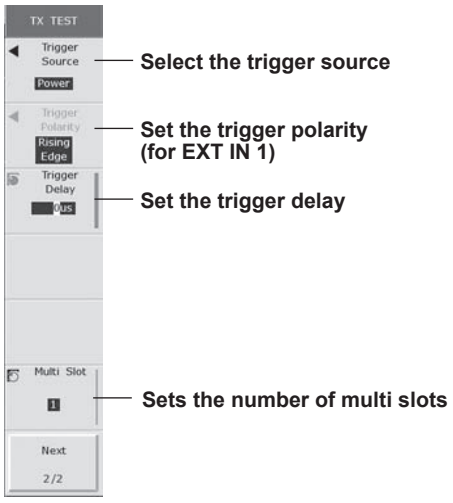


Press **TX**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.

<Screen 1 of 2>



<Screen 2 of 2>



Explanation

A trigger is activated and measurement is started when the uplink signal or external input signal passes through a preset trigger level in the specified polarity.
The power of the uplink signal is measured continuously in unit of time slots (567.923 μs), and a list of the absolute values and relative values (with respect to the first slot) of the measured results of each slot is displayed.
You can set the number of slots to be measured per frame. when the specified number of slots is measured, the measurement pauses until the next frame. After measuring the specified number of bursts, the measurement stops.

Number of Bursts

Set the number of bursts to be measured.
Selectable range: 1 to 1000

Multi Slot

Set the number of slots to be measured per frame.
Selectable range: 1 to 4

Initial Input Level

Set the initial value of the input level when the measurement range is set to Auto.
Selectable range: +35 dBm to –40 dBm (in 1 dB steps)

Measurement Range (Range)

Set the measurement range from the following:

- Auto (set automatically by following the input signal level)
- +35 to –5 dBm
- +25 to –15 dBm
- +15 to –25 dBm
- +5 to –35 dBm
- –5 to –40 dBm

Trigger Condition

Trigger Source

Select the trigger source signal from below:

- Power: Uplink signal
- EXT IN1: External input

Trigger Level

The trigger level varies depending on the Range setting.

- **When set to Auto**
  Activates a trigger with the trigger level set to initial input level –20 dB.
- **When not set to Auto**
  Activates a trigger with the trigger level set to upper limit of the specified range –20 dB.

Trigger Polarity

You can select the trigger polarity when the trigger source is EXT IN1. If the trigger source is Power, the polarity is fixed to rising.

- Rising: Activates a trigger when the trigger source passes through the trigger level on the rising edge.
- Falling: Activates a trigger when the trigger source passes through the trigger level on the falling edge.

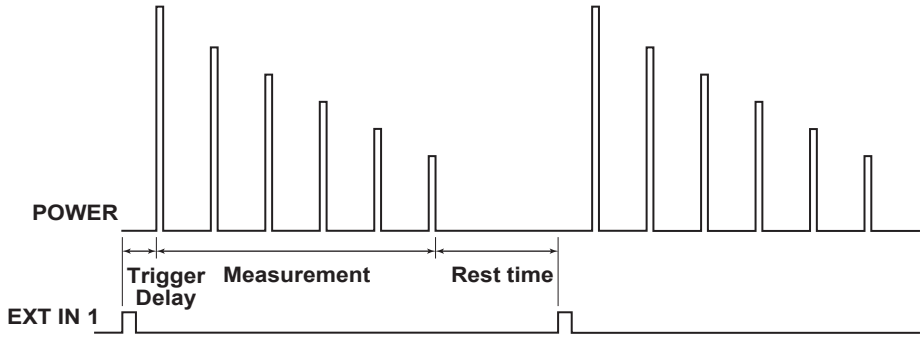
Trigger Delay

Delays the activation of the trigger by the specified amount of time after the trigger is detected.

Selectable range: 0 to 4615 μs (in 1 μs steps)

Measurement Rest Time

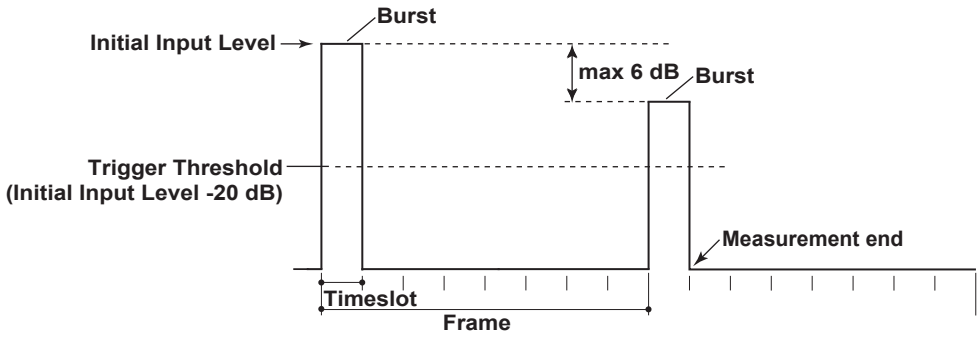
When measuring repetitively, a rest time of at least 60 ms is required from the last measured slot until the next trigger detection.



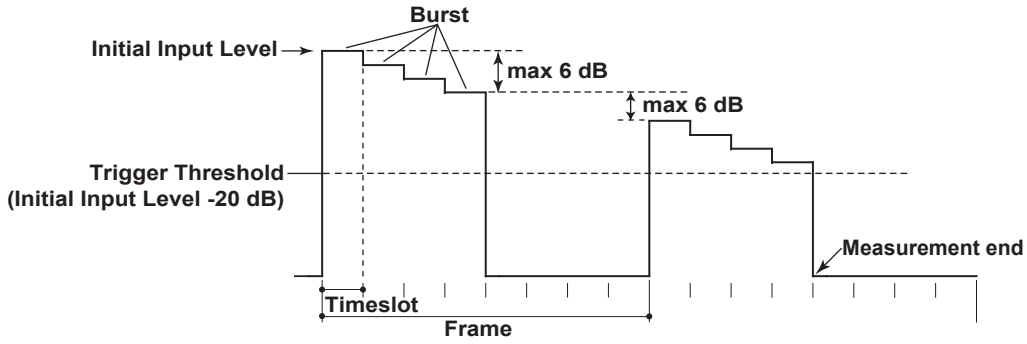
Measurement Example

A measurement example when the measurement range is set to Auto and the trigger polarity is set to rising is given below.

- **For single slot (the number of bursts is 2 and the number of slots is 1)**



- **For multi slot (the number of bursts is 8 and the number of slots is 4)**

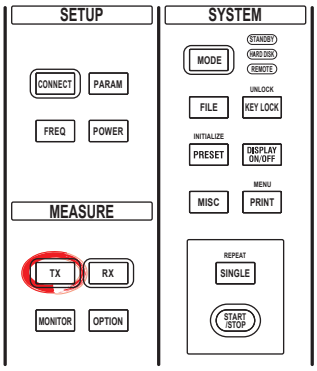


Note

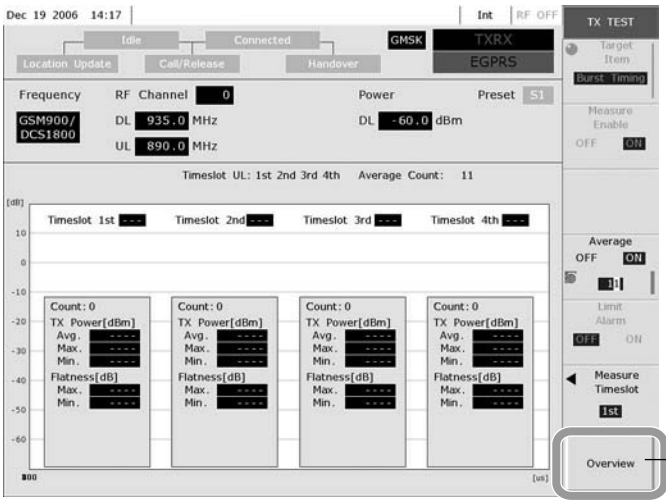
- When measuring the dynamic power, set the mobile phone so that it outputs a signal that the VC3300 can measure. The VC3300 cannot control the signal.
- The VC3300 can measure correctly only if a burst is present in the first slot of the frame. In the case of multi slot, the VC3300 can measure correctly only if the bursts are continuous from the head of the frame.
- When the measurement range is set to Auto, the VC3300 may not measure correctly in the following cases.
  - If the difference between the maximum and minimum values of each slot in a frame exceeds 6 dB.
  - If the difference between the last slot level to be measured in a frame and the first slot level of the next frame exceeds 6 dB.
- If you measure the uplink signal of 8PSK modulation using dynamic power measurement, the accuracy of the absolute value is not warranted.

3.7 Selecting the Display Format

Procedure



Press **TX**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Select the display format

Explanation

Select the following display formats.

List (Overview)

Lists the measured values of all measurement items.

Detail Display

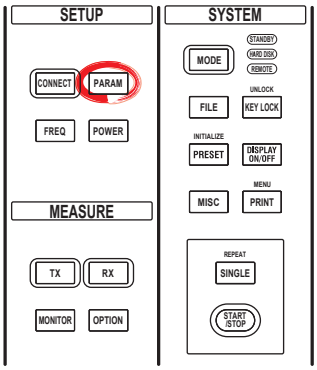
Displays the details on the measured values of the selected measurement item. The displayed contents vary depending on the measurement item. For a description of the detail display of each measurement item, see section 1.2.

4.1 Timing and Clock Outputs

CAUTION

Do not apply external voltage to the TIMING OUT terminal. If you do, the VC3300 may malfunction.

Procedure



Press **PARAM**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.

<Manual mode>

Select the output signal (Frame Timing/ Bit Clock)

<TXRX mode>

Explanation

Selecting the Output Signal (Timing Output)

Select the signal to be output from the TIMING OUT terminal on the rear panel from the following:

- Frame Timing: Outputs the timing signal (positive pulse with a period of 4.615 ms and width of 3.7 μs) of the downlink frame.
- Bit Clock: Outputs the bit clock (270.833 kHz)

TIMING OUT Terminal Specifications

Output Level: +3.3 V LVCMOS level
Output impedance: 50 Ω (Typical*)
Connector type: BNC

* Typical value represents a typical or average value. It is not strictly warranted.

5.1 A List of Commands

Command	Function	Page
Manual Mode		
GMANual?		
:GMANual?	Queries all settings related to settings in manual mode.	5-13
CLSLoop Group		
:CLSLoop	Executes close loop.	5-13
FREQuency Group		
:GMANual:FREQuency?	Queries all settings related to the frequency.	5-13
:GMANual:FREQuency:BAND	Sets the frequency band or queries the current setting.	5-13
:GMANual:FREQuency:BCCH?	Queries all settings related to the BCCH.	5-13
:GMANual:FREQuency:BCCH:BAND?	Queries the BCCH frequency band.	5-14
:GMANual:FREQuency:BCCH:CHANnel?	Queries the BCCH channel.	5-14
:GMANual:FREQuency:BCCH:DLFReq?	Queries the downlink frequency of the BCCH channel.	5-14
:GMANual:FREQuency:BCCH:ULFReq?	Queries the uplink frequency of the BCCH channel.	5-14
:GMANual:FREQuency:BCCH:TMP:BAND	Temporarily sets the BCCH frequency band or queries the current setting.	5-14
:GMANual:FREQuency:BCCH:TMP:CHANnel	Sets the BCCH channel temporarily or queries the current setting.	5-14
:GMANual:FREQuency:BCCH:TMP:DLFReq	Sets the temporary downlink frequency of the BCCH channel or queries the current setting.	5-14
:GMANual:FREQuency:BCCH:TMP:ULFReq	Sets the temporary uplink frequency of the BCCH channel or queries the current setting.	5-14
:GMANual:FREQuency:BCCH:TMP:SET	Enters the temporary frequency settings of the BCCH channel.	5-14
:GMANual:FREQuency:BCCH:TMP:CANCel	Cancels the temporary frequency settings of the BCCH channel.	5-14
:GMANual:FREQuency:TCH?	Queries all settings related to the TCH.	5-14
:GMANual:FREQuency:TCH:BAND?	Queries the TCH frequency band.	5-14
:GMANual:FREQuency:TCH:CHANnel?	Queries the TCH channel.	5-15
:GMANual:FREQuency:TCH:DLFReq?	Queries the downlink frequency of the TCH channel.	5-15
:GMANual:FREQuency:TCH:ULFReq?	Queries the uplink frequency of the TCH channel.	5-15
:GMANual:FREQuency:TCH:TMP:BAND	Temporarily sets the TCH frequency band or queries the current setting.	5-15
:GMANual:FREQuency:TCH:TMP:CHANnel	Sets the TCH channel temporarily or queries the current setting.	5-15
:GMANual:FREQuency:TCH:TMP:DLFReq	Sets the temporary downlink frequency of the TCH channel or queries the current setting.	5-15
:GMANual:FREQuency:TCH:TMP:ULFReq	Sets the temporary uplink frequency of the TCH channel or queries the current setting.	5-15
:GMANual:FREQuency:TCH:TMP:SET	Enters the temporary frequency settings of the TCH channel.	5-15
:GMANual:FREQuency:TCH:TMP:CANCel	Cancels the temporary frequency settings of the TCH channel.	5-15
:GMANual:FREQuency:FDSTination	Sets the frequency handover destination frequency using a preset number or queries the current setting.	5-15
LOCupd Group		
:LOCupd	Executes the location update.	5-15
MEASure Group		
:GMANual:MEASure?	Queries the measurement item and measurement mode.	5-16
:GMANual:MEASure:ITEM	Sets the measurement item or queries the current setting.	5-16
:GMANual:MEASure:MODE	Sets the measurement mode or queries the current setting.	5-16
OPNLoop Group		
:OPNLoop	Executes open loop.	5-16
PARam Group		
:GMANual:PARam?	Queries all settings related to connection conditions (PARAM).	5-16
:GMANual:PARam:DTYPe	Sets the downlink payload type or queries the current setting.	5-16
:GMANual:PARam:TIMESlot?	Queries all settings related to the timeslot.	5-16

Command	Function	Page
:GMANual:PARam:TIMESlot:MAINTimeslot?	Queries the main timeslot.	5-17
:GMANual:PARam:TIMESlot:DLTS3?	Queries whether downlink timeslot 3 is used.	5-17
:GMANual:PARam:TIMESlot:DLTS4?	Queries whether downlink timeslot 4 is used.	5-17
:GMANual:PARam:TIMESlot:DLTS5?	Queries whether downlink timeslot 5 is used.	5-17
:GMANual:PARam:TIMESlot:DLTS6?	Queries whether downlink timeslot 6 is used.	5-17
:GMANual:PARam:TIMESlot:ULTS3?	Queries whether uplink timeslot 3 is used.	5-17
:GMANual:PARam:TIMESlot:ULTS4?	Queries whether uplink timeslot 4 is used.	5-17
:GMANual:PARam:TIMESlot:ULTS5?	Queries whether uplink timeslot 5 is used.	5-17
:GMANual:PARam:TIMESlot:ULTS6?	Queries whether uplink timeslot 6 is used.	5-17
:GMANual:PARam:TIMESlot:TMP:MAINTimeslot	Temporarily sets the main timeslot number or queries the current setting.	5-17
:GMANual:PARam:TIMESlot:TMP:DLTS3	Temporarily sets whether to use downlink timeslot 3 or queries the current setting.	5-17
:GMANual:PARam:TIMESlot:TMP:DLTS4	Temporarily sets whether to use downlink timeslot 4 or queries the current setting.	5-17
:GMANual:PARam:TIMESlot:TMP:DLTS5	Temporarily sets whether to use downlink timeslot 5 or queries the current setting.	5-17
:GMANual:PARam:TIMESlot:TMP:DLTS6	Temporarily sets whether to use downlink timeslot 6 or queries the current setting.	5-18
:GMANual:PARam:TIMESlot:TMP:ULTS3	Temporarily sets whether to use uplink timeslot 3 or queries the current setting.	5-18
:GMANual:PARam:TIMESlot:TMP:ULTS4	Temporarily sets whether to use uplink timeslot 4 or queries the current setting.	5-18
:GMANual:PARam:TIMESlot:TMP:ULTS5	Temporarily sets whether to use uplink timeslot 5 or queries the current setting.	5-18
:GMANual:PARam:TIMESlot:TMP:ULTS6	Temporarily sets whether to use uplink timeslot 6 or queries the current setting.	5-18
:GMANual:PARam:TIMESlot:TMP:SET	Confirms the temporary timeslot settings.	5-18
:GMANual:PARam:TIMESlot:TMP:CANCel	Cancels the temporary timeslot settings.	5-18
:GMANual:PARam:IMSI	Sets the IMSI or queries the current setting.	5-18
:GMANual:PARam:MCC	Sets the MCC or queries the current setting.	5-18
:GMANual:PARam:MNC	Sets the MNC or queries the current setting.	5-18
:GMANual:PARam:ULPControl	Sets the uplink power control method or queries the current setting.	5-18
:GMANual:PARam:SPEechdelay	Sets the delay time or queries the current setting.	5-18
:GMANual:PARam:FMHOver?	Queries all settings related to the frequency handover (manual).	5-19
:GMANual:PARam:FMHOver:TCH?	Queries all settings related to the TCH of the frequency handover (manual).	5-19
:GMANual:PARam:FMHOver:TCH:BAND	Sets the TCH frequency band of the frequency handover (manual) destination or queries the current setting.	5-19
:GMANual:PARam:FMHOver:TCH:CHANnel	Sets the frequency handover (manual) destination TCH channel or queries the current setting.	5-19
:GMANual:PARam:FMHOver:TCH:DLFReq	Sets the downlink frequency of the frequency handover (manual) destination TCH channel or queries the current setting.	5-19
:GMANual:PARam:FMHOver:TCH:ULFReq	Sets the uplink frequency of the frequency handover (manual) destination TCH channel or queries the current setting.	5-19
:GMANual:PARam:FMHOver:ULPower	Sets the uplink power of frequency handover (manual) destination or queries the current setting.	5-19
:GMANual:PARam:FMHOver:GAMMa	Sets the uplink power (GAMMA) of frequency handover (manual) destination or queries the current setting.	5-19
:GMANual:PARam:GSM:CONNect	Sets the connection mode or queries the current setting.	5-20
:GMANual:PARam:GPRS:CODing	GSets the coding scheme for the GPRS connection or queries the current setting.	5-20
:GMANual:PARam:EGPRS:CODing	Sets the coding scheme for the EGPRS connection or queries the current setting.	5-20
:GMANual:PARam:EGPRS:TMBack	Sets Test Mode B with Ack for the EGPRS connection or queries the current setting.	5-20
:GMANual:PARam:TLMode	Sets the test loop mode or queries the current setting.	5-20
:GMANual:PARam:TLDType	Sets the payload type during the test loop or queries the current setting.	5-20

Command	Function	Page
POWer Group		
:GMANual:POWer?	Queries all settings related to the power.	5-21
:GMANual:POWer:CONTrol	Sets the downlink power control or queries the current setting.	5-21
:GMANual:POWer:DLPower	Sets the downlink power or queries the current setting.	5-21
:GMANual:POWer:ULPower	Sets the uplink power or queries the current setting.	5-21
:GMANual:POWer:COMPensation?	Queries all settings related to the power compensation.	5-21
:GMANual:POWer:COMPensation:DLGSM	Sets the downlink power compensation value (GSM band) or queries the current setting.	5-21
:GMANual:POWer:COMPensation:DLDCS	Sets the downlink power compensation value (DCS band) or queries the current setting.	5-21
:GMANual:POWer:COMPensation:DLPCS	Sets the downlink power compensation value (PCS band) or queries the current setting.	5-21
:GMANual:POWer:COMPensation:ULGSM	Sets the uplink power compensation value (GSM band) or queries the current setting.	5-21
:GMANual:POWer:COMPensation:ULDCS	Sets the uplink power compensation value (DCS band) or queries the current setting.	5-22
:GMANual:POWer:COMPensation:ULPCS	Sets the uplink power compensation value (PCS band) or queries the current setting.	5-22
:GMANual:POWer:GAMMa	Sets the uplink power (GAMMA) or queries the current setting.	5-22
PRESet Group		
:GMANual:PRESet?	Queries all settings related to presets.	5-22
:GMANual:PRESet:MODE	Sets the preset mode or queries the current setting.	5-22
:GMANual:PRESet:NUMBer	Sets the preset number or queries the current setting.	5-22
:GMANual:PRESet:VALid?	Queries whether the settings of the specified preset number are valid.	5-22
:GMANual:PRESet:BAND?	Queries the frequency band in the preset.	5-23
:GMANual:PRESet:BCCH?	Queries all settings related to the BCCH in the preset.	5-23
:GMANual:PRESet:BCCH:BAND?	Queries the BCCH frequency band in the preset.	5-23
:GMANual:PRESet:BCCH:CHANnel?	Queries the BCCH channel in the preset.	5-23
:GMANual:PRESet:BCCH:DLFReq?	Queries the BCCH downlink frequency in the preset.	5-23
:GMANual:PRESet:BCCH:ULFReq?	Queries the BCCH uplink frequency in the preset.	5-23
:GMANual:PRESet:TCH?	Queries all settings related to the TCH in the preset.	5-23
:GMANual:PRESet:TCH:BAND?	Queries the TCH frequency band in the preset.	5-23
:GMANual:PRESet:TCH:CHANnel?	Queries the TCH channel in the preset.	5-23
:GMANual:PRESet:TCH:DLFReq?	Queries the TCH downlink frequency in the preset.	5-23
:GMANual:PRESet:TCH:ULFReq?	Queries the TCH uplink frequency in the preset.	5-23
:GMANual:PRESet:DLPower?	Queries the downlink power in the preset.	5-23
:GMANual:PRESet:ULPower?	Queries the uplink power in the preset.	5-23
:GMANual:PRESet:GAMMa?	Queries the GAMMA in the preset.	5-24
:GMANual:PRESet:EXECute	Executes the preset.	5-24
RESult Group		
:GMANual:RESult?	Queries all measurement results.	5-24
:GMANual:RESult:CLEar	Clears all measurement results.	5-24
:GMANual:RESult:TXTest:TIMESlot	Sets the timeslot number for which you want to retrieve the TX measurement result or queries the current setting.	5-24
:GMANual:RESult:TXTest:MCOunt?	Queries the measurement count of the TX characteristics measurement.	5-24
:GMANual:RESult:TXPower?	Queries all results related to the TX power.	5-24
:GMANual:RESult:TXPower:AVERage?	Queries the average value of the TX power.	5-24
:GMANual:RESult:TXPower:MAX?	Queries the maximum value of the TX power.	5-24
:GMANual:RESult:TXPower:MIN?	Queries the minimum value of the TX power.	5-25
:GMANual:RESult:BURSt?	Queries the judgement result of the burst timing.	5-25
:GMANual:RESult:FLATness?	Queries all results related to the flatness.	5-25
:GMANual:RESult:FLATness:MAX?	Queries the maximum value of the flatness.	5-25
:GMANual:RESult:FLATness:MIN?	Queries the minimum value of the flatness.	5-25
:GMANual:RESult:TIMingerr?	Queries all results related to the timing error.	5-25
:GMANual:RESult:TIMingerr:AVERage?	Queries the average value of the timing error.	5-25
:GMANual:RESult:TIMingerr:MAX?	Queries the maximum value of the timing error.	5-25
:GMANual:RESult:TIMingerr:MIN?	Queries the minimum value of the timing error.	5-25
:GMANual:RESult:FERRor?	Queries all results related to the frequency error.	5-25
:GMANual:RESult:FERRor:PPM?	Queries all results related to the frequency error (in unit of ppm).	5-25

Command	Function	Page
:GMANual:RESult:FERRor:PPM:AVERage?	Queries the average value of the frequency error (in unit of ppm).	5-25
:GMANual:RESult:FERRor:PPM:MAX?	Queries the maximum value of the frequency error (in unit of ppm).	5-25
:GMANual:RESult:FERRor:PPM:MIN?	Queries the minimum value of the frequency error (in unit of ppm).	5-26
:GMANual:RESult:FERRor:HZ?	Queries all results related to the frequency error (in unit of Hz).	5-26
:GMANual:RESult:FERRor:HZ:AVERage?	Queries the average value of the frequency error (in unit of Hz).	5-26
:GMANual:RESult:FERRor:HZ:MAX?	Queries the maximum value of the frequency error (in unit of Hz).	5-26
:GMANual:RESult:FERRor:HZ:MIN?	Queries the minimum value of the frequency error (in unit of Hz).	5-26
:GMANual:RESult:PHASeerr?	Queries all results related to the phase error.	5-26
:GMANual:RESult:PHASeerr:PEAK?	Queries all results related to the phase error (peak).	5-26
:GMANual:RESult:PHASeerr:PEAK:AVERage?	Queries the average value of the phase error (peak).	5-26
:GMANual:RESult:PHASeerr:PEAK:MAX?	Queries the maximum value of the phase error (peak).	5-26
:GMANual:RESult:PHASeerr:PEAK:MIN?	Queries the minimum value of the phase error (peak).	5-26
:GMANual:RESult:PHASeerr:RMS?	Queries all results related to the phase error (RMS).	5-26
:GMANual:RESult:PHASeerr:RMS:AVERage?	Queries the average value of the phase error (RMS).	5-26
:GMANual:RESult:PHASeerr:RMS:MAX?	Queries the maximum value of the phase error (RMS).	5-27
:GMANual:RESult:PHASeerr:RMS:MIN?	Queries the minimum value of the phase error (RMS).	5-27
:GMANual:RESult:OSPEctrum:JUDGe?	Queries the judgement result of the output spectrum.	5-27
:GMANual:RESult:OSPEctrum:MODulation?	Queries all results related to the frequency offset of the output spectrum (modulation).	5-27
:GMANual:RESult:OSPEctrum:MODulation:M1800k?	Queries the result at the -1800-kHz frequency offset of the output spectrum (modulation).	5-27
:GMANual:RESult:OSPEctrum:MODulation:M1600k?	Queries the result at the -1600-kHz frequency offset of the output spectrum (modulation).	5-27
:GMANual:RESult:OSPEctrum:MODulation:M1400k?	Queries the result at the -1400-kHz frequency offset of the output spectrum (modulation).	5-27
:GMANual:RESult:OSPEctrum:MODulation:M1200k?	Queries the result at the -1200-kHz frequency offset of the output spectrum (modulation).	5-27
:GMANual:RESult:OSPEctrum:MODulation:M1000k?	Queries the result at the -1000-kHz frequency offset of the output spectrum (modulation).	5-28
:GMANual:RESult:OSPEctrum:MODulation:M800k?	Queries the result at the -800-kHz frequency offset of the output spectrum (modulation).	5-28
:GMANual:RESult:OSPEctrum:MODulation:M600k?	Queries the result at the -600-kHz frequency offset of the output spectrum (modulation).	5-28
:GMANual:RESult:OSPEctrum:MODulation:M400k?	Queries the result at the -400-kHz frequency offset of the output spectrum (modulation).	5-28
:GMANual:RESult:OSPEctrum:MODulation:M250k?	Queries the result at the -250-kHz frequency offset of the output spectrum (modulation).	5-28
:GMANual:RESult:OSPEctrum:MODulation:M200k?	Queries the result at the -200-kHz frequency offset of the output spectrum (modulation).	5-28
:GMANual:RESult:OSPEctrum:MODulation:M100k?	Queries the result at the -100-kHz frequency offset of the output spectrum (modulation).	5-28
:GMANual:RESult:OSPEctrum:MODulation:P0k?	Queries the result at the 0-kHz frequency offset of the output spectrum (modulation).	5-28
:GMANual:RESult:OSPEctrum:MODulation:P100k?	Queries the result at the 100-kHz frequency offset of the output spectrum (modulation).	5-29
:GMANual:RESult:OSPEctrum:MODulation:P200k?	Queries the result at the 200-kHz frequency offset of the output spectrum (modulation).	5-29
:GMANual:RESult:OSPEctrum:MODulation:P250k?	Queries the result at the 250-kHz frequency offset of the output spectrum (modulation).	5-29
:GMANual:RESult:OSPEctrum:MODulation:P400k?	Queries the result at the 400-kHz frequency offset of the output spectrum (modulation).	5-29
:GMANual:RESult:OSPEctrum:MODulation:P600k?	Queries the result at the 600-kHz frequency offset of the output spectrum (modulation).	5-29
:GMANual:RESult:OSPEctrum:MODulation:P800k?	Queries the result at the 800-kHz frequency offset of the output spectrum (modulation).	5-29
:GMANual:RESult:OSPEctrum:MODulation:P1000k?	Queries the result at the 1000-kHz frequency offset of the output spectrum (modulation).	5-29

Command	Function	Page
:GMANual:RESult:OSPEctrum:MODulation:P1200k?	Queries the result at the 1200-kHz frequency offset of the output spectrum (modulation).	5-29
:GMANual:RESult:OSPEctrum:MODulation:P1400k?	Queries the result at the 1400-kHz frequency offset of the output spectrum (modulation).	5-30
:GMANual:RESult:OSPEctrum:MODulation:P1600k?	Queries the result at the 1600-kHz frequency offset of the output spectrum (modulation).	5-30
:GMANual:RESult:OSPEctrum:MODulation:P1800k?	Queries the result at the 1800-kHz frequency offset of the output spectrum (modulation).	5-30
:GMANual:RESult:OSPEctrum:SWITched?	Queries all results related to the frequency offset of the output spectrum (switched transients).	5-30
:GMANual:RESult:OSPEctrum:SWITched:M1800k?	Queries the result at the -1800-kHz frequency offset of the output spectrum (switched transients).	5-30
:GMANual:RESult:OSPEctrum:SWITched:M1200k?	Queries the result at the -1200-kHz frequency offset of the output spectrum (switched transients).	5-30
:GMANual:RESult:OSPEctrum:SWITched:M600k?	Queries the result at the -600-kHz frequency offset of the output spectrum (switched transients).	5-30
:GMANual:RESult:OSPEctrum:SWITched:M400k?	Queries the result at the -400-kHz frequency offset of the output spectrum (switched transients).	5-30
:GMANual:RESult:OSPEctrum:SWITched:P0k?	Queries the result at the 0-kHz frequency offset of the output spectrum (switched transients).	5-31
:GMANual:RESult:OSPEctrum:SWITched:P400k?	Queries the result at the 400-kHz frequency offset of the output spectrum (switched transients).	5-31
:GMANual:RESult:OSPEctrum:SWITched:P600k?	Queries the result at the 600-kHz frequency offset of the output spectrum (switched transients).	5-31
:GMANual:RESult:OSPEctrum:SWITched:P1200k?	Queries the result at the 1200-kHz frequency offset of the output spectrum (switched transients).	5-31
:GMANual:RESult:OSPEctrum:SWITched:P1800k?	Queries the result at the 1800-kHz frequency offset of the output spectrum (switched transients).	5-31
:GMANual:RESult:MAGerr?	Queries all results related to the magnitude error.	5-31
:GMANual:RESult:MAGerr:PEAK?	Queries all results related to the magnitude error (peak).	5-31
:GMANual:RESult:MAGerr:PEAK:AVERage?	Queries the average value of the magnitude error (peak).	5-31
:GMANual:RESult:MAGerr:PEAK:MAX?	Queries the maximum value of the magnitude error (peak).	5-31
:GMANual:RESult:MAGerr:PEAK:MIN?	Queries the minimum value of the magnitude error (peak).	5-31
:GMANual:RESult:MAGerr:RMS?	Queries all results related to the magnitude error (RMS).	5-32
:GMANual:RESult:MAGerr:RMS:AVERage?	Queries the average value of the magnitude error (RMS).	5-32
:GMANual:RESult:MAGerr:RMS:MAX?	Queries the maximum value of the magnitude error (RMS).	5-32
:GMANual:RESult:MAGerr:RMS:MIN?	Queries the minimum value of the magnitude error (RMS).	5-32
:GMANual:RESult:ORIGinoffset?	Queries all results related to the origin offset.	5-32
:GMANual:RESult:ORIGinoffset:AVERage?	Queries the average value of the origin offset.	5-32
:GMANual:RESult:ORIGinoffset:MAX?	Queries the maximum value of the origin offset.	5-32
:GMANual:RESult:ORIGinoffset:MIN?	Queries the minimum value of the origin offset.	5-32
:GMANual:RESult:EVM?	Queries all results related to the EVM.	5-32
:GMANual:RESult:EVM:PEAK?	Queries all results related to the EVM (peak).	5-32
:GMANual:RESult:EVM:PEAK:AVERage?	Queries the average value of the EVM (peak).	5-32
:GMANual:RESult:EVM:PEAK:MAX?	Queries the maximum value of the EVM (peak).	5-32
:GMANual:RESult:EVM:PEAK:MIN?	Queries the minimum value of the EVM (peak).	5-32
:GMANual:RESult:EVM:RMS?	Queries all results related to the EVM (RMS).	5-32
:GMANual:RESult:EVM:RMS:AVERage?	Queries the average value of the EVM (RMS).	5-32
:GMANual:RESult:EVM:RMS:MAX?	Queries the maximum value of the EVM (RMS).	5-33
:GMANual:RESult:EVM:RMS:MIN?	Queries the minimum value of the EVM (RMS).	5-33
:GMANual:RESult:PER95th?	Queries all results related to the 95th percentile.	5-33
:GMANual:RESult:PER95th:AVERage?	Queries the average value of the 95th percentile.	5-33
:GMANual:RESult:PER95th:MAX?	Queries the maximum value of the 95th percentile.	5-33
:GMANual:RESult:PER95th:MIN?	Queries the minimum value of the 95th percentile.	5-33
:GMANual:RESult:RXTest:TIMESlot	Sets the timeslot number for which you want to retrieve the RX measurement result or queries the current setting.	5-33
:GMANual:RESult:RXTest:MCOunt?	Queries the measurement count of the RX characteristics measurement.	5-33
:GMANual:RESult:FER?	Queries the measured results of the FER, RBER1b, and RBER2.	5-33
:GMANual:RESult:FER:FRNumber?	Queries the number of bits or frames that has been measured for the FER, RBER1b, and RBER2.	5-33

