



RIGOL

PULSE Mode

For RSA6000 Series
Spectrum Analyzer

User Guide

Mar. 2026

Guaranty and Declaration

Copyright

© 2026 RIGOL TECHNOLOGIES CO., LTD. All Rights Reserved.

Trademark Information

RIGOL® is the trademark of RIGOL TECHNOLOGIES CO., LTD.

Notices

- RIGOL products are covered by P.R.C. and foreign patents, issued and pending.
- RIGOL reserves the right to modify or change parts of or all the specifications and pricing policies at the company's sole decision.
- Information in this publication replaces all previously released materials.
- Information in this publication is subject to change without notice.
- RIGOL shall not be liable for either incidental or consequential losses in connection with the furnishing, use, or performance of this manual, as well as any information contained.
- Any part of this document is forbidden to be copied, photocopied, or rearranged without prior written approval of RIGOL.

Product Certification

RIGOL guarantees that this product conforms to the national and industrial standards in China as well as the ISO9001:2015 standard and the ISO14001:2015 standard. Other international standard conformance certifications are in progress.

Contact Us

If you have any problem or requirement when using our products or this manual, please contact RIGOL.

E-mail: service@rigol.com

Website: <http://www.rigol.com>

Section	Description	Page
	List of Figures.....	V
	List of Tables.....	VI
1	Safety Requirement	1
1.1	General Safety Summary	1
1.2	Safety Notices and Symbols	2
1.3	Measurement Category	3
1.4	Ventilation Requirement	4
1.5	Working Environment	4
1.6	Care and Cleaning	6
1.7	Environmental Considerations	6
2	RSA6000 Series Spectrum Analyzer	7
3	Document Overview	8
4	Quick Start	10
4.1	User Interface	10
4.2	Mode Setting	11
4.3	To Install the Option	11
5	Basic Settings	13
5.1	Freq	13
5.1.1	Center Frequency	13
5.1.2	CF Step	14
5.1.3	CF Step Mode	14
5.2	Amplitude	14
5.2.1	Range	15
5.2.2	Y Auto Scaling	15
5.2.3	Y Ref Value	15
5.2.4	Y Scale/Div	19
5.2.5	Y Ref Position	20
5.2.6	Y Axis Unit	20
5.3	Sweep	20
5.3.1	Sweep Mode	20
5.3.2	Restart	21
5.4	Trigger	21
5.4.1	Trigger Source	21

5.4.1.1	Free Run	21
5.4.1.2	External Trigger	22
5.4.1.3	IF Power	22
5.4.2	Trigger Holdoff State	23
5.4.3	Trigger Holdoff	24
5.4.4	Auto Trig State	24
5.4.5	Auto Trig	24
5.5	Measurement Settings	25
5.5.1	Setting	25
5.5.1.1	Measure Time	25
5.5.1.2	Sample Rate	25
5.5.1.3	Maximum Pulse Count	26
5.5.1.4	Maximum Pulse Count State	26
5.5.1.5	Detect Threshold Ref	27
5.5.1.6	Detect Threshold	27
5.5.1.7	Configuration	28
5.5.2	Global CF Mode	38
5.6	Trace	39
5.6.1	Trace Setting	39
5.6.1.1	Measurement Trace	39
5.6.1.2	Reference Trace	40
5.6.1.3	Error Trace	40
5.7	Marker Measurement	41
5.7.1	Marker Setting	41
5.7.2	Marker Function	44
5.7.2.1	Interval Function	44
5.7.2.2	Interval Function	45
5.7.2.3	Interval Left	45
5.7.2.4	Interval Right	46
5.7.3	Peak Setting	46
5.7.3.1	Peak Search	46
5.7.3.2	Next Peak	47
5.7.3.3	Minimum Search	47
5.8	Display	47
5.8.1	Display Meas	47
5.8.1.1	Pulse Table Column Visibility	47
5.8.1.2	Current Statistics Table Column Visibility	48

