User's Manual

VC3300
Wireless Communication Tester
WCDMA/HSDPA Test Software

YOKOGAWA
Yokogawa Electric Corporation

IM 733022-01E
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 WCDMA/HSDPA 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	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	This manual. 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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Revisions

1st Edition: February 2006
2nd Edition: May 2006
3rd Edition: June 2006
4th Edition: September 2006
5th Edition: June 2007

5th Edition : June 2007 (YK)

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 (IM733022-01E) 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 User's Manual (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

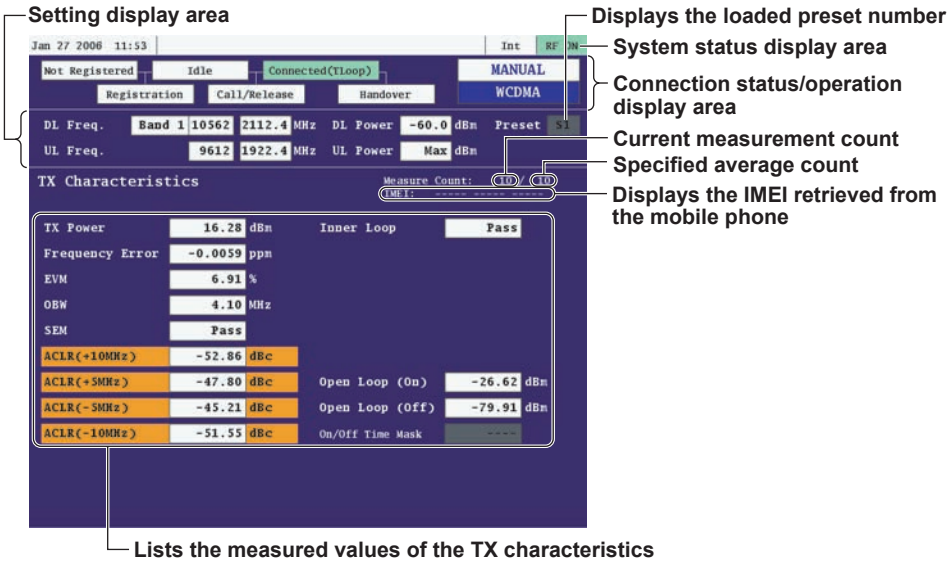
k Denotes 1000. Example: 12 kg, 100 kHz

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

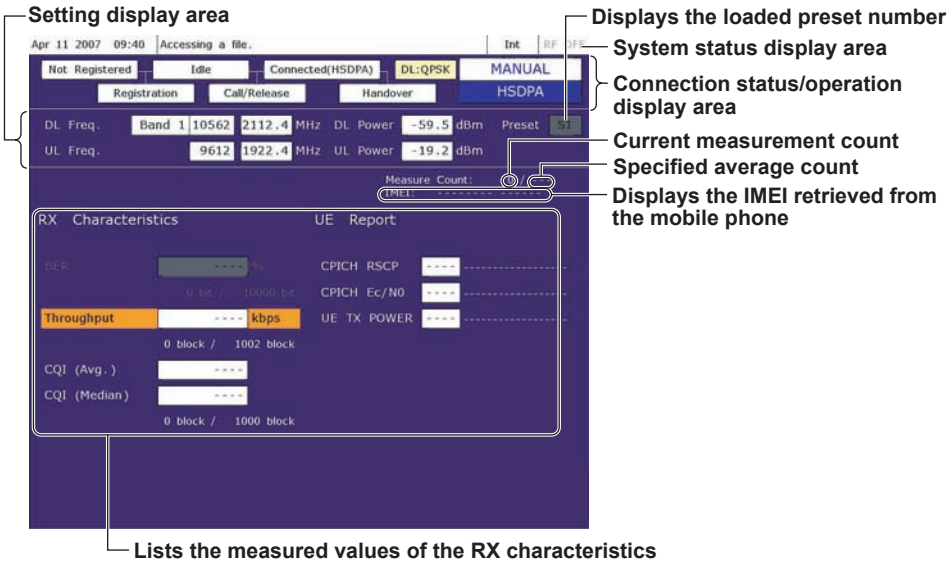
Contents

1.1 Display (List Display)

Transmitter (TX) Characteristics

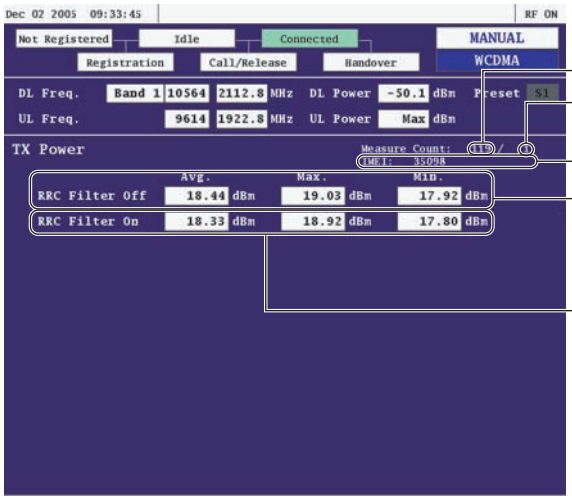


Receiver (RX) Characteristics



1.2 Display (Detail Display)

TX Power



Current measurement count

Specified average count

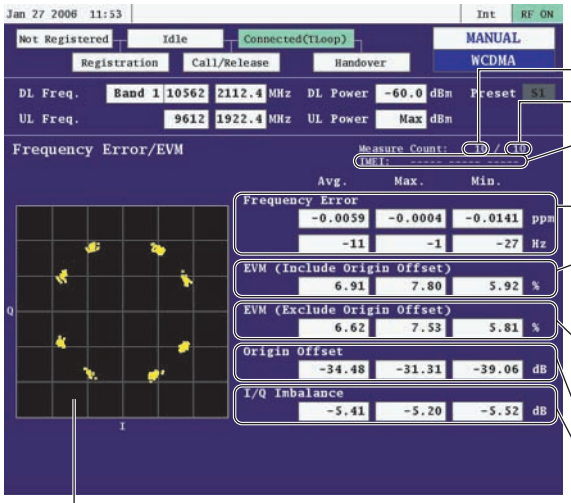
Displays the IMEI retrieved from the mobile phone

Displays the measured value of the uplink transmission power before passing through the RRC filter*

Displays the measured value of the uplink transmission power after passing through the RRC filter*

* Root-Raised Cosine(RRC) filter: roll off factor = 0.22, bandwidth = 3.84 MHz

Frequency Error and EVM



Current measurement

Specified average count

Displays the IMEI retrieved from the mobile phone

Displays the frequency error
(displayed in [ppm] and [Hz])

Displays the EVM after passing through the RRC filter
(includes the offset error from the origin)

Displays the EVM after passing through the RRC filter
(excludes the offset error from the origin)

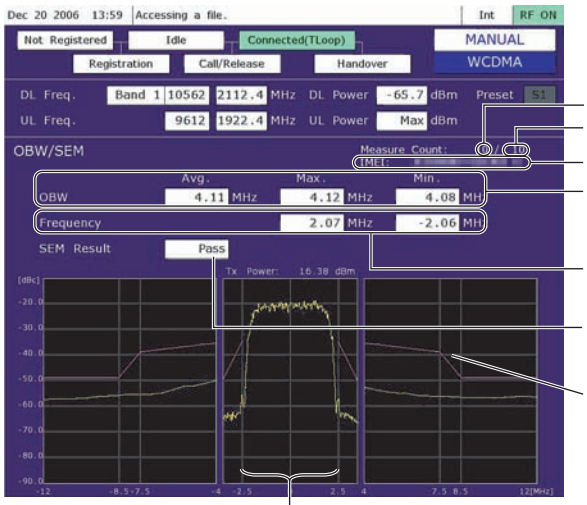
Displays the offset error from the origin

Displays the level ratio (dB) of the I and Q signals

Displays the constellation*
(horizontal axis: I (in-phase), vertical axis: Q (quadrature))

* Repetitively displays 512 points of data.

OBW (Occupied Bandwidth) and SEM (Spectrum Emission Mask)



- Current measurement count
- Specified average count
- Displays the IMEI retrieved from the mobile phone
- Displays the frequency bandwidth corresponding to 99% of the transmission power from the mobile phone
- Displays the upper and lower limit frequencies (Max and Min) of OBW
- Determines whether the spectrum* is within the criteria mask, and displays pass or fail
- Criteria level of SEM measurement
- Displays the results measured at 30-kHz bandwidth for 0 to ±2.5 MHz

* The spectrum in the following frequency range is measured.
–12 MHz to –2.5 MHz and 2.5 MHz to 12 MHz
The measurement bandwidth for each frequency offset is as follows:
30 kHz: When the frequency offset is –3.5 MHz to –2.5 MHz or 2.5 MHz to 3.5 MHz.
1 MHz: When the frequency offset is –12 MHz to –4 MHz or 4 MHz to 12 MHz.

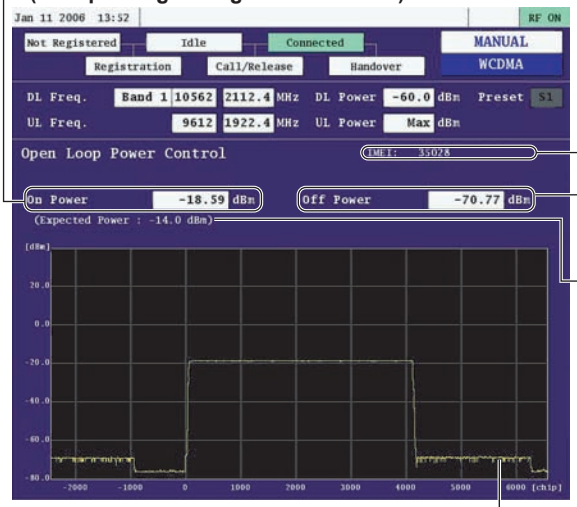
Vertical axis: Power (0 dBc = power of the carrier frequency)
Horizontal axis: Frequency offset (0 MHz = carrier frequency)

ACLR (Adjacent channel leakage power ratio)

- Transmission power
- Current measurement count
- Specified average count
- Displays the IMEI retrieved from the mobile phone
- Displays the peak hold value of the maximum value
- Criteria level
- Displays the difference (dBc) with respect to the transmission power (reference signal)
- Displays the reference transmission power (after passing through the RRC filter, dBm)

Vertical axis: Adjacent channel leakage power ratio (0 dBc = power of the transmission)
Horizontal axis: ±5 MHz, ±10 MHz

Open Loop Power Control (Open Loop (On) and Open Loop (Off))



Average power in the On period of the PRACH preamble (after passing through the RRC filter)

Displays the IMEI retrieved from the mobile phone

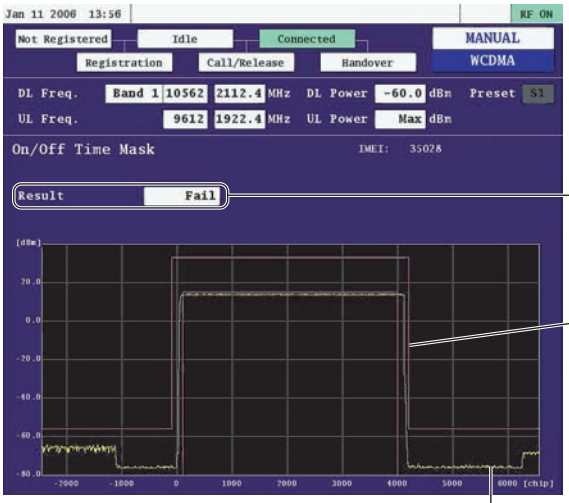
Average power in the Off period of the PRACH preamble (after passing through the RRC filter)

Expected value of ON power

Power trend display

Vertical axis: Power (absolute level)
Horizontal axis: Number of chips (–2464 to 6560 chips)

On/Off Time Mask



Determines whether the measured value is within the criteria mask, and displays pass or fail

Criteria mask

Power trend display

Inner Loop Power Control

Displays the IMEI retrieved from the mobile phone

Difference in the transmission power after 1 time slot

Difference in the transmission power after 10 time slots

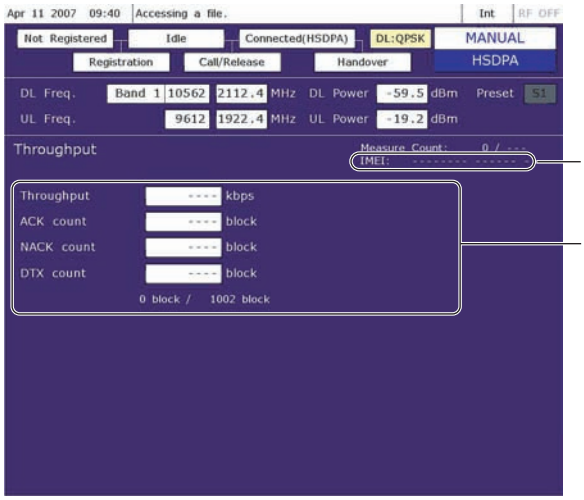
Determines whether the measured value is within the criteria, and displays pass or fail

Power trend (relative value) display
(orange: 1 time slot, green: 10 time slots)

Power trend (absolute value) display

Vertical axis (upper section): Power (relative level, automatically set for each selected TPC pattern)
Vertical axis (lower section): Power (absolute level)
Horizontal axis: Time slot

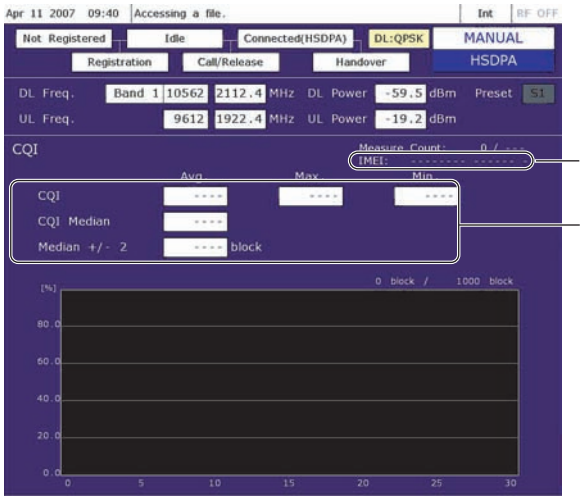
Throughput



Displays the IMEI retrieved from the mobile phone

Displays the downlink throughput that is calculated from the ACK/NACK signals retrieved from the mobile phone as well as the number of ACK, NACK, and DTX blocks

CQI



Displays the IMEI retrieved from the mobile phone

Displays the CQI value retrieved from the mobile phone

1.3 Measurements in Manual Mode (Signaling)

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

Select the wireless standard to be used from the following:

- GSM: Measures mobile phones of the GSM system. This standard can be selected when the GSM test software is installed.
- WCDMA: Measures mobile phones of the WCDMA system.
- HSDPA: Measures voice and HSDPA communications. This standard can be selected when the HSDPA test software is installed.

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

Profile

Select the WCDMA protocol used in signaling from below.

- Profile_w00: Supports 3GPP 2000.12 edition
- Profile_w01: Supports 3GPP 2001.06 edition or later

IMSI

Set the IMSI code of the mobile phone. If the VC3300 is able to retrieve the IMSI code of the mobile phone during position registration, the retrieved value is automatically set.

MCC and MNC

Set the MCC and MNC codes of system information.

Security

Turn ON/OFF the integrity function, turn ON/OFF the authentication function, and set the authentication key when the authentication function is turned ON.

Voice Payload

If the connection mode is Voice, you can select the downlink payload from the following four types.

PRBS9: Transmits PRBS9 data to the mobile phone.
ALL0: Transmits all-zero data to the mobile phone.
ALL1: Transmits all-one data to the mobile phone.
Echo: Loops back the speech data that is received in the uplink from the mobile phone and transmits the data

Test Loop Bit Rate

Set the test loop bit rate.

Delay Time

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

Channel Type (H-Set)

Set the combination of the HSDPA downlink channel type and modulation type according to the performance of the mobile phone.

CQI and ACK/NACK

Set the feedback cycle and the repetition factor of the CQI and ACK/NACK sent from the mobile phone.

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

Set the downlink and uplink frequencies to be used in the measurement. If you change the frequency while the call is connected, a frequency handover is carried out.

Frequency Band

The following eight frequency bands can be used in the measurement.
Band1, 2, 3, 4, 5, 6, 8, and 9

Downlink Frequency Channel (DL UARFCN)

Set the actual frequency or the channel number (UARFCN).

Uplink Frequency Channel (UL UARFCN)

Set the actual frequency or the channel number (UARFCN).

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 (target power of the inner loop power) of the uplink 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.

Turning ON/OFF the DL RF

You can turn ON/OFF the downlink RF output.

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.>>

Position Registration

Displays whether the position registration sequence was completed when the power of the mobile phone was turned ON in the connection status/operation display area on the display. When the position registration is complete, the display shows the IMEI of the mobile phone. If the VC3300 is able to retrieve the IMSI code of the mobile phone during position registration, that value is automatically set in the VC3300.

Connection Mode

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

Connection Mode	Measured Item
Test Loop	TXRX characteristics
Voice	Voice and TX characteristics
Video	Video and TX characteristics
RMC 12.2k+HSDPA*	TX/RX characteristics (including the test loop)
SRB 3.4k+HSDPA*	TX/RX characteristics (excluding the test loop)

* Selectable on models with the HSDPA option.

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 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 VC3300 receives the call resulting in the establishment of the call, the display shows the dialed number and the IMEI of the mobile phone. The Connected 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**
  When the mobile phone is idle, the VC3300 starts the TC (Test Control) protocol. When the mobile phone is able to close the test loop normally and the test loop is established, the Connected indicator in the connection status display area at the upper section of the display turns light green.
  If mobile phone fails to establish the test loop, the mobile phone returns to idle. The Idle indicator in the connection status display area 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 Idle indicator in the connection status display area at the upper section of the display turns light green.
  If the mobile phone fails to open the test loop, the background color of the Call/Release indicator in the connection status display area at the upper section of the display turns red. Then, the mobile phone returns to idle, and the Idle indicator in the connection status display area turns light green.

- **HSDPA Connection**
  Executes an HSDPA connection procedure from the VC3300 when the mobile phone is idle. If the mobile phone successfully establishes an HSDPA connection, the Connected indicator in the connection status display area at the upper section of the display turns light green.

- **HSDPA Disconnection**
  Executes an HSDPA disconnection procedure from the VC3300 while the mobile phone is connected. If the mobile phone successfully releases the HSDPA call, the Idle 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 or is not registered, execute the emergency call procedure (dial the numbers and press the talk button) from the mobile phone. When the VC3300 receives the call resulting in the establishment of the call, the display shows the dialed number and the IMEI 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.

- **Inter-RAT Handovers**
  When the mobile phone is in the Connected state, handover is made to the GSM system. 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. Parameters such as the handover destination frequency band/channel are set in the GSM connection conditions.

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 STOP/STOP or SINGLE key on the front panel.

Measurement Items

The following radio characteristics can be measured in the Connected state. However, open loop power and transmit ON/OFF time mask cannot be measured simultaneously.

TX Characteristics

TX Power

Measures the transmission power of the mobile phone. You can select the test specs while making HSDPA measurements.

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. You can select the test specs while making HSDPA measurements.

Modulation Accuracy (EVM)

Measures the modulation accuracy (EVM rms value) of the uplink output signal of the mobile phone. The detailed display shows simultaneously the measured values with and without the origin offset. You can select the test specs while making HSDPA measurements.

Open Loop Power Control (On Power)

Measures the open loop power of the mobile phone. The VC3300 measures the average power of the output signal of the first RACH preamble received from the mobile phone and shows the measured value on the display.

Open Loop Power Control (Off Power)

The VC3300 measures the power in the Off period of a time slot before and after the first RACH preamble received from the mobile phone and shows the measured value on the display.

Inner Loop Power Control

Tests the inner loop power control of the mobile phone when the connection mode is Voice, Video, or Test Loop. Measures the inner loop power control of the mobile phone. The VC3300 sends a given TPC command to the mobile phone, measures whether the power of the corresponding time slot changes as expected, and shows the measured value on the display.

Transmit ON/OFF Time Mask

Measures the ON/OFF time mask of the mobile phone. The VC3300 measures the power of the first RACH preamble output signal received from the mobile phone, measures the power in the OFF period of a time slot before and after the RACH preamble, and compares them to the time mask. Then, the VC3300 judges whether the power transition diagram is within the mask as defined in the 3GPP specifications and shows the result (pass or fail) on the display.

Occupied Bandwidth (OBW)

Measures the occupied bandwidth (99% bandwidth) of the output signal received from the mobile phone and shows the measured value on the display. You can select the test specs while making HSDPA measurements.

Spectrum Emission Mask(SEM)

Measures the spectrum emission mask of the mobile phone. The VC3300 analyzes the spectrum of the output signal received from the mobile phone. Then, the VC3300 judges whether the power of a section away from the carrier frequency is within the mask as defined in the 3GPP specifications and shows the result (pass or fail) on the display. You can select the test specs while making HSDPA measurements.

Adjacent Channel Leakage Power Ratio (ACLR)

Measures the adjacent channel leakage power ratio of the mobile phone. The VC3300 analyzes the spectrum of the output signal received from the mobile phone. Measures the ratio of the power of the first adjacent channel (±5 MHz) and the second adjacent channel (±10 MHz) with respect to the power of the carrier frequency. You can select the test specs while making HSDPA measurements.

RX Characteristics

Bit Error Rate

Measures the bit error rate on layer 1 of the received signal when the connection mode is Test Loop.

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.

Throughput

Calculates the throughput of the HSDPA signal that is sent on the VC3300 downlink using the ACK/NACK signals received from the mobile phone and displays the results. The throughput is displayed when the connection mode is RMC 12.2k + HSDPA or SRB 3.4k + HSDPA.

CQI

Displays the average, maximum, minimum, center, and other values of the CQI (Channel Quality Indicator) of the HSDPA signal that is sent on the VC3300 downlink when the connection mode is RMC 12.2k + HSDPA or SRB 3.4k + HSDPA.

List of Measured Values and Detail Display

Measurement Item	Displayed Information List (Overview)	Detail
TX Characteristics		
TX Power	Measured value[*1] (without RRC filter)	Maximum, minimum, and average values (without RRC filter)[*1] Maximum, minimum, and average values (with RRC filter)[*1]
Frequency Error	Measured value[*1]	Maximum, minimum, and average values (frequency error)[*1] Maximum, minimum, and average values (EVM with origin offset)[*1] Maximum, minimum, and average values (EVM without origin offset)[*1] Maximum, minimum, and average values (origin offset)[*1] Maximum, minimum, and average values (I/Q imbalance)[*1]
Modulation Accuracy (EVM)	(EVM with Origin Offset) Measured value[*1]	Common with Frequency Error
Open Loop Power Control	ON power measured value[*1], OFF power measured value[*1] time domain graph	ON power measured value[*1], OFF power measured value[*1]
Inner Loop Power Control	Pass or Fail	Pass or Fail (StepE[*2]) After the 1st time slot: Maximum, minimum, and average values (StepE[*2]) After the 10th time slot: Maximum, minimum, and average values time domain graph
Transmit ON/OFF Time Mask	Pass or Fail	Pass or fail and time domain graph
Occupied Bandwidth (OBW)	Measured value[*1]	Maximum, minimum, and average values[*1], lower limit frequency, upper limit frequency (Spectrum Emission Mask) Pass or Fail Spectrum emission mask flag
Spectrum Emission Mask (SEM)	Pass or Fail	Common with OBW
Adjacent Channel Leakage	±5 MHz: Measured value[*1]	±5 MHz: Maximum, minimum, and average values[*1]
Power Ratio (ACLR)	±10 MHz: Measured value[*1]	±10 MHz: Maximum, minimum, and average values[*1] ACLR bar graph (displays 0 MHz, ±5 MHz, and ±10 MHz points on the graph) TX Power (with RRC filter)
RX Characteristics		
Bit Error Rate	Measured value	—
Throughput	Measured value	Measured value, ACK count, NACK count, and DTX count
CQI	Average/center value	Average, center, maximum, minimum, and center±2 CQI graph

*1 Displays the average value when averaging is ON and the measured value when averaging is OFF
*2 Displays the measured value of the selected TPC pattern (Step E, Step F, Step G, or Step H)

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
Modulation Accuracy (EVM)	Yes
Open Loop Power Control	No
Inner Loop Power Control	No
Transmit ON/OFF Time Mask	No
Occupied Bandwidth	Yes
Spectrum Emission Mask	Yes
Adjacent Channel Leakage Power Ratio	Yes
RX Characteristics	
Bit Error Rate	No
Throughput	No
CQI	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)

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

DL Code Number

Set the downlink scrambling code number and the channelization code number for each channel.

- **Scrambling Code**
  Set the downlink scrambling code number as defined by 3GPP TS25.213.
  The scrambling code number is used in the spreading of all code channels.
- **Channelization Code**
  You can set the channelization code number for S-CPICH, PICH, and DPCH.

DL Timing Offset

Set the timing offset of PICH and DPCH with respect to P-CCPCH.

DPCH Symbol Rate

Set the symbol rate of the downlink DPCH.
At 30 k and 120 ksps, the transport channel consists of a symbol sequence that has been encoded and mapped using RMC (Reference Measurement Channel) as defined by 3GPP TS25.101 V3.8.0 (2001-09) Annex A.3.
At 7.5 k, 15 k, 60 k, 240 k, 480 k, and 960 ksps in which no RMC regulation exists, the specified data pattern is inserted in the symbol pattern of the physical channel.

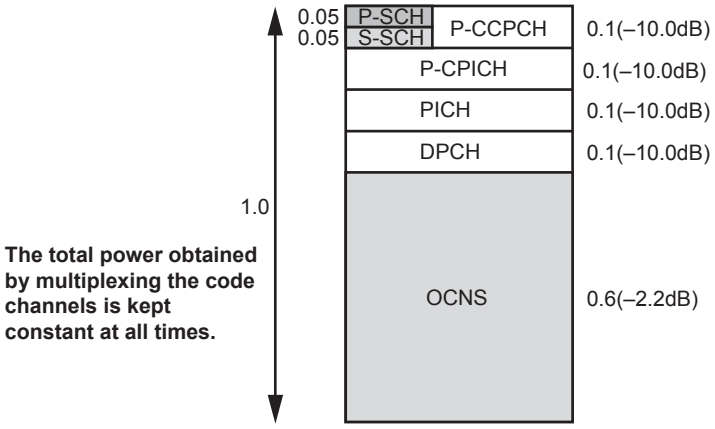
DPCH Payload

Set the payload type of the downlink DPCH.
ALL0: Transmits all-zero data to the mobile phone.
ALL1: Transmits all-one data to the mobile phone.
PRBS9: Transmits PRBS9 data to the mobile phone.

DL Code Domain Power

Set the code domain power value for each downlink channel.
Set the attenuation (power ratio) of each code channel with respect to the total power in decibels. The remaining power of each code channel with respect to the total power is input to OCNS, so that the total power obtained by multiplexing the code channels is constant.
SCH is obtained by multiplexing equal powers of P-SCH and S-SCH at 1/2 power level each. The total power is equal to P-CCPCH.
Example: Power ratio diagram when the code power setting is as follows:

- SCH+PCCPCH: –10.0 dB
- P-CPICH: –10.0 dB
- S-CPICH: – ∞ dB
- PICH: –10.0 dB
- DPCH: –10.0 dB
- OCNS: –2.2 dB



Note

- To maintain a constant total power after multiplexing, the channelization code setting of each code channel must maintain orthogonality.
- Since the channelization codes of DPCH and PICH can be set freely, if they are not set to achieve orthogonality, correlation between code channels occur. This causes a fluctuation in the total power. Consequently, this fluctuation appears in the RF power.

DL Modulation

You can turn ON/OFF the downlink modulation.
When turned ON, the VC3300 transmits a WCDMA modulated signal according to the specified parameters (scrambling code number, channelization code number, timing offset, code power, and other parameters). When turned OFF, the VC3300 transmits an unmodulated carrier.

Uplink Measurement Conditions <<For procedures, see section 3.3.>>

UL Code Number

Set the scrambling code number of the uplink signal to be received.
You can specify this value only when the synchronous mode is set to Sync.

UL Timing Offset

Set the timing offset of the uplink signal (DPCH) to be received with respect to SCH+PCCPCH that the VC3300 transmits.
You can specify this value only when the synchronous mode is set to Sync.
Since the VC3300 can compensate up to ±15 chips of offset between the uplink signal and the downlink signal of the VC3300, reception in synchronous mode is possible. If the offset is greater than ±15 chips, set a timing offset to the uplink signal and specify whether to receive the signal using Sync or Async mode.

Synchronous Mode

Sync mode and Async mode are available. When the uplink signal to be received is not synchronized with the downlink signal of the VC3300, use asynchronous mode.

- **Sync Mode**
  The VC3300 automatically detects the power ratio of DPDCH and DPCCH. Therefore, input signals with arbitrary power ratios can be analyzed. However, to carry out synchronization, the scrambling code number, the DPDCH symbol rate, and the timing offset must be specified to match the transmission condition of the mobile phone.

- **Async Mode**
  In asynchronous mode, it is assumed that the power ratio of DPDCH and DPCCH of the transmission source under measurement is known. You must set the IQ power ratio described later. For the value, you will select the power ratio rank, either βc or βd as defined by 3GPP TS25.213.

IQ Power Ratio

Set the gain ratio between the control channel (DPCCH) and the data channel (DPDCH) of the uplink signal (HPSK modulated signal) to be received.
You can specify this value only when the synchronous mode is set to Async.

DPDCH Symbol Rate

Set the uplink DPDCH symbol rate in Sync mode.
You can specify this value only when the synchronous mode is set to Sync.

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

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

Frequency Band

The following eight frequency bands are available for the RF frequencies that are transmitted or received.
Band1, 2, 3, 4, 5, 6, 8, and 9

Downlink Frequency Channel (DL UARFCN)

Set the actual frequency or the channel number (UARFCN).

Uplink Frequency Channel (UL UARFCN)

Set the actual frequency or the channel number (UARFCN).

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 3.5>>

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.
Setting the power compensation allows the cancellation of the power loss in the cable, etc.

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 3.6 to 3.8>>

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 STOP/STOP or SINGLE key on the front panel.

Measurement Items

TX Characteristics

TX Power

Measures the power of the output signal received 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.

Modulation Accuracy (EVM)

Measures the modulation accuracy (EVM rms value) of the uplink output signal of the mobile phone, and shows the measured value on the display. The detailed display shows simultaneously the measured values with and without the origin offset.

Occupied Bandwidth (OBW)

Measures the occupied bandwidth (99% bandwidth) of the output signal received from the mobile phone and shows the measured value on the display.

Spectrum Emission Mask (SEM)

Measures the spectrum emission mask of the mobile phone. The VC3300 analyzes the spectrum of a time slot of the output signal received from the mobile station after passing through the RRC filter. Then, the VC3300 judges whether the power of a section away from the carrier frequency is within the mask as defined in the 3GPP specifications and shows the result (pass or fail) on the display.

Adjacent Channel Leakage Power Ratio (ACLR)

Measures the adjacent channel leakage power ratio of the mobile phone. The VC3300 analyzes the spectrum of the output signal received from the mobile phone. Measures the ratio of the power of the first adjacent channel (±5 MHz) and the second adjacent channel (±10 MHz) with respect to the power of the carrier frequency.

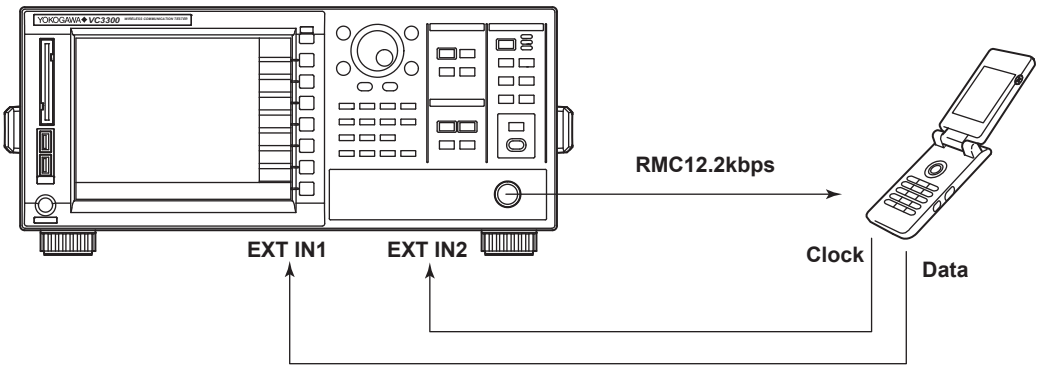
Dynamic Power

Continuously measures the uplink signal power from the mobile phone (after passing through the RRC filter) in unit of 1 time slot (666.7 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.

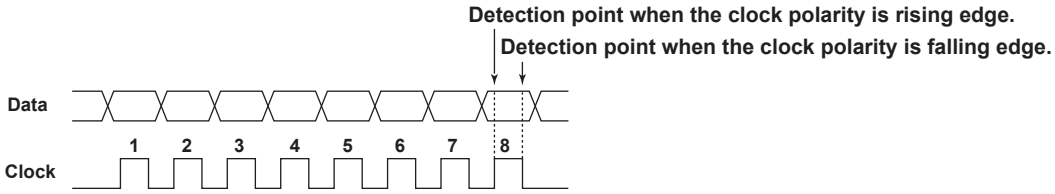
RX Characteristics

Bit Error Rate

If you apply the received result (decoded data sequence) of the data sequence sent on the downlink data channel along with the clock signal to the VC3300 EXT IN terminal, the VC3300 detects the data on the rising or falling edge of the clock, measures the bit error rate against the sent data, and displays the result on the screen.



Data detection timing



List of Measured Values and Detail Display

Measurement Item	Displayed Information List (Overview)	Detail
TX Characteristics		
TX Power	Measured value[*1] (without RRC filter)	Maximum, minimum, and average values (without RRC filter)[*1] Maximum, minimum, and average values (with RRC filter)[*1]
Frequency Error	Measured value[*1]	Maximum, minimum, and average values (frequency error)[*1] Maximum, minimum, and average values (EVM with origin offset)[*1] Maximum, minimum, and average values (EVM without origin offset)[*1] Maximum, minimum, and average values (origin offset)[*1]
Modulation Accuracy (EVM)	(EVM with Origin Offset) Measured value[*1]	Common with Frequency Error
Occupied Bandwidth (OBW)	Measured value[*1]	Maximum, minimum, and average values[*1], lower limit frequency, upper limit frequency (Spectrum Emission Mask) Pass or Fail Spectrum emission mask flag
Spectrum Emission Mask (SEM)	Pass or Fail	Common with OBW
Adjacent Channel Leakage	±5 MHz: Measured value[*1]	±5 MHz: Maximum, minimum, and average values[*1]
Power Ratio (ACLR)	±10 MHz: Measured value[*1]	±10 MHz: Maximum, minimum, and average values[*1] ACLR bar graph (displays 0 MHz, ±5 MHz, and ±10 MHz points on the graph) TX Power (with RRC filter)
RX Characteristics		
EXT BER	Measured value	—

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

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
Modulation Accuracy (EVM)	Yes
Occupied Bandwidth	Yes
Spectrum Emission Mask	Yes
Adjacent Channel Leakage Power Ratio	Yes
Dynamic Power	No
RX Characteristice	
Bit Error Rate	No

Yes: Averaged, No: Not averaged

Turning the Measurement Items ON/OFF

You can turn ON/OFF each measurement item.

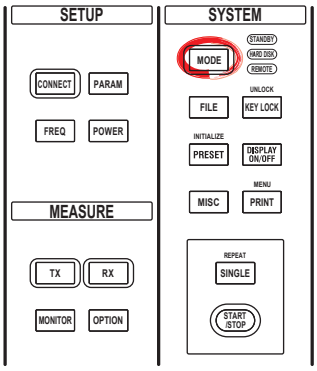
Monitor Function <<For procedures, see section 3.9.>>

Spectrum Monitor

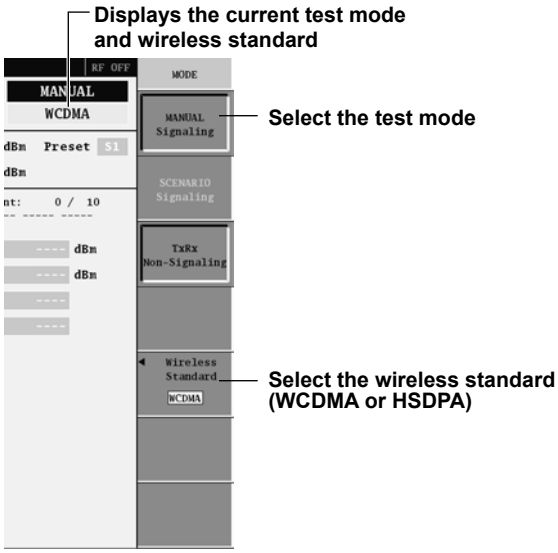
Measures the power at the specified frequency point and total power on the uplink signal spectrum and displays the spectrum graph along with the measured values.

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

Selecting the 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.

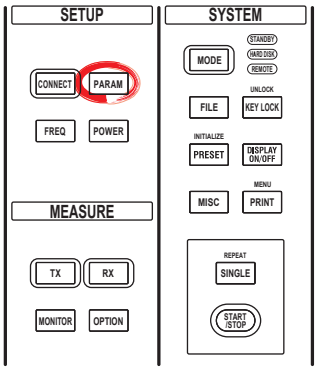
* For a description of scenario mode, see section 7 in the *VC3300 User's Manual (IM733020-01E)*.

Setting the Wireless Standard

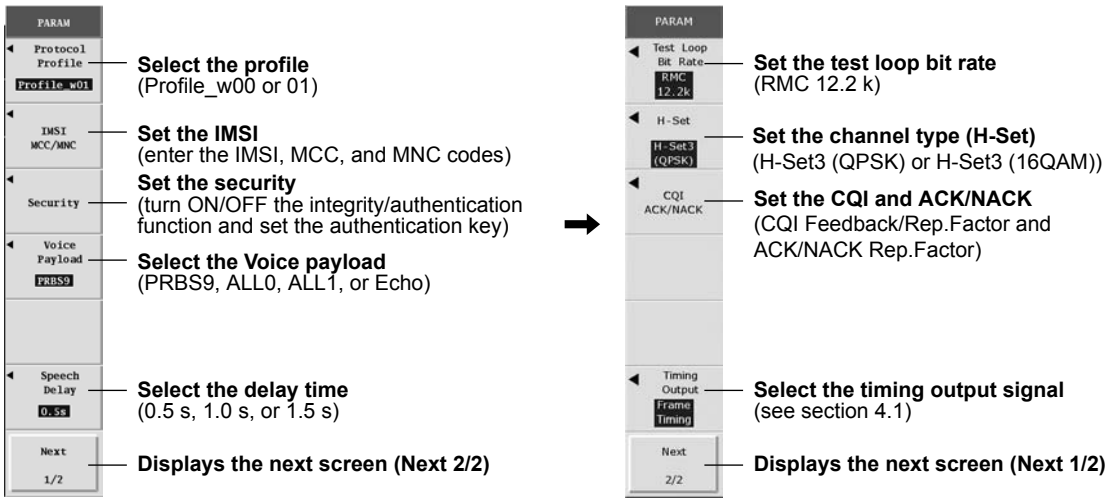
Select the wireless standard (WCDMA or HSDPA) to be used.

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)*.