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:GMANual:RESult:FER:FERData:FER?	Queries the FER measurement result.	5-34
:GMANual:RESult:FER:FERData:FRNumber?	Queries the number of frames that have been measured in the FER measurement.	5-34
:GMANual:RESult:FER:FERData:ERRNumber?	Queries the number of error frames in the FER measurement.	5-34
:GMANual:RESult:FER:RBER1bdata:RBER1b?	Queries the RBER1b measurement result.	5-34
:GMANual:RESult:FER:RBER1bdata:BNUMber?	Queries the number of measured bits in the RBER1b measurement.	5-34
:GMANual:RESult:FER:RBER1bdata:ERRNumber?	Queries the number of error bits in the RBER1b measurement.	5-34
:GMANual:RESult:FER:RBER2data:RBER2?	Queries the RBER2 measurement result.	5-34
:GMANual:RESult:FER:RBER2data:BNUMber?	Queries the number of measured bits in the RBER2 measurement.	5-34
:GMANual:RESult:FER:RBER2data:ERRNumber?	Queries the number of error bits in the RBER2 measurement.	5-34
:GMANual:RESult:BER?	Queries the BER measurement result when the test loop mode is Burst-by-Burst (C).	5-34
:GMANual:RESult:BER:BNUMber?	Queries the number of bits that have been measured in the BER measurement when the test loop mode is Burst-by-Burst (C).	5-34
:GMANual:RESult:BER:ERRNumber?	Queries the number of error bits in the BER measurement when the test loop mode is Burst-by-Burst (C).	5-35
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:GMANual:RESult:BLER:DATARate?	Queries the data rate.	5-35
:GMANual:RESult:BLER:BLNumber?	Queries the number of blocks and bits that have been measured in the BLER, BER, CRC error, and data rate measurements.	5-35
:GMANual:RESult:BLER:BLERData:BLER?	Queries the BLER measurement result.	5-35
:GMANual:RESult:BLER:BLERData:BLNumber?	Queries the number of blocks that have been measured in the BLER measurement.	5-35
:GMANual:RESult:BLER:BLERData:ERRNumber?	Queries the number of error blocks in the BLER measurement.	5-35
:GMANual:RESult:BLER:BERData:BER?	Queries the BER measurement result.	5-35
:GMANual:RESult:BLER:BERData:BNUMber?	Queries the number of measured bits of the BER measurement.	5-35
:GMANual:RESult:BLER:BERData:ERRNumber?	Queries the number of error bits in the BER measurement.	5-36
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:GMANual:RESult:UEReport:RXLevel?	Queries the UE report (RX level).	5-36
:GMANual:RESult:UEReport:MSPower?	Queries the UE report (actual MS power).	5-36
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:GMANual:RESult:UEReport:GMCv?	Queries the UE report (GMSK-CV-BEP).	5-36
:GMANual:RESult:UEReport:P8Mean?	Queries the UE report (8PSK-MEAN-BEP).	5-36
:GMANual:RESult:UEReport:P8Cv?	Queries the UE report (8PSK-CV-BEP).	5-36
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:GMANual:RESult:UEINfo:IMSI?	Queries the IMSI retrieved from the mobile phone.	5-36
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:GMANual:RESult:UEINfo:MULTiclass?	Queries the multislot class of the UE information.	5-37
:GMANual:RESult:UEINfo:BAND?	Queries the band information of the UE information.	5-37
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:GMANual:RESult:UEINfo:BANDPwrclass:GSM850?	Queries the power class information of GSM850 of the UE information.	5-37
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:GMANual:RXTest:BER?	Queries all settings related to the BER measurement.	5-38
:GMANual:RXTest:BER:EXECute	Turns ON/OFF the BER measurement or queries the current setting.	5-38
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:GMANual:RXTest:BLER:BNUMber?	Queries the number of measured bits of the BLER measurement.	5-39
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:GMANual:TXTest:AVERage:COUNt	Sets the average count of the TX characteristics measurement or queries the current setting.	5-40
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:GMANual:TXTest:BURSt:EXECute	Turns ON/OFF the burst timing or queries the current setting.	5-41
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:GMANual:TXTest:PHASeerr:EXECute	Turns ON/OFF the phase error or queries the current setting.	5-41
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:GMANual:TXTest:MAGerr:EXECute	Turns ON/OFF the magnitude error or queries the current setting.	5-41
:GMANual:TXTest:ORIGinoffset:EXECute	Turns ON/OFF the origin offset or queries the current setting.	5-41
:GMANual:TXTest:EVM:EXECute	Turns ON/OFF the EVM or queries the current setting.	5-42
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:GTXRx?	Queries all settings related to measurement in TXRX mode.	5-43
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:GTXRx:FREQuency:CHANnel?	Queries the frequency channel.	5-43
:GTXRx:FREQuency:DLFReq?	Queries the downlink frequency.	5-43
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:GTXRx:FREQuency:TMP:DLFReq	Sets the temporary downlink frequency or queries the current setting.	5-44
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:GTXRx:FREQuency:TMP:SET	Enters the temporary frequency settings.	5-44
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:GTXRx:POWer:CONTrol	Sets the downlink power control or queries the current setting.	5-45
:GTXRx:POWer:DLPower	Sets the downlink power or queries the current setting.	5-45
:GTXRx:POWer:COMPensation?	Queries all settings related to the power compensation.	5-45
:GTXRx:POWer:COMPensation:DLGSM	Sets the downlink power compensation value (GSM band) or queries the current setting.	5-46
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:GTXRx:PRESet:BAND?	Queries the frequency band in the preset.	5-47
:GTXRx:PRESet:CHANNel?	Queries the channel in the preset.	5-47
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:GTXRx:PRESet:DLPower?	Queries the downlink power in the preset.	5-47
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:GTXRx:RESult:CLEar	Clears all measurement results.	5-48
:GTXRx:RESult:TXTest:TIMESlot	Sets the timeslot number for which you want to retrieve the TX measurement result or queries the current setting.	5-48
:GTXRx:RESult:TXTest:MCOunt?	Queries the measurement count of the TX characteristics measurement.	5-48
:GTXRx:RESult:TXPower?	Queries all results related to the TX power.	5-48
:GTXRx:RESult:TXPower:AVERage?	Queries the average value of the TX power.	5-48
:GTXRx:RESult:TXPower:MAX?	Queries the maximum value of the TX power.	5-48
:GTXRx:RESult:TXPower:MIN?	Queries the minimum value of the TX power.	5-48
:GTXRx:RESult:BURSt:JUDGe?	Queries the judgement result of the burst timing.	5-48
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:GTXRx:RESult:FERRor:PPM?	Queries all results related to the frequency error (in unit of ppm).	5-49
:GTXRx:RESult:FERRor:PPM:AVERage?	Queries the average value of the frequency error (in unit of ppm).	5-49
:GTXRx:RESult:FERRor:PPM:MAX?	Queries the maximum value of the frequency error (in unit of ppm).	5-49
:GTXRx:RESult:FERRor:PPM:MIN?	Queries the minimum value of the frequency error (in unit of ppm).	5-49
:GTXRx:RESult:FERRor:HZ?	Queries all results related to the frequency error (in unit of Hz).	5-49
:GTXRx:RESult:FERRor:HZ:AVERage?	Queries the average value of the frequency error (in unit of Hz).	5-49
:GTXRx:RESult:FERRor:HZ:MAX?	Queries the maximum value of the frequency error (in unit of Hz).	5-49
:GTXRx:RESult:FERRor:HZ:MIN?	Queries the minimum value of the frequency error (in unit of Hz).	5-49
:GTXRx:RESult:PHASeerr?	Queries all results related to the phase error.	5-49
:GTXRx:RESult:PHASeerr:PEAK?	Queries all results related to the phase error (peak).	5-49
:GTXRx:RESult:PHASeerr:PEAK:AVERage?	Queries the average value of the phase error (peak).	5-50
:GTXRx:RESult:PHASeerr:PEAK:MAX?	Queries the maximum value of the phase error (peak).	5-50
:GTXRx:RESult:PHASeerr:PEAK:MIN?	Queries the minimum value of the phase error (peak).	5-50
:GTXRx:RESult:PHASeerr:RMS?	Queries all results related to the phase error (RMS).	5-50
:GTXRx:RESult:PHASeerr:RMS:AVERage?	Queries the average value of the phase error (RMS).	5-50
:GTXRx:RESult:PHASeerr:RMS:MAX?	Queries the maximum value of the phase error (RMS).	5-50
:GTXRx:RESult:PHASeerr:RMS:MIN?	Queries the minimum value of the phase error (RMS).	5-50
:GTXRx:RESult:OSPEctrum:JUDGe?	Queries the judgement result of the output spectrum.	5-50
:GTXRx:RESult:OSPEctrum:MODulation?	Queries all results related to the frequency offset of the output spectrum (modulation).	5-50
:GTXRx:RESult:OSPEctrum:MODulation:M1800k?	Queries the result at the -1800-kHz frequency offset of the output spectrum (modulation).	5-50
:GTXRx:RESult:OSPEctrum:MODulation:M1600k?	Queries the result at the -1600-kHz frequency offset of the output spectrum (modulation).	5-51
:GTXRx:RESult:OSPEctrum:MODulation:M1400k?	Queries the result at the -1400-kHz frequency offset of the output spectrum (modulation).	5-51
:GTXRx:RESult:OSPEctrum:MODulation:M1200k?	Queries the result at the -1200-kHz frequency offset of the output spectrum (modulation).	5-51
:GTXRx:RESult:OSPEctrum:MODulation:M1000k?	Queries the result at the -1000-kHz frequency offset of the output spectrum (modulation).	5-51

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:GTXRx:RESult:OSPEctrum:MODulation:M600k?	Queries the result at the -600-kHz frequency offset of the output spectrum (modulation).	5-51
:GTXRx:RESult:OSPEctrum:MODulation:M400k?	Queries the result at the -400-kHz frequency offset of the output spectrum (modulation).	5-51
:GTXRx:RESult:OSPEctrum:MODulation:M250k?	Queries the result at the -250-kHz frequency offset of the output spectrum (modulation).	5-51
:GTXRx:RESult:OSPEctrum:MODulation:M200k?	Queries the result at the -200-kHz frequency offset of the output spectrum (modulation).	5-52
:GTXRx:RESult:OSPEctrum:MODulation:M100k?	Queries the result at the -100-kHz frequency offset of the output spectrum (modulation).	5-52
:GTXRx:RESult:OSPEctrum:MODulation:P0k?	Queries the result at the 0-kHz frequency offset of the output spectrum (modulation).	5-52
:GTXRx:RESult:OSPEctrum:MODulation:P100k?	Queries the result at the 100-kHz frequency offset of the output spectrum (modulation).	5-52
:GTXRx:RESult:OSPEctrum:MODulation:P200k?	Queries the result at the 200-kHz frequency offset of the output spectrum (modulation).	5-52
:GTXRx:RESult:OSPEctrum:MODulation:P250k?	Queries the result at the 250-kHz frequency offset of the output spectrum (modulation).	5-52
:GTXRx:RESult:OSPEctrum:MODulation:P400k?	Queries the result at the 400-kHz frequency offset of the output spectrum (modulation).	5-52
:GTXRx:RESult:OSPEctrum:MODulation:P600k?	Queries the result at the 600-kHz frequency offset of the output spectrum (modulation).	5-52
:GTXRx:RESult:OSPEctrum:MODulation:P800k?	Queries the result at the 800-kHz frequency offset of the output spectrum (modulation).	5-53
:GTXRx:RESult:OSPEctrum:MODulation:P1000k?	Queries the result at the 1000-kHz frequency offset of the output spectrum (modulation).	5-53
:GTXRx:RESult:OSPEctrum:MODulation:P1200k?	Queries the result at the 1200-kHz frequency offset of the output spectrum (modulation).	5-53
:GTXRx:RESult:OSPEctrum:MODulation:P1400k?	Queries the result at the 1400-kHz frequency offset of the output spectrum (modulation).	5-53
:GTXRx:RESult:OSPEctrum:MODulation:P1600k?	Queries the result at the 1600-kHz frequency offset of the output spectrum (modulation).	5-53
:GTXRx:RESult:OSPEctrum:MODulation:P1800k?	Queries the result at the 1800-kHz frequency offset of the output spectrum (modulation).	5-53
:GTXRx:RESult:OSPEctrum:SWITched?	Queries all results related to the frequency offset of the output spectrum (switched transients).	5-53
:GTXRx:RESult:OSPEctrum:SWITched:M1800k?	Queries the result at the -1800-kHz frequency offset of the output spectrum (switched transients).	5-54
:GTXRx:RESult:OSPEctrum:SWITched:M1200k?	Queries the result at the -1200-kHz frequency offset of the output spectrum (switched transients).	5-54
:GTXRx:RESult:OSPEctrum:SWITched:M600k?	Queries the result at the -600-kHz frequency offset of the output spectrum (switched transients).	5-54
:GTXRx:RESult:OSPEctrum:SWITched:M400k?	Queries the result at the -400-kHz frequency offset of the output spectrum (switched transients).	5-54
:GTXRx:RESult:OSPEctrum:SWITched:P0k?	Queries the result at the 0-kHz frequency offset of the output spectrum (switched transients).	5-54
:GTXRx:RESult:OSPEctrum:SWITched:P400k?	Queries the result at the 400-kHz frequency offset of the output spectrum (switched transients).	5-54
:GTXRx:RESult:OSPEctrum:SWITched:P600k?	Queries the result at the 600-kHz frequency offset of the output spectrum (switched transients).	5-54
:GTXRx:RESult:OSPEctrum:SWITched:P1200k?	Queries the result at the 1200-kHz frequency offset of the output spectrum (switched transients).	5-54
:GTXRx:RESult:OSPEctrum:SWITched:P1800k?	Queries the result at the 1800-kHz frequency offset of the output spectrum (switched transients).	5-55
:GTXRx:RESult:MAGerr?	Queries all results related to the magnitude error.	5-55
:GTXRx:RESult:MAGerr:PEAK?	Queries all results related to the magnitude error (peak).	5-55
:GTXRx:RESult:MAGerr:PEAK:AVERage?	Queries the average value of the magnitude error (peak).	5-55
:GTXRx:RESult:MAGerr:PEAK:MAX?	Queries the maximum value of the magnitude error (peak).	5-55
:GTXRx:RESult:MAGerr:PEAK:MIN?	Queries the minimum value of the magnitude error (peak).	5-55
:GTXRx:RESult:MAGerr:RMS?	Queries all results related to the magnitude error (RMS).	5-55

Command	Function	Page
:GTXRx:RESult:MAGerr:RMS:AVERage?	Queries the average value of the magnitude error (RMS).	5-55
:GTXRx:RESult:MAGerr:RMS:MAX?	Queries the maximum value of the magnitude error (RMS).	5-55
:GTXRx:RESult:MAGerr:RMS:MIN?	Queries the minimum value of the magnitude error (RMS).	5-55
:GTXRx:RESult:ORIGinoffset?	Queries all results related to the origin offset.	5-55
:GTXRx:RESult:ORIGinoffset:AVERage?	Queries the average value of the origin offset.	5-55
:GTXRx:RESult:ORIGinoffset:MAX?	Queries the maximum value of the origin offset.	5-55
:GTXRx:RESult:ORIGinoffset:MIN?	Queries the minimum value of the origin offset.	5-55
:GTXRx:RESult:EVM?	Queries all results related to the EVM.	5-56
:GTXRx:RESult:EVM:PEAK?	Queries all results related to the EVM (peak).	5-56
:GTXRx:RESult:EVM:PEAK:AVERage?	Queries the average value of the EVM (peak).	5-56
:GTXRx:RESult:EVM:PEAK:MAX?	Queries the maximum value of the EVM (peak).	5-56
:GTXRx:RESult:EVM:PEAK:MIN?	Queries the minimum value of the EVM (peak).	5-56
:GTXRx:RESult:EVM:RMS?	Queries all results related to the EVM (RMS).	5-56
:GTXRx:RESult:EVM:RMS:AVERage?	Queries the average value of the EVM (RMS).	5-56
:GTXRx:RESult:EVM:RMS:MAX?	Queries the maximum value of the EVM (RMS).	5-56
:GTXRx:RESult:EVM:RMS:MIN?	Queries the minimum value of the EVM (RMS).	5-56
:GTXRx:RESult:PER95th?	Queries all results related to the 95th percentile.	5-56
:GTXRx:RESult:PER95th:AVERage?	Queries the average value of the 95th percentile.	5-56
:GTXRx:RESult:PER95th:MAX?	Queries the maximum value of the 95th percentile.	5-56
:GTXRx:RESult:PER95th:MIN?	Queries the minimum value of the 95th percentile.	5-56
:GTXRx:RESult:DPOWer:BURst?	Queries the number of bursts in the dynamic power measurement result.	5-56
:GTXRx:RESult:DPOWer:ABSolute:ALL?	Queries the absolute power (dBm) of all bursts in the dynamic power measurement result.	5-57
:GTXRx:RESult:DPOWer:ABSolute:BURSt?	Queries the absolute power (dBm) of a specific burst in the dynamic power measurement result.	5-57
:GTXRx:RESult:DPOWer:RELative:ALL?	Queries the power value (dB) of all bursts with respect to the first burst in the dynamic power measurement result.	5-57
:GTXRx:RESult:DPOWer:RELative:BURSt?	Queries the power value (dB) of a specific burst with respect to the first burst in the dynamic power measurement result.	5-57
:GTXRx:RESult:DPOWer:INTegrity?	Queries the integrity of a specific burst in the dynamic power measurement result.	5-57
TSPDisplay Group		
:GTXRx:TSPDisplay?	Queries all settings related to the output spectrum.	5-58
:GTXRx:TSPDisplay:SPECtrum	Sets the detail display of the output spectrum or queries the current setting.	5-58
:GTXRx:TSPDisplay:POWer?	Queries the frequency offset setting of each spectrum (Modulation/Switch transients) of OutputSpectrum measurement.	5-58
:GTXRx:TSPDisplay:POWer:MODulation	Sets which frequency offset power trend to display when measuring OutputSpectrum (Modulation) or queries the current setting.	5-58
:GTXRx:TSPDisplay:POWer:SWITched	Sets which frequency offset power trend to display when measuring OutputSpectrum (Switch transients) or queries the current setting.	5-59
TTARget Group		
:GTXRx:TTARget	Sets the measurement items of the TX characteristics measurement or queries the current setting.	5-59
TXTest Group		
:GTXRx:TXTest?	Queries all settings related to TX characteristics measurement.	5-59
:GTXRx:TXTest:AVERage?	Queries all settings related to the average of TX characteristics measurement.	5-59
:GTXRx:TXTest:AVERage:CONTrol	Turns ON/OFF the averaging of the TX characteristics measurement or queries the current setting.	5-59
:GTXRx:TXTest:AVERage:COUNt	Sets the average count of the TX characteristics measurement or queries the current setting.	5-59
:GTXRx:TXTest:MEASTimeslot	Sets the measurement timeslot to be shown on the TX TEST screen or queries the current setting.	5-60
:GTXRx:TXTest:TXPower:EXECute	Turns ON/OFF the TX power or queries the current setting.	5-60
:GTXRx:TXTest:FERRor:EXECute	Turns ON/OFF the frequency error or queries the current setting.	5-60
:GTXRx:TXTest:BURSt:EXECute	Turns ON/OFF the burst timing or queries the current setting.	5-60
:GTXRx:TXTest:FLATness:EXECute	Turns ON/OFF the flatness or queries the current setting.	5-60
:GTXRx:TXTest:PHASeerr:EXECute	Turns ON/OFF the phase error or queries the current setting.	5-60

Command	Function	Page
:GTXRx:TXTest:OSPEctrum:EXECute	Turns ON/OFF the output spectrum or queries the current setting.	5-60
:GTXRx:TXTest:MAGerr:EXECute	Turns ON/OF the magnitude error or queries the current setting.	5-60
:GTXRx:TXTest:ORIGinoffset:EXECute	Turns ON/OFF the origin offset or queries the current setting.	5-60
:GTXRx:TXTest:EVM:EXECute	Turns ON/OFF the EVM or queries the current setting.	5-60
:GTXRx:TXTest:PER95th:EXECute	Turns ON/OFF the 95th percentile or queries the current setting.	5-61
:GTXRx:TXTest:ITEM	Switches between normal measurement and dynamic power measurement.	5-61
:GTXRx:TXTest:DPOWer?	Queries all settings related to the dynamic power measurement.	5-61
:GTXRx:TXTest:DPOWer:BURSt	Sets the number of measured bursts of the dynamic power measurement or queries the current setting.	5-61
:GTXRx:TXTest:DPOWer:INLevel	Sets the initial level of the dynamic power measurement or queries the current setting.	5-61
:GTXRx:TXTest:DPOWer:RANGe	Sets the range of the dynamic power measurement or queries the current setting.	5-61
:GTXRx:TXTest:DPOWer:TRIGger?	Queries all settings related to the trigger of the dynamic power measurement.	5-61
:GTXRx:TXTest:DPOWer:TRIGger:SRC	Sets the trigger source of the dynamic power measurement or queries the current setting.	5-61
:GTXRx:TXTest:DPOWer:TRIGger:POLarity	Sets the trigger polarity of the dynamic power measurement or queries the current setting.	5-61
:GTXRx:TXTest:DPOWer:TRIGger:DELay	Sets the trigger delay of the dynamic power measurement or queries the current setting.	5-62
:GTXRx:TXTest:DPOWer:MSLot	Sets the number of multi slots of the dynamic power measurement or queries the current setting.	5-62
TXView Group		
:GTXRx:TXView	Switches the display format.	5-62
ULParam Group		
:GTXRx:ULParam:RECEivemode	Sets the receive mode or queries the current setting.	5-62

5.2 Manual Mode

This manual lists the response messages in the examples in the abbreviated form (the lowercase section of the message is omitted).

5.2.1 GMANual?

:GMANual?

Function Queries all settings related to the measurement in manual mode.

Syntax :GMANual?

Example :GMANual? -> :GMAN:FREQ:BAND GSMDCS;
BCCH:BAND GSMDCS;CHAN 0;
DLFR 935.00E+00;ULFR 890.00E+00;:
GMAN:FREQ:TCH:BAND GSMDCS;CHAN 0;
DLFR 935.00E+00;ULFR 890.00E+00;:
GMAN:FREQ:FDST S1;:GMAN:POW:CONT ON;
DLP -60.000E+00;ULP 5;COMP:
DLGSM 0.0000E+00;DLDCS 0.0000E+00;
DLPCS 0.0000E+00;ULGSM 0.0000E+00;
ULDCS 0.0000E+00;ULPCS 0.0000E+00;:
GMAN:POW:GAMM 3;:GMAN:PRES:
MODE LOAD;NUMB S1;:GMAN:PAR:
DTYP ECHO;TIMES:MAINT TS4;DLTS3 OFF;
DLTS4 ON;DLTS5 OFF;DLTS6 OFF;
ULTS3 OFF;ULTS4 ON;ULTS5 OFF;
ULTS6 OFF;:GMAN:PAR:
IMSI "001010000000010";MCC "001";
MNC "01";ULPC NORMAL;SPE 500.00E-03;
FMHO:TCH:BAND GSMDCS;CHAN 0;
DLFR 935.00E+00;ULFR 890.00E+00;:
GMAN:PAR:FMHO:ULP 5;GAMM 3;:GMAN:PAR:
GSM:CONN LOOP;:GMAN:PAR:GPRS:
COD CS1;:GMAN:PAR:EGPRS:COD MCS1;
TMB OFF;:GMAN:PAR:TLM LOOP;TLDT PR9;:
GMAN:MEAS:ITEM TX;MODE REP;:GMAN:TXT:
AVER:CONT ON;COUN 10;:GMAN:TXT:
MEAST TS4;TXP:EXEC ON;:GMAN:TXT:FERR:
EXEC ON;:GMAN:TXT:BURS:EXEC ON;:GMAN:
TXT:FLAT:EXEC ON;:GMAN:TXT:TIM:
EXEC ON;:GMAN:TXT:PHAS:EXEC ON;:GMAN:
TXT:OSPE:EXEC ON;:GMAN:TXT:MAG:
EXEC ON;:GMAN:TXT:ORIG:EXEC ON;:GMAN:
TXT:EVM:EXEC ON;:GMAN:TXT:PER95:
EXEC ON;:GMAN:RXT:FER:EXEC ON;
B1BN 132000;B2BN 78000;FRN 1000;:
GMAN:RXT:BER:EXEC ON;BNUM 114000;
BSTN 1000;:GMAN:RXT:BLER:EXEC ON;
BNUM 160000;BLN 1000;:GMAN:TTAR TXP;
TSPD:SPEC MOD;POW:MOD P0K;SWIT P0K;:
GMAN:RTAR FER;TXV OVER

5.2.2 CLSLoop Group

:CLSLoop

Function Executes close loop.

Syntax :CLSLoop

Example :CLSLoop

Description This command is valid in the Connected state in manual mode. Close loop is executed in the mode selected by :GMANual:PARam:GSM:CONNect.

5.2.3 FREQuency Group

:GMANual:FREQuency?

Function Queries all settings related to the frequency.

Syntax :GMANual:FREQuency?

Example :GMANual:FREQuency? -> :GMAN:FREQ:
BAND GSMDCS;BCCH:BAND GSMDCS:CHAN 0;
DLFR 935.00E+00;ULFR 890.00E+00;:
GMAN:FREQ:BAND GSMDCS:TCH:CHAN 0;
DLFR 935.00E+00;ULFR 890.00E+00;:
GMAN:FREQ:FDST S1

:GMANual:FREQuency:BAND

Function Sets the frequency band or queries the current setting.

Syntax :GMANual:FREQuency:BAND {GSMDCS|GSMPCS}
:GMANual:FREQuency:BAND?

Example :GMANual:FREQuency:BAND GSMDCS
:GMANual:FREQuency:BAND? ->
:GMAN:FREQ:BAND GSMDCS

Description Sets the frequency band of both the BCCH and TCH.
GSMDCS: GSM900/DCS180
GSMPCS: GSM850/PCS1900
Use the :GMANual:FREQuency:BCCH:TMP:BAND and :GMANual:FREQuency:TCH:TMP:BAND commands to set the frequency bands of the BCCH and TCH separately. The response when the frequency bands differ between the BCCH and TCH is "******."

:GMANual:FREQuency:BCCH?

Function Queries all settings related to the BCCH.

Syntax :GMANual:FREQuency:BCCH?

Example :GMANual:FREQuency:BCCH? ->
:GMAN:FREQ:BCCH:BAND GSMDCS:CHAN 0;
DLFR 935.00E+00;ULFR 890.00E+00

:GMANual:FREQuency:BCCH:BAND?

Function Queries the BCCH frequency band.
Syntax :GMANual:FREQuency:BCCH:BAND?
Example :GMANual:FREQuency:BCCH:BAND? ->
:GMAN:FREQ:BCCH: BAND GSMDCS
Description The response is one of the following: {GSMDCS|GSMPCS}.
GSMDCS : For GSM900/DCS1800
GSMPCS : For GSM850/PCS1900

:GMANual:FREQuency:BCCH:CHANnel?

Function Queries the BCCH channel.
Syntax :GMANual:FREQuency:BCCH:CHANnel?
Example :GMANual:FREQuency:BCCH:CHANnel? ->
:GMAN:FREQ:BCCH:CHAN 0

:GMANual:FREQuency:BCCH:DLFReq?

Function Queries the downlink frequency of the BCCH channel.
Syntax :GMANual:FREQuency:BCCH:DLFReq?
Example :GMANual:FREQuency:BCCH:DLFReq? ->
:GMAN:FREQ:BCCH:DLFR 935.00E+00
Description The frequency unit of the response is MHz.

:GMANual:FREQuency:BCCH:ULFReq?

Function Queries the uplink frequency of the BCCH channel.
Syntax :GMANual:FREQuency:BCCH:ULFReq?
Example :GMANual:FREQuency:BCCH:ULFReq? ->
:GMAN:FREQ:BCCH:ULFR 890.00E+00
Description The frequency unit of the response is MHz.

:GMANual:FREQuency:BCCH:TMP:BAND

Function Temporarily sets the BCCH frequency band or queries the current setting.
Syntax :GMANual:FREQuency:BCCH:BAND {GSMDCS|GSMPCS}
:GMANual:FREQuency:BCCH:TMP:BAND?
Example :GMANual:FREQuency:BCCH:BAND GSMDCS
:GMANual:FREQuency:BCCH:TMP:BAND?
-> :GMANual:FREQuency:BCCH:
BAND GSMDCS
Description The settings and responses are as follows.
GSMDCS : For GSM900/DCS1800
GSMPCS : For GSM850/PCS1900

:GMANual:FREQuency:BCCH:TMP:CHANnel

Function Sets the BCCH channel temporarily or queries the current setting.
Syntax :GMANual:FREQuency:BCCH:TMP:
CHANnel <number>
:GMANual:FREQuency:BCCH:TMP:CHANnel?
Example :GMANual:FREQuency:BCCH:TMP:CHANnel 0
:GMANual:FREQuency:BCCH:TMP:CHANnel?
-> :GMAN:FREQ:BCCH:TMP:CHAN 0

:GMANual:FREQuency:BCCH:TMP:DLFReq

Function Sets the temporary downlink frequency of the BCCH channel or queries the current setting.
Syntax :GMANual:FREQuency:BCCH:TMP:
DLFReq <frequency>
:GMANual:FREQuency:BCCH:TMP:DLFReq?
Example :GMANual:FREQuency:BCCH:TMP:
DLFReq 935
:GMANual:FREQuency:BCCH:TMP:DLFReq?
-> :GMAN:FREQ:BCCH:TMP:
DLFR 935.00E+00
Description The frequency unit of the setting and response is MHz.

:GMANual:FREQuency:BCCH:TMP:ULFReq

Function Sets the temporary uplink frequency of the BCCH channel or queries the current setting.
Syntax :GMANual:FREQuency:BCCH:TMP:
ULFReq <frequency>
:GMANual:FREQuency:BCCH:TMP:ULFReq?
Example :GMANual:FREQuency:BCCH:TMP:
ULFReq 895
:GMANual:FREQuency:BCCH:TMP:ULFReq?
-> :GMAN:FREQ:BCCH:TMP:
ULFR 895.00E+00
Description The frequency unit of the setting and response is MHz.

:GMANual:FREQuency:BCCH:TMP:SET

Function Enters the temporary frequency settings of the BCCH channel.
Syntax :GMANual:FREQuency:BCCH:TMP:SET
Example :GMANual:FREQuency:BCCH:TMP:SET

:GMANual:FREQuency:BCCH:TMP:CANCel

Function Cancels the temporary frequency settings of the BCCH channel.
Syntax :GMANual:FREQuency:BCCH:TMP:CANCel
Example :GMANual:FREQuency:BCCH:TMP:CANCel

:GMANual:FREQuency:TCH?

Function Queries all settings related to the TCH.
Syntax :GMANual:FREQuency:TCH?
Example :GMANual:FREQuency:TCH? -> :GMAN:
FREQ:TCH:BAND GSMDCS:CHAN 0;
DLFR 935.00E+00;ULFR 890.00E+00

:GMANual:FREQuency:TCH:BAND?

Function Queries the TCH frequency band.
Syntax :GMANual:FREQuency:TCH:BAND?
Example :GMANual:FREQuency:TCH:BAND? ->
:GMAN:FREQ:TCH:BAND GSMDCS
Description The response is one of the following: {GSMDCS|GSMPCS}.
GSMDCS : For GSM900/DCS1800
GSMPCS : For GSM850/PCS1900

:GMANual:FREQuency:TCH:CHANnel?

Function Queries the TCH channel.
Syntax :GMANual:FREQuency:TCH:CHANnel?
Example :GMANual:FREQuency:TCH:CHANnel? ->
:GMAN:FREQ:TCH:CHAN 0

:GMANual:FREQuency:TCH:DLFReq?

Function Queries the downlink frequency of the TCH channel.
Syntax :GMANual:FREQuency:TCH:DLFReq?
Example :GMANual:FREQuency:TCH:DLFReq? ->
:GMAN:FREQ:TCH:DLFR 935.00E+00
Description The frequency unit of the response is MHz.

:GMANual:FREQuency:TCH:ULFReq?

Function Queries the uplink frequency of the TCH channel.
Syntax :GMANual:FREQuency:TCH:ULFReq?
Example :GMANual:FREQuency:TCH:ULFReq? ->
:GMAN:FREQ:TCH:ULFR 890.00E+00
Description The frequency unit of the response is MHz.