5.8.1.3	Cumulative Statistics Column Visibility	49
5.8.1.4	Scatterplot X/Y Scale	50
5.8.2	Display View	56
5.8.3	X Scale	56
5.8.3.1	X Auto Scaling	57
5.8.3.2	X Ref Position	57
5.8.3.3	X Ref Value	57
5.8.3.4	X Scale/Div	61
5.9	Input/Output	61
5.9.1	Input Impedance	61
5.9.2	Ext Gain	62
5.9.3	Trig Out	62
5.10	Save	62
5.10.1	State	62
5.10.2	Preset	63
5.10.3	Measurement Data	63
5.10.4	Screenshot	63
5.11	Recall	64
5.11.1	State	64
5.11.2	Measurement Data	64
6	Shortcut Key	66
6.1	Preset	66
6.2	Single/Continue	71
6.3	Restart	71
7	System Function	72
7.1	System	72
7.1.1	I/O Setting	72
7.1.2	Basic Settings	74
7.1.3	About this Spectrum	76
7.1.4	Options	76
7.1.5	Calibration	77
7.1.6	Update	77
7.1.7	Help Menu	77
7.1.8	Shutdown	77
7.1.9	Restart	78
7.1.10	Auto	78
7.2	File	78

7.2.1 File Management	78
7.2.2 Copy	79
7.2.3 Cut	79
7.2.4 Paste	79
7.2.5 Rename	79
7.2.6 Delete	79
7.2.7 New Folder	79
7.2.8 Security Clear	79
8 Remote Control	80
9 Troubleshooting	83
10 Appendix	84
10.1 Appendix A: Options and Accessories	84
10.2 Appendix B: Warranty	85

List of Figures

Figure 4.1 User Interface	10
Figure 5.1 Relationship of Trigger Parameters	25
Figure 5.2 Marker	42
Figure 5.3 Pulse Table	47
Figure 5.4 Pulse Table Column Visibility Interface	48
Figure 5.5 Current Statistics Table	48
Figure 5.6 Current Statistics Table Column Visibility Interface	49
Figure 5.7 Cumulative Statistics Table	49
Figure 5.8 Cumulative Statistics Column Visibility Interface	50

List of Tables

Table 5.5 Units of Y Ref Value and Y Scale/Div in Different Windows	15
Table 5.6 Y Scale/Div	19
Table 5.33 Definition of Measurement Trace in Different Windows	39
Table 5.34 Definition of Reference Trace in Different Windows	40
Table 5.35 Definition of Error Trace in Different Windows	41
Table 5.36 Marker X Value	44
Table 5.37 Interval Function	45
Table 5.38 Interval Left	45
Table 5.39 Interval Right	46
Table 5.41 X Ref Value	57
Table 5.42 Units of X Ref Value and X Scale/Div	57
Table 5.43 X Scale/Div	61

1 Safety Requirement

1.1 General Safety Summary

Please review the following safety precautions carefully before putting the instrument into operation so as to avoid any personal injury or damage to the instrument and any product connected to it. To prevent potential hazards, please follow the instructions specified in this manual to use the instrument properly.

- **Use Proper Power Cord.**

Only the exclusive power cord designed for the instrument and authorized for use within the local country could be used.

- **Ground the Instrument.**

The instrument is grounded through the Protective Earth lead of the power cord. To avoid electric shock, it is essential to connect the earth terminal of the power cord to the Protective Earth terminal before connecting any inputs or outputs.

- **Observe All Terminal Ratings.**

To avoid fire or shock hazard, observe all ratings and markers on the instrument and check your manual for more information about ratings before connecting the instrument.

- **Use Proper Overvoltage Protection.**

Ensure that no overvoltage (such as that caused by a bolt of lightning) can reach the product. Otherwise, the operator might be exposed to the danger of an electric shock.

- **Do Not Operate Without Covers.**

Do not operate the instrument with covers or panels removed.

- **Do Not Insert Objects Into the Air Outlet.**

Do not insert anything into the holes of the fan to avoid damaging the instrument.

- **Use Proper Fuse.**

Please use the specified fuses.

