# Terminal Interface User's Guide

(AT6030D)



Terminal Interface User's Guide				

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# Chapter 1. Specifications

## 1-1. Overview

This spectrum analyzer can control a measurement system when it is connected with an external control device(such as host computer or PC). To this purpose, a spectrum analyzer is equipped with RS-232C interface.

## 1-2. RS-232C Specification

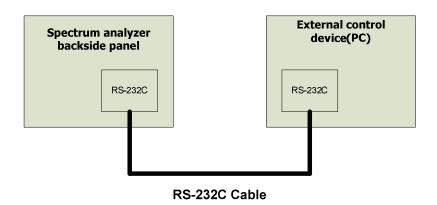
The below table demonstrates the standard RS-232C specifications in a spectrum analyzer.

Item	Specifications
Function	Control via an external control device (except for power on/off key)
Communication system	Non-synchronization, non-dual mode
Communication control system	NA
Transmission speed	115200 bps
Data bit	8 bit
Parity	NA
Stop bit	1 bit
Connector	D-Sub 9pin, female

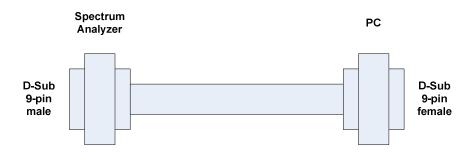
# Chapter 2. Device Connection

# 2-1. RS-232C Cable Connection with an External Control Device

Connect RS-232C connector(D-Sub 9 pin, female) of the backside panel of this device to RS-232 connector of an external control connector.

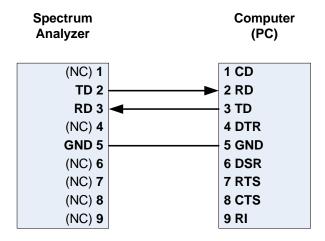


- ▶ RS-232C connector should be with nine pins.
- ▶ When purchasing RS-232C cable, please inspect a pin connection on RS-232C connector.
- ▶ RS-232C Cable



# 2-2. Connection Diagram of RS-232C Interface Signal

The below demonstrates the connection with a PC as an example of a diagram of connection between a spectrum analyzer and an external control device via RS-232C interface.



< Connection with PC >

# Chapter 3. Message Type

# 3-1. Command Type

A command does not distinguish a capital letter from a small letter. The following displays diverse methods of using one command. The following examples are all the same. The examples bring forth the same consequence.

Command	Actually applicable command
:CALCulate:MARKer1 2 3 4:MODE	• :CALCULATE:MARKER1:MODE NORMAL
NORMal DELTa BAND SPAN OFF	• :calc:marker1:mode normal
	• :CALC:MARK1:MODE NORMAL
	• :calc:mark1:mode norm
:FREQuency:CENTer <freq></freq>	• :FREQUENCY:CENTER 1GHZ
	• :freq:center 1 ghz
	• :freq:cent 1.0 ghz
:TRACe:DATA? <trace_name></trace_name>	• :TRACE:DATA? TRACE1
<trace_name> is TRACE1 2 3</trace_name>	• :trac:data? trace1

# 3-2. Special Text on Command

Special text	Meaning	Example
	You should select one	Command
	parameter among many	:CALCulate:MARKer1 2 3 4:MODE
	parameters. You can have	NORMal DELTa BAND SPAN OFF
	different result upon what	The selectable parameters include normal,
	parameter you select. You	delta, band, span, off.
	can select one parameter at	
	one time.	Ex)
		:calc:mark2:mode delt
<>	<> is not used as the text	Command
	goes. It means that you	:FREQuency:CENTer <freq></freq>
	should put a relevant	
	parameter in the place.	Ex)
		:freq:cent 125mhz
;(semicolon)	Separator	Ex)
		:freq:center 1ghz;:freq:span 2mhz
	It is an indication	
	distinguishing each command	:freq:center 1ghz
	when giving more than one	:freq:span 2mhz
	command at a time.	It is the same as the one when you make
		two commands successively.
:(colon)	It is a slight variable of SCPI	Ex)
	command as a command type	:freq:center 1ghz
	of this device.	
		Wrong ex)

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SCPI command is divided with	freq:center 1ghz
subsystems, and the	The command was not recognized.
subsystem is subdivided with	
subsections. When giving a	
command by using SCPI	
command, always put :(colon)	
in front of subsystem and	
subsection.	