:GMANual:FREQuency:TCH:TMP:BAND

Function Temporarily sets the TCH frequency band or queries the current setting.
Syntax :GMANual:FREQuency:TCH:BAND {GSMDCS|GSMPCS}
:GMANual:FREQuency:TCH:TMP:BAND?
Example :GMANual:FREQuency:TCH:BAND GSMDCS
:GMANual:FREQuency:TCH:TMP:BAND?
-> :GMANual:FREQuency:TCH:BAND GSMDCS
Description The settings and responses are as follows.
GSMDCS : For GSM900/DCS1800
GSMPCS : For GSM850/PCS1900

:GMANual:FREQuency:TCH:TMP:CHANnel

Function Sets the TCH channel temporarily or queries the current setting.
Syntax :GMANual:FREQuency:TCH:TMP:CHANnel <number>
:GMANual:FREQuency:TCH:TMP:CHANnel?
Example :GMANual:FREQuency:TCH:TMP:CHANnel 0
:GMANual:FREQuency:TCH:TMP:CHANnel?
-> :GMAN:FREQ:TCH:TMP:CHAN 0

:GMANual:FREQuency:TCH:TMP:DLFReq

Function Sets the temporary downlink frequency of the TCH channel or queries the current setting.
Syntax :GMANual:FREQuency:TCH:TMP:DLFReq <frequency>
:GMANual:FREQuency:TCH:TMP:DLFReq?
Example :GMANual:FREQuency:TCH:TMP:DLFReq 935
:GMANual:FREQuency:TCH:TMP:DLFReq? ->
:GMAN:FREQ:TCH:TMP:DLFR 935.00E+00
Description The frequency unit of the setting and response is MHz.

:GMANual:FREQuency:TCH:TMP:ULFReq

Function Sets the temporary uplink frequency of the TCH channel or queries the current setting.
Syntax :GMANual:FREQuency:TCH:TMP:ULFReq <frequency>
:GMANual:FREQuency:TCH:TMP:ULFReq?
Example :GMANual:FREQuency:TCH:TMP:ULFReq 890
:GMANual:FREQuency:TCH:TMP:ULFReq? ->
:GMAN:FREQ:TCH:TMP:ULFR 890.00E+00
Description The frequency unit of the setting and response is MHz.

:GMANual:FREQuency:TCH:TMP:SET

Function Enters the temporary frequency settings of the TCH channel.
Syntax :GMANual:FREQuency:TCH:TMP:SET
Example :GMANual:FREQuency:TCH:TMP:SET

:GMANual:FREQuency:TCH:TMP:CANCel

Function Cancels the temporary frequency settings of the TCH channel.
Syntax :GMANual:FREQuency:TCH:TMP:CANCel
Example :GMANual:FREQuency:TCH:TMP:CANCel

:GMANual:FREQuency:FDSTination

Function Sets the frequency handover destination frequency using a preset number or queries the current setting.
Syntax :GMANual:FREQuency:FDSTination {S1|S2|S3|S4|S5|S6}
:GMANual:FREQuency:FDSTination?
Example :GMANual:FREQuency:FDSTination S1
:GMANual:FREQuency:FDSTination? ->
:GMAN:FREQ:FDST S1
Description This command sets the conditions of the handover destination. By executing the handover after executing this command, the handover test can be carried out using the conditions of the specified preset number.

5.2.4 LOCupd Group

:LOCupd

Function Executes the location update.
Syntax :LOCupd
Example :LOCupd
Description This command is valid in the Idle state in manual mode.

5.2.5 MEASure Group

:GMANual:MEASure?

Function Queries the measurement item and measurement mode.

```
Syntax  :GMANual:MEASure?
Example :GMANual:MEASure? ->
        :GMAN:MEAS:ITEM TX;MODE REP
```

:GMANual:MEASure:ITEM

Function Sets the measurement item or queries the current setting.

```
Syntax  :GMANual:MEASure:ITEM {TX|RX}
        :GMANual:MEASure:ITEM?
Example :GMANual:MEASure:ITEM TX
        :GMANual:MEASure:ITEM? ->
        :GMAN:MEAS:ITEM TX
```

Description The settings and responses are as follows.

TX: TX mesurement

RX: RX measurement

:GMANual:MEASure:MODE

Function Sets the measurement mode or queries the current setting.

```
Syntax  :GMANual:MEASure:MODE {REPeat|SINGle}
        :GMANual:MEASure:MODE?
Example :GMANual:MEASure:MODE REPeat
        :GMANual:MEASure:MODE? ->
        :GMAN:MEAS:MODE REP
```

Description The settings and responses are as follows.

REPeat: Repeats measurement

SINGle: Single measurement

5.2.6 OPNLoop Group

:OPNLoop

Function Executes open loop.

```
Syntax  :OPNLoop
Example :OPNLoop
```

Description This command is valid in the Connected state in manual mode.

5.2.7 PARam Group

:GMANual:PARam?

Function Queries all settings related to connection conditions (PARAM).

```
Syntax  :GMANual:PARam?
Example :GMANual:PARam? -> :GMAN:PAR:
        DTYP ECHO;TIMES:MAINT TS4;DLTS3 OFF;
        DLTS4 ON;DLTS5 OFF;DLTS6 OFF;
        ULTS3 OFF;ULTS4 ON;ULTS5 OFF;
        ULTS6 OFF;:GMAN:PAR:
        IMSI "001010000000010";MCC "001";
        MNC "01";ULPC NORMAL;
        SPE 500.00E-03;FMHO:TCH:BAND GSMDCS;
        CHAN 0;DLFR 935.00E+00;
        ULFR 890.00E+00;:GMAN:PAR:FMHO:
        ULP 5;GAMM 3;:GMAN:PAR:GSM:
        CONN LOOP;:GMAN:PAR:GPRS:COD CS1;:
        GMAN:PAR:EGPRS:COD MCS1;TMB OFF;:
        GMAN:PAR:TLM LOOP;TLDT PR9
```

:GMANual:PARam:DTYPe

Function Sets the downlink payload type or queries the current setting.

```
Syntax  :GMANual:PARam:DTYPe {ALL0|ALL1|PR9|
        ECHO}
        :GMANual:PARam:DTYPe?
Example :GMANual:PARam:DTYPe PR9
        :GMANual:PARam:DTYPe? ->
        :GMAN:PAR:DTYP PR9
```

Description The setting and response format is as follows.

ALL0: Sets all zeroes in the payload.

ALL1: Sets all ones in the payload.

PR9: Sets PRBS9 in the payload.

ECHO: Sets the voice data received from the mobile phone in the payload by looping back.

:GMANual:PARam:TIMESlot?

Function Queries all settings related to the timeslot.

```
Syntax  :GMANual:PARam:TIMESlot?
Example :GMANual:PARam:TIMESlot? -> :GMAN:
        PAR:TIMES:MAINT TS4;DLTS3 OFF;
        DLTS4 ON;DLTS5 OFF;DLTS6 OFF;
        ULTS3 OFF;ULTS4 ON;ULTS5 OFF;
        ULTS6 OFF
```

:GMANual:PARam:TIMESlot:MAINTimeslot?

Function Queries the main timeslot.
Syntax :GMANual:PARam:TIMESlot:MAINTimeslot?
Example :GMANual:PARam:TIMESlot:MAINTimeslot? -> :GMAN:PAR:TIMES:MAINT TS4
Description The response is one of the following:
{TS3|TS4|TS5|TS6}.
TS3 : Specifies time slot 3
TS4 : Specifies time slot 4
TS5 : Specifies time slot 5
TS6 : Specifies time slot 6

:GMANual:PARam:TIMESlot:DLTS3?

Function Queries whether downlink timeslot 3 is used.
Syntax :GMANual:PARam:TIMESlot:DLTS3?
Example :GMANual:PARam:TIMESlot:DLTS3? -> :GMAN:PAR:TIMES:DLTS3 OFF

:GMANual:PARam:TIMESlot:DLTS4?

Function Queries whether downlink timeslot 4 is used.
Syntax :GMANual:PARam:TIMESlot:DLTS4?
Example :GMANual:PARam:TIMESlot:DLTS4? -> :GMAN:PAR:TIMES:DLTS4 ON

:GMANual:PARam:TIMESlot:DLTS5?

Function Queries whether downlink timeslot 5 is used.
Syntax :GMANual:PARam:TIMESlot:DLTS5?
Example :GMANual:PARam:TIMESlot:DLTS5? -> :GMANl:PARam:TIMES:DLTS5 OFF

:GMANual:PARam:TIMESlot:DLTS6?

Function Queries whether downlink timeslot 6 is used.
Syntax :GMANual:PARam:TIMESlot:DLTS6?
Example :GMANual:PARam:TIMESlot:DLTS6? -> :GMAN:PAR:TIMES:DLTS6 OFF

:GMANual:PARam:TIMESlot:ULTS3?

Function Queries whether uplink timeslot 3 is used.
Syntax :GMANual:PARam:TIMESlot:ULTS3?
Example :GMANual:PARam:TIMESlot:ULTS3? -> :GMAN:PAR:TIMES:ULTS3 OFF

:GMANual:PARam:TIMESlot:ULTS4?

Function Queries whether uplink timeslot 4 is used.
Syntax :GMANual:PARam:TIMESlot:ULTS4?
Example :GMANual:PARam:TIMESlot:ULTS4? -> :GMAN:PAR:TIMES:ULTS4 ON

:GMANual:PARam:TIMESlot:ULTS5?

Function Queries whether uplink timeslot 5 is used.
Syntax :GMANual:PARam:TIMESlot:ULTS5?
Example :GMANual:PARam:TIMESlot:ULTS5? -> :GMAN:PAR:TIMES:ULTS5 OFF

:GMANual:PARam:TIMESlot:ULTS6?

Function Queries whether uplink timeslot 6 is used.
Syntax :GMANual:PARam:TIMESlot:ULTS6?
Example :GMANual:PARam:TIMESlot:ULTS6? -> :GMAN:PAR:TIMES:ULTS6 OFF

:GMANual:PARam:TIMESlot:TMP:MAINTimeslot

Function Temporarily sets the main timeslot number or queries the current setting.
Syntax :GMANual:PARam:TIMESlot:TMP:MAINTimeslot {TS3|TS4|TS5|TS6}
:GMANual:PARam:TIMESlot:TMP:MAINTimeslot?
Example :GMANual:PARam:TIMESlot:TMP:MAINTimeslot TS4
:GMANual:PARam:TIMESlot:TMP:MAINTimeslot? -> :GMAN:PAR:TIMES:TMP:MAINT TS4
Description The settings and responses are as follows.
TS3 : Specifies time slot 3
TS4 : Specifies time slot 4
TS5 : Specifies time slot 5
TS6 : Specifies time slot 6

:GMANual:PARam:TIMESlot:TMP:DLTS3

Function Temporarily sets whether to use downlink timeslot 3 or queries the current setting.
Syntax :GMANual:PARam:TIMESlot:TMP:DLTS3 {ON|OFF}
:GMANual:PARam:TIMESlot:TMP:DLTS3?
Example :GMANual:PARam:TIMESlot:TMP:DLTS3 OFF
:GMANual:PARam:TIMESlot:TMP:DLTS3? -> :GMAN:PAR:TIMES:TMP:DLTS3 OFF

:GMANual:PARam:TIMESlot:TMP:DLTS4

Function Temporarily sets whether to use downlink timeslot 4 or queries the current setting.
Syntax :GMANual:PARam:TIMESlot:TMP:DLTS4 {ON|OFF}
:GMANual:PARam:TIMESlot:TMP:DLTS4?
Example :GMANual:PARam:TIMESlot:TMP:DLTS4 ON
:GMANual:PARam:TIMESlot:TMP:DLTS4? -> :GMAN:PAR:TIMES:TMP:DLTS4 ON

:GMANual:PARam:TIMESlot:TMP:DLTS5

Function Temporarily sets whether to use downlink timeslot 5 or queries the current setting.
Syntax :GMANual:PARam:TIMESlot:TMP:DLTS5 {ON|OFF}
:GMANual:PARam:TIMESlot:TMP:DLTS5?
Example :GMANual:PARam:TIMESlot:TMP:DLTS5 OFF
:GMANual:PARam:TIMESlot:TMP:DLTS5? -> :GMAN:PAR:TIMES:TMP:DLTS5 OFF

:GMANual:PARam:TIMESlot:TMP:DLTS6

Function Temporarily sets whether to use downlink timeslot 6 or queries the current setting.

Syntax :GMANual:PARam:TIMESlot:TMP:DLTS6 {ON|OFF}
:GMANual:PARam:TIMESlot:TMP:DLTS6?

Example :GMANual:PARam:TIMESlot:TMP:DLTS6 OFF
:GMANual:PARam:TIMESlot:TMP:DLTS6? ->
:GMAN:PAR:TIMES:TMP:DLTS6 OFF

:GMANual:PARam:TIMESlot:TMP:ULTS3

Function Temporarily sets whether to use uplink timeslot 3 or queries the current setting.

Syntax :GMANual:PARam:TIMESlot:TMP:ULTS3 {ON|OFF}
:GMANual:PARam:TIMESlot:TMP:ULTS3?

Example :GMANual:PARam:TIMESlot:TMP:ULTS3 OFF
:GMANual:PARam:TIMESlot:TMP:ULTS3? ->
:GMAN:PAR:TIMES:TMP:ULTS3 OFF

:GMANual:PARam:TIMESlot:TMP:ULTS4

Function Temporarily sets whether to use uplink timeslot 4 or queries the current setting.

Syntax :GMANual:PARam:TIMESlot:TMP:ULTS4 {ON|OFF}
:GMANual:PARam:TIMESlot:TMP:ULTS4?

Example :GMANual:PARam:TIMESlot:TMP:ULTS4 ON
:GMANual:PARam:TIMESlot:TMP:ULTS4? ->
:GMAN:PAR:TIMES:TMP:ULTS4 ON

:GMANual:PARam:TIMESlot:TMP:ULTS5

Function Temporarily sets whether to use uplink timeslot 5 or queries the current setting.

Syntax :GMANual:PARam:TIMESlot:TMP:ULTS5 {ON|OFF}
:GMANual:PARam:TIMESlot:TMP:ULTS5?

Example :GMANual:PARam:TIMESlot:TMP:ULTS5 OFF
:GMANual:PARam:TIMESlot:TMP:ULTS5? ->
:GMAN:PAR:TIMES:TMP:ULTS5 OFF

:GMANual:PARam:TIMESlot:TMP:ULTS6

Function Temporarily sets whether to use uplink timeslot 6 or queries the current setting.

Syntax :GMANual:PARam:TIMESlot:TMP:ULTS6 {ON|OFF}
:GMANual:PARam:TIMESlot:TMP:ULTS6?

Example :GMANual:PARam:TIMESlot:TMP:ULTS6 OFF
:GMANual:PARam:TIMESlot:TMP:ULTS6? ->
:GMAN:PAR:TIMES:TMP:ULTS6 OFF

:GMANual:PARam:TIMESlot:TMP:SET

Function Confirms the temporary timeslot settings.

Syntax :GMANual:PARam:TIMESlot:TMP:SET

Example :GMANual:PARam:TIMESlot:TMP:SET

:GMANual:PARam:TIMESlot:TMP:CANCel

Function Cancels the temporary timeslot settings.

Syntax :GMANual:PARam:TIMESlot:TMP:CANCel

Example :GMANual:PARam:TIMESlot:TMP:CANCel

:GMANual:PARam:IMSI

Function Sets the IMSI or queries the current setting.

Syntax :GMANual:PARam:IMSI <String>
:GMANual:PARam:IMSI?

Example :GMANual:PARam:IMSI "001010000000010"
:GMANual:PARam:IMSI? ->
:GMAN:PAR:IMSI "001010000000010"

:GMANual:PARam:MCC

Function Sets the MCC or queries the current setting.

Syntax :GMANual:PARam:MCC <String>
:GMANual:PARam:MCC?

Example :GMANual:PARam:MCC "001"
:GMANual:PARam:MCC? ->
:GMAN:PAR:MCC "001"

:GMANual:PARam:MNC

Function Sets the MNC or queries the current setting.

Syntax :GMANual:PARam:MNC <String>
:GMANual:PARam:MNC?

Example :GMANual:PARam:MNC "01"
:GMANual:PARam:MNC? ->
:GMAN:PAR:MNC "01"

:GMANual:PARam:ULPControl

Function Sets the uplink power control method or queries the current setting.

Syntax :GMANual:PARam:ULPControl {NORMal|FAST}
:GMANual:PARam:ULPControl?

Example :GMANual:PARam:ULPControl NORMal
:GMANual:PARam:ULPControl? ->
:GMAN:PAR:ULPC NORM

Description The setting and response format is as follows.

- NORMal: Changes the uplink power according to the SACCH.
- FAST: Changes the uplink power according to the assignment command.

:GMANual:PARam:SPEechdelay

Function Sets the delay time or queries the current setting.

Syntax :GMANual:PARam:SPEechdelay {0.5|1.0|1.5}
:GMANual:PARam:SPEechdelay?

Example :GMANual:PARam:SPEechdelay 0.5
:GMANual:PARam:SPEechdelay? ->
:GMAN:PAR:SPE 500.00E-03

Description The time unit of the setting and response is seconds.

:GMANual:PARam:FMHOver?

Function Queries all settings related to the frequency handover (manual).

Syntax :GMANual:PARam:FMHOver?

Example :GMANual:PARam:FMHOver? ->
:GMAN:PAR:FMHO:TCH:BAND GSMDCS:
CHAN 0;DLFR 935.00E+00;
ULFR 890.00E+00;:GMAN:PAR:FMHO:ULP 0:
GAMM 5

:GMANual:PARam:FMHOver:TCH?

Function Queries all settings related to the TCH of the frequency handover (manual).

Syntax :GMANual:PARam:FMHOver:TCH?

Example :GMANual:PARam:FMHOver:TCH? ->
:GMAN:PAR:FMHO:TCH:BAND GSMDCS:
CHAN 0;DLFR 935.00E+00;
ULFR 890.00E+00

:GMANual:PARam:FMHOver:TCH:BAND

Function Sets the TCH frequency band of the frequency handover (manual) destination or queries the current setting.

Syntax :GMANual:PARam:FMHOver:TCH:
BAND {GSMDCS|GSMPCS}
:GMANual:PARam:FMHOver:TCH:TMP:BAND?

Example :GMANual:PARam:FMHOver:TCH:
BAND GSMDCS
:GMANual:PARam:FMHOver:TCH:TMP:BAND?
-> :GMANual:PARam:FMHOver:TCH:
BAND GSMDCS

Description The settings and responses are as follows.
GSMDCS : For GSM900/DCS1800
GSMPCS : For GSM850/PCS1900

:GMANual:PARam:FMHOver:TCH:CHANnel

Function Sets the frequency handover (manual) destination TCH channel or queries the current setting.

Syntax :GMANual:PARam:FMHOver:TCH:
CHANnel <number>
:GMANual:PARam:FMHOver:TCH:CHANnel?

Example :GMANual:PARam:FMHOver:TCH:CHANnel 0
:GMANual:PARam:FMHOver:TCH:CHANnel?
-> :GMAN:PAR:FMHO:TCH:CHAN 0

:GMANual:PARam:FMHOver:TCH:DLFReq

Function Sets the downlink frequency of the frequency handover (manual) destination TCH channel or queries the current setting.

Syntax :GMANual:PARam:FMHOver:TCH:
DLFReq <frequency>
:GMANual:PARam:FMHOver:TCH:DLFReq?

Example :GMANual:PARam:FMHOver:TCH:DLFReq 935
:GMANual:PARam:FMHOver:TCH:DLFReq? ->
:GMAN:PAR:FMHO:TCH:DLFR 935.00E+00

Description The frequency unit of the setting and response is MHz.

:GMANual:PARam:FMHOver:TCH:ULFReq

Function Sets the uplink frequency of the frequency handover (manual) destination TCH channel or queries the current setting.

Syntax :GMANual:PARam:FMHOver:TCH:
ULFReq <frequency>
:GMANual:PARam:FMHOver:TCH:ULFReq?

Example :GMANual:PARam:FMHOver:TCH:ULFReq 890
:GMANual:PARam:FMHOver:TCH:ULFReq? ->
:GMAN:PAR:FMHO:TCH:ULFR 890.00E+00

Description The frequency unit of the setting and response is MHz.

:GMANual:PARam:FMHOver:ULPower

Function Sets the uplink power of frequency handover (manual) destination or queries the current setting.

Syntax :GMANual:PARam:FMHOver:ULPower <pcl>
:GMANual:PARam:FMHOver:ULPower?

Example :GMANual:PARam:FMHOver:ULPower 0
:GMANual:PARam:FMHOver:ULPower? ->
:GMAN:PAR:FMHO:ULP 0

:GMANual:PARam:FMHOver:GAMMa

Function Sets the uplink power (GAMMA) of frequency handover (manual) destination or queries the current setting.

Syntax :GMANual:PARam:FMHOver:GAMMa <gamma>
:GMANual:PARam:FMHOver:GAMMa?

Example :GMANual:PARam:FMHOver:GAMMa 0
:GMANual:PARam:FMHOver:GAMMa? ->
:GMAN:PAR:FMHO:GAMM 0

:GMANual:PARam:GSM:CONNect

Function Sets the connection mode or queries the current setting.

Syntax
```
:GMANual:PARam:GSM:CONNect {LOOPa|BURStc}
:GMANual:PARam:GSM:CONNect?
```

Example
```
:GMANual:PARam:GSM:CONNect LOOPa
:GMANual:PARam:GSM:CONNect? ->
:GMAN:PAR:GSM:CONN LOOP
```

Description The setting and response format is as follows.
LOOPa: Connects using Test Loop (a).
BURStc: Connects using Burst-by-Burst (c).

:GMANual:PARam:GPRS:CODing

Function Sets the coding scheme for the GPRS connection or queries the current setting.

Syntax
```
:GMANual:PARam:GPRS:CODing {CS1|CS2|CS3|CS4}
:GMANual:PARam:GPRS:CODing?
```

Example
```
:GMANual:PARam:GPRS:CODing CS1
:GMANual:PARam:GPRS:CODing? ->
:GMAN:PAR:GPRS:COD CS1
```

:GMANual:PARam:EGPRS:CODing

Function Sets the coding scheme for the EGPRS connection or queries the current setting.

Syntax
```
:GMANual:PARam:EGPRS:CODing {CS1|CS2|CS3|CS4|MCS1|MCS2|MCS3|MCS4|MCS5|MCS6|MCS7|MCS8|MCS9}
:GMANual:PARam:EGPRS:CODing?
```

Example
```
:GMANual:PARam:EGPRS:CODing CS1
:GMANual:PARam:EGPRS:CODing? ->
:GMAN:PAR:EGPRS:COD CS1
```

:GMANual:PARam:EGPRS:TMBack

Function Sets Test Mode B with Ack for the EGPRS connection or queries the current setting.

Syntax
```
:GMANual:PARam:EGPRS:TMBack {OFF|ON}
:GMANual:PARam:EGPRS:TMBack?
```

Example
```
:GMANual:PARam:EGPRS:TMBack OFF
:GMANual:PARam:EGPRS:TMBack? ->
:GMAN:PAR:EGPRS:TMB OFF
```

:GMANual:PARam:TLMode

Function Sets the test loop mode or queries the current setting.

Syntax
```
:GMANual:PARam:TLMode {LOOPa|BURStc|MODA|MODB|SYMMetry}
:GMANual:PARam:TLMode?
```

Example
```
:GMANual:PARam:TLMode LOOPa
:GMANual:PARam:TLMode? ->
:GMAN:PAR:TLM LOOPa
```

Description The settings and responses are as follows.
LOOPa: Tch Loop(A)
BURStc: Burst-by-burst(C)
MODA: Test Mode A
MODB: Test Mode B
SYMMetry: EGPRS SRBL Symmetry

:GMANual:PARam:TLDType

Function Sets the payload type during the test loop or queries the current setting.

Syntax
```
:GMANual:PARam:TLDType {ALL0|ALL1|PR9|PR15}
:GMANual:PARam:TLDType?
```

Example
```
:GMANual:PARam:TLDType ALL0
:GMANual:PARam:TLDType? ->
:GMAN:PAR:TLDT ALL0
```

Description The settings and responses are as follows.
ALL0: Sets all zeroes in the payload.
ALL1: Sets all ones in the payload.
PR9: Sets PRBS9 in the payload.
PR15: Sets PRBS15 in the payload.

5.2.8 POWer Group

:GMANual:POWer?

Function Queries all settings related to the power.

Syntax :GMANual:POWer?

Example :GMANual:POWer? -> :GMAN:POW:CONT ON;
DLP -60.000E+00;ULP 5;COMP:
DLGSM 0.0000E+00;DLDCS 0.0000E+00;
DLPCS 0.0000E+00;ULGSM 0.0000E+00;
ULDCS 0.0000E+00;ULPCS 0.0000E+00;:
GMAN:POW:GAMM 10

:GMANual:POWer:CONTrol

Function Sets the downlink power control or queries the current setting.

Syntax :GMANual:POWer:CONTrol {ON|OFF}
:GMANual:POWer:CONTrol?

Example :GMANual:POWer:CONTrol ON
:GMANual:POWer:CONTrol? ->
:GMAN:POW:CONT ON

Description This command is used to turn ON/OFF the RF output.

:GMANual:POWer:DLPower

Function Sets the downlink power or queries the current setting.

Syntax :GMANual:POWer:DLPower <power>
:GMANual:POWer:DLPower?

Example :GMANual:POWer:DLPower -60
:GMANual:POWer:DLPower? ->
:GMAN:POW:DLP -60.000E+00

Description The power unit of the setting and response is dBm.

:GMANual:POWer:ULPower

Function Sets the uplink power value or queries the current setting.

Syntax :GMANual:POWer:ULPower <pcl>
:GMANual:POWer:ULPower?

Example :GMANual:POWer:ULPower 0
:GMANual:POWer:ULPower? ->
:GMAN:POW:ULP 0

Description Set the power control level of the mobile phone in the range of 0 to 31.

:GMANual:POWer:COMPensation?

Function Queries all settings related to the power compensation.

Syntax :GMANual:POWer:COMPensation?

Example :GMANual:POWer:COMPensation? ->
:GMAN:POW:COMP:DLGSM 0.0000E+00;
DLDCS 0.0000E+00;DLPCS 0.0000E+00;
ULGSM 0.0000E+00;ULDCS 0.0000E+00;
ULPCS 0.0000E+00

:GMANual:POWer:COMPensation:DLGSM

Function Sets the downlink power compensation value (GSM band) or queries the current setting.

Syntax :GMANual:POWer:COMPensation:
DLGSM <power (dB)>
:GMANual:POWer:COMPensation:DLGSM?

Example :GMANual:POWer:COMPensation:DLGSM 0
:GMANual:POWer:COMPensation:DLGSM? ->
:GMAN:POW:COMP:DLGSM 0.0000E+00

Description The unit in the setting and response of the compensation value is dB.

:GMANual:POWer:COMPensation:DLDCS

Function Sets the downlink power compensation value (DCS band) or queries the current setting.

Syntax :GMANual:POWer:COMPensation:
DLDCS <power (dB)>
:GMANual:POWer:COMPensation:DLDCS?

Example :GMANual:POWer:COMPensation:DLDCS 0
:GMANual:POWer:COMPensation:DLDCS? ->
:GMAN:POW:COMP:DLDCS 0.0000E+00

Description The unit in the setting and response of the compensation value is dB.

:GMANual:POWer:COMPensation:DLPCS

Function Sets the downlink power compensation value (PCS band) or queries the current setting.

Syntax :GMANual:POWer:COMPensation:
DLPCS <power (dB)>
:GMANual:POWer:COMPensation:DLPCS?

Example :GMANual:POWer:COMPensation:DLPCS 0
:GMANual:POWer:COMPensation:DLPCS? ->
:GMAN:POW:COMP:DLPCS 0.0000E+00

Description The unit in the setting and response of the compensation value is dB.

:GMANual:POWer:COMPensation:ULGSM

Function Sets the uplink power compensation value (GSM band) or queries the current setting.

Syntax :GMANual:POWer:COMPensation:
ULGSM <power (dB)>
:GMANual:POWer:COMPensation:ULGSM?

Example :GMANual:POWer:COMPensation:ULGSM 0
:GMANual:POWer:COMPensation:ULGSM? ->
:GMAN:POW:COMP:ULGSM 0.0000E+00

Description The unit in the setting and response of the compensation value is dB.

:GMANual:POWer:COMPensation:ULDCS

Function Sets the uplink power compensation value (DCS band) or queries the current setting.

Syntax
```
:GMANual:POWer:COMPensation:
ULDCS <power (dB)>
:GMANual:POWer:COMPensation:ULDCS?
```

Example
```
:GMANual:POWer:COMPensation:ULDCS 0
:GMANual:POWer:COMPensation:ULDCS? ->
:GMAN:POW:COMP:ULDCS 0.0000E+00
```

Description The unit in the setting and response of the compensation value is dB.

:GMANual:POWer:COMPensation:ULPCS

Function Sets the uplink power compensation value (PCS band) or queries the current setting.

Syntax
```
:GMANual:POWer:COMPensation:
ULPCS <power (dB)>
:GMANual:POWer:COMPensation:ULPCS?
```

Example
```
:GMANual:POWer:COMPensation:ULPCS 0
:GMANual:POWer:COMPensation:ULPCS? ->
:GMAN:POW:COMP:ULPCS 0.0000E+00
```

Description The unit in the setting and response of the compensation value is dB.

:GMANual:POWer:GAMMa

Function Sets the uplink power (GAMMA) or queries the current setting.

Syntax
```
:GMANual:POWer:GAMMa <gamma>
:GMANual:POWer:GAMMa?
```

Example
```
:GMANual:POWer:GAMMa 0
:GMANual:POWer:GAMMa? ->
:GMAN:POW:GAMM 0
```

Description Set the uplink power (GAMMA) in the range of 0 to 31.

5.2.9 PRESet Group

:GMANual:PRESet?

Function Queries all settings related to presets.

Syntax
```
:GMANual:PRESet?
```

Example
```
:GMANual:PRESet? -> :GMAN:PRES:
MODE LOAD;NUMB S1
```

:GMANual:PRESet:MODE

Function Sets the preset mode or queries the current setting.

Syntax
```
:GMANual:PRESet:MODE {LOAD|SAVE}
:GMANual:PRESet:MODE?
```

Example
```
:GMANual:PRESet:MODE LOAD
:GMANual:PRESet:MODE? ->
:GMAN:PRES:MODE LOAD
```

Description The settings and responses are as follows.

LOAD: Sets the preset mode to Load

SAVE: Sets the preset mode to Save

After setting the preset mode with this command, you can load or save by executing the `:GMANual:PRESet:EXECute` command.

:GMANual:PRESet:NUMBer

Function Sets the preset number or queries the current setting.

Syntax
```
:GMANual:PRESet:NUMBer {S1|S2|S3|S4|
S5|S6}
:GMANual:PRESet:NUMBer?
```

Example
```
:GMANual:PRESet:NUMBer S1
:GMANual:PRESet:NUMBer? ->
:GMAN:PRES:NUMB S1
```

Description After setting the preset mode with this command, you can load or save by executing the `:GMANual:PRESet:EXECute` command.

:GMANual:PRESet:VALid?

Function Queries whether the settings of the specified preset number are valid.

Syntax
```
:GMANual:PRESet:VALid?
```

Example
```
:GMANual:PRESet:VALid? ->
:GMAN:PRES:VAL VAL
```

Description Queries whether the preset specified in `:GMANual:PRESet:NUMBer` is valid.

The responses are as follows.

INValid: Preset value not saved to the specified preset number.

VALid: Specified preset number is valid.

:GMANual:PRESet:BAND?

Function Queries the frequency band in the preset.
Syntax :GMANual:PRESet:BAND?
Example :GMANual:PRESet:BAND? ->
:GMAN:PRES:BAND GSMDCS
Description The response is one of the following: {GSMDCS|GSMPCS|*****}.
GSMDCS: For BCCH, TCH, and GSM900/DCS1800
GSMPCS: For BCCH, TCH, and GSM850/PCS1900
*****: When the BCCH and TCH frequency bands differ

:GMANual:PRESet:BCCH?

Function Queries all settings related to the BCCH of the preset.
Syntax :GMANual:PRESet:BCCH?
Example :GMANual:PRESet:BCCH? -> :GMAN:PRES:BCCH: BAND GSMDCS:CHAN 0;DLFR 935.00E+00;ULFR 890.00E+00

:GMANual:PRESet:BCCH:BAND?

Function Queries the BCCH frequency band in the preset.
Syntax :GMANual:PRESet:BCCH:BAND?
Example :GMANual:PRESet:BCCH:BAND? ->
:GMAN:PRES:BCCH:BAND GSMDCS
Description The response is one of the following.
{GSMDCS|GSMPCS}
GSMDCS : For GSM900/DCS1800
GSMPCS : For GSM850/PCS1900

:GMANual:PRESet:BCCH:CHANnel?

Function Queries the BCCH channel in the preset.
Syntax :GMANual:PRESet:BCCH:CHANnel?
Example :GMANual:PRESet:BCCH:CHANnel? ->
:GMAN:PRES:BCCH:CHAN 0

:GMANual:PRESet:BCCH:DLFReq?

Function Queries the BCCH downlink frequency in the preset.
Syntax :GMANual:PRESet:BCCH:DLFReq?
Example :GMANual:PRESet:BCCH:DLFReq? ->
:GMAN:PRES:BCCH:DLFR 935.00E+00
Description The frequency unit of the response is MHz.

:GMANual:PRESet:BCCH:ULFReq?