- **Avoid Circuit or Wire Exposure.**

Do not touch exposed junctions and components when the unit is powered on.

- **Do Not Operate With Suspected Failures.**

If you suspect damage occurs to the instrument, have it inspected by RIGOL authorized personnel before further operations. Any maintenance, adjustment or

replacement especially to circuits or accessories must be performed by RIGOL authorized personnel.

- **Provide Adequate Ventilation.**

Inadequate ventilation may cause an increase of temperature in the instrument, which would cause damage to the instrument. So please keep the instrument well ventilated and inspect the air outlet and the fan regularly.

- **Do Not Operate in Wet Conditions.**

To avoid short circuit inside the instrument or electric shock, never operate the instrument in a humid environment.

- **Do Not Operate in an Explosive Atmosphere.**

To avoid personal injuries or damage to the instrument, never operate the instrument in an explosive atmosphere.

- **Keep Instrument Surfaces Clean and Dry.**

To avoid dust or moisture from affecting the performance of the instrument, keep the surfaces of the instrument clean and dry.

- **Prevent Electrostatic Impact.**

Operate the instrument in an electrostatic discharge protective environment to avoid damage induced by static discharges. Always ground both the internal and external conductors of cables to release static before making connections.

- **Use the Battery Properly.**

Do not expose the battery (if available) to high temperature or fire. Keep it out of the reach of children. Improper change of a battery (lithium battery) may cause an explosion. Use the RIGOL specified battery only.

- **Handle with Caution.**

Please handle with care during transportation to avoid damage to keys, knobs, interfaces, and other parts on the panels.



WARNING

Equipment meeting Class A requirements may not offer adequate protection to broadcast services within residential environment.

1.2 Safety Notices and Symbols

Safety Notices in this Manual:



WARNING

Indicates a potentially hazardous situation or practice which, if not avoided, will result in serious injury or death.

**CAUTION**

Indicates a potentially hazardous situation or practice which, if not avoided, could result in damage to the product or loss of important data.

Safety Notices on the Product:

- **DANGER**

It calls attention to an operation, if not correctly performed, could result in injury or hazard immediately.

- **WARNING**

It calls attention to an operation, if not correctly performed, could result in potential injury or hazard.

- **CAUTION**

It calls attention to an operation, if not correctly performed, could result in damage to the product or other devices connected to the product.

Safety Symbols on the Product:

Hazardous
Voltage



Safety Warning



Protective Earth
Terminal



Chassis Ground



Test Ground

1.3 Measurement Category

Measurement Category

This instrument can make measurements in Measurement Category I.

**WARNING**

This instrument can only be used for measurements within its specified measurement categories.

Measurement Category Definitions

- **Measurement category I** is for measurements performed on circuits not directly connected to MAINS. Examples are measurements on circuits not derived from MAINS, and specially protected (internal) MAINS derived circuits. In the latter case, transient stresses are variable. Thus, you must know the transient withstand capability of the equipment.
- **Measurement category II** is for measurements performed on circuits directly connected to low voltage installation. Examples are measurements on household appliances, portable tools and similar equipment.

- **Measurement category III** is for measurements performed in the building installation. Examples are measurements on distribution boards, circuit-breakers, wiring (including cables, bus-bars, junction boxes, switches and socket-outlets) in the fixed installation, and equipment for industrial use and some other equipment. For example, stationary motors with permanent connection to a fixed installation.
- **Measurement category IV** is for measurements performed at the source of a low-voltage installation. Examples are electricity meters and measurements on primary overcurrent protection devices and ripple control units.

1.4 Ventilation Requirement

This instrument uses a fan to force cooling. Please make sure that the air inlet and outlet areas are free from obstructions and have free air. When using the instrument in a bench-top or rack setting, provide at least 10 cm clearance beside, above and behind the instrument for adequate ventilation.



CAUTION

Inadequate ventilation may cause an increase of temperature in the instrument, which would cause damage to the instrument. So please keep the instrument well ventilated and inspect the air outlet and the fan regularly.