Explanation

Protocol Profile

Select the protocol file from the following:

- Profile_w00: Supports 3GPP 2000.12 edition
- Profile_w01: Supports 3GPP 2001.06 edition or later

IMSI/MCC/MNC

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)

Security

- **Turning ON/OFF the Integrity Function**
  Set whether to check the integrity during signaling.
- **Turning ON/OFF the Authentication Function**
  Set whether to execute authentication during registration.
  If the authentication function is turned OFF, the integrity function is also turned OFF.
- **Setting the Authentication Key**
  Selectable range: 128 bits (hexadecimal)
  (in 1 steps, default value: AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA)

Voice Payload

Select the downlink payload type when the connection mode (see section 2.5) is set to Voice from the following:

PRBS9: Transmits PRBS9 data to the mobile phone.
ALL0: Transmits all-zero data to the mobile phone.
ALL1: Transmits all-one data to the mobile phone.
Echo: Loops back the speech data that is received in the uplink from the mobile phone and transmits the data

Test Loop Bit Rate

Select the test loop bit rate when the connection mode (see section 2.5) is set to Test Loop from the following:
RMC 12.2k

Speech Delay

Set the delay time (voice loopback time) when the voice payload is set to Echo or when the connection mode is Video from the following:
0.5, 1.0, and 1.5 (s)

Channel Type (H-Set)

Select the combination of the channel type and modulation type to be used in the HSDPA measurement according to the performance of the mobile phone. Select from the following:

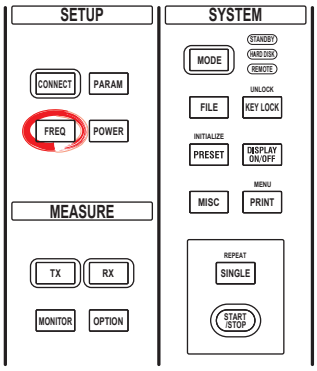
- H-Set3 (QPSK)
- H-Set3 (16QAM)

CQI and ACK/NACK

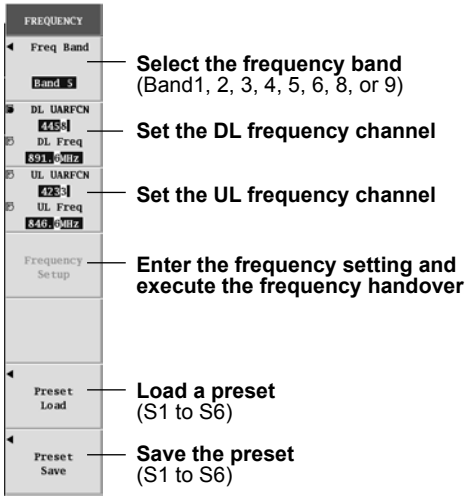
- **CQI**
  - Rep. Factor: Select a value from 1 to 4.
  - Feedback Cycle: Select a value from 0, 2, 4, 8, 10, 20, 40, 80, and 160 ms. CQI measurement is not performed if you select 0.
- **ACK/NACK**
  Select the repetition factor from 1 to 4.

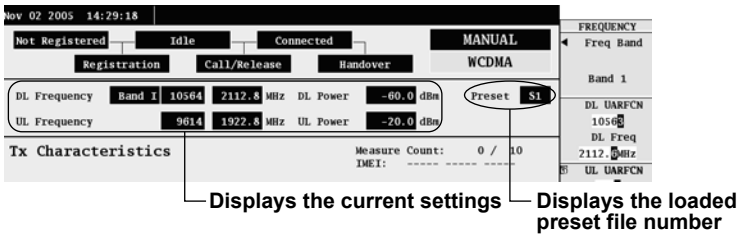
2.3 Setting the Frequency

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)*.





Note

The Frequency Setup soft key becomes selectable when the frequency band or frequency channel is changed.

Explanation

Frequency Band (Freq Band)

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

Operating Band	TX-RX Frequency Separation	Frequency Band
Band1	190 MHz	DL: 2112.4 to 2167.6 MHz UL: 1922.4 to 1977.6 MHz
Band2	80 MHz	DL: 1932.4 to 1987.6 MHz UL: 1852.4 to 1907.6 MHz
Band3	95 MHz	DL: 1807.4 to 1877.6 MHz UL: 1712.4 to 1782.6 MHz
Band4	400 MHz	DL: 2112.4 to 2152.6 MHz UL: 1712.4 to 1752.6 MHz
Band5	45 MHz	DL: 871.4 to 891.6 MHz UL: 826.4 to 846.6 MHz
Band6	45 MHz	DL: 877.4 to 882.6 MHz UL: 832.4 to 837.6 MHz
Band8	45 MHz	DL:927.4 to 957.6 MHz UL:882.4 to 912.6 MHz
Band9	95 MHz	DL:1847.4 to 1877.4 MHz UL:1752.4 to 1782.4 MHz

Downlink Frequency Channel (DL UARFCN/DL Freq)

Set the actual frequency or the channel number (UARFCN). The selectable range is as follows:

- **When Setting Using the Actual Frequency**

Operating Band	Lower Limit	Upper Limit	Step	Default	Unit
Band1	2112.4	2167.6	0.2	2112.4	MHz
Band2	1932.4 1932.5	1987.6 1987.5	0.2 5	1932.4	MHz
Band3	1807.4	1877.6	0.2	1807.4	MHz
Band4	2112.4 2112.5	2152.6 2152.5	0.2 5	2112.4	MHz
Band5	871.4 871.5 876.5 882.5	891.6 872.5 877.5 887.5	0.2 1 1 5	871.4	MHz
Band6	877.4 877.5	882.6 882.5	0.2 5	877.4	MHz
Band8	927.4	957.6	0.2	927.4	MHz
Band9	1847.4	1877.4	0.2	877.4	MHz

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

Operating Band	Lower Limit	Upper Limit	Step	Default	Unit
Band1	10562	10838	1	10562	–
Band2	9662	9938	1	9662	–
	412	687	25		
Band3	1162	1513	1	1162	–
Band4	1537	1738	1	1537	–
	1887	2087	25		
Band5	4357	4458	1	4357	–
	1007	1012	5		
	1032	1037	5		
	1062	1087	25		
Band6	4387	4413	1	4387	–
	1037	1062	25		
Band8	2937	3088	1	2937	–
Band9	9237	9387	1	9237	–

Uplink Frequency Channel (UL UARFCN/UL Freq)

Set the actual frequency or the channel number (UARFCN). The selectable range is as follows:

- **When Setting Using the Actual Frequency**

Operating Band	Lower Limit	Upper Limit	Step	Default	Unit
Band1	1922.4	1977.6	0.2	1922.4	MHz
Band2	1852.4	1907.6	0.2	1852.4	MHz
	1852.5	1907.5	5		
Band3	1712.4	1782.6	0.2	1712.4	MHz
Band4	1712.4	1752.6	0.2	1712.4	MHz
	1712.5	1752.5	5		
Band5	826.4	846.6	0.2	826.4	MHz
	826.5	827.5	1		
	831.5	832.5	1		
	837.5	842.5	5		
Band6	832.4	837.6	0.2	832.4	MHz
	832.5	837.5	5		
Band8	882.4	912.6	0.2	882.4	MHz
Band9	1752.4	1782.4	0.2	1752.4	MHz

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

Operating Band	Lower Limit	Upper Limit	Step	Default	Unit
Band1	9612	9888	1	9612	—
Band2	9262	9538	1	9262	—
	12	287	25		
Band3	937	1288	1	937	—
Band4	1312	1513	1	1312	—
	1662	1862	25		
Band5	4132	4233	1	4132	—
	782	787	5		
	807	812	5		
	837	862	25		
Band6	4162	4188	1	4162	—
	812	837	25		
Band8	2712	2863	1	2712	—
Band9	8762	8912	1	8762	—

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

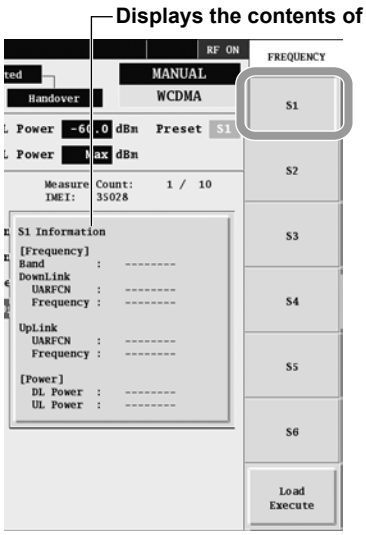
A frequency handover can be carried out by setting the frequency band, downlink frequency channel, or uplink frequency channel in the connected state.
The soft key display varies depending on the connection state.

- When the connection state is idle, the **Frequency Setup** is displayed. Press the Frequency Setup soft key to change the value in the setup display area in the upper section of the display to the specified frequency.
- When the connection state is connected, the **Handover Execute** is displayed. Press the Handover Execute soft key to change the value in the setup display area in the upper section of the display to the specified frequency and execute the frequency handover.

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.

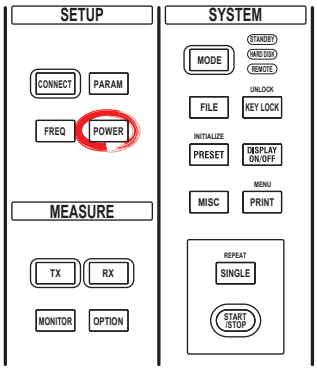


Note

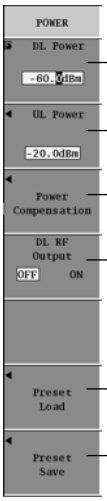
- If you set the downlink frequency channel, the uplink frequency channel value is also automatically set according to the frequency band setting. Likewise, if you set the uplink frequency channel, the downlink frequency channel value is also automatically set.
- The presets in the FREQ key menu are common with those of the POWER key menu.
- When you save a preset, the current settings including the frequency and power settings are saved.

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
(Max, Min, or Adjust)

Set the power compensation

Turn ON/OFF the DL RF output

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 (target power of the inner loop power control) of the uplink signal.
Max, Min, or Adjust (–70.0 to +35.0 dBm, in 0.1 steps, default value: –20.0 dBm)

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 (Band1 to Band6, Band8, or 9).
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.

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

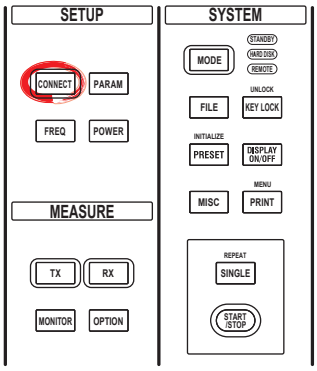
- **Saving the Preset**
  Select the save destination preset number, and then press the **Save Execute** soft key. Up to six presets (S1 to S6) can be registered. If you specify a preset number containing preset settings, the existing settings are overwritten.
- **Load a Preset**
  Select the preset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

Note

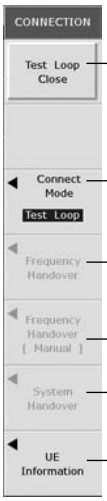
- The presets in the POWER key menu are common with those of the FREQ key menu.
- When you save a preset, the current settings including the frequency and power settings are saved.

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)*.



Execute call connection or disconnection

Select the connect mode
(Test Loop, Voice, Video, RMC 12.2k+HSDPA, or SRB 3.4k+HSDPA)

Select the frequency handover destination from the presets
(S1 to S6)
Execute with the Handover Execute soft key

Manually set the frequency handover destination
(Freq Band, DL UARFCN/DL Freq, or UL UARFCN/UL Freq)
Execute with the Handover Execute soft key

Select the handover destination system (WCDMA or GSM)
Execute with the Handover Execute soft key

Display the mobile phone information

Explanation

Call Setup/Release, Selecting the Connect Mode

You can setup or release a call in one of the following connection modes. The selectable functions vary depending on the connect mode.

Connect Mode	Function
Test Loop	Test Loop Close/Open and Freq Handover
Voice	CALL from NW/Release from NW, Freq Handover, and System Handover
Video	CALL from NW/Release from NW and Freq Handover
RMC 12.2k+HSDPA*1	HSDPA Connect/Disconnect*2, Freq Handover
SRB 3.4k+HSDPA*1	HSDPA Connect/Disconnect, Freq Handover

*1 Selectable on models with the HSDPA option.

*2 Execute Test Loop Close/Open simultaneously when HSDPA Connect/Disconnect is executed.

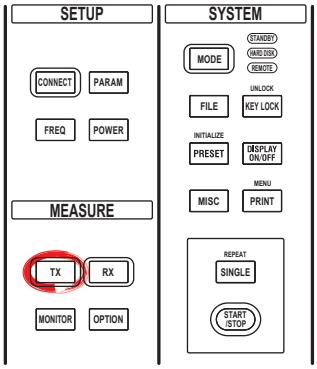
Connection Method

Select from the following:

- **Call from NW/Release from 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.
- **Test Loop Close/Open**
  Press the desired soft key to execute the test loop connection procedure or call release from NW.
- **HSDPA Connect/Disconnect**
  Press the desired soft key to execute an HSDPA connection or disconnection procedure.
- **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 menu to set S1 to S6.
  - **Specifying manually**
    Set the frequency band, DL frequency (actual frequency or UARFCN), or UL frequency (actual frequency or UARFCN). For the selectable range, see the explanation in section 2.3.
    The same operation can be carried out on the FREQ key menu.
- **Inter-RAT Handovers (System Handover)**
  Select the handover destination system, and press the Handover Execute soft key. The inter-RAT handover begins.
- **UE Information (Display the Mobile Phone Information)**
  Displays the following information about the connected mobile phone.
  - IMSI: A 15- or 16-digit subscriber ID.
  - IMEI: A unique 15-digit serial number assigned to the terminal.
  - Power Class: WCDMA power class (1 to 4)
  - HSDPA Category: HSDPA category information (1 to 12)

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)*.

TX Power/Frequency Error/EVM/OBW/SEM/ACLR

Select the target setting item

Turn the each measurement ON/OFF

Turn ON/OFF averaging

Set the HSDPA test specs
(1 Bc/Bd=2/15, 2 Bc/Bd=12/15, 3 Bc/Bd=15/8, or 4 Bc/Bd=15/4)

Select the display format
(see section 2.8)

Cursor moves to the measurement item selected using the Target Item soft key

Open Loop

Select the target setting item

Turn the measurement ON/OFF

Select the parameter set
(RX Upper End, RX Middle, or RX Sensitivity)

Select the display format
(see section 2.8)

Inner Loop

Select the target setting item

Turn the measurement ON/OFF

Select the TPC pattern
(Step E, Step F, Step G, or Step H)

Select the display format
(see section 2.8)

On/Off Time Mask

Select the target setting item

Turn the measurement ON/OFF

Select the power class
(Power Class1 to 4)

Select the display format
(see section 2.8)

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.
Modulation Accuracy (EVM):	Measures the modulation accuracy (EVM rms value).
Occupied Bandwidth (OBW):	Measures the occupied bandwidth.
Spectrum Emission Mask (SEM):	Measures the spectrum emission mask.
Adjacent Channel Leakage Power Ratio (ACLR):	Measures the adjacent channel leakage power ratio.
Open Loop Power Control (On Power):	Measures the open loop power (ON period).
Open Loop Power Control (Off Power):	Measures the open loop power (OFF period).
Inner Loop Power Control:	Measures the inner loop power.
Transmit ON/OFF Time Mask:	Measures the ON/OFF time mask.

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.

Selecting the HSDPA Test Specs

Select the HSDPA test specs that are defined in the 3GPP standard from below. If you change the test specs while the measurement is in progress, the VC3300 redoes the measurement using the new test specs.

- 1: Bc/Bd = 2/15
- 2: Bc/Bd = 12/15
- 3: Bc/Bd = 15/8
- 4: Bc/Bd = 15/4

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 Parameter Set

Select the downlink power and the system information parameter set used in the open loop power measurement. For details on each parameter set, see appendix 2, “Open Loop Power Control Parameters.”

- RX Upper End
- RX Middle
- RX Sensitivity

Selecting the TPC Pattern

Select the TPC pattern used in the inner loop power measurement from below. The measurement method varies depending on the selected pattern. For a description of TPC patterns, see appendix 3, “Inner Loop Power Control TPC Pattern.”

Step E, Step F, Step G, and Step H

Selecting the Power Class

Select the power class used in the ON/OFF time mask measurement from below. For the detailed settings of each power classes, see appendix 4, “Power Class of TX ON/OFF Time Mask.”

Power Class1, Power Class2, Power Class3, and Power Class4

Unit of OBW/SEM Measurement (Graph Unit)

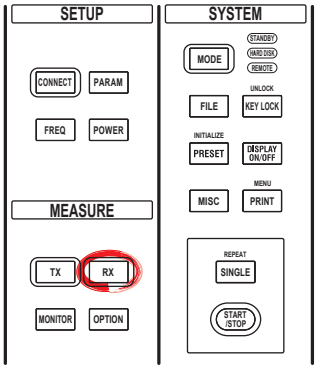
If the display format is detail display, you can set the unit of the graph’s vertical axis to dBc or dBm. The default value is dBc.

Note

- The measurement of open loop power and transmit ON/OFF time mask cannot be turned ON simultaneously.
- **Number of TX power measurements**
  The following communication command allows TX power to be measured up to five times and the average to be displayed as a measurement result for each TX characteristics measurement that is executed.
  `:WMANual:TXTest:TXPower:MTIMes` (see section 5.2.12)
  This communication command can be used to reduce the measurement time if you only need to measure once the parameters that take a long time to measure (such as EVM) but want to obtain the average of five TX power measurements.
- **Fast power measurement mode**
  The following communication command turns ON the fast power measurement mode.
  `:WMANual:TXTest:FASTPmode` (see section 5.2.12)

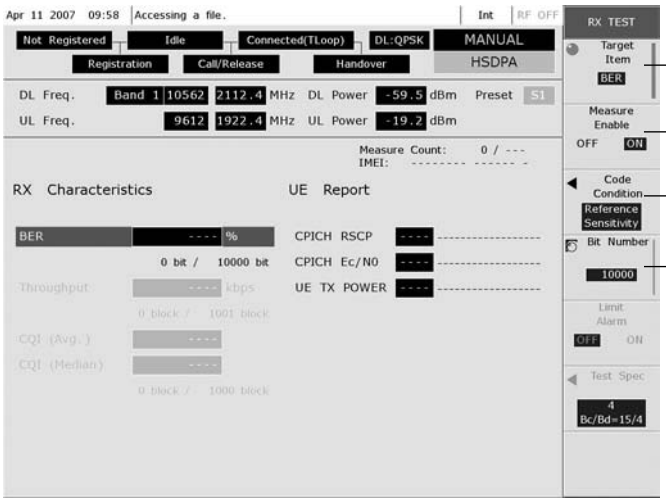
2.7 Setting the Receiver (RX) Characteristics Measurement Conditions

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)*.

BER measurement



Select the target setting item

Turn the measurement ON/OFF

Select the parameter set (Reference Sensitivity or Maximum Input)

Set the number of bits

Throughput (Only On Models with the HSDPA Option)

Select the target setting item

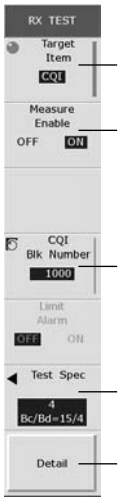
Turn the measurement ON/OFF

Set the number of blocks

Select the HSDPA test specs

Select the display format
(see section 2.8)

CQI (Only On Models with the HSDPA Option)



Select the target setting item

Turn the measurement ON/OFF

Set the number of blocks

Select the HSDPA test specs

Select the display format
(see section 2.8)

UE report

Select the report mode
(Intra Frequency or UE Internal Mes Quantity)

Retrieve the report

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

Bit Error Rate (BER):	Measures the BER.
Throughput:	Measures the throughput of the HSDPA signal that is sent on the VC3300 downlink.
CQI:	Measures average, center, and other values of the CQI of the HSDPA signal that is sent on the VC3300 downlink.
UE Report:	Retrieves the report from the mobile phone.

Selecting the Parameter Set (Code Condition)

Select the parameter set used in the bit error rate measurement.

- Reference Sensitivity
- Maximum Input

Setting the Number of Bits (Bit Number)

Set the number of bits on which to measure the BER.
Selectable range: 1 to 1800000 bits (in 1000 steps, default value: 10000)

Setting the Number of Blocks (Blk Number)

When measuring Throughput:	Set the number of ACK/NACK blocks to be measured.
When measuring CQI:	Set the number of CQI blocks to be measured.

Selecting the HSDPA Test Specs

Select the HSDPA test specs that are defined in the 3GPP standard from below. If you change the test specs while the measurement is in progress, the VC3300 redoes the measurement using the new test specs.

- 1: Bc/Bd = 2/15
- 2: Bc/Bd = 12/15
- 3: Bc/Bd = 15/8
- 4: Bc/Bd = 15/4

Selecting the Report Mode

Select the type of report to retrieve from the mobile phone in the UE report measurement.

- Intra Frequency: Retrieves the RSCP and Ec/No of the CPICH.
- UE Internal Mes Quantity: Retrieves the UE TX power.

Retrieving the Report (Report Execute)

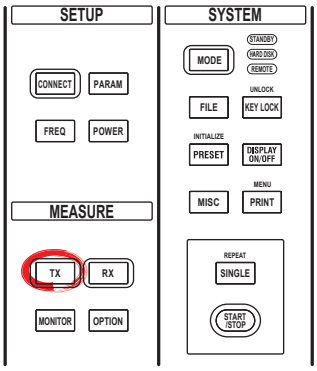
The report selected in the report mode above are retrieved from the mobile phone each time you pres the Report Execute soft key.

Note

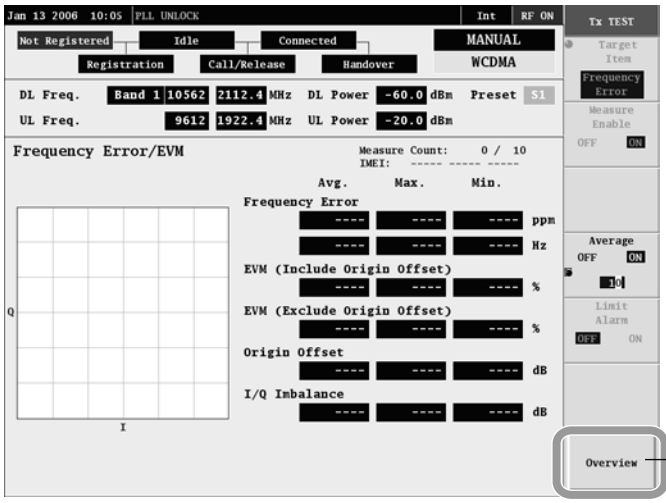
The BER cannot be measured if the connection mode is set to RMC 12.2k+HSDPA or SRB 3.4k+HSDPA. Throughput and CQI can be measured only if the connection mode is RMC 12.2k+HSDPA or SRB 3.4k+HSDPA.

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)*.



Select the display format

Explanation

Select the following display formats.

List (Overview)

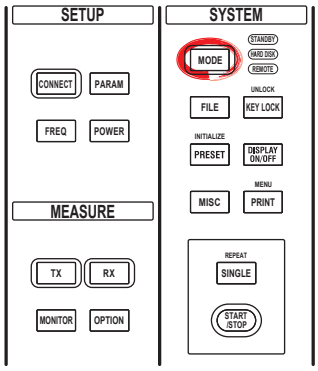
Lists the measured values of all measurement items.

Detail Display

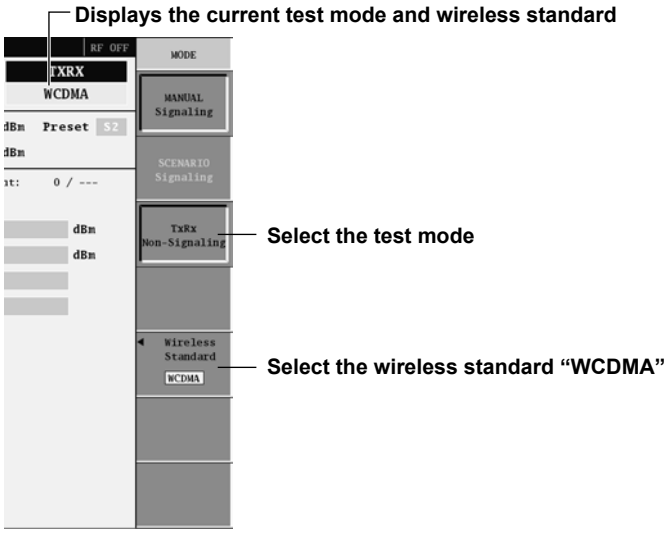
Displays the details on the measured values of the selected measurement item. The displayed contents vary depending on the measurement item. For a description of the detail display of each measurement item, see section 1.2.

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

Selecting the 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.

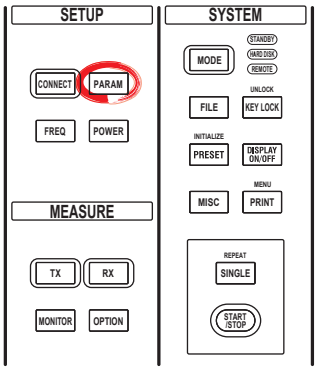
* For a description of scenario mode, see section 7 in the *VC3300 User's Manual (IM733020-01E)*.

Setting the Wireless Standard

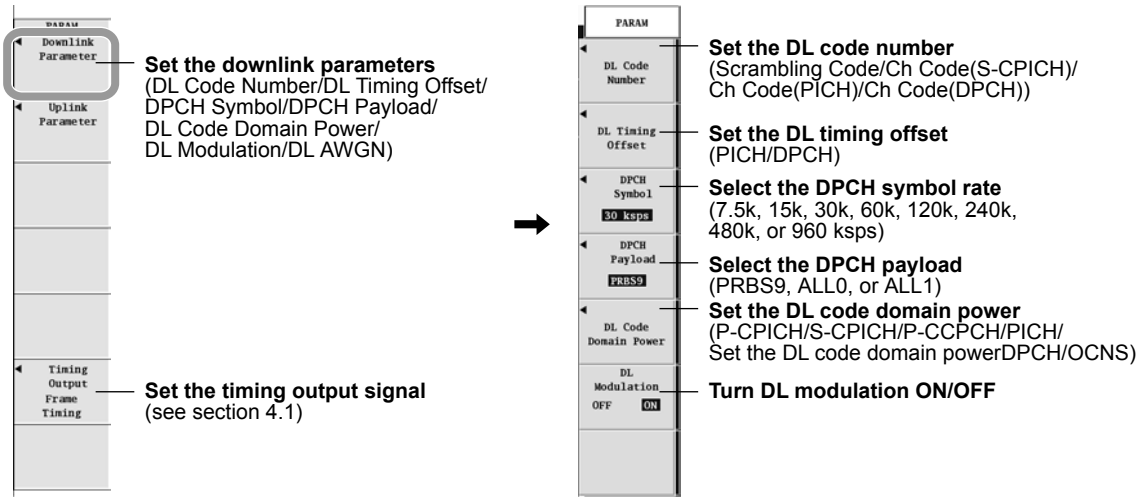
Select the wireless standard (WCDMA) to be used.

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)*.



Explanation

Set the following items related to the downlink.

DL Code Number

Set the scrambling code and the channelization code for each channel. The selectable range is as follows:

- **Scrambling Code Number**
  0 to 8191 (in 1 steps, default value: 0)

- **Channelization Code Number**
  S-CPICH: 0 to 255 (in 1 steps, default value: 3)
  PICH: 0 to 255 (in 1 steps, default value: 2)
  DPCH: 0 to 511 (when the symbol rate is 7.5 ksps, in 1 steps, default value: 16)
  0 to 255 (when the symbol rate is 15 ksps, in 1 steps, default value: 16)
  0 to 127 (when the symbol rate is 30 ksps, in 1 steps, default value: 5)
  0 to 63 (when the symbol rate is 60 ksps, in 1 steps, default value: 3)
  0 to 31 (when the symbol rate is 120 ksps, in 1 steps, default value: 2)
  0 to 15 (when the symbol rate is 240 ksps, in 1 steps, default value: 2)
  0 to 7 (when the symbol rate is 480 ksps, in 1 steps, default value: 2)
  0 to 3 (when the symbol rate is 960 ksps, in 1 steps, default value: 2)

DL Timing Offset

Set the timing offset value for each channel. The selectable range is as follows:

- PICH: 0 to 38144 chips (in 256 steps, default value: 0)
- DPCH: 0 to 153344 chips (in 256 steps, default value: 0)

DPCH Symbol Rate

Select the DPCH symbol rate from the following:
7.5 ksps, 15 ksps, 30 ksps (RMC 12.2 kbps), 60 ksps, 120 ksps (RMC 64 kbps), 240 ksps, 480 ksps, and 960 ksps

DPCH Payload

Select the DPCH payload type from the following:

- PRBS9: Transmits PRBS9 data to the mobile phone.
- ALL0: Transmits all-zero data to the mobile phone.
- ALL1: Transmits all-one data to the mobile phone.

DL Code Domain Power

Set the code domain power value for each code channel. However, the code domain power of OCNS is automatically set to P-CPICH, S-CPICH, P-CCPCH, PICH, or DPCH.
For details on the DL code domain power, see page 1-16.

P-CPICH: – ∞, –30.0 to 0 dB(in 0.1 steps, default value: –10.0 dB)
S-CPICH: – ∞, –30.0 to 0 dB(in 0.1 steps, default value: –10.0 dB)
P-CCPCH: – ∞, –30.0 to 0 dB(in 0.1 steps, default value: –12.0 dB)
PICH: – ∞, –30.0 to 0 dB(in 0.1 steps, default value: –15.0 dB)
DPCH: – ∞, –30.0 to 0 dB(in 0.1 steps, default value: –10.0 dB)

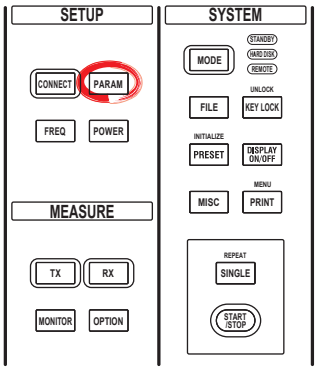
DL Modulation

Turn ON/OFF the downlink WCDMA modulation.

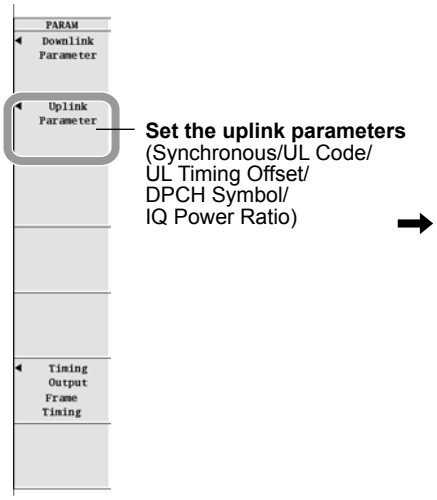
- ON: Transmits a WCDMA-modulated signal.
- OFF: Transmits unmodulated carrier.

3.3 Setting the Uplink Parameters

Procedure

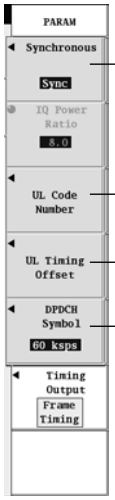


Press **PARAM**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Set the uplink parameters
(Synchronous/UL Code/
UL Timing Offset/
DPCH Symbol/
IQ Power Ratio)

<When Synchronous = Sync>



Set the synchronous mode
(Sync or Async)

Set the UL code number

Set the UL timing offset value

Select the DPDCH symbol rate
(15k, 30k, 60k, 120k, 240k, 480k, or 960 ksps)

<When Synchronous = Async>

Set the synchronous mode
(Sync or Async)

Set the IQ power ratio

Explanation

Set the following items related to the uplink.

Synchronous Mode

Select the synchronous mode.

- Sync: Synchronous mode
- Async: Asynchronous mode

The following parameters can be set when the synchronous mode is set to Sync.

UL Code Number

Set the scrambling code number.
Selectable range: 0 to 16777215 (in 1 steps, default value: 0)

UL Timing Offset

Set the DPCH timing offset value.
Selectable range: 0 to 38399 chips (in 1 steps, default value: 0)

DPDCH Symbol Rate

Select the DPDCH symbol rate from the following:
15 ksps, 30 ksps, 60 ksps, 120 ksps, 240 ksps, 480 ksps, and 960 ksps

The following parameters can be set when the synchronous mode is set to Async.

IQ Power Ratio

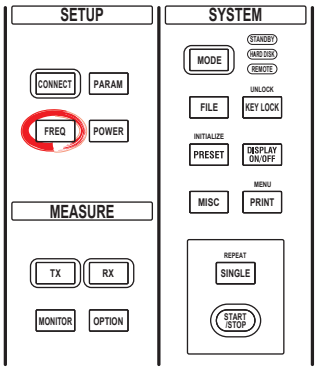
Set the IQ power ratio.
Selectable range: 0.0 to 15.0 (in 0.1 steps, default value: 8.0)

Note

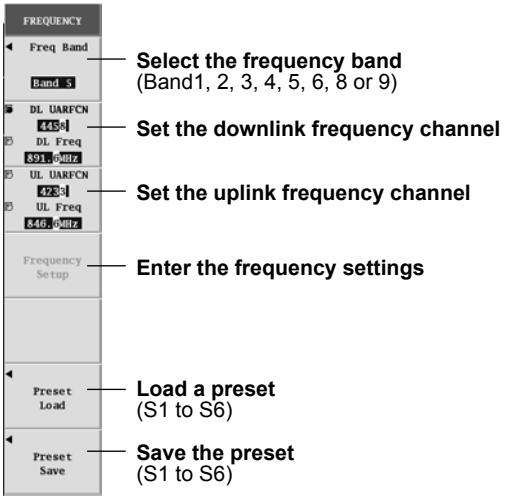
Set the IQ power ratio equal to the IQ power ratio of the uplink signal to be measured.

3.4 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
(Band1, 2, 3, 4, 5, 6, 8 or 9)

Set the downlink frequency channel

Set the uplink frequency channel

Enter the frequency settings

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: For details on each frequency band, see the explanation in section 2.3.
Band1, 2, 3, 4, 5, 6, 8, and 9

Downlink Frequency Channel (DL UARFCN/DL Freq)

Set the actual frequency or the channel number (UARFCN). For the selectable range, see the explanation in section 2.3.

Uplink Frequency Channel (UL UARFCN/UL Freq)

Set the actual frequency or the channel number (UARFCN). For the selectable range, see the explanation in section 2.3.

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.

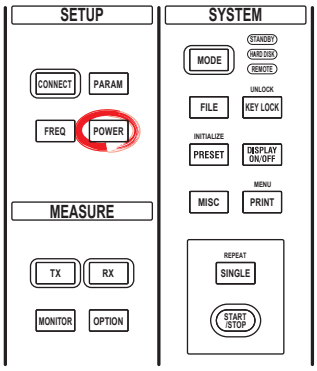
- **Load a Preset**
  Select the preset number to be loaded, and press the **Load Execute** soft key.

Note

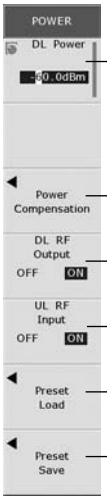
- If you set the downlink frequency channel, the uplink frequency channel value is also automatically set. Likewise, if you set the uplink frequency channel, the downlink frequency channel value is also automatically set.
- The frequency band, downlink frequency channel, or uplink frequency channel can 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.

3.5 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 power compensation

Turn ON/OFF the DL RF output

Turn ON/OFF the UL RF input

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)

Power Compensation

Set the compensation value of the RF power of the downlink signal for each frequency band (Band 1 to 6, Band 8, or 9).
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 output (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.

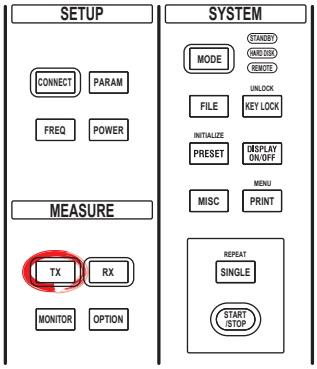
- **Load a Preset**
  Select the preset number to be loaded, and press the **Load Execute** soft key.

Note

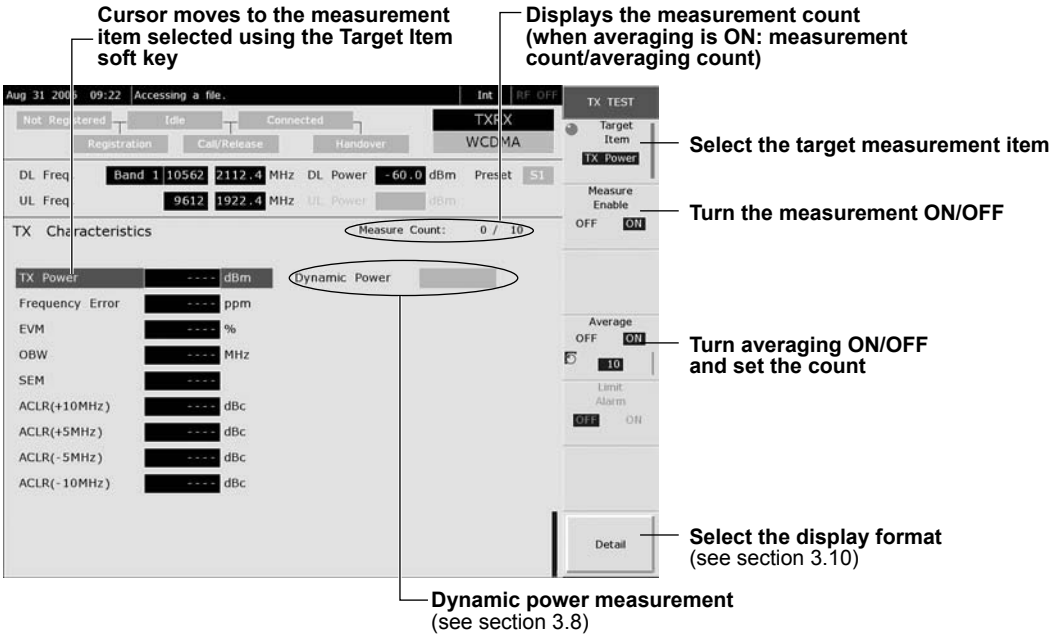
When you save a preset, the current settings including the frequency and power settings are saved. For the items that are saved to the preset, see appendix 1.

3.6 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)*.



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 3.10).

Measurement Items

TX Power:	Measures the transmission power.
Frequency Error:	Measures the frequency error.
Modulation Accuracy (EVM):	Measures the modulation accuracy (EVM rms value).
Occupied Bandwidth (OBW):	Measures the occupied bandwidth.
Spectrum Emission Mask (SEM):	Measures the spectrum emission mask.
Adjacent Channel Leakage Power Ratio (ACLR):	Measures the adjacent channel leakage power ratio.
Dynamic Power*:	Measures the transmission power in unit of slots. For setting the dynamic power measurement, see section 3.8.

* 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

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.

Unit of OBW/SEM Measurement (Graph Unit)

If the display format is detail display, you can set the unit of the graph's vertical axis to dBc or dBm. The default value is dBc.

Note

- **Number of TX power measurements**

  The following communication command allows TX power to be measured up to five times and the average to be displayed as a measurement result for each TX characteristics measurement that is executed.

  `:WTXRx:TXTest:TXPower:MTIMes` (see section 5.3.11)

  This communication command can be used to reduce the measurement time if you only need to measure once the parameters that take a long time to measure (such as EVM) but want to obtain the average of five TX power measurements.

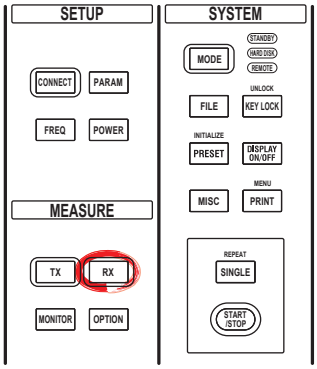
- **Fast power measurement mode**

  The following communication command turns ON the fast power measurement mode.

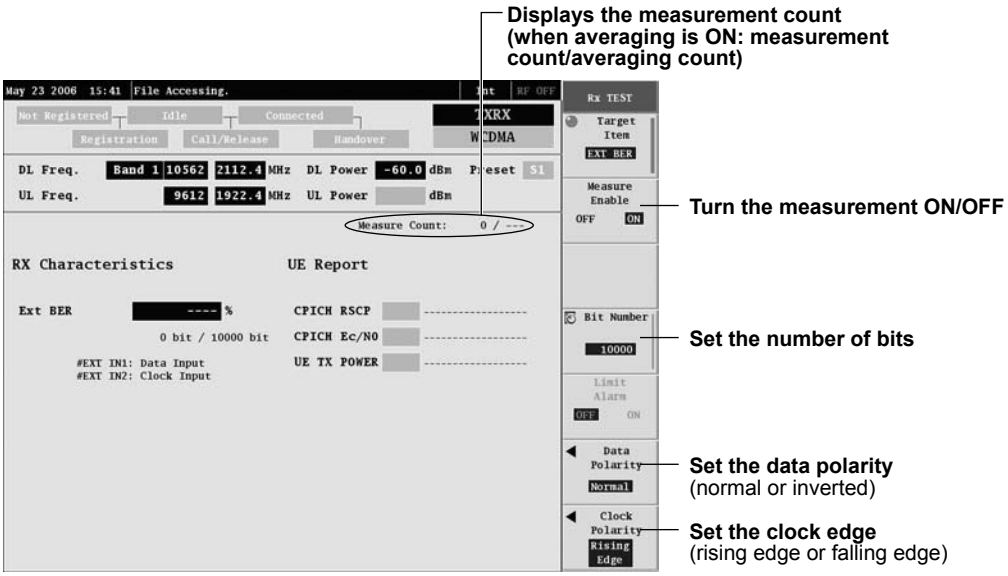
  `:WTXRx:TXTest:FASTPmode` (see section 5.3.11)

3.7 Setting the Receiver (RX) Characteristics Measurement Conditions

Procedure



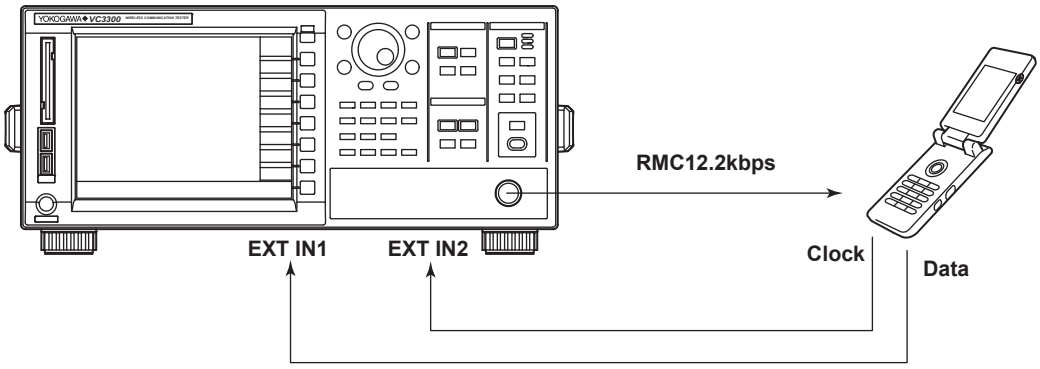
Press **RX**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.