Function Queries the BCCH uplink frequency in the preset.
Syntax :GMANual:PRESet:BCCH:ULFReq?
Example :GMANual:PRESet:BCCH:ULFReq? ->
:GMAN:PRES:BCCH:ULFR 890.00E+00
Description The frequency unit of the response is MHz.

:GMANual:PRESet:TCH?

Function Queries all settings related to the TCH in the preset.
Syntax :GMANual:PRESet:TCH?
Example :GMANual:PRESet:TCH? ->
:GMAN:PRES:TCH: BAND GSMDCS:CHAN 0;DLFR 935.00E+00;ULFR 890.00E+00

:GMANual:PRESet:TCH:BAND?

Function Queries the TCH frequency band in the preset.
Syntax :GMANual:PRESet:TCH:BAND?
Example :GMANual:PRESet:TCH:BAND? ->
:GMAN:PRES:TCH:BAND GSMDCS
Description The response is one of the following.
{GSMDCS|GSMPCS}
GSMDCS : For GSM900/DCS1800
GSMPCS : For GSM850/PCS1900

:GMANual:PRESet:TCH:CHANnel?

Function Queries the TCH channel in the preset.
Syntax :GMANual:PRESet:TCH:CHANnel?
Example :GMANual:PRESet:TCH:CHANnel? ->
:GMAN:PRES:TCH:CHAN 0

:GMANual:PRESet:TCH:DLFReq?

Function Queries the TCH downlink frequency in the preset.
Syntax :GMANual:PRESet:TCH:DLFReq?
Example :GMANual:PRESet:TCH:DLFReq? ->
:GMAN:PRES:TCH:DLFR 935.00E+00
Description The frequency unit of the response is MHz.

:GMANual:PRESet:TCH:ULFReq?

Function Queries the TCH uplink frequency in the preset.
Syntax :GMANual:PRESet:TCH:ULFReq?
Example :GMANual:PRESet:TCH:ULFReq? ->
:GMAN:PRES:TCH:ULFR 890.00E+00
Description The frequency unit of the response is MHz.

:GMANual:PRESet:DLPower?

Function Queries the downlink power in the preset.
Syntax :GMANual:PRESet:DLPower?
Example :GMANual:PRESet:DLPower? ->
:GMAN:PRES:DLP -60.000E+00
Description The power unit of the response is dBm.

:GMANual:PRESet:ULPower?

Function Queries the uplink power in the preset.
Syntax :GMANual:PRESet:ULPower?
Example :GMANual:PRESet:ULPower? ->
:GMAN:PRES:ULP 0

:GMANual:PRESet:GAMMa?

Function Queries the GAMMA in the preset.
Syntax GMANual:PRESet:GAMMa?
Example :GMANual:PRESet:GAMMa? ->
:GMAN:PRES:GAMM 0

:GMANual:PRESet:EXECute

Function Executes preset.
Syntax :GMANual:PRESet:EXECute
Example :GMANual:PRESet:EXECute

5.2.10 RESult Group

:GMANual:RESult?

Function Queries all the measured results.
Syntax :GMANual:RESult?
Example :GMANual:RESult? -> :GMAN:RES:TXT:
TIMES TS4;MCO 0;:GMAN:RES:TXP:
AVER NAN;MAX NAN;MIN NAN;:GMAN:RES:
BURS:JUDG NOEX;:GMAN:RES:FLAT:
MAX NAN;MIN NAN;:GMAN:RES:TIM:
AVER NAN;MAX NAN;MIN NAN;:GMAN:RES:
FERR:PPM:AVER NAN;MAX NAN;MIN NAN;:
GMAN:RES:FERR:HZ:AVER NAN;MAX NAN;
MIN NAN;:GMAN:RES:PHAS:PEAK:AVER NAN;
MAX NAN;MIN NAN;:GMAN:RES:PHAS:RMS:
AVER NAN;MAX NAN;MIN NAN;:GMAN:RES:
OSPE:JUDG NOEX;:GMAN:RES:MAG:PEAK:
AVER NAN;MAX NAN;MIN NAN;:GMAN:RES:
MAG:RMS:AVER NAN;MAX NAN;MIN NAN;:
GMAN:RES:ORIG:AVER NAN;MAX NAN;
MIN NAN;:GMAN:RES:EVM:PEAK:AVER NAN;
MAX NAN;MIN NAN;:GMAN:RES:EVM:RMS:
AVER NAN;MAX NAN;MIN NAN;:GMAN:RES:
PER95:AVER NAN;MAX NAN;MIN NAN;:GMAN:
RES:RXT:TIMES OVR;MCO 0;:GMAN:RES:
FER NAN,NAN,NAN;:GMAN:RES:
BER NAN;:GMAN:RES:BLER NAN,NAN,NAN;
DATAR NAN;:GMAN:RES:UER:RXQ NOEX;
RXL NOEX;MSP NOEX;CVAL NOEX;
SIGV NOEX;GMM NOEX;GMC NOEX;P8M NOEX;
P8C NOEX;:GMAN:RES:UEIN:IMSI "";
IMEI "";POW NOEX;BAND NOEX,
NOEX,NOEX,NOEX;MULT NOEX,NOEX;BANDP:
GSM900 NOEX,NOEX;DCS1800 NOEX,NOEX;
GSM850 NOEX,NOEX;PCS1900 NOEX,NOEX;:
GMAN:RES:DIAL ""

:GMANual:RESult:CLEar

Function Clears all measured results.
Syntax :GMANual:RESult:CLEar
Example :GMANual:RESult:CLEar

:GMANual:RESult:TXTest:TIMESlot

Function Sets the timeslot number for which you want to retrieve the TX measurement result or queries the current setting.
Syntax :GMANual:RESult:TXTest:TIMESlot
{TS3|TS4|TS5|TS6}
:GMANual:RESult:TXTest:TIMESlot?
Example :GMANual:RESult:TXTest:TIMESlot TS4
:GMANual:RESult:TXTest:TIMESlot? ->
:GMAN:RES:TXT:TIMES TS4
Description • The settings and responses are as follows.
TS3: Specifies time slot 3
TS4: Specifies time slot 4
TS5: Specifies time slot 5
TS6: Specifies time slot 6
• After executing this command, the response to :GMANual:RESult: will correspond to the slot number specified here. This setting can be specified independent of the measurement timeslot setting.

:GMANual:RESult:TXTest:MCOunt?

Function Queries the measurement count of the TX characteristics measurement.
Syntax :GMANual:RESult:TXTest:MCOunt?
Example :GMANual:RESult:TXTest:MCOunt? ->
:GMAN:RES:TXT:MCO 0

:GMANual:RESult:TXPower?

Function Queries all the results of the TX power.
Syntax :GMANual:RESult:TXPower?
Example :GMANual:RESult:TXPower? ->
:GMAN:RES:TXP:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
Description All of the units in the response of the TX power result are dBm.

:GMANual:RESult:TXPower:AVERage?

Function Queries the average value of the TX power.
Syntax :GMANual:RESult:TXPower:AVERage?
Example :GMANual:RESult:TXPower:AVERage? ->
:GMAN:RES:TXP:AVER 0.0000000E+00

:GMANual:RESult:TXPower:MAX?

Function Queries the maximum value of the TX power.
Syntax :GMANual:RESult:TXPower:MAX?
Example :GMANual:RESult:TXPower:MAX? ->
:GMAN:RES:TXP:MAX 0.0000000E+00

:GMANual:RESult:TXPower:MIN?

Function Queries the minimum value of the TX power.
Syntax :GMANual:RESult:TXPower:MIN?
Example :GMANual:RESult:TXPower:MIN? ->
:GMAN:RES:TXP:MIN 0.0000000E+00

:GMANual:RESult:BURSt?

Function Queries the judgement result of the burst timing.
Syntax :GMANual:RESult:BURSt?
Example :GMANual:RESult:BURSt? ->
:GMAN:RES:BURS:JUDG PASS
Description The response is as follows:
All within range
:GMAN:RES:BURS:JUDG PASS
Rising edge is out of range
:GMAN:RES:BURS:JUDG FAIL _|
The center section is out of range
:GMAN:RES:BURS:JUDG FAIL ~
Falling edge is out of range
:GMAN:RES:BURS:JUDG FAIL |_
All out of range
:GMAN:RES:BURS:JUDG FAIL _|~|_

:GMANual:RESult:FLATness?

Function Queries all results related to the flatness.
Syntax :GMANual:RESult:FLATness?
Example :GMANual:RESult:FLATness? ->
:GMAN:RES:FLAT:MAX 0.0000000E+00;
MIN 0.0000000E+00
Description All of the units in the response of the flatness result are dB.

:GMANual:RESult:FLATness:MAX?

Function Queries the maximum value of the flatness.
Syntax :GMANual:RESult:FLATness:MAX?
Example :GMANual:RESult:FLATness:MAX? ->
:GMAN:RES:FLAT:MAX 0.0000000E+00

:GMANual:RESult:FLATness:MIN?

Function Queries the minimum value of the flatness.
Syntax :GMANual:RESult:FLATness:MIN?
Example :GMANual:RESult:FLATness:MIN? ->
:GMAN:RES:FLAT:MIN 0.0000000E+00

:GMANual:RESult:TIMingerr?

Function Queries all results related to the timing error.
Syntax :GMANual:RESult:TIMingerr?
Example :GMANual:RESult:TIMingerr? ->
:GMAN:RES:TIM:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
Description All of the units in the response of the timing error result are symbol.

:GMANual:RESult:TIMingerr:AVERage?

Function Queries the average value of the timing error.
Syntax :GMANual:RESult:TIMingerr:AVERage?
Example :GMANual:RESult:TIMingerr:AVERage? ->
:GMAN:RES:TIM:AVER 0.0000000E+00

:GMANual:RESult:TIMingerr:MAX?

Function Queries the maximum value of the timing error.
Syntax :GMANual:RESult:TIMingerr:MAX?
Example :GMANual:RESult:TIMingerr:MAX? ->
:GMAN:RES:TIM:MAX 0.0000000E+00

:GMANual:RESult:TIMingerr:MIN?

Function Queries the minimum value of the timing error.
Syntax :GMANual:RESult:TIMingerr:MIN?
Example :GMANual:RESult:TIMingerr:MIN? ->
:GMAN:RES:TIM:MIN 0.0000000E+00

:GMANual:RESult:FERRor?

Function Queries all results related to the frequency error.
Syntax :GMANual:RESult:FERRor?
Example :GMANual:RESult:FERRor? -> :GMAN:RES:
FERR:PPM:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
GMAN:RES:FERR:HZ:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
Description The unit in the response of the frequency error is ppm for :PPM and Hz for :HZ.

:GMANual:RESult:FERRor:PPM?

Function Queries all results related to the frequency error (in unit of ppm).
Syntax :GMANual:RESult:FERRor:PPM?
Example :GMANual:RESult:FERRor:PPM? ->
:GMAN:RES:FERR:PPM:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00
Description All of the units in the response of the frequency error result are ppm.

:GMANual:RESult:FERRor:PPM:AVERage?

Function Queries the average value of the frequency error (in unit of ppm).
Syntax :GMANual:RESult:FERRor:PPM:AVERage?
Example :GMANual:RESult:FERRor:PPM:AVERage?
-> :GMAN:RES:FERR:PPM:
AVER 0.0000000E+00

:GMANual:RESult:FERRor:PPM:MAX?

Function Queries the maximum value of the frequency error (in unit of ppm).
Syntax :GMANual:RESult:FERRor:PPM:MAX?
Example :GMANual:RESult:FERRor:PPM:MAX? ->
:GMAN:RES:FERR:PPM:MAX 0.0000000E+00

:GMANual:RESult:FERRor:PPM:MIN?

Function Queries the minimum value of the frequency error (in unit of ppm).

Syntax :GMANual:RESult:FERRor:PPM:MIN?

Example :GMANual:RESult:FERRor:PPM:MIN? ->
:GMAN:RES:FERR:PPM:MIN 0.0000000E+00

:GMANual:RESult:FERRor:HZ?

Function Queries all results related to the frequency error (in unit of Hz).

Syntax :GMANual:RESult:FERRor:HZ?

Example :GMANual:RESult:FERRor:HZ? ->
:GMAN:RES:FERR:HZ:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

Description All of the units in the response of the frequency error result are Hz.

:GMANual:RESult:FERRor:HZ:AVERage?

Function Queries the average value of the frequency error (in unit of Hz).

Syntax :GMANual:RESult:FERRor:HZ:AVERage?

Example :GMANual:RESult:FERRor:HZ:AVERage? ->
:GMAN:RES:FERR:HZ:AVER 0.0000000E+00

:GMANual:RESult:FERRor:HZ:MAX?

Function Queries the maximum value of the frequency error (in unit of Hz).

Syntax :GMANual:RESult:FERRor:HZ:MAX?

Example :GMANual:RESult:FERRor:HZ:MAX? ->
:GMAN:RES:FERR:HZ:MAX 0.0000000E+00

:GMANual:RESult:FERRor:HZ:MIN?

Function Queries the minimum value of the frequency error (in unit of Hz).

Syntax :GMANual:RESult:FERRor:HZ:MIN?

Example :GMANual:RESult:FERRor:HZ:MIN? ->
:GMAN:RES:FERR:HZ:MIN 0.0000000E+00

:GMANual:RESult:PHASeerr?

Function Queries all results related to the phase error.

Syntax :GMANual:RESult:PHASeerr?

Example :GMANual:RESult:PHASeerr? ->
:GMAN:RES:PHAS:PEAK:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00;:GMAN:RES:PHAS:RMS:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00

Description All of the units in the response of the phase error result are deg.

:GMANual:RESult:PHASeerr:PEAK?

Function Queries all results related to the phase error (peak).

Syntax :GMANual:RESult:PHASeerr:PEAK?

Example :GMANual:RESult:PHASeerr:PEAK? ->
:GMAN:RES:PHAS:PEAK:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00

:GMANual:RESult:PHASeerr:PEAK:AVERage?

Function Queries the average value of the phase error (peak).

Syntax :GMANual:RESult:PHASeerr:PEAK:
AVERage?

Example :GMANual:RESult:PHASeerr:PEAK:
AVERage? -> :GMAN:RES:PHAS:PEAK:
AVER 0.0000000E+00

:GMANual:RESult:PHASeerr:PEAK:MAX?

Function Queries the maximum value of the phase error (peak).

Syntax :GMANual:RESult:PHASeerr:PEAK:MAX?

Example :GMANual:RESult:PHASeerr:PEAK:MAX? ->
:GMAN:RES:PHAS:PEAK:MAX 0.0000000E+00

:GMANual:RESult:PHASeerr:PEAK:MIN?

Function Queries the minimum value of the phase error (peak).

Syntax :GMANual:RESult:PHASeerr:PEAK:MIN?

Example :GMANual:RESult:PHASeerr:PEAK:MIN? ->
:GMAN:RES:PHAS:PEAK:MIN 0.0000000E+00

:GMANual:RESult:PHASeerr:RMS?

Function Queries all results related to the phase error (RMS).

Syntax :GMANual:RESult:PHASeerr:RMS?

Example :GMANual:RESult:PHASeerr:RMS? ->
:GMAN:RES:PHAS:RMS:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00

:GMANual:RESult:PHASeerr:RMS:AVERage?

Function Queries the average value of the phase error (RMS).

Syntax :GMANual:RESult:PHASeerr:RMS:AVERage?

Example :GMANual:RESult:PHASeerr:RMS:AVERage?
-> :GMAN:RES:PHAS:RMS:
AVER 0.0000000E+00

:GMANual:RESult:PHASeerr:RMS:MAX?

Function Queries the maximum value of the phase error (RMS).

Syntax :GMANual:RESult:PHASeerr:RMS:MAX?

Example :GMANual:RESult:PHASeerr:RMS:MAX? ->
:GMAN:RES:PHAS:RMS:MAX 0.0000000E+00

:GMANual:RESult:PHASeerr:RMS:MIN?

Function Queries the minimum value of the phase error (RMS).

Syntax :GMANual:RESult:PHASeerr:RMS:MIN?

Example :GMANual:RESult:PHASeerr:RMS:MIN? ->
:GMAN:RES:PHAS:RMS:MIN 0.0000000E+00

:GMANual:RESult:OSPEctrum:JUDGe?

Function Queries the judgement result of the output spectrum.

Syntax :GMANual:RESult:OSPEctrum:JUDGe?

Example :GMANual:RESult:OSPEctrum:JUDGe? ->
:GMAN:RES:OSPE:JUDG PASS

Description The response format is PASS or FAIL.

:GMANual:RESult:OSPEctrum:MODulation?

Function Queries all results related to the frequency offset of the output spectrum (modulation).

Syntax :GMANual:RESult:OSPEctrum:MODulation?

Example :GMANual:RESult:OSPEctrum:MODulation?
-> :GMAN:RES:OSPE:MOD:
M1800 0.0000000E+00;
M1600 0.0000000E+00;
M1400 0.0000000E+00;
M1200 0.0000000E+00;
M1000 0.0000000E+00;
M800 0.0000000E+00;
M600 0.0000000E+00;
M400 0.0000000E+00;
M250 0.0000000E+00;
M200 0.0000000E+00;
M100 0.0000000E+00;P0 0.0000000E+00;
P100 0.0000000E+00;
P200 0.0000000E+00;
P250 0.0000000E+00;
P400 0.0000000E+00;
P600 0.0000000E+00;
P800 0.0000000E+00;
P1000 0.0000000E+00;
P1200 0.0000000E+00;
P1400 0.0000000E+00;
P1600 0.0000000E+00;
P1800 0.0000000E+00

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M1800k?

Function Queries the result at the -1800-kHz frequency offset of the output spectrum (modulation).

Syntax :GMANual:RESult:OSPEctrum:MODulation:
M1800k?

Example :GMANual:RESult:OSPEctrum:MODulation:
M1800k? -> :GMAN:RES:OSPE:MOD:
M1800 0.0000000E+00

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M1600k?

Function Queries the result at the -1600-kHz frequency offset of the output spectrum (modulation).

Syntax :GMANual:RESult:OSPEctrum:MODulation:
M1600k?

Example :GMANual:RESult:OSPEctrum:MODulation:
M1600k? -> :GMAN:RES:OSPE:MOD:
M1600 0.0000000E+00

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M1400k?

Function Queries the result at the -1400-kHz frequency offset of the output spectrum (modulation).

Syntax :GMANual:RESult:OSPEctrum:MODulation:
M1400k?

Example :GMANual:RESult:OSPEctrum:MODulation:
M1400k? -> :GMAN:RES:OSPE:MOD:
M1400 0.0000000E+00

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M1200k?

Function Queries the result at the -1200-kHz frequency offset of the output spectrum (modulation).

Syntax :GMANual:RESult:OSPEctrum:MODulation:
M1200k?

Example :GMANual:RESult:OSPEctrum:MODulation:
M1200k? -> :GMAN:RES:OSPE:MOD:
M1200 0.0000000E+00

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M1000k?

Function Queries the result at the -1000-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:M1000k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:M1000k? -> :GMAN:RES:OSPE:MOD:M1000 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M800k?

Function Queries the result at the -800-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:M800k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:M800k? -> :GMAN:RES:OSPE:MOD:M800 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M600k?

Function Queries the result at the -600-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:M600k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:M600k? -> :GMAN:RES:OSPE:MOD:M600 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M400k?

Function Queries the result at the -400-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:M400k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:M400k? -> :GMAN:RES:OSPE:MOD:M400 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M250k?

Function Queries the result at the -250-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:M250k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:M250k? -> :GMAN:RES:OSPE:MOD:M250 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M200k?

Function Queries the result at the -200-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:M200k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:M200k? -> :GMAN:RES:OSPE:MOD:M200 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:M100k?

Function Queries the result at the -100-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:M100k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:M100k? -> :GMAN:RES:OSPE:MOD:M100 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P0k?

Function Queries the result at the 0-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:P0k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:P0k? -> :GMAN:RES:OSPE:MOD:P0 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P100k?

Function Queries the result at the 100-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:P100k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:P100k? -> :GMAN:RES:OSPE:MOD:P100 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P200k?

Function Queries the result at the 200-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:P200k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:P200k? -> :GMAN:RES:OSPE:MOD:P200 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P250k?

Function Queries the result at the 250-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:P250k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:P250k? -> :GMAN:RES:OSPE:MOD:P250 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P400k?

Function Queries the result at the 400-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:P400k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:P400k? -> :GMAN:RES:OSPE:MOD:P400 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P600k?

Function Queries the result at the 600-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:P600k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:P600k? -> :GMAN:RES:OSPE:MOD:P600 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P800k?

Function Queries the result at the 800-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:P800k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:P800k? -> :GMAN:RES:OSPE:MOD:P800 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P1000k?

Function Queries the result at the 1000-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:P1000k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:P1000k? -> :GMAN:RES:OSPE:MOD:P1000 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P1200k?

Function Queries the result at the 1200-kHz frequency offset of the output spectrum (modulation).

Syntax `:GMANual:RESult:OSPEctrum:MODulation:P1200k?`

Example `:GMANual:RESult:OSPEctrum:MODulation:P1200k? -> :GMAN:RES:OSPE:MOD:P1200 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P1400k?

Function Queries the result at the 1400-kHz frequency offset of the output spectrum (modulation).

Syntax
```
:GMANual:RESult:OSPEctrum:MODulation:
P1400k?
```

Example
```
:GMANual:RESult:OSPEctrum:MODulation:
P1400k? -> :GMAN:RES:OSPE:MOD:
P1400 0.0000000E+00
```

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P1600k?

Function Queries the result at the 1600-kHz frequency offset of the output spectrum (modulation).

Syntax
```
:GMANual:RESult:OSPEctrum:MODulation:
P1600k?
```

Example
```
:GMANual:RESult:OSPEctrum:MODulation:
P1600k? -> :GMAN:RES:OSPE:MOD:
P1600 0.0000000E+00
```

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:MODulation:P1800k?

Function Queries the result at the 1800-kHz frequency offset of the output spectrum (modulation).

Syntax
```
:GMANual:RESult:OSPEctrum:MODulation:
P1800k?
```

Example
```
:GMANual:RESult:OSPEctrum:MODulation:
P1800k? -> :GMAN:RES:OSPE:MOD:
P1800 0.0000000E+00
```

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched?

Function Queries all results related to the frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched?
-> :GMAN:RES:OSPE:SWIT:
M1800 0.0000000E+00;
M1200 0.0000000E+00;
M600 0.0000000E+00;
M400 0.0000000E+00;P0 0.0000000E+00;
P400 0.0000000E+00;
P600 0.0000000E+00;
P1200 0.0000000E+00;
P1800 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched:M1800k?

Function Queries the result at the -1800-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched:
M1800k?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched:
M1800k? -> :GMAN:RES:OSPE:SWIT:
M1800 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched:M1200k?

Function Queries the result at the -1200-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched:
M1200k?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched:
M1200k? -> :GMAN:RES:OSPE:SWIT:
M1200 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched:M600k?

Function Queries the result at the -600-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched:
M600k?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched:
M600k? -> :GMAN:RES:OSPE:SWIT:
M600 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched:M400k?

Function Queries the result at the -400-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched:
M400k?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched:
M400k? -> :GMAN:RES:OSPE:SWIT:
M400 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched:P0k?

Function Queries the result at the 0-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched:
P0k?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched:
P0k? -> :GMAN:RES:OSPE:SWIT:
P0 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched:P400k?

Function Queries the result at the 400-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched:
P400k?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched:
P400k? -> :GMAN:RES:OSPE:SWIT:
P400 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched:P600k?

Function Queries the result at the 600-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched:
P600k?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched:
P600k? -> :GMAN:RES:OSPE:SWIT:
P600 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched:P1200k?

Function Queries the result at the 1200-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched:
P1200k?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched:
P1200k? -> :GMAN:RES:OSPE:SWIT:
P1200 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:OSPEctrum:SWITched:P1800k?

Function Queries the result at the 1800-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GMANual:RESult:OSPEctrum:SWITched:
P1800k?
```

Example
```
:GMANual:RESult:OSPEctrum:SWITched:
P1800k? -> :GMAN:RES:OSPE:SWIT:
P1800 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GMANual:RESult:MAGerr?

Function Queries all results related to the magnitude error.

Syntax
```
:GMANual:RESult:MAGerr?
```

Example
```
:GMANual:RESult:MAGerr? -> :GMAN:RES:
MAG:PEAK:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
GMAN:RES:MAG:RMS:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
```

Description All of the units in the response of the magnitude error result are %.

:GMANual:RESult:MAGerr:PEAK?

Function Queries all results related to the magnitude error (peak).

Syntax
```
:GMANual:RESult:MAGerr:PEAK?
```

Example
```
:GMANual:RESult:MAGerr:PEAK? ->:GMAN:
RES:MAG:PEAK:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
```

:GMANual:RESult:MAGerr:PEAK:AVERage?

Function Queries the average value of the magnitude error (peak).

Syntax
```
:GMANual:RESult:MAGerr:PEAK:AVERage?
```

Example
```
:GMANual:RESult:MAGerr:PEAK:AVERage?
-> :GMAN:RES:MAG:PEAK:
AVER 0.0000000E+00
```

:GMANual:RESult:MAGerr:PEAK:MAX?

Function Queries the maximum value of the magnitude error (peak).

Syntax
```
:GMANual:RESult:MAGerr:PEAK:MAX?
```

Example
```
:GMANual:RESult:MAGerr:PEAK:MAX? ->
:GMAN:RES:MAG:PEAK:MAX 0.0000000E+00
```

:GMANual:RESult:MAGerr:PEAK:MIN?

Function Queries the minimum value of the magnitude error (peak).

Syntax
```
:GMANual:RESult:MAGerr:PEAK:MIN?
```

Example
```
:GMANual:RESult:MAGerr:PEAK:MIN? ->
:GMAN:RES:MAG:PEAK:MIN 0.0000000E+00
```

:GMANual:RESult:MAGerr:RMS?

Function Queries all results related to the magnitude error (RMS).

Syntax :GMANual:RESult:MAGerr:RMS?

Example :GMANual:RESult:MAGerr:RMS? -> :GMAN:RES:MAG:RMS:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

:GMANual:RESult:MAGerr:RMS:AVERage?

Function Queries the average value of the magnitude error (RMS).

Syntax :GMANual:RESult:MAGerr:RMS:AVERage?

Example :GMANual:RESult:MAGerr:RMS:AVERage? -> :GMAN:RES:MAG:RMS:AVER 0.0000000E+00

:GMANual:RESult:MAGerr:RMS:MAX?

Function Queries the maximum value of the magnitude error (RMS).

Syntax :GMANual:RESult:MAGerr:RMS:MAX?

Example :GMANual:RESult:MAGerr:RMS:MAX? -> :GMAN:RES:MAG:RMS:MAX 0.0000000E+00

:GMANual:RESult:MAGerr:RMS:MIN?

Function Queries the minimum value of the magnitude error (RMS).

Syntax :GMANual:RESult:MAGerr:RMS:MIN?

Example :GMANual:RESult:MAGerr:RMS:MIN? -> :GMAN:RES:MAG:RMS:MIN 0.0000000E+00

:GMANual:RESult:ORIGinoffset?

Function Queries all results related to the origin offset.

Syntax :GMANual:RESult:ORIGinoffset?

Example :GMANual:RESult:ORIGinoffset? -> :GMAN:RES:ORIG:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

Description All of the units in the response of the origin offset result are dBm.

:GMANual:RESult:ORIGinoffset:AVERage?

Function Queries the average value of the origin offset.

Syntax :GMANual:RESult:ORIGinoffset:AVERage?

Example :GMANual:RESult:ORIGinoffset:AVERage? -> :GMAN:RES:ORIG:AVER 0.0000000E+00

:GMANual:RESult:ORIGinoffset:MAX?

Function Queries the maximum value of the origin offset.

Syntax :GMANual:RESult:ORIGinoffset:MAX?

Example :GMANual:RESult:ORIGinoffset:MAX? -> :GMAN:RES:ORIG:MAX 0.0000000E+00

:GMANual:RESult:ORIGinoffset:MIN?

Function Queries the minimum value of the origin offset.

Syntax :GMANual:RESult:ORIGinoffset:MIN?

Example :GMANual:RESult:ORIGinoffset:MIN? -> :GMAN:RES:ORIG:MIN 0.0000000E+00

:GMANual:RESult:EVM?

Function Queries all results related to the EVM.

Syntax :GMANual:RESult:EVM?

Example :GMANual:RESult:EVM? -> :GMAN:RES:EVM:PEAK:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00;:GMAN:RES:EVM:RMS:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

Description All of the units in the response of the EVM result are %.

:GMANual:RESult:EVM:PEAK?

Function Queries all results related to the EVM (peak).

Syntax :GMANual:RESult:EVM:PEAK?

Example :GMANual:RESult:EVM:PEAK? -> :GMAN:RES:EVM:PEAK:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

:GMANual:RESult:EVM:PEAK:AVERage?

Function Queries the average value of the EVM (peak).

Syntax :GMANual:RESult:EVM:PEAK:AVERage?

Example :GMANual:RESult:EVM:PEAK:AVERage? -> :GMAN:RES:EVM:PEAK:AVER 0.0000000E+00

:GMANual:RESult:EVM:PEAK:MAX?

Function Queries the maximum value of the EVM (peak).

Syntax :GMANual:RESult:EVM:PEAK:MAX?

Example :GMANual:RESult:EVM:PEAK:MAX? -> :GMAN:RES:EVM:PEAK:MAX 0.0000000E+00

:GMANual:RESult:EVM:PEAK:MIN?

Function Queries the minimum value of the EVM (peak).

Syntax :GMANual:RESult:EVM:PEAK:MIN?

Example :GMANual:RESult:EVM:PEAK:MIN? -> GMAN:RES:EVM:PEAK:MIN 0.0000000E+00

:GMANual:RESult:EVM:RMS?

Function Queries all results related to the EVM (RMS).

Syntax :GMANual:RESult:EVM:RMS?

Example :GMANual:RESult:EVM:RMS? -> :GMAN:RES:EVM:RMS:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

:GMANual:RESult:EVM:RMS:AVERage?

Function Queries the average value of the EVM (RMS).

Syntax :GMANual:RESult:EVM:RMS:AVERage?

Example :GMANual:RESult:EVM:RMS:AVERage? -> :GMAN:RES:EVM:RMS:AVER 0.0000000E+00

:GMANual:RESult:EVM:RMS:MAX?

Function Queries the maximum value of the EVM (RMS).

Syntax :GMANual:RESult:EVM:RMS:MAX?

Example :GMANual:RESult:EVM:RMS:MAX? ->
:GMAN:RES:EVM:RMS:MAX 0.0000000E+00

:GMANual:RESult:EVM:RMS:MIN?

Function Queries the minimum value of the EVM (RMS).

Syntax :GMANual:RESult:EVM:RMS:MIN?

Example :GMANual:RESult:EVM:RMS:MIN? ->
:GMAN:RES:EVM:RMS:MIN 0.0000000E+00

:GMANual:RESult:PER95th?

Function Queries all results related to the 95th percentile.

Syntax :GMANual:RESult:PER95th?

Example :GMANual:RESult:PER95th? -> :GMAN:
RES:PER95:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

Description All of the units in the response of the 95th percentile result are %.

:GMANual:RESult:PER95th:AVERage?

Function Queries the average value of the 95th percentile.

Syntax :GMANual:RESult:PER95th:AVERage?

Example :GMANual:RESult:PER95th:AVERage? ->
:GMAN:RES:PER95:AVER 0.0000000E+00

:GMANual:RESult:PER95th:MAX?

Function Queries the maximum value of the 95th percentile.

Syntax :GMANual:RESult:PER95th:MAX?

Example :GMANual:RESult:PER95th:MAX? ->
:GMAN:RES:PER95:MAX 0.0000000E+00

:GMANual:RESult:PER95th:MIN?

Function Queries the minimum value of the 95th percentile.

Syntax :GMANual:RESult:PER95th:MIN?

Example :GMANual:RESult:PER95th:MIN? ->
:GMAN:RES:PER95:MIN 0.0000000E+00

:GMANual:RESult:RXTest:TIMESlot

Function Sets the timeslot number for which you want to retrieve the RX measurement result or queries the current setting.

Syntax :GMANual:RESult:RXTest:TIMESlot
{OVR|TS3|TS4|TS5|TS6}
:GMANual:RESult:RXTest:TIMESlot?

Example :GMANual:RESult:RXTest:TIMESlot OVR
:GMANual:RESult:RXTest:TIMESlot? ->
:GMAN:RES:RXT:TIMES OVR

Description
- After executing this command, the response to :GMANual:RESult: will correspond to the slot number specified here. This setting can be specified independent of the measurement timeslot setting.
- The settings and responses are as follows.
  OVR : Specifies Overall
  TS3 : Specifies time slot 3
  TS4 : Specifies time slot 4
  TS5 : Specifies time slot 5
  TS6 : Specifies time slot 6

:GMANual:RESult:RXTest:MCOunt?

Function Queries the measurement count of the RX characteristics measurement.

Syntax :GMANual:RESult:RXTest:MCOunt?

Example :GMANual:RESult:RXTest:MCOunt? ->
:GMAN:RES:RXT:MCO 0

:GMANual:RESult:FER?

Function Queries the measured results of the FER, RBER1b, and RBER2.

Syntax :GMANual:RESult:FER?

Example :GMANual:RESult:FER? -> :GMAN:RES:
FER 0.0000000E+00,0.0000000E+00,
0.0000000E+00

Description All of the units in the response of the FER result are %. The result is returned in the order <FER>, <RBER1b>, and <RBER2>.