1.5 Working Environment

Temperature

Operating: 0°C to +50°C

Non-operating: -20°C to +70°C

Humidity

- **Operating:**
 - Below +30°C: ≤95% RH (without condensation)
 - +30°C to +40°C: ≤75% RH (without condensation)
 - +40°C to +50°C: ≤45% RH (without condensation)
- **Non-operating:**
 - Below +40°C: 5%~ 90% (without condensation)
 - ≥+40°C to <+60°C: 5%~ 80% (without condensation)
 - >+60°C to <+70°C: 5%~ 40% (without condensation)

**WARNING**

To avoid short circuit inside the instrument or electric shock, never operate the instrument in a humid environment.

Altitude

Operating: below 3 km

Protection Level Against Electric Shock

- **Contact discharge:** ± 4 kV
- **Air discharge:** ± 8 kV

Installation (Overvoltage) Category

This product is powered by mains conforming to installation (overvoltage) category II.

**WARNING**

Ensure that no overvoltage (such as that caused by a bolt of lightning) can reach the product. Otherwise, the operator might be exposed to the danger of an electric shock.

Installation (Overvoltage) Category Definitions

Installation (overvoltage) category I refers to signal level which is applicable to equipment measurement terminals connected to the source circuit. Among these terminals, precautions are done to limit the transient voltage to a low level.

Installation (overvoltage) category II refers to the local power distribution level which is applicable to equipment connected to the AC line (AC power).

Pollution Degree

Pollution Degree 2

Pollution Degree Definition

- **Pollution Degree 1:** No pollution or only dry, nonconductive pollution occurs. The pollution has no effect. For example, a clean room or air-conditioned office environment.
- **Pollution Degree 2:** Normally only nonconductive pollution occurs. Temporary conductivity caused by condensation is to be expected. For example, indoor environment.
- **Pollution Degree 3:** Conductive pollution or dry nonconductive pollution that becomes conductive due to condensation occurs. For example, sheltered outdoor environment.
- **Pollution Degree 4:** The pollution generates persistent conductivity caused by conductive dust, rain, or snow. For example, outdoor areas.

Safety Class

Class 1 – Grounded Product

1.6 Care and Cleaning

Care

Do not store or leave the instrument where it may be exposed to direct sunlight for long periods of time.

Cleaning

Clean the instrument regularly according to its operating conditions.

1. Disconnect the instrument from all power sources.
2. Clean the external surfaces of the instrument with a soft cloth dampened with mild detergent or water. Avoid having any water or other objects into the chassis via the heat dissipation hole. When cleaning the LCD, take care to avoid scarifying it.

CAUTION

To avoid damage to the instrument, do not expose it to caustic liquids.

WARNING

To avoid short-circuit resulting from moisture or personal injuries, ensure that the instrument is completely dry before connecting it to the power supply.

1.7 Environmental Considerations

The following symbol indicates that this product complies with the WEEE Directive 2012/19/EU.



The equipment may contain substances that could be harmful to the environment or human health. To avoid the release of such substances into the environment and avoid harm to human health, we recommend you to recycle this product appropriately to ensure that most materials are reused or recycled properly. Please contact your local authorities for disposal or recycling information.

You can click on the following link <https://www.rigol.com/intl/services/environmental-protection-statement.html> to download the latest version of the RoHS&WEEE certification file.

2 **RSA6000 Series Spectrum Analyzer**

RSA6000 series is RIGOL's newly launched real-time spectrum analyzer. Its excellent performance in SFDR, phase noise, amplitude accuracy and test speed makes it applicable in various test scenarios such as spectrum analysis, real-time spectrum analysis, vector signal analysis, pulse analysis. RSA6000 series real-time spectrum analyzer has a strong expansion capability, allowing you to build the test system or perform user-defined development via various digital and analog output interfaces. With its excellent performance and flexible configuration, it can meet your test demands in various application scenarios such as wireless communication, automobile electronics, Internet of Things (IoT), and etc.