Explanation

Connecting the VC3300 and the Mobile Phone

You can measure the external BER by applying the received result (decoded data sequence) of the data sequence sent on the downlink data channel to the EXT IN1 terminal and the clock signal to the EXT IN2 terminal.
For the specifications of the EXT IN1/IN2 terminal, see section 9.4 in the *VC3300 User's Manual (IM733020-01E)*.



EXT IN1 terminal: Apply the data signal (received result).
EXT IN2 terminal: Apply the clock signal.

Selecting the Target Item

You can set the following on the selected measurement item.

- Turn the measurement ON/OFF.
- Detail display (see section 3.8).

Measurement Items

Ext BER: Measures the external BER.

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.

Setting the Number of Bits (Bit Number)

Set the number of bits on which to measure the external BER.
Selectable range: 1000 to 1800000 (in 1000 steps, default value: 1000)

Setting the Data Polarity

Set the polarity of the data signal applied to the EXT IN1 terminal.

- Normal
- Inverted (bit inversion)

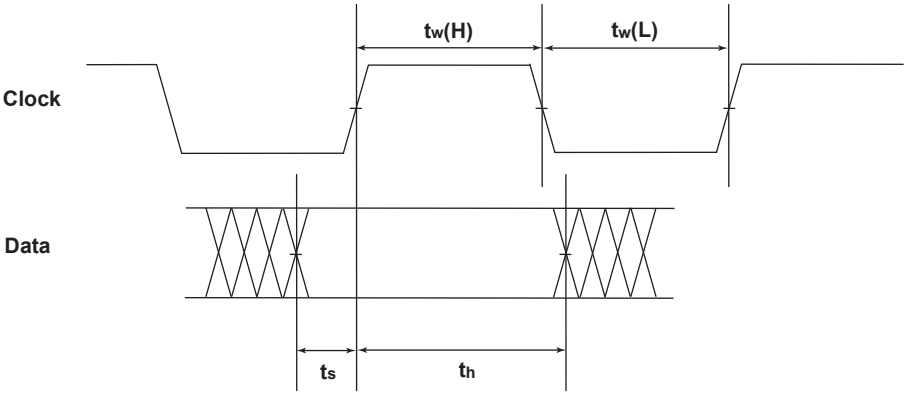
Setting the Clock Edge (Clock Polarity)

Set the detected edge of the data signal applied to the EXT IN1 terminal.

- Rising Edge: Detect the data on the rising edge.
- Falling Edge: Detect the data on the falling edge.

AC Characteristics

Item	Symbol	Minimum	Maximum	Unit
Clock frequency	fclk	0	3.3	MHz
Pulse width	tw(H)	150	–	ns
	tw(L)	150	–	ns
Setup time	ts	20	–	ns
Hold time	th	0	–	ns

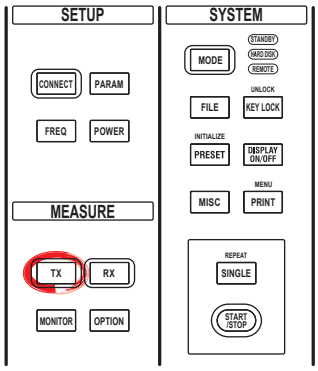


Note

- If a measurement cannot be performed even after a given time elapses, the measured value display shows “sync loss.”
- You can select the bit pattern to be analyzed with DPCH Payload (see section 3.2) in the PARAM key menu. Select PRBS9, ALL0, or ALL1.

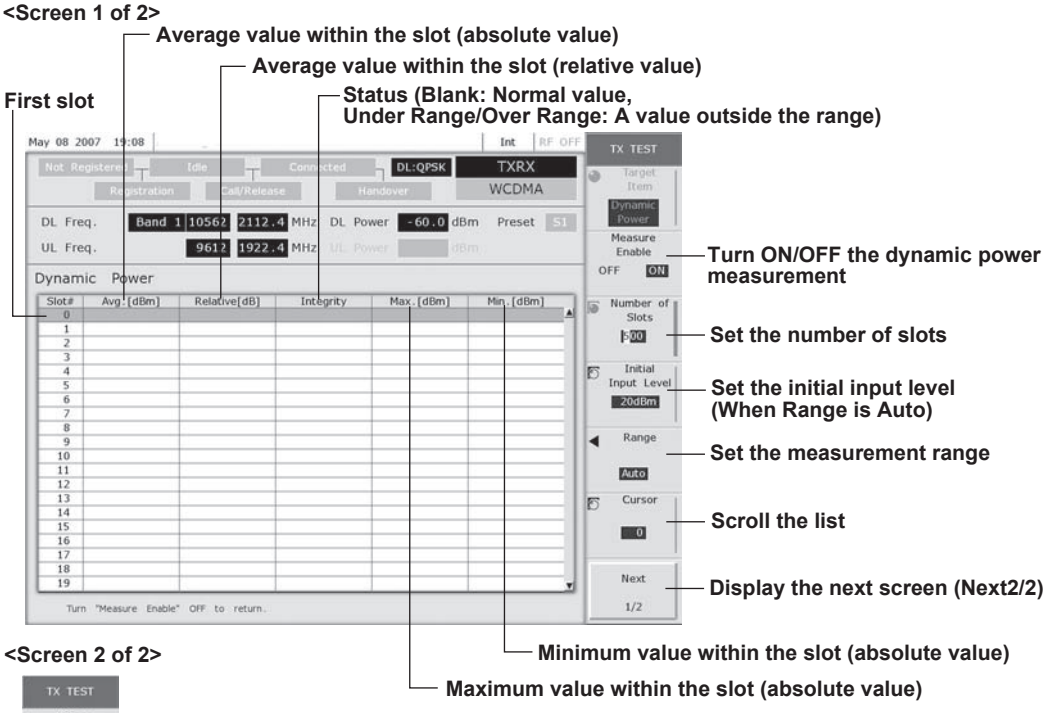
3.8 Setting the Dynamic Power Measurement

Procedure

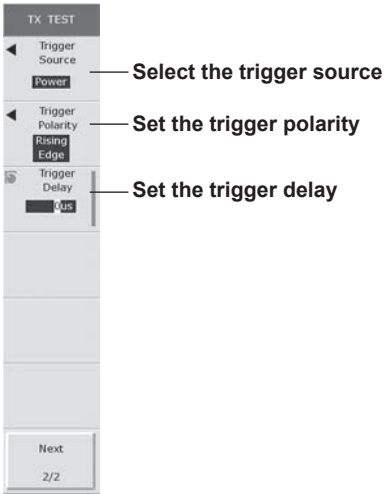


Press **TX**. A soft key menu or dialog box appears as shown below. Set each item according to the basic operating procedure of section 3.6 in the *VC3300 User's Manual (IM733020-01E)*.

<Screen 1 of 2>



<Screen 2 of 2>



Note

If you turn OFF the Measure Enable soft key under Dynamic Power, the TX characteristics measurement screen other than dynamic power is displayed.

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 1 time slot (666.7 μs), and a list of the absolute and relative values (with respect to the first slot) of the average values as well as the maximum and minimum values of the measured results of each slot is displayed.

Number of Slots

Set the number of slots to be measured. After measuring the specified number of slots, the measurement stops.
Selectable range: 1 to 500

Initial Input Level

Set the initial value of the input level when the measurement range is set to Auto.
Selectable range: +35 dBm to −70 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 −45 dBm
- −15 to −55 dBm
- −25 to −70 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**
  The information varies depending on the trigger mode as follows:
  - Rising
    Activates a trigger with the trigger level set to initial input level − 20 dB.
  - Falling or Rising and Falling
    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

- 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.
- Rising and Falling: Activates a trigger when the trigger source passes through the trigger level on the falling edge after passing through the level on the rising edge. You cannot select this setting when the trigger source is EXT IN1.

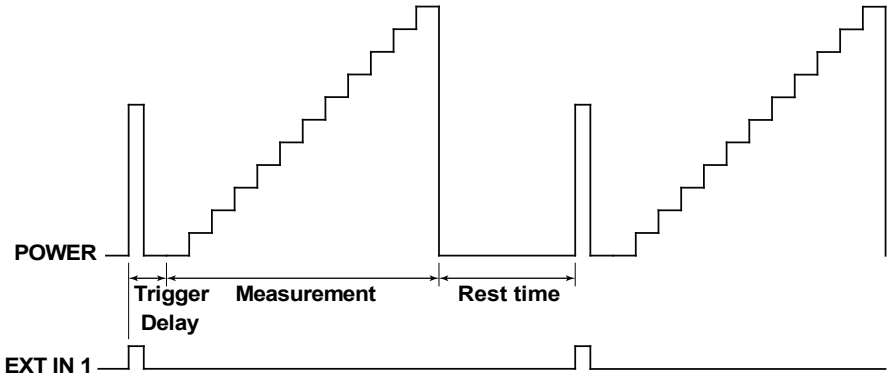
Trigger Delay

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

Selectable range: 0 to 10000 μs (in 1 μs steps)

Measurement Rest Time

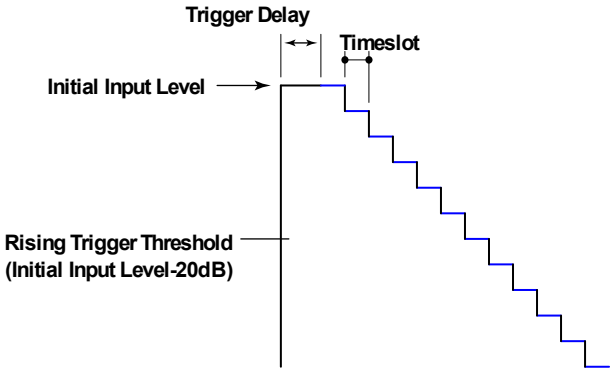
When measuring repetitively, a rest time of at least 60 ms is required from the last measured slot until the next trigger detection.



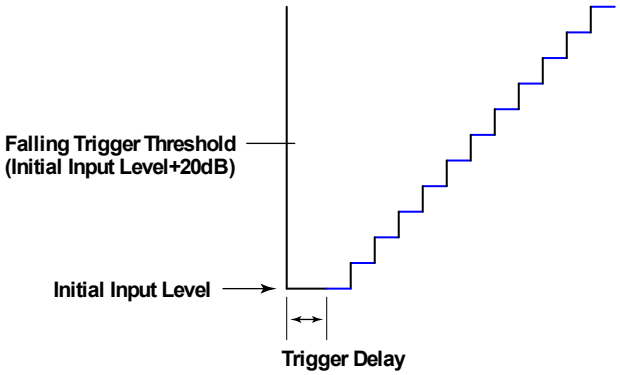
Measurement Example

Measurement examples for each trigger polarity when the measurement range is set to Auto are given below.

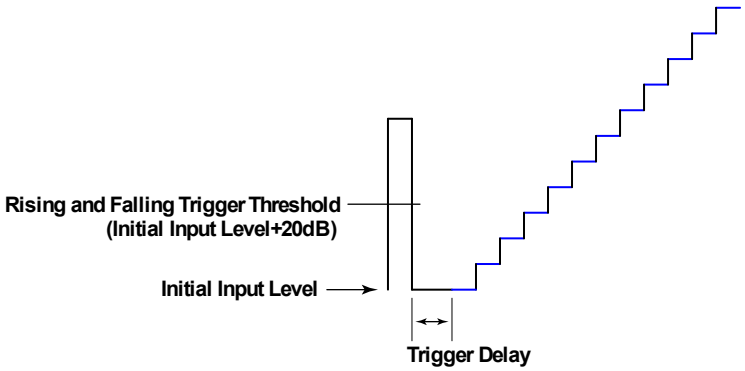
- **When the Trigger Polarity Is Set to Rising**



- **When the Trigger Polarity Is Set to Falling**



- **When the Trigger Polarity Is Set to Rising and Falling**

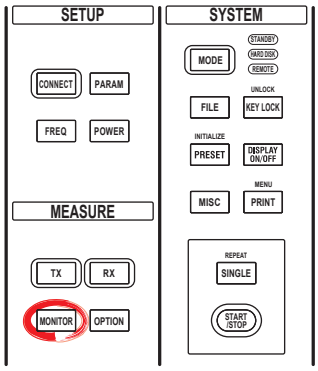


Note

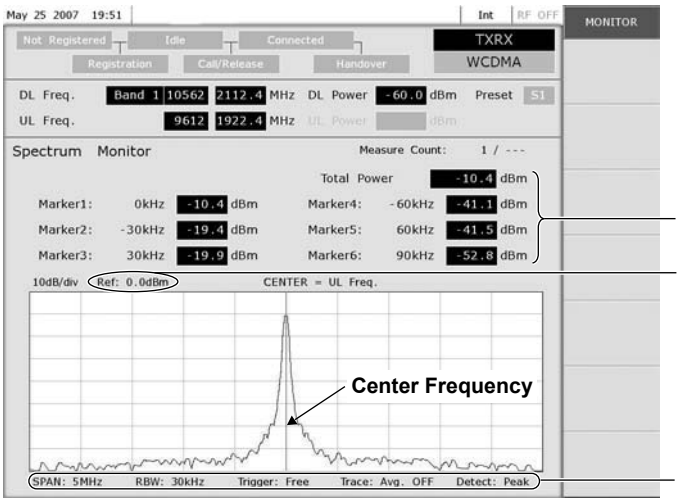
- When measuring the dynamic power, set the mobile phone so that it outputs a signal that the VC3300 can measure. The VC3300 cannot control the signal.
- If the power step exceeds the ranges below, the VC3300 may not measure correctly.
  - When the measurement range is Auto: 0 to 6 dB
  - When the measurement range is not Auto: 0 to 40 dB
- When using the settings available at power-on, the VC3300 measures the transmission power after the signal passes through the RRC filter. If you want to measure the transmission power before the signal passes through the RRC filter, change the setting using the communication command below.
  Note that settings entered using the communication command is initialized (FILTer ON) if the power is turned OFF.
  `:WTXRx:TXTest:DPOWer:FILTer OFF`

3.9 Setting the Spectrum Monitor Function

Procedure



Press **MONITOR**. The spectrum and measured values are displayed.
Communication commands (see section 5.3.5, “MONitor Group”) are used to set the spectrum monitor function.



Displays the total power and marker 1 to 6 values

Reference level

Center Frequency

Displays the spectrum monitor settings

Explanation

The spectrum monitor function measures the uplink signal spectrum and displays the spectrum and following values on the screen.

- Total power
- Measured values at markers 1 to 6

Setting the Spectrum Monitor Function

The following items can be set using communication commands (see section 5.3.5, “MONitor Group”).

Center Frequency

Measurement is performed using the frequency specified by the uplink frequency channel (UL Freq) for the center frequency.
The frequency span is 5 MHz, and the measurement bandwidth is 30 kHz.
For details on how to set the uplink frequency channel, see section 3.4.

Reference Level

Set the reference level of the spectrum to be displayed. The specified value is used as the upper limit of the graph to display the spectrum.

Trace Method

Select from the items below. If you want to measure with averaging turned OFF, set the trace to Average and then turn the averaging of the spectrum monitor measurement OFF.

- Average: Displays the average of the measured values up to now.
- Maxhold: Displays the larger of the two values, the most recent measured value or the previous measured value.

Turning ON/OFF Averaging

Set whether to average the monitor measurement and the average count.
Selectable range of the averaging count: 1 to 255

Power Detection Method

The VC3300 measures and displays data using the spectrum sampled at 10-kHz intervals.
Select the power detection method for the sampling from the following:

- RMS: Use the squared average of all the data present between two samplings.
- Peak: Use the maximum of all the data present between two samplings.

Setting the Markers

The VC3300 displays the power at the specified markers. You can specify up to six markers.

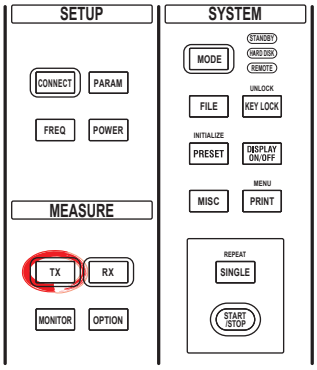
Reading the Measured Results

You can read the value of the following items using communication commands (see section 5.3.8, “RESult Group”).

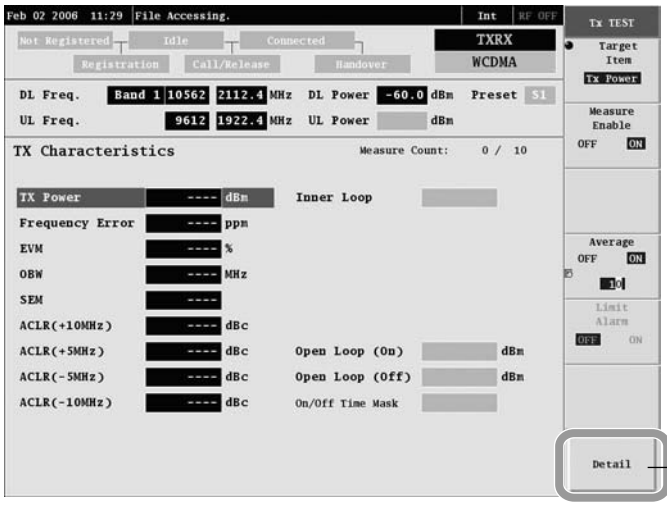
- Total power (dBm)
- Measured values of markers 1 to 6 (dBm).

3.10 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

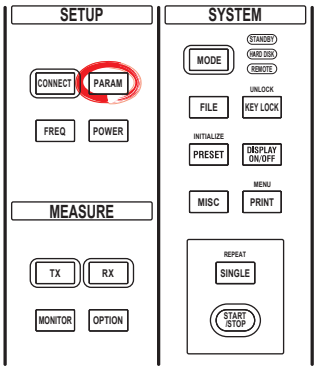
Displays the details on the measured values of the selected measurement item. The displayed contents vary depending on the measurement item. For a description of the detail display of each measurement item, see section 1.2.

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, Slot Timing, Chip Clock, or Chip Clock × 5)

<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 a timing signal (10-ms cycle, positive pulse with a width of approx. 66.7 μs) of a frame synchronized to PCCPCH.
- Slot Timing: Outputs a timing signal (667-μs cycle, positive pulse with a width of approx. 66.7 μs) of a time slot synchronized to PCCPCH.
- Chip Clock: Outputs the chip clock (3.84 MHz) that is synchronized to the downlink signal.
- Chip Clock×5: Outputs a clock (19.2 MHz) that is 5 times the chip clock (3.84 MHz) that is synchronized to the downlink signal.

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		
WMANual?		
:WMANual?	Queries all settings related to settings in manual mode.	5-11
FREQuency Group		
:WMANual:FREQuency?	Queries all settings related to the frequency.	5-11
:WMANual:FREQuency:BAND?	Queries the frequency band.	5-11
:WMANual:FREQuency:DLFReq?	Queries the downlink frequency.	5-11
:WMANual:FREQuency:DLCH?	Queries the downlink frequency channel number.	5-12
:WMANual:FREQuency:ULFReq?	Queries the uplink frequency.	5-12
:WMANual:FREQuency:ULCH?	Queries the uplink frequency channel number.	5-12
:WMANual:FREQuency:TMP:BAND	Sets the temporary frequency band or queries the current setting.	5-12
:WMANual:FREQuency:TMP:DLFReq	Sets the temporary downlink frequency or queries the current setting.	5-12
:WMANual:FREQuency:TMP:DLCH	Sets the temporary downlink frequency channel number or queries the current setting.	5-12
:WMANual:FREQuency:TMP:ULFReq	Sets the temporary uplink frequency or queries the current setting.	5-12
:WMANual:FREQuency:TMP:ULCH	Sets the temporary uplink frequency channel number or queries the current setting.	5-12
:WMANual:FREQuency:TMP:SET	Enters the temporary frequency settings.	5-12
:WMANual:FREQuency:TMP:CANCel	Cancels the temporary frequency settings.	5-12
:WMANual:FREQuency:FDSTination	Sets the frequency handover destination frequency using a preset number or queries the current setting.	5-12
MEASure Group		
:WMANual:MEASure?	Queries the measurement item and measurement mode.	5-13
:WMANual:MEASure:ITEM	Sets the measurement item or queries the current setting.	5-13
:WMANual:MEASure:MODE	Sets the measurement mode or queries the current setting.	5-13
PARam Group		
:WMANual:PARam?	Queries all settings related to connection conditions (PARAM).	5-13
:WMANual:PARam:CNMode	Sets the connection mode or queries the current setting.	5-13
:WMANual:PARam:DTYPe	Sets the voice payload type or queries the current setting.	5-13
:WMANual:PARam:PROFile	Sets the profile or queries the current setting.	5-13
:WMANual:PARam:IMSI	Sets the IMSI or queries the current setting.	5-13
:WMANual:PARam:MCC	Sets the MCC or queries the current setting.	5-13
:WMANual:PARam:MNC	Sets the MNC or queries the current setting.	5-13
:WMANual:PARam:SECurity?	Queries all settings related to the security parameter.	5-14
:WMANual:PARam:SECurity:INTegrity	Turns ON/OFF the integrity function or queries the current setting.	5-14
:WMANual:PARam:SECurity:AUTHent	Turns ON/OFF the authentication key or queries the current setting.	5-14
:WMANual:PARam:SECurity:AKEY	Sets the authentication key or queries the current setting.	5-14
:WMANual:PARam:SPEechdelay	Sets the delay time or queries the current setting.	5-14
:WMANual:PARam:HSET	Sets the H-Set or queries the current setting.	5-14
:WMANual:PARam:CQFCycle	Sets the CQI feedback cycle or queries the current setting.	5-14
:WMANual:PARam:ANRFactor	Sets the Ack/Nack repetition factor or queries the current setting.	5-14
:WMANual:PARam:CQRFactor	CQI Sets the CQI repetition factor or queries the current setting.	5-14
POWer Group		
:WMANual:POWer?	Queries all settings related to the power.	5-15
:WMANual:POWer:CONTrol	Sets the downlink power control or queries the current setting.	5-15
:WMANual:POWer:DLPower	Sets the downlink power value or queries the current setting.	5-15
:WMANual:POWer:ULPower	Sets the uplink power value or queries the current setting.	5-15
:WMANual:POWer:COMPensation?	Queries all settings related to the power compensation.	5-15
:WMANual:POWer:COMPensation:DLB1	Sets the downlink power compensation value (Band1) or queries the current setting.	5-15
:WMANual:POWer:COMPensation:DLB2	Sets the downlink power compensation value (Band2) or queries the current setting.	5-15

Command	Function	Page
:WMANual:POWer:COMPensation:DLB3	Sets the downlink power compensation value (Band3) or queries the current setting.	5-15
:WMANual:POWer:COMPensation:DLB4	Sets the downlink power compensation value (Band4) or queries the current setting.	5-15
:WMANual:POWer:COMPensation:DLB5	Sets the downlink power compensation value (Band5) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:DLB6	Sets the downlink power compensation value (Band6) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:DLB8	Sets the downlink power compensation value (Band8) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:DLB9	Sets the downlink power compensation value (Band9) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:ULB1	Sets the uplink power compensation value (Band1) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:ULB2	Sets the uplink power compensation value (Band2) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:ULB3	Sets the uplink power compensation value (Band3) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:ULB4	Sets the uplink power compensation value (Band4) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:ULB5	Sets the uplink power compensation value (Band5) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:ULB6	Sets the uplink power compensation value (Band6) or queries the current setting.	5-16
:WMANual:POWer:COMPensation:ULB8	Sets the uplink power compensation value (Band8) or queries the current setting.	5-17
:WMANual:POWer:COMPensation:ULB9	Sets the uplink power compensation value (Band9) or queries the current setting.	5-17
PRESet Group		
:WMANual:PRESet?	Queries all settings related to presets.	5-17
:WMANual:PRESet:MODE	Sets the preset mode or queries the current setting.	5-17
:WMANual:PRESet:NUMBer	Sets the preset number or queries the current setting.	5-17
:WMANual:PRESet:VALid?	Queries whether the preset settings are valid.	5-17
:WMANual:PRESet:BAND?	Queries the frequency band in the preset.	5-17
:WMANual:PRESet:DLFReq?	Queries the downlink frequency in the preset.	5-17
:WMANual:PRESet:DLCH?	Queries the downlink frequency channel in the preset.	5-17
:WMANual:PRESet:ULFReq?	Queries the uplink frequency in the preset.	5-18
:WMANual:PRESet:ULCH?	Queries the uplink frequency channel in the preset.	5-18
:WMANual:PRESet:DLPower?	Queries the downlink power in the preset.	5-18
:WMANual:PRESet:ULPower?	Queries the uplink power in the preset.	5-18
:WMANual:PRESet:EXECute	Executes the preset.	5-18
RESult Group		
:WMANual:RESult?	Queries all measurement results.	5-18
:WMANual:RESult:CLEar	Clears all measurement results.	5-18
:WMANual:RESult:TXTest:MCOunt?	Queries the measurement count of the TX characteristics measurement.	5-18
:WMANual:RESult:TXPower?	Queries all results related to the TX power.	5-18
:WMANual:RESult:TXPower:AVERage?	Queries the average value of the TX power.	5-19
:WMANual:RESult:TXPower:MAX?	Queries the maximum value of the TX power.	5-19
:WMANual:RESult:TXPower:MIN?	Queries the minimum value of the TX power.	5-19
:WMANual:RESult:FILPower?	Queries all results related to the TX power after passing through the RRC filter.	5-19
:WMANual:RESult:FILPower:AVERage?	Queries the average value of the TX power after passing through the RRC filter.	5-19
:WMANual:RESult:FILPower:MAX?	Queries the maximum value of the TX power after passing through the RRC filter.	5-19
:WMANual:RESult:FILPower:MIN?	Queries the minimum value of the TX power after passing through the RRC filter.	5-19
:WMANual:RESult:FERRor?	Queries all results related to the frequency error.	5-19
:WMANual:RESult:FERRor:PPM?	Queries all results related to the frequency error (in unit of ppm).	5-19
:WMANual:RESult:FERRor:PPM:AVERage?	Queries the average value of the frequency error (in unit of ppm).	5-19
:WMANual:RESult:FERRor:PPM:MAX?	Queries the maximum value of the frequency error (in unit of ppm).	5-20

Command	Function	Page
:WMANual:RESult:FERRor:PPM:MIN?	Queries the minimum value of the frequency error (in unit of ppm).	5-20
:WMANual:RESult:FERRor:HZ?	Queries all results related to the frequency error (in unit of Hz).	5-20
:WMANual:RESult:FERRor:HZ:AVERage?	Queries the average value of the frequency error (in unit of Hz).	5-20
:WMANual:RESult:FERRor:HZ:MAX?	Queries the maximum value of the frequency error (in unit of Hz).	5-20
:WMANual:RESult:FERRor:HZ:MIN?	Queries the minimum value of the frequency error (in unit of Hz).	5-20
:WMANual:RESult:EVM?	Queries all results related to the EVM.	5-20
:WMANual:RESult:EVM:WIOFfset?	Queries all results related to the EVM (including the origin offset).	5-20
:WMANual:RESult:EVM:WIOFfset:AVERage?	Queries the average value of EVM (including the origin offset).	5-20
:WMANual:RESult:EVM:WIOFfset:MAX?	Queries the maximum value of EVM (including the origin offset).	5-20
:WMANual:RESult:EVM:WIOFfset:MIN?	Queries the minimum value of EVM (including the origin offset).	5-21
:WMANual:RESult:EVM:WOOFfset?	Queries all results related to the EVM (excluding the origin offset).	5-21
:WMANual:RESult:EVM:WOOFfset:AVERage?	Queries the average value of EVM (excluding the origin offset).	5-21
:WMANual:RESult:EVM:WOOFfset:MAX?	Queries the maximum value of EVM (excluding the origin offset).	5-21
:WMANual:RESult:EVM:WOOFfset:MIN?	Queries the minimum value of EVM (excluding the origin offset).	5-21
:WMANual:RESult:EVM:ORIGinoffset?	Queries all results related to origin offset.	5-21
:WMANual:RESult:EVM:ORIGinoffset:AVERage?	Queries the average value of the origin offset.	5-21
:WMANual:RESult:EVM:ORIGinoffset:MAX?	Queries the maximum value of the origin offset.	5-21
:WMANual:RESult:EVM:ORIGinoffset:MIN?	Queries the minimum value of the origin offset.	5-22
:WMANual:RESult:EVM:IQIMbalance?	Queries all results related to the IQ power ratio.	5-22
:WMANual:RESult:EVM:IQIMbalance:AVERage?	Queries the average value of the IQ power ratio.	5-22
:WMANual:RESult:EVM:IQIMbalance:MAX?	Queries the maximum value of the IQ power ratio.	5-22
:WMANual:RESult:EVM:IQIMbalance:MIN?	Queries the minimum value of the IQ power ratio.	5-22
:WMANual:RESult:OBW?	Queries all results related to the occupied bandwidth.	5-22
:WMANual:RESult:OBW:AVERage?	Queries the average value of the occupied bandwidth.	5-22
:WMANual:RESult:OBW:MAX?	Queries the maximum value of the occupied bandwidth.	5-22
:WMANual:RESult:OBW:MIN?	Queries the minimum value of the occupied bandwidth.	5-22
:WMANual:RESult:OBW:FUPPer?	Queries the upper frequency limit of the occupied bandwidth.	5-22
:WMANual:RESult:OBW:FLOWer?	Queries the lower frequency limit of the occupied bandwidth.	5-23
:WMANual:RESult:SEM:JUDGe?	Queries the SEM judgement result.	5-23
:WMANual:RESult:ACLR?	Queries all results related to the ACLR.	5-23
:WMANual:RESult:ACLR:P5M?	Queries all results related to the ACLR (+5 MHz).	5-23
:WMANual:RESult:ACLR:P5M:AVERage?	Queries the average value of the ACLR (+5 MHz).	5-23
:WMANual:RESult:ACLR:P5M:MAX?	Queries the maximum value of the ACLR (+5 MHz).	5-23
:WMANual:RESult:ACLR:P5M:MIN?	Queries the minimum value of the ACLR (+5 MHz).	5-23
:WMANual:RESult:ACLR:M5M?	Queries all results related to the ACLR (–5 MHz).	5-23
:WMANual:RESult:ACLR:M5M:AVERage?	Queries the average value of the ACLR (–5 MHz).	5-23
:WMANual:RESult:ACLR:M5M:MAX?	Queries the maximum value of the ACLR (–5 MHz).	5-23
:WMANual:RESult:ACLR:M5M:MIN?	Queries the minimum value of the ACLR (–5 MHz).	5-24
:WMANual:RESult:ACLR:P10M?	Queries all results related to the ACLR (+10 MHz).	5-24
:WMANual:RESult:ACLR:P10M:AVERage?	Queries the average value of the ACLR (+10 MHz).	5-24
:WMANual:RESult:ACLR:P10M:MAX?	Queries the maximum value of the ACLR (+10 MHz).	5-24
:WMANual:RESult:ACLR:P10M:MIN?	Queries the minimum value of the ACLR (+10 MHz).	5-24
:WMANual:RESult:ACLR:M10M?	Queries all results related to the ACLR (–10 MHz).	5-24
:WMANual:RESult:ACLR:M10M:AVERage?	Queries the average value of the ACLR (–10 MHz).	5-24
:WMANual:RESult:ACLR:M10M:MAX?	Queries the maximum value of the ACLR (–10 MHz).	5-24
:WMANual:RESult:ACLR:M10M:MIN?	Queries the minimum value of the ACLR (–10 MHz).	5-24
:WMANual:RESult:OPLPower?	Queries all results related to the open loop power.	5-24
:WMANual:RESult:OPLPower:ONPower?	Queries the ON power of the open loop power.	5-25
:WMANual:RESult:OPLPower:OFFPower?	Queries the OFF power of the open loop power.	5-25
:WMANual:RESult:OPLPower:FACTor?	Queries the cause of the error in the open loop power measurement.	5-25
:WMANual:RESult:OOMask:JUDGe?	Queries the judgement result of the ON/OFF mask.	5-25

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:WMANual:RESult:INNPower:JUDGe?	Queries the judgement result of the inner loop power.	5-25
:WMANual:RESult:INNPower:AVERage:ONETslot?	Queries the average value of a command of the inner loop power.	5-25
:WMANual:RESult:INNPower:AVERage:TENTslot?	Queries the average value of 10 commands of the inner loop power.	5-25
:WMANual:RESult:INNPower:MAX:ONETslot?	Queries the maximum value of a command of the inner loop power.	5-25
:WMANual:RESult:INNPower:MAX:TENTslot?	Queries the maximum value of 10 commands of the inner loop power.	5-26
:WMANual:RESult:INNPower:MIN:ONETslot?	Queries the minimum value of a command of the inner loop power.	5-26
:WMANual:RESult:INNPower:MIN:TENTslot?	Queries the minimum value of 10 commands of the inner loop power.	5-26
:WMANual:RESult:INNPower:TS:ONETslot?	Queries the specified time slot value of a command of the inner loop power.	5-26
:WMANual:RESult:INNPower:TS:TENTslot?	Queries the specified time slot value of 10 commands of the inner loop power.	5-26
:WMANual:RESult:INNPower:TS:ABSolute?	Queries the absolute value of the specified time slot of the inner loop power.	5-26
:WMANual:RESult:RXTest:MCOunt?	Queries the RX characteristics measurement count.	5-26
:WMANual:RESult:BER?	Queries the BER measurement result.	5-27
:WMANual:RESult:BER:BNUMber?	Queries the number of measured bits of the BER measurement.	5-27
:WMANual:RESult:BER:ERRNumber?	Queries the number of error bits in the BER measurement.	5-27
:WMANual:RESult:UEINfo?	Queries all settings related to the information retrieved from the mobile phone.	5-27
:WMANual:RESult:UEINfo:IMSI?	Queries the IMSI retrieved from the mobile phone.	5-27
:WMANual:RESult:UEINfo:IMEI?	Queries the IMEI retrieved from the mobile phone.	5-27
:WMANual:RESult:UEINfo:POWerclass?	Queries the power class retrieved from the mobile phone.	5-27
:WMANual:RESult:UEINfo:HSCAtegory?	Queries the HSDPA category retrieved from the mobile phone.	5-27
:WMANual:RESult:UECPich?	Queries all results related to the measurement report (CPICH).	5-27
:WMANual:RESult:UECPich:ECN0?	Queries the measurement report (CPICH-ECN0).	5-27
:WMANual:RESult:UECPich:RSCP?	Queries the measurement report (CPICH-RSCP).	5-27
:WMANual:RESult:THROughput?	Queries all the measured results related to the throughput.	5-27
:WMANual:RESult:THROughput:THROughput?	Queries the throughput.	5-27
:WMANual:RESult:THROughput:ACKCount?	Queries the number of ACK blocks.	5-27
:WMANual:RESult:THROughput:NACKcount?	Queries the number of NACK blocks.	5-28
:WMANual:RESult:THROughput:DTXCount?	Queries the number of DTX blocks.	5-28
:WMANual:RESult:THROughput:BLNumber?	Queries the number of measured blocks in the throughput measurement.	5-28
:WMANual:RESult:CQI?	Queries all the measured results related to the CQI.	5-28
:WMANual:RESult:CQI:AVERage?	Queries the average CQI value.	5-28
:WMANual:RESult:CQI:MAX?	Queries the maximum CQI value.	5-28
:WMANual:RESult:CQI:MIN?	Queries the minimum CQI value.	5-28
:WMANual:RESult:CQI:MEDian?	Queries the center CQI value.	5-28
:WMANual:RESult:CQI:MPM2?	Queries the number of blocks included within ±2 of the center CQI value.	5-28
:WMANual:RESult:CQI:BLNumber?	Queries the number of measured blocks in the CQI measurement.	5-28
:WMANual:RESult:UEPower?	Queries the measurement report (UE TX POWER).	5-28
:WMANual:RESult:DIALnumber?	Queries the dial number for the call setup.	5-28
RTARget Group		
:WMANual:RTARget	Sets the measurement items of the RX characteristics measurement or queries the current setting.	5-28
RXTest Group		
:WMANual:RXTest?	Queries all settings related to RX characteristics measurement.	5-29
:WMANual:RXTest:BER?	Queries all settings related to the BER measurement.	5-29
:WMANual:RXTest:BER:EXECute	Turns ON/OFF the BER measurement or queries the current setting.	5-29

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:WMANual:RXTest:BER:BNUMber	Sets the number of measured bits of the BER measurement or queries the current setting.	5-29
:WMANual:RXTest:BER:CDPower	Sets the code domain power for the BER measurement or queries the current setting.	5-29
:WMANual:RXTest:UECPich:EXECute	Retrieves the measurement report (CPICH).	5-29
:WMANual:RXTest:UEPower:EXECute	Retrieves the measurement report (UE TX POWER).	5-29
:WMANual:RXTest:THROughput?	Queries all settings related to the throughput measurement.	5-29
:WMANual:RXTest:THROughput:EXECute	Turns ON/OFF the throughput measurement or queries the current setting.	5-29
:WMANual:RXTest:THROughput:BLNumber	Sets the number of measured blocks in the throughput measurement or queries the current setting.	5-29
:WMANual:RXTest:CQI?	Queries all settings related to the CQI measurement.	5-29
:WMANual:RXTest:CQI:EXECute	Turns ON/OFF the CQI measurement or queries the current setting.	5-29
:WMANual:RXTest:CQI:BLNumber	Sets the number of measured blocks in the CQI measurement or queries the current setting.	5-30
RXView Group		
:WMANual:RXView	Switches the display format.	5-30
TTARget Group		
:WMANual:TTARget	Sets the measurement items of the TX characteristics measurement or queries the current setting.	5-30
TXTest Group		
:WMANual:TXTest?	Queries all settings related to TX characteristics measurement.	5-30
:WMANual:TXTest:AVERage?	Queries all settings related to the average of TX characteristics measurement.	5-30
:WMANual:TXTest:AVERage:CONTrol	Turns ON/OFF the averaging of the TX characteristics measurement or queries the current setting.	5-30
:WMANual:TXTest:AVERage:COUNt	Sets the average count of the TX characteristics measurement or queries the current setting.	5-30
:WMANual:TXTest:HSTSpec	Sets the TX measurement test specs or queries the current setting.	5-30
:WMANual:TXTest:TXPower:EXECute	Turns ON/OFF the TX power or queries the current setting.	5-31
:WMANual:TXTest:TXPower:MTIMes	Sets the measurement count of the TX power measurement or queries the current setting.	5-31
:WMANual:TXTest:FERRor:EXECute	Turns ON/OFF the frequency error or queries the current setting.	5-31
:WMANual:TXTest:EVM:EXECute	Turns ON/OFF the EVM or queries the current setting.	5-31
:WMANual:TXTest:OBW:EXECute	Turns ON/OFF the occupied bandwidth or queries the current setting.	5-31
:WMANual:TXTest:ACLR:EXECute	Turns ON/OFF the ACLR or queries the current setting.	5-31
:WMANual:TXTest:SEM:EXECute	Turns ON/OFF the SEM or queries the current setting.	5-31
:WMANual:TXTest:SEM:UNIT	Switches the SEM graph unit of the TX measurement or queries the current setting.	5-31
:WMANual:TXTest:OPLPower?	Queries all settings related to the open loop power measurement.	5-31
:WMANual:TXTest:OPLPower:EXECute	Turns ON/OFF the open loop power or queries the current setting.	5-31
:WMANual:TXTest:OPLPower:PARam	Sets the measurement parameters of the open loop power or queries the current setting.	5-32
:WMANual:TXTest:INNPower?	Queries all settings related to the inner loop power measurement.	5-32
:WMANual:TXTest:INNPower:EXECute	Turns ON/OFF the inner loop power or queries the current setting.	5-32
:WMANual:TXTest:INNPower:TPCPattern	Sets the TPC pattern of the inner loop power or queries the current setting.	5-32
:WMANual:TXTest:OOMask?	Queries all settings related to the ON/OFF time mask measurement.	5-32
:WMANual:TXTest:OOMask:EXECute	Turns ON/OFF the ON/OFF time mask or queries the current setting.	5-32
:WMANual:TXTest:OOMask:PARam	Sets the measurement parameters of the ON/OFF time mask or queries the current setting.	5-32
:WMANual:TXTest:FASTPmode	Sets the fast power measurement mode or queries the current setting.	5-32
TXView Group		
:WMANual:TXView	Switches the display format.	5-32
TXRX Mode		
WTXRx?		
:WTXRx?	Queries all settings related to measurement in TXRX mode.	5-33