:GMANual:RESult:FER:FRNumber?

Function Queries the number of bits or frames that has been measured for the FER, RBER1b, and RBER2.

Syntax :GMANual:RESult:FER:FRNumber?

Example :GMANual:RESult:FER:FRNumber? ->
:GMAN:RES:FER:FRN 0,0,0

Description The result is returned in the following order: the number of measured frames, the number of bits (RBER1b), and the number of bits (RBER2).

:GMANual:RESult:FER:FERData:FER?

Function Queries the FER measurement result.

Syntax :GMANual:RESult:FER:FERData:FER?

Example :GMANual:RESult:FER:FERData:FER? ->
:GMANual:RESult:FER:FERD:
FER 0.0000000E+00

Description The unit in the response of the FER result is %.

:GMANual:RESult:FER:FERData:FRNumber?

Function Queries the number of frames that have been measured in the FER measurement.

Syntax :GMANual:RESult:FER:FERData:FRNumber?

Example :GMANual:RESult:FER:FERData:
FRNumber? -> :GMANual:RESult:FER:
FERD:FRN 0

:GMANual:RESult:FER:FERData:ERRNumber?

Function Queries the number of error frames in the FER measurement.

Syntax :GMANual:RESult:FER:FERData:
ERRNumber?

Example :GMANual:RESult:FER:FERData:
ERRNumber? -> :GMANual:RESult:FER:
FERD:ERRN 0

:GMANual:RESult:FER:RBER1bdata:RBER1b?

Function Queries the RBER1b measurement result.

Syntax :GMANual:RESult:FER:RBER1bdata:
RBER1b?

Example :GMANual:RESult:FER:RBER1bdata:
RBER1b? -> :GMANual:RESult:FER:RBER1:
RBER1 0.0000000E+00

Description The unit in the response of the RBER1b result is %.

:GMANual:RESult:FER:RBER1bdata:BNUMber?

Function Queries the number of measured bits in the RBER1b measurement.

Syntax :GMANual:RESult:FER:RBER1bdata:
BNUMber?

Example :GMANual:RESult:FER:RBER1bdata:
BNUMber? -> :GMANual:RESult:FER:
RBER1:BNUM 0

:GMANual:RESult:FER:RBER1bdata:ERRNumber?

Function Queries the number of error bits in the RBER1b measurement.

Syntax :GMANual:RESult:FER:RBER1bdata:
ERRNumber?

Example :GMANual:RESult:FER:RBER1bdata:
ERRNumber? -> :GMANual:RESult:FER:
RBER1:ERRN 0

:GMANual:RESult:FER:RBER2data:RBER2?

Function Queries the RBER2 measurement result.

Syntax :GMANual:RESult:FER:RBER2data:RBER2?

Example :GMANual:RESult:FER:RBER2data:
RBER2? -> :GMANual:RESult:FER:RBER2:
RBER2 0.0000000E+00

Description The unit in the response of the RBER2 result is %.

:GMANual:RESult:FER:RBER2data:BNUMber?

Function Queries the number of measured bits in the RBER2 measurement.

Syntax :GMANual:RESult:FER:RBER2data:
BNUMber?

Example :GMANual:RESult:FER:RBER2data:
BNUMber? -> :GMANual:RESult:FER:
RBER2:BNUM 0

:GMANual:RESult:FER:RBER2data:ERRNumber?

Function Queries the number of error bits in the RBER2 measurement.

Syntax :GMANual:RESult:FER:RBER2data:
ERRNumber?

Example :GMANual:RESult:FER:RBER2data:
ERRNumber? -> :GMANual:RESult:FER:
RBER2:ERRN 0

:GMANual:RESult:BER?

Function Queries the BER measurement result when the test loop mode is Burst-by-Burst (C).

Syntax :GMANual:RESult:BER?

Example :GMANual:RESult:BER? ->
:GMAN:RES:BER 0.0000000E+00

:GMANual:RESult:BER:BNUMber?

Function Queries the number of bits that have been measured in the BER measurement when the test loop mode is Burst-by-Burst (C).

Syntax :GMANual:RESult:BER:BNUMber?

Example :GMANual:RESult:BER:BNUMber? ->
:GMAN:RES:BER:BNUM 0

:GMANual:RESult:BER:ERRNumber?

Function Queries the number of error bits in the BER measurement when the test loop mode is Burst-by-Burst (C).

Syntax :GMANual:RESult:BER:ERRNumber?

Example :GMANual:RESult:BER:ERRNumber? -> :GMAN:RES:BER:ERRN 0

:GMANual:RESult:BLER?

Function Queries the measured results of the BLER, BER, CRC error, and data rate.

Syntax :GMANual:RESult:BLER?

Example :GMANual:RESult:BLER? -> :GMAN:RES:BLER 0.0000000E+00,0.0000000E+00,0.0000000E+00:DATAR 14.637769E+00

Description All of the units in the response of the BLER result are %. The result is returned in the order <BLER>, <BER>, <CRC Error>, and <Data Rate>.

:GMANual:RESult:BLER:DATARate?

Function Queries the data rate.

Syntax :GMANual:RESult:BLER:DATARate?

Example :GMANual:RESult:BLER:DATARate? -> :GMAN:RES:BLER:DATAR 14.645701E+00

Description Returns the data rate of the slot number specified by :GMANual:RESult:RXTest:TIMESlot.

:GMANual:RESult:BLER:BLNumber?

Function Queries the number of blocks and bits that have been measured in the BLER, BER, CRC error, and data rate measurements.

Syntax :GMANual:RESult:BLER:BLNumber?

Example :GMANual:RESult:BLER:BLNumber? -> :GMAN:RES:BLER:BLN 0,0

Description The result is returned in the following order: the number of measured blocks and the number of bits.

:GMANual:RESult:BLER:BLERData:BLER?

Function Queries the BLER measurement result.

Syntax :GMANual:RESult:BLER:BLERData:BLER?

Example :GMANual:RESult:BLER:BLERData:BLER? -> :GMANual:RESult:BLER:BLERD:BLER 0.0000000E+00

Description The unit in the response of the BLER result is %. Returns the BLER of the slot number specified by :GMANual:RESult:RXTest:TIMESlot.

:GMANual:RESult:BLER:BLERData:BLNumber?

Function Queries the number of blocks that have been measured in the BLER measurement.

Syntax :GMANual:RESult:BLER:BLERData:BLNumber?

Example :GMANual:RESult:BLER:BLERData:BLNumber? -> :GMANual:RESult:BLER:BLERD:BLN 0

Description Returns the number of measured blocks in the BLER measurement for the slot number specified by :GMANual:RESult:RXTest:TIMESlot.

:GMANual:RESult:BLER:BLERData:ERRNumber?

Function Queries the number of error blocks in the BLER measurement.

Syntax :GMANual:RESult:BLER:BLERData:ERRNumber?

Example :GMANual:RESult:BLER:BLERData:ERRNumber? -> :GMANual:RESult:BLER:BLERD:ERRN 0

Description Returns the number of error blocks in the BLER measurement for the slot number specified by :GMANual:RESult:RXTest:TIMESlot.

:GMANual:RESult:BLER:BERData:BER?

Function Queries the BER measurement result.

Syntax :GMANual:RESult:BLER:BERData:BER?

Example :GMANual:RESult:BLER:BERData:BER? -> :GMANual:RESult:BLER:BERD:BER 0.0000000E+00

Description The unit in the response of the BER result is %. Returns the BLER-BER of the slot number specified by :GMANual:RESult:RXTest:TIMESlot.

:GMANual:RESult:BLER:BERData:BNUMber?

Function Queries the number of measured bits of the BER measurement.

Syntax :GMANual:RESult:BLER:BERData:BNUMber?

Example :GMANual:RESult:BLER:BERData:BNUMber? -> :GMANual:RESult:BLER:BERD:BNUM 0

Description Returns the number of measured bits in the BLER-BER measurement for the slot number specified by :GMANual:RESult:RXTest:TIMESlot.

:GMANual:RESult:BLER:BERData:ERRNumber?

Function Queries the number of error bits in the BER measurement.

Syntax :GMANual:RESult:BLER:BERData:ERRNumber?

Example :GMANual:RESult:BLER:BERData:ERRNumber? -> :GMANual:RESult:BLER:BERD:ERRN 0

Description Returns the number of error bits in the BLER-BER measurement for the slot number specified by :GMANual:RESult:RXTest:TIMESlot.

:GMANual:RESult:BLER:CRCError?

Function Queries the CRC error.

Syntax :GMANual:RESult:BLER:CRCError?

Example :GMANual:RESult:BLER:CRCError? -> :GMAN:RES:BLER:CRCE 0.0000000E+00

Description Returns the CRC error of the slot number specified by :GMANual:RESult:RXTest:TIMESlot.

:GMANual:RESult:UEReport?

Function Queries all the UE report results.

Syntax :GMANual:RESult:UEReport?

Example :GMANual:RESult:UEReport? -> :GMAN:RES:UER:RXQ 0;RXL 43;MSP 5:GMAN:RES:UER:RXQ 0;RXL NOEX;MSP NOEX;CVA 0;SIGV 0;GMM 0;GMC 0;P8M NOEX;P8C NOEX

:GMANual:RESult:UEReport:RXQuality?

Function Queries the UE report (RX quality).

Syntax :GMANual:RESult:UEReport:RXQuality?

Example :GMANual:RESult:UEReport:RXQuality? -> :GMAN:RES:UER:RXQ 0

:GMANual:RESult:UEReport:RXLevel?

Function Queries the UE report (RX level).

Syntax :GMANual:RESult:UEReport:RXLevel?

Example :GMANual:RESult:UEReport:RXLevel? -> :GMAN:RES:UER:RXL 43

:GMANual:RESult:UEReport:MSPower?

Function Queries the UE report (actual MS power).

Syntax :GMANual:RESult:UEReport:MSPower?

Example :GMANual:RESult:UEReport:MSPower? -> :GMAN:RES:UER:MSP 5

:GMANual:RESult:UEReport:CVALue?

Function Queries the UE report (C value).

Syntax :GMANual:RESult:UEReport:CVALue?

Example :GMANual:RESult:UEReport:CVALue? -> :GMAN:RES:UER:CVAL

:GMANual:RESult:UEReport:SIGVar?

Function Queries the UE report (signal var).

Syntax :GMANual:RESult:UEReport:SIGVar?

Example :GMANual:RESult:UEReport:SIGVar? -> :GMAN:RES:UER:SIGV 5

:GMANual:RESult:UEReport:GMMean?

Function Queries the UE report (GMSK-MEAN-BEP).

Syntax :GMANual:RESult:UEReport:GMMean?

Example :GMANual:RESult:UEReport:GMMean? -> :GMAN:RES:UER:GMM 5

:GMANual:RESult:UEReport:GMCv?

Function Queries the UE report (GMSK-CV-BEP).

Syntax :GMANual:RESult:UEReport:GMCv?

Example :GMANual:RESult:UEReport:GMCv? -> :GMAN:RES:UER:GMC 5

:GMANual:RESult:UEReport:P8Mean?

Function Queries the UE report (8PSK-MEAN-BEP).

Syntax :GMANual:RESult:UEReport:P8Mean?

Example :GMANual:RESult:UEReport:P8Mean? -> :GMAN:RES:UER:P8M 5

:GMANual:RESult:UEReport:P8Cv?

Function Queries the UE report (8PSK-CV-BEP).

Syntax :GMANual:RESult:UEReport:P8Cv?

Example :GMANual:RESult:UEReport:P8Cv? -> :GMAN:RES:UER:P8C 5

:GMANual:RESult:UEINfo?

Function Queries all of the information retrieved from the mobile phone.

Syntax :GMANual:RESult:UEINfo?

Example :GMANual:RESult:UEINfo? -> :GMAN:RES:UEIN:IMSI "001010000000010";IMEI "123456789012345";POW 0

:GMANual:RESult:UEINfo:IMSI?

Function Queries the IMSI retrieved from the mobile phone.

Syntax :GMANual:RESult:UEINfo:IMSI?

Example :GMANual:RESult:UEINfo:IMSI? -> :GMAN:RES:UEIN:IMSI "001010000000010"

:GMANual:RESult:UEINfo:IMEI?

Function Queries the IMEI retrieved from the mobile phone.

Syntax :GMANual:RESult:UEINfo:IMEI?

Example :GMANual:RESult:UEINfo:IMEI? -> :GMAN:RES:UEIN:IMEI "123456789012345"

:GMANual:RESult:UEINfo:POWerclass?

Function Queries the power class retrieved from the mobile phone.

Syntax :GMANual:RESult:UEINfo:POWerclass?

Example :GMANual:RESult:UEINfo:POWerclass? -> :GMAN:RES:UEIN:POW 0

:GMANual:RESult:UEINfo:MULTiclass?

Function Queries the multislot class of the UE information.

Syntax :GMANual:RESult:UEINfo:MULTiclass?

Example :GMANual:RESult:UEINfo:MULTiclass? -> :GMAN:RES:UEIN:MULT 10,0

Description Returns the multislot class in the following order: GMSK and 8PSK. Zero is returned for unsupported classes.

:GMANual:RESult:UEINfo:BAND?

Function Queries the band information of the UE information.

Syntax :GMANual:RESult:UEINfo:BAND?

Example :GMANual:RESult:UEINfo:BAND? -> :GMAN:RES:UEIN:BAND E,1,0,0

Description Returns the band support information in the following order: GSM900, DCS1800, GSM850, and PCS1900. Zero is returned for unsupported bands.
If GSM900 is supported, E, R, or P is returned in the relevant digit.
E, R, and P represent E-GSM, R-GSM, and P-GSM, respectively. For other bands, 1 is returned in the relevant digit if it is supported.

:GMANual:RESult:UEINfo:BANDPwrclass?

Function Queries the power class information for each band of the UE information.

Syntax :GMANual:RESult:UEINfo:BANDPwrclass?

Example :GMANual:RESult:UEINfo:BANDPwrclass? -> :GMAN:RES:UEIN:BANDP:GSM900 4,0;DCS1800 1,0;GSM850 0,0;PCS1900 0,0

:GMANual:RESult:UEINfo:BANDPwrclass:GSM900?

Function Queries the power class information of GSM900 of the UE information.

Syntax :GMANual:RESult:UEINfo:BANDPwrclass:GSM900?

Example :GMANual:RESult:UEINfo:BANDPwrclass:GSM900? -> :GMAN:RES:UEIN:BANDP:GSM900 4,0

Description The power class is returned in the following order: GMSK and 8PSK. Zero is returned for unsupported classes.

:GMANual:RESult:UEINfo:BANDPwrclass:DCS1800?

Function Queries the power class information of DCS1800 of the UE information.

Syntax :GMANual:RESult:UEINfo:BANDPwrclass:DCS1800?

Example :GMANual:RESult:UEINfo:BANDPwrclass:DCS1800? -> :GMAN:RES:UEIN:BANDP:DCS1800 1,0

Description The power class is returned in the following order: GMSK and 8PSK. Zero is returned for unsupported classes.

:GMANual:RESult:UEINfo:BANDPwrclass:GSM850?

Function Queries the power class information of GSM850 of the UE information.

Syntax :GMANual:RESult:UEINfo:BANDPwrclass:GSM850?

Example :GMANual:RESult:UEINfo:BANDPwrclass:GSM850? -> :GMAN:RES:UEIN:BANDP:GSM850 0,0

Description The power class is returned in the following order: GMSK and 8PSK. Zero is returned for unsupported classes.

:GMANual:RESult:UEINfo:BANDPwrclass:PCS1900?

Function Queries the power class information of DCS1800 of the UE information.

Syntax :GMANual:RESult:UEINfo:BANDPwrclass:PCS1900?

Example :GMANual:RESult:UEINfo:BANDPwrclass:PCS1900? -> :GMAN:RES:UEIN:BANDP:PCS1900 0,0

Description The power class is returned in the following order: GMSK and 8PSK. Zero is returned for unsupported classes.

:GMANual:RESult:DIALnumber?

Function Queries the dial number for the call setup.

Syntax :GMANual:RESult:DIALnumber?

Example :GMANual:RESult:DIALnumber? -> :GMAN:RES:DIAL "1234567890#*"

5.2.11 RTARget Group

:GMANual:RTARget

Function Sets the measurement items of the RX characteristics measurement or queries the current setting.

```
Syntax  :GMANual:RTARget {FER|BER}
        :GMANual:RTARget?
Example :GMANual:RTARget FER
        :GMANual:RTARget? -> :GMAN:RTAR FER
```

5.2.12 RXTest Group

:GMANual:RXTest?

Function Queries all settings related to RX characteristics measurement.

```
Syntax  :GMANual:RXTest?
Example :GMANual:RXTest? -> :GMAN:RXT:FER:
        EXEC OFF;B1BN 132000;B2BN 78000;
        FRN 1000;:GMAN:RXT:BER:EXEC OFF;BNUM
        114000;BSTN 1000
```

:GMANual:RXTest:FER?

Function Queries all settings related to the FER measurement.

```
Syntax  :GMANual:RXTest:FER?
Example :GMANual:RXTest:FER? -> :GMAN:RXT:
        FER:EXEC OFF;B1BN 132000;
        B2BN 78000;FRN 1000
```

:GMANual:RXTest:FER:EXECute

Function Turns ON/OFF the FER measurement or queries the current setting.

```
Syntax  :GMANual:RXTest:FER:EXECute {ON|OFF}
        :GMANual:RXTest:FER:EXECute?
Example :GMANual:RXTest:FER:EXECute OFF
        :GMANual:RXTest:FER:EXECute? ->
        :GMAN:RXT:FER:EXEC OFF
```

:GMANual:RXTest:FER:B1BNumber?

Function Queries the number of measured bits of the FER measurement (RBER1b).

```
Syntax  :GMANual:RXTest:FER:B1BNumber?
Example :GMANual:RXTest:FER:B1BNumber? ->
        :GMAN:RXT:FER:B1BN 1320000
```

:GMANual:RXTest:FER:B2BNumber?

Function Queries the number of measured bits of the FER measurement (RBER2).

```
Syntax  :GMANual:RXTest:FER:B2BNumber?
Example :GMANual:RXTest:FER:B2BNumber? ->
        :GMAN:RXT:FER:B2BN 780000
```

:GMANual:RXTest:FER:FRNumber

Function Sets the number of measured frames of the FER measurement or queries the current setting.

```
Syntax  :GMANual:RXTest:FER:FRNumber <number>
        :GMANual:RXTest:FER:FRNumber?
Example :GMANual:RXTest:FER:FRNumber 1000
        :GMANual:RXTest:FER:FRNumber? ->
        :GMAN:RXT:FER:FRN 1000
```

:GMANual:RXTest:BER?

Function Queries all settings related to the BER measurement.

```
Syntax  :GMANual:RXTest:BER?
Example :GMANual:RXTest:BER? -> :GMAN:RXT:
        BER:EXEC OFF;BNUM 114000;BSTN 1000
```

:GMANual:RXTest:BER:EXECute

Function Turns ON/OFF the BER measurement or queries the current setting.

```
Syntax  :GMANual:RXTest:BER:EXECute {ON|OFF}
        :GMANual:RXTest:BER:EXECute?
Example :GMANual:RXTest:BER:EXECute OFF
        :GMANual:RXTest:BER:EXECute? ->
        :GMAN:RXT:BER:EXEC OFF
```

:GMANual:RXTest:BER:BNUMber

Function Sets the number of measured bits of the BER measurement or queries the current setting.

```
Syntax  :GMANual:RXTest:BER:BNUMber <number>
        :GMANual:RXTest:BER:BNUMber?
Example :GMANual:RXTest:BER:BNUMber 10000
        :GMANual:RXTest:BER:BNUMber? ->
        :GMAN:RXT:BER:BNUM 114000
```

:GMANual:RXTest:BER:BSTNumber

Function Sets the number of measured bursts of the BER measurement or queries the current setting.

```
Syntax  :GMANual:RXTest:BER:
        BSTNumber <number>
        :GMANual:RXTest:BER:BSTNumber?
Example :GMANual:RXTest:BER:BSTNumber 1000
        :GMANual:RXTest:BER:BSTNumber? ->
        :GMAN:RXT:BER:BSTN 1000
```

:GMANual:RXTest:BLER:EXECute

Function Turns ON/OFF the BLER measurement or queries the current setting.

```
Syntax  :GMANual:RXTest:BLER:EXECute {ON|OFF}
        :GMANual:RXTest:BLER:EXECute?
Example :GMANual:RXTest:BLER:EXECute OFF
        :GMANual:RXTest:BLER:EXECute? ->
        :GMAN:RXT:BLER:EXEC OFF
```

:GMANual:RXTest:BLER:BNUMber?

Function Queries the number of measured bits of the BLER measurement.

Syntax :GMANual:RXTest:BLER:?

Example :GMANual:RXTest:FER:BNUMber? ->
:GMAN:RXT:BLER:BNUM 160000

:GMANual:RXTest:BLER:BLNumber

Function Sets the number of measured blocks of the BLER measurement or queries the current setting.

Syntax :GMANual:RXTest:BLER:
BLNumber <number>
:GMANual:RXTest:BLER:BLNumber?

Example :GMANual:RXTest:BLER:BLNumber 1000
:GMANual:RXTest:BLER:BLNumber? ->
:GMAN:RXT:BLER:BLN 1000

5.2.13 TSPDisplay Group

:GMANual:TSPDisplay?

Function Queries all settings related to the output spectrum.

Syntax :GMANual:TSPDisplay?

Example :GMANual:TSPDisplay? -> :GMAN:TSPD:
SPEC MOD;POW:MOD P0K;SWIT P0K

:GMANual:TSPDisplay:SPECtrum

Function Sets the detail display of the output spectrum or queries the current setting.

Syntax :GMANual:TSPDisplay:
SPECtrum {MODulation|SWITched}
:GMANual:TSPDisplay:SPECtrum?

Example :GMANual:TSPDisplay:
SPECtrum {MODulation|SWITched}
:GMANual:TSPDisplay:SPECtrum? ->
:GMAN:TSPD:SPEC MOD

Description The setting and response format is as follows.

MODulation: due to modulation
SWITched: due to switching transients

:GMANual:TSPDisplay:POWer?

Function Queries the frequency offset setting of each spectrum (Modulation/Switch transients) of OutputSpectrum measurement.

Syntax :GMANual:TSPDisplay:POWer?

Example :GMANual:TSPDisplay:POWer? ->
:GMAN:TSPD:POW:MOD P0K;SWIT P0K

:GMANual:TSPDisplay:POWer:MODulation

Function Sets which frequency offset power trend to display when measuring OutputSpectrum (Modulation) or queries the current setting.

Syntax :GMANual:TSPDisplay:POWer:
MODulation {M1800K|M1600K|M1400K|
M1200K|M1000K|M800K|M600K|M400K|
M250K|M200K|M100K|P0K|P100K|P200K|
P250K|P400K|P600K|P800K|P1000K|
P1200K|P1400K|P1600K|P1800K}
:GMANual:TSPDisplay:POWer:MODulation?

Example :GMANual:TSPDisplay:POWer:
MODulation P0K
:GMANual:TSPDisplay:POWer:MODulation?
-> :GMAN:TSPD:POW:MOD P0K

Description The settings and responses are as follows.

M1800 K : Displays a -1800 kHz (frequency offset) power trend
M1600 K : Displays a -1600 kHz (frequency offset) power trend
M1400K : Displays a -1400 kHz (frequency offset) power trend
M1200K : Displays a -1200 kHz (frequency offset) power trend
M1000K : Displays a -1000 kHz (frequency offset) power trend
M800K : Displays a -800 kHz (frequency offset) power trend
M600K : Displays a -600 kHz (frequency offset) power trend
M400K : Displays a -400 kHz (frequency offset) power trend
M250K : Displays a -250 kHz (frequency offset) power trend
M200K : Displays a -200 kHz (frequency offset) power trend
M100K : Displays a -100 kHz (frequency offset) power trend
P0 K : Displays a 0 kHz (frequency offset) power trend
P100K : Displays a 100 kHz (frequency offset) power trend
P200K : Displays a 200 kHz (frequency offset) power trend
P250K : Displays a 250 kHz (frequency offset) power trend
P400K : Displays a 400 kHz (frequency offset) power trend
P600K : Displays a 600 kHz (frequency offset) power trend
P800K : Displays a 800 kHz (frequency offset) power trend
P1000K : Displays a 1000 kHz (frequency offset) power trend
P1200K : Displays a 1200 kHz (frequency offset) power trend
P1400K : Displays a 1400 kHz (frequency offset) power trend
P1600K : Displays a 1600 kHz (frequency offset) power trend
P1800K : Displays a 1800 kHz (frequency offset) power trend

:GMANual:TSPDisplay:POWer:SWITched

Function Sets which frequency offset power trend to display when measuring OutputSpectrum (Switch transients) or queries the current setting.

Syntax
```
:GMANual:TSPDisplay:POWer:
SWITched {M1800K|M1200K|M600K|M400K|
P0K|P400K|P600K|P1200K|P1800K}
:GMANual:TSPDisplay:POWer:SWITched?
```

Example
```
:GMANual:TSPDisplay:POWer:
SWITched P0K
:GMANual:TSPDisplay:POWer:SWITched?
-> :GMAN:TSPD:POW:SWIT P0K
```

Description The settings and responses are as follows.

- M1800K: Displays a -1800 kHz (frequency offset) power trend
- M1200K: Displays a -1200 kHz (frequency offset) power trend
- M600K : Displays a -600 kHz (frequency offset) power trend
- M400K : Displays a -400 kHz (frequency offset) power trend
- P0 K : Displays a 0 kHz (frequency offset) power trend
- P400K : Displays a 400 kHz (frequency offset) power trend
- P600K : Displays a 600 kHz (frequency offset) power trend
- P1200K : Displays a 1200 kHz (frequency offset) power trend
- P1800K : Displays a 1800 kHz (frequency offset) power trend

5.2.14 TTARget Group

:GMANual:TTARget

Function Sets the measurement items of the TX characteristics measurement or queries the current setting.

Syntax
```
:GMANual:TTARget {TXPower|BURSt|
FLATness|TIMingerr|FERRor|PHASeerr|
OSPEctrum|MAGerr|ORIGinoffset|EVM|
PER95th}
:GMANual:TTARget?
```

Example
```
:GMANual:TTARget TXPower
:GMANual:TTARget? -> :GMAN:TTAR TXP
```

Description The settings and responses are as follows.

TXPower	:TxPower
BURSt	:Burst Timing
FLATness	:Flatness
TIMingerr	:Timing Error
FERRor	:Frequency Error
PHASeerr	:Phase Error
OSPEctrum	:Output Spectrum
MAGerr	:Magunitude Error
ORIGinoffset	:Origin Offset
EVM	:EVM
PER95th	:95:th percentile

5.2.15 TXTest Group

:GMANual:TXTest?

Function Queries all settings related to TX characteristics measurement.

Syntax
```
:GMANual:TXTest?
```

Example
```
:GMANual:TXTest? -> :GMAN:TXT:AVER:
CONT ON;COUN 10;:GMAN:TXT:MEAST TS4;
TXP:EXEC ON;:GMAN:TXT:FERR:EXEC ON;:
GMAN:TXT:BURS:EXEC ON;:GMAN:TXT:FLAT:
EXEC ON;:GMAN:TXT:TIM:EXEC ON;:GMAN:
TXT:PHAS:EXEC ON;:GMAN:TXT:OSPE:
EXEC ON;:GMAN:TXT:MAG:EXEC ON;:GMAN:
TXT:ORIG:EXEC ON;:GMAN:TXT:EVM:
EXEC ON;:GMAN:TXT:PER95:EXEC ON
```

:GMANual:TXTest:AVERage?

Function Queries all settings related to the average of TX characteristics measurement.

Syntax
```
:GMANual:TXTest:AVERage?
```

Example
```
:GMANual:TXTest:AVERage? ->
:GMAN:TXT:AVER:CONT ON;COUN 16
```

:GMANual:TXTest:AVERage:CONTrol

Function Turns ON/OFF the averaging of the TX characteristics measurement or queries the current setting.

Syntax
```
:GMANual:TXTest:AVERage:CONTrol {ON|
OFF}
:GMANual:TXTest:AVERage:CONTrol?
```

Example
```
:GMANual:TXTest:AVERage:CONTrol OFF
:GMANual:TXTest:AVERage:CONTrol? ->
:GMAN:TXT:AVER:CONT OFF
```

:GMANual:TXTest:AVERage:COUNt

Function Sets the average count of the TX characteristics measurement or queries the current setting.

Syntax
```
:GMANual:TXTest:AVERage:
COUNt <number>
:GMANual:TXTest:AVERage:COUNt?
```

Example
```
:GMANual:TXTest:AVERage:COUNt 10
:GMANual:TXTest:AVERage:COUNt? ->
:GMAN:TXT:AVER:COUN 10
```

:GMANual:TXTest:MEASTimeslot

Function Sets the measurement timeslot to be shown on the TX TEST screen or queries the current setting.

Syntax
```
:GMANual:TXTest:MEASTimeslot {TS3|TS4|TS5|TS6}
:GMANual:TXTest:MEASTimeslot?
```

Example
```
:GMANual:TXTest:MEASTimeslot TS3
:GMANual:TXTest:MEASTimeslot? ->
:GMAN:TXT:MEAST TS4
```

Description
- The settings and responses are as follows.
  TS3: Displays measured results of time slot 3
  TS4: Displays measured results of time slot 4
  TS5: Displays measured results of time slot 5
  TS6: Displays measured results of time slot 6
- Slots that are not used as uplink timeslots cannot be specified.

:GMANual:TXTest:TXPower:EXECute

Function Turns ON/OFF the TX power or queries the current setting.

Syntax
```
:GMANual:TXTest:TXPower:EXECute {ON|OFF}
:GMANual:TXTest:TXPower:EXECute?
```

Example
```
:GMANual:TXTest:TXPower:EXECute OFF
:GMANual:TXTest:TXPower:EXECute? ->
:GMAN:TXT:TXP:EXEC OFF
```

:GMANual:TXTest:FERRor:EXECute

Function Turns ON/OFF the frequency error or queries the current setting.

Syntax
```
:GMANual:TXTest:FERRor:EXECute {ON|OFF}
:GMANual:TXTest:FERRor:EXECute?
```

Example
```
:GMANual:TXTest:FERRor:EXECute OFF
:GMANual:TXTest:FERRor:EXECute? ->
:GMAN:TXT:FERR:EXEC OFF
```

:GMANual:TXTest:BURSt:EXECute

Function Turns ON/OFF the burst timing or queries the current setting.

Syntax
```
:GMANual:TXTest:BURSt:EXECute {ON|OFF}
:GMANual:TXTest:BURSt:EXECute?
```

Example
```
:GMANual:TXTest:BURSt:EXECute OFF
:GMANual:TXTest:BURSt:EXECute? ->
:GMAN:TXT:BURS:EXEC OFF
```

:GMANual:TXTest:FLATness:EXECute

Function Turns ON/OFF the flatness or queries the current setting.

Syntax
```
:GMANual:TXTest:FLAT:EXECute {ON|OFF}
:GMANual:TXTest:FLAT:EXECute?
```

Example
```
:GMANual:TXTest:FLAT:EXECute OFF
:GMANual:TXTest:FLAT:EXECute? ->
:GMAN:TXT:FLAT:EXEC OFF
```

:GMANual:TXTest:TIMingerr:EXECute

Function Turns ON/OFF the timing error or queries the current setting.

Syntax
```
:GMANual:TXTest:TIMingerr:EXECute {ON|OFF}
:GMANual:TXTest:TIMingerr:EXECute?
```

Example
```
:GMANual:TXTest:TIMingerr:EXECute OFF
:GMANual:TXTest:TIMingerr:EXECute? ->
:GMAN:TXT:TIM:EXEC OFF
```

:GMANual:TXTest:PHASeerr:EXECute

Function Turns ON/OFF the phase error or queries the current setting.

Syntax
```
:GMANual:TXTest:PHASeerr:EXECute {ON|OFF}
:GMANual:TXTest:PHASeerr:EXECute?
```

Example
```
:GMANual:TXTest:PHASeerr:EXECute OFF
:GMANual:TXTest:PHASeerr:EXECute? ->
:GMAN:TXT:PHAS:EXEC OFF
```

:GMANual:TXTest:OSPEctrum:EXECute

Function Turns ON/OFF the output spectrum or queries the current setting.

Syntax
```
:GMANual:TXTest:OSPEctrum:EXECute {ON|OFF}
:GMANual:TXTest:OSPEctrum:EXECute?
```

Example
```
:GMANual:TXTest:OSPEctrum:EXECute OFF
:GMANual:TXTest:OSPEctrum:EXECute? ->
:GMAN:TXT:OSPE:EXEC OFF
```

:GMANual:TXTest:MAGerr:EXECute

Function Turns ON/OFF the magnitude error or queries the current setting.

Syntax
```
:GMANual:TXTest:MAGerr:EXECute {ON|OFF}
:GMANual:TXTest:MAGerr:EXECute?
```

Example
```
:GMANual:TXTest:MAGerr:EXECute OFF
:GMANual:TXTest:MAGerr:EXECute? ->
:GMAN:TXT:MAG:EXEC OFF
```

:GMANual:TXTest:ORIGinoffset:EXECute

Function Turns ON/OFF the origin offset or queries the current setting.