3 Document Overview

This manual gives you a quick review about the front and rear panel of RSA6000 series, the user interface, and its basic operation method.



TIP

For the latest version of this manual, download it from the official website of RIGOL (<http://www.rigol.com>).

Publication Number

UGD35100-1110

Software Version

00.01.01

Software upgrade might change or add product features. Please acquire the latest version of the manual from RIGOL website or contact RIGOL to upgrade the software.

Format Conventions in this Manual

1. Key

The front panel key is denoted by the menu key icon. For example, indicates the "System" key.

System

2. Menu

The menu item is denoted by the format of "Menu Name (Bold) + Character Shading" in the manual. For example, **Setup** indicates clicking or tapping the "Setup" sub-menu under the system menu to view the basic setting configuration items.

3. Operation Procedures

The next step of the operation is denoted by ">" in the manual. For example,

> **Save** indicates that first clicking or tapping the icon , then clicking or tapping **Save**.

4. Connector

The connectors on the front or rear panel are usually denoted by the format of "Connector Name (Bold) + Square Brackets (Bold)". For example **[TRIG IN]**.

Content Conventions in this Manual

The RSA6000 series spectrum analyzer includes the following models. Unless otherwise specified, this manual takes RSA6265 as an example to illustrate the functions and operation methods of the RSA6000 series.

Model	Frequency Range
RSA6265	5 kHz to 26.5 GHz
RSA6140	5 kHz to 14 GHz
RSA6085	5 kHz to 8.5 GHz

4 Quick Start

This chapter gives you a quick review about the user interface of the RSA6000 series spectrum analyzer in PULSE mode and its mode settings. For its details about the appearance and dimensions, its front and rear panel, as well as notices during first use of the analyzer, refer to relevant chapters in *RSA6000 User Guide*.

4.1 User Interface



Figure 4.1 User Interface

No.	Name	Description
1	Window Display Area	Displays different views.
2	Status Display Bar	Displays center frequency, sample rate, sweep mode, trigger information, etc.
3	Quick Operation Menu	Displays the quick operation menu.

No.	Name	Description
4	Menu Operation Area	Sets the measurement menu parameters such as Meas Setup, Frequency, Sweep, Trace, Display, Marker, and etc.
5	Notification Area	Displays the USB storage device icon, LAN connection icon, sound icon, remote control icon, and system time. You can click or tap this area to enter the System menu.
6	Working Mode	Displays the currently selected working mode, such as GPSA, RTSA, VSA, EMI, ADM, PULSE, PNOISE, and etc.
7	Function Navigation Icon	Click or tap the icon  to open the function navigation menu. Click or tap the specified menu icon to enter the specified function setting menu.

4.2 Mode Setting

You can press the Mode Meas key on the front panel to switch the measurement mode. Also you can click or tap the current measurement mode icon (e.g. ) shown at the bottom of the screen to switch the measurement mode.

Pulse mode provides time-oriented measurements of Pulsed RF radio frequency. To use this function, you must install the pulse measurement option (RSA6000-PMA). For details about how to install the option, refer to *To Install the Option*.

4.3 To Install the Option

This series spectrum analyzer provides many options to meet various measurement requirements. If you need any of these options, order them according to the Order No. available in "*Appendix A: Options and Accessories*", and then install the options according to this section. Besides, you can also view the options currently installed on the spectrum analyzer and activate the newly purchased option.

1. View the Installed Option

If your instrument has currently installed the option, perform the following operations to view the name of the installed option and other detailed information about the option from the option list.

- Click or tap the function navigation icon  at the lower-left corner of the screen, and then select **System** to enter the system setting menu.
- Click or tap **Options** to view the options currently installed.