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DLParam Group		
:WTXRx:DLParam?	Queries all settings related to connection conditions (downlink parameters).	5-33
:WTXRx:DLParam:MODulation	Turns ON/OFF the modulation or queries the current setting.	5-33
:WTXRx:DLParam:SCODe	Sets the scrambling code or queries the current setting.	5-33
:WTXRx:DLParam:SRATe	Sets the symbol rate or queries the current setting.	5-33
:WTXRx:DLParam:TYPE	Sets the payload type or queries the current setting.	5-34
:WTXRx:DLParam:CCODe?	Queries all settings related to the channelization code.	5-34
:WTXRx:DLParam:CCODe:SCPIch	Sets the SCPICH channelization code or queries the current setting.	5-34
:WTXRx:DLParam:CCODe:PICH	Sets the PICH channelization code or queries the current setting.	5-34
:WTXRx:DLParam:CCODe:DPCH	Sets the DPCH channelization code or queries the current setting.	5-34
:WTXRx:DLParam:TOFFset?	Queries all settings related to the timing offset.	5-34
:WTXRx:DLParam:TOFFset:PICH	Sets the PICH timing offset or queries the current setting.	5-34
:WTXRx:DLParam:TOFFset:DPCH	Sets the DPCH timing offset or queries the current setting.	5-34
:WTXRx:DLParam:CPOWer?	Queries all settings related to the code domain power.	5-34
:WTXRx:DLParam:CPOWer:PCPIch	Sets the PCPICH code domain power or queries the current setting.	5-34
:WTXRx:DLParam:CPOWer:SCPIch	Sets the SCPICH code domain power or queries the current setting.	5-34
:WTXRx:DLParam:CPOWer:PCCPch	Sets the PCCPCH code domain power or queries the current setting.	5-35
:WTXRx:DLParam:CPOWer:PICH	Sets the PICH code domain power or queries the current setting.	5-35
:WTXRx:DLParam:CPOWer:DPCH	Sets the DPCH code domain power or queries the current setting.	5-35
:WTXRx:DLParam:CPOWer:OCNS?	Queries the OCNS code domain power.	5-35
FREQuency Group		
:WTXRx:FREQuency?	Queries all settings related to the frequency.	5-35
:WTXRx:FREQuency:BAND?	Queries the frequency band.	5-35
:WTXRx:FREQuency:DLFReq?	Queries the downlink frequency.	5-35
:WTXRx:FREQuency:DLCH?	Queries the downlink frequency channel number.	5-35
:WTXRx:FREQuency:ULFReq?	Queries the uplink frequency.	5-35
:WTXRx:FREQuency:ULCH?	Queries the uplink frequency channel number.	5-36
:WTXRx:FREQuency:TMP:BAND	Sets the temporary frequency band or queries the current setting.	5-36
:WTXRx:FREQuency:TMP:DLFReq	Sets the temporary downlink frequency or queries the current setting.	5-36
:WTXRx:FREQuency:TMP:DLCH	Sets the temporary downlink frequency channel number or queries the current setting.	5-36
:WTXRx:FREQuency:TMP:ULFReq	Sets the temporary uplink frequency or queries the current setting.	5-36
:WTXRx:FREQuency:TMP:ULCH	Sets the temporary uplink frequency channel number or queries the current setting.	5-36
:WTXRx:FREQuency:TMP:SET	Enters the temporary frequency settings.	5-36
:WTXRx:FREQuency:TMP:CANCel	Cancels the temporary frequency settings.	5-36
MEASure Group		
:WTXRx:MEASure?	Queries the measurement item and measurement mode.	5-37
:WTXRx:MEASure:ITEM	Sets the measurement item or queries the current setting.	5-37
:WTXRx:MEASure:MODE	Sets the measurement mode or queries the current setting.	5-37
MONitor Group		
:WTXRx:MONitor?	Queries all settings related to the monitor function.	5-37
:WTXRx:MONitor:AVERage?	Queries all settings related to the averaging of spectrum monitor measurement.	5-37
:WTXRx:MONitor:AVERage:CONTrol	Enables/disables averaging of the spectrum monitor measurement or queries the current setting.	5-37
:WTXRx:MONitor:AVERage:COUNt	Sets the average count of the spectrum monitor measurement or queries the current setting.	5-37
:WTXRx:MONitor:SPECtrum?	Queries all settings related to the spectrum monitor function.	5-37
:WTXRx:MONitor:SPECtrum:REFLevel	Sets the reference level of the spectrum monitor function or queries the current setting.	5-38
:WTXRx:MONitor:SPECtrum:TRACe	Sets the trace method of the spectrum monitor function or queries the current setting.	5-38
:WTXRx:MONitor:SPECtrum:DETect	Sets the power detection method of the spectrum monitor function or queries the current setting.	5-38
:WTXRx:MONitor:SPECtrum:MARK<x>?	Queries all settings related to marker <x> of the spectrum monitor function.	5-38
:WTXRx:MONitor:SPECtrum:MARK<x>:EXEC	Enables/disables marker <x> of the spectrum monitor function or queries the current setting.	5-38

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:WTXRx:MONitor:SPECtrum:MARK<x>:FREQuency	Sets the frequency of marker <x> of the spectrum monitor function or queries the current setting.	5-38
POWer Group		
:WTXRx:POWer?	Queries all settings related to the power.	5-39
:WTXRx:POWer:CONTrol	Sets the downlink power control or queries the current setting.	5-39
:WTXRx:POWer:DLPower	Sets the downlink power value or queries the current setting.	5-39
:WTXRx:POWer:COMPensation?	Queries all settings related to the power compensation.	5-39
:WTXRx:POWer:COMPensation:DLB1	Sets the downlink power compensation value (Band1) or queries the current setting.	5-39
:WTXRx:POWer:COMPensation:DLB2	Sets the downlink power compensation value (Band2) or queries the current setting.	5-39
:WTXRx:POWer:COMPensation:DLB3	Sets the downlink power compensation value (Band3) or queries the current setting.	5-39
:WTXRx:POWer:COMPensation:DLB4	Sets the downlink power compensation value (Band4) or queries the current setting.	5-39
:WTXRx:POWer:COMPensation:DLB5	Sets the downlink power compensation value (Band5) or queries the current setting.	5-39
:WTXRx:POWer:COMPensation:DLB6	Sets the downlink power compensation value (Band6) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:DLB8	Sets the downlink power compensation value (Band8) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:DLB9	Sets the downlink power compensation value (Band9) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:ULB1	Sets the uplink power compensation value (Band1) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:ULB2	Sets the uplink power compensation value (Band2) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:ULB3	Sets the uplink power compensation value (Band3) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:ULB4	Sets the uplink power compensation value (Band4) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:ULB5	Sets the uplink power compensation value (Band5) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:ULB6	Sets the uplink power compensation value (Band6) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:ULB8	Sets the uplink power compensation value (Band8) or queries the current setting.	5-40
:WTXRx:POWer:COMPensation:ULB9	Sets the uplink power compensation value (Band9) or queries the current setting.	5-41
:WTXRx:POWer:ULINput	Turns ON/OFF the uplink RF input or queries the current setting.	5-41
PRESet Group		
:WTXRx:PRESet?	Queries all settings related to presets.	5-41
:WTXRx:PRESet:MODE	Sets the preset mode or queries the current setting.	5-41
:WTXRx:PRESet:NUMBer	Sets the preset number or queries the current setting.	5-41
:WTXRx:PRESet:VALid?	Queries whether the preset settings are valid.	5-41
:WTXRx:PRESet:BAND?	Queries the frequency band in the preset.	5-41
:WTXRx:PRESet:DLFReq?	Queries the downlink frequency in the preset.	5-42
:WTXRx:PRESet:DLCH?	Queries the downlink frequency channel in the preset.	5-42
:WTXRx:PRESet:ULFReq?	Queries the uplink frequency in the preset.	5-42
:WTXRx:PRESet:ULCH?	Queries the uplink frequency channel in the preset.	5-42
:WTXRx:PRESet:DLPower?	Queries the downlink power in the preset.	5-42
:WTXRx:PRESet:EXECute	Executes the preset.	5-42
RESult Group		
:WTXRx:RESult?	Queries all measurement results.	5-42
:WTXRx:RESult:CLEar	Clears all measurement results.	5-42
:WTXRx:RESult:TXTest:MCOunt?	Queries the measurement count of the TX characteristics measurement.	5-42
:WTXRx:RESult:TXPower?	Queries all results related to the TX power.	5-42
:WTXRx:RESult:TXPower:AVERage?	Queries the average value of the TX power.	5-43
:WTXRx:RESult:TXPower:MAX?	Queries the maximum value of the TX power.	5-43
:WTXRx:RESult:TXPower:MIN?	Queries the minimum value of the TX power.	5-43

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:WTXRx:RESult:FILPower?	Queries all results related to the TX power after passing through the RRC filter.	5-43
:WTXRx:RESult:FILPower:AVERage?	Queries the average value of the TX power after passing through the RRC filter.	5-43
:WTXRx:RESult:FILPower:MAX?	Queries the maximum value of the TX power after passing through the RRC filter.	5-43
:WTXRx:RESult:FILPower:MIN?	Queries the minimum value of the TX power after passing through the RRC filter.	5-43
:WTXRx:RESult:FERRor?	Queries all results related to the frequency error.	5-43
:WTXRx:RESult:FERRor:PPM?	Queries all results related to the frequency error (in unit of ppm).	5-43
:WTXRx:RESult:FERRor:PPM:AVERage?	Queries the average value of the frequency error (in unit of ppm).	5-43
:WTXRx:RESult:FERRor:PPM:MAX?	Queries the maximum value of the frequency error (in unit of ppm).	5-44
:WTXRx:RESult:FERRor:PPM:MIN?	Queries the minimum value of the frequency error (in unit of ppm).	5-44
:WTXRx:RESult:FERRor:HZ?	Queries all results related to the frequency error (in unit of Hz).	5-44
:WTXRx:RESult:FERRor:HZ:AVERage?	Queries the average value of the frequency error (in unit of Hz).	5-44
:WTXRx:RESult:FERRor:HZ:MAX?	Queries the maximum value of the frequency error (in unit of Hz).	5-44
:WTXRx:RESult:FERRor:HZ:MIN?	Queries the minimum value of the frequency error (in unit of Hz).	5-44
:WTXRx:RESult:EVM?	Queries all results related to the EVM.	5-44
:WTXRx:RESult:EVM:WIOFfset?	Queries all results related to the EVM (including the origin offset).	5-44
:WTXRx:RESult:EVM:WIOFfset:AVERage?	Queries the average value of EVM (including the origin offset).	5-44
:WTXRx:RESult:EVM:WIOFfset:MAX?	Queries the maximum value of EVM (including the origin offset).	5-44
:WTXRx:RESult:EVM:WIOFfset:MIN?	Queries the minimum value of EVM (including the origin offset).	5-45
:WTXRx:RESult:EVM:WOOFfset?	Queries all results related to the EVM (excluding the origin offset).	5-45
:WTXRx:RESult:EVM:WOOFfset:AVERage?	Queries the average value of EVM (excluding the origin offset).	5-45
:WTXRx:RESult:EVM:WOOFfset:MAX?	Queries the maximum value of EVM (excluding the origin offset).	5-45
:WTXRx:RESult:EVM:WOOFfset:MIN?	Queries the minimum value of EVM (excluding the origin offset).	5-45
:WTXRx:RESult:EVM:ORIGinoffset?	Queries all results related to origin offset.	5-45
:WTXRx:RESult:EVM:ORIGinoffset:AVERage?	Queries the average value of the origin offset.	5-45
:WTXRx:RESult:EVM:ORIGinoffset:MAX?	Queries the maximum value of the origin offset.	5-45
:WTXRx:RESult:EVM:ORIGinoffset:MIN?	Queries the minimum value of the origin offset.	5-45
:WTXRx:RESult:EVM:IQIMbalance?	Queries all results related to the IQ power ratio.	5-45
:WTXRx:RESult:EVM:IQIMbalance:AVERage?	Queries the average value of the IQ power ratio.	5-46
:WTXRx:RESult:EVM:IQIMbalance:MAX?	Queries the maximum value of the IQ power ratio.	5-46
:WTXRx:RESult:EVM:IQIMbalance:MIN?	Queries the minimum value of the IQ power ratio.	5-46
:WTXRx:RESult:OBW?	Queries all results related to the occupied bandwidth.	5-46
:WTXRx:RESult:OBW:AVERage?	Queries the average value of the occupied bandwidth.	5-46
:WTXRx:RESult:OBW:MAX?	Queries the maximum value of the occupied bandwidth.	5-46
:WTXRx:RESult:OBW:MIN?	Queries the minimum value of the occupied bandwidth.	5-46
:WTXRx:RESult:OBW:FUPPer?	Queries the upper frequency limit of the occupied bandwidth.	5-46
:WTXRx:RESult:OBW:FLOWer?	Queries the lower frequency limit of the occupied bandwidth.	5-46
:WTXRx:RESult:SEM:JUDGe?	Queries the SEM judgement result.	5-46
:WTXRx:RESult:ACLR?	Queries all results related to the ACLR.	5-47
:WTXRx:RESult:ACLR:P5M?	Queries all results related to the ACLR (+5 MHz).	5-47
:WTXRx:RESult:ACLR:P5M:AVERage?	Queries the average value of the ACLR (+5 MHz).	5-47
:WTXRx:RESult:ACLR:P5M:MAX?	Queries the maximum value of the ACLR (+5 MHz).	5-47
:WTXRx:RESult:ACLR:P5M:MIN?	Queries the minimum value of the ACLR (+5 MHz).	5-47
:WTXRx:RESult:ACLR:M5M?	Queries all results related to the ACLR (-5 MHz).	5-47
:WTXRx:RESult:ACLR:M5M:AVERage?	Queries the average value of the ACLR (-5 MHz).	5-47
:WTXRx:RESult:ACLR:M5M:MAX?	Queries the maximum value of the ACLR (-5 MHz).	5-47
:WTXRx:RESult:ACLR:M5M:MIN?	Queries the minimum value of the ACLR (-5 MHz).	5-47
:WTXRx:RESult:ACLR:P10M?	Queries all results related to the ACLR (+10 MHz).	5-47
:WTXRx:RESult:ACLR:P10M:AVERage?	Queries the average value of the ACLR (+10 MHz).	5-48
:WTXRx:RESult:ACLR:P10M:MAX?	Queries the maximum value of the ACLR (+10 MHz).	5-48
:WTXRx:RESult:ACLR:P10M:MIN?	Queries the minimum value of the ACLR (+10 MHz).	5-48
:WTXRx:RESult:ACLR:M10M?	Queries all results related to the ACLR (-10 MHz).	5-48

Command	Function	Page
:WTXRx:RESult:ACLR:M10M:AVERage?	Queries the average value of the ACLR (-10 MHz).	5-48
:WTXRx:RESult:ACLR:M10M:MAX?	Queries the maximum value of the ACLR (-10 MHz).	5-48
:WTXRx:RESult:ACLR:M10M:MIN?	Queries the minimum value of the ACLR (-10 MHz).	5-48
:WTXRx:RESult:RXTest:MCOunt?	Queries the Rx characteristics measurement count.	5-48
:WTXRx:RESult:EBER?	Queries the external BER measurement result.	5-48
:WTXRx:RESult:EBER:BNUMber?	Queries the number of measured bits of the external BER measurement.	5-48
:WTXRx:RESult:EBER:FACTor?	Queries the cause of the error in the external BER measurement result.	5-48
:WTXRx:RESult:EBER:ERRNumber?	Queries the number of error bits in the external BER measurement.	5-49
:WTXRx:RESult:DPOWer:SLOT?	Queries the number of slots in the dynamic power measurement result.	5-49
:WTXRx:RESult:DPOWer:ABSolute:ALL?	Queries the absolute power (dBm) of all time slots in the dynamic power measurement result.	5-49
:WTXRx:RESult:DPOWer:ABSolute:TS?	Queries the absolute power (dBm) of a specific time slot in the dynamic power measurement result.	5-49
:WTXRx:RESult:DPOWer:RELative:ALL?	Queries the power value (dB) of all time slots with respect to the first time slot in the dynamic power measurement result.	5-49
:WTXRx:RESult:DPOWer:RELative:TS?	Queries the power value (dB) of a specific time slot with respect to the first time slot in the dynamic power measurement result.	5-49
:WTXRx:RESult:DPOWer:INTegrity?	Queries the integrity of a specific time slot in the dynamic power measurement result.	5-49
:WTXRx:RESult:DPOWer:MAX:ALL?	Queries the maximum value (dBm) of all time slots in the dynamic power measurement result.	5-49
:WTXRx:RESult:DPOWer:MAX:TS?	Queries the maximum value (dBm) of a specific time slot in the dynamic power measurement result.	5-50
:WTXRx:RESult:DPOWer:MIN:ALL?	Queries the minimum value (dBm) of all time slots in the dynamic power measurement result.	5-50
:WTXRx:RESult:DPOWer:MIN:TS?	Queries the minimum value (dBm) of a specific time slot in the dynamic power measurement result.	5-50
:WTXRx:RESult:MONitor:MCOunt?	Queries the measurement count of the monitor measurement.	5-50
:WTXRx:RESult:SPECtrum?	Queries all results related to the spectrum monitor function.	5-50
:WTXRx:RESult:SPECtrum:TPOWer?	Queries the total power of the spectrum.	5-50
:WTXRx:RESult:SPECtrum:MARK<x>?	Sets the measured value (power) of marker <x> of the spectrum monitor function or queries the current setting.	5-50
RXTest Group		
:WTXRx:RXTest?	Queries all settings related to the RX characteristics.	5-51
:WTXRx:RXTest:EBER?	Queries all settings related to the external BER.	5-51
:WTXRx:RXTest:EBER:EXECute	Turns On/Off the external BER measurement or queries the current setting.	5-51
:WTXRx:RXTest:EBER:BNUMber	Sets the number of bits of the external BER measurement or queries the current setting.	5-51
:WTXRx:RXTest:CPOLarity	Sets the external input clock characteristics or queries the current setting.	5-51
:WTXRx:RXTest:DPOLarity	Sets the external input data characteristics or queries the current setting.	5-51
TTARget Group		
:WTXRx:TTARget	Sets the measurement items of the TX characteristics measurement or queries the current setting.	5-51
TXTest Group		
:WTXRx:TXTest?	Queries all settings related to TX characteristics measurement.	5-52
:WTXRx:TXTest:AVERage?	Queries all settings related to the average of TX characteristics measurement.	5-52
:WTXRx:TXTest:AVERage:CONTrol	Turns ON/OFF the averaging of the TX characteristics measurement or queries the current setting.	5-52
:WTXRx:TXTest:AVERage:COUNt	Sets the average count of the TX characteristics measurement or queries the current setting.	5-52
:WTXRx:TXTest:TXPower:EXECute	Turns ON/OFF the TX power or queries the current setting.	5-52
:WTXRx:TXTest:TXPower:MTIMes	Sets the measurement count of the TX power measurement or queries the current setting.	5-52
:WTXRx:TXTest:FERRor:EXECute	Turns ON/OFF the frequency error or queries the current setting.	5-52
:WTXRx:TXTest:EVM:EXECute	Turns ON/OFF the EVM or queries the current setting.	5-52
:WTXRx:TXTest:OBW:EXECute	Turns ON/OFF the occupied bandwidth or queries the current setting.	5-52
:WTXRx:TXTest:ACLR:EXECute	Turns ON/OFF the ACLR or queries the current setting.	5-52
:WTXRx:TXTest:SEM?	Queries all settings related to the SEM of TX measurement.	5-53

Command	Function	Page
:WTXRx:TXTest:SEM:EXECute	Turns ON/OFF the SEM or queries the current setting.	5-53
:WTXRx:TXTest:SEM:UNIT	Switches the SEM graph unit of the TX measurement or queries the current setting.	5-53
:WTXRx:TXTest:ITEM	Switches between normal measurement and dynamic power measurement.	5-53
:WTXRx:TXTest:DPOWer?	Queries all settings related to the dynamic power measurement.	5-53
:WTXRx:TXTest:DPOWer:SLOT	Sets the number of measured slots of the dynamic power measurement or queries the current setting.	5-53
:WTXRx:TXTest:DPOWer:INLevel	Sets the initial level of the dynamic power measurement or queries the current setting.	5-53
:WTXRx:TXTest:DPOWer:RANGe	Sets the range of the dynamic power measurement or queries the current setting.	5-53
:WTXRx:TXTest:DPOWer:TRIGger:SRC	Sets the trigger source of the dynamic power measurement or queries the current setting.	5-53
:WTXRx:TXTest:DPOWer:TRIGger?	Queries all settings related to the trigger of the dynamic power measurement.	5-53
:WTXRx:TXTest:DPOWer:TRIGger:POLarity	Sets the trigger polarity of the dynamic power measurement or queries the current setting.	5-54
:WTXRx:TXTest:DPOWer:TRIGger:DELay	Sets the trigger delay of the dynamic power measurement or queries the current setting.	5-54
:WTXRx:TXTest:DPOWer:FILTer	Turns ON/OFF the RRC filter for the dynamic power measurement or queries the current setting.	5-54
:WTXRx:TXTest:FASTPmode	Sets the fast power measurement mode or queries the current setting.	5-54
TXView Group		
:WTXRx:TXView	Switches the display format.	5-54
ULParam Group		
:WTXRx:ULParam?	Queries all settings related to connection conditions (uplink parameters).	5-55
:WTXRx:ULParam:SCODe	Sets the scrambling code or queries the current setting.	5-55
:WTXRx:ULParam:TOFFset	Sets the timing offset or queries the current setting.	5-55
:WTXRx:ULParam:SRATe	Sets the symbol rate or queries the current setting.	5-55
:WTXRx:ULParam:SYMode	Sets the synchronous mode or queries the current setting.	5-55
:WTXRx:ULParam:PRATio	Sets the IQ power ratio or queries the current setting.	5-55

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 WMANual?

:WMANual?

Function Queries all settings related to setting in manual mode.

Syntax :WMANual?

Example :WMANual? -> :WMAN:FREQ:BAND B1;
DLFR 2.1124E+03;DLCH 10562;
ULFR 1.9224E+03;ULCH 9612;FDST S1;
:WMAN:POW:CONT ON;DLP -60.00E+00;
ULP -20.00E+00;COMP:
DLB1 0.00E+00;DLB2 0.00E+00;
DLB3 0.00E+00;DLB4 0.00E+00;
DLB5 0.00E+00;DLB6 0.00E+00;
DLB8 0.00E+00;DLB9 0.00E+00;
ULB1 0.00E+00;ULB2 0.00E+00;
ULB3 0.00E+00;ULB4 0.00E+00;
ULB5 0.00E+00;ULB6 0.00E+00;
ULB8 0.00E+00;ULB9 0.00E+00;:WMAN:
PRES:MODE LOAD;NUMB S1;:WMAN:PAR:
CNM TEST;DTYP ECHO;PROF P01;
IMSI "001010000000010";MCC "001";
MNC "01";SEC:INT ON;AUTH ON;
AKEY "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
A";:WMAN:PAR:SPE T0_5;HSET H3QP;
CQFC C0M;ANRF 1;CQRF 1;:WMAN:MEAS:
ITEM TX;MODE REP;:WMAN:TXT:AVER:
CONT ON;COUN 10;:WMAN:TXT:HSTS SPC1;
TXP:EXEC ON;:WMAN:TXT:FERR:EXEC ON;:
WMAN:TXT:EVM:EXEC ON;:WMAN:TXT:OBW:
EXEC ON;:WMAN:TXT:ACLR:EXEC ON;:WMAN:
TXT:SEM:EXEC ON;UNIT DBC;:WMAN:TXT:
OPLP:EXEC ON;PAR MIDD;:WMAN:TXT:INNP:
EXEC ON;TPCP ST_E;:WMAN:TXT:OOM:
EXEC OFF;PAR CL_3;:WMAN:TXT:
FASTP OFF;:WMAN:RXT:BER:EXEC ON;
BNUM 10000;CDP REFS;:WMAN:RXT:THRO:
EXEC ON;BLN 1000;:WMAN:RXT:CQI:
EXEC ON;BLN 1000;:WMAN:TTAR TXP;
RTAR BER;TXV OVER;RXV OVER

5.2.2 FREQuency Group

:WMANual:FREQuency?

Function Queries all settings related to the frequency.

Syntax :WMANual:FREQuency?

Example :WMANual:FREQuency? -> :WMAN:FREQ:
BAND B1;DLFR 2.1124E+03;DLCH 10562;
ULFR 2.1124E+03;ULCH 9612;FDST S1

:WMANual:FREQuency:BAND?

Function Queries the frequency band.

Syntax :WMANual:FREQuency:BAND?

Example :WMANual:FREQuency:BAND? ->
:WMAN:FREQ:BAND B1

Description This command is only for querying. Use : WMANual:FREQuency:TMP:BAND to set the frequency band and :WMANual:FREQuency:TMP:SET to enter the setting.
The responses are as follows.

B1 : Band 1	B5 : Band5
B2 : Band 2	B6 : Band6
B3 : Band3	B8 : Band8
B4 : Band4	B9 : Band9

:WMANual:FREQuency:DLFReq?

Function Queries the downlink frequency.

Syntax :WMANual:FREQuency:DLFReq?

Example :WMANual:FREQuency:DLFReq? ->
:WMAN:FREQ:DLFR 2.1124E+03

Description
- This command is only for querying. Use : WMANual:FREQuency:TMP:DLFReq to set the downlink frequency and :WMANual:FREQuency:TMP:SET to enter the setting.
- The frequency unit of the response is MHz.

:WMANual:FREQuency:DLCH?

Function Queries the downlink frequency channel number.

Syntax :WMANual:FREQuency:DLCH?

Example :WMANual:FREQuency:DLCH? ->
:WMAN:FREQ:DLCH 10562

Description This command is only for querying. Use : WMANual:FREQuency:TMP:DLCH to set the downlink frequency channel number and : WMANual:FREQuency:TMP:SET to enter the setting.

:WMANual:FREQuency:ULFReq?

Function Queries the uplink frequency.

Syntax :WMANual:FREQuency:ULFReq?

Example :WMANual:FREQuency:ULFReq? ->
:WMAN:FREQ:ULFR 2.1124E+03

Description
- This command is only for querying. Use : WMANual:FREQuency:TMP:ULFReq to set the uplink frequency and :WMANual:FREQuency:TMP:SET to enter the setting.
- The frequency unit of the response is MHz.

:WMANual:FREQuency:ULCH?

Function Queries the uplink frequency channel number.
Syntax :WMANual:FREQuency:ULCH?
Example :WMANual:FREQuency:ULCH? ->
:WMAN:FREQ:ULCH 10562
Description This command is only for querying. Use :WMANual:FREQuency:TMP:ULCH to set the uplink frequency channel number and :WMANual:FREQuency:TMP:SET to enter the setting.

:WMANual:FREQuency:TMP:BAND

Function Sets the temporary frequency band or queries the current setting.
Syntax :WMANual:FREQuency:TMP:BAND {B1|B2|B3|B4|B5|B6|B8|B9}
:WMANual:FREQuency:TMP:BAND?
Example :WMANual:FREQuency:TMP:BAND B1
:WMANual:FREQuency:TMP:BAND? ->
:WMAN:FREQ:TMP:BAND B1
Description
- The settings and responses are as follows.

B1	: Band1	B5	: Band5
B2	: Band2	B6	: Band6
B3	: Band3	B8	: Band8
B4	: Band4	B9	: Band9

- Use :WMANual:FREQuency:TMP:SET to enter the frequency band set with this command.

:WMANual:FREQuency:TMP:DLFReq

Function Sets the temporary downlink frequency or queries the current setting.
Syntax :WMANual:FREQuency:TMP:DLFReq <frequency>
:WMANual:FREQuency:TMP:DLFReq?
Example :WMANual:FREQuency:TMP:DLFReq 2112.4
:WMANual:FREQuency:TMP:DLFReq? ->
:WMAN:FREQ:TMP:DLFR 2.1124E+03
Description
- Use :WMANual:FREQuency:TMP:SET to enter the downlink frequency set with this command.
- The frequency unit of the setting and response is MHz.

:WMANual:FREQuency:TMP:DLCH

Function Sets the temporary downlink frequency channel number or queries the current setting.
Syntax :WMANual:FREQuency:TMP:DLCH <number>
:WMANual:FREQuency:TMP:DLCH?
Example :WMANual:FREQuency:TMP:DLCH 10562
:WMANual:FREQuency:TMP:DLCH? ->
:WMAN:FREQ:TMP:DLCH 10562
Description Use :WMANual:FREQuency:TMP:SET to enter the downlink frequency channel number set with this command.

:WMANual:FREQuency:TMP:ULFReq

Function Sets the temporary uplink frequency or queries the current setting.
Syntax :WMANual:FREQuency:TMP:ULFReq <frequency>
:WMANual:FREQuency:TMP:ULFReq?
Example :WMANual:FREQuency:TMP:ULFReq 1922.4
:WMANual:FREQuency:TMP:ULFReq? ->
:WMAN:FREQ:TMP:ULFR 1.9224E+03
Description
- Use :WMANual:FREQuency:TMP:SET to enter the uplink frequency set with this command.
- The frequency unit of the setting and response is MHz.

:WMANual:FREQuency:TMP:ULCH

Function Sets the temporary uplink frequency channel number or queries the current setting.
Syntax :WMANual:FREQuency:TMP:ULCH <number>
:WMANual:FREQuency:TMP:ULCH?
Example :WMANual:FREQuency:TMP:ULCH 9612
:MANual:FREQuency:TMP:ULCH? ->
:WMAN:FREQ:TMP:ULCH 9612
Description Use :WMANual:FREQuency:TMP:SET to enter the uplink frequency channel number set with this command.

:WMANual:FREQuency:TMP:SET

Function Enters the temporary frequency settings.
Syntax :WMANual:FREQuency:TMP:SET
Example :WMANual:FREQuency:TMP:SET
Description This command enters the values set with :WMANual:FREQuency:TMP:BAND, :WMANual:FREQuency:TMP:DLFReq, :WMANual:FREQuency:TMP:DLCH, :WMANual:FREQuency:TMP:ULFReq, and :WMANual:FREQuency:TMP:ULCH.
This command executes a frequency handover when the call is connected.

:WMANual:FREQuency:TMP:CANCel

Function Cancels the temporary frequency settings.
Syntax :WMANual:FREQuency:TMP:CANCel
Example :WMANual:FREQuency:TMP:CANCel

:WMANual:FREQuency:FDSTination

Function Sets the frequency handover destination frequency using a preset number or queries the current setting.
Syntax :WMANual:FREQuency:FDSTination {S1|S2|S3|S4|S5|S6}
:WMANual:FREQuency:FDSTination?
Example :WMANual:FREQuency:FDSTination S1
:WMANual:FREQuency:FDSTination? ->
:WMAN:FREQ:FDST S1
Description The preset number set with this command is used when executing a frequency handover with :FHOVer.

5.2.3 MEASure Group

:WMANual:MEASure?

Function Queries the measurement item and measurement mode.

```
Syntax  :WMANual:MEASure?
Example :WMANual:MEASure? ->
        :WMAN:MEAS:ITEM TX;MODE REP
```

:WMANual:MEASure:ITEM

Function Sets the measurement item or queries the current setting.

```
Syntax  :WMANual:MEASure:ITEM {TX|RX}
        :WMANual:MEASure:ITEM?
Example :WMANual:MEASure:ITEM TX
        :WMANual:MEASure:ITEM? ->
        :WMAN:MEAS:ITEM TX
```

Description The settings and responses are as follows.

TX : TX mesurement
RX : RX measurement

:WMANual:MEASure:MODE

Function Sets the measurement mode or queries the current setting.

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

Description The settings and responses are as follows.

REPeat : Repeats measurement
SINGle : Single measurement

5.2.4 PARam Group

:WMANual:PARam?

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

```
Syntax  :WMANual:PARam?
Example :WMANual:PARam? -> :WMAN:PAR:CNM
        TEST;DTYP ECHO;PROF P01;
        IMSI "001010000000010";MCC "001";
        MNC "01";SEC:INT ON;AUTH ON;AKEY
        "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA";
        :WMAN:PAR:SPE T0_5;HSET H3QP;
        CQFC C0M;ANRF 1;CQRF 1
```

:WMANual:PARam:CNMode

Function Sets the connection mode or queries the current setting.

```
Syntax  :WMANual:PARam:CNMode {TESTloop|
        VOICe|VIDeo|RMCHsdpa|SRBHsdpa}
        :WMANual:PARam:CNMode?
Example :WMANual:PARam:CNMode VOICe
        :WMANual:PARam:CNMode? ->
        :WMAN:PAR:CNM VOIC
```

:WMANual:PARam:DTYPe

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

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

Description
- This command is valid during a voice call.
- The settings and responses are as follows.

  ALL0 : Transmits all-zero data
  ALL1 : Transmits all-one data
  PR9 : Transmits PRBS9 data
  ECHO : Loops back the speech data and transmits the data

:WMANual:PARam:PROFile

Function Sets the profile or queries the current setting.

```
Syntax  :WMANual:PARam:PROFile {P00|P01}
        :WMANual:PARam:PROFile?
Example :WMANual:PARam:PROFile P01
        :WMANual:PARam:PROFile? ->
        :WMAN:PAR:PROF P01
```

Description The settings and responses are as follows.

P00 : Profile_w00
P01 : Profile_w01

:WMANual:PARam:IMSI

Function Sets the IMSI or queries the current setting.

```
Syntax  :WMANual:PARam:IMSI <String>
        :WMANual:PARam:IMSI?
Example :WMANual:PARam:IMSI "001010000000010"
        :WMANual:PARam:IMSI? ->
        :WMAN:PAR:IMSI "001010000000010"
```

:WMANual:PARam:MCC

Function Sets the MCC or queries the current setting.

```
Syntax  :WMANual:PARam:MCC <String>
        :WMANual:PARam:MCC?
Example :WMANual:PARam:MCC "001"
        :WMANual:PARam:MCC? ->
        :WMAN:PAR:MCC "001"
```

:WMANual:PARam:MNC

Function Sets the MNC or queries the current setting.

```
Syntax  :WMANual:PARam:MNC <String>
        :WMANual:PARam:MNC?
Example :WMANual:PARam:MNC "01"
        :WMANual:PARam:MNC? ->
        :WMAN:PAR:MNC "01"
```

:WMANual:PARam:SECurity?

Function Queries all settings related to the security parameter.

Syntax :WMANual:PARam:SECurity?

Example :WMANual:PARam:SECurity? -> :WMAN:PAR:SEC:INT ON;AUTH ON;AKEY "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA"

:WMANual:PARam:SECurity:INTegrity

Function Turns ON/OFF the integrity function or queries the current setting.

Syntax :WMANual:PARam:SECurity:INTegrity {ON|OFF}
:WMANual:PARam:SECurity:INTegrity?

Example :WMANual:PARam:SECurity:INTegrity ON
:WMANual:PARam:SECurity:INTegrity? -> :WMAN:PAR:SEC:INT ON

:WMANual:PARam:SECurity:AUTHent

Function Turns ON/OFF the authentication key or queries the current setting.

Syntax :WMANual:PARam:SECurity:AUTHent {ON|OFF}
:WMANual:PARam:SECurity:AUTHent?

Example :WMANual:PARam:SECurity:AUTHent ON
:WMANual:PARam:SECurity:AUTHent? -> :WMAN:PAR:SEC:AUTH ON

:WMANual:PARam:SECurity:AKEY

Function Sets the authentication key or queries the current setting.

Syntax :WMANual:PARam:SECurity:AKEY <String>
:WMANual:PARam:SECurity:AKEY?

Example :WMANual:PARam:SECurity:AKEY "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA"
:WMANual:PARam:SECurity:AKEY? -> :WMAN:PAR:SEC:AKEY "AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA"

:WMANual:PARam:SPEechdelay

Function Sets the delay time or queries the current setting.

Syntax :WMANual:PARam:SPEechdelay {T0_5|T1_0|T1_5}
:WMANual:PARam:SPEechdelay?

Example :WMANual:PARam:SPEechdelay T0_5
:WMANual:PARam:SPEechdelay? -> :WMAN:PAR:SPE T0_5

Description The settings and responses are as follows.
T0_5 : 0.5 second.
T1_0 : 1.0 second.
T1_5 : 1.5 second.

:WMANual:PARam:HSET

Function Sets the H-Set or queries the current setting.

Syntax :WMANual:PARam:HSET {H3QPsk|H316qam}
:WMANual:PARam:HSET?

Example :WMANual:PARam:HSET H3QPsk
:WMANual:PARam:HSET? -> :WMAN:PAR:HSET H3QP

:WMANual:PARam:CQFCycle

Function Sets the CQI feedback cycle or queries the current setting.

Syntax :WMANual:PARam:CQFCycle {C0M|C2M|C4M|C8M|C10M|C20M|C40M|C80M|C160M}
:WMANual:PARam:CQFCycle?

Example :WMANual:PARam:CQFCycle C2M
:WMANual:PARam:CQFCycle? -> :WMAN:PAR:CQFC C2M

:WMANual:PARam:ANRFactor

Function Sets the Ack/Nack repetition factor or queries the current setting.

Syntax :WMANual:PARam:ANRFactor <factor>
:WMANual:PARam:ANRFactor?

Example :WMANual:PARam:ANRFactor 1
:WMANual:PARam:ANRFactor? -> :WMAN:PAR:ANRF 1

:WMANual:PARam:CQRFactor

Function Sets the CQI repetition factor or queries the current setting.

Syntax :WMANual:PARam:CQRFactor <factor>
:WMANual:PARam:CQRFactor?

Example :WMANual:PARam:CQRFactor 1
:WMANual:PARam:CQRFactor? -> :WMAN:PAR:CQRF 1

5.2.5 POWer Group

:WMANual:POWer?

Function Queries all settings related to the power.

Syntax :WMANual:POWer?

Example :WManual:POWer? -> :WMAN:POW:CONT ON;DLP -10.00E+00;ULP 35.10E+00;COMP: DLB1 0.00E+00;DLB2 0.00E+00; DLB3 0.00E+00;DLB4 0.00E+00; DLB5 0.00E+00;DLB6 0.00E+00; DLB8 0.00E+00;DLB9 0.00E+00; ULB1 0.00E+00;ULB2 0.00E+00; ULB3 0.00E+00;ULB4 0.00E+00; ULB5 0.00E+00;ULB6 0.00E+00; ULB8 0.00E+00;ULB9 0.00E+00

:WMANual:POWer:CONTrol

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

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

Example :WMANual:POWer:CONTrol ON
:WMANual:POWer:CONTrol? ->
:WMAN:POW:CONT ON

:WMANual:POWer:DLPower

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

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

Example :WMANual:POWer:DLPower -60
:WMANual:POWer:DLPower? ->
:WMAN:POW:DLP -60.00E+00

:WMANual:POWer:ULPower

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

Syntax :WMANual:POWer:ULPower <power>
:WMANual:POWer:ULPower?

Example :WMANual:POWer:ULPower -20
:WMANual:POWer:ULPower? ->
:WMAN:POW:ULP -20.00E+00

Description The selectable range is –70.0 to 35.0. However, to set the power of the mobile phone to the maximum power, specify 35.1. To set the power of the mobile phone to the minimum power, specify –70.1.

:WMANual:POWer:COMPensation?

Function Queries all settings related to the power compensation.

Syntax :WMANual:POWer:COMPensation?

Example :WMANual:POWer:COMPensation? ->
:WMAN:POW:COMP:DLB1 0.00E+00;
DLB2 0.00E+00;DLB3 0.00E+00;
DLB4 0.00E+00;DLB5 0.00E+00;
DLB6 0.00E+00;DLB8 0.00E+00;
DLB9 0.00E+00;ULB1 0.00E+00;
ULB2 0.00E+00;ULB3 0.00E+00;
ULB4 0.00E+00;ULB5 0.00E+00;
ULB6 0.00E+00;ULB8 0.00E+00;
ULB9 0.00E+00

:WMANual:POWer:COMPensation:DLB1

Function Sets the downlink power compensation value (Band1) or queries the current setting.