## 3-3. Parameter

#### <freq>

Input a frequency. The basic unit is Hz. If you do not use any unit separately, it is recognized as Hz.

The unit that you can input includes Hz, kHz, MHz, GHz.

## <integer>

Integer parameter does not need any unit.

### <string>

String parameter comprises alphabets. On the LCD screen of a spectrum analyzer, it is only written with capital letters. If there is any small letter on the parameter, it is changed to a capital letter for display.

## <ampl>

Input a level. The basic unit is dBm. If you do not use any unit, it is recognized as dBm.

## <rel\_ampl>

Input a relative level value. The basic unit is dB. If you do not use any unit, it is recognized as dB.

## <time>

Input a time. The basic unit is ms. If you do not use any unit, it is recognized as ms. The unit that you can use includes ms, s.

### <delay>

Input a delay of external trig. The basic unit is ms. If you do not use any unit, it is recognized as ms.

The unit that you can use includes ms, s.

### <trace\_name>

It is used only for the query of trace data. The only one is used among TRACE1, TRACE2, TRACE3.

#### <year>

Input a year. Do not attach a unit. The input coverage ranges from 2000 to 2037.

#### <month>

Input a month. Do not attach a unit. The input coverage ranges from Jan. to Dec.

When you input a month, be sure to input a number of two figures.

Ex) Input January as 01, and May as 05.

#### <day>

Input a day. Do not attach a unit. The input coverage ranges from 01 to 31.

When you input a day, be sure to input a number of two figures.

Ex) Input the 1<sup>st</sup> day as 01, and the fifth day as 05.

### <hour>

Input a time. Do not attach a unit. The input coverage ranges from 00 to 23.

When you input a time, be sure to input a number of two figures.

Ex) Input 1 hour as 01, and 5 hour as 05.

#### <minute>

Input a minute. Do not attach a unit. The input coverage ranges from 00 to 59.

When you input a minute, be sure to input a number of two figures.

Ex) Input 1 minute as 01, and 5 minute as 05.

#### <second>

Input a second. Do not attach a unit. The input coverage ranges from 00 to 59.

When you input a second, be sure to input a number of two figures.

Ex) Input 1 second as 01, 5 second as 05, and 10 second as 10.

## <definite\_length\_block>

definite\_length\_block data comprise Ascii header and binary data.

Ascii header starts from '#'. And then, it is followed by the byte number of binary data.

Ex) #512320 + 12320 Binary data of a byte

#: It indicates the start of Ascii header.

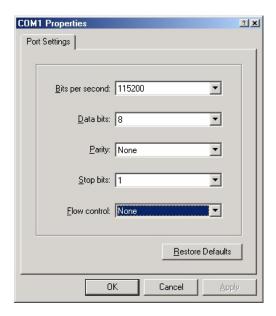
5: It indicates how many texts are brought forth after '5' which is the first indication within the header. It also means that there will be five figures of 12320 next to 5.

12320: It indicates the byte number of binary data which will be continued after Ascii header. It also means that the byte number of binary data is 12320.

## 3-4. Communication Method

Connect the device with an external control device by referring to the connection of an external control device with RS-232C cable in section 2-1.

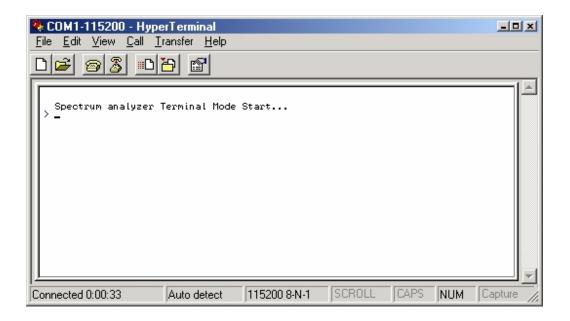
## ■ Terminal program setup



Set up as indicated in section 1-2 RS-232C Specifications.

Control system(no flow control), transmission speed(115200 bps, The device does not support speed other than 115200 bps), Set up Data bit(8 bit), parity bit(NA), Stop bit(1 bit).