2. Install the Option

The option license is a string with a fixed number of characters. Each instrument has one unique license. The license file should be in specific format, with the filename extension ".lic". After you purchase an option, you will obtain a key (used for obtaining the license). Then, you can install the option according to the following steps.

a. Obtain an option license

- a. Log in to the **RIGOL** official website (<http://www.rigol.com>), click **SERVICE CENTER > LICENSE ACTIVATION** to enter the license activation interface.
- b. In the interface, input the correct key, serial number (click or tap the function navigation icon  at the lower-left corner of the screen, then click or tap **System > About** to obtain the serial number of the instrument), and verification code. Then click **Generate** to obtain the option license.

b. Install the Option

- a. Install the option by sending SCPI commands. For details, refer to *PULSE Programming Guide*.
- b. After installation, a prompt message "Option activated successfully" is displayed. After the option has been installed, you are recommended to restart the instrument.



TIP

- During the installation process, you are not allowed to power off the instrument.
- To install the option, send the relevant SCPI command. Installing options by inputting the license code manually is not supported.

5 Basic Settings

5.1 Freq

In the Frequency menu, you can set the frequency related parameters.

You can set the center frequency, CF step, and CF step mode.

5.1.1 Center Frequency

Sets the center frequency of the current channel. You can see the changes of the value in the status display bar in a timely manner when you modify the value.

Key Points:

- Modifying the center frequency indicates that the frequency is changed along the current channel horizontally, and the adjustable range should be within the frequency range specified in the technical specifications of the analyzer.
- You can use the numeric keys, the knob, or arrow keys to modify this parameter; you can also use the touch screen to modify the parameter.

Parameter	Description
Default	$F_{\max}^{[1]}/2$
Range	$(S_{\min}/2)^{[2]}$ to $(F_{\max} - S_{\min}/2)$
Unit	GHz, MHz, kHz, Hz, mHz
Knob Step	Step = Span/200 Min. 1 Hz
Left/Right Arrow Key Step	CF step

NOTE

[1]: The maximum frequency $F_{\max}$ is determined by the instrument model. RSA6000 includes 8.5 GHz model, 14 GHz, and 26.5 GHz model.

[2]: $S_{\min}$ indicates the sminimum span.



5.1.2 CF Step

Used to change the step size for the center frequency. Changing the center frequency by a constant step-size value switches the channel to be measured continuously.

Remarks:

- Set a proper CF step value, and then select the center frequency. Use the the Left/Right arrow key to switch the measurement channel at a fixed step size. Thus, the instrument can sweep the adjacent channels manually.
- You can use the numeric keys, the knob, or arrow keys to modify this parameter; you can also use the touch screen to modify the parameter.

Parameter	Description
Default	1 MHz
Range	-Fmax to Fmax
Unit	GHz, MHz, kHz, Hz, mHz
Knob Step	Step = Span/200 Min. 1 Hz
Left/Right Arrow Key Step	at 1-2-5 step

5.1.3 CF Step Mode

The CF step mode consists of "Manual" and "Auto".

Remarks:

- When the CF step mode is set to Auto, the CF step is 1/10 of the span.
- When the CF step mode is set to Manual, you can use the numeric keypad to input the CF step value.

5.2 Amplitude

Sets the amplitude parameters of the analyzer. You can modify these parameters to make the signals under test be displayed with minimal errors in the current window, easy for you to observe.

5.2.1 Range

Represents the attenuation scale, and it is about 15 dB or 16 dB offset from the actual attenuation value.

Parameter	Description
Default	0 dBm
Range	-15 dBm to 25 dBm
Unit	dBm
Knob Step	1 dBm
Left/Right Arrow Key Step	10 dBm

5.2.2 Y Auto Scaling

Enables or disables the auto scaling of Y-axis. By default, it is enabled. If it is enabled, **Y Ref Value** and **Y Scale/Div** menus are disabled and grayed out. The system will automatically adjust the two parameter values to ensure the signal integrity. If it is disabled, you can set the Y-axis reference value and Y scale/div value manually.

5.2.3 Y Ref Value

Sets the Y-axis reference of the selected trace.

Parameter	Description
Default	0
Range	(-1e+12) to (1e+12)
Unit	Units are different in different windows. For details, refer to the following table.