Syntax :WMANual:POWer:COMPensation:
DLB1 <power (dB)>
:WMANual:POWer:COMPensation:DLB1?

Example :WMANual:POWer:COMPensation:DLB1 0
:WMANual:POWer:COMPensation:DLB1? ->
:WMAN:POW:COMP:DLB1 0.00E+00

:WMANual:POWer:COMPensation:DLB2

Function Sets the downlink power compensation value (Band2) or queries the current setting.

Syntax :WMANual:POWer:COMPensation:
DLB2 <power (dB)>
:WMANual:POWer:COMPensation:DLB2?

Example :WMANual:POWer:COMPensation:DLB2 0
:WMANual:POWer:COMPensation:DLB2? ->
:WMAN:POW:COMP:DLB2 0.00E+00

:WMANual:POWer:COMPensation:DLB3

Function Sets the downlink power compensation value (Band3) or queries the current setting.

Syntax :WMANual:POWer:COMPensation:
DLB3 <power (dB)>
:WMANual:POWer:COMPensation:DLB3?

Example :WMANual:POWer:COMPensation:DLB3 0
:WMANual:POWer:COMPensation:DLB3? ->
:WMAN:POW:COMP:DLB3 0.00E+00

:WMANual:POWer:COMPensation:DLB4

Function Sets the downlink power compensation value (Band4) or queries the current setting.

Syntax :WMANual:POWer:COMPensation:
DLB4 <power (dB)>
:WMANual:POWer:COMPensation:DLB4?

Example :WMANual:POWer:COMPensation:DLB4 0
:WMANual:POWer:COMPensation:DLB4? ->
:WMAN:POW:COMP:DLB4 0.00E+00

:WMANual:POWer:COMPensation:DLB5

Function Sets the downlink power compensation value (Band5) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:
        DLB5 <power (dB)>
        :WMANual:POWer:COMPensation:DLB5?
Example :WMANual:POWer:COMPensation:DLB5 0
        :WMANual:POWer:COMPensation:DLB5? ->
        :WMAN:POW:COMP:DLB5 0.00E+00
```

:WMANual:POWer:COMPensation:DLB6

Function Sets the downlink power compensation value (Band6) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:
        DLB6 <power (dB)>
        :WMANual:POWer:COMPensation:DLB6?
Example :WMANual:POWer:COMPensation:DLB6 0
        :WMANual:POWer:COMPensation:DLB6? ->
        :WMAN:POW:COMP:DLB6 0.00E+00
```

:WMANual:POWer:COMPensation:DLB8

Function Sets the downlink power compensation value (Band8) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:DLB8
        <power(dB)>
        :WMANual:POWer:COMPensation:DLB8?
Example :WMANual:POWer:COMPensation:DLB8 0
        :WMANual:POWer:COMPensation:DLB8? ->
        :WMAN:POW:COMP:DLB8 0.00E+00
```

:WMANual:POWer:COMPensation:DLB9

Function Sets the downlink power compensation value (Band9) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:DLB9
        <power(dB)>
        :WMANual:POWer:COMPensation:DLB9?
Example :WMANual:POWer:COMPensation:DLB9 0
        :WMANual:POWer:COMPensation:DLB9? ->
        :WMAN:POW:COMP:DLB9 0.00E+00
```

:WMANual:POWer:COMPensation:ULB1

Function Sets the uplink power compensation value (Band1) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:
        ULB1 <power (dB)>
        :WMANual:POWer:COMPensation:ULB1?
Example :WMANual:POWer:COMPensation:ULB1 0
        :WMANual:POWer:COMPensation:ULB1? ->
        :WMAN:POW:COMP:ULB1 0.00E+00
```

:WMANual:POWer:COMPensation:ULB2

Function Sets the uplink power compensation value (Band2) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:
        ULB2 <power (dB)>
        :WMANual:POWer:COMPensation:ULB2?
Example :WMANual:POWer:COMPensation:ULB2 0
        :WMANual:POWer:COMPensation:ULB2? ->
        :WMAN:POW:COMP:ULB2 0.00E+00
```

:WMANual:POWer:COMPensation:ULB3

Function Sets the uplink power compensation value (Band3) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:
        ULB3 <power (dB)>
        :WMANual:POWer:COMPensation:ULB3?
Example :WMANual:POWer:COMPensation:ULB3 0
        :WMANual:POWer:COMPensation:ULB3? ->
        :WMAN:POW:COMP:ULB3 0.00E+00
```

:WMANual:POWer:COMPensation:ULB4

Function Sets the uplink power compensation value (Band4) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:
        ULB4 <power (dB)>
        :WMANual:POWer:COMPensation:ULB4?
Example :WMANual:POWer:COMPensation:ULB4 0
        :WMANual:POWer:COMPensation:ULB4? ->
        :WMAN:POW:COMP:ULB4 0.00E+00
```

:WMANual:POWer:COMPensation:ULB5

Function Sets the uplink power compensation value (Band5) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:
        ULB5 <power (dB)>
        :WMANual:POWer:COMPensation:ULB5?
Example :WMANual:POWer:COMPensation:ULB5 0
        :WMANual:POWer:COMPensation:ULB5? ->
        :WMAN:POW:COMP:ULB5 0.00E+00
```

:WMANual:POWer:COMPensation:ULB6

Function Sets the uplink power compensation value (Band6) or queries the current setting.

```
Syntax  :WMANual:POWer:COMPensation:
        ULB6 <power (dB)>
        :WMANual:POWer:COMPensation:ULB6?
Example :WMANual:POWer:COMPensation:ULB6 0
        :WMANual:POWer:COMPensation:ULB6? ->
        :WMAN:POW:COMP:ULB6 0.00E+00
```

:WMANual:POWer:COMPensation:ULB8

Function Sets the uplink power compensation value (Band8) or queries the current setting.

Syntax `:WMANual:POWer:COMPensation:ULB8 <power(dB)>`
`:WMANual:POWer:COMPensation:ULB8?`

Example `:WMANual:POWer:COMPensation:ULB8 0`
`:WMANual:POWer:COMPensation:ULB8? ->`
`:WMAN:POW:COMP:ULB8 0.00E+00`

:WMANual:POWer:COMPensation:ULB9

Function Sets the uplink power compensation value (Band9) or queries the current setting.

Syntax `:WMANual:POWer:COMPensation:ULB9 <power(dB)>`
`:WMANual:POWer:COMPensation:ULB9?`

Example `:WMANual:POWer:COMPensation:ULB9 0`
`:WMANual:POWer:COMPensation:ULB9? ->`
`:WMAN:POW:COMP:ULB9 0.00E+00`

5.2.6 PRESet Group

:WMANual:PRESet?

Function Queries all settings related to presets.

Syntax `:WMANual:PRESet?`

Example `:WMANual:PRESet? ->`
`:WMAN:PRES:MODE LOAD;NUMB S1`

:WMANual:PRESet:MODE

Function Sets the preset mode or queries the current setting.

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

Example `:WMANual:PRESet:MODE LOAD`
`:WMANual:PRESet:MODE? ->`
`:WMAN: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 `:WMANual:PRESet:EXECute` command.

:WMANual:PRESet:NUMBer

Function Sets the preset number or queries the current setting.

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

Example `:WMANual:PRESet:NUMBer S1`
`:WMANual:PRESet:NUMBer? ->`
`:WMAN:PRES:NUMB S1`

:WMANual:PRESet:VALid?

Function Queries whether the preset settings are valid.

Syntax `:WMANual:PRESet:VALid?`

Example `:WMANual:PRESet:VALid? ->`
`:WMAN:PRES:VAL INV`

Description
- Queries whether the preset specified by `:WMANual: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.

:WMANual:PRESet:BAND?

Function Queries the frequency band in the preset.

Syntax `:WMANual:PRESet:BAND?`

Example `:WMANual:PRESet:BAND? ->`
`:WMAN:PRES:BAND B1`

Description
- Queries the frequency band of the preset specified by `:WMANual:PRESet:NUMBer` is valid. If the preset is invalid, the response is meaningless.
- The responses are as follows.
  B1 : Band1 B5 : Band5
  B2 : Band2 B6 : Band6
  B3 : Band3 B8 : Band8
  B4 : Band4 B9 : Band9

:WMANual:PRESet:DLFReq?

Function Queries the downlink frequency in the preset.

Syntax `:WMANual:PRESet:DLFReq?`

Example `:WMANual:PRESet:DLFReq? ->`
`:WMAN:PRES:DLFR 2.1124E+03`

Description
- Queries the downlink frequency of the preset specified by `:WMANual:PRESet:NUMBer` is valid. If the preset is invalid, the response is meaningless.
- The frequency unit of the response is MHz.

:WMANual:PRESet:DLCH?

Function Queries the downlink frequency channel in the preset.

Syntax `:WMANual:PRESet:DLCH?`

Example `:WMANual:PRESet:DLCH? ->`
`:WMAN:PRES:DLCH 10562`

Description Queries the downlink frequency channel number of the preset specified by `:WMANual:PRESet:NUMBer` is valid. If the preset is invalid, the response is meaningless.

:WMANual:PRESet:ULFReq?

Function Queries the uplink frequency in the preset.

Syntax :WMANual:PRESet:ULFReq?

Example :WMANual:PRESet:ULFReq? ->
:WMAN:PRES:ULFR 1.9224E+03

Description
- Queries the uplink frequency of the preset specified by :WMANual:PRESet:NUMBer is valid. If the preset is invalid, the response is meaningless.
- The frequency unit of the response is MHz.

:WMANual:PRESet:ULCH?

Function Queries the uplink frequency channel in the preset.

Syntax :WMANual:PRESet:ULCH?

Example :WMANual:PRESet:ULCH? ->
:WMAN:PRES:ULCH 9612

Description Queries the uplink frequency channel number of the preset specified by :WMANual:PRESet:NUMBer is valid. If the preset is invalid, the response is meaningless.

:WMANual:PRESet:DLPower?

Function Queries the downlink power in the preset.

Syntax :WMANual:PRESet:DLPower?

Example :WMANual:PRESet:DLPower? ->
:WMAN:PRES:DLP -60.00E+00

Description Queries the downlink power of the preset specified by :WMANual:PRESet:NUMBer is valid. If the preset is invalid, the response is meaningless.

:WMANual:PRESet:ULPower?

Function Queries the uplink power in the preset.

Syntax :WMANual:PRESet:ULPower?

Example :WMANual:PRESet:ULPower? ->
:WMAN:PRES:ULP -20.00E+00

Description Queries the uplink power of the preset specified by :WMANual:PRESet:NUMBer is valid. If the preset is invalid, the response is meaningless.

:WMANual:PRESet:EXECute

Function Executes preset.

Syntax :WMANual:PRESet:EXECute

Example :WMANual:PRESet:EXECute

5.2.7 RESult Group

:WMANual:RESult?

Function Queries all the measured results.

Syntax :WMANual:RESult?

Example :WMANual:RESult? -> :WMAN:RES:TXT:
MCO 0;:WMAN:RES:TXP:AVER NAN;MAX NAN;
MIN NAN;:WMAN:RES:FILP:AVER NAN;
MAX NAN;MIN NAN;:WMAN:RES:FERR:PPM:
AVER NAN;MAX NAN;MIN NAN;:WMAN:RES:
FERR:HZ:AVER NAN;MAX NAN;MIN NAN;:
WMAN:RES:EVM:WIOF:AVER NAN;MAX NAN;
MIN NAN;:WMAN:RES:EVM:WOOF:AVER NAN;
MAX NAN;MIN NAN;:WMAN:RES:EVM:ORIG:
AVER NAN;MAX NAN;MIN NAN;:WMAN:RES:
EVM:IQIM:AVER NAN;MAX NAN;MIN NAN;:
WMAN:RES:OBW:AVER NAN;MAX NAN;
MIN NAN;FUPP NAN;FLOW NAN;:WMAN:RES:
SEM:JUDG NOEX;:WMAN:RES:ACLR:P5M:
AVER NAN;MAX NAN;MIN NAN;:WMAN:RES:
ACLR:M5M:AVER NAN;MAX NAN;MIN NAN;:
WMAN:RES:ACLR:P10M:AVER NAN;MAX NAN;
MIN NAN;:WMAN:RES:ACLR:M10M:AVER NAN;
MAX NAN;MIN NAN;:WMAN:RES:OPLP:
ONP NAN;OFFP NAN;FACT NOEX;:WMAN:RES:
OOM:JUDG NOEX;:WMAN:RES:INNP:
JUDG NOEX;AVER:ONET NAN;TENT NAN;:
WMAN:RES:INNP:MAX:ONET NAN;TENT NAN;:
WMAN:RES:INNP:MIN:ONET NAN;TENT NAN;:
WMAN:RES:RXT:MCO 0;:WMAN:RES:
BER NAN;:WMAN:RES:UEIN:IMSI "";
IMEI "";POW NOEX;HSCA NOEX;:WMAN:RES:
UECP:ECN0 NOEX;RSCP NOEX;:WMAN:RES:
UEP NOEX;DIAL "";THRO:THRO NAN;
ACKC 0;NACK 0;DTXC 0;:WMAN:RES:CQI:
AVER NAN;MAX NOEX;MIN NOEX;
MED NOEX;MPM2 NOEX

:WMANual:RESult:CLEar

Function Clears all measured results.

Syntax :WMANual:RESult:CLEar

Example :WMANual:RESult:CLEar

:WMANual:RESult:TXTest:MCOunt?

Function Queries the measurement count of the TX characteristics measurement.

Syntax :WMANual:RESult:TXTest:MCOunt?

Example :WMANual:RESult:TXTest:MCOunt? ->
:WMAN:RES:TXT:MCO 0

:WMANual:RESult:TXPower?

Function Queries all results related to the TX power.

Syntax :WMANual:RESult:TXPower?

Example :WMANual:RESult:TXPower? ->
:WMAN:RES:TXP:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WMANual:RESult:TXPower:AVERage?

Function Queries the average value of the TX power.
Syntax :WMANual:RESult:TXPower:AVERage?
Example :WMANual:RESult:TXPower:AVERage? ->
:WMAN:RES:TXP:AVER 0.0000000E+00
Description The response is the average value of the measured result of the TX power. The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:TXPower:MAX?

Function Queries the maximum value of the TX power.
Syntax :WMANual:RESult:TXPower:MAX?
Example :WMANual:RESult:TXPower:MAX? ->
:WMAN:RES:TXP:MAX 0.0000000E+00
Description The response is the maximum value of the measured result of the TX power. The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:TXPower:MIN?

Function Queries the minimum value of the TX power.
Syntax :WMANual:RESult:TXPower:MIN?
Example :WMANual:RESult:TXPower:MIN? ->
:WMAN:RES:TXP:MIN 0.0000000E+00
Description The response is the minimum value of the measured result of the TX power. The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:FILPower?

Function Queries all results related to the TX power after passing through the RRC filter.
Syntax :WMANual:RESult:FILPower?
Example :WMANual:RESult:FILPower? -> :WMAN:
RES:FILP:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WMANual:RESult:FILPower:AVERage?

Function Queries the average value of the TX power after passing through the RRC filter.
Syntax :WMANual:RESult:FILPower:AVERage?
Example :WMANual:RESult:FILPower:AVERage? ->
:WMAN:RES:FILP:AVER 0.0000000E+00
Description The response is the average value of the measured result of the TX power (after RRC). The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:FILPower:MAX?

Function Queries the maximum value of the TX power after passing through the RRC filter.
Syntax :WMANual:RESult:FILPower:MAX?
Example :WMANual:RESult:FILPower:MAX? ->
:WMAN:RES:FILP:MAX 0.0000000E+00
Description The response is the maximum value of the measured result of the TX power (after RRC). The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:FILPower:MIN?

Function Queries the minimum value of the TX power after passing through the RRC filter.
Syntax :WMANual:RESult:FILPower:MIN?
Example :WMANual:RESult:FILPower:MIN? ->
:WMAN:RES:FILP:MIN 0.0000000E+00
Description The response is the minimum value of the measured result of the TX power (after RRC). The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:FERRor?

Function Queries all results related to the frequency error.
Syntax :WMANual:RESult:FERRor?
Example :WMANual:RESult:FERRor? -> :WMAN:RES:
FERR:PPM:AVER NAN;MAX NAN;MIN NAN;:
WMAN:RES:FERR:HZ:AVER NAN;MAX NAN;
MIN NAN

:WMANual:RESult:FERRor:PPM?

Function Queries all results related to the frequency error (in unit of ppm).
Syntax :WMANual:RESult:FERRor:PPM?
Example :WMANual:RESult:FERRor:PPM? ->
:WMAN:RES:FERR:PPM:AVER NAN;MAX NAN;
MIN NAN

:WMANual:RESult:FERRor:PPM:AVERage?

Function Queries the average value of the frequency error (in unit of ppm).
Syntax :WMANual:RESult:FERRor:PPM:AVERage?
Example :WMANual:RESult:FERRor:PPM:AVERage?
-> :WMAN:RES:FERR:PPM:
AVER 0.0000000E+00
Description The response is the average value of the measured result of the frequency error. The unit is ppm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:FERRor:PPM:MAX?

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

Syntax :WMANual:RESult:FERRor:PPM:MAX?

Example :WMANual:RESult:FERRor:PPM:MAX? ->
:WMAN:RES:FERR:PPM:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the frequency error. The unit is ppm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:FERRor:PPM:MIN?

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

Syntax :WMANual:RESult:FERRor:PPM:MIN?

Example :WMANual:RESult:FERRor:PPM:MIN? ->
:WMAN:RES:FERR:PPM:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the frequency error. The unit is ppm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:FERRor:HZ?

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

Syntax :WMANual:RESult:FERRor:HZ?

Example :WMANual:RESult:FERRor:HZ? -> :WMAN:
RES:FERR:HZ:AVER NAN;MAX NAN;MIN NAN

:WMANual:RESult:FERRor:HZ:AVERage?

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

Syntax :WMANual:RESult:FERRor:HZ:AVERage?

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

Description The response is the average value of the measured result of the frequency error. The unit is Hz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:FERRor:HZ:MAX?

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

Syntax :WMANual:RESult:FERRor:HZ:MAX?

Example :WMANual:RESult:FERRor:HZ:MAX? ->
:WMAN:RES:FERR:HZ:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the frequency error. The unit is Hz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:FERRor:HZ:MIN?

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

Syntax :WMANual:RESult:FERRor:HZ:MIN?

Example :WMANual:RESult:FERRor:HZ:MIN? ->
:WMAN:RES:FERR:HZ:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the frequency error. The unit is Hz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:EVM?

Function Queries all results related to the EVM.

Syntax :WMANual:RESult:EVM?

Example :WMANual:RESult:EVM? -> :WMAN:RES:
EVM:WIOF:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
WMAN:RES:EVM:WOOF:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
WMAN:RES:EVM:ORIG:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
WMAN:RES:EVM:IQIM:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WMANual:RESult:EVM:WIOFfset?

Function Queries all results related to the EVM (including the origin offset).

Syntax :WMANual:RESult:EVM:WIOFfset?

Example :WMANual:RESult:EVM:WIOFfset? ->
:WMAN:RES:EVM:WIOF:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00

:WMANual:RESult:EVM:WIOFfset:AVERage?

Function Queries the average value of EVM (including the origin offset).

Syntax :WMANual:RESult:EVM:WIOFfset:AVERage?

Example :WMANual:RESult:EVM:WIOFfset:AVERage?
-> :WMAN:RES:EVM:WIOF:
AVER 0.0000000E+00

Description The response is the average value of the measured result of the EVM (value including the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:EVM:WIOFfset:MAX?

Function Queries the maximum value of EVM (including the origin offset).

Syntax :WMANual:RESult:EVM:WIOFfset:MAX?

Example :WMANual:RESult:EVM:WIOFfset:MAX? ->
:WMAN:RES:EVM:WIOF:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the EVM (value including the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:EVM:WIOFfset:MIN?

Function Queries the minimum value of EVM (including the origin offset).

Syntax :WMANual:RESult:EVM:WIOFfset:MIN?

Example :WMANual:RESult:EVM:WIOFfset:MIN? ->
:WMAN:RES:EVM:WIOF:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the EVM (value including the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:EVM:WOOFfset?

Function Queries all results related to the EVM (excluding the origin offset).

Syntax :WMANual:RESult:EVM:WOOFfset?

Example :WMANual:RESult:EVM:WOOFfset? ->
:WMAN:RES:EVM:WOOF:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00

:WMANual:RESult:EVM:WOOFfset:AVERage?

Function Queries the average value of EVM (excluding the origin offset).

Syntax :WMANual:RESult:EVM:WOOFfset:AVERage?

Example :WMANual:RESult:EVM:WOOFfset:AVERage?
-> :WMAN:RES:EVM:WOOF:
AVER 0.0000000E+00

Description The response is the average value of the measured result of the EVM (value excluding the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:EVM:WOOFfset:MAX?

Function Queries the maximum value of EVM (excluding the origin offset).

Syntax :WMANual:RESult:EVM:WOOFfset:MAX?

Example :WMANual:RESult:EVM:WOOFfset:MAX? ->
:WMAN:RES:EVM:WOOF:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the EVM (value excluding the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:EVM:WOOFfset:MIN?

Function Queries the minimum value of EVM (excluding the origin offset).

Syntax :WMANual:RESult:EVM:WOOFfset:MIN?

Example :WMANual:RESult:EVM:WOOFfset:MIN? ->
:WMAN:RES:EVM:WOOF:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the EVM (value excluding the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:EVM:ORIGinoffset?

Function Queries all results related to origin offset.

Syntax :WMANual:RESult:EVM:ORIGinoffset?

Example :WMANual:RESult:EVM:ORIGinoffset? ->
:WMAN:RES:EVM:ORIG:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00

:WMANual:RESult:EVM:ORIGinoffset:AVERage?

Function Queries the average value of the origin offset.

Syntax :WMANual:RESult:EVM:ORIGinoffset:
AVERage?

Example :WMANual:RESult:EVM:ORIGinoffset:
AVERage? -> :WMAN:RES:EVM:ORIG:
AVER 0.0000000E+00

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

:WMANual:RESult:EVM:ORIGinoffset:MAX?

Function Queries the maximum value of the origin offset.

Syntax :WMANual:RESult:EVM:ORIGinoffset:MAX?

Example :WMANual:RESult:EVM:ORIGinoffset:MAX?
-> :WMAN:RES:EVM:ORIG:
MAX 0.0000000E+00

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

:WMANual:RESult:EVM:ORIGinoffset:MIN?

Function Queries the minimum value of the origin offset.

Syntax :WMANual:RESult:EVM:ORIGinoffset:MIN?

Example :WMANual:RESult:EVM:ORIGinoffset:MIN?
-> :WMAN:RES:EVM:ORIG:
MIN 0.0000000E+00

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

:WMANual:RESult:EVM:IQIMbalance?

Function Queries all results related to the IQ power ratio.

Syntax :WMANual:RESult:EVM:IQIMbalance?

Example :WMANual:RESult:EVM:IQIMbalance? ->
:WMAN:RES:EVM:IQIM:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00

:WMANual:RESult:EVM:IQIMbalance:AVERage?

Function Queries the average value of the IQ power ratio.

Syntax :WMANual:RESult:EVM:IQIMbalance:
AVERage?

Example :WMANual:RESult:EVM:IQIMbalance:
AVERage? -> :WMAN:RES:EVM:IQIM:
AVER 0.0000000E+00

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

:WMANual:RESult:EVM:IQIMbalance:MAX?

Function Queries the maximum value of the IQ power ratio.

Syntax :WMANual:RESult:EVM:IQIMbalance:MAX?

Example :WMANual:RESult:EVM:IQIMbalance:MAX?
-> :WMAN:RES:EVM:IQIM:
MAX 0.0000000E+00

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

:WMANual:RESult:EVM:IQIMbalance:MIN?

Function Queries the minimum value of the IQ power ratio.

Syntax :WMANual:RESult:EVM:IQIMbalance:MIN?

Example :WMANual:RESult:EVM:IQIMbalance:MIN?
-> :WMAN:RES:EVM:IQIM:
MIN 0.0000000E+00

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

:WMANual:RESult:OBW?

Function Queries all results related to the occupied bandwidth.

Syntax :WMANual:RESult:OBW?

Example :WMANual:RESult:OBW? -> :WMAN:RES:
OBW:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;
FUPP 0.0000000E+00;FLOW 0.0000000E+00

:WMANual:RESult:OBW:AVERage?

Function Queries the average value of the occupied bandwidth.

Syntax :WMANual:RESult:OBW:AVERage?

Example :WMANual:RESult:OBW:AVERage? ->
:WMAN:RES:OBW:AVER 0.0000000E+00

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

:WMANual:RESult:OBW:MAX?

Function Queries the maximum value of the occupied bandwidth.

Syntax :WMANual:RESult:OBW:MAX?

Example :WMANual:RESult:OBW:MAX? ->
:WMAN:RES:OBW:MAX 0.0000000E+00

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

:WMANual:RESult:OBW:MIN?

Function Queries the minimum value of the occupied bandwidth.

Syntax :WMANual:RESult:OBW:MIN?

Example :WMANual:RESult:OBW:MIN? ->
:WMAN:RES:OBW:MIN 0.0000000E+00

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

:WMANual:RESult:OBW:FUPPer?

Function Queries the upper frequency limit of the occupied bandwidth.

Syntax :WMANual:RESult:OBW:FUPPer?

Example :WMANual:RESult:OBW:FUPPer? ->
:WMAN:RES:OBW:FUPP 0.0000000E+00

Description The response is the measured result of the upper frequency limit of the OBW. The unit is MHz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:OBW:FLOWer?

Function Queries the lower frequency limit of the occupied bandwidth.

Syntax :WMANual:RESult:OBW:FLOWer?

Example :WMANual:RESult:OBW:FLOWer? ->
:WMAN:RES:OBW:FLOW 0.0000000E+00

Description The response is the measured result of the lower frequency limit of the OBW. The unit is MHz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:SEM:JUDGe?

Function Queries the SEM judgement result.

Syntax :WMANual:RESult:SEM:JUDGe?

Example :WMANual:RESult:SEM:JUDGe? ->
:WMAN:RES:SEM:JUDG PASS

Description The response format is PASS or FAIL. If the measured result was not obtained, NOEX (No Execute) is returned.

:WMANual:RESult:ACLR?

Function Queries all results related to the ACLR.

Syntax :WMANual:RESult:ACLR?

Example :WMANual:RESult:ACLR? -> :WMAN:RES:
ACLR:P5M:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
WMAN:RES:ACLR:M5M:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
WMAN:RES:ACLR:P10M:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00;:WMAN:RES:ACLR:
M10M:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WMANual:RESult:ACLR:P5M?

Function Queries all results related to the ACLR (+5 MHz).

Syntax :WMANual:RESult:ACLR:P5M?

Example :WMANual:RESult:ACLR:P5M? -> :WMAN:
RES:ACLR:P5M:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WMANual:RESult:ACLR:P5M:AVERage?

Function Queries the average value of the ACLR (+5 MHz).

Syntax :WMANual:RESult:ACLR:P5M:AVERage?

Example :WMANual:RESult:ACLR:P5M:AVERage? ->
:WMAN:RES:ACLR:P5M:AVER 0.0000000E+00

Description The response is the average value of the measured result of the ACLR (+5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:P5M:MAX?

Function Queries the maximum value of the ACLR (+5 MHz).

Syntax :WMANual:RESult:ACLR:P5M:MAX?

Example :WMANual:RESult:ACLR:P5M:MAX? ->
:WMAN:RES:ACLR:P5M:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the ACLR (+5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:P5M:MIN?

Function Queries the minimum value of the ACLR (+5 MHz).

Syntax :WMANual:RESult:ACLR:P5M:MIN?

Example :WMANual:RESult:ACLR:P5M:MIN? ->
:WMAN:RES:ACLR:P5M:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the ACLR (+5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:M5M?

Function Queries all results related to the ACLR (–5 MHz).

Syntax :WMANual:RESult:ACLR:M5M?

Example :WMANual:RESult:ACLR:M5M? -> :WMAN:
RES:ACLR:M5M:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WMANual:RESult:ACLR:M5M:AVERage?

Function Queries the average value of the ACLR (–5 MHz).

Syntax :WMANual:RESult:ACLR:M5M:AVERage?

Example :WMANual:RESult:ACLR:M5M:AVERage? ->
:WMAN:RES:ACLR:M5M:AVER 0.0000000E+00

Description The response is the average value of the measured result of the ACLR (–5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:M5M:MAX?

Function Queries the maximum value of the ACLR (–5 MHz).

Syntax :WMANual:RESult:ACLR:M5M:MAX?

Example :WMANual:RESult:ACLR:M5M:MAX? ->
:WMAN:RES:ACLR:M5M:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the ACLR (–5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:M5M:MIN?

Function Queries the minimum value of the ACLR (–5 MHz).

Syntax :WMANual:RESult:ACLR:M5M:MIN?

Example :WMANual:RESult:ACLR:M5M:MIN? ->
:WMAN:RES:ACLR:M5M:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the ACLR (–5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:P10M?

Function Queries all results related to the ACLR (+10 MHz).

Syntax :WMANual:RESult:ACLR:P10M?

Example :WMANual:RESult:ACLR:P10M? -> :WMAN:
RES:ACLR:P10M:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WMANual:RESult:ACLR:P10M:AVERage?

Function Queries the average value of the ACLR (+10 MHz).

Syntax :WMANual:RESult:ACLR:P10M:AVERage?

Example :WMANual:RESult:ACLR:P10M:AVERage? ->
:WMAN:RES:ACLR:P10M:
AVER 0.0000000E+00

Description The response is the average value of the measured result of the ACLR (+10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:P10M:MAX?

Function Queries the maximum value of the ACLR (+10 MHz).

Syntax :WMANual:RESult:ACLR:P10M:MAX?

Example :WMANual:RESult:ACLR:P10M:MAX? ->
:WMAN:RES:ACLR:P10M:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the ACLR (+10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:P10M:MIN?

Function Queries the minimum value of the ACLR (+10 MHz).

Syntax :WMANual:RESult:ACLR:P10M:MIN?

Example :WMANual:RESult:ACLR:P10M:MIN? ->
:WMAN:RES:ACLR:P10M:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the ACLR (+10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:M10M?

Function Queries all results related to the ACLR (–10 MHz).

Syntax :WMANual:RESult:ACLR:M10M?

Example :WMANual:RESult:ACLR:M10M? -> :WMAN:
RES:ACLR:M10M:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WMANual:RESult:ACLR:M10M:AVERage?

Function Queries the average value of the ACLR (–10 MHz).

Syntax :WMANual:RESult:ACLR:M10M:AVERage?

Example :WMANual:RESult:ACLR:M10M:AVERage? ->
:WMAN:RES:ACLR:M10M:
AVER 0.0000000E+00

Description The response is the average value of the measured result of the ACLR (–10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:M10M:MAX?

Function Queries the maximum value of the ACLR (–10 MHz).

Syntax :WMANual:RESult:ACLR:M10M:MAX?

Example :WMANual:RESult:ACLR:M10M:MAX? ->
:WMAN:RES:ACLR:M10M:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the ACLR (–10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:ACLR:M10M:MIN?

Function Queries the minimum value of the ACLR (–10 MHz).

Syntax :WMANual:RESult:ACLR:M10M:MIN?

Example :WMANual:RESult:ACLR:M10M:MIN? ->
:WMAN:RES:ACLR:M10M:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the ACLR (–10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:OPLPower?

Function Queries all results related to the open loop power.

Syntax :WMANual:RESult:OPLPower?

Example :WMANual:RESult:OPLPower? ->
:WMAN:RES:OPLP:ONP 0.0000000E+00;
OFFP 0.0000000E+00

:WMANual:RESult:OPLPower:ONPower?

Function Queries the ON power of the open loop power.

Syntax :WMANual:RESult:OPLPower:ONPower?

Example :WMANual:RESult:OPLPower:ONPower? ->
:WMAN:RES:OPLP:ONP 0.0000000E+00

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

:WMANual:RESult:OPLPower:OFFPower?

Function Queries the OFF power of the open loop power.

Syntax :WMANual:RESult:OPLPower:OFFPower?

Example :WMANual:RESult:OPLPower:OFFPower? ->
:WMAN:RES:OPLP:OFFP 0.0000000E+00

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

:WMANual:RESult:OPLPower:FACTor?

Function Queries the cause of the error in the open loop power measurement.

Syntax WMANual:RESult:OPLPower:FACTor?

Example :WMANual:RESult:OPLPower:FACTor? ->
:WMAN:RES:OPLP:FACT NOEX

Description The response is one of the following: {NOEXec|EXECuted|ERRor}.

:WMANual:RESult:OOMask:JUDGe?

Function Queries the judgement result of the ON/OFF mask.

Syntax :WMANual:RESult:OOMask:JUDGe?

Example :WMANual:RESult:OOMask:JUDGe? ->
:WMAN:RES:OOM:JUDG PASS

Description The response format is PASS or FAIL. If the measured result was not obtained, NOEX (No Execute) is returned.

:WMANual:RESult:INNPower:JUDGe?

Function Queries the judgement result of the inner loop power.

Syntax :WMANual:RESult:INNPower:JUDGe?

Example :WMANual:RESult:INNPower:JUDGe? ->
:WMAN:RES:INNP:JUDG PASS

Description The response format is PASS or FAIL. If the measured result was not obtained, NOEX (No Execute) is returned.

:WMANual:RESult:INNPower:AVERage:ONETslot?

Function Queries the average value of a command of the inner loop power.

Syntax :WMANual:RESult:INNPower:AVERage:
ONETslot?

Example :WMANual:RESult:INNPower:AVERage:
ONETslot? -> :WMAN:RES:INNP:AVER:
ONET 0.0000000E+00

Description The response is the average value of the power ratio in a time slot of the inner loop power measurement. The unit is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:INNPower:AVERage:TENTslot?

Function Queries the average value of 10 commands of the inner loop power.

Syntax :WMANual:RESult:INNPower:AVERage:
TENTslot?

Example :WMANual:RESult:INNPower:AVERage:
TENTslot? -> :WMAN:RES:INNP:AVER:
TENT 0.0000000E+00

Description The response is the average value of the power ratio in 10 time slots of the inner loop power measurement. The unit is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:INNPower:MAX:ONETslot?

Function Queries the maximum value of a command of the inner loop power.

Syntax :WMANual:RESult:INNPower:MAX:
ONETslot?

Example :WMANual:RESult:INNPower:MAX:
ONETslot? -> :WMAN:RES:INNP:MAX:
ONET 0.0000000E+00

Description The response is the maximum value of the power ratio in a time slot of the inner loop power measurement. The unit is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:INNPower:MAX:TENTslot?

Function Queries the maximum value of 10 commands of the inner loop power.

Syntax `:WMANual:RESult:INNPower:MAX:TENTslot?`

Example `:WMANual:RESult:INNPower:MAX:TENTslot? -> :WMAN:RES:INNP:MAX:TENT 0.0000000E+00`

Description The response is the maximum value of the power ratio in 10 time slots of the inner loop power measurement. The unit is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:INNPower:MIN:ONETslot?

Function Queries the minimum value of a command of the inner loop power.

Syntax `:WMANual:RESult:INNPower:MIN:ONETslot?`

Example `:WMANual:RESult:INNPower:MIN:ONETslot? -> :WMAN:RES:INNP:MIN:ONET 0.0000000E+00`

Description The response is the minimum value of the power ratio in a time slot of the inner loop power measurement. The unit is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:INNPower:MIN:TENTslot?

Function Queries the minimum value of 10 commands of the inner loop power.

Syntax `:WMANual:RESult:INNPower:MIN:TENTslot?`

Example `:WMANual:RESult:INNPower:MIN:TENTslot? -> :WMAN:RES:INNP:MIN:TENT 0.0000000E+00`

Description The response is the minimum value of the power ratio in 10 time slots of the inner loop power measurement. The unit is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:INNPower:TS:ONETslot?

Function Queries the specified time slot value of a command of the inner loop power.

Syntax `:WMANual:RESult:INNPower:TS:ONETslot? <time slot number>`

Example `:WMANual:RESult:INNPower:TS:ONETslot? 1 -> :WMAN:RES:INNP:TS:ONET 0.0000000E+00`

Description The response is the power ratio in a time slot of the inner loop power measurement of the specified time slot. The unit is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:INNPower:TS:TENTslot?

Function Queries the specified time slot value of 10 commands of the inner loop power.

Syntax `:WMANual:RESult:INNPower:TS:TENTslot? <time slot number>`

Example `:WMANual:RESult:INNPower:TS:TENTslot? 10 -> :WMAN:RES:INNP:TS:TENT 0.0000000E+00`

Description The response is the power ratio in 10 time slots of the inner loop power measurement of the specified time slot. The unit is dB. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:INNPower:TS:ABSolute?

Function Queries the absolute value of the specified time slot of the inner loop power.

Syntax `:WMANual:RESult:INNPower:TS:ABSolute? <time slot number>`

Example `:WMANual:RESult:INNPower:TS:ABSolute? 100 -> :WMAN:RES:INNP:TS:ABS 0.0000000E+00`

Description The response is the absolute power of the inner loop power measurement of the specified time slot. The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:RXTest:MCOunt?

Function Queries the RX characteristics measurement count.

Syntax `:WMANual:RESult:RXTest:MCOunt?`

Example `:WMANual:RESult:RXTest:MCOunt? -> :WMAN:RES:RXT:MCO 0`

:WMANual:RESult:BER?

Function Queries the BER measurement result.
Syntax :WMANual:RESult:BER?
Example :WMANual:RESult:BER? ->
:WMAN:RES:BER 0.0000000E+00
Description The response is the BER measurement result. The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:BER:BNUMber?

Function Queries the number of measured bits of the BER measurement.
Syntax :WMANual:RESult:BER:BNUMber?
Example :WMANual:RESult:BER:BNUMber? ->
:WMAN:RES:BER:BNUM 0

:WMANual:RESult:BER:ERRNumber?

Function Queries the number of error bits in the BER measurement.
Syntax :WMANual:RESult:BER:ERRNumber?
Example :WMANual:RESult:BER:ERRNumber? ->
:WMAN:RES:BER:ERRN 0

:WMANual:RESult:UEINfo?

Function Queries all settings related to the information retrieved from the mobile phone.
Syntax :WMANual:RESult:UEINfo?
Example :WMANual:RESult:UEINfo? -> :WMAN:RES:
UEIN:IMSI "001010000000010";
IMEI "123456789012345";POW NOEX;
HSCA NOEX

:WMANual:RESult:UEINfo:IMSI?

Function Queries the IMSI retrieved from the mobile phone.
Syntax :WMANual:RESult:UEINfo:IMSI?
Example :WMANual:RESult:UEINfo:IMSI? ->
:WMAN:RES:UEIN:IMSI ""

:WMANual:RESult:UEINfo:IMEI?

Function Queries the IMEI retrieved from the mobile phone.
Syntax :WMANual:RESult:UEINfo:IMEI?
Example :WMANual:RESult:UEINfo:IMEI? ->
:WMAN:RES:UEIN:IMEI ""

:WMANual:RESult:UEINfo:POWerclass?

Function Queries the power class retrieved from the mobile phone.
Syntax :WMANual:RESult:UEINfo:POWerclass?
Example :WMANual:RESult:UEINfo:POWerclass? ->
:WMAN:RES:UEIN:POW 0

:WMANual:RESult:UEINfo:HSCAtegory?

Function Queries the HSDPA category retrieved from the mobile phone.
Syntax :WMANual:RESult:UEINfo:HSCAtegory?
Example :WMANual:RESult:UEINfo:HSCAtegory? ->
:WMAN:RES:UEIN:HSCA 6

:WMANual:RESult:UECPich?

Function Queries all results related to the measurement report (CPICH).
Syntax :WMANual:RESult:UECPich?
Example :WMANual:RESult:UECPich? ->
:WMAN:RES:UECP:ECN0 -1;RSCP -1

:WMANual:RESult:UECPich:ECN0?

Function Queries the measurement report (CPICH-ECN0).
Syntax :WMANual:RESult:UECPich:ECN0?
Example :WMANual:RESult:UECPich:ECN0? ->
:WMAN:RES:UECP:ECN0 -1

:WMANual:RESult:UECPich:RSCP?

Function Queries the measurement report (CPICH-RSCP).
Syntax :WMANual:RESult:UECPich:RSCP?
Example :WMANual:RESult:UECPich:RSCP? ->
:WMAN:RES:UECP:RSCP -1

:WMANual:RESult:THROughput?

Function Queries all the measured results related to the throughput.
Syntax :WMANual:RESult:THROughput?
Example :WMANual:RESult:THROughput? ->
:WMAN:RES:THRO:THRO 1.6010000E+03;
ACKC 10000;NACK 0;DTXC 0

:WMANual:RESult:THROughput:THROughput?

Function Queries the throughput.
Syntax :WMANual:RESult:THROughput:
THROughput?
Example :WMANual:RESult:THROughput:
THROughput? ->
:WMAN:RES:THRO:THRO 1.6010000E+03
Description The throughput unit is kbps.
If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:THROughput:ACKCount?

Function Queries the number of ACK blocks.
Syntax :WMANual:RESult:THROughput:ACKCount?
Example :WMANual:RESult:THROughput:
ACKCount? -> :WMAN:RES:THRO:ACKC 1000

:WMANual:RESult:THROughput:NACKcount?

Function Queries the number of NACK blocks.
Syntax :WMANual:RESult:THROughput:NACKcount?
Example :WMANual:RESult:THROughput:NACKcountt? -> :WMAN:RES:THRO:NACK 0

:WMANual:RESult:THROughput:DTXCount?

Function Queries the number of DTX blocks.
Syntax :WMANual:RESult:THROughput:DTXCount?
Example :WMANual:RESult:THROughput:DTXCount? -> :WMAN:RES:THRO:DTXC 0

:WMANual:RESult:THROughput:BLNumber?

Function Queries the number of measured blocks in the throughput measurement.
Syntax :WMANual:RESult:THROughput:BLNumber?
Example :WMANual:RESult:THROughput:BLNumber? -> :WMAN:RES:THRO:BLN 1000

:WMANual:RESult:CQI?

Function Queries all the measured results related to the CQI.
Syntax :WMANual:RESult:CQI?
Example :WMANual:RESult:CQI? -> :WMAN:RES:CQI:AVER 17.083000E+00;MAX 18;MIN 17;MED 17;MPM2 1000

:WMANual:RESult:CQI:AVERage?

Function Queries the average CQI value.
Syntax :WMANual:RESult:CQI:AVERage?
Example :WMANual:RESult:CQI:AVERage? -> :WMAN:RES:CQI:AVER 17.083000E+00
Description If the measured result was not obtained, NAN (Not a Number) is returned.

:WMANual:RESult:CQI:MAX?

Function Queries the maximum CQI value.
Syntax :WMANual:RESult:CQI:MAX?
Example :WMANual:RESult:CQI:MAX? -> :WMAN:RES:CQI:MAX 18
Description If the measured result was not obtained, NOEX (No Execute) is returned.

:WMANual:RESult:CQI:MIN?

Function Queries the minimum CQI value.
Syntax :WMANual:RESult:CQI:MIN?
Example :WMANual:RESult:CQI:MIN? -> :WMAN:RES:CQI:MIN 17
Description If the measured result was not obtained, NOEX (No Execute) is returned.

:WMANual:RESult:CQI:MEDian?

Function Queries the center CQI value.
Syntax :WMANual:RESult:CQI:MEDian?
Example :WMANual:RESult:CQI:MEDian? -> :WMAN:RES:CQI:MED 17
Description If the measured result was not obtained, NOEX (No Execute) is returned.

:WMANual:RESult:CQI:MPM2?

Function Queries the number of blocks included within ±2 of the center CQI value.
Syntax :WMANual:RESult:CQI:MPM2?
Example :WMANual:RESult:CQI:MPM2? -> :WMAN:RES:CQI:MPM2 1000
Description If the measured result was not obtained, NOEX (No Execute) is returned.

:WMANual:RESult:CQI:BLNumber?

Function Queries the number of measured blocks in the CQI measurement.
Syntax :WMANual:RESult:CQI:BLNumber?
Example :WMANual:RESult:CQI:BLNumber? -> :WMAN:RES:CQI:BLN 1000

:WMANual:RESult:UEPower?

Function Queries the measurement report (UE TX POWER).
Syntax :WMANual:RESult:UEPower?
Example :WMANual:RESult:UEPower? -> :WMAN:RES:UEP -1

:WMANual:RESult:DIALnumber?

Function Queries the dial number for the call setup.
Syntax :WMANual:RESult:DIALnumber?
Example :WMANual:RESult:DIALnumber? -> :WMAN:RES:DIAL "1111111"

5.2.8 RTARget Group

:WMANual:RTARget

Function Sets the measurement items of the RX characteristics measurement or queries the current setting.
Syntax :WMANual:RTARget {BER|UECPich|UEPower|THROughput|CQI}
:WMANual:RTARget?
Example :WMANual:RTARget BER
:WMANual:RTARget? -> :WMAN:RTAR BER
Description The settings and responses are as follows.
BER : BER
UECPich : CPICH Report
UEPower : TX Power Report

5.2.9 RXTest Group

:WMANual:RXTest?

Function Queries all settings related to RX characteristics measurement.

Syntax :WMANual:RXTest?

Example :WMANual:RXTest? -> :WMAN:RXT:BER:EXEC ON;BNUM 10000;CDP REFS;:WMAN:RXT:THRO:EXEC ON;BLN 1000;:WMAN:RXT:CQI:EXEC ON;BLN 1000

:WMANual:RXTest:BER?

Function Queries all settings related to the BER measurement.

Syntax :WMANual:RXTest:BER?

Example :WMANual:RXTest:BER? -> :WMAN:RXT:BER:EXEC ON;BNUM 10000;CDP REFS

:WMANual:RXTest:BER:EXECute

Function Turns ON/OFF the BER measurement or queries the current setting.

Syntax :WMANual:RXTest:BER:EXECute {ON|OFF}
:WMANual:RXTest:BER:EXECute?

Example :WMANual:RXTest:BER:EXECute ON
:WMANual:RXTest:BER:EXECute? -> :WMAN:RXT:BER:EXEC ON

:WMANual:RXTest:BER:BNUMber

Function Sets the number of measured bits of the BER measurement or queries the current setting.

Syntax :WMANual:RXTest:BER:BNUMber <number>
:WMANual:RXTest:BER:BNUMber?

Example :WMANual:RXTest:BER:BNUMber 10000
:WMANual:RXTest:BER:BNUMber? -> :WMAN:RXT:BER:BNUM 10000

:WMANual:RXTest:BER:CDPower

Function Sets the code domain power for the BER measurement or queries the current setting.

Syntax :WMANual:RXTest:BER:CDPower {REFSens|MAXInput}
:WMANual:RXTest:BER:CDPower?

Example :WMANual:RXTest:BER:CDPower MAXInput
:WMANual:RXTest:BER:CDPower? -> :WMAN:RXT:BER:CDP MAXI

Description The settings and responses are as follows.
REFSens : Reference Sensitivity
MAXInput : Maximum Input

:WMANual:RXTest:UECPich:EXECute

Function Retrieves the measurement report (CPICH). This is an overlap command.

Syntax :WMANual:RXTest:UECPich:EXECute

Example :WMANual:RXTest:UECPich:EXECute

:WMANual:RXTest:UEPower:EXECute

Function Retrieves the measurement report (UE TX POWER). This is an overlap command.

Syntax :WMANual:RXTest:UEPower:EXECute

Example :WMANual:RXTest:UEPower:EXECute

:WMANual:RXTest:THROughput?

Function Queries all settings related to the throughput measurement.

Syntax :WMANual:RXTest:THROughput?

Example :WMANual:RXTest:THROughput? -> :WMAN:RXT:THRO:EXEC ON;BLN 1000

:WMANual:RXTest:THROughput:EXECute

Function Turns ON/OFF the throughput measurement or queries the current setting.

Syntax :WMANual:RXTest:THROughput:EXECute {ON|OFF}
:WMANual:RXTest:THROughput:EXECute?

Example :WMANual:RXTest:THROughput:EXECute ON
:WMANual:RXTest:THROughput:EXECute? -> :WMAN:RXT:THRO:EXEC ON

:WMANual:RXTest:THROughput:BLNumber

Function Sets the number of measured blocks in the throughput measurement or queries the current setting.

Syntax :WMANual:RXTest:THROughput:BLNumber <number>
:WMANual:RXTest:THROughput:BLNumber?

Example :WMANual:RXTest:THROughput:BLNumber 10000
:WMANual:RXTest:THROughput:BLNumber? -> :WMAN:RXT:THRO:BLN 10000

:WMANual:RXTest:CQI?

Function Queries all settings related to the CQI measurement.

Syntax :WMANual:RXTest:CQI?

Example :WMANual:RXTest:CQI? -> :WMAN:RXT:CQI:EXEC ON;BLN 1000

:WMANual:RXTest:CQI:EXECute

Function Turns ON/OFF the CQI measurement or queries the current setting.

Syntax :WMANual:RXTest:CQI:EXECute {ON|OFF}
:WMANual:RXTest:CQI:EXECute?

Example :WMANual:RXTest:CQI:EXECute ON
:WMANual:RXTest:CQI:EXECute? -> :WMAN:RXT:CQI:EXEC ON

:WMANual:RXTest:CQI:BLNumber

Function Sets the number of measured blocks in the CQI measurement or queries the current setting.

Syntax :WMANual:RXTest:CQI:BLNumber <number>
:WMANual:RXTest:CQI:BLNumber?

Example :WMANual:RXTest:CQI:BLNumber 10000
:WMANual:RXTest:CQI:BLNumber? -> :WMAN:RXT:CQI:BLN 10000

5.2.10 RXView Group

:WMANual:RXView

Function Switches the display format.

Syntax :WMANual:RXView {OVER|DETail}

Example :WMANual:RXView OVER

Description The setting and response format is as follows.
OVER: Overview display
DETail: Detail display

5.2.11 TTARget Group

:WMANual:TTARget

Function Sets the measurement items of the TX characteristics measurement or queries the current setting.

Syntax :WMANual:TTARget {TXPower|FERRor|EVM|OBW|SEM|ACLR|ONPower|ILPower|TMASk}
:WMANual:TTARget?

Example :WMANual:TTARget TXPower
:WMANual:TTARget? -> :WMAN:TTAR TXP

Description The settings and responses are as follows.
TXPower : TX Power
FERRor : Frequency Error
EVM : EVM
OBW : OBW
SEM : SEM
ACLR : ACLR
ONPower : Open Loop Power
ILPower : Inner Loop Power
TMASk : On/Off Time Mask

5.2.12 TXTest Group

:WMANual:TXTest?

Function Queries all settings related to TX characteristics measurement.

Syntax :WMANual:TXTest?

Example :WMANual:TXTest? -> :WMAN:TXT:AVER:CONT ON;COUN 10;:WMAN:TXT:HSTS SPC1;TXP:EXEC ON;:WMAN:TXT:FERR:EXEC ON;:WMAN:TXT:EVM:EXEC ON;:WMAN:TXT:OBW:EXEC ON;:WMAN:TXT:ACLR:EXEC ON;:WMAN:TXT:SEM:EXEC ON;UNIT DBC;:WMAN:TXT:OPLP:EXEC ON;PAR MIDD;:WMAN:TXT:INNP:EXEC ON;TPCP ST_E;:WMAN:TXT:OOM:EXEC OFF;PAR CL_3;:WMAN:TXT:FASTP OFF

:WMANual:TXTest:AVERage?

Function Queries all settings related to the average of TX characteristics measurement.

Syntax :WMANual:TXTest:AVERage?

Example :WMANual:TXTest:AVERage? -> :WMAN:TXT:AVER:CONT ON;COUN 10

:WMANual:TXTest:AVERage:CONTrol

Function Turns ON/OFF the averaging of the TX characteristics measurement or queries the current setting.

Syntax :WMANual:TXTest:AVERage:CONTrol {ON|OFF}
:WMANual:TXTest:AVERage:CONTrol?

Example :WMANual:TXTest:AVERage:CONTrol ON
:WMANual:TXTest:AVERage:CONTrol? -> :WMAN:TXT:AVER:CONT ON

:WMANual:TXTest:AVERage:COUNt

Function Sets the average count of the TX characteristics measurement or queries the current setting.

Syntax :WMANual:TXTest:AVERage:COUNt <number>
:WMANual:TXTest:AVERage:COUNt?

Example :WMANual:TXTest:AVERage:COUNt 10
:WMANual:TXTest:AVERage:COUNt? -> :WMAN:TXT:AVER:COUN 10

:WMANual:TXTest:HSTSpec

Function Sets the TX measurement test specs or queries the current setting.

Syntax :WMANual:TXTest:HSTSpec {SPC1|SPC2|SPC3|SPC4}
:WMANual:TXTest:HSTSpec?

Example :WMANual:TXTest:HSTSpec SPC1
:WMANual:TXTest:HSTSpec? -> :WMAN:TXT:HSTS SPC1

:WMANual:TXTest:TXPower:EXECute

Function Turns ON/OFF the TX power or queries the current setting.

Syntax
```
:WMANual:TXTest:TXPower:EXECute {ON|OFF}
:WMANual:TXTest:TXPower:EXECute?
```

Example
```
:WMANual:TXTest:TXPower:EXECute ON
:WMANual:TXTest:TXPower:EXECute? ->
:WMAN:TXT:TXP:EXEC ON
```

:WMANual:TXTest:TXPower:MTIMes

Function Sets the measurement count of the TX power measurement or queries the current setting.

Syntax
```
:WMANual:TXTest:TXPower:MTIMes <number>
:WMANual:TXTest:TXPower:MTIMes?
```
<number> = 1 to 5

Example
```
:WMANual:TXTest:TXPower:MTIMes 5
:WMANual:TXTest:TXPower:MTIMes? ->
:WMAN:TXT:TXP:MTIM 5
```

Description
- Performs the specified number of measurements of only the TX power for each TX characteristics measurement and determines the average value.
- This setting is not backed up. It is always set to 1 at startup.

:WMANual:TXTest:FERRor:EXECute

Function Turns ON/OFF the frequency error or queries the current setting.

Syntax
```
:WMANual:TXTest:FERRor:EXECute {ON|OFF}
:WMANual:TXTest:FERRor:EXECute?
```

Example
```
:WMANual:TXTest:FERRor:EXECute ON
:WMANual:TXTest:FERRor:EXECute? ->
:WMAN:TXT:FERR:EXEC ON
```

:WMANual:TXTest:EVM:EXECute

Function Turns ON/OFF the EVM or queries the current setting.

Syntax
```
:WMANual:TXTest:EVM:EXECute {ON|OFF}
:WMANual:TXTest:EVM:EXECute?
```

Example
```
:WMANual:TXTest:EVM:EXECute ON
:WMANual:TXTest:EVM:EXECute? ->
:WMAN:TXT:EVM:EXEC ON
```

:WMANual:TXTest:OBW:EXECute

Function Turns ON/OFF the occupied bandwidth or queries the current setting.

Syntax
```
:WMANual:TXTest:OBW:EXECute {ON|OFF}
:WMANual:TXTest:OBW:EXECute?
```

Example
```
:WMANual:TXTest:OBW:EXECute ON
:WMANual:TXTest:OBW:EXECute? ->
:WMAN:TXT:OBW:EXEC ON
```

:WMANual:TXTest:ACLR:EXECute

Function Turns ON/OFF the ACLR or queries the current setting.

Syntax
```
:WMANual:TXTest:ACLR:EXECute {ON|OFF}
:WMANual:TXTest:ACLR:EXECute?
```

Example
```
:WMANual:TXTest:ACLR:EXECute ON
:WMANual:TXTest:ACLR:EXECute? ->
:WMAN:TXT:ACLR:EXEC ON
```

:WMANual:TXTest:SEM:EXECute

Function Turns ON/OFF the SEM or queries the current setting.

Syntax
```
:WMANual:TXTest:SEM:EXECute {ON|OFF}
:WMANual:TXTest:SEM:EXECute?
```

Example
```
:WMANual:TXTest:SEM:EXECute ON
:WMANual:TXTest:SEM:EXECute? ->
:WMAN:TXT:SEM:EXEC ON
```

:WMANual:TXTest:SEM:UNIT

Function Switches the SEM graph unit of the TX measurement or queries the current setting.

Syntax
```
:WMANual:TXTest:SEM:UNIT {DBC|DBM}
:WMANual:TXTest:SEM:UNIT?
```

Example
```
:WMANual:TXTest:SEM:UNIT DBC
:WMANual:TXTest:SEM:UNIT? ->
:WMAN:TXT:SEM:UNIT DBC
```

:WMANual:TXTest:OPLPower?

Function Queries all settings related to the open loop power measurement.

Syntax
```
:WMANual:TXTest:OPLPower?
```

Example
```
:WMANual:TXTest:OPLPower? ->
:WMAN:TXT:OPLP:EXEC ON;PAR MIDD
```

:WMANual:TXTest:OPLPower:EXECute

Function Turns ON/OFF the open loop power or queries the current setting.

Syntax
```
:WMANual:TXTest:OPLPower:EXECute {ON|OFF}
:WMANual:TXTest:OPLPower:EXECute?
```

Example
```
:WMANual:TXTest:OPLPower:EXECute ON
:WMANual:TXTest:OPLPower:EXECute? ->
:WMAN:TXT:OPLP:EXEC ON
```

:WMANual:TXTest:OPLPower:PARam

Function Sets the measurement parameters of the open loop power or queries the current setting.

Syntax
```
:WMANual:TXTest:OPLPower:
PARam {UPPer|MIDDle|SENSitivity}
:WMANual:TXTest:OPLPower:PARam?
```

Example
```
:WMANual:TXTest:OPLPower:PARam MIDDle
:WMANual:TXTest:OPLPower:PARam? ->
:WMAN:TXT:OPLP:PAR MIDD
```

Description The setting and responses are as follows.

UPPer : RX Upper End
MIDDle : RX Middle
SENSitivity : RX Sensitivity

:WMANual:TXTest:INNPower?

Function Queries all settings related to the inner loop power measurement.

Syntax
```
:WMANual:TXTest:INNPower?
```

Example
```
:WMANual:TXTest:INNPower? ->
:WMAN:TXT:INNP:EXEC ON;TPCP ST_E
```

:WMANual:TXTest:INNPower:EXECute

Function Turns ON/OFF the inner loop power or queries the current setting.

Syntax
```
:WMANual:TXTest:INNPower:EXECute {ON|
OFF}
:WMANual:TXTest:INNPower:EXECute?
```

Example
```
:WMANual:TXTest:INNPower:EXECute ON
:WMANual:TXTest:INNPower:EXECute? ->
:WMAN:TXT:INNP:EXEC ON
```

:WMANual:TXTest:INNPower:TPCPattern

Function Sets the TPC pattern of the inner loop power or queries the current setting.

Syntax
```
:WMANual:TXTest:INNPower:
TPCPattern {ST_E|ST_F|ST_G|ST_H}
:WMANual:TXTest:INNPower:TPCPattern?
```

Example
```
:WMANual:TXTest:INNPower:
TPCPattern ST_E
:WMANual:TXTest:INNPower:TPCPattern?
-> :WMAN:TXT:INNP:TPCP ST_E
```

Description The settings and responses are as follows.

ST_E : Step E
ST_F : Step F
ST_G : Step G
ST_H : Step H

:WMANual:TXTest:OOMask?

Function Queries all settings related to the ON/OFF time mask measurement.

Syntax
```
:WMANual:TXTest:OOMask?
```

Example
```
:WMANual:TXTest:OOMask? ->
:WMAN:TXT:OOM:EXEC ON;PAR CL_3
```

:WMANual:TXTest:OOMask:EXECute

Function Turns ON/OFF the ON/OFF time mask or queries the current setting.

Syntax
```
:WMANual:TXTest:OOMask:EXECute {ON|
OFF}
:WMANual:TXTest:OOMask:EXECute?
```

Example
```
:WMANual:TXTest:OOMask:EXECute ON
:WMANual:TXTest:OOMask:EXECute? ->
:WMAN:TXT:OOM:EXEC ON
```

:WMANual:TXTest:OOMask:PARam

Function Sets the measurement parameters of the ON/OFF time mask or queries the current setting.

Syntax
```
:WMANual:TXTest:OOMask:PARam {CL_1|
CL_2|CL_3|CL_4}
:WMANual:TXTest:OOMask:PARam?
```

Example
```
:WMANual:TXTest:OOMask:PARam CL_3
:WMANual:TXTest:OOMask:PARam? ->
:WMAN:TXT:OOM:PAR CL_3
```

Description The settings and responses are as follows.

CL_1 : Power Class 1
CL_2 : Power Class 2
CL_3 : Power Class 3
CL_4 : Power Class 4

:WMANual:TXTest:FASTPmode

Function Sets the fast power measurement mode or queries the current setting.

Syntax
```
:WMANual:TXTest:FASTPmode {ON|OFF}
:WMANual:TXTest:FASTPmode?
```

Example
```
:WMANual:TXTest:FASTPmode ON
:WMANual:TXTest:FASTPmode? ->
:WMAN:TXT:FASTP ON
```

Description
- If the fast power measurement mode is turned ON, only the TX power with the RRC filter turned OFF is measured.
  Measurement is not performed on other parameters regardless of the Measure Enable setting.
- This setting is not backed up. It is always set to OFF at startup.

5.2.13 TXView Group

:WMANual:TXView

Function Switches the display format.

Syntax
```
:WMANual:TXView {OVER|DETail}
```

Example
```
:WMANual: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 WTXRx?