Syntax
```
:GMANual:TXTest:ORIGinoffset:EXECute {ON|OFF}
:GMANual:TXTest:ORIGinoffset:EXECute?
```

Example
```
:GMANual:TXTest:ORIGinoffset:EXECute OFF
:GMANual:TXTest:ORIGinoffset:EXECute?
-> :GMAN:TXT:ORIG:EXEC OFF
```

:GMANual:TXTest:EVM:EXECute

Function Turns ON/OFF the EVM or queries the current setting.

Syntax `:GMANual:TXTest:EVM:EXECute {ON|OFF}`
`:GMANual:TXTest:EVM:EXECute?`

Example `:GMANual:TXTest:EVM:EXECute OFF`
`:GMANual:TXTest:EVM:EXECute? ->`
`:GMAN:TXT:EVM:EXEC OFF`

:GMANual:TXTest:PER95th:EXECute

Function Turns ON/OFF the 95th percentile or queries the current setting.

Syntax `:GMANual:TXTest:PER95th:EXECute {ON|OFF}`
`:GMANual:TXTest:PER95th:EXECute?`

Example `:GMANual:TXTest:PER95th:EXECute OFF`
`:GMANual:TXTest:PER95th:EXECute? ->`
`:GMAN:TXT:PER95:EXEC OFF`

5.2.16 TXView Group

:GMANual:TXView

Function Switches the display format.

Syntax `:GMANual:TXView {OVER|DETail}`

Example `:GMANual:TXView OVER`

Description The settings and responses are as follows.
OVER: Overview screen
DETail: Detail screen

5.3 TXRX Mode

This manual lists the response messages in the examples in the abbreviated form (the lowercase section of the message is omitted).

5.3.1 GTXRx?

:GTXRx?

Function Queries all settings related to measurement in TXRX mode.

Syntax :GTXRx?

Example :GTXRx? -> :GTXR:FREQ:BAND GSMDCS;
CHAN 0;DLFR 935.00E+00;
ULFR 890.00E+00;OFFS 0;:GTXR:POW:
CONT ON;DLP -60.000E+00;ULIN ON;
COMP:DLGSM 0.0000E+00;
DLDCS 0.0000E+00;DLPCS 0.0000E+00;
ULGSM 0.0000E+00;ULDCS 0.0000E+00;
ULPCS 0.0000E+00;:GTXR:PRES:
MODE LOAD;NUMB S1;:GTXR:DLP:MOD ON;
TYP PR9;:GTXR:ULP:RECE BURS;:GTXR:
PAR:MOD MGMSK;TIMES:ULTS1 ON;
ULTS2 OFF;ULTS3 OFF;ULTS4 OFF;:GTXR:
MEAS:ITEM TX;MODE REP;:GTXR:TXT:AVER:
CONT ON;COUN 10;:GTXR:TXT:
MEAST TS1;ITEM NORM;TXP:EXEC ON;:
GTXR:TXT:FERR:EXEC ON;:GTXR:TXT:BURS:
EXEC ON;:GTXR:TXT:FLAT:EXEC ON;:GTXR:
TXT:PHAS:EXEC ON;:GTXR:TXT:OSPE:
EXEC ON;:GTXR:TXT:MAG:EXEC ON;:GTXR:
TXT:ORIG:EXEC ON;:GTXR:TXT:EVM:
EXEC ON;:GTXR:TXT:PER95:EXEC ON;:
GTXR:TXT:DPOW:BURS 100;INL 30.0E+00;
RANG AUTO;TRIG:SRC POW;POL RIS;
DEL 0;:GTXR:TXT:DPOW:MSL 1;:GTXR:
TTAR TXP;TSPD:SPEC MOD;POW:MOD P0K;
SWIT P0K;:GTXR:TXV OVER

5.3.2 DLParam Group

:GTXRx:DLParam?

Function Queries all settings related to connection conditions (downlink parameters).

Syntax :GTXRx:DLParam?

Example :GTXRx:DLParam? ->
:GTXR:DLP:MOD ON;TYP BCCH

:GTXRx:DLParam:MODulation

Function Turns ON/OFF the modulation or queries the current setting.

Syntax :GTXRx:DLParam:MODulation {ON|OFF}
:GTXRx:DLParam:MODulation?

Example :GTXRx:DLParam:MODulation ON
:GTXRx:DLParam:MODulation? ->
:GTXR:DLP:MOD ON

:GTXRx:DLParam:TYPe

Function Sets the payload type or queries the current setting.

Syntax :GTXRx:DLParam:TYPe {ALL0|ALL1|PR9|BCCH}
:GTXRx:DLParam:TYPe?

Example :GTXRx:DLParam:TYPe PR9
:GTXRx:DLParam:TYPe? ->
:GTXR:DLP:TYP PR9

Description The setting and response format is as follows.
ALL0: Sets all zeroes in the payload.
ALL1: Sets all ones in the payload.
PR9: Sets PRBS9 in the payload.
BCCH: Transmits the BCCH.

5.3.3 FREQuency Group

:GTXRx:FREQuency?

Function Queries all settings related to the frequency.

Syntax :GTXRx:FREQuency?

Example :GTXRx:FREQuency? -> :GTXR:FREQ:
BAND GSMDCS;CHAN 0;DLFR 935.00E+00;
ULFR 890.00E+00;OFFS 0

:GTXRx:FREQuency:BAND

Function Sets the frequency band or queries the current setting.

Syntax :GTXRx:FREQuency:BAND {GSMDCS|GSMPCS}
:GTXRx:FREQuency:BAND?

Example :GTXRx:FREQuency:BAND GSMDCS
:GTXRx:FREQuency:BAND? ->
:GTXR:FREQ:BAND GSMDC

Description The setting and response format is as follows.
GSMDCS: GSM900/DCS1800
GSMPCS: GSM850/PCS1900

:GTXRx:FREQuency:CHANnel?

Function Queries the frequency channel.

Syntax :GTXRx:FREQuency:CHANnel?

Example :GTXRx:FREQuency:CHANnel? ->
:GTXR:FREQ:CHAN 0

:GTXRx:FREQuency:DLFReq?

Function Queries the downlink frequency.

Syntax :GTXRx:FREQuency:DLFReq?

Example :GTXRx:FREQuency:DLFReq? ->
:GTXR:FREQ:DLFR 935.00E+00

Description The frequency unit of the response is MHz.

:GTXRx:FREQuency:ULFReq?

Function Queries the uplink frequency.
Syntax :GTXRx:FREQuency:ULFReq?
Example :GTXRx:FREQuency:ULFReq? ->
:GTXR:FREQ:ULFR 890.00E+00
Description The frequency unit of the response is MHz.

:GTXRx:FREQuency:TMP:CHANnel

Function Sets the frequency channel temporarily or queries the current setting.
Syntax :GTXRx:FREQuency:TMP:CHANnel <number>
:GTXRx:FREQuency:TMP:CHANnel?
Example :GTXRx:FREQuency:TMP:CHANnel 0
:GTXRx:FREQuency:TMP:CHANnel? ->
:GTXR:FREQ:TMP:CHAN 0

:GTXRx:FREQuency:TMP:DLFReq

Function Sets the temporary downlink frequency or queries the current setting.
Syntax :GTXRx:FREQuency:TMP:
DLFReq <frequency>
:GTXRx:FREQuency:TMP:DLFReq?
Example :GTXRx:FREQuency:TMP:DLFReq 935
:GTXRx:FREQuency:TMP:DLFReq? ->
:GTXR:FREQ:TMP:DLFR 935.00E+00
Description The frequency unit of the setting and response is MHz.

:GTXRx:FREQuency:TMP:ULFReq

Function Sets the temporary uplink frequency or queries the current setting.
Syntax :GTXRx:FREQuency:TMP:
ULFReq <frequency>
:GTXRx:FREQuency:TMP:ULFReq?
Example :GTXRx:FREQuency:TMP:ULFReq 890
:GTXRx:FREQuency:TMP:ULFReq? ->
:GTXR:FREQ:TMP:ULFR 890.00E+00
Description The frequency unit of the setting and response is MHz.

:GTXRx:FREQuency:TMP:SET

Function Enters the temporary frequency settings.
Syntax :GTXRx:FREQuency:TMP:SET
Example :GTXRx:FREQuency:TMP:SET

:GTXRx:FREQuency:TMP:CANCel

Function Cancels the temporary frequency settings.
Syntax :GTXRx:FREQuency:TMP:CANCel
Example :GTXRx:FREQuency:TMP:CANCel

:GTXRx:FREQuency:OFFSet

Function Sets the frequency offset or queries the current setting.
Syntax :GTXRx:FREQuency:OFFSet <frequency>
:GTXRx:FREQuency:OFFSet?
Example :GTXRx:FREQuency:OFFSet 0
:GTXRx:FREQuency:OFFSet? ->
:GTXR:FREQ:OFFS 0
Description The frequency unit of the setting and response is kHz.

5.3.4 MEASure Group

:GTXRx:MEASure?

Function Queries the measurement item and measurement mode.
Syntax :GTXRx:MEASure?
Example :GTXRx:MEASure? ->
:GTXR:MEAS:ITEM TX;MODE REP

:GTXRx:MEASure:ITEM

Function Sets the measurement item or queries the current setting.
Syntax :GTXRx:MEASure:ITEM {TX|RX}
:GTXRx:MEASure:ITEM?
Example :GTXRx:MEASure:ITEM TX
:GTXRx:MEASure:ITEM? ->
:GTXR:MEAS:ITEM TX
Description The settings and responses are as follows.
TX : TX mesurement
RX : RX measurement

:GTXRx:MEASure:MODE

Function Sets the measurement mode or queries the current setting.
Syntax :GTXRx:MEASure:MODE {REPeat|SINGle}
:GTXRx:MEASure:MODE?
Example :GTXRx:MEASure:MODE REPeat
:GTXRx:MEASure:MODE? ->
:GTXR:MEAS:MODE REP
Description The settings and responses are as follows.
REPeat : Repeats measurement
SINGle : Single measurement

5.3.5 PARam Group

:GTXRx:PARam?

Function Queries all settings related to connection conditions (PARAM).

Syntax :GTXRx:PARam?

Example :GTXR:PAR:MOD MGMSK;TIMES:ULTS1 ON;ULTS2 OFF;ULTS3 OFF;ULTS4 OFF

:GTXRx:PARam:MODulation

Function Sets the downlink and uplink signal modulation or queries the current setting.

Syntax :GTXRx:PARam:MODulation {MGMSK|M8PSK}
:GTXRx:PARam:MODulation?

Example :GTXRx:PARam:MODulation MGMSK
:GTXRx:PARam:MODulation? ->
:GTXR:PAR:MOD MGMSK

Description The settings and responses are as follows.
MGMSK: Sets a modulation method of GSMK
M8PSK: Sets a modulation method of 8PSK

:GTXRx:PARam:TIMESlot?

Function Queries all settings related to the timeslot.

Syntax :GTXRx:PARam:TIMESlot?

Example :GTXRx:PARam:TIMESlot? ->
:GTXR:PAR:TIMES:ULTS1 ON;ULTS2 OFF;
ULTS3 OFF;ULTS4 OFF

:GTXRx:PARam:TIMESlot:ULTS1st

Function Sets whether to use uplink timeslot 1st or queries the current setting.

Syntax :GTXRx:PARam:TIMESlot:ULTS1st
{ON|OFF}
:GTXRx:PARam:TIMESlot:ULTS1st?

Example :GTXRx:PARam:TIMESlot:ULTS1st ON
:GTXRx:PARam:TIMESlot:ULTS1st? ->
:GTXR:PAR:TIMES:ULTS1 ON

:GTXRx:PARam:TIMESlot:ULTS2nd

Function Sets whether to use uplink timeslot 2nd or queries the current setting.

Syntax :GTXRx:PARam:TIMESlot:ULTS2nd
{ON|OFF}
:GTXRx:PARam:TIMESlot:ULTS2nd?

Example :GTXRx:PARam:TIMESlot:ULTS2nd OFF
:GTXRx:PARam:TIMESlot:ULTS2nd? ->
:GTXR:PAR:TIMES:ULTS2 OFF

:GTXRx:PARam:TIMESlot:ULTS3rd

Function Sets whether to use uplink timeslot 3rd or queries the current setting.

Syntax :GTXRx:PARam:TIMESlot:ULTS3rd
{ON|OFF}
:GTXRx:PARam:TIMESlot:ULTS3rd?

Example :GTXRx:PARam:TIMESlot:ULTS3rd OFF
:GTXRx:PARam:TIMESlot:ULTS3rd? ->
:GTXR:PAR:TIMES:ULTS3 OFF

:GTXRx:PARam:TIMESlot:ULTS4th

Function Sets whether to use uplink timeslot 4th or queries the current setting.

Syntax :GTXRx:PARam:TIMESlot:ULTS4th
{ON|OFF}
:GTXRx:PARam:TIMESlot:ULTS4th?

Example :GTXRx:PARam:TIMESlot:ULTS4th OFF
:GTXRx:PARam:TIMESlot:ULTS4th? ->
:GTXR:PAR:TIMES:ULTS4 OFF

5.3.6 POWer Group

:GTXRx:POWer?

Function Queries all settings related to the power.

Syntax :GTXRx:POWer?

Example :GTXRx:POWer? -> :GTXR:POW:CONT ON;DLP -40.000E+00;COMP:
DLGSM 0.0000E+00;DLDCS 0.0000E+00;
DLPCS 0.0000E+00;ULGSM 0.0000E+00;
ULDCS 0.0000E+00;ULPCS 0.0000E+00

:GTXRx:POWer:CONTrol

Function Sets the downlink power control or queries the current setting.

Syntax :GTXRx:POWer:CONTrol {ON|OFF}
:GTXRx:POWer:CONTrol?

Example :GTXRx:POWer:CONTrol ON
:GTXRx:POWer:CONTrol? ->
:GTXR:POW:CONT ON

Description This command is used to turn ON/OFF the RF output.

:GTXRx:POWer:DLPower

Function Sets the downlink power or queries the current setting.

Syntax :GTXRx:POWer:DLPower <power>
:GTXRx:POWer:DLPower?

Example :GTXRx:POWer:DLPower -60
:GTXRx:POWer:DLPower? ->
:GTXR:POW:DLP -60.000E+00

Description The power unit of the setting and response is dBm.

:GTXRx:POWer:COMPensation?

Function Queries all settings related to the power compensation.

Syntax :GTXRx:POWer:COMPensation?

Example :GTXRx:POWer:COMPensation? -> :GTXR:POW:COMP:DLGSM 0.0000E+00;
DLDCS 0.0000E+00;DLPCS 0.0000E+00;
ULGSM 0.0000E+00;ULDCS 0.0000E+00;
ULPCS 0.0000E+00

:GTXRx:POWer:COMPensation:DLGSM

Function Sets the downlink power compensation value (GSM band) or queries the current setting.

```
Syntax  :GTXRx:POWer:COMPensation:
        DLGSM <power>
        :GTXRx:POWer:COMPensation:DLGSM?
Example :GTXRx:POWer:COMPensation:DLGSM 0
        :GTXRx:POWer:COMPensation:DLGSM? ->
        :GTXR:POW:COMP:DLGSM 0.0000E+00
```

Description The unit in the setting and response of the compensation value is dB.

:GTXRx:POWer:COMPensation:DLDCS

Function Sets the downlink power compensation value (DCS band) or queries the current setting.

```
Syntax  :GTXRx:POWer:COMPensation:
        DLDCS <power>
        :GTXRx:POWer:COMPensation:DLDCS?
Example :GTXRx:POWer:COMPensation:DLDCS 0
        :GTXRx:POWer:COMPensation:DLDCS? ->
        :GTXR:POW:COMP:DLDCS 0.0000E+00
```

Description The unit in the setting and response of the compensation value is dB.

:GTXRx:POWer:COMPensation:DLPCS

Function Sets the downlink power compensation value (PCS band) or queries the current setting.

```
Syntax  :GTXRx:POWer:COMPensation:
        DLPCS <power>
        :GTXRx:POWer:COMPensation:DLPCS?
Example :GTXRx:POWer:COMPensation:DLPCS 0
        :GTXRx:POWer:COMPensation:DLPCS? ->
        :GTXR:POW:COMP:DLPCS 0.0000E+00
```

Description The unit in the setting and response of the compensation value is dB.

:GTXRx:POWer:COMPensation:ULGSM

Function Sets the uplink power compensation value (GSM band) or queries the current setting.

```
Syntax  :GTXRx:POWer:COMPensation:
        ULGSM <power>
        :GTXRx:POWer:COMPensation:ULGSM?
Example :GTXRx:POWer:COMPensation:ULGSM 0
        :GTXRx:POWer:COMPensation:ULGSM? ->
        :GTXR:POW:COMP:ULGSM 0.0000E+00
```

Description The unit in the setting and response of the compensation value is dB.

:GTXRx:POWer:COMPensation:ULDCS

Function Sets the uplink power compensation value (DCS band) or queries the current setting.

```
Syntax  :GTXRx:POWer:COMPensation:
        ULDCS <power>
        :GTXRx:POWer:COMPensation:ULDCS?
Example :GTXRx:POWer:COMPensation:ULDCS 0
        :GTXRx:POWer:COMPensation:ULDCS? ->
        :GTXR:POW:COMP:ULDCS 0.0000E+00
```

Description The unit in the setting and response of the compensation value is dB.

:GTXRx:POWer:COMPensation:ULPCS

Function Sets the uplink power compensation value (PCS band) or queries the current setting.

```
Syntax  :GTXRx:POWer:COMPensation:
        ULPCS <power>
        :GTXRx:POWer:COMPensation:ULPCS?
Example :GTXRx:POWer:COMPensation:ULPCS 0
        :GTXRx:POWer:COMPensation:ULPCS? ->
        :GTXR:POW:COMP:ULPCS 0.0000E+00
```

Description The unit in the setting and response of the compensation value is dB.

:GTXRx:POWer:ULINput

Function Turns ON/OFF the uplink RF input or queries the current setting.

```
Syntax  :GTXRx:POWer:ULINput {ON|OFF}
        :GTXRx:POWer:ULINput?
Example :GTXRx:POWer:ULINput ON
        :GTXRx:POWer:ULINput? ->
        :GTXR:POW:ULIN ON
```

Description If this setting is turned OFF, the uplink RF input attenuator can be set to the maximum value. Consequently, the RF output power accuracy can be improved when a low level is set. However, measurement is not performed if this setting is OFF.

5.3.7 PRESet Group

:GTXRx:PRESet?

Function Queries all settings related to presets.
Syntax :GTXRx:PRESet?
Example :GTXRx:PRESet? -> :GTXR:PRES:MODE LOAD;NUMB S1

:GTXRx:PRESet:MODE

Function Sets the preset mode or queries the current setting.
Syntax :GTXRx:PRESet:MODE {LOAD|SAVE}
:GTXRx:PRESet:MODE?
Example :GTXRx:PRESet:MODE LOAD
:GTXRx:PRESet:MODE? ->
:GTXR:PRES:MODE LOAD
Description The settings and responses are as follows.
LOAD: Sets the preset mode to Load
SAVE: Sets the preset mode to Save
After setting the preset mode with this command, you can load or save by executing the :GTXR:PRESet:EXECute command.

:GTXRx:PRESet:NUMBer

Function Sets the preset number or queries the current setting.
Syntax :GTXRx:PRESet:NUMBer {S1|S2|S3|S4|S5|S6}
:GTXRx:PRESet:NUMBer?
Example :GTXRx:PRESet:NUMBer S1
:GTXRx:PRESet:NUMBer? ->
:GTXR:PRES:NUMB S1
Description After setting the preset mode with this command, you can load or save by executing the :GTXR:PRESet:EXECute command.

:GTXRx:PRESet:VALid?

Function Queries whether the settings of the specified preset number are valid.
Syntax :GTXRx:PRESet:VALid?
Example :GTXRx:PRESet:VALid? ->
:GTXR:PRES:VAL VAL
Description The responses are as follows.
INValid: Preset value not saved to the specified preset number.
VALid: Specified preset number is valid.

:GTXRx:PRESet:BAND?

Function Queries the frequency band in the preset.
Syntax :GTXRx:PRESet:BAND?
Example :GTXRx:PRESet:BAND? ->
:GTXR:PRES:BAND GSMDCS
Description The response format is as follows:
GSMDCS: GSM900/DCS1800
GSMPCS: GSM850/PCS1900

:GTXRx:PRESet:CHANNel?

Function Queries the channel in the preset.
Syntax :GTXRx:PRESet:CHANNel?
Example :GTXRx:PRESet:CHANNel? ->
:GTXR:PRES:CHAN 0

:GTXRx:PRESet:DLFReq?

Function Queries the downlink frequency in the preset.
Syntax :GTXRx:PRESet:DLFReq?
Example :GTXRx:PRESet:DLFReq? ->
:GTXR:PRES:DLFR 935.00E+00
Description The frequency unit of the response is MHz.

:GTXRx:PRESet:ULFReq?

Function Queries the uplink frequency in the preset.
Syntax :GTXRx:PRESet:ULFReq?
Example :GTXRx:PRESet:ULFReq? ->
:GTXR:PRES:ULFR 890.00E+00
Description The frequency unit of the response is MHz.

:GTXRx:PRESet:DLPower?

Function Queries the downlink power in the preset.
Syntax :GTXRx:PRESet:DLPower?
Example :GTXRx:PRESet:DLPower? ->
:GTXR:PRES:DLP -60.000E+00
Description The power unit of the response is dBm.

:GTXRx:PRESet:EXECute

Function Executes preset.
Syntax :GTXRx:PRESet:EXECute
Example :GTXRx:PRESet:EXECute

5.3.8 RESult Group

:GTXRx:RESult?

Function Queries all the measured results.

Syntax :GTXRx:RESult?

Example :GTXRx:RESult? -> :GTXR:RES:TXT:TIMES TS1;MCO 0;:GTXR:RES:TXP:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:BURS:JUDG NOEX;:GTXR:RES:FLAT:MAX NAN;MIN NAN;:GTXR:RES:FERR:PPM:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:FERR:HZ:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:PHAS:PEAK:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:PHAS:RMS:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:OSPE:JUDG NOEX;:GTXR:RES:MAG:PEAK:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:MAG:RMS:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:ORIG:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:EVM:PEAK:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:EVM:RMS:AVER NAN;MAX NAN;MIN NAN;:GTXR:RES:PER95:AVER NAN;MAX NAN;MIN NAN

:GTXRx:RESult:CLEar

Function Clears all measured results.

Syntax :GTXRx:RESult:CLEar

Example :GTXRx:RESult:CLEar

:GTXRx:RESult:TXTest:TIMESlot

Function Sets the timeslot number for which you want to retrieve the TX measurement result or queries the current setting.

Syntax :GTXRx:RESult:TXTest:TIMESlot {TS1st|TS2nd|TS3rd|TS4th}
:GTXRx:RESult:TXTest:TIMESlot?

Example :GTXRx:RESult:TXTest:TIMESlot TS1st
:GTXRx:RESult:TXTest:TIMESlot? -> :GTXR:RES:TXT:TIMES TS3

Description
- The settings and responses are as follows.
  TS1st :Specifies time slot 1st
  TS2nd :Specifies time slot 2nd
  TS3rd :Specifies time slot 3rd
  TS4th :Specifies time slot 4th
- After executing this command, the response to :GTXRx:RESult: will correspond to the slot number specified here. This setting can be specified independent of the measurement timeslot setting.

:GTXRx:RESult:TXTest:MCOunt?

Function Queries the measurement count of the TX characteristics measurement.

Syntax :GTXRx:RESult:TXTest:MCOunt?

Example :GTXRx:RESult:TXTest:MCOunt? -> :GTXR:RES:TXT:MCO 0

:GTXRx:RESult:TXPower?

Function Queries all results related to the TX power.

Syntax :GTXRx:RESult:TXPower?

Example :GTXRx:RESult:TXPower? -> :GTXR:RES:TXP:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

Description All of the units in the response of the TX power result are dBm.

:GTXRx:RESult:TXPower:AVERage?

Function Queries the average value of the TX power.

Syntax :GTXRx:RESult:TXPower:AVERage?

Example :GTXRx:RESult:TXPower:AVERage? -> :GTXR:RES:TXP:AVER 0.0000000E+00

:GTXRx:RESult:TXPower:MAX?

Function Queries the maximum value of the TX power.

Syntax :GTXRx:RESult:TXPower:MAX?

Example :GTXRx:RESult:TXPower:MAX? -> :GTXR:RES:TXP:MAX 0.0000000E+00

:GTXRx:RESult:TXPower:MIN?

Function Queries the minimum value of the TX power.

Syntax :GTXRx:RESult:TXPower:MIN?

Example :GTXRx:RESult:TXPower:MIN? -> :GTXR:RES:TXP:MIN 0.0000000E+00

:GTXRx:RESult:BURSt:JUDGe?

Function Queries the judgement result of the burst timing.

Syntax :GTXRx:RESult:BURSt:JUDGe?

Example :GTXRx:RESult:BURSt:JUDGe? -> :GTXR:RES:BURS:JUDG PASS

Description The response is as follows:

All within range
:GTXR:RES:BURS:JUDG PASS

Rising edge is out of range
:GTXR:RES:BURS:JUDG FAIL _|

The center section is out of range
:GTXR:RES:BURS:JUDG FAIL ~

Falling edge is out of range
:GTXR:RES:BURS:JUDG FAIL |_

All out of range
:GTXR:RES:BURS:JUDG FAIL _|~|_

:GTXRx:RESult:FLATness?

Function Queries all results related to the flatness.

Syntax :GTXRx:RESult:FLATness?

Example :GTXRx:RESult:FLATness? -> :GTXR:RES:FLAT:MAX 0.0000000E+00;MIN 0.0000000E+00

Description All of the units in the response of the flatness result are dB.

:GTXRx:RESult:FLATness:MAX?

Function Queries the maximum value of the flatness.

Syntax :GTXRx:RESult:FLATness:MAX?

Example :GTXRx:RESult:FLATness:MAX? -> :GTXR:RES:FLAT:MAX 0.0000000E+00

:GTXRx:RESult:FLATness:MIN?

Function Queries the minimum value of the flatness.

Syntax :GTXRx:RESult:FLATness:MIN?

Example :GTXRx:RESult:FLATness:MIN? -> :GTXR:RES:FLAT:MIN 0.0000000E+00

:GTXRx:RESult:FERRor?

Function Queries all results related to the frequency error.

Syntax :GTXRx:RESult:FERRor?

Example :GTXRx:RESult:FERRor? -> :GTXR:RES:FERR:PPM:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00;:GTXR:RES:FERR:HZ:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

Description The unit in the response of the frequency error is ppm for :PPM and Hz for :HZ.

:GTXRx:RESult:FERRor:PPM?

Function Queries all results related to the frequency error (in unit of ppm).

Syntax :GTXRx:RESult:FERRor:PPM?

Example :GTXRx:RESult:FERRor:PPM? -> :GTXR:RES:FERR:PPM:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

Description All of the units in the response of the frequency error result are ppm.

:GTXRx:RESult:FERRor:PPM:AVERage?

Function Queries the average value of the frequency error (in unit of ppm).

Syntax :GTXRx:RESult:FERRor:PPM:AVERage?

Example :GTXRx:RESult:FERRor:PPM:AVERage? -> :GTXR:RES:FERR:PPM:AVER 0.0000000E+00

:GTXRx:RESult:FERRor:PPM:MAX?

Function Queries the maximum value of the frequency error (in unit of ppm).

Syntax :GTXRx:RESult:FERRor:PPM:MAX?

Example :GTXRx:RESult:FERRor:PPM:MAX? -> :GTXR:RES:FERR:PPM:MAX 0.0000000E+00

:GTXRx:RESult:FERRor:PPM:MIN?

Function Queries the minimum value of the frequency error (in unit of ppm).

Syntax :GTXRx:RESult:FERRor:PPM:MIN?

Example :GTXTx:RESult:FERRor:PPM:MIN? -> :GTXR:RES:FERR:PPM:MIN 0.0000000E+00

:GTXRx:RESult:FERRor:HZ?

Function Queries all results related to the frequency error (in unit of Hz).

Syntax :GTXRx:RESult:FERRor:HZ?

Example :GTXRx:RESult:FERRor:HZ? -> :GTXR:RES:FERR:HZ:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

Description All of the units in the response of the frequency error result are Hz.

:GTXRx:RESult:FERRor:HZ:AVERage?

Function Queries the average value of the frequency error (in unit of Hz).

Syntax :GTXRx:RESult:FERRor:HZ:AVERage?

Example :GTXRx:RESult:FERRor:HZ:AVERage? -> :GTXR:RES:FERR:HZ:AVER 0.0000000E+00

:GTXRx:RESult:FERRor:HZ:MAX?

Function Queries the maximum value of the frequency error (in unit of Hz).

Syntax :GTXRx:RESult:FERRor:HZ:MAX?

Example :GTXRx:RESult:FERRor:HZ:MAX? -> :GMAN:RES:FERR:HZ:MAX 0.0000000E+00

:GTXRx:RESult:FERRor:HZ:MIN?

Function Queries the minimum value of the frequency error (in unit of Hz).

Syntax :GTXRx:RESult:FERRor:HZ:MIN?

Example :GTXRx:RESult:FERRor:HZ:MIN? -> :GTXR:RES:FERR:HZ:MIN 0.0000000E+00

:GTXRx:RESult:PHASeerr?

Function Queries all results related to the phase error.

Syntax :GTXRx:RESult:PHASeerr?

Example :GTXRx:RESult:PHASeerr? -> :GTXR:RES:PHAS:PEAK:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00;:GTXR:RES:PHAS:RMS:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

Description All of the units in the response of the phase error result are deg.

:GTXRx:RESult:PHASeerr:PEAK?

Function Queries all results related to the phase error (peak).

Syntax :GTXRx:RESult:PHASeerr:PEAK?

Example :GTXRx:RESult:PHASeerr:PEAK? -> :GTXR:RES:PHAS:PEAK:AVER 0.0000000E+00;MAX 0.0000000E+00;MIN 0.0000000E+00

:GTXRx:RESult:PHASeerr:PEAK:AVERage?

Function Queries the average value of the phase error (peak).

Syntax :GTXRx:RESult:PHASeerr:PEAK:AVERage?

Example :GTXRx:RESult:PHASeerr:PEAK:AVERage?
-> :GTXR:RES:PHAS:PEAK:
AVER 0.0000000E+00

:GTXRx:RESult:PHASeerr:PEAK:MAX?

Function Queries the maximum value of the phase error (peak).

Syntax :GTXRx:RESult:PHASeerr:PEAK:MAX?

Example :GTXRx:RESult:PHASeerr:PEAK:MAX? ->
:GTXR:RES:PHAS:PEAK:MAX 0.0000000E+00

:GTXRx:RESult:PHASeerr:PEAK:MIN?

Function Queries the minimum value of the phase error (peak).

Syntax :GTXRx:RESult:PHASeerr:PEAK:MIN?

Example :GTXRx:RESult:PHASeerr:PEAK:MIN? ->
:GTXR:RES:PHAS:PEAK:MIN 0.0000000E+00

:GTXRx:RESult:PHASeerr:RMS?

Function Queries all results related to the phase error (RMS).

Syntax :GTXRx:RESult:PHASeerr:RMS?

Example :GTXRx:RESult:PHASeerr:RMS? -> :GTXR:
RES:PHAS:RMS:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:GTXRx:RESult:PHASeerr:RMS:AVERage?

Function Queries the average value of the phase error (RMS).

Syntax :GTXRx:RESult:PHASeerr:RMS:AVERage?

Example :GTXRx:RESult:PHASeerr:RMS:AVERage?
-> :GTXR:RES:PHAS:RMS:
AVER 0.0000000E+00

:GTXRx:RESult:PHASeerr:RMS:MAX?

Function Queries the maximum value of the phase error (RMS).

Syntax :GTXRx:RESult:PHASeerr:RMS:MAX?

Example :GTXRx:RESult:PHASeerr:RMS:MAX? ->
:GTXR:RES:PHAS:RMS:MAX 0.0000000E+00

:GTXRx:RESult:PHASeerr:RMS:MIN?

Function Queries the minimum value of the phase error (RMS).

Syntax :GTXRx:RESult:PHASeerr:RMS:MIN?

Example :GTXRx:RESult:PHASeerr:RMS:MIN? ->
:GTXR:RES:PHAS:RMS:MIN 0.0000000E+00

:GTXRx:RESult:OSPEctrum:JUDGe?

Function Queries the judgement result of the output spectrum.

Syntax :GTXRx:RESult:OSPEctrum:JUDGe?

Example :GTXRx:RESult:OSPEctrum:JUDGe? ->
:GTXR:RES:OSPE:JUDG PASS

Description The response format is PASS or FAIL.

:GTXRx:RESult:OSPEctrum:MODulation?

Function Queries all results related to the frequency offset of the output spectrum (modulation).

Syntax :GTXRx:RESult:OSPEctrum:MODulation?

Example :GTXRx:RESult:OSPEctrum:MODulation?
-> :GTXR:RES:OSPE:MOD:
M1800 0.0000000E+00;
M1600 0.0000000E+00;
M1400 0.0000000E+00;
M1200 0.0000000E+00;
M1000 0.0000000E+00;
M800 0.0000000E+00;
M600 0.0000000E+00;
M400 0.0000000E+00;
M250 0.0000000E+00;
M200 0.0000000E+00;
M100 0.0000000E+00;P0 0.0000000E+00;
P100 0.0000000E+00;
P200 0.0000000E+00;
P250 0.0000000E+00;
P400 0.0000000E+00;
P600 0.0000000E+00;
P800 0.0000000E+00;
P1000 0.0000000E+00;
P1200 0.0000000E+00;
P1400 0.0000000E+00;
P1600 0.0000000E+00;
P1800 0.0000000E+00

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M1800k?