Table 5.5 Units of Y Ref Value and Y Scale/Div in Different Windows

Window Name	Ref Value	Scale/Div
Raw Time	V: V	W: W
	dBm: dBm	V: V
	W: W	dBm: dB
Spectrum	dBm	dB

Window Name	Ref Value	Scale/Div
Amplitude	V: V	W: W
	dBm: dBm	V: V
	W: W	dBm: dB
Phase	deg	deg
FM	Hz	Hz
Spectrogram	s	s
Scatter 1	X/Y axis units of Scatter 1 and Scatter 2 are determined based on the unit of the selected scatterplot X scale and scatterplot Y scale.	
Scatter 2		
TrendLine Top Level	dBm	dB
TrendLine Base Level	dBm	dB
TrendLine Top/Base	dB	dB
TrendLine On Level	dBm	dB
TrendLine Peak Level	dBm	dB
TrendLine Mean Level	dBm	dB
TrendLine Peak to Average	dB	dB
TrendLine Rise Time	s	s
TrendLine Fall Time	s	s
TrendLine Rise Edge	s	s
TrendLine Fall Edge	s	s
TrendLine Width	s	s
TrendLine Off Time	s	s
TrendLine PRI	s	s
TrendLine PRF	Hz	Hz
TrendLine Duty Cycle	%	%

Window Name	Ref Value	Scale/Div
TrendLine Phase Mean	deg	deg
TrendLine Phase Pulse-Pulse Diff	deg	deg
TrendLine Phase Pk-Pk Dev	deg	deg
TrendLine Phase Error RMS	deg	deg
TrendLine Phase Error Peak	deg	deg
TrendLine Phase Error Peak Loc	N/A	N/A
TrendLine Freq Mean	Hz	Hz
TrendLine Freq Pulse-Pulse Diff	Hz	Hz
TrendLine Freq Pk-Pk Dev	Hz	Hz
TrendLine Freq Error RMS	Hz	Hz
TrendLine Freq Error Peak	Hz	Hz
TrendLine Freq Error Peak Loc	N/A	N/A
TrendLine Droop (dB)	dB	dB
TrendLine Droop (%)	%	%
TrendLine Droop Rate	dB/ μ s	dB/ μ s
TrendLine Droop Start	dBm	dB
TrendLine Droop Stop	dBm	dB
TrendLine Overshoot (dB)	dB	dB
TrendLine Overshoot (%)	%	%
TrendLine Ripple (dB)	dB	dB
TrendLine Ripple (%)	%	%
Histogram Top Level	%	%

Window Name	Ref Value	Scale/Div
Histogram Base Level	%	%
Histogram Top/Base	%	%
Histogram On Level	%	%
Histogram Peak Level	%	%
Histogram Mean Level	%	%
Histogram Peak to Average	%	%
Histogram Rise Time	%	%
Histogram Fall Time	%	%
Histogram Rise Edge	%	%
Histogram Fall Edge	%	%
Histogram Width	%	%
Histogram Off Time	%	%
Histogram PRI	%	%
Histogram PRF	%	%
Histogram Duty Cycle	%	%
Histogram Phase Mean	%	%
Histogram Phase Pulse-Pulse Diff	%	%
Histogram Phase Pk-Pk Dev	%	%
Histogram Phase Error RMS	%	%
Histogram Phase Error Peak	%	%
Histogram Phase Error Peak Loc	%	%

Window Name	Ref Value	Scale/Div
Histogram Freq Mean	%	%
Histogram Freq Pulse-Pulse Diff	%	%
Histogram Freq Pk-Pk Dev	%	%
Histogram Freq Error RMS	%	%
Histogram Freq Error Peak	%	%
Histogram Freq Error Peak Loc	%	%
Histogram Droop (dB)	%	%
Histogram Droop (%)	%	%
Histogram Droop Rate	%	%
Histogram Droop Start	%	%
Histogram Droop Stop	%	%
Histogram Overshoot (dB)	%	%
Histogram Overshoot (%)	%	%
Histogram Ripple (dB)	%	%
Histogram Ripple (%)	%	%

5.2.4 Y Scale/Div

Sets the Y-axis scale per division of the selected trace. The Y scale/div value and Y ref value are displayed at the upper-left corner of the selected window.