### ■ Remote start



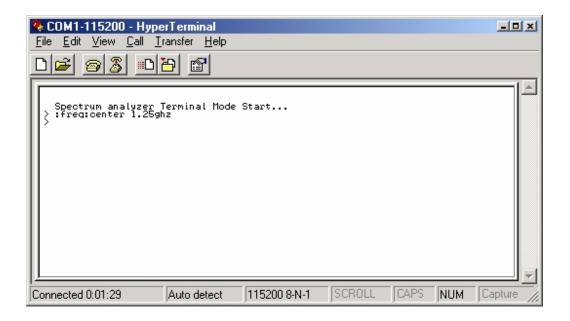
Send '#' to a device by using a keyboard on a terminal program.

In order to send '#', click Shift + 3 on a keyboard.

There appears Spectrum analyzer Terminal Mode Start... on a terminal program console, and prompt(>) appears to be ready to receive command.

There appears 'R' which indicates that it is currently in a remote condition on the right of the upper side of LCD on the device.

## ■ Input command



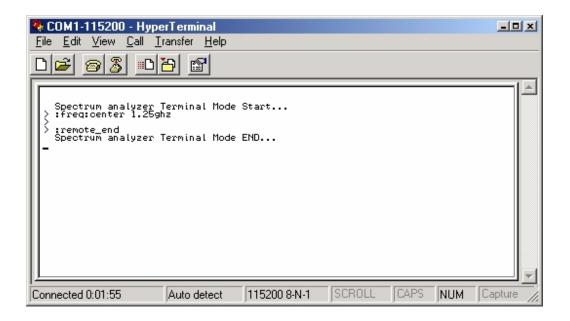
Input command that a user wants.

If you want to change Center frequency to 1.25GHz,

## >:freq:center 1.25ghz

If you click an enter key after typing the above on a terminal, you will see the enter frequency of the device was changed to 1.25GHz.

■ Remote termination



In order to terminate under a remote condition,

Type

>:remote\_end

Then, there appears Spectrum analyzer Terminal Mode END... on a terminal console, and the remote condition is terminated.

There appears 'R' which indicates that it is currently in a remote condition on the right of the upper side of LCD on the device.

# Chapter 4. Detailed Description on Command

## 4-1. Command Type

- ▶ IEEE Common Commands
- ► Abort Subsystem
- ► Average Subsystem
- ► Bandwidth Subsystem
- ► Calculate Subsystem (Marker)
- ► Calibration Subsystem
- ► Configure Subsystem
- ▶ Detector Subsystem
- ► Display Subsystem
- ► Format Subsystem
- ► Frequency Subsystem
- ► Hcopy Subsystem
- ► Initiate Subsystem
- ▶ Power Subsystem
- ▶ Sweep Subsystem
- ► System Subsystem
- ► Trace Subsystem
- ► Trigger Subsystem
- ▶ Unit Subsystem

## 4-2. IEEE Common Commands

Not all commands of IEEE Common Commands are executed under analyzer.

Four types of IEEE Common Commands  $\pm$  \*CAL?, \*IDN?, \*RST, \*TST are executed under analyzer.

#### ■ Calibration Query

• \*CAL?

Executes Alignments, and returns to 0.

## ■ Identification Query

• \*IDN?

Returns to device information. The device information is divided with four parts, and each are separated by comma.

The each part is as follows.

- 1. Manufacturing company
- 2. Model no.
- 3. Serial no.
- 4. Firmware version

#### ■ Reset

• \*RST

Performs Factory Preset.

It performs the same function as :SYSTem:PRESet.

## ■ Self Test Query

• \*TST?

It performs a self-test of a device.

\*TST? Always returns to 0 under analyzer. And, it does not perform an actual self-test.

# 4-3. Abort Subsystem

## ■ Abort

:ABORt

Restart swim or measurement.

It performs the same function as clicking a restart button on a front board.

## 4-4. Average Subsystem

## ■ Turn Averaging On/Off

:AVERage OFF|ON

:AVERage?

It performs or stops the average function.

## ■ Set the Average Count

:AVERage:COUNt <integer>

:AVERage:COUNt?

When the average function is turned on, it sets up a frequency of actually performing the average.

## ■ Type of Averaging for Measurements

:AVERage:TYPE VIDeo|PWR

:AVERage:TYPE?