:WTXRx?

Function Queries all settings related to measurement in TXRX mode.

Syntax :WTXRx?

Example :WTXRx? -> :WTXR:FREQ:BAND B1;
DLFR 2.1124E+03;DLCH 10562;
ULFR 1.9224E+03;ULCH 9612;:WTXR:POW:
CONT ON;DLP -60.00E+00;ULIN ON;COMP:
DLB1 0.00E+00;DLB2 0.00E+00;
DLB3 0.00E+00;DLB4 0.00E+00;
DLB5 0.00E+00;DLB6 0.00E+00;
DLB8 0.00E+00;DLB9 0.00E+00;
ULB1 0.00E+00;ULB2 0.00E+00;
ULB3 0.00E+00;ULB4 0.00E+00;
ULB5 0.00E+00;ULB6 0.00E+00;
ULB8 0.00E+00;ULB9 0.00E+00;:WTXR:
PRES:MODE LOAD;NUMB S1;:WTXR:DLP:
MOD ON;SCOD 0;SRAT K30;TYPE PR9;CCOD:
SCPI 3;PICH 2;DPCH 5;:WTXR:DLP:TOFF:
PICH 0;DPCH 0;:WTXR:DLP:CPOW:
PCPI -3.00E+00;SCPI -30.1E+00;
PCCP -3.00E+00;PICH -30.1E+00;
DPCH -30.1E+00;OCNS -30.1E+00;:WTXR:
ULP:SCOD 0;TOFF 0;SRAT K60;
SYM ASYN;PRAT 8.00E+00;:WTXR:MEAS:
ITEM TX;MODE REP;:WTXR:TXT:AVER:
CONT ON;COUN 10;:WTXR:TXT:ITEM NORM;
TXP:EXEC ON;:WTXR:TXT:FERR:EXEC ON;:
WTXR:TXT:EVM:EXEC ON;:WTXR:TXT:OBW:
EXEC ON;:WTXR:TXT:ACLR:EXEC ON;:WTXR:
TXT:SEM:EXEC ON;UNIT DBC;:WTXR:TXT:
DPOW:SLOT 100;INL 20.0E+00;
RANG AUTO;TRIG:SRC POW;POL RIS;
DEL 0;:WTXR:TXT:DPOW:FILT ON;:WTXR:
TXT:FASTP OFF;:WTXR:RXT:EBER:EXEC ON;
BNUM 10000;:WTXR:RXT:CPOL RIS;
DPOL NORM;:WTXR:MON:AVER:CONT ON;
COUN 10;:WTXR:MON:SPEC:TRAC AVER;
REFL 0.00E+00;MARK1:EXEC OFF;FREQ 0;:
WTXR:MON:SPEC:MARK2:EXEC OFF;FREQ 0;:
WTXR:MON:SPEC:MARK3:EXEC OFF;FREQ 0;:
WTXR:MON:SPEC:MARK4:EXEC OFF;FREQ 0;:
WTXR:MON:SPEC:MARK5:EXEC OFF;FREQ 0;:
WTXR:MON:SPEC:MARK6:EXEC OFF;FREQ 0;:
WTXR:TTAR TXP;TXV OVER

5.3.2 DLParam Group

:WTXRx:DLParam?

Function Queries all settings related to connection conditions (downlink parameters).

Syntax :WTXRx:DLParam?

Example :WTxRx:DLParam? -> :WTXR:DLP:MOD ON;
SCOD 0;SRAT K30;TYPE PR9;CCOD:SCPI 3;
PICH 2;DPCH 5;:WTXR:DLP:TOFF:PICH 0;
DPCH 0;:WTXR:DLP:CPOW:PCPI -3.00E+00;
SCPI -30.1E+00;PCCP -3.00E+00;
PICH -30.1E+00;DPCH -30.1E+00;
OCNS -30.1E+00

:WTXRx:DLParam:MODulation

Function Turns ON/OFF the modulation or queries the current setting.

Syntax :WTXRx:DLParam:MODulation {ON|OFF}
:WTXRx:DLParam:MODulation?

Example :WTXRx:DLParam:MODulation ON
:WTXRx:DLParam:MODulation? ->
:WTXR:DLP:MOD ON

:WTXRx:DLParam:SCODe

Function Sets the scrambling code or queries the current setting.

Syntax :WTXRx:DLParam:SCODe <code>
:WTXRx:DLParam:SCODe?

Example :WTXRx:DLParam:SCODe 0
:WTXRx:DLParam:SCODe? ->
:WTXR:DLP:SCOD 0

:WTXRx:DLParam:SRATe

Function Sets the symbol rate or queries the current setting.

Syntax :WTXRx:DLParam:SRATe {K7_5|K15|K30|
K60|K120|K240|K480|K960}
:WTXRx:DLParam:SRATe?

Example :WTXRx:DLParam:SRATe K30
:WTXRx:DLParam:SRATe? ->
:WTXR:DLP:SRAT K30

Description The settings and responses are as follows.

K7_5 : 7.5 ksps
K15 : 15 ksps
K30 : 30 ksps
K60 : 60 ksps
K120 : 120 ksps
K240 : 240 ksps
K480 : 480 ksps
K960 : 960 ksps

:WTXRx:DLParam:TYPE

Function Sets the payload type or queries the current setting.

Syntax
```
:WTXRx:DLParam:TYPE {ALL0|ALL1|PR9}
:WTXRx:DLParam:TYPE?
```

Example
```
:WTXRx:DLParam:TYPE PR9
:WTXRx:DLParam:TYPE? ->
:WTXR:DLP:TYPE PR9
```

Description The settings and responses are as follows.
ALL0: Transmits all-zero data
ALL1: Transmits all-one data
PR9: Transmits PRBS9 data

:WTXRx:DLParam:CCODe?

Function Queries all settings related to the channelization code.

Syntax
```
:WTXRx:DLParam:CCODe?
```

Example
```
:WTXRx:DLParam:CCODe? -> :WTXR:DLP:
CCOD:SCPI 3;PICH 2;DPCH 500
```

:WTXRx:DLParam:CCODe:SCPIch

Function Sets the SCPICH channelization code or queries the current setting.

Syntax
```
:WTXRx:DLParam:CCODe:SCPIch <code>
:WTXRx:DLParam:CCODe:SCPIch?
```

Example
```
:WTXRx:DLParam:CCODe:SCPIch 3
:WTXRx:DLParam:CCODe:SCPIch? ->
:WTXR:DLP:CCOD:SCPI 3
```

:WTXRx:DLParam:CCODe:PICH

Function Sets the PICH channelization code or queries the current setting.

Syntax
```
:WTXRx:DLParam:CCODe:PICH <code>
:WTXRx:DLParam:CCODe:PICH?
```

Example
```
:WTXRx:DLParam:CCODe:PICH 2
:WTXRx:DLParam:CCODe:PICH? ->
:WTXR:DLP:CCOD:PICH 2
```

:WTXRx:DLParam:CCODe:DPCH

Function Sets the DPCH channelization code or queries the current setting.

Syntax
```
:WTXRx:DLParam:CCODe:DPCH <code>
:WTXRx:DLParam:CCODe:DPCH?
```

Example
```
:WTXRx:DLParam:CCODe:DPCH 5
:WTXRx:DLParam:CCODe:DPCH? ->
:WTXR:DLP:CCOD:DPCH 5
```

:WTXRx:DLParam:TOFFset?

Function Queries all settings related to the timing offset.

Syntax
```
:WTXRx:DLParam:TOFFset?
```

Example
```
:WTXRx:DLParam:TOFFset? ->
:WTXR:DLP:TOFF:PICH 0;DPCH 0
```

:WTXRx:DLParam:TOFFset:PICH

Function Sets the PICH timing offset or queries the current setting.

Syntax
```
:WTXRx:DLParam:TOFFset:PICH <number>
:WTXRx:DLParam:TOFFset:PICH?
```

Example
```
:WTXRx:DLParam:TOFFset:PICH 0
:WTXRx:DLParam:TOFFset:PICH? ->
:WTXR:DLP:TOFF:PICH 0
```

:WTXRx:DLParam:TOFFset:DPCH

Function Sets the DPCH timing offset or queries the current setting.

Syntax
```
:WTXRx:DLParam:TOFFset:DPCH <number>
:WTXRx:DLParam:TOFFset:DPCH?
```

Example
```
:WTXRx:DLParam:TOFFset:DPCH 0
:WTXRx:DLParam:TOFFset:DPCH? ->
:WTXR:DLP:TOFF:DPCH 0
```

:WTXRx:DLParam:CPOWer?

Function Queries all settings related to the code domain power.

Syntax
```
:WTXRx:DLParam:CPOWer?
```

Example
```
:WTXRx:DLParam:CPOWer? -> :WTXR:DLP:
CPOW:PCPI -3.00E+00;SCPI -30.1E+00;
PCCP -3.00E+00;PICH -30.1E+00;
DPCH -30.1E+00;OCNS -30.1E+00
```

:WTXRx:DLParam:CPOWer:PCPIch

Function Sets the PCPICH code domain power or queries the current setting.

Syntax
```
:WTXRx:DLParam:CPOWer:
PCPIch <power (dB)>
:WTXRx:DLParam:CPOWer:PCPIch?
```

Example
```
:WTXRx:DLParam:CPOWer:PCPIch -3
:WTXRx:DLParam:CPOWer:PCPIch? ->
:WTXR:DLP:CPOW:PCPI -3.00E+00
```

Description To set –infinity, specify –30.1. If the power is increased, it is absorbed by the OCNS. If the OCNS cannot absorb all of the power, an error results.

:WTXRx:DLParam:CPOWer:SCPIch

Function Sets the SCPICH code domain power or queries the current setting.

Syntax
```
:WTXRx:DLParam:CPOWer:
SCPIch <power (dB)>
:WTXRx:DLParam:CPOWer:SCPIch?
```

Example
```
:WTXRx:DLParam:CPOWer:SCPIch -30.1
:WTXRx:DLParam:CPOWer:SCPIch? ->
:WTXR:DLP:CPOW:SCPI -30.1E+00
```

Description To set –infinity, specify –30.1. If the power is increased, it is absorbed by the OCNS. If the OCNS cannot absorb all of the power, an error results.

:WTXRx:DLParam:CPOWer:PCCPch

Function Sets the PCCPCH code domain power or queries the current setting.

Syntax
```
:WTXRx:DLParam:CPOWer:
PCCPch <power (dB)>
:WTXRx:DLParam:CPOWer:PCCPch?
```

Example
```
:WTXRx:DLParam:CPOWer:PCCPch -3
:WTXRx:DLParam:CPOWer:PCCPch? ->
:WTXR:DLP:CPOW:PCCP -3.00E+00
```

Description To set –infinity, specify –30.1. If the power is increased, it is absorbed by the OCNS. If the OCNS cannot absorb all of the power, an error results.

:WTXRx:DLParam:CPOWer:PICH

Function Sets the PICH code domain power or queries the current setting.

Syntax
```
:WTXRx:DLParam:CPOWer:
PICH <power (dB)>
:WTXRx:DLParam:CPOWer:PICH?
```

Example
```
:WTXRx:DLParam:CPOWer:PICH -30.1
:WTXRx:DLParam:CPOWer:PICH? ->
:WTXR:DLP:CPOW:PICH -30.1E+00
```

Description To set –infinity, specify –30.1. If the power is increased, it is absorbed by the OCNS. If the OCNS cannot absorb all of the power, an error results.

:WTXRx:DLParam:CPOWer:DPCH

Function Sets the DPCH code domain power or queries the current setting.

Syntax
```
:WTXRx:DLParam:CPOWer:
DPCH <power (dB)>
:WTXRx:DLParam:CPOWer:DPCH?
```

Example
```
:WTXRx:DLParam:CPOWer:DPCH -30.1
:WTXRx:DLParam:CPOWer:DPCH? ->
:WTXR:DLP:CPOW:DPCH -30.1E+00
```

Description To set –infinity, specify –30.1. If the power is increased, it is absorbed by the OCNS. If the OCNS cannot absorb all of the power, an error results.

:WTXRx:DLParam:CPOWer:OCNS?

Function Queries the OCNS code domain power.

Syntax `:WTXRx:DLParam:CPOWer:OCNS?`

Example
```
:WTXRx:DLParam:CPOWer:OCNS? ->
:WTXR:DLP:CPOW:OCNS -7.00E+00
```

Description You cannot set the OCNS. Only querying is possible.

5.3.3 FREQuency Group

:WTXRx:FREQuency?

Function Queries all settings related to the frequency.

Syntax `:WTXRx:FREQuency?`

Example
```
:WTXRx:FREQuency? -> :WTXR:FREQ:
BAND B1;DLFR 2.1140E+03;DLCH 10570;
ULFR 1.9240E+03;ULCH 9620
```

:WTXRx:FREQuency:BAND?

Function Queries the frequency band.

Syntax `:WTXRx:FREQuency:BAND?`

Example
```
:WTXRx:FREQuency:BAND? ->
:WTXR:FREQ:BAND B1
```

Description
- This command is only for querying. Use `:WTXRx:FREQuency:TMP:BAND` to set the frequency band and `:WTXRx:FREQuency:TMP:SET` to enter the setting.
- The responses are as follows.

B1 : Band1	B5 : Band5
B2 : Band2	B6 : Band6
B3 : Band3	B8 : Band8
B4 : Band4	B9 : Band9

:WTXRx:FREQuency:DLFReq?

Function Queries the downlink frequency.

Syntax `:WTXRx:FREQuency:DLFReq?`

Example
```
:WTXRx:FREQuency:DLFReq? ->
:WTXR:FREQ:DLFR 2.1124E+03
```

Description
- This command is only for querying. Use `:WTXRx:FREQuency:TMP:DLFReq` to set the downlink frequency and `:WTXRx:FREQuency:TMP:SET` to enter the setting.
- The frequency unit of the response is MHz.

:WTXRx:FREQuency:DLCH?

Function Queries the downlink frequency channel number.

Syntax `:WTXRx:FREQuency:DLCH?`

Example
```
:WTXRx:FREQuency:DLCH? ->
:WTXR:FREQ:DLCH 10562
```

Description This command is only for querying. Use `:WTXRx:FREQuency:TMP:DLCH` to set the downlink frequency channel number and `:WTXRx:FREQuency:TMP:SET` to enter the setting.

:WTXRx:FREQuency:ULFReq?

Function Queries the uplink frequency.

Syntax `:WTXRx:FREQuency:ULFReq?`

Example
```
:WTXRx:FREQuency:ULFReq? ->
:WTXR:FREQ:ULFR 1.9224E+03
```

Description
- This command is only for querying. Use `:WTXRx:FREQuency:TMP:ULFReq` to set the uplink frequency and `:WTXRx:FREQuency:TMP:SET` to enter the setting.
- The frequency unit of the response is MHz.

:WTXRx:FREQuency:ULCH?

Function Queries the uplink frequency channel number.

Syntax :WTXRx:FREQuency:ULCH?

Example :WTXRx:FREQuency:ULCH? ->
:WTXR:FREQ:ULCH 10562

Description This command is only for querying. Use :WTXRx:FREQuency:TMP:ULCH to set the uplink frequency channel number and :WTXRx:FREQuency:TMP:SET to enter the setting.

:WTXRx:FREQuency:TMP:BAND

Function Sets the temporary frequency band or queries the current setting.

Syntax :WTXRx:FREQuency:TMP:BAND
{B1|B2|B3|B4|B5|B6|B8|B9}
:WTXRx:FREQuency:TMP:BAND?

Example :WTXRx:FREQuency:TMP:BAND B1
:WTXRx:FREQuency:TMP:BAND? ->
:WTXR:FREQ:TMP:BAND B1

Description
- Use :WTXRx:FREQuency:TMP:SET to enter the frequency band set with this command.
- The settings and responses are as follows.

B1 : Band1 B5 : Band5
B2 : Band2 B6 : Band6
B3 : Band3 B8 : Band8
B4 : Band4 B9 : Band9

:WTXRx:FREQuency:TMP:DLFReq

Function Sets the temporary downlink frequency or queries the current setting.

Syntax :WTXRx:FREQuency:TMP:
DLFReq <Frequency>
:WTXRx:FREQuency:TMP:DLFReq?

Example :WTXRx:FREQuency:TMP:DLFReq 2112.4
:WTXRx:FREQuency:TMP:DLFReq? ->
:WTXR:FREQ:TMP:DLFR 2.1124E+03

Description
- Use :WTXRx:FREQuency:TMP:SET to enter the downlink frequency set with this command.
- The frequency unit of the setting and response is MHz.

:WTXRx:FREQuency:TMP:DLCH

Function Sets the temporary downlink frequency channel number or queries the current setting.

Syntax :WTXRx:FREQuency:TMP:DLCH <number>
:WTXRx:FREQuency:TMP:DLCH?

Example :WTXRx:FREQuency:TMP:DLCH 10562
:WTXRx:FREQuency:TMP:DLCH? ->
:WTXR:FREQ:TMP:DLCH 10562

Description Use :WTXRx:FREQuency:TMP:SET to enter the downlink frequency channel number set with this command.

:WTXRx:FREQuency:TMP:ULFReq

Function Sets the temporary uplink frequency or queries the current setting.

Syntax :WTXRx:FREQuency:TMP:
ULFReq <Frequency>
:WTXRx:FREQuency:TMP:ULFReq?

Example :WTXRx:FREQuency:TMP:ULFReq 1922.8
:WTXRx:FREQuency:TMP:ULFReq? ->
:WTXR:FREQ:TMP:ULFR 1.9228E+03

Description
- Use :WTXRx:FREQuency:TMP:SET to enter the uplink frequency set with this command.
- The frequency unit of the setting and response is MHz.

:WTXRx:FREQuency:TMP:ULCH

Function Sets the temporary uplink frequency channel number or queries the current setting.

Syntax :WTXRx:FREQuency:TMP:ULCH <number>
:WTXRx:FREQuency:TMP:ULCH?

Example :WTXRx:FREQuency:TMP:ULCH 9613
:WTXRx:FREQuency:TMP:ULCH? ->
:WTXR:FREQ:TMP:ULCH 9613

Description Use :WTXRx:FREQuency:TMP:SET to enter the uplink frequency channel number set with this command.

:WTXRx:FREQuency:TMP:SET

Function Enters the temporary frequency settings.

Syntax :WTXRx:FREQuency:TMP:SET

Example :WTXRx:FREQuency:TMP:SET

:WTXRx:FREQuency:TMP:CANCel

Function Cancels the temporary frequency settings.

Syntax :WTXRx:FREQuency:TMP:CANCel

Example :WTXRx:FREQuency:TMP:CANCel

5.3.4 MEASure Group

:WTXRx:MEASure?

Function Queries the measurement item and measurement mode.

Syntax :WTXRx:MEASure?

Example :WTXRx:MEASure? ->
:WTXR:MEAS:ITEM TX;MODE REP

:WTXRx:MEASure:ITEM

Function Sets the measurement item or queries the current setting.

Syntax :WTXRx:MEASure:ITEM {TX|RX|MONitor}
:WTXRx:MEASure:ITEM?

Example :WTXRx:MEASure:ITEM TX
:WTXRx:MEASure:ITEM? ->
:WTXR:MEAS:ITEM TX

Description The settings and responses are as follows.
TX: TX mesurement
RX: RX measurement

:WTXRx:MEASure:MODE

Function Sets the measurement mode or queries the current setting.

Syntax :WTXRx:MEASure:MODE {REPeat|SINGle}
:WTXRx:MEASure:MODE?

Example :WTXRx:MEASure:MODE REPeat
:WTXRx:MEASure:MODE? ->
:WTXR:MEAS:MODE REP

Description The settings and responses are as follows.
REPeat: Repeats measurement
SINGle: Single measurement

5.3.5 MONitor Group

:WTXRx:MONitor?

Function Queries all settings related to the monitor function.

Syntax :WTXRx:MONitor?

Example :WTXRx:MONitor? -> :WTXR:MON:AVER:
CONT ON;COUN 10;:WTXR:MON:SPEC:
TRAC AVER;REFL 0.00E+00;MARK1:
EXEC OFF;FREQ 0;:WTXR:MON:SPEC:MARK2:
EXEC OFF;FREQ 0;:WTXR:MON:SPEC:MARK3:
EXEC OFF;FREQ 0;:WTXR:MON:SPEC:MARK4:
EXEC OFF;FREQ 0;:WTXR:MON:SPEC:MARK5:
EXEC OFF;FREQ 0;:WTXR:MON:SPEC:MARK6:
EXEC OFF;FREQ 0

:WTXRx:MONitor:AVERage?