Function Queries the result at the -1800-kHz frequency offset of the output spectrum (modulation).

Syntax :GTXRx:RESult:OSPEctrum:MODulation:
M1800k?

Example :GTXRx:RESult:OSPEctrum:MODulation:
M1800k? -> :GTXR:RES:OSPE:MOD:
M1800 0.0000000E+00

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M1600k?

Function Queries the result at the -1600-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M1600k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M1600k? -> :GTXR:RES:OSPE:MOD:M1600 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M1400k?

Function Queries the result at the -1400-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M1400k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M1400k? -> :GTXR:RES:OSPE:MOD:M1400 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M1200k?

Function Queries the result at the -1200-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M1200k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M1200k? -> :GTXR:RES:OSPE:MOD:M1200 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M1000k?

Function Queries the result at the -1000-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M1000k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M1000k? -> :GTXR:RES:OSPE:MOD:M1000 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M800k?

Function Queries the result at the -800-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M800k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M800k? -> :GTXR:RES:OSPE:MOD:M800 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M600k?

Function Queries the result at the -600-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M600k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M600k? -> :GTXR:RES:OSPE:MOD:M600 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M400k?

Function Queries the result at the -400-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M400k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M400k? -> :GTXR:RES:OSPE:MOD:M400 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M250k?

Function Queries the result at the -250-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M250k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M250k? -> :GTXR:RES:OSPE:MOD:M250 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M200k?

Function Queries the result at the -200-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M200k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M200k? -> :GTXR:RES:OSPE:MOD:M200 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:M100k?

Function Queries the result at the -100-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:M100k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:M100k? -> :GTXR:RES:OSPE:MOD:M100 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P0k?

Function Queries the result at the 0-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:P0k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:P0k? -> :GTXR:RES:OSPE:MOD:P0 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P100k?

Function Queries the result at the 100-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:P100k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:P100k? -> :GTXR:RES:OSPE:MOD:P100 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P200k?

Function Queries the result at the 200-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:P200k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:P200k? -> :GTXR:RES:OSPE:MOD:P200 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P250k?

Function Queries the result at the 250-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:P250k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:P250k? -> :GTXR:RES:OSPE:MOD:P250 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P400k?

Function Queries the result at the 400-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:P400k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:P400k? -> :GTXR:RES:OSPE:MOD:P400 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P600k?

Function Queries the result at the 600-kHz frequency offset of the output spectrum (modulation).

Syntax `:GTXRx:RESult:OSPEctrum:MODulation:P600k?`

Example `:GTXRx:RESult:OSPEctrum:MODulation:P600k? -> :GTXR:RES:OSPE:MOD:P600 0.0000000E+00`

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P800k?

Function Queries the result at the 800-kHz frequency offset of the output spectrum (modulation).

Syntax
```
:GTXRx:RESult:OSPEctrum:MODulation:
P800k?
```

Example
```
:GTXRx:RESult:OSPEctrum:MODulation:
P800k? -> :GTXR:RES:OSPE:MOD:
P800 0.0000000E+00
```

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P1000k?

Function Queries the result at the 1000-kHz frequency offset of the output spectrum (modulation).

Syntax
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1000k?
```

Example
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1000k? -> :GTXR:RES:OSPE:MOD:
P1000 0.0000000E+00
```

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P1200k?

Function Queries the result at the 1200-kHz frequency offset of the output spectrum (modulation).

Syntax
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1200k?
```

Example
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1200k? -> :GTXR:RES:OSPE:MOD:
P1200 0.0000000E+00
```

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P1400k?

Function Queries the result at the 1400-kHz frequency offset of the output spectrum (modulation).

Syntax
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1400k?
```

Example
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1400k? -> :GTXR:RES:OSPE:MOD:
P1400 0.0000000E+00
```

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P1600k?

Function Queries the result at the 1600-kHz frequency offset of the output spectrum (modulation).

Syntax
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1600k?
```

Example
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1600k? -> :GTXR:RES:OSPE:MOD:
P1600 0.0000000E+00
```

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:MODulation:P1800k?

Function Queries the result at the 1800-kHz frequency offset of the output spectrum (modulation).

Syntax
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1800k?
```

Example
```
:GTXRx:RESult:OSPEctrum:MODulation:
P1800k? -> :GTXR:RES:OSPE:MOD:
P1800 0.0000000E+00
```

Description The unit of the response is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched?

Function Queries all results related to the frequency offset of the output spectrum (switched transients).

Syntax
```
:GTXRx:RESult:OSPEctrum:SWITched?
```

Example
```
:GTXRx:RESult:OSPEctrum:SWITched?
-> :GTXR:RES:OSPE:
SWIT:M1800 0.0000000E+00;
M1200 0.0000000E+00;
M600 0.0000000E+00;
M400 0.0000000E+00;
P0 0.0000000E+00;
P400 0.0000000E+00;
P600 0.0000000E+00;
P1200 0.0000000E+00;
P1800 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched:M1800k?

Function Queries the result at the -1800-kHz frequency offset of the output spectrum (switched transients).

Syntax `:GTXRx:RESult:OSPEctrum:SWITched:M1800k?`

Example `:GTXRx:RESult:OSPEctrum:SWITched:M1800k? -> :GTXR:RES:OSPE:SWIT:M1800 0.0000000E+00`

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched:M1200k?

Function Queries the result at the -1200-kHz frequency offset of the output spectrum (switched transients).

Syntax `:GTXRx:RESult:OSPEctrum:SWITched:M1200k?`

Example `:GTXRx:RESult:OSPEctrum:SWITched:M1200k? -> :GTXR:RES:OSPE:SWIT:M1200 0.0000000E+00`

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched:M600k?

Function Queries the result at the -600-kHz frequency offset of the output spectrum (switched transients).

Syntax `:GTXRx:RESult:OSPEctrum:SWITched:M600k?`

Example `:GTXRx:RESult:OSPEctrum:SWITched:M600k? -> :GTXR:RES:OSPE:SWIT:M600 0.0000000E+00`

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched:M400k?

Function Queries the result at the -400-kHz frequency offset of the output spectrum (switched transients).

Syntax `:GTXRx:RESult:OSPEctrum:SWITched:M400k?`

Example `:GTXRx:RESult:OSPEctrum:SWITched:M400k? -> :GTXR:RES:OSPE:SWIT:M400 0.0000000E+00`

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched:P0k?

Function Queries the result at the 0-kHz frequency offset of the output spectrum (switched transients).

Syntax `:GTXRx:RESult:OSPEctrum:SWITched:P0k?`

Example `:GTXRx:RESult:OSPEctrum:SWITched:P0k? -> :GTXR:RES:OSPE:SWIT:P0 0.0000000E+00`

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched:P400k?

Function Queries the result at the 400-kHz frequency offset of the output spectrum (switched transients).

Syntax `:GTXRx:RESult:OSPEctrum:SWITched:P400k?`

Example `:GTXRx:RESult:OSPEctrum:SWITched:P400k? -> :GTXR:RES:OSPE:SWIT:P400 0.0000000E+00`

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched:P600k?

Function Queries the result at the 600-kHz frequency offset of the output spectrum (switched transients).

Syntax `:GTXRx:RESult:OSPEctrum:SWITched:P600k?`

Example `:GTXRx:RESult:OSPEctrum:SWITched:P600k? -> :GTXR:RES:OSPE:SWIT:P600 0.0000000E+00`

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched:P1200k?

Function Queries the result at the 1200-kHz frequency offset of the output spectrum (switched transients).

Syntax `:GTXRx:RESult:OSPEctrum:SWITched:P1200k?`

Example `:GTXRx:RESult:OSPEctrum:SWITched:P1200k? -> :GTXR:RES:OSPE:SWIT:P1200 0.0000000E+00`

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:OSPEctrum:SWITched:P1800k?

Function Queries the result at the 1800-kHz frequency offset of the output spectrum (switched transients).

Syntax
```
:GTXRx:RESult:OSPEctrum:SWITched:
P1800k?
```

Example
```
:GTXRx:RESult:OSPEctrum:SWITched:
P1800k? -> :GTXR:RES:OSPE:SWIT:
P1800 0.0000000E+00
```

Description The unit of the response is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:GTXRx:RESult:MAGerr?

Function Queries all results related to the magnitude error.

Syntax
```
:GTXRx:RESult:MAGerr?
```

Example
```
:GTXRx:RESult:MAGerr? -> :GTXR:RES:
MAG:PEAK:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
GTXR:RES:MAG:RMS:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
```

Description All of the units in the response of the magnitude error result are %.

:GTXRx:RESult:MAGerr:PEAK?

Function Queries all results related to the magnitude error (peak).

Syntax
```
:GTXRx:RESult:MAGerr:PEAK?
```

Example
```
:GTXRx:RESult:MAGerr:PEAK? ->:GTXR:
RES:MAG:PEAK:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
```

:GTXRx:RESult:MAGerr:PEAK:AVERage?

Function Queries the average value of the magnitude error (peak).

Syntax
```
:GTXRx:RESult:MAGerr:PEAK:AVERage?
```

Example
```
:GTXRx:RESult:MAGerr:PEAK:AVERage? ->
:GTXR:RES:MAG:PEAK:AVER 0.0000000E+00
```

:GTXRx:RESult:MAGerr:PEAK:MAX?

Function Queries the maximum value of the magnitude error (peak).

Syntax
```
:GTXRx:RESult:MAGerr:PEAK:MAX?
```

Example
```
:GTXRx:RESult:MAGerr:PEAK:MAX? ->
:GTXR:RES:MAG:PEAK:MAX 0.0000000E+00
```

:GTXRx:RESult:MAGerr:PEAK:MIN?

Function Queries the minimum value of the magnitude error (peak).

Syntax
```
:GTXRx:RESult:MAGerr:PEAK:MIN?
```

Example
```
:GTXRx:RESult:MAGerr:PEAK:MIN? ->
:GTXR:RES:MAG:PEAK:MIN 0.0000000E+00
```

:GTXRx:RESult:MAGerr:RMS?

Function Queries all results related to the magnitude error (RMS).

Syntax
```
:GTXRx:RESult:MAGerr:RMS?
```

Example
```
:GTXRx:RESult:MAGerr:RMS? -> :GTXR:
RES:MAG:RMS:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
```

:GTXRx:RESult:MAGerr:RMS:AVERage?

Function Queries the average value of the magnitude error (RMS).

Syntax
```
:GTXRx:RESult:MAGerr:RMS:AVERage?
```

Example
```
:GTXRx:RESult:MAGerr:RMS:AVERage? ->
:GTXR:RES:MAG:RMS:AVER 0.0000000E+00
```

:GTXRx:RESult:MAGerr:RMS:MAX?

Function Queries the maximum value of the magnitude error (RMS).

Syntax
```
:GTXRx:RESult:MAGerr:RMS:MAX?
```

Example
```
:GTXRx:RESult:MAGerr:RMS:MAX? ->
:GTXR:RES:MAG:RMS:MAX 0.0000000E+00
```

:GTXRx:RESult:MAGerr:RMS:MIN?

Function Queries the minimum value of the magnitude error (RMS).

Syntax
```
:GTXRx:RESult:MAGerr:RMS:MIN?
```

Example
```
:GTXRx:RESult:MAGerr:RMS:MIN? ->
:GTXR:RES:MAG:RMS:MIN 0.0000000E+00
```

:GTXRx:RESult:ORIGinoffset?

Function Queries all results related to the origin offset.

Syntax
```
:GTXRx:RESult:ORIGinoffset?
```

Example
```
:GTXRx:RESult:ORIGinoffset? -> :GTXR:
RES:ORIG:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
```

Description All of the units in the response of the origin offset result are dBm.

:GTXRx:RESult:ORIGinoffset:AVERage?

Function Queries the average value of the origin offset.

Syntax
```
:GTXRx:RESult:ORIGinoffset:AVERage?
```

Example
```
:GTXRx:RESult:ORIGinoffset:AVERage?
-> :GTXR:RES:ORIG:AVER 0.0000000E+00
```

:GTXRx:RESult:ORIGinoffset:MAX?

Function Queries the maximum value of the origin offset.

Syntax
```
:GTXRx:RESult:ORIGinoffset:MAX?
```

Example
```
:GTXRx:RESult:ORIGinoffset:MAX? ->
:GTXR:RES:ORIG:MAX 0.0000000E+00
```

:GTXRx:RESult:ORIGinoffset:MIN?

Function Queries the minimum value of the origin offset.

Syntax
```
:GTXRx:RESult:ORIGinoffset:MIN?
```

Example
```
:GTXRx:RESult:ORIGinoffset:MIN? ->
:GTXR:RES:ORIG:MIN 0.0000000E+00
```

:GTXRx:RESult:EVM?

Function Queries all results related to the EVM.
Syntax :GTXRx:RESult:EVM?
Example :GTXRx:RESult:EVM? -> :GTXR:RES:EVM:
PEAK:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
GTXR:RES:EVM:RMS:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
Description All of the units in the response of the EVM result are %.

:GTXRx:RESult:EVM:PEAK?

Function Queries all results related to the EVM (peak).
Syntax :GTXRx:RESult:EVM:PEAK?
Example :GTXRx:RESult:EVM:PEAK? -> :GTXR:RES:
EVM:PEAK:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:GTXRx:RESult:EVM:PEAK:AVERage?

Function Queries the average value of the EVM (peak).
Syntax :GTXRx:RESult:EVM:PEAK:AVERage?
Example :GTXRx:RESult:EVM:PEAK:AVERage? ->
:GTXR:RES:EVM:PEAK:AVER 0.0000000E+00

:GTXRx:RESult:EVM:PEAK:MAX?

Function Queries the maximum value of the EVM (peak).
Syntax :GTXRx:RESult:EVM:PEAK:MAX?
Example :GTXRx:RESult:EVM:PEAK:MAX? ->
:GTXR:RES:EVM:PEAK:MAX 0.0000000E+00

:GTXRx:RESult:EVM:PEAK:MIN?

Function Queries the minimum value of the EVM (peak).
Syntax :GTXRx:RESult:EVM:PEAK:MIN?
Example :GTXRx:RESult:EVM:PEAK:MIN? ->
:GTXR:RES:EVM:PEAK:MIN 0.0000000E+00

:GTXRx:RESult:EVM:RMS?

Function Queries all results related to the EVM (RMS).
Syntax :GTXRx:RESult:EVM:RMS?
Example :GTXRx:RESult:EVM:RMS? -> :GTXR:RES:
EVM:RMS:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:GTXRx:RESult:EVM:RMS:AVERage?

Function Queries the average value of the EVM (RMS).
Syntax :GTXRx:RESult:EVM:RMS:AVERage?
Example :GTXRx:RESult:EVM:RMS:AVERage? ->
:GTXR:RES:EVM:RMS:AVER 0.0000000E+00

:GTXRx:RESult:EVM:RMS:MAX?

Function Queries the maximum value of the EVM (RMS).
Syntax :GTXRx:RESult:EVM:RMS:MAX?
Example :GTXRx:RESult:EVM:RMS:MAX? ->
:GTXR:RES:EVM:RMS:MAX 0.0000000E+00

:GTXRx:RESult:EVM:RMS:MIN?

Function Queries the minimum value of the EVM (RMS).
Syntax :GTXRx:RESult:EVM:RMS:MIN?
Example :GTXRx:RESult:EVM:RMS:MIN? ->
:GTXR:RES:EVM:RMS:MIN 0.0000000E+00

:GTXRx:RESult:PER95th?

Function Queries all results related to the 95th percentile.
Syntax :GTXRx:RESult:PER95th?
Example :GTXRx:RESult:PER95th? -> :GTXR:RES:
PER95:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00
Description All of the units in the response of the 95th percentile result are %.

:GTXRx:RESult:PER95th:AVERage?

Function Queries the average value of the 95th percentile.
Syntax :GTXRx:RESult:PER95th:AVERage?
Example :GTXRx:RESult:PER95th:AVERage? ->
:GTXR:RES:PER95:AVER 0.0000000E+00

:GTXRx:RESult:PER95th:MAX?

Function Queries the maximum value of the 95th percentile.
Syntax :GTXRx:RESult:PER95th:MAX?
Example :GTXRx:RESult:PER95th:MAX? ->
:GTXR:RES:PER95:MAX 0.0000000E+00

:GTXRx:RESult:PER95th:MIN?

Function Queries the minimum value of the 95th percentile.
Syntax :GTXRx:RESult:PER95th:MIN?
Example :GTXRx:RESult:PER95th:MIN? ->
:GTXR:RES:PER95:MIN 0.0000000E+00

:GTXRx:RESult:DPOWer:BURst?

Function Queries the number of bursts in the dynamic power measurement result.
Syntax :GTXRx:RESult:DPOWer:BURst?
Example :GTXRx:RESult:DPOWer:BURst? ->
:GTXR:RES:DPOW:BURS 20

:GTXRx:RESult:DPOWer:ABSolute:ALL?

Function Queries the absolute power (dBm) of all bursts in the dynamic power measurement result.

Syntax :GTXRx:RESult:DPOWer:ABSolute:ALL?

Example
```
:GTXRx:RESult:DPOWer:ABSolute:ALL?
-> :GTXR:RES:DPOW:ABS:
ALL 2.5118752E+00,31.888962E-03,
-2.8599606E+00,-5.9538937E+00,
-9.3571339E+00,-12.133741E+00,
-15.016582E+00,-17.999741E+00,
-21.028765E+00,-23.752773E+00,
-63.316551E+00,-64.756721E+00,
-64.655457E+00,-64.741142E+00,
-64.702194E+00,-64.795670E+00,
-64.694405E+00,-64.624290E+00,
-64.538605E+00,-64.639877E+00
```

:GTXRx:RESult:DPOWer:ABSolute:BURSt?

Function Queries the absolute power (dBm) of a specific burst in the dynamic power measurement result.

Syntax
```
:GTXRx:RESult:DPOWer:ABSolute:
BURSt? <Burst number>
```

Example
```
:GTXRx:RESult:DPOWer:ABSolute:
BURSt? 0 -> :GTXR:RES:DPOW:ABS:
BURS 2.5118752E+00
```

Description The burst number is counted from 0.
If 1000 bursts are measured, you can specify a value from 0 to 999.

:GTXRx:RESult:DPOWer:RELative:ALL?

Function Queries the power value (dB) of all bursts with respect to the first burst in the dynamic power measurement result.

Syntax :GTXRx:RESult:DPOWer:RELative:ALL?

Example
```
:GTXRx:RESult:DPOWer:RELative:ALL?
-> :GTXR:RES:DPOW:REL:
ALL 0.0000000E+00,-2.4799862E+00,
-5.3718357E+00,-8.4657688E+00,
-11.869009E+00,-14.645617E+00,
-17.528458E+00,-20.511616E+00,
-23.540640E+00,-26.264648E+00,
-65.828426E+00,-67.268597E+00,
-67.167332E+00,-67.253017E+00,
-67.214069E+00,-67.307545E+00,
-67.206280E+00,-67.136166E+00,
-67.050480E+00,-67.151752E+00
```

:GTXRx:RESult:DPOWer:RELative:BURSt?

Function Queries the power value (dB) of a specific burst with respect to the first burst in the dynamic power measurement result.

Syntax
```
:GTXRx:RESult:DPOWer:RELative:
BURSt? <Burst number>
```

Example
```
:GTXRx:RESult:DPOWer:RELative:
BURSt? 0 -> :GTXR:RES:DPOW:REL:
BURS 0.0000000E+00
```

Description The burst number is counted from 0.
If 1000 bursts are measured, you can specify a value from 0 to 999.

:GTXRx:RESult:DPOWer:INTegrity?

Function Queries the integrity of a specific burst in the dynamic power measurement result.

Syntax
```
:GTXRx:RESult:DPOWer:
INTegrity? <Burst number>
```

Example
```
:GTXRx:RESult:DPOWer:INTegrity? 1 ->
:GTXR:RES:DPOW:INT LEG
```

Description
- The burst number is counted from 0.
- If 1000 bursts are measured, you can specify a value from 0 to 999.
- The response is one of the following: {LEGal|OVPower|UDPower|NOData}.
  - LEGal : Normal measurement
  - OVPower : Abnormal measurement (range over)
  - UDPower : Abnormal measurement (range under)
  - NOData : Abnormal measurement (No data. When specification over measurement time slot length.)

5.3.9 TSPDisplay Group

:GTXRx:TSPDisplay?

Function Queries all settings related to the output spectrum.

Syntax :GTXRx:TSPDisplay?

Example :GTXRx:TSPDisplay? -> :GTXR:TSPD:SPEC MOD;POW:MOD P0K;SWIT P0K

:GTXRx:TSPDisplay:SPECtrum

Function Sets the detail display of the output spectrum or queries the current setting.

Syntax :GTXRx:TSPDisplay:SPECtrum {MODulation|SWITched}
:GTXRx:TSPDisplay:SPECtrum?

Example :GTXRx:TSPDisplay:SPECtrum MODulation
:GTXRx:TSPDisplay:SPECtrum? -> :GTXR:TSPD:SPEC MOD

Description The setting and response format is as follows.
MODulation: due to modulation
SWITched: due to switching transients

:GTXRx:TSPDisplay:POWer?

Function Queries the frequency offset setting of each spectrum (Modulation/Switch transients) of OutputSpectrum measurement.

Syntax :GTXRx:TSPDisplay:POWer?

Example :GTXRx:TSPDisplay:POWer? -> :GTXR:TSPD:POW:MOD P0K;SWIT P0K

:GTXRx:TSPDisplay:POWer:MODulation

Function Sets which frequency offset power trend to display when measuring OutputSpectrum (Modulation) or queries the current setting.

Syntax :GTXRx:TSPDisplay:POWer:MODulation {M1800K|M1600K|M1400K|M1200K|M1000K|M800K|M600K|M400K|M250K|M200K|M100K|P0K|P100K|P200K|P250K|P400K|P600K|P800K|P1000K|P1200K|P1400K|P1600K|P1800K}
:GTXRx:TSPDisplay:POWer:MODulation?

Example :GTXRx:TSPDisplay:POWer:MODulation P0K
:GTXRx:TSPDisplay:POWer:MODulation? -> :GTXR:TSPD:POW:MOD P0K

Description The settings and responses are as follows.

M1800 K : Displays a -1800 kHz (frequency offset) power trend
M1600 K : Displays a -1600 kHz (frequency offset) power trend
M1400K : Displays a -1400 kHz (frequency offset) power trend
M1200K : Displays a -1200 kHz (frequency offset) power trend
M1000K : Displays a -1000 kHz (frequency offset) power trend
M800K : Displays a -800 kHz (frequency offset) power trend
M600K : Displays a -600 kHz (frequency offset) power trend
M400K : Displays a -400 kHz (frequency offset) power trend
M250K : Displays a -250 kHz (frequency offset) power trend
M200K : Displays a -200 kHz (frequency offset) power trend
M100K : Displays a -100 kHz (frequency offset) power trend
P0 K : Displays a 0 kHz (frequency offset) power trend
P100K : Displays a 100 kHz (frequency offset) power trend
P200K : Displays a 200 kHz (frequency offset) power trend
P250K : Displays a 250 kHz (frequency offset) power trend
P400K : Displays a 400 kHz (frequency offset) power trend
P600K : Displays a 600 kHz (frequency offset) power trend
P800K : Displays a 800 kHz (frequency offset) power trend
P1000K : Displays a 1000 kHz (frequency offset) power trend
P1200K : Displays a 1200 kHz (frequency offset) power trend
P1400K : Displays a 1400 kHz (frequency offset) power trend
P1600K : Displays a 1600 kHz (frequency offset) power trend
P1800K : Displays a 1800 kHz (frequency offset) power trend

:GTXRx:TSPDisplay:POWer:SWITched

Function Sets which frequency offset power trend to display when measuring OutputSpectrum (Switch transients) or queries the current setting.

Syntax
```
:GTXRx:TSPDisplay:POWer:
SWITched {M1800K|M1200K|M600K|M400K|
P0K|P400K|P600K|P1200K|P1800K}
:GTXRx:TSPDisplay:POWer:SWITched?
```

Example
```
:GTXRx:TSPDisplay:POWer:SWITched P0K
:GTXRx:TSPDisplay:POWer:SWITched? ->
:GTXR:TSPD:POW:SWIT P0K
```

Description The settings and responses are as follows.

- M1800 K : Displays a -1800 kHz (frequency offset) power trend
- M1200K : Displays a -1200 kHz (frequency offset) power trend
- M600K : Displays a -600 kHz (frequency offset) power trend
- M400K : Displays a -400 kHz (frequency offset) power trend
- P0 K : Displays a 0 kHz (frequency offset) power trend
- P400K : Displays a 400 kHz (frequency offset) power trend
- P600K : Displays a 600 kHz (frequency offset) power trend
- P1200K : Displays a 1200 kHz (frequency offset) power trend
- P1800K : Displays a 1800 kHz (frequency offset) power trend

5.3.10 TTARget Group

:GTXRx:TTARget

Function Sets the measurement items of the TX characteristics measurement or queries the current setting.

Syntax
```
:GTXRx:TTARget {TXPower|BURSt|
FLATness|FERRor|PHASeerr|OSPEctrum|
MAGerr|ORIGinoffset|EVM|PER95th|
DPOWer}
:GTXRx:TTARget?
```

Example
```
:GTXRx:TTARget TXPower
:GTXRx:TTARget? -> :GTXR:TTAR TXP
```

Description The settings and responses are as follows.

- TXPower : TxPower
- BURSt : Burst Timing
- FLATness : Flatness
- FERRor : Frequency Error
- PHASeerr : Phase Error
- OSPEctrum : Output Spectrum
- MAGerr : Magunitude Error
- ORIGinoffset : Origin Offset
- EVM : EVM
- PER95th : 95:th percentile
- DPOWer : Dynamic Power

5.3.11 TXTest Group

:GTXRx:TXTest?

Function Queries all settings related to TX characteristics measurement.

Syntax
```
:GTXRx:TXTest?
```

Example
```
:GTXRx:TXTest? -> :GTXR:TXT:AVER:
CONT ON;COUN 10;:GTXR:TXT:MEAST TS1;
ITEM NORM;TXP:EXEC ON;:GTXR:TXT:FERR:
EXEC ON;:GTXR:TXT:BURS:EXEC ON;:GTXR:
TXT:FLAT:EXEC ON;:GTXR:TXT:PHAS:
EXEC ON;:GTXR:TXT:OSPE:EXEC ON;:GTXR:
TXT:MAG:EXEC ON;:GTXR:TXT:ORIG:
EXEC ON;:GTXR:TXT:EVM:EXEC ON;:GTXR:
TXT:PER95:EXEC ON;:GTXR:TXT:DPOW:
BURS 100;INL 30.0E+00;RANG AUTO;TRIG:
SRC POW;POL RIS;DEL 0;:GTXR:TXT:DPOW:
MSL 1
```

:GTXRx:TXTest:AVERage?

Function Queries all settings related to the average of TX characteristics measurement.

Syntax
```
:GTXRx:TXTest:AVERage?
```

Example
```
:GTXRx:TXTest:AVERage? ->
:GTXR:TXT:AVER:CONT OFF;COUN 10
```

:GTXRx:TXTest:AVERage:CONTrol

Function Turns ON/OFF the averaging of the TX characteristics measurement or queries the current setting.

Syntax
```
:GTXRx:TXTest:AVERage:CONTrol {ON|
OFF}
:GTXRx:TXTest:AVERage:CONTrol?
```

Example
```
:GTXRx:TXTest:AVERage:CONTrol OFF
:GTXRx:TXTest:AVERage:CONTrol? ->
:GTXR:TXT:AVER:CONT OFF
```

:GTXRx:TXTest:AVERage:COUNt

Function Sets the average count of the TX characteristics measurement or queries the current setting.

Syntax
```
:GTXRx:TXTest:AVERage:COUNt <number>
:GTXRx:TXTest:AVERage:COUNt?
```

Example
```
:GTXRx:TXTest:AVERage:COUNt 10
:GTXRx:TXTest:AVERage:COUNt? -> 10
```

:GTXRx:TXTest:MEASTimeslot

Function Sets the measurement timeslot to be shown on the TX TEST screen or queries the current setting.

Syntax
```
:GTXRx:TXTest:MEASTimeslot
{TS1st|TS2nd|TS3rd|TS4th}
:GTXRx:TXTest:MEASTimeslot?
```

Example
```
:GTXRx:TXTest:MEASTimeslot TS1st
:GTXRx:TXTest:MEASTimeslot? ->
:GTXR:TXT:MEAST TS1
```

Description
- The settings and responses are as follows.
  TS1st :Displays measured results of time slot 1st
  TS2nd:Displays measured results of time slot 2nd
  TS3rd :Displays measured results of time slot 3rd
  TS4th :Displays measured results of time slot 4th
- Slots that are not used as uplink timeslots cannot be specified.

:GTXRx:TXTest:TXPower:EXECute

Function Turns ON/OFF the TX power or queries the current setting.

Syntax
```
:GTXRx:TXTest:TXPower:EXECute {ON|
OFF}
:GTXRx:TXTest:TXPower:EXECute?
```

Example
```
:GTXRx:TXTest:TXPower:EXECute OFF
:GTXRx:TXTest:TXPower:EXECute? ->
:GTXR:TXT:TXP:EXEC OFF
```

:GTXRx:TXTest:FERRor:EXECute

Function Turns ON/OFF the frequency error or queries the current setting.

Syntax
```
:GTXRx:TXTest:FERRor:EXECute {ON|OFF}
:GTXRx:TXTest:FERRor:EXECute?
```

Example
```
:GTXRx:TXTest:FERRor:EXECute OFF
:GTXRx:TXTest:FERRor:EXECute? ->
:GTXR:TXT:FERR:EXEC OFF
```

:GTXRx:TXTest:BURSt:EXECute

Function Turns ON/OFF the burst timing or queries the current setting.

Syntax
```
:GTXRx:TXTest:BURSt:EXECute {ON|OFF}
:GTXRx:TXTest:BURSt:EXECute?
```

Example
```
:GTXRx:TXTest:BURSt:EXECute OFF
:GTXRx:TXTest:BURSt:EXECute? ->
:GTXR:TXT:BURS:EXEC OFF
```

:GTXRx:TXTest:FLATness:EXECute

Function Turns ON/OFF the flatness or queries the current setting.

Syntax
```
:GTXRx:TXTest:FLATness:EXECute {ON|
OFF}
:GTXRx:TXTest:FLATness:EXECute?
```

Example
```
:GTXRx:TXTest:FLATness:EXECute OFF
:GTXRx:TXTest:FLATness:EXECute? ->
:GTXR:TXT:FLAT:EXEC OFF
```

:GTXRx:TXTest:PHASeerr:EXECute

Function Turns ON/OFF the phase error or queries the current setting.

Syntax
```
:GTXRx:TXTest:PHASeerr:EXECute {ON|
OFF}
:GTXRx:TXTest:PHASeerr:EXECute?
```

Example
```
:GTXRx:TXTest:PHASeerr:EXECute OFF
:GTXRx:TXTest:PHASeerr:EXECute? ->
:GTXR:TXT:PHAS:EXEC OFF
```

:GTXRx:TXTest:OSPEctrum:EXECute

Function Turns ON/OFF the output spectrum or queries the current setting.

Syntax
```
:GTXRx:TXTest:OSPEctrum:EXECute {ON|
OFF}
:GTXRx:TXTest:OSPEctrum:EXECute?
```

Example
```
:GTXRx:TXTest:OSPEctrum:EXECute OFF
:GTXRx:TXTest:OSPEctrum:EXECute? ->
:GTXR:TXT:OSPE:EXEC OFF
```

:GTXRx:TXTest:MAGerr:EXECute

Function Turns ON/OF the magnitude error or queries the current setting.

Syntax
```
:GTXRx:TXTest:MAGerr:EXECute {ON|OFF}
:GTXRx:TXTest:MAGerr:EXECute?
```

Example
```
:GTXRx:TXTest:MAGerr:EXECute OFF
:GTXRx:TXTest:MAGerr:EXECute? ->
:GTXR:TXT:MAG:EXEC OFF
```

:GTXRx:TXTest:ORIGinoffset:EXECute

Function Turns ON/OFF the origin offset or queries the current setting.

Syntax
```
:GTXRx:TXTest:ORIGinoffset:
EXECute {ON|OFF}
:GTXRx:TXTest:ORIGinoffset:EXECute?
```

Example
```
:GTXRx:TXTest:ORIGinoffset:
EXECute OFF
:GTXRx:TXTest:ORIGinoffset:EXECute?
-> :GTXR:TXT:ORIG:EXEC OFF
```

:GTXRx:TXTest:EVM:EXECute

Function Turns ON/OFF the EVM or queries the current setting.

Syntax
```
:GTXRx:TXTest:EVM:EXECute {ON|OFF}
:GTXRx:TXTest:EVM:EXECute?
```

Example
```
:GTXRx:TXTest:EVM:EXECute OFF
:GTXRx:TXTest:EVM:EXECute? ->
:GTXR:TXT:EVM:EXEC OFF
```

:GTXRx:TXTest:PER95th:EXECute

Function Turns ON/OFF the 95th percentile or queries the current setting.