When the average function is turned on, it sets up how the trace average is calculated.

## ■ Turn Automatic Averaging On/Off

:AVERage:TYPE:AUTO ON

:AVERage:TYPE:AUTO?

It sets up the average type as AUTO.

## 4-5. Bandwidth Subsystem

### ■ Resolution Bandwidth

:BANDwidth <freq>

:BANDwidth?

It sets up Resolution bandwidth.

#### ■ Resolution Bandwidth Automatic

:BANDwidth:AUTO ON

:BANDwidth:AUTO?

It sets up Resolution bandwidth in connection with Span.

#### ■ Video Bandwidth

:BANDwidth:VIDeo <freq>

:BANDwidth:VIDeo?

It sets up Video bandwidth.

## ■ Video Bandwidth Automatic

:BANDwidth:VIDeo:AUTO ON

:BANDwidth:VIDeo:AUTO?

It sets up Video bandwidth in connection with Resolution bandwidth.

#### ■ Video to Resolution Bandwidth Ratio

:BANDwidth:VIDeo:RATio <integer>

:BANDwidth:VIDeo:RATio?

It sets up the ratio of Video bandwidth versus Resolution bandwidth.

#### ■ Video to Resolution Bandwidth Ratio Mode Select

:BANDwidth:VIDeo:RATio:AUTO ON

:BANDwidth:VIDeo:RATio:AUTO?

It sets up the ratio of VBW / RBW as Auto.

## 4-6. Calculate Subsystem (MARKer)

### ■ Marker Mode

:CALCulate:MARKer1|2|3|4:MODE NORMal |DELTa|BAND|SPAN|OFF

:CALCulate:MARKer1 | 2 | 3 | 4:MODE?

It sets up a marker mode.

### ■ Markers All Off on All Traces

:CALCulate:MARKer:AOFF

It deletes all markers on the current LCD screen.

### ■ Marker to Trace

:CALCulate:MARKer1|2|3|4:TRACe <integer>

:CALCulate:MARKer1 | 2 | 3 | 4:TRACe?

It allots a marker to designated trace.

## ■ Marker to Trace Auto

:CALCulate:MARKer1|2|3|4:TRACe:AUTO ON

:CALCulate:MARKer1|2|3|4:TRACe:AUTO?

It automatically allots a marker to trace.

The allotment is made in order of Clear-write, Max-hold, Min-hold, and View.

**Ex1)** If Trace1(Clear-write), Trace2(Max-hold), Trace3(Min-hold), a marker is allotted to Trace 1.

**Ex2)** If Trace1(Max-hold), Trace2(Clear-write), Trace3(View), a marker is allotted to Trace 2.

### ■ Marker Table On/Off

:CALCulate:MARKer:TABLe:STATe OFF|ON

:CALCulate:MARKer:TABLe:STATe?

It turns on/off a marker table.

#### ■ Marker Peak (Maximum) Search

:CALCulate:MARKer:MAXimum

It puts the current marker on the maximum point of trace.

#### ■ Marker Next Peak (Maximum) Search

:CALCulate:MARKer:MAXimum:NEXT

It puts the current marker on the next highest peak.

## ■ Marker Peak (Maximum) Left Search

:CALCulate:MARKer:MAXimum:LEFT

It puts the current marker on the next highest peak on the left.

## ■ Marker Peak (Maximum) Right Search

:CALCulate:MARKer:MAXimum:RIGHt

It puts the current marker on the next highest peak on the right.

### ■ Marker Peak (Minimum) Search

:CALCulate:MARKer:MINimum

It puts the current marker on the minimum point of trace.

#### ■ Peak to Peak Delta Markers

:CALCulate:MARKer:PTPeak

After changing a marker mode to delta, it puts a marker on the maximum point and minimum point.

## ■ Continuous Peaking Marker Function

:CALCulate:MARKer:CPEak OFF | ON

:CALCulate:MARKer:CPEak?

It turns on/off Continuous peak function.

#### ■ Set Center Frequency to the Marker Value

:CALCulate:MARKer:CENTer

It changes Center frequency to the current marker frequency.

## ■ Set Center Frequency Step Size to the Marker Value

:CALCulate:MARKer:STEP

It changes Step frequency to the current marker frequency.