Function Queries all settings related to the averaging of spectrum monitor measurement.

Syntax :WTXRx:MONitor:AVERage?

Example :WTXRx:MONitor:AVERage? ->
:WTXR:MON:AVER:CONT ON;COUN 10

:WTXRx:MONitor:AVERage:CONTrol

Function Enables/disables averaging of the spectrum monitor measurement or queries the current setting.

Syntax :WTXRx:MONitor:AVERage:CONTrol
{ON|OFF}
:WTXRx:MONitor:AVERage:CONTrol?

Example :WTXRx:MONitor:AVERage:CONTrol ON
:WTXRx:MONitor:AVERage:CONTrol? ->
:WTXR:MON:AVER:CONT ON

:WTXRx:MONitor:AVERage:COUNt

Function Sets the average count of the spectrum monitor measurement or queries the current setting.

Syntax :WTXRx:MONitor:AVERage:COUNt <number>
:WTXRx:MONitor:AVERage:COUNt?
<number> = 1 to 255

Example :WTXRx:MONitor:AVERage:COUNt 100
:WTXRx:MONitor:AVERage:COUNt? ->
:WTXR:MON:AVER:COUN 100

:WTXRx:MONitor:SPECtrum?

Function Queries all settings related to the spectrum monitor function.

Syntax :WTXRx:MONitor:SPECtrum?

Example :WTXRx:MONitor:SPECtrum? ->
:WTXR:MON:SPEC:TRAC AVER;
REFL 0.00E+00;MARK1:EXEC OFF;FREQ 0;
:WTXR:MON:SPEC:MARK2:EXEC OFF;FREQ 0;
:WTXR:MON:SPEC:MARK3:EXEC OFF;FREQ 0;
:WTXR:MON:SPEC:MARK4:EXEC OFF;FREQ 0;
:WTXR:MON:SPEC:MARK5:EXEC OFF;FREQ 0;
:WTXR:MON:SPEC:MARK6:EXEC OFF;FREQ 0

:WTXRx:MONitor:SPECtrum:REFLevel

Function Sets the reference level of the spectrum monitor function or queries the current setting.

Syntax
```
:WTXRx:MONitor:SPECtrum:REFLevel <Power>
:WTXRx:MONitor:SPECtrum:REFLevel?
```

Example
```
:WTXRx:MONitor:SPECtrum:REFLevel 10.0
:WTXRx:MONitor:SPECtrum:REFLevel? ->
:WTXR:MON:SPEC:REFL 10.0E+00
```

Description The reference level is used as the upper limit of the graph to display the spectrum.
The selectable range is +40.0 to −40 dBm. The unit is 0.1 dBm.

:WTXRx:MONitor:SPECtrum:TRACe

Function Sets the trace method of the spectrum monitor function or queries the current setting.

Syntax
```
:WTXRx:MONitor:SPECtrum:TRACe {AVERage|MAXHold}
:WTXRx:MONitor:SPECtrum:TRACe?
```

Example
```
:WTXRx:MONitor:SPECtrum:TRACe AVERage
:WTXRx:MONitor:SPECtrum:TRACe? ->
:WTXR:MON:SPEC:TRAC AVER
```

Description If the trace method is set to AVERage, averaging is performed according to the settings of the `:WTXRx:TXTest:AVERage:CONTrol` and `:WTXRx:TXTest:AVERage:COUNt` commands.
If the trace method is set to MAXHold, the measured result is updated with the maximum value.

:WTXRx:MONitor:SPECtrum:DETect

Function Sets the power detection method of the spectrum monitor function or queries the current setting.

Syntax
```
:WTXRx:MONitor:SPECtrum:DETect {RMS|PEAK}
```

Example
```
:WTXRx:MONitor:SPECtrum:DETect PEAK
:WTXRx:MONitor:SPECtrum:DETect? ->
:WTXR:MON:SPEC:DET PEAK
```

Description The spectrum is displayed by sampling the signal at 10-kHz intervals. Measurement is performed on this data.
This command is used to select the power detection method for the sampling from the following:

- RMS: Retrieve the average value of all the data between samples.
- PEAK: Retrieve the maximum value in the data between samples.

:WTXRx:MONitor:SPECtrum:MARK<x>?

Function Queries all settings related to marker <x> of the spectrum monitor function.

Syntax
```
:WTXRx:MONitor:SPECtrum:MARK<x>?
```
<x> = 1 to 6

Example
```
:WTXRx:MONitor:SPECtrum:MARK1? ->
:WTXR:MON:SPEC:MARK1:EXEC OFF;FREQ 0
```

:WTXRx:MONitor:SPECtrum:MARK<x>:EXEC

Function Enables/disables marker <x> of the spectrum monitor function or queries the current setting.

Syntax
```
:WTXRx:MONitor:SPECtrum:MARK<x>:EXEC {ON|OFF}
:WTXRx:MONitor:SPECtrum:MARK<x>:EXEC?
```
<x> = 1 to 6

Example
```
:WTXRx:MONitor:SPECtrum:MARK1:EXEC ON
:WTXRx:MONitor:SPECtrum:MARK1:EXEC? -> :WTXR:MON:SPEC:MARK1:EXEC ON
```

:WTXRx:MONitor:SPECtrum:MARK<x>:FREQuency

Function Sets the frequency of marker <x> of the spectrum monitor function or queries the current setting.

Syntax
```
:WTXRx:MONitor:SPECtrum:MARK<x>:FREQuency <Frequency>
:WTXRx:MONitor:SPECtrum:MARK<x>:FREQuency?
```
<x> = 1 to 6

Example
```
:WTXRx:MONitor:SPECtrum:MARK1:FREQuency 1000
:WTXRx:MONitor:SPECtrum:MARK1:FREQuency? -> :WTXR:MON:SPEC:MARK1:FREQ 1000
```

Description
- Set the marker frequency using a relative value from the center frequency (uplink frequency).
- The frequency unit of the setting and response is kHz. However, because the sampling frequency is 10 kHz, if you set or query using a value less than 10 kHz, the value of the closest sampled point will be used.

5.3.6 POWer Group

:WTXRx:POWer?

Function Queries all settings related to the power.

```
Syntax  :WTXRx:POWer?
Example :WTXRx:POWer? -> :WTXR:POW:CONT ON;
        DLP -60.00E+00;COMP:
        DLB1 0.00E+00;DLB2 0.00E+00;
        DLB3 0.00E+00;DLB4 0.00E+00;
        DLB5 0.00E+00;DLB6 0.00E+00;
        DLB8 0.00E+00;DLB9 0.00E+00;
        ULB1 0.00E+00;ULB2 0.00E+00;
        ULB3 0.00E+00;ULB4 0.00E+00;
        ULB5 0.00E+00;ULB6 0.00E+00;
        ULB8 0.00E+00;ULB9 0.00E+00
```

:WTXRx:POWer:CONTrol

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

```
Syntax  :WTXRx:POWer:CONTrol {ON|OFF}
        :WTXRx:POWer:CONTrol?
Example :WTXRx:POWer:CONTrol ON
        :WTXRx:POWer:CONTrol? ->
        :WTXR:POW:CONT ON
```

:WTXRx:POWer:DLPower

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

```
Syntax  :WTXRx:POWer:DLPower <power>
        :WTXRx:POWer:DLPower?
Example :WTXRx:POWer:DLPower -60
        :WTXRx:POWer:DLPower? ->
        :WTXR:POW:DLP -60.00E+00
```

:WTXRx:POWer:COMPensation?

Function Queries all settings related to the power compensation.

```
Syntax  :WTXRx:POWer:COMPensation?
Example :WTXRx:POWer:COMPensation? ->
        :WTXR:POW:COMP:DLB1 0.00E+00;
        DLB2 0.00E+00;DLB3 0.00E+00;
        DLB4 0.00E+00;DLB5 0.00E+00;
        DLB6 0.00E+00;DLB8 0.00E+00;
        DLB9 0.00E+00;ULB1 0.00E+00;
        ULB2 0.00E+00;ULB3 0.00E+00;
        ULB4 0.00E+00;ULB5 0.00E+00;
        ULB6 0.00E+00;ULB8 0.00E+00;
        ULB9 0.00E+00
```

:WTXRx:POWer:COMPensation:DLB1

Function Sets the downlink power compensation value (Band1) or queries the current setting.

```
Syntax  :WTXRx:POWer:COMPensation:
        DLB1 <power>
        :WTXRx:POWer:COMPensation:DLB1?
Example :WTXRx:POWer:COMPensation:DLB1 1
        :WTXRx:POWer:COMPensation:DLB1? ->
        :WTXR:POW:COMP:DLB1 1.00E+00
```

:WTXRx:POWer:COMPensation:DLB2

Function Sets the downlink power compensation value (Band2) or queries the current setting.

```
Syntax  :WTXRx:POWer:COMPensation:
        DLB2 <power>
        :WTXRx:POWer:COMPensation:DLB2?
Example :WTXRx:POWer:COMPensation:DLB2 1
        :WTXRx:POWer:COMPensation:DLB2? ->
        :WTXR:POW:COMP:DLB2 1.00E+00
```

:WTXRx:POWer:COMPensation:DLB3

Function Sets the downlink power compensation value (Band3) or queries the current setting.

```
Syntax  :WTXRx:POWer:COMPensation:
        DLB3 <power>
        :WTXRx:POWer:COMPensation:DLB3?
Example :WTXRx:POWer:COMPensation:DLB3 1
        :WTXRx:POWer:COMPensation:DLB3? ->
        :WTXR:POW:COMP:DLB3 1.00E+00
```

:WTXRx:POWer:COMPensation:DLB4

Function Sets the downlink power compensation value (Band4) or queries the current setting.

```
Syntax  :WTXRx:POWer:COMPensation:
        DLB4 <power>
        :WTXRx:POWer:COMPensation:DLB4?
Example :WTXRx:POWer:COMPensation:DLB4 1
        :WTXRx:POWer:COMPensation:DLB4? ->
        :WTXR:POW:COMP:DLB4 1.00E+00
```

:WTXRx:POWer:COMPensation:DLB5

Function Sets the downlink power compensation value (Band5) or queries the current setting.

```
Syntax  :WTXRx:POWer:COMPensation:
        DLB5 <power>
        :WTXRx:POWer:COMPensation:DLB5?
Example :WTXRx:POWer:COMPensation:DLB5 1
        :WTXRx:POWer:COMPensation:DLB5? ->
        :WTXR:POW:COMP:DLB5 1.00E+00
```

:WTXRx:POWer:COMPensation:DLB6

Function Sets the downlink power compensation value (Band6) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
DLB6 <power>
:WTXRx:POWer:COMPensation:DLB6?
```

Example
```
:WTXRx:POWer:COMPensation:DLB6 1
:WTXRx:POWer:COMPensation:DLB6? ->
:WTXR:POW:COMP:DLB6 1.00E+00
```

:WTXRx:POWer:COMPensation:DLB8

Function Sets the downlink power compensation value (Band8) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
DLB8 <power>
:WTXRx:POWer:COMPensation:DLB8?
```

Example
```
:WTXRx:POWer:COMPensation:DLB8 1
:WTXRx:POWer:COMPensation:DLB8? ->
:WTXR:POW:COMP:DLB8 1.00E+00
```

:WTXRx:POWer:COMPensation:DLB9

Function Sets the downlink power compensation value (Band9) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
DLB9 <power>
:WTXRx:POWer:COMPensation:DLB9?
```

Example
```
:WTXRx:POWer:COMPensation:DLB9 1
:WTXRx:POWer:COMPensation:DLB9? ->
:WTXR:POW:COMP:DLB9 1.00E+00
```

:WTXRx:POWer:COMPensation:ULB1

Function Sets the uplink power compensation value (Band1) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
ULB1 <power>
:WTXRx:POWer:COMPensation:ULB1?
```

Example
```
:WTXRx:POWer:COMPensation:ULB1 1
:WTXRx:POWer:COMPensation:ULB1? ->
:WTXR:POW:COMP:ULB1 1.00E+00
```

:WTXRx:POWer:COMPensation:ULB2

Function Sets the uplink power compensation value (Band2) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
ULB2 <power>
:WTXRx:POWer:COMPensation:ULB2?
```

Example
```
:WTXRx:POWer:COMPensation:ULB2 1
:WTXRx:POWer:COMPensation:ULB2? ->
:WTXR:POW:COMP:ULB2 1.00E+00
```

:WTXRx:POWer:COMPensation:ULB3

Function Sets the uplink power compensation value (Band3) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
ULB3 <power>
:WTXRx:POWer:COMPensation:ULB3?
```

Example
```
:WTXRx:POWer:COMPensation:ULB3 1
:WTXRx:POWer:COMPensation:ULB3? ->
:WTXR:POW:COMP:ULB3 1.00E+00
```

:WTXRx:POWer:COMPensation:ULB4

Function Sets the uplink power compensation value (Band4) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
ULB4 <power>
:WTXRx:POWer:COMPensation:ULB4?
```

Example
```
:WTXRx:POWer:COMPensation:ULB4 1
:WTXRx:POWer:COMPensation:ULB4? ->
:WTXR:POW:COMP:ULB4 1.00E+00
```

:WTXRx:POWer:COMPensation:ULB5

Function Sets the uplink power compensation value (Band5) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
ULB5 <power>
:WTXRx:POWer:COMPensation:ULB5?
```

Example
```
:WTXRx:POWer:COMPensation:ULB5 1
:WTXRx:POWer:COMPensation:ULB5? ->
:WTXR:POW:COMP:ULB5 1.00E+00
```

:WTXRx:POWer:COMPensation:ULB6

Function Sets the uplink power compensation value (Band6) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
ULB6 <power>
:WTXRx:POWer:COMPensation:ULB6?
```

Example
```
:WTXRx:POWer:COMPensation:ULB6 1
:WTXRx:POWer:COMPensation:ULB6? ->
:WTXR:POW:COMP:ULB6 1.00E+00
```

:WTXRx:POWer:COMPensation:ULB8

Function Sets the uplink power compensation value (Band8) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
ULB1 <power>
:WTXRx:POWer:COMPensation:ULB8?
```

Example
```
:WTXRx:POWer:COMPensation:ULB8 1
:WTXRx:POWer:COMPensation:ULB8? ->
:WTXR:POW:COMP:ULB8 1.00E+00
```

:WTXRx:POWer:COMPensation:ULB9

Function Sets the uplink power compensation value (Band9) or queries the current setting.

Syntax
```
:WTXRx:POWer:COMPensation:
ULB1 <power>
:WTXRx:POWer:COMPensation:ULB9?
```

Example
```
:WTXRx:POWer:COMPensation:ULB9 1
:WTXRx:POWer:COMPensation:ULB9? ->
:WTXR:POW:COMP:ULB9 1.00E+00
```

:WTXRx:POWer:ULINput

Function Turns ON/OFF the uplink RF input or queries the current setting.

Syntax
```
:WTXRx:POWer:ULINput {ON|OFF}
:WTXRx:POWer:ULINput?
```

Example
```
:WTXRx:POWer:ULINput ON
:WTXRx:POWer:ULINput? ->
:WTXR:POW:ULIN ON
```

Description If this setting is turned OFF, the RF output power accuracy can be improved when a low level is set. However, measurements cannot be performed when this setting is OFF.

5.3.7 PRESet Group

:WTXRx:PRESet?

Function Queries all settings related to presets.

Syntax
```
:WTXRx:PRESet?
```

Example
```
:WTXRx:PRESet? ->
:WTXR:PRES:MODE LOAD;NUMB S1
```

:WTXRx:PRESet:MODE

Function Sets the preset mode or queries the current setting.