Syntax
```
:GTXRx:TXTest:PER95th:EXECute {ON|OFF}
:GTXRx:TXTest:PER95th:EXECute?
```

Example
```
:GTXRx:TXTest:PER95th:EXECute OFF
:GTXRx:TXTest:PER95th:EXECute? ->
:GTXR:TXT:PER95:EXEC OFF
```

:GTXRx:TXTest:ITEM

Function Switches between normal measurement and dynamic power measurement.

Syntax
```
:GTXRx:TXTest:ITEM {NORMal|DPOWer}
:GTXRx:TXTest:ITEM?
```

Example
```
:GTXRx:TXTest:ITEM NORMal
:GTXRx:TXTest:ITEM? ->
:GTXR:TXT:ITEM NORM
```

Description The settings and responses are as follows.
NORMal: TX characteristics measurement mode
DPOWer: Dynamic power measurement mode

:GTXRx:TXTest:DPOWer?

Function Queries all settings related to the dynamic power measurement.

Syntax
```
:GTXRx:TXTest:DPOWer?
```

Example
```
:GTXRx:TXTest:DPOWer? -> :GTXR:TXT:DPOW:BURS 1000;INL 30.0E+00;RANG AUTO;TRIG:SRC POW;POL RIS;DEL 0;:GTXR:TXT:DPOW:MSL 1
```

:GTXRx:TXTest:DPOWer:BURSt

Function Sets the number of measured bursts of the dynamic power measurement or queries the current setting.

Syntax
```
:GTXRx:TXTest:DPOWer:BURSt <Number of bursts>
:GTXRx:TXTest:DPOWer:BURSt?
```

Example
```
:GTXRx:TXTest:DPOWer:BURSt 1000
:GTXRx:TXTest:DPOWer:BURSt? ->
:GTXR:TXT:DPOW:BURS 1000
```

:GTXRx:TXTest:DPOWer:INLevel

Function Sets the initial level of the dynamic power measurement or queries the current setting.

Syntax
```
:GTXRx:TXTest:DPOWer:INLevel <Initial level (dBm)>
:GTXRx:TXTest:DPOWer:INLevel?
```

Example
```
:GTXRx:TXTest:DPOWer:INLevel 0.0
:GTXRx:TXTest:DPOWer:INLevel? ->
:GTXR:TXT:DPOW:INL 0.00E+00
```

Description This setting is valid only if the range is set to Auto.

:GTXRx:TXTest:DPOWer:RANGe

Function Sets the range of the dynamic power measurement or queries the current setting.

Syntax
```
:GTXRx:TXTest:DPOWer:RANGe {AUTO|P35|P25|P15|P5|M5}
:GTXRx:TXTest:DPOWer:RANGe?
```

Example
```
:GTXRx:TXTest:DPOWer:RANGe AUTO
:GTXRx:TXTest:DPOWer:RANGe? ->
:GTXR:TXT:DPOW:RANG AUTO
```

Description The settings and responses are as follows.
AUTO : Sets to auto range
P35 : +35 to −5 dBm
P25 : +25 to −15 dBm
P15 : +15 to −25 dBm
P5 : +5 to −35 dBm
M5 : −5 to −40 dBm

:GTXRx:TXTest:DPOWer:TRIGger?

Function Queries all settings related to the trigger of the dynamic power measurement.

Syntax
```
:GTXRx:TXTest:DPOWer:TRIGger?
```

Example
```
:GTXRx:TXTest:DPOWer:TRIGger? ->
:GTXR:TXT:DPOW:TRIG:SRC POW;POL RIS;DEL 0
```

:GTXRx:TXTest:DPOWer:TRIGger:SRC

Function Sets the trigger source of the dynamic power measurement or queries the current setting.

Syntax
```
:GTXRx:TXTest:DPOWer:TRIGger:SRC {POWer|EXTernal}
:GTXRx:TXTest:DPOWer:TRIGger:SRC?
```

Example
```
:GTXRx:TXTest:DPOWer:TRIGger:SRC POWer
:GTXRx:TXTest:DPOWer:TRIGger:SRC? ->
:GTXR:TXT:DPOW:TRIG:SRC POW
```

Description The settings and responses are as follows.
POWer: Uplink signal
EXTernal: External input

:GTXRx:TXTest:DPOWer:TRIGger:POLarity

Function Sets the trigger polarity of the dynamic power measurement or queries the current setting.

Syntax
```
:GTXRx:TXTest:DPOWer:TRIGger:POLarity {RISing|FALLing}
:GTXRx:TXTest:DPOWer:TRIGger:POLarity?
```

Example
```
:GTXRx:TXTest:DPOWer:TRIGger:POLarity RISing
:GTXRx:TXTest:DPOWer:TRIGger:POLarity? -> :GTXR:TXT:DPOW:TRIG:POL RIS
```

Description The settings and responses are as follows.
RISing: Rising edge
FALLing: Falling edge

:GTXRx:TXTest:DPOWer:TRIGger:DELay

Function Sets the trigger delay of the dynamic power measurement or queries the current setting.

```
Syntax  :GTXRx:TXTest:DPOWer:TRIGger:
        DELay <Delay (us)>
        :GTXRx:TXTest:DPOWer:TRIGger:DELay?
Example :GTXRx:TXTest:DPOWer:TRIGger:DELay 1
        :GTXRx:TXTest:DPOWer:TRIGger:DELay?
        -> :GTXR:TXT:DPOW:TRIG:DEL 1
```

:GTXRx:TXTest:DPOWer:MSLot

Function Sets the number of multi slots of the dynamic power measurement or queries the current setting.

```
Syntax  :GTXRx:TXTest:DPOWer:
        MSLot <Number of multi slots>
        :GTXRx:TXTest:DPOWer:MSLot?
Example :GTXRx:TXTest:DPOWer:MSLot 4
        :GTXRx:TXTest:DPOWer:MSLot? ->
        :GTXR:TXT:DPOW:MSL 4
```

5.3.12 TXView Group

:GTXRx:TXView

Function Switches the display format.

```
Syntax  :GTXRx:TXView {OVER|DETail}
Example :GTXRx:TXView OVER
```

Description The settings and responses are as follows.

OVER: Overview screen

DETail: Detail screen

5.3.13 ULParam Group

:GTXRx:ULParam:RECEivemode

Function Sets the receive mode or queries the current setting.

```
Syntax  :GTXRx:ULParam:RECEivemode {BURSt|CW}
        :GTXRx:ULParam:RECEivemode?
Example :GTXRx:ULParam:RECEivemode BURSt
        :GTXRx:ULParam:RECEivemode? ->
        :GTXR:ULP:RECE BURS
```

Description The setting and response format is as follows.

BURSt: Executes the measurement of the burst signal.

CW: Executes the measurement of the continuous signal. Only TX power can be measured.

6.1 Downlink Transmission Section

Item	Specifications		
Transmission frequency (BCCH/TCH)	**Band**	**ARFCN[*1] (resolution: 1)**	**Actual frequency(resolution: 0.2 MHz)**
	GSM900/DCS1800	0 to 124	935.0 to 959.8 MHz
		955 to 1023	921.2 to 934.8 MHz
		512 to 885	1805.2 to 1879.8 MH
	GSM850/PCS1900	128 to 251	869.2 to 893.8 MHz
		512 to 810	1930.2 to 1989.8 MHz
	* If you set the uplink reception frequency, the transmission frequency is set automatically to the corresponding frequency.		
Frequency offset	Selectable range: –75 to +75 kHz (resolution: 1 kHz) (TXRX mode only)		
Transmission power	–120.0 to –10.0 dBm (resolution: 0.1 dBm) Accuracy: ±1.0 dB (> –110.0 dBm)		
Phase error (GMSK)	2 deg rms or less		
EVM (8PSK)[*2]	5% rms or less		

*1 ARFCN = Absolute Radio Frequency Channel Number
*2 On models with the /E (GSM/GPRS/EDGE test software) option

6.2 Uplink Reception Section

Item	Specifications		
Reception frequency (BCCH/TCH)	**Band**	**ARFCN (resolution: 1)**	**Actual frequency(Resolution: 0.2 MHz)**
	GSM900/DCS1800	0 to 124	890.0 to 914.8 MHz
		955 to 1023	876.2 to 889.8 MHz
		512 to 885	1710.2 to 1784.8 MHz
	GSM850/PCS1900	128 to 251	824.2 to 848.8 MHz
		512 to 810	1850.2 to 1909.8 MHz
	* If you set the downlink transmission frequency, the reception frequency is set automatically to the corresponding frequency.		
Reception power	Maximum input level: +35 dBm (CW), +40 dBm (GSM Single Burst) Reference sensitivity: –40 dBm		
Power measurement	Measurement range: –40.0 to +35.0 dBm Accuracy: ±1.0 dB		
Phase error measurement (GMSK)	Measurement range: peak 0.5 to 45.0 deg, rms 0.5 to 20.0 deg Residual error: Approx. 1.4 deg (rms value)		
Frequency error measurement (GMSK)	Measurement range: 0 to ±10 kHz (EVM method with the frequency on the VC3300 end as a reference) Residual error: ±0.01 ppm		
EVM measurement	Residual error: 3% rms Typical[*2]		

*1 On models with the /E (GSM/GPRS/EDGE test software) option
*2 Typical value represents a typical or average value. It is not a warranted value.

6.3 Measurement Function

Item	Specifications
Connection function	Location Update Call from UE Call from NW Release from NW Release from UE Loopback (TCH (A) and burst by burst) Emergency call Frequency handover Dialing number display
GPRS/EGPRS signaling*1	Attach/Detach Test Mode A Test Mode B EGPRS SRBL Symmetry
Speech function	PN signal transmission and voice loopback Delay time setting: 0.5, 1.0, and 1.5 s
Radio characteristics measurement	• TX characteristics measurement Transmission power Frequency error Phase error (rms and peak) EVM (RMS, Peak)*1 95th percentile*1 Magnitude Error (RMS, Peak)*1 Origin Offset*1 Burst timing Spectrum (modulation): Offset 100, 200, 250, 400 to 1800 (step200) kHz Spectrum (switching): Offset 400, 600, 1200, and 1800 kHz Dynamic power (see section 6.4) • RX characteristics measurement RX quality (UE report) RX level (UE report) FER (loopback) BER (loopback) BLER*1 BER (packet communication) CRC Error*1 Data Rate*1 Actual MS Power Level C Value*1 Signal VAR*1 GMSK_MEAN_BEP*1 GMSK_CV_BEP*1 8PSK_MEAN_BEP*1 8PSK_CV_BEP*1
Display function	List display and detail display

*1 On models with the /E (GSM/GPRS/EDGE test software) option

6.4 Dynamic Power Measurement Function

Item	Specifications
Number of Bursts	1 to 1000 (resolution: 1)
Multi Slot	1 to 4 (Bursts per Frame)
Maximum Power	+35 dBm
Minimum Power	–40 dBm
Dynamic Range	When set to auto range: 75 dB When set to fixed range: 40 dB
Power step size	When set to auto range: 0 to 6 dB (within a frame or between frames) When set to fixed range: 0 to 40 dB (within the range)
Power level accuracy (absolute value)	±1.0 dB (excluding 8PSK modulation)
Trigger Source	Power EXT IN 1
Trigger polarity	Rising (when the trigger source is set to Power) Rising/Falling (when the trigger source is set to EXT IN 1)
Trigger Delay	0 to 4,615 μs (resolution: 1 μs)
Measurement rest time	60 ms

6.5 General Specifications

Item	Specifications	
Standard accessories	• CD-ROM*1	2 pieces, GSM Test Software Installation Disk (B8044UM)/electronic data of the user's manual (B8044UL)
	• CD-ROM*2	2 pieces, GSM/GPRS/EDGE Test Software Installation Disk (B8044UP)/electronic data of the user's manual (B8044UL)
	• Please Read before Installation*1	1 sheet (IM733021-71E)
	• Please Read before Installation*2	1 sheet (IM733023-71E)

*1 Included only on models with the 733021 GSM Test Software.
*2 Included only on models with the 733023 GSM/GPRS/EDGE Test Software.

Appendix 1 List of Default Values

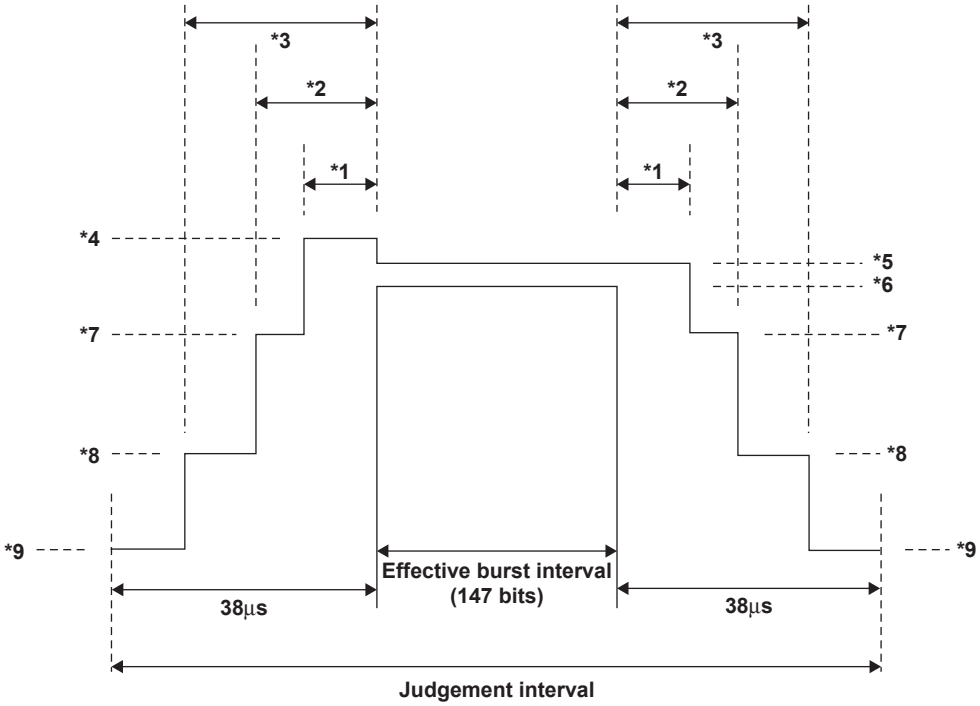
Item	Setting
CONNECT	
Test Loop Mode	Tch Loop(A)
Frequency Handover	S1 (selection only)
Frequency Handover [Manual]	
TCH	
ARFCN	0
DL Freq	935.0 MHz
UL Freq	890.0 MHz
PARAM	
IMSI MCC/MNC	
IMSI	001010000000010
MCC	001
MNC	01
Main Timeslot	4
Timeslot	
DL	ON only for slot4
UL	ON only for slot4
Voice Payload	Echo
Power Control	Normal
Speech Delay	0.5 s
Coding Scheme	CS-1
Test Loop Payload	PRBS9
Test Mode B with Ack	ON
Timing Output	Frame Timing
Payload	PRBS9
DL Modulation	ON
Receive Mode	Burst
Modulation	GMSK
FREQ	
Freq Band	GSM900/DCS1800
BCCH	
ARFCN	0
DL Freq	935.0 MHz
UL Freq	890.0 MHz
TCH	
ARFCN	0
DL Freq	935.0 MHz
UL Freq	890.0 MHz
Preset Load	S1 (selection only)
Preset Save	S1 (selection only)
RF Channel	
ARFCN	0
DL Freq	935.0 MHz
UL Freq	890.0 MHz
Offset	0 kHz
POWER	
DL Power	-60 dBm
UL Power	5 [33 dBm]
Power Compensation	0.0dB for all items
DL RF Output	ON
UL RF Input	ON
GAMMA UL Power	3 [33 dBm]
Preset Load	S1 (selection only)
Preset Save	S1 (selection only)

Appendix 1 List of Default Values

Item	Setting
TX	
Target Item	Tx Power
Measure Enable	On for all items (excluding Dynamic Power)
Average	On, count: 10
Display(Output Spectrum Detail)	
Spectrum	Modulation
Frequency Offset	0 kHz
Dynamic Power	
Number of Bursts	100
Initial Input Level	+30 dBm
Range	AUTO
Cursor	0
Trigger Source	Power
Trigger Polarity	Rising Edge
Trigger Delay	0 μs
Multi Slot	1
Rx	
Measure Enable	On for all items
Tch Frame Number	1000
Bit Number	114000
Burst Number	1000
RLC Block Number	1000

Appendix 2 Criteria for the GSM Burst Timing

For GMSK



The judgement of the burst timing is carried out based on the GSM standards. However, the criteria are slightly relaxed to take into account the measurement accuracy of the instrument, so that normal mobile phones are not judged as fail.
The criteria for burst timing (GSM specifications + measurement tolerance) are shown below. The reference level (0 dB) is the average value over the effective burst interval.

*1: 10 μs + 0.5 bit
*2: 18 μs + 0.5 bit
*3: 28 μs + 0.5 bit
*4: +4 dB + 0.5 dB
*5: +1 dB + 0.5 dB
*6: –1 dB – 0.5 dB
***7**: **For GSM850 and GSM900**

When the UL power is set to
- 0 to 15: –6 dB + 0.5 dB
- 16: –4 dB + 0.5 dB
- 17: –2 dB + 0.5 dB
- 18 and 19: –1 dB + 0.5 dB

For DCS1800 and PCS1900

When the UL power is set to
- 29 to 31 or 0 to 10: –6 dB + 0.5 dB
- 11: –4 dB + 0.5 dB
- 12: –2 dB + 0.5 dB
- 13 to 28: –1 dB + 0.5 dB

***8**: **For GSM850 and GSM900**

Add 1 dB to –30 dB or –17 dBm, whichever is higher.

For DCS1800 and PCS1900

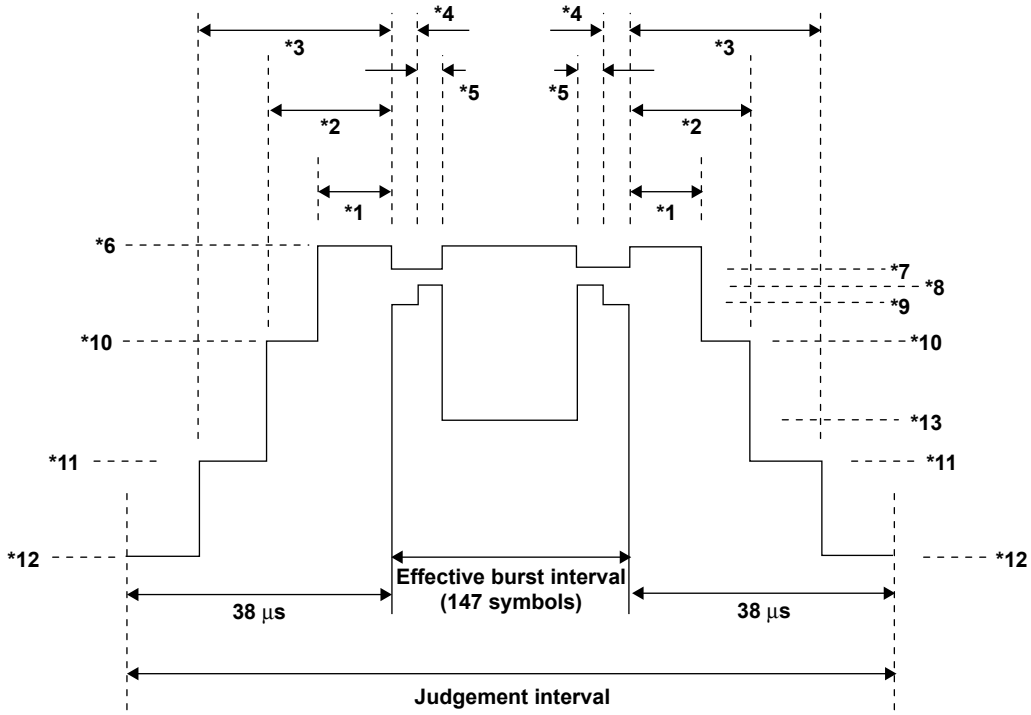
Add 1 dB to –30 dB or –20 dBm, whichever is higher.

***9**: **For GSM850 and GSM900**
Add 1 dB to –59 dB or –54 dBm, whichever is higher.
For DCS1800 and PCS1900
Add 1 dB to –48 dB or –48 dBm, whichever is higher.

Note

In the TXRX test, the power value that is actually measured is converted to the UL power setting (power control level) as in *7 above and judged in the same fashion.

For 8PSK



*1: 10 µs + 0.5 symbol
*2: 18 µs + 0.5 symbol
*3: 28 µs + 0.5 symbol
*4: 2 µs
*5: 2 µs
*6: +4 dB + 0.5 dB
*7: +2.4 dB + 0.5 dB
*8: 0 dB - 0.5 dB
*9: -2 dB - 0.5 dB

***10: For GSM850 and GSM900**

When the UL power is set to 0 to 15: -6 dB + 0.5 dB
16: -4 dB + 0.5 dB
17: -2 dB + 0.5 dB
18 and 19: -1 dB + 0.5 dB

For DCS1800 and PCS1900

When the UL power is set to 29 to 31 or 0 to 10: -6 dB + 0.5 dB
11: -4 dB + 0.5 dB
12: -2 dB + 0.5 dB
13 to 28: -1 dB + 0.5 dB

***11: For GSM850 and GSM900**

Add 1 dB to -30 dB or -17 dBm, whichever is higher.

For DCS1800 and PCS1900

Add 1 dB to -30 dB or -20 dBm, whichever is higher.

***12: For GSM850 and GSM900**

Add 1 dB to -59 dB or -54 dBm, whichever is higher.

For DCS1800 and PCS1900

Add 1 dB to -48 dB or -48 dBm, whichever is higher.

***13: -20dB - 0.5dB**

Note

In the TXRX test, the power value that is actually measured is converted to the UL power setting (power control level) as in *10 above and judged in the same fashion.

Appendix 3 Criteria for GSM Spectrum Measurements

Spectrum due to Modulation

Measurement Bandwidth: 30 kHz

Frequency Offset	Criteria
0 Hz	–
±100 kHz	0.5 dB or -36 dBm or less
±200 kHz	-30.0 dB or -36 dBm or less
±250 kHz	-33.0 dB or -36 dBm or less
±400 kHz	-60.0 dB or -36 dBm or less*3
±600, 800, 1000, 1200, 1400, 1600 kHz	*1
±1800 kHz	*2

***1 For GSM850 and GSM900**

Measurement value of TX Power	Criteria
34 dBm or more	-62 dB or -51 dBm or less
Less than 34 dBm	-60 dB or -51 dBm or less

For DCS1800 and PCS1900

Measurement value of TX Power	Criteria
34 dBm or more	-62 dB or -56 dBm or less
Less than 34 dBm	-60 dB or -56 dBm or less

***2 For GSM850 and GSM900**

Measurement value of TX Power	Criteria
34 dBm or more	-65 dB or -46 dBm or less
Less than 34 dBm	-63 dB or -46 dBm or less

For DCS1800

Measurement value of TX Power	Criteria
33 dBm or more	-69 dB or -51 dBm or less
31 dBm or more less than 33 dBm	-67 dB or -51 dBm or less
29 dBm or more less than 31 dBm	-65 dB or -51 dBm or less
27 dBm or more less than 29 dBm	-63 dB or -51 dBm or less
25 dBm or more less than 27 dBm	-61 dB or -51 dBm or less
Less than 25 dBm	-59 dB or -51 dBm or less

For PCS1900

Measurement value of TX Power	Criteria
33 dBm or more	-68 dB or -51 dBm or less
31 dBm or more less than 33 dBm	-67 dB or -51 dBm or less
29 dBm or more less than 31 dBm	-65 dB or -51 dBm or less
27 dBm or more less than 29 dBm	-63 dB or -51 dBm or less
25 dBm or more less than 27 dBm	-61 dB or -51 dBm or less
Less than 25 dBm	-59 dB or -51 dBm or less

***3 For 8PSK**

For GSM850, GSM900

Measurement value of TX Power	Criteria
34 dBm or more	-60.0 dB or -36 dBm or less
Less than 34 dBm	-54.0 dB or -36 dBm or less

For DCS1800 and PCS1900

Measurement value of TX Power	Criteria
31 dBm or more	-60.0 dB or -36 dBm or less
Less than 31 dBm	-54.0 dB or -36 dBm or less

Spectrum due to Switching Transients

Measurement Bandwidth: 30 kHz

For GSM850 and GSM900

Measurement value of TX Power	Criteria (maximum value)			
	±400 kHz	±600 kHz	±1200 kHz	±1800 kHz
34 dBm or more	-17 dBm	-21 dBm	-21 dBm	-24 dBm
32 dBm or more less than 34 dBm	-19 dBm	-21 dBm	-21 dBm	-24 dBm
30 dBm or more less than 32 dBm	-21 dBm	-23 dBm	-23 dBm	-26 dBm
28 dBm or more less than 30 dBm	-23 dBm	-25 dBm	-25 dBm	-28 dBm
26 dBm or more less than 28 dBm	-23 dBm	-26 dBm	-27 dBm	-30 dBm
24 dBm or more less than 26 dBm	-23 dBm	-26 dBm	-29 dBm	-32 dBm
22 dBm or more less than 24 dBm	-23 dBm	-26 dBm	-31 dBm	-34 dBm
Less than 22 dBm	-23 dBm	-26 dBm	-32 dBm	-36 dBm

For DCS1800 (GMSK, 8PSK) and PCS1900 (8PSK)

Measurement value of TX Power	Criteria (maximum value)			
	±400 kHz	±600 kHz	±1200 kHz	±1800 kHz
33 dBm or more	-18 dBm	-21 dBm	-21 dBm	-24 dBm
31 dBm or more less than 33 dBm	-20 dBm	-22 dBm	-22 dBm	-25 dBm
29 dBm or more less than 31dBm	-22 dBm	-24 dBm	-24 dBm	-27 dBm
27 dBm or more less than 29 dBm	-23 dBm	-25 dBm	-26 dBm	-29 dBm
25 dBm or more less than 27 dBm	-23 dBm	-26 dBm	-28 dBm	-31 dBm
23 dBm or more less than 25 dBm	-23 dBm	-26 dBm	-30 dBm	-33 dBm
21 dBm or more less than 23 dBm	-23 dBm	-26 dBm	-31 dBm	-35 dBm
Less than 21 dBm	-23 dBm	-26 dBm	-32 dBm	-36 dBm

For PCS1900 (GMSK)

Measurement value of TX Power	Criteria (maximum value)			
	±400 kHz	±600 kHz	±1200 kHz	±1800 kHz
32.5 dBm or more	-19 dBm	-22 dBm	-22 dBm	-25 dBm
31 dBm or more less than 32.5 dBm	-20 dBm	-22 dBm	-22 dBm	-25 dBm
29 dBm or more less than 31 dBm	-22 dBm	-24 dBm	-24 dBm	-27 dBm
27 dBm or more less than 29 dBm	-23 dBm	-25 dBm	-26 dBm	-29 dBm
25 dBm or more less than 27 dBm	-23 dBm	-26 dBm	-28 dBm	-31 dBm
23 dBm or more less than 25 dBm	-23 dBm	-26 dBm	-30 dBm	-33 dBm
21 dBm or more less than 23 dBm	-23 dBm	-26 dBm	-31 dBm	-35 dBm
Less than 21 dBm	-23 dBm	-26 dBm	-32 dBm	-36 dBm

Appendix 4 Relationship between the Power Class/ Power Control Level and Output Power

Power Class and Maximum Output Power

The maximum output power of a mobile phone is specified by the power class. The maximum output power varies depending on the used frequency band and modulation type even in the same power class as follows:

GMSK Modulation

Power Class	GSM900/GSM850 Maximum Output Power	DCS1800 Maximum Output Power	PCS1900 Maximum Output Power
1	–	1W (30 dBm)	1W (30 dBm)
2	8W (39 dBm)	0.25 W (24 dBm)	0.25 W (24 dBm)
3	5W (37 dBm)	4W (36 dBm)	2W (33 dBm)
4	2W (33 dBm)		
5	0.8W (29 dBm)		

8PSK Modulation

Power Class	GSM900/GSM850 Maximum Output Power	DCS1800 Maximum Output Power	PCS1900 Maximum Output Power
E1	33 dBm	30 dBm	30 dBm
E2	27 dBm	26 dBm	26 dBm
E3	23 dBm	22 dBm	22 dBm

Power Control Level and Output Power

The power control level (voice) or GAMMA (packet) is used to set the RF power of the uplink signal. The output power varies depending on the used frequency band even at the same power control level (GAMMA) as follows:

Voice Communication (UL Power)

Power Control Level	GSM900/GSM850 Output Power (dBm)	DCS1800 Output Power (dBm)	PCS1900 Output Power (dBm)
0	39	30	30
1	39	28	28
2	39	26	26
3	37	24	24
4	35	22	22
5	33	20	20
6	31	18	18
7	29	16	16
8	27	14	14
9	25	12	12
10	23	10	10
11	21	8	8
12	19	6	6
13	17	4	4
14	15	2	2
15	13	0	0
16	11	0	Reserved
17	9	0	Reserved
18	7	0	Reserved
19	5	0	Reserved
20	5	0	Reserved
21	5	0	Reserved
22	5	0	Reserved
23	5	0	Reserved
24	5	0	Reserved
25	5	0	Reserved
26	5	0	Reserved
27	5	0	Reserved
28	5	0	Reserved
29	5	36	Reserved
30	5	34	33
31	5	32	32

Packet Communication (GAMMA UL Power)

Power Control Level (GAMMA)	GSM900/GSM850 Output Power (dBm)	DCS1800/PCS1900 Output Power (dBm)
0	39	36
1	37	34
2	35	32
3	33	30
4	31	28
5	29	26
6	27	24
7	25	22
8	23	20
9	21	18
10	19	16
11	17	14
12	15	12
13	13	10
14	11	8
15	9	6
16	7	4
17	5	2
18	3	0
19	1	-2
20	-1	-4
21	-3	-6
22	-5	-8
23	-7	-10
24	-9	-12
25	-11	-14
26	-13	-16
27	-15	-18
28	-17	-20
29	-19	-22
30	-21	-24
31	-23	-26

Appendix 5 Multislot Class and the Number of Slots That Can Be Used

Number of Slots That Can Be Used for Each Multislot Class

The number of timeslots that can be used for DL and UL varies depending on the multislot class of the mobile phone as follows:

Multislot class	Rx (DL)	Tx (UL)	Sum
1	1	1	2
2	2	1	3
3	2	2	3
4	3	1	4
5	2	2	4
6	3	2	4
7	3	3	4
8	4	1	5
9	3	2	5
10	4	2	5
11	4	3	5
12	4	4	5

* How to view the table
If the multislot class is 10, up to 4 timeslots can be used for DL alone and up to 2 timeslots can be used for UL alone. However, the total number of DL and UL timeslots that can be used is 5.

Combinations of Slots That Can Be Used for DL and UL (Timeslot configuration)

The combination of the number of slots that can be used varies depending on the test loop mode as follows:

Test Mode A

DL / UL	Main Timeslot	DL timeslot	UL timeslot
DL1 / UL1	3	3	3
	4	4	4
	5	5	5
	6	6	6
DL1 / UL2	3	3	3,4
	4	4	4,5
	5	5	5,6
DL1 / UL3	3	3	3,4,5
	4	4	4,5,6
DL1 /UL4	3	3	3,4,5,6

Test Mode B

- **When the number of timeslots used by DL is 1**

DL/UL	Main timeslot	DL timeslot	UL timeslot
DL1/UL1	3	3	3
	4	4	4
	5	5	5
	6	6	6
DL1/UL2	3	3	3,4
	4	4	4,5
	5	5	5,6
DL1/UL3	3	3	3,4,5
	4	4	4,5,6
DL1/UL4	3	3	3,4,5,6

- **When the number of timeslots used by DL is 2**

DL/UL	Main timeslot	DL timeslot	UL timeslot
DL2/UL1	3	3,4	3
	4	3,4	4
	4	4,5	4
	5	4,5	5
	5	5,6	5
	6	5,6	6
DL2/UL2	3	3,4	3,4
	4	3,4	3,4
	4	4,5	4,5
	5	4,5	4,5
	5	5,6	5,6
	6	5,6	5,6
DL2/UL3	3	3,4	3,4,5
	4	3,4	3,4,5
	4	3,4	4,5,6
	4	4,5	4,5,6
	5	4,5	4,5,6
DL2/UL4	3	3,4	3,4,5,6
	4	3,4	3,4,5,6

- **When the number of timeslots used by DL is 3**

DL/UL	Main timeslot	DL timeslot	UL timeslot
DL3/UL1	4	3,4,5	4
	5	3,4,5	5
	5	4,5,6	5
	6	4,5,6	6
DL3/UL2	4	3,4,5	4,5
	5	3,4,5	4,5
	5	4,5,6	5,6
	6	4,5,6	5,6
DL3/UL3	4	3,4,5	4,5,6
	5	3,4,5	4,5,6

- **When the number of timeslots used by DL is 4**

DL/UL	Main timeslot	DL timeslot	UL timeslot
DL4/UL1	5	3,4,5,6	5
	6	3,4,5,6	6
DL4/UL2	5	3,4,5,6	5,6
	6	3,4,5,6	5,6

EGPRS SRBL Symmetry

DL / UL	Main Timeslot	DL timeslot	UL timeslot
DL1 / UL1	3	3	3
	4	4	4
	5	5	5
	6	6	6

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