## ■ Set Start Frequency to the Marker Value

:CALCulate:MARKer:STARt

It changes Start frequency to the current marker frequency.

## ■ Set Stop Frequency to the Marker Value

:CALCulate:MARKer:STOP

It changes Stop frequency to the current marker frequency.

## ■ Set Span to the Marker Value

:CALCulate:MARKer:SPAN

It is applied only when a marker mode is delta.

If the current marker mode is delta, a frequency between two markers is set up as span.

### ■ Set Reference Level to the Marker Value

:CALCulate:MARKer:RLEVel

It changes a Reference level to a level where a marker is currently placed.

## ■ Continuous Signal Tracking Function

:CALCulate:MARKer:TRCKing OFF|ON

:CALCulate:MARKer:TRCKing?

It turns on/off Signal tracking function.

## 4-7. Calibration Subsystem

## ■ Align All Instrument Assemblies

:CALibration

:CALibration?

It makes Alignments and returns to 0.

## ■ Automatic Alignment

:CALibration:AUTO OFF ON

:CALibration:AUTO?

It turns on/off Auto Alignments.

## ■ Query the Internal or External Frequency Reference

:CALibration:FREQuency:REFerence INT|EXT

:CALibration:FREQuency:REFerence?

It determines what to use as reference 10MHz.

INT: Use internal TOXO 10MHz as analyzer reference frequency.

EXT: Use external input port frequency as analyzer reference frequency.

### ■ Output Internal 80MHz

:CALibration:FREQuency:OUT ON OFF

:CALibration:FREQuency:OUT?

It sets up the output of external 80MHz.

# 4-8. Configure Subsystem

## ■ Configure the Basic Spectrum Analyzer State

:CONFigure:SANalyzer

It changes to spectrum mode when it is in a Measurement mode.

It is the same as clicking a Meas off key.

# 4-9. Detector Subsystem

## ■ Automatic Detection Type Selected

:DETector:AUTO ON

:DETector:AUTO?

It changes to a Auto Detector mode.

## ■ Type of Detection

:DETector PEAK|NEGative|NORMal|SAMPle|AVERage

:DETector?

It sets up a Detector mode.

## 4-10. Display Subsystem

#### ■ Active Function Position

:DISPlay:AFUNction BOTTom | CENTer | TOP

:DISPlay:AFUNction?

It sets up the position of active function block.

## ■ Date and Time Display

:DISPlay:DATE OFF ON

:DISPlay:DATE?

It turns on/off the time and date of LCD screen.

#### ■ Date and Time Display Format

:DISPlay:DATE:FORMat MDY|YMD

:DISPlay:DATE:FORMat?

It sets up the indication type of date.

MDY: It indicates in order of month, date, and year.

YMD: It indicates in order of year, month, and date.

### ■ Display Annotation Title Data

:DISPlay:TITLe <string>

:DISPlay:TITLe?

It sets up a title on the upper left of LCD screen as <string>.

#### ■ Turn the Full Screen Display On/Off

:DISPlay:FULLSCReen OFF ON

:DISPlay:FULLSCReen?

It turns on/off the whole screen.

## ■ Trace Graticule Display

- :DISPlay:GRID OFF ON
- :DISPlay:GRID?

It turns on/off a lattice of a graph where trace is drawn.

## ■ Display Line Amplitude

- :DISPlay:DLINe <ampl>
- :DISPlay:DLINe?

It sets up the position of a display line. Only unit dBm.

## ■ Display Line On/Off

- :DISPlay:DLINe:STATe OFF ON
- :DISPlay:DLINe:STATe?

It turns on/off a display line.

## ■ Trace Y-Axis Reference Level

- :DISPlay:AMPlitude:RLEVel <ampl>
- :DISPlay:AMPlitude:RLEVel?

It sets up a position of a reference level. Only unit dBm.

## ■ Trace Y-Axis Reference Level Offset

- :DISPlay:AMPlitude:RLEVel:OFFSet <rel\_ampl>
- :DISPlay:AMPlitude:RLEVel:OFFSet?

It sets up a reference level offset.

### ■ Trace Y-Axis Amplitude Scaling

- :DISPlay:AMPlitude:PDIVision <rel\_ampl>
- :DISPlay:AMPlitude:PDIVision?