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

Example
```
:WTXRx:PRESet:MODE LOAD
:WTXRx:PRESet:MODE? ->
:WTXR: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 `:WTXRx:PRESet:EXECute` command.

:WTXRx:PRESet:NUMBer

Function Sets the preset number or queries the current setting.

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

Example
```
:WTXRx:PRESet:NUMBer S1
:WTXRx:PRESet:NUMBer? ->
:WTXR:PRES:NUMB S1
```

:WTXRx:PRESet:VALid?

Function Queries whether the preset settings are valid.

Syntax
```
:WTXRx:PRESet:VALid?
```

Example
```
:WTXRx:PRESet:VALid? ->
:WTXR:PRES:VAL INV
```

Description
- Queries whether the preset specified by `:WTXRx: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.

:WTXRx:PRESet:BAND?

Function Queries the frequency band in the preset.

Syntax
```
:WTXRx:PRESet:BAND?
```

Example
```
:WTXRx:PRESet:BAND? ->
:WTXR:PRES:BAND B1
```

Description Queries the frequency band of the preset specified by `:WTXRx:PRESet:NUMBer` is valid. If the preset is invalid, the response is meaningless.

:WTXRx:PRESet:DLFReq?

Function Queries the downlink frequency in the preset.
Syntax :WTXRx:PRESet:DLFReq?
Example :WTXRx:PRESet:DLFReq? ->
:WTXR:PRES:DLFR 2.1124E+03
Description
- Queries the downlink frequency of the preset specified by :WTXRx:PRESet:NUMBer is valid. If the preset is invalid, the response is meaningless.
- The responses are as follows.

B1 : Band 1 B5 : Band 5
B2 : Band 2 B6 : Band 6
B3 : Band 3 B8 : Band 8
B4 : Band 4 B9 : Band 9

:WTXRx:PRESet:DLCH?

Function Queries the downlink frequency channel in the preset.
Syntax :WTXRx:PRESet:DLCH?
Example :WTXRx:PRESet:DLCH? ->
:WTXR:PRES:DLCH 10562
Description Queries the downlink frequency channel number of the preset specified by :WTXRx:PRESet:NUMBer is valid. If the preset is invalid, the response is meaningless.

:WTXRx:PRESet:ULFReq?

Function Queries the uplink frequency in the preset.
Syntax :WTXRx:PRESet:ULFReq?
Example :WTXRx:PRESet:ULFReq? ->
:WTXR:PRES:ULFR 1.9224E+03
Description Queries the uplink frequency of the preset specified by :WTXRx:PRESet:NUMBer is valid. If the preset is invalid, the response is meaningless.

:WTXRx:PRESet:ULCH?

Function Queries the uplink frequency channel in the preset.
Syntax :WTXRx:PRESet:ULCH?
Example :WTXRx:PRESet:ULCH? ->
:WTXR:PRES:ULCH 9612
Description Queries the uplink frequency channel number of the preset specified by :WTXRx:PRESet:NUMBer is valid. If the preset is invalid, the response is meaningless.

:WTXRx:PRESet:DLPower?

Function Queries the downlink power in the preset.
Syntax :WTXRx:PRESet:DLPower?
Example :WTXRx:PRESet:DLPower? ->
:WTXR:PRES:DLP -60.00E+00
Description Queries the downlink power of the preset specified by :WTXRx:PRESet:NUMBer is valid. If the preset is invalid, the response is meaningless.

:WTXRx:PRESet:EXECute

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

5.3.8 RESult Group

:WTXRx:RESult?

Function Queries all the measured results.
Syntax :WTXRx:RESult?
Example :WTXRx:RESult? -> :WTXR:RES:TXT:
MCO 0;:WTXR:RES:TXP:AVER NAN;MAX NAN;
MIN NAN;:WTXR:RES:FILP:AVER NAN;
MAX NAN;MIN NAN;:WTXR:RES:FERR:PPM:
AVER NAN;MAX NAN;MIN NAN;:WTXR:RES:
FERR:HZ:AVER NAN;MAX NAN;MIN NAN;:
WTXR:RES:EVM:WIOF:AVER NAN;MAX NAN;
MIN NAN;:WTXR:RES:EVM:WOOF:AVER NAN;
MAX NAN;MIN NAN;:WTXR:RES:EVM:ORIG:
AVER NAN;MAX NAN;MIN NAN;:WTXR:RES:
EVM:IQIM:AVER NAN;MAX NAN;MIN NAN;:
WTXR:RES:OBW:AVER NAN;MAX NAN;
MIN NAN;FUPP NAN;FLOW NAN;:WTXR:RES:
SEM:JUDG NOEX;:WTXR:RES:ACLR:P5M:
AVER NAN;MAX NAN;MIN NAN;:WTXR:RES:
ACLR:M5M:AVER NAN;MAX NAN;MIN NAN;:
WTXR:RES:ACLR:P10M:AVER NAN;MAX NAN;
MIN NAN;:WTXR:RES:ACLR:M10M:AVER NAN;
MAX NAN;MIN NAN;:WTXR:RES:RXT:MCO 0;:
WTXR:RES:EBER NAN;:WTXR:RES:MON:
MCO 0;:WTXR:RES:SPEC:TPOW NAN;
MARK1 NAN;MARK2 NAN;MARK4 NAN;
MARK5 NAN;MARK6 NAN

:WTXRx:RESult:CLEar

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

:WTXRx:RESult:TXTest:MCOunt?

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

:WTXRx:RESult:TXPower?

Function Queries all results related to the TX power.
Syntax :WTXRx:RESult:TXPower?
Example :WTXRx:RESult:TXPower? ->
:WTXR:RES:TXP:AVER -472.42903E-03;
MAX -135.49710E-03;MIN -1.2675777E+00

:WTXRx:RESult:TXPower:AVERage?

Function Queries the average value of the TX power.

Syntax :WTXRx:RESult:TXPower:AVERage?

Example :WTXRx:RESult:TXPower:AVERage? ->
:WTXR:RES:TXP:AVER 0.0000000E+00

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

:WTXRx:RESult:TXPower:MAX?

Function Queries the maximum value of the TX power.

Syntax :WTXRx:RESult:TXPower:MAX?

Example :WTXRx:RESult:TXPower:MAX? ->
:WTXR:RES:TXP:MAX 0.0000000E+00

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

:WTXRx:RESult:TXPower:MIN?

Function Queries the minimum value of the TX power.

Syntax :WTXRx:RESult:TXPower:MIN?

Example :WTXRx:RESult:TXPower:MIN? ->
:WTXR:RES:TXP:MIN 0.0000000E+00

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

:WTXRx:RESult:FILPower?

Function Queries all results related to the TX power after passing through the RRC filter.

Syntax :WTXRx:RESult:FILPower?

Example :WTXRx:RESult:FILPower? ->
:WTXR:RES:FILP:AVER -500.87925E-03;
MAX 3.2226355E-03;MIN -1.1375923E+00

:WTXRx:RESult:FILPower:AVERage?

Function Queries the average value of the TX power after passing through the RRC filter.

Syntax :WTXRx:RESult:FILPower:AVERage?

Example :WTXRx:RESult:FILPower:AVERage? ->
:WTXR:RES:FILP:AVER 0.0000000E+00

Description The response is the average value of the measured result of the TX power (after RRC). The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:FILPower:MAX?

Function Queries the maximum value of the TX power after passing through the RRC filter.

Syntax :WTXRx:RESult:FILPower:MAX?

Example :WTXRx:RESult:FILPower:MAX? ->
:WTXR:RES:FILP:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the TX power (after RRC). The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:FILPower:MIN?

Function Queries the minimum value of the TX power after passing through the RRC filter.

Syntax :WTXRx:RESult:FILPower:MIN?

Example :WTXRx:RESult:FILPower:MIN? ->
:WTXR:RES:FILP:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the TX power (after RRC). The unit is dBm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:FERRor?

Function Queries all results related to the frequency error.

Syntax :WTXRx:RESult:FERRor?

Example :WTXRx:RESult:FERRor? -> :WTXR:RES:
FERR:PPM:AVER NAN;MAX NAN;MIN NAN;:
WTXR:RES:FERR:HZ:AVER NAN;MAX NAN;
MIN NAN

:WTXRx:RESult:FERRor:PPM?

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

Syntax :WTXRx:RESult:FERRor:PPM?

Example :WTXRx:RESult:FERRor:PPM? -> :WTXR:
RES:FERR:PPM:AVER NAN;MAX NAN;MIN NAN

:WTXRx:RESult:FERRor:PPM:AVERage?

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

Syntax :WTXRx:RESult:FERRor:PPM:AVERage?

Example :WTXRx:RESult:FERRor:PPM:AVERage? ->
:WTXR:RES:FERR:PPM:AVER 0.0000000E+00

Description The response is the average value of the measured result of the frequency error. The unit is ppm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:FERRor:PPM:MAX?

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

Syntax :WTXRx:RESult:FERRor:PPM:MAX?

Example :WTXRx:RESult:FERRor:PPM:MAX? ->
:WTXR:RES:FERR:PPM:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the frequency error. The unit is ppm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:FERRor:PPM:MIN?

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

Syntax :WTXRx:RESult:FERRor:PPM:MIN?

Example :WTXRx:RESult:FERRor:PPM:MIN? ->
:WTXR:RES:FERR:PPM:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the frequency error. The unit is ppm. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:FERRor:HZ?

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

Syntax :WTXRx:RESult:FERRor:HZ?

Example :WTXRx:RESult:FERRor:HZ? -> :WTXR:
RES:FERR:HZ:AVER NAN;MAX NAN;MIN NAN

:WTXRx:RESult:FERRor:HZ:AVERage?

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

Syntax :WTXRx:RESult:FERRor:HZ:AVERage?

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

Description The response is the average value of the measured result of the frequency error. The unit is Hz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:FERRor:HZ:MAX?

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

Syntax :WTXRx:RESult:FERRor:HZ:MAX?

Example :WTXRx:RESult:FERRor:HZ:MAX? ->
:WTXR:RES:FERR:HZ:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the frequency error. The unit is Hz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:FERRor:HZ:MIN?

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

Syntax :WTXRx:RESult:FERRor:HZ:MIN?

Example :WTXRx:RESult:FERRor:HZ:MIN? ->
:WTXR:RES:FERR:HZ:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the frequency error. The unit is Hz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:EVM?

Function Queries all results related to the EVM.

Syntax :WTXRx:RESult:EVM?

Example :WTXRx:RESult:EVM? -> :WTXR:RES:EVM:
WIOF:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
WTXR:RES:EVM:WOOF:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
WTXR:RES:EVM:ORIG:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00;:
WTXR:RES:EVM:IQIM:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WTXRx:RESult:EVM:WIOFfset?

Function Queries all results related to the EVM (including the origin offset).

Syntax :WTXRx:RESult:EVM:WIOFfset?

Example :WTXRx:RESult:EVM:WIOFfset? -> :WTXR:
RES:EVM:WIOF:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WTXRx:RESult:EVM:WIOFfset:AVERage?

Function Queries the average value of EVM (including the origin offset).

Syntax :WTXRx:RESult:EVM:WIOFfset:AVERage?

Example :WTXRx:RESult:EVM:WIOFfset:AVERage?
-> :WTXR:RES:EVM:WIOF:
AVER 0.0000000E+00

Description The response is the average value of the measured result of the EVM (value including the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:EVM:WIOFfset:MAX?

Function Queries the maximum value of EVM (including the origin offset).

Syntax :WTXRx:RESult:EVM:WIOFfset:MAX?

Example :WTXRx:RESult:EVM:WIOFfset:MAX? ->
:WTXR:RES:EVM:WIOF:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the EVM (value including the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:EVM:WIOFfset:MIN?

Function Queries the minimum value of EVM (including the origin offset).

Syntax :WTXRx:RESult:EVM:WIOFfset:MIN?

Example :WTXRx:RESult:EVM:WIOFfset:MIN? ->
:WTXR:RES:EVM:WIOF:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the EVM (value including the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:EVM:WOOFfset?

Function Queries all results related to the EVM (excluding the origin offset).

Syntax :WTXRx:RESult:EVM:WOOFfset

Example :WTXRx:RESult:EVM:WOOFfset? -> :WTXR:
RES:EVM:WOOF:AVER 0.0000000E+00;
MAX 0.0000000E+00;MIN 0.0000000E+00

:WTXRx:RESult:EVM:WOOFfset:AVERage?

Function Queries the average value of EVM (excluding the origin offset).

Syntax :WTXRx:RESult:EVM:WOOFfset:AVERage?

Example :WTXRx:RESult:EVM:WOOFfset:AVERage?
-> :WTXR:RES:EVM:WOOF:
AVER 0.0000000E+00

Description The response is the average value of the measured result of the EVM (value excluding the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:EVM:WOOFfset:MAX?

Function Queries the maximum value of EVM (excluding the origin offset).

Syntax :WTXRx:RESult:EVM:WOOFfset:MAX?

Example :WTXRx:RESult:EVM:WOOFfset:MAX? ->
:WTXR:RES:EVM:WOOF:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the EVM (value excluding the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:EVM:WOOFfset:MIN?

Function Queries the minimum value of EVM (excluding the origin offset).

Syntax :WTXRx:RESult:EVM:WOOFfset:MIN?

Example :WTXRx:RESult:EVM:WOOFfset:MIN? ->
:WTXR:RES:EVM:WOOF:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the EVM (value excluding the origin offset). The unit is %. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:EVM:ORIGinoffset?

Function Queries all results related to origin offset.

Syntax :WTXRx:RESult:EVM:ORIGinoffset

Example :WTXRx:RESult:EVM:ORIGinoffset? ->
:WTXR:RES:EVM:ORIG:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00

:WTXRx:RESult:EVM:ORIGinoffset:AVERage?

Function Queries the average value of the origin offset.

Syntax :WTXRx:RESult:EVM:ORIGinoffset:
AVERage?

Example :WTXRx:RESult:EVM:ORIGinoffset:
AVERage? -> :WTXR:RES:EVM:ORIG:
AVER 0.0000000E+00

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

:WTXRx:RESult:EVM:ORIGinoffset:MAX?

Function Queries the maximum value of the origin offset.

Syntax :WTXRx:RESult:EVM:ORIGinoffset:MAX?

Example :WTXRx:RESult:EVM:ORIGinoffset:MAX?
-> :WTXR:RES:EVM:ORIG:
MAX 0.0000000E+00

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

:WTXRx:RESult:EVM:ORIGinoffset:MIN?

Function Queries the minimum value of the origin offset.

Syntax :WTXRx:RESult:EVM:ORIGinoffset:MIN?

Example :WTXRx:RESult:EVM:ORIGinoffset:MIN?
-> :WTXR:RES:EVM:ORIG:
MIN 0.0000000E+00

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

:WTXRx:RESult:EVM:IQIMbalance?

Function Queries all results related to the IQ power ratio.

Syntax :WTXRx:RESult:EVM:IQIMbalance

Example :WTXRx:RESult:EVM:IQIMbalance? ->
:WTXR:RES:EVM:IQIM:
AVER 0.0000000E+00;MAX 0.0000000E+00;
MIN 0.0000000E+00

:WTXRx:RESult:EVM:IQIMbalance:AVERage?

Function Queries the average value of the IQ power ratio.

Syntax :WTXRx:RESult:EVM:IQIMbalance:AVERage?

Example :WTXRx:RESult:EVM:IQIMbalance:AVERage? -> :WTXR:RES:EVM:IQIM:AVER 0.0000000E+00

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

:WTXRx:RESult:EVM:IQIMbalance:MAX?

Function Queries the maximum value of the IQ power ratio.

Syntax :WTXRx:RESult:EVM:IQIMbalance:MAX?

Example :WTXRx:RESult:EVM:IQIMbalance:MAX? -> :WTXR:RES:EVM:IQIM:MAX 0.0000000E+00

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

:WTXRx:RESult:EVM:IQIMbalance:MIN?

Function Queries the minimum value of the IQ power ratio.

Syntax :WTXRx:RESult:EVM:IQIMbalance:MIN?

Example :WTXRx:RESult:EVM:IQIMbalance:MIN? -> :WTXR:RES:EVM:IQIM:MIN 0.0000000E+00

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

:WTXRx:RESult:OBW?

Function Queries all results related to the occupied bandwidth.

Syntax :WTXRx:RESult:OBW?

Example :WTXRx:RESult:OBW? -> :WTXR:RES:OBW:AVER 4.1928355E+00;MAX 4.2255850E+00;MIN 4.1605760E+00;FUPP 2.1204440E+00;FLOW -2.1244680E+00

:WTXRx:RESult:OBW:AVERage?

Function Queries the average value of the occupied bandwidth.

Syntax :WTXRx:RESult:OBW:AVERage?

Example :WTXRx:RESult:OBW:AVERage? -> :WTXR:RES:OBW:AVER 0.0000000E+00

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

:WTXRx:RESult:OBW:MAX?

Function Queries the maximum value of the occupied bandwidth.

Syntax :WTXRx:RESult:OBW:MAX?

Example :WTXRx:RESult:OBW:MAX? -> :WTXR:RES:OBW:MAX 0.0000000E+00

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

:WTXRx:RESult:OBW:MIN?

Function Queries the minimum value of the occupied bandwidth.

Syntax :WTXRx:RESult:OBW:MIN?

Example :WTXRx:RESult:OBW:MIN? -> :WTXR:RES:OBW:MIN 0.0000000E+00

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

:WTXRx:RESult:OBW:FUPPer?

Function Queries the upper frequency limit of the occupied bandwidth.

Syntax :WTXRx:RESult:OBW:FUPPer?

Example :WTXRx:RESult:OBW:FUPPer? -> :WTXR:RES:OBW:FUPP 0.0000000E+00

Description The response is the measured result of the upper frequency limit of the OBW. The unit is MHz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:OBW:FLOWer?

Function Queries the lower frequency limit of the occupied bandwidth.

Syntax :WTXRx:RESult:OBW:FLOWer?

Example :WTXRx:RESult:OBW:FLOWer? -> :WTXR:RES:OBW:FLOW 0.0000000E+00

Description The response is the measured result of the lower frequency limit of the OBW. The unit is MHz. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:SEM:JUDGe?

Function Queries the SEM judgement result.

Syntax :WTXRx:RESult:SEM:JUDGe?

Example :WTXRx:RESult:SEM:JUDGe? -> :WTXR:RES:SEM:JUDG PASS

Description The response format is PASS or FAIL. If the measured result was not obtained, NOEX (No Execute) is returned.

:WTXRx:RESult:ACLR?

Function Queries all results related to the ACLR.

Syntax :WTXRx:RESult:ACLR?

Example :WTXRx:RESult:ACLR? -> :WTXR:RES:
ACLR:P5M:AVER -48.846590E+00;
MAX -48.319328E+00;
MIN -49.380219E+00;:WTXR:RES:ACLR:
M5M:AVER -48.398758E+00;
MAX -42.581486E+00;
MIN -48.872082E+00;:WTXR:RES:ACLR:
P10M:AVER -49.777812E+00;
MAX -48.336712E+00;
MIN -50.313786E+00;:WTXR:RES:ACLR:
M10M:AVER -49.467035E+00;
MAX -48.916306E+00;MIN -49.897602E+00

:WTXRx:RESult:ACLR:P5M?

Function Queries all results related to the ACLR (+5 MHz).

Syntax :WTXRx:RESult:ACLR:P5M?

Example :WTXRx:RESult:ACLR:P5M? ->
:WTXR:RES:ACLR:P5M:
AVER -48.823814E+00;
MAX -48.319328E+00;MIN -49.380219E+00

:WTXRx:RESult:ACLR:P5M:AVERage?

Function Queries the average value of the ACLR (+5 MHz).

Syntax :WTXRx:RESult:ACLR:P5M:AVERage?

Example :WTXRx:RESult:ACLR:P5M:AVERage? ->
:WTXR:RES:ACLR:P5M:AVER 0.0000000E+00

Description The response is the average value of the measured result of the ACLR (+5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:P5M:MAX?

Function Queries the maximum value of the ACLR (+5 MHz).

Syntax :WTXRx:RESult:ACLR:P5M:MAX?

Example :WTXRx:RESult:ACLR:P5M:MAX? ->
:WTXR:RES:ACLR:P5M:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the ACLR (+5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:P5M:MIN?

Function Queries the minimum value of the ACLR (+5 MHz).

Syntax :WTXRx:RESult:ACLR:P5M:MIN?

Example :WTXRx:RESult:ACLR:P5M:MIN? ->
:WTXR:RES:ACLR:P5M:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the ACLR (+5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:M5M?

Function Queries all results related to the ACLR (–5 MHz).

Syntax :WTXRx:RESult:ACLR:M5M?

Example :WTXRx:RESult:ACLR:M5M? ->
:WTXR:RES:ACLR:M5M:
AVER -48.156052E+00;
MAX -42.209999E+00;MIN -48.872082E+00

:WTXRx:RESult:ACLR:M5M:AVERage?

Function Queries the average value of the ACLR (–5 MHz).

Syntax :WTXRx:RESult:ACLR:M5M:AVERage?

Example :WTXRx:RESult:ACLR:M5M:AVERage? ->
:WTXR:RES:ACLR:M5M:AVER 0.0000000E+00

Description The response is the average value of the measured result of the ACLR (–5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:M5M:MAX?

Function Queries the maximum value of the ACLR (–5 MHz).

Syntax :WTXRx:RESult:ACLR:M5M:MAX?

Example :WTXRx:RESult:ACLR:M5M:MAX? ->
:WTXR:RES:ACLR:M5M:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the ACLR (–5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:M5M:MIN?

Function Queries the minimum value of the ACLR (–5 MHz).

Syntax :WTXRx:RESult:ACLR:M5M:MIN?

Example :WTXRx:RESult:ACLR:M5M:MIN? ->
:WTXR:RES:ACLR:M5M:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the ACLR (–5 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:P10M?

Function Queries all results related to the ACLR (+10 MHz).

Syntax :WTXRx:RESult:ACLR:P10M?

Example :WTXRx:RESult:ACLR:P10M? -> :WTXR:
RES:ACLR:P10M:AVER -49.782112E+00;
MAX -48.336712E+00;MIN -50.313786E+00

:WTXRx:RESult:ACLR:P10M:AVERage?

Function Queries the average value of the ACLR (+10 MHz).

Syntax :WTXRx:RESult:ACLR:P10M:AVERage?

Example :WTXRx:RESult:ACLR:P10M:AVERage? ->
:WTXR:RES:ACLR:P10M:
AVER 0.0000000E+00

Description The response is the average value of the measured result of the ACLR (+10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:P10M:MAX?

Function Queries the maximum value of the ACLR (+10 MHz).

Syntax :WTXRx:RESult:ACLR:P10M:MAX?

Example :WTXRx:RESult:ACLR:P10M:MAX? ->
:WTXR:RES:ACLR:P10M:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the ACLR (+10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:P10M:MIN?

Function Queries the minimum value of the ACLR (+10 MHz).

Syntax :WTXRx:RESult:ACLR:P10M:MIN?

Example :WTXRx:RESult:ACLR:P10M:MIN? ->
:WTXR:RES:ACLR:P10M:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the ACLR (+10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:M10M?

Function Queries all results related to the ACLR (–10 MHz).

Syntax :WTXRx:RESult:ACLR:M10M?

Example :WTXRx:RESult:ACLR:M10M? -> :WTXR:
RES:ACLR:M10M:AVER -49.422993E+00;
MAX -48.915230E+00;MIN -49.897602E+00

:WTXRx:RESult:ACLR:M10M:AVERage?

Function Queries the average value of the ACLR (–10 MHz).

Syntax :WTXRx:RESult:ACLR:M10M:AVERage?

Example :WTXRx:RESult:ACLR:M10M:AVERage? ->
:WTXR:RES:ACLR:M10M:AVER
0.0000000E+00

Description The response is the average value of the measured result of the ACLR (–10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:M10M:MAX?

Function Queries the maximum value of the ACLR (–10 MHz).

Syntax :WTXRx:RESult:ACLR:M10M:MAX?

Example :WTXRx:RESult:ACLR:M10M:MAX? ->
:WTXR:RES:ACLR:M10M:MAX 0.0000000E+00

Description The response is the maximum value of the measured result of the ACLR (–10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:ACLR:M10M:MIN?

Function Queries the minimum value of the ACLR (–10 MHz).

Syntax :WTXRx:RESult:ACLR:M10M:MIN?

Example :WTXRx:RESult:ACLR:M10M:MIN? ->
:WTXR:RES:ACLR:M10M:MIN 0.0000000E+00

Description The response is the minimum value of the measured result of the ACLR (–10 MHz). The unit is dBc. If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:RXTest:MCOunt?

Function Queries the RX characteristics measurement count.

Syntax :WTXRx:RESult:RXTest:MCOunt?

Example :WTXRx:RESult:RXTest:MCOunt? ->
:WTXR:RES:RXT:MCO 0

:WTXRx:RESult:EBER?

Function Queries the external BER measurement result.

Syntax :WTXRx:RESult:EBER?

Example :WTXRx:RESult:EBER? ->
:WTXR:RES:EBER NAN

Description If the measured result was not obtained, NAN (Not a Number) is returned.

:WTXRx:RESult:EBER:BNUMber?

Function Queries the number of measured bits of the external BER measurement.

Syntax :WTXRx:RESult:EBER:BNUMber?

Example :WTXRx:RESult:EBER:BNUMber? ->
:WTXR:RES:EBER:BNUM 0

:WTXRx:RESult:EBER:FACTor?

Function Queries the cause of the error in the external BER measurement result.

Syntax :WTXRx:RESult:EBER:FACTor?

Example :WTXRx:RESult:EBER:FACTor? ->
:WTXR:RES:EBER:FACT NOER

Description The response is one of the following: {SYNCloss|OVERclock|NOERror}.

SYNCloss : For sync loss
OVERclock : For over clock
NOERror : Measures normally

:WTXRx:RESult:EBER:ERRNumber?

Function Queries the number of error bits in the external BER measurement.

Syntax :WTXRx:RESult:EBER:ERRNumber?

Example :WTXRx:RESult:EBER:ERRNumber? ->
:WTXR:RES:EBER:ERRN 0

:WTXRx:RESult:DPOWer:SLOT?

Function Queries the number of slots in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:SLOT?

Example :WTXRx:RESult:DPOWer:SLOT? ->
:WTXR:RES:DPOW:SLOT 10

:WTXRx:RESult:DPOWer:ABSolute:ALL?

Function Queries the absolute power (dBm) of all time slots in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:ABSolute:ALL?

Example :WTXRx:RESult:DPOWer:ABSolute:ALL? ->
:WTXR:RES:DPOW:ABS:
ALL 759.49341E-03,557.93775E-03,
2.6917629E+00,2.6769598E+00,
2.7213690E+00,2.7115003E+00,
2.7164347E+00,2.7361721E+00,
2.7361721E+00,2.7065659E+00

:WTXRx:RESult:DPOWer:ABSolute:TS?

Function Queries the absolute power (dBm) of a specific time slot in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:ABSolute:TS?
<Time slot number>

Example :WTXRx:RESult:DPOWer:ABSolute:
TS? 0 -> :WTXR:RES:DPOW:ABS:
TS 759.49341E-03

Description The time slot number is counted from 0.
If 200 time slots are measured, you can specify a value from 0 to 199.

:WTXRx:RESult:DPOWer:RELative:ALL?

Function Queries the power value (dB) of all time slots with respect to the first time slot in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:RELative:ALL?

Example :WTXRx:RESult:DPOWer:RELative:ALL? ->
:WTXR:RES:DPOW:REL:
ALL 0.0000000E+00,177.07313E-321,
4.9406565E-324,0.0000000E+00,
11.788055E+00,759.49347E-03,
557.93775E-03,2.6917629E+00,
2.6769598E+00,2.7213690E+00

:WTXRx:RESult:DPOWer:RELative:TS?

Function Queries the power value (dB) of a specific time slot with respect to the first time slot in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:RELative:TS?
<Time slot number>

Example :WTXRx:RESult:DPOWer:RELative:
TS? 0 -> :WTXR:RES:DPOW:REL:
TS 0.0000000E+00

Description The time slot number is counted from 0.
If 200 time slots are measured, you can specify a value from 0 to 199.

:WTXRx:RESult:DPOWer:INTegrity?

Function Queries the integrity of a specific time slot in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:INTegrity?
<Time slot number>

Example :WTXRx:RESult:DPOWer:INTegrity? 0 ->
:WTXR:RES:DPOW:INT LEG

Description
- The time slot number is counted from 0.
  If 200 time slots are measured, you can specify a value from 0 to 199.
- 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.)

:WTXRx:RESult:DPOWer:MAX:ALL?

Function Queries the maximum value (dBm) of all time slots in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:MAX:ALL?

Example :WTXRx:RESult:DPOWer:MAX:
ALL? -> :WTXR:RES:DPOW:MAX:
ALL 6.7807902E-01,6.7254803E-
01,6.6701705E-01,-1.9496845E-01,
-1.0658008E+00,-1.9867542E+00,
-2.9591567E+00,-3.9427991E+00,
-5.0031959E+00,-6.0581052E+00

:WTXRx:RESult:DPOWer:MAX:TS?

Function Queries the maximum value (dBm) of a specific time slot in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:MAX:TS? <Time slot number>

Example :WTXRx:RESult:DPOWer:MAX:TS? 0 ->
:WTXR:RES:DPOW:MAX:TS 6.7807902E-01

Description
- The time slot number is counted from 0.
- If 500 time slots are measured, you can specify a value from 0 to 499.

:WTXRx:RESult:DPOWer:MIN:ALL?

Function Queries the minimum value (dBm) of all time slots in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:MIN:ALL?

Example :WTXRx:RESult:DPOWer:MIN:ALL? ->
:WTXR:RES:DPOW:MIN:ALL 5.6745934E-01,
5.7852131E-01,1.3051164E-01,
-7.2374282E-01,-1.6039482E+00,
-2.5572544E+00,-3.5379838E+00,
-4.5735217E+00,-5.6208996E+00,
-6.7006096E+00

:WTXRx:RESult:DPOWer:MIN:TS?

Function Queries the minimum value (dBm) of a specific time slot in the dynamic power measurement result.

Syntax :WTXRx:RESult:DPOWer:MIN:TS? <Time slot number>

Example :WTXRx:RESult:DPOWer:MIN:TS? 0 ->
:WTXR:RES:DPOW:MIN:TS 5.6745934E-01

Description
- The time slot number is counted from 0.
- If 500 time slots are measured, you can specify a value from 0 to 499.

:WTXRx:RESult:MONitor:MCOunt?

Function Queries the measurement count of the monitor measurement.

Syntax :WTXRx:RESult:MONitor:MCOunt?

Example :WTXRx:RESult:MONitor:MCOunt? ->
:WTXR:RES:MON:MCO 1000

:WTXRx:RESult:SPECtrum?

Function Queries all settings related to measured results of the spectrum monitor function.

Syntax :WTXRx:RESult:SPECtrum?

Example :WTXRx:RESult:SPECtrum? ->
:WTXR:RES:SPEC:TPOW NAN;MARK1 NAN;
MARK2 NAN;MARK4 NAN;MARK5 NAN;
MARK6 NAN

:WTXRx:RESult:SPECtrum:TPOWer?

Function Queries the total power of the spectrum.

Syntax :WTXRx:RESult:SPECtrum:TPOWer?

Example :WTXRx:RESult:SPECtrum:TPOWer? ->
:WTXR:RES:SPEC:TPOW 24.0000E+00

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

:WTXRx:RESult:SPECtrum:MARK<x>?

Function Sets the measured value (power) of marker <x> of the spectrum monitor function or queries the current setting.

Syntax :WTXRx:RESult:SPECtrum:MARK<x>?
<x> = 1 to 6

Example :WTXRx:RESult:SPECtrum:MARK1? ->
:WTXR:RES:SPEC:MARK1 0.00000E+00

Description The unit of the response is dBm. If the measured value was not obtained or if marker <x> is invalid, NAN (Not a Number) is returned.

5.3.9 RXTest Group

:WTXRx:RXTest?

Function Queries all settings related to the RX characteristics.

Syntax :WTXRx:RXTest?

Example :WTXRx:RXTest? -> :WTXR:RXT:EBER:EXEC ON;BNUM 10000;:WTXR:RXT:CPOL RIS;DPOL NORM

:WTXRx:RXTest:EBER?

Function Queries all settings related to the external BER.

Syntax :WTXRx:RXTest:EBER?

Example :WTXRx:RXTest:EBER? ->
:WTXR:RXT:EBER:EXEC ON;BNUM 10000

:WTXRx:RXTest:EBER:EXECute

Function Turns On/Off the external BER measurement or queries the current setting.

Syntax :WTXRx:RXTest:EBER:EXECute {ON|OFF}
:WTXRx:RXTest:EBER:EXECute?

Example :WTXRx:RXTest:EBER:EXECute ON
:WTXRx:RXTest:EBER:EXECute? ->
:WTXR:RXT:EBER:EXEC ON

:WTXRx:RXTest:EBER:BNUMber

Function Sets the number of bits of the external BER measurement or queries the current setting.

Syntax :WTXRx:RXTest:EBER:BNUMber <number>
:WTXRx:RXTest:EBER:BNUMber?

Example :WTXRx:RXTest:EBER:BNUMber 10000
:WTXRx:RXTest:EBER:BNUMber? ->
:WTXR:RXT:EBER:BNUM 10000

:WTXRx:RXTest:CPOLarity

Function Sets the external input clock characteristics or queries the current setting.

Syntax :WTXRx:RXTest:CPOLarity {RISing|FALLing}
:WTXRx:RXTest:CPOLarity?

Example :WTXRx:RXTest:CPOLarity RISing
:WTXRx:RXTest:CPOLarity? ->
:WTXR:RXT:CPOL RIS

Description The settings and responses are as follows.
RISing: Detects data on the rising edge
FALLing: Detects data on the falling edge

:WTXRx:RXTest:DPOLarity

Function Sets the external input data characteristics or queries the current setting.

Syntax :WTXRx:RXTest:DPOLarity {NORMal|INVerted}
:WTXRx:RXTest:DPOLarity?

Example :WTXRx:RXTest:DPOLarity NORMal
:WTXRx:RXTest:DPOLarity? ->
:WTXR:RXT:DPOL NORM

Description The settings and responses are as follows.
NORMal: Normal
INVerted: Bits inverted

5.3.10 TTARget Group

:WTXRx:TTARget

Function Sets the measurement items of the TX characteristics measurement or queries the current setting.

Syntax :WTXRx:TTARget {TXPower|FERRor|EVM|OBW|SEM|ACLR|DPOWer}
:WTXRx:TTARget?

Example :WTXRx:TTARget TXPower
:WTXRx:TTARget? -> :WTXR:TTAR TXP

Description The settings and responses are as follows.
TXPower : TX Power
FERRor : Frequency Error
EVM : EVM
OBW : OBW
SEM : SEM
ACLR : ACLR
DPOWer : Dynamic Power

5.3.11 TXTest Group

:WTXRx:TXTest?

Function Queries all settings related to TX characteristics measurement.

Syntax :WTXRx:TXTest?

Example :WTXRx:TXTest? -> :WTXR:TXT:AVER:CONT ON;COUN 10;:WTXR:TXT:ITEM NORM;TXP:EXEC ON;:WTXR:TXT:FERR:EXEC ON;:WTXR:TXT:EVM:EXEC ON;:WTXR:TXT:OBW:EXEC ON;:WTXR:TXT:ACLR:EXEC ON;:WTXR:TXT:SEM:EXEC ON;UNIT DBC;:WTXR:TXT:DPOW:SLOT 100;INL 20.0E+00;RANG AUTO;TRIG:SRC POW;POL RIS;DEL 0;:WTXR:TXT:DPOW:FILT ON;:WTXR:TXT:FASTP OFF

:WTXRx:TXTest:AVERage?

Function Queries all settings related to the average of TX characteristics measurement.

Syntax :WTXRx:TXTest:AVERage?

Example :WTXRx:TXTest:AVERage? -> :WTXR:TXT:AVER:CONT ON;COUN 11

:WTXRx:TXTest:AVERage:CONTrol

Function Turns ON/OFF the averaging of the TX characteristics measurement or queries the current setting.

Syntax :WTXRx:TXTest:AVERage:CONTrol {ON|OFF}
:WTXRx:TXTest:AVERage:CONTrol?

Example :WTXRx:TXTest:AVERage:CONTrol ON
:WTXRx:TXTest:AVERage:CONTrol? -> :WTXR:TXT:AVER:CONT ON

:WTXRx:TXTest:AVERage:COUNt

Function Sets the average count of the TX characteristics measurement or queries the current setting.

Syntax :WTXRx:TXTest:AVERage:COUNt {ON|OFF}
:WTXRx:TXTest:AVERage:COUNt?

Example :WTXRx:TXTest:AVERage:COUNt 10
:WTXRx:TXTest:AVERage:COUNt? -> :WTXR:TXT:AVER:COUN 10

:WTXRx:TXTest:TXPower:EXECute

Function Turns ON/OFF the TX power or queries the current setting.

Syntax :WTXRx:TXTest:TXPower:EXECute {ON|OFF}
:WTXRx:TXTest:TXPower:EXECute?

Example :WTXRx:TXTest:TXPower:EXECute ON
:WTXRx:TXTest:TXPower:EXECute? -> :WTXR:TXT:TXP:EXEC ON

:WTXRx:TXTest:TXPower:MTIMes

Function Sets the measurement count of the TX power measurement or queries the current setting.

Syntax :WTXRx:TXTest:TXPower:MTIMes <number>
:WTXRx:TXTest:TXPower:MTIMes?
<number> = 1 to 5

Example :WTXRx:TXTest:TXPower:MTIMes 5
:WTXRxl:TXTest:TXPower:MTIMes? -> :WTXR:TXT:TXP:MTIM 5

Description
- Performs the specified number of measurements of only the TX power for each TX characteristics measurement and determines the average value.
- This setting is not backed up. It is always set to 1 at startup.

:WTXRx:TXTest:FERRor:EXECute

Function Turns ON/OFF the frequency error or queries the current setting.

Syntax :WTXRx:TXTest:FERRor:EXECute {ON|OFF}
:WTXRx:TXTest:FERRor:EXECute?

Example :WTXRx:TXTest:FERRor:EXECute ON
:WTXRx:TXTest:FERRor:EXECute? -> :WTXR:TXT:FERR:EXEC ON

:WTXRx:TXTest:EVM:EXECute

Function Turns ON/OFF the EVM or queries the current setting.

Syntax :WTXRx:TXTest:EVM:EXECute {ON|OFF}
:WTXRx:TXTest:EVM:EXECute?

Example :WTXRx:TXTest:EVM:EXECute ON
:WTXRx:TXTest:EVM:EXECute? -> :WTXR:TXT:EVM:EXEC ON

:WTXRx:TXTest:OBW:EXECute

Function Turns ON/OFF the occupied bandwidth or queries the current setting.

Syntax :WTXRx:TXTest:OBW:EXECute {ON|OFF}
:WTXRx:TXTest:OBW:EXECute?

Example :WTXRx:TXTest:OBW:EXECute ON
:WTXRx:TXTest:OBW:EXECute? -> :WTXR:TXT:OBW:EXEC ON

:WTXRx:TXTest:ACLR:EXECute

Function Turns ON/OFF the ACLR or queries the current setting.

Syntax :WTXRx:TXTest:ACLR:EXECute {ON|OFF}
:WTXRx:TXTest:ACLR:EXECute?

Example :WTXRx:TXTest:ACLR:EXECute ON
:WTXRx:TXTest:ACLR:EXECute? -> :WTXR:TXT:ACLR:EXEC ON

:WTXRx:TXTest:SEM?

Function Queries all settings related to the SEM of TX measurement.

Syntax :WTXRx:TXTest:SEM?

Example :WTXRx:TXTest:SEM? -> :WTXR:TXT:SEM:EXEC ON;UNIT DBC

:WTXRx:TXTest:SEM:EXECute

Function Turns ON/OFF the SEM or queries the current setting.

Syntax :WTXRx:TXTest:SEM:EXECute {ON|OFF}
:WTXRx:TXTest:SEM:EXECute?

Example :WTXRx:TXTest:SEM:EXECute ON
:WTXRx:TXTest:SEM:EXECute? ->
:WTXR:TXT:SEM:EXEC ON

:WTXRx:TXTest:SEM:UNIT

Function Switches the SEM graph unit of the TX measurement or queries the current setting.

Syntax :WTXRx:TXTest:SEM:UNIT {DBC|DBM}
:WTXRx:TXTest:SEM:UNIT?

Example :WTXRx:TXTest:SEM:UNIT DBC
:WTXRx:TXTest:SEM:UNIT? -> :WTXR:TXT:SEM:UNIT DBC

:WTXRx:TXTest:ITEM

Function Switches between normal measurement and dynamic power measurement.

Syntax :WTXRx:TXTest:ITEM {NORMal|DPOWer}
:WTXRx:TXTest:ITEM?

Example :WTXRx:TXTest:ITEM NORMal
:WTXRx:TXTest:ITEM? ->
:WTXR:TXT:ITEM NORM

Description The settings and responses are as follows.
NORMal: Normal TX measurement mode
DPOWer: Dynamic power measurement mode

:WTXRx:TXTest:DPOWer?

Function Queries all settings related to the dynamic power measurement.

Syntax :WTXRx:TXTest:DPOWer?

Example :WTXRx:TXTest:DPOWer? -> :WTXR:TXT:DPOW:SLOT 10;INL 20.0E+00;RANG AUTO;TRIG:SRC POW;POL RIS;DEL 0;:WTXR:TXT:DPOW:FILT ON

:WTXRx:TXTest:DPOWer:SLOT

Function Sets the number of measured slots of the dynamic power measurement or queries the current setting.

Syntax :WTXRx:TXTest:DPOWer:SLOT
<number of slots>
:WTXRx:TXTest:DPOWer:SLOT?

Example :WTXRx:TXTest:DPOWer:SLOT 200
:WTXRx:TXTest:DPOWer:SLOT? ->
:WTXR:TXT:DPOW:SLOT 200

:WTXRx:TXTest:DPOWer:INLevel

Function Sets the initial level of the dynamic power measurement or queries the current setting.

Syntax :WTXRx:TXTest:DPOWer:INLevel
<Initial level (dBm)>
:WTXRx:TXTest:DPOWer:INLevel?

Example :WTXRx:TXTest:DPOWer:INLevel 0.0
:WTXRx:TXTest:DPOWer:INLevel? ->
:WTXR:TXT:DPOW:INL 0.00E+00

Description This setting is valid only if the range is set to Auto.

:WTXRx:TXTest:DPOWer:RANGe

Function Sets the range of the dynamic power measurement or queries the current setting.

Syntax :WTXRx:TXTest:DPOWer:RANGe
{AUTO|P35|P25|P15|P5|M5|M15|M25}
:WTXRx:TXTest:DPOWer:RANGe?

Example :WTXRx:TXTest:DPOWer:RANGe AUTO
:WTXRx:TXTest:DPOWer:RANGe? ->
:WTXR:TXT:DPOW:RANG AUTO

Description The settings and responses are as follows.
AUTO : Sets to auto range
P35 : +35 to −5dBm
P25 : +25 to −15dBm
P15 : +15 to −25dBm
P5 : +5 to −35dBm
M5 : −5 to −40dBm
M15 : −15 to −55dBm
M25 : −25 to −70dBm

:WTXRx:TXTest:DPOWer:TRIGger:SRC

Function Sets the trigger source of the dynamic power measurement or queries the current setting.

Syntax :WTXRx:TXTest:DPOWer:TRIGger:SRC
{POWer|EXTernal}
:WTXRx:TXTest:DPOWer:TRIGger:SRC?

Example :WTXRx:TXTest:DPOWer:TRIGger:SRC POWer
:WTXRx:TXTest:DPOWer:TRIGger:SRC? ->
:WTXR:TXT:DPOW:TRIG:SRC POW

Description The settings and responses are as follows.
POWer : Uplink signal
EXTernal : External input

:WTXRx:TXTest:DPOWer:TRIGger?

Function Queries all settings related to the trigger of the dynamic power measurement.

Syntax :WTXRx:TXTest:DPOWer:TRIGger?

Example :WTXRx:TXTest:DPOWer:TRIGger? ->
:WTXR:TXT:DPOW:TRIG:SRC POW;
POL RIS;DEL 0

:WTXRx:TXTest:DPOWer:TRIGger:POLarity

Function Sets the trigger polarity of the dynamic power measurement or queries the current setting.

Syntax
```
:WTXRx:TXTest:DPOWer:TRIGger:POLarity {RISing|FALLing|RANDF}
:WTXRx:TXTest:DPOWer:TRIGger:POLarity?
```

Example
```
:WTXRx:TXTest:DPOWer:TRIGger:POLarity RISing
:WTXRx:TXTest:DPOWer:TRIGger:POLarity? -> :WTXR:TXT:DPOW:TRIG:POL RIS
```

Description The settings and responses are as follows.
- RISing : Activates a trigger on the rising edge
- FALLing : Activates a trigger on the falling edge
- RANDF : Activates a trigger on the falling edge after a rising edge

(enabled only when the trigger source is POWer)

:WTXRx:TXTest:DPOWer:TRIGger:DELay

Function Sets the trigger delay of the dynamic power measurement or queries the current setting.

Syntax
```
:WTXRx:TXTest:DPOWer:TRIGger:DELay <Delay (us)>
:WTXRx:TXTest:DPOWer:TRIGger:DELay?
```

Example
```
:WTXRx:TXTest:DPOWer:TRIGger:DELay 0
:WTXRx:TXTest:DPOWer:TRIGger:DELay? -> :WTXR:TXT:DPOW:TRIG:DEL 0
```

:WTXRx:TXTest:DPOWer:FILTer

Function Turns ON/OFF the RRC filter for the dynamic power measurement or queries the current setting.

Syntax
```
:WTXRx:TXTest:DPOWer:FILTer {ON|OFF}
:WTXRx:TXTest:DPOWer:FILTer?
```

Example
```
:WTXRx:TXTest:DPOWer:FILTer ON
:WTXRx:TXTest:DPOWer:FILTer? -> :WTXR:TXT:DPOW:FILT ON
```

Description If the filter is turned ON, the power after the signal passes through the RRC filter is measured.
If the filter is turned OFF, the power is measured without applying the RRC filter.
This setting is not backed up. It is always set to ON at startup.

:WTXRx:TXTest:FASTPmode

Function Sets the fast power measurement mode or queries the current setting.

Syntax
```
:WTXRx:TXTest:FASTPmode {ON|OFF}
:WTXRx:TXTest:FASTPmode?
```

Example
```
:WTXRx:TXTest:FASTPmode ON
:WTXRx:TXTest:FASTPmode? -> :WTXR:TXT:FASTP ON
```

Description
- If the fast power measurement mode is turned ON, only the TX power with the RRC filter turned OFF is measured. Measurement is not performed on other parameters regardless of the Measure Enable setting.
- This setting is not backed up. It is always set to OFF at startup.

5.3.12 TXView Group

:WTXRx:TXView

Function Switches the display format.

Syntax
```
:WTXRx:TXView {OVER|DETail}
```

Example
```
:WTXRx:TXView OVER
```

Description The settings and responses are as follows.
- OVER: Overview screen
- DETail: Detail screen

5.3.13 ULParam Group

:WTXRx:ULParam?

Function Queries all settings related to connection conditions (uplink parameters).

Syntax :WTXRx:ULParam?

Example :WTXRx:ULParam? -> :WTXR:ULP:SCOD 0;TOFF 0;SRAT K60;SYM ASYN;PRAT 7.50E+00

:WTXRx:ULParam:SCODe

Function Sets the scrambling code or queries the current setting.

Syntax :WTXRx:ULParam:SCODe <code>
:WTXRx:ULParam:SCODe?

Example :WTXRx:ULParam:SCODe 0
:WTXRx:ULParam:SCODe? ->
:WTXR:ULP:SCOD 0

:WTXRx:ULParam:TOFFset

Function Sets the timing offset or queries the current setting.

Syntax :WTXRx:ULParam:TOFFset <number>
:WTXRx:ULParam:TOFFset?

Example :WTXRx:ULParam:TOFFset 0
:WTXRx:ULParam:TOFFset? ->
:WTXR:ULP:TOFF 0

:WTXRx:ULParam:SRATe

Function Sets the symbol rate or queries the current setting.

Syntax :WTXRx:ULParam:SRATe {K15|K30|K60|K120|K240|K480|K960}
:WTXRx:ULParam:SRATe?

Example :WTXRx:ULParam:SRATe K60
:WTXRx:ULParam:SRATe? ->
:WTXR:ULP:SRAT K60

Description The setting and responses are as follows.

K15 : 15ksps
K30 : 30ksps
K60 : 60ksps
K120 : 120ksps
K240 : 240ksps
K480 : 480ksps
K960 : 960ksps

:WTXRx:ULParam:SYMode

Function Sets the uplink synchronous mode.

Syntax :WTXRx:ULParam:SYMode {SYNC|ASYNc}
:WTXRx:ULParam:SYMode?

Example :WTXRx:ULParam:SYMode ASYNc
:WTXRx:ULParam:SYMode? ->
:WTXR:ULP:SYM ASYN

:WTXRx:ULParam:PRATio

Function Sets the IQ power ratio or queries the current setting.

Syntax :WTXRx:ULParam:PRATio <power ratio>
:WTXRx:ULParam:PRATio?

Example :WTXRx:ULParam:PRATio 8
:WTXRx:ULParam:PRATio? ->
:WTXR:ULP:PRAT 8.00E+00

6.1 Downlink Transmission Section

Item	Specifications		
Transmission frequency	**Band**	**UARFCN*1(Resolution)**	**Actual frequency(Resolution)**
	1	10562 to 10838 (1)	2112.4 to 2167.6 MHz (0.2 MHz)
	2	9662 to 9938 (1)	1932.4 to 1987.6 MHz (0.2 MHz)
		412 to 687 (25)	1932.5 to 1987.5 MHz (5 MHz)
	3	1162 to 1513 (1)	1807.4 to 1877.6 MHz (0.2 MHz)
	4	1537 to 1738 (1)	2112.4 to 2152.6 MHz (0.2 MHz)
		1887 to 2087 (25)	2112.5 to 2152.5 MHz (5 MHz)
	5	4357 to 4458 (1)	871.4 to 891.6 MHz (0.2 MHz)
		1007, 1012	871.5, 872.5 MHz
		1032, 1037	876.5, 877.5 MHz
		1062, 1087	882.5, 887.5 MHz
	6	4387 to 4413 (1)	877.4 to 882.6 MHz (0.2 MHz)
		1037, 1062	877.5, 882.5 MHz
	8	2937 to 3088 (1)	927.4 to 957.6 MHz (0.2 MHz)
	9	9237 to 9387 (1)	1847.4 to 1877.4MHz (0.2 MHz)
	* If you set the uplink reception frequency, the transmission frequency is set automatically to the corresponding frequency.		
Transmission power	–120.0 to –10.0 dBm (resolution: 0.1 dBm) Accuracy: ±1.0 dB (> –110.0 dBm)		
Type of physical transmission channel	P-SCH/S-SCH P-CCPCH S-CCPCH (during manual mode) P-CPICH S-CPICH (during TXRX mode) PICH AICH (during manual mode) DPCH: 7.5k, 15k, 30k, 60k, 120k, 240k, 480k, and 960 ksps*2 OCNS (16ch)*3 HS-PDSCH(during manual mode) HS-SCCH(during manual mode)		
Scrambling Code number*4	0 to 8191 (resolution: 1)		
Channelization code number*4	P-CCPCH: Fixed to 1 P-CPICH: Fixed to 0 S-CPICH: 0 to 255 (resolution: 1) PICH: 0 to 255 (resolution: 1) DPCH: 0 to spread factor – 1 (resolution: 1)		
Timing offset*4	PICH 0 to 38144 chips (resolution: 256 chips) DPCH 0 to 153344 chips (resolution: 256 chips)		
Code channel power*4	PSCH/SSCH/PCCPCH: 0 to –30.0 dB, – ∞ P-CPICH: 0 to –30.0 dB, – ∞ S-CPICH: 0 to –30.0 dB, – ∞ PICH: 0 to –30.0 dB, – ∞ DPCH: 0 to –30.0 dB, – ∞ OCNS: Automatically set to the remaining power of each channel power setting with respect to the transmission power. Resolution: ±0.1 (0 to –16.9 dB) ±0.5 (–17.0 to –22.9 dB) ±1.0 (–23.0 to –30.0 dB)		
Modulation accuracy	4% or less (when transmitting DPCH 1ch)		

*1 UARFCN = UTRA Absolute Radio Frequency Channel Number

*2 At 30 k and 120 k, the transport channel consists of a symbol sequence that has been encoded and mapped using RMC (Reference Measurement Channel) as defined by 3GPP TS25.101 V3.8.0 (2001-09) Annex A.3.
At 7.5 k, 15 k, 60 k, 240 k, 480 k, and 960 ksps, the specified data pattern is inserted in the symbol pattern of the physical channel.

*3 Conforms to 3GPP TS25.101 V3.8.0 (2001-09) Annex C, Table C.6.

*4 Can be set on in TXRX mode. Automatically set in manual mode.

6.2 Uplink Reception Section

Item	Specifications		
Reception frequency	**Band**	**UARFCN (Resolution)**	**Actual frequency(Resolution)**
	1	9612 to 9888 (1)	1922.4 to 1977.6 MHz (0.2 MHz)
	2	9262 to 9538 (1)	1852.4 to 1907.6 MHz (0.2 MHz)
		12 to 287 (25)	1852.5 to 1907.5 MHz (5 MHz)
	3	937 to 1288 (1)	1712.4 to 1782.6 MHz (0.2 MHz)
	4	1312 to 1513 (1)	1712.4 to 1752.6 MHz (0.2 MHz)
		1662 to 1862 (25)	1712.5 to 1752.5 MHz (5 MHz)
	5	4132 to 4233 (1)	826.4 to 846.6 MHz (0.2 MHz)
		782, 787	826.5, 827.5 MHz
		807, 812	831.5, 832.5 MHz
		837, 862	837.5, 842.5 MHz
	6	4162 to 4188 (1)	832.4 to 837.6 MHz (0.2 MHz)
		812, 837	832.5, 837.5 MHz
	8	2712 to 2863 (1)	882.4 to 912.6 MHz (0.2 MHz)
	9	8762 to 8912 (1)	1752.4 to 1782.4MHz (0.2 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 Reference sensitivity: –70 dBm		
Type of physical reception channel	DPCCH DPDCH: 15 k, 30 k, 60 k, 120 k, 240 k, 480 k, and 960 ksps RACH (during manual mode) HS-DPCCH(during manual mode)		
Scrambling code number*2	0 to 16777215 (resolution: 1)		
Power measurement	Measurement range: –70.0 to +35.0 dBm Accuracy: ±1.0 dB		
EVM	Residual EVM: 3% rms Typical*1 (input level > –30 dBm)		
Frequency error measurement	Measurement range: 0 to ±10 kHz (EVM method with the frequency on the VC3300 end as a reference) Accuracy: ±0.01 ppm		

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

*2 Can be set on in TXRX mode. Automatically set in manual mode.

6.3 Measurement Function

Item	Specifications
Connection function	Position Registration Call from UE Call from NW Release from NW Release from UE Test loop (RMC 12.2 k) Emergency call Frequency handover Inter-RAT handovers Dialing number display HSDPA, HSDPA + test loop(RMC12.2k)
Speech function	PN signal transmission, voice loopback, and video loopback Delay time setting: 0.5, 1.0, and 1.5 s
Radio characteristics	• TX characteristics measurement Transmission power Frequency error Modulation accuracy Open loop power control Inner loop power control: 1 dB step and 2 dB step Transmission OFF power ON/OFF time mask Occupied bandwidth Spectrum emission mask Adjacent channel leakage power ratio: ±5 MHz and ±10 MHz Dynamic Power (see section 6.4) Spectrum monitor • RX characteristics measurement Bit error rate (reference sensitivity and intense electric field reception) Throughput, CQI
Display function	List display and detail display

6.4 Dynamic Power Measurement Function

Item	Specifications
Number of Slots	1 to 200 (resolution: 1)
Maximum Power	+35 dBm
Minimum Power	−70 dBm
Dynamic Range	When set to auto range : 105 dB When set to fixed range : 40 dB
Power Step Size	When set to auto range : 0 to 6 dB When set to fixed range : 0 to 40 dB (within the range)
Power Level Accuracy (absolute value)	±1.0 dB
Trigger Source	Power EXT IN 1
Trigger Polarity	Rising Falling Rising and Falling (selectable only when the trigger source is set to Power)
Trigger Delay	0 to 10,000 μs (resolution: 1μs)
Measurement rest time	60 ms

6.5 General Specifications

Item	Specifications	
Standard accessories	• CD-ROM*1	2 pieces, WCDMA Test Software Installation Disk (B8044UN)/ electronic data of the user's manual (B8044UL)
	• CD-ROM*2	2 pieces, WCDMA/HSDPA Test Software Installation Disk (B8044UR)/electronic data of the user's manual (B8044UL)
	• CD-ROM*3	2 pieces, HSDPA Test Software Installation Disk (B8044US)/ electronic data of the user's manual (B8044UL)
	• Please Read before Installation*1	1 sheet (IM733022-71E)
	• Please Read before Installation*2	1 sheet (IM733025-71E)
	• Please Read before Installation*3	1 sheet (IM733026-71E)

*1 Included only on models with the 733022 WCDMA Test Software.
*2 Included only on models with the 733025 WCDMA/HSDPA Test Software.
*3 Included only on models with the 733026 HSDPA Test Software.

Appendix 1 List of Default Values

Item	Setting
CONNECT	
Connect Mode	Test Loop
Frequency Handover	S1 (selection only)
Frequency Handover [Manual]	
Freq Band	Band 1
DL UARFCN	10562
DL Freq	2112.4 MHz
UL UARFCN	9612
UL Freq	1922.4 MHz
PARAM	
Protocol Profile	Profile_w00
IMSI MCC/MNC	
IMSI	001010000000010
MCC	001
MNC	01
Security	
Integrity Function	ON
Authentication	ON
Auth. Key	AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
Voice Payload	Echo
Speech Delay	0.5 s
Test Loop Bit Rate	RMC 12.2 k
Timing Output	Frame Timing
Downlink Parameter	
DL Code Number	
Scrambling Code	0
Ch Code S-CPICH	3
Ch Code PICH	2
Ch Code DPCH	5
DL Timing Offset	
PICH	0
DPCH	0
DPCH Symbol	30 ksps
DPCH Payload	PRBS9
DL Code Domain Power	
P-CPICH	-3.0 dB
S-CPICH	-Infinite
P-CCPCH	-3.0dB
PICH	-Infinite
DPCH	-Infinite
DL Modulation	ON
Uplink Parameter	
Synchronous	Async
IQ Power Ratio	8.0
UL Code Number	
Scrambring Code	0
UL Timing Offset	
DPCH	0
DPDCH Symbol	60 ksps

Item	Setting
FREQ	
Freq Band	Band 1
DL UARFCN	10562
DL Freq	2112.4MHz
UL UARFCN	9612
UL Freq	1922.4MHz
Preset Load	S1 (selection only)
Preset Save	S1 (selection only)
POWER	
DL Power	-60 dBm
UL Power	
Adjust	-20 dBm
Power Compensation	All 0.0 dB
DL RF Output	ON
UL RF Input	ON
Preset Load	S1 (selection only)
Preset Save	S1 (selection only)
TX	
Target Item	Tx Power
Measure Enable	On for all items (excluding On/Off Time Mask and Dynamic Power)
Average	On, count: 10
Parameter Set	RX Middle
TPC Pattern	Step E
Power Class	Class 3
Dynamic Power	
Number of Slots	100
Initial Input Level	+20 dBm
Range	AUTO
Cursor	0
Trigger Source	Power
Trigger Polarity	Rising Edge
Trigger Delay	0 μs
Spectrum Monitor	
Reference	0 dBm
Trace	Average OFF
Detect	Peak
Maker1	OFF
Maker2	OFF
Maker3	OFF
Maker4	OFF
Maker5	OFF
Maker6	OFF
Rx	
Target Item	BER
Measure Enable	On for all items
Rx Quality	Reference Sensitivity
Bit Number	10000
Report Mode	Intra Frequency

Appendix 2 Open Loop Power Control Parameters

The details of the parameter set used in the open loop power measurement are as follows:

Parameter	RX Upper End	RX Middle	RX Sensitivity
Qqualmin	− 24 dB	− 24 dB	− 24 dB
Qrxlevmin	− 58 dBm	− 58 dBm	− 58 dBm
Downlink Power	Setting*	Setting*	Setting*
(CPICH_RSCP)	Down link Power − 3.9 dBm	Down link Power − 3.9 dBm	Down link Power − 3.9 dBm
CPICH DL TXPower	+ 19 dBm	+ 28 dBm	+ 19 dBm
UL Interference	− 75 dBm	− 101 dBm	− 110 dBm (Band1, 4, 6) − 108 dBm (Band2, 5) − 107 dBm (Band3, 8) − 109 dBm (Band9)
Constant Value	− 10 dB	− 10 dB	− 10 dB

Expected Power=CPICH DL TXPower−(CPICH_RSCP) +UL Interference+Constant Value

* The DL Power value in the setup display area.

Appendix 3 TPC Pattern of Inner Loop Power Control

The details of the TPC pattern used in the inner loop power measurement are as follows:

Sequence	Description
Step E	150 TPC Command with 0
Step F	150 TPC Command with 1
Step G	75 TPC Command with 0
Step H	75 TPC Command with 1

Appendix 4 Power Class of TX ON/OFF Time Mask

The details of the power classes used in the ON/OFF time mask measurement are as follows:

Parameter	Power Class 1	Power Class 2	Power Class 3	Power Class 4
Downlink Power	Setting*	Setting*	Setting*	Setting*
(CPICH_RSCP)	Down link Power − 3.9 dBm	Down link Power − 3.9 dBm	Down link Power − 3.9 dBm	Down link Power − 3.9 dBm
CPICH DL TXPower	+ 19 dBm	+ 19 dBm	+ 19 dBm	+ 19 dBm
UL Interference	− 86 dBm (Band1, 4, 6)	− 92 dBm (Band1, 4, 6)	− 95 dBm (Band1, 4, 6)	− 98 dBm (Band1, 4, 6)
	− 84 dBm (Band2, 5)	− 90 dBm (Band2, 5)	− 93 dBm (Band2, 5)	− 96 dBm (Band2, 5)
	− 83 dBm (Band3, 8)	− 89 dBm (Band3, 8)	− 92 dBm (Band3, 8)	− 95 dBm (Band3, 8)
	− 85 dBm (Band9)	− 91 dBm (Band9)	− 94 dBm (Band9)	− 97 dBm (Band9)
Constant Value	− 10 dB	− 10 dB	− 10 dB	− 10 dB

Expected Power=CPICH DL TXPower−(CPICH_RSCP) +UL Interference+Constant Value

* The DL Power value in the setup display area.

Appendix 5 Code Domain Power Parameter Set

The details of the parameter set of the code domain power used in the signaling, TX measurement, and RX measurement of manual mode are as follows:

Signaling (Not Registered, Idle, and Registration)

Parameter	Not Registered, Idle	Registration
P-CPICH	− 3.9 dB	– 3.3 dB
S-CPICH	− ∞	– ∞
P-SCH	− 11.3 dB	– 8.3 dB
S-SCH	− 11.3 dB	– 8.3 dB
P-CCPCH	− 8.3 dB	– 5.3 dB
S-CCPCH	− 5.3 dB	– ∞
PICH	− 8.3 dB	– 8.3 dB
AICH	− 10.9 dB	– ∞
DPCH	− ∞	– 10.3 dB
OCNS	− ∞	– ∞
AWGN	− ∞	– ∞

Signaling (Call/Release and Handover) and TX Measurement

- **If the connection mode is Test Loop, Voice, or Video**

Parameter	Signaling & Normal Measurement
P-CPICH	– 3.3 dB
S-CPICH	– ∞
P-SCH	– 8.3 dB
S-SCH	– 8.3 dB
P-CCPCH	– 5.3 dB
S-CCPCH	– ∞
PICH	– 8.3 dB
AICH	– ∞
DPCH	– 10.3 dB
OCNS	– ∞
AWGN	– ∞

- **If the connection mode is RMC 12.2k+HSDPA or SRB 3.4k+HSDPA**

Parameter	Signaling & Normal Measurement
P-CPICH	– 10.0 dB
S-CPICH	– ∞
P-SCH	– 15.0 dB
S-SCH	– 15.0 dB
P-CCPCH	– 12.0 dB
S-CCPCH	– ∞
PICH	– 15.0 dB
AICH	– ∞
DPCH	– 9.0 dB
HS-SCCH	– 8.0 dB
HS-PDSCH	– 3.0 dB
OCNS	– 17.1 dB
AWGN	– ∞

RX Measurement

- **If the connection mode is Test Loop (BER measurement)**

Parameter	Reference Sensitivity	Maximum Input
P-CPICH	– 3.3 dB	– 10.0 dB
S-CPICH	– ∞	– ∞
P-CCPCH	– 5.3 dB	– 12.0 dB
PICH	– 8.3 dB	– 15.0 dB
DPCH	– 10.3 dB	– 19.0 dB
OCNS	– ∞	– 1.0 dB

- **If the connection mode is RMC 12.2k+HSDPA or SRB 3.4k+HSDPA (throughput and CQI measurement)**

Parameter	RX Measurement
P-CPICH	– 10.0 dB
S-CPICH	– ∞
P-SCH	– 15.0 dB
S-SCH	– 15.0 dB
P-CCPCH	– 12.0 dB
S-CCPCH	– ∞
PICH	– 15.0 dB
AICH	– ∞
DPCH	– 13.0 dB
HS-SCCH	– 13.0 dB
HS-PDSCH	– 3.0 dB
OCNS	– 6.9 dB
AWGN	– ∞

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