It sets up the size of one unit area of a lattice of a trace graph.

## 4-11. Format Subsystem

It sets up a type of trace data(Binary data) transferred between a device and a terminal. The value set here is applied only with TRACe:DATA? query.

#### ■ Byte Order

:FORMat:BORDer NORMal|SWAPped

:FORMat:BORDer?

It sets up a byte order of trace data(Binary data) transferred between a device and a terminal.

**Normal**: As for the data byte order, MSB(Most significant byte) is the first output, and LSB(Least significant byte) is the last output.

**Swapped**: As for the data byte order, LSB(Least significant byte) is the first output, and MSB Most significant byte) is the last output.

### ■ Numeric Data format

:FORMat:DATA ASCii | INTeger, 32 | REAL, 32 | REAL, 64

:FORMat:DATA?

It sets up a type of trace data(Binary data) transferred between a device and a terminal.

**Ascii**: The data type of a level transferred is the set of Ascii characters. Each level is separated with comma. As for a unit, a unit set in the current device is outputted.

Integer, 32: Binary 32 bit data are outputted. The unit is mdBm.

Real, 32(or 64): Binary 32 bit(or 64 bit) data are outputted. It is not supported in RS-232C communication.

## 4-12. Frequency Subsystem

### ■ Center Frequency

:FREQuency:CENTer <freq>

:FREQuency:CENTer UP|DOWN

:FREQuency:CENTer?

It sets up Center frequency.

## ■ Center Frequency Step Size

:FREQuency:CENTer:STEP <freq>

:FREQuency:CENTer:STEP?

It sets up the step size of Center frequency.

## ■ Center Frequency Step Size Automatic

:FREQuency:CENTer:STEP:AUTO ON

:FREQuency:CENTer:STEP:AUTO?

It makes the step size of Center frequency automatically set at a fixed portion of span frequency.

## ■ Start Frequency

:FREQuency:STARt <freq>

:FREQuency:STARt?

It sets up Start frequency.

## ■ Stop Frequency

:FREQuency:STOP <freq>

:FREQuency:STOP?

It sets up Stop frequency.

## ■ Frequency Span

:FREQuency:SPAN <freq>

:FREQuency:SPAN?

It sets up Span frequency.

## ■ Full Frequency Span

:FREQuency:SPAN:FULL

It sets up Span frequency as 3GHz.

## ■ Last Frequency Span

:FREQuency:SPAN:PREVious

It sets up Span frequency as the previously set frequency.

## 4-13. Hcopy Subsystem

## ■ Print a Hard Copy

:HCOPy

It outputs print data. When the current printer port is set up as a parallel port, output data as a parallel port, and when it is set up as USB port, output data as USB port.

## ■ Printer Type

:HCOPy:TYPE CENT|USB

:HCOPy:TYPE?

It sets up a port to output print data.

### ■ Set Printer Driver

:HCOPy:DRIVer LJ|DJ|DJN|DYMO|ED9|ED24|SC|SCN|SP|SPN

:HCOPy:DRIVer:?

It sets up a printer driver. It selects a relevant printer driver according to a printer concerned.

LJ: LaserJet printer

DJ, DJN: DeskJet printer

**DYMO**: DYMO Label printer

ED9: Epson 9pin Dot printer

ED24: Epson 24pin Dot printer

SC, SCN: Epson Stylus Color printer

SP, SPN: Epson Stylus Photo printer

## ■ Page Orientation

:HCOPy:PAGE:ORIentation LANDscape|PORTrait

:HCOPy:PAGE:ORIentation?

It sets up the direction of a paper.

## ■ Printed Page Size

:HCOPy:PAGE:SIZE EXECutive|LETTer|LEGal|A4|A3

:HCOPy:PAGE:SIZE?

It sets up the size of a paper.

## 4-14. Initiate Subsystem

## ■ Continuous or Single Measurements

:INITiate:CONTinuous OFF | ON

:INITiate:CONTinuous?

It sets up a Sweep type.

ON: It sets up Continuous sweep.

OFF: It sets up Single sweep.

### ■ Pause the Measurement

:INITiate:PAUSe

It temporarily stops Sweep or Measurement.

This command is applicable only for measurement.

### ■ Resume the Measurement

:INITiate:RESume

It resumes Sweep or Measurement when Pause is set up.

This command is applicable only for measurement.

## ■ Restart the Measurement

:INITiate:RESTart

It resumes Sweep or Measurement.

## 4-15. Power Subsystem

## ■ Input Attenuation

:POWer:ATTenuation <rel\_ampl>

:POWer:ATTenuation?

It sets up Attenuation.

## ■ Input Port Attenuator Auto

:POWer:ATTenuation:AUTO ON

:POWer:ATTenuation:AUTO?

It links Attenuation setup with a reference level.

## ■ Pre amp

:POWer:PREAMP ON OFF

:POWer:PREAMP?

It sets up Pre amp.

## ■ Pre amp Auto

:POWer:PREAMP:AUTO ON

:POWer:PREAMP:AUTO?

It links Pre amp setup with a reference level.

# 4-16. Sweep Subsystem

## ■ Sweep Time

:SWEep:TIME <time>

:SWEep:TIME?

It sets up a sweep time.

## ■ Automatic Sweep Time

:SWEep:TIME:AUTO ON

:SWEep:TIME:AUTO?

It links a sweep time with span frequency.

## 4-17. System Subsystem

#### ■ GPIB Address

:SYSTem:COMMunicate:GPIB:ADDRess <integer>

:SYSTem:COMMunicate:GPIB:ADDRess?

It sets up a GPIB address.

## ■ Display System Configuration

:SYSTem:CONFigure:STATe OFF|ON

:SYSTem:CONFigure:STATe?

It outputs a show system screen indicating system information.

#### ■ Preset

:SYSTem:PRESet

It performs factory preset or user preset according to a preset type of the current device.

## ■ Save User Preset

:SYSTem:PRESet:SAVE

It saves the current state. When a user performs a user preset, it restores the saved state with this command.

### ■ Preset Type

:SYSTem:PRESet:TYPE FACTory|USER

:SYSTem:PRESet:TYPE?

It sets up a preset type of a device. When a user click a preset key, it determines whether to perform a factory preset or a user preset.

## ■ Power On Type

:SYSTem:PON:TYPE PRESet|LAST

:SYSTem:PON:TYPE?

It sets up a power on type of a device. When the power of the device is on, it determines how to set up the initial condition.

## ■ Set Date

:SYSTem:DATE <year>,<month>,<day>

:SYSTem:DATE?

It sets up the date of a device.

## ■ Set Time

:SYSTem:TIME <hour>,<minute>,<second>

:SYSTem:TIME?

It sets up a time of a device.

# 4-18. Trace Subsystem

## ■ Select Trace Display Mode

:TRACe1|2|3:MODE WRITe|MAXHold|MINHold|VIEW|BLANk

:TRACe1|2|3:MODE?

It sets up a mode of trace concerned.

## **■** Transfer Trace Data

:TRACe:DATA? <trace\_name>

It inquires trace data.

The data type is outputted in a type set up in format:data command.

## 4-19. Trigger Subsystem

#### **■** Trigger Source

:TRIGger:SOURce FREErun|VIDeo|LINE|EXTernal

:TRIGger:SOURce?

It sets up a trigger type.

## ■ Video Trigger Level Amplitude

:TRIGger:VIDeo:LEVel <ampl>

:TRIGger:VIDeo:LEVel?

It is command to set up a trigger level when a trigger type is video. Only unit dBm.

## ■ External Trigger Slope

:TRIGger:EXTernal:SLOPe POSitive | NEGative

:TRIGger:EXTernal:SLOPe?

It sets up an edge of an external trigger signal to start measurement when a trigger type is external.

## ■ External Trigger Delay Value

:TRIGger:DELay <delay>

:TRIGger:DELay?

It determines whether to use delay when a trigger type is external.

The possible input coverage ranges from 10msec to 10s.

## ■ External Trigger Delay Enable

:TRIGger:DELay:STATe OFF ON

:TRIGger:DELay:STATe?

It determines whether to use delay when a trigger type is external.

# 4-20. Unit Subsystem

## ■ Select Power Units of Measure

:UNIT:POWer DBM|DBMV|DBUV|V|W

:UNIT:POWer?

It sets up a unit of a level.