Table 5.6 Y Scale/Div

Parameter	Description
Default	10
Range	1e-11 to 1e+11

Parameter	Description
Unit	Units are different in different windows. For details, refer to <i>Units of Y Ref Value and Y Scale/Div in Different Windows</i>

5.2.5 Y Ref Position

Sets the Y reference position to Top, Center, and Bottom. Modifying the Y Ref Position will not change the Y-axis reference value.

5.2.6 Y Axis Unit

Sets the Y-axis unit for the traces in the RawTime and Amplitude windows. The unit can be set to "dBm", "V", and "W".

Key Points:

- The Y-axis unit is only available to set in the RawTime and Amplitude windows. Its setting will affect the measurement trace, reference trace, and error trace in the Amplitude window.

5.3 Sweep

Sets the sweep-related parameters.

5.3.1 Sweep Mode

RSA6000 series spectrum analyzer supports two sweep modes: Single sweep and Continuous sweep.

Continuous Sweep

- If the current system is in single sweep mode and no measurement is performed, click or tap **Sweep** > **Sweep Mode** > **Cont** to enter continuous sweep mode. In this case, if the trigger conditions are met, the system will sweep continuously.
- If the current system is in single sweep mode and is performing the specified measurement, click or tap **Sweep** > **Sweep Mode** > **Cont** to enter continuous sweep mode. In this case, if the trigger conditions are met, the system will perform measurements continuously.

- In continuous sweep mode, the system will send a trigger initialization signal automatically and enter the trigger condition judgment directly after each sweep is completed.

Single Sweep

- If the current system is in continuous sweep mode and no measurement is performed, selecting this menu to enter the single sweep mode. In this case, if the trigger conditions are met, the system performs one sweep
- If the current system is in continuous sweep mode and is performing the specified measurement, selecting this menu to set the measurement mode to "Single". In this case, if the trigger conditions are met, the system will execute the specified number of measurements.
- If the system is already in single sweep mode, press this key and then the system will execute the specified number of sweeps (or measurements) once the trigger conditions are met.
- In single sweep mode, trigger initialization (click or tap **Sweep** > **Sweep Mode** > **Cont** or send the SCPI command through the remote interface) should be executed before judging the trigger conditions.



NOTE

Switching between Single and Continuous sweep mode will result in restarting the sweep.

5.3.2 Restart

Click or tap **Restart**, the current sweep will be suspended. All the previously measured data will be remeasured, and the trigger restores to the not-triggered state.

5.4 Trigger

Selects the trigger source and sets trigger-related parameters.

5.4.1 Trigger Source

Sets "Free Run", "External", or "IF Power" to be the trigger source.

5.4.1.1 Free Run

The trigger conditions are met at any time, that is, the analyzer generates trigger signals continuously.

5.4.1.2 External Trigger

Click or tap **Trigger** > **Source** > **External**. Then, an external signal is input via the [TRIG IN] connector on the rear panel. When the signal meets the set trigger conditions, trigger signals are generated.



NOTE

The input signal frequency on the external trigger interface should not be greater than 1 MHz.

1. Slope

Sets the trigger polarity for External Trigger. It is set positive to trigger on a rising edge and negative to trigger on a falling edge.

2. Delay State

Enables or disables the trigger delay function. After the trigger delay function is enabled, you can set the trigger delay time.

3. Delay Time

Sets the time interval during which the instrument waits to start the sweep operation after the trigger signal that meets the trigger conditions is generated. You can use the numeric keys, the knob, or arrow keys to modify this parameter; you can also use the touch screen to modify the parameter.

Parameter	Description
Default	1 us
Range	-500 ms ^[1] to 500 ms
Unit	s, ms, μ s, ns, ps
Knob Step	Trigger Delay/100, Min. 1 μ s
Left/Right Arrow Key Step	at 1-1.5-2-3-5-7.5 step



NOTE

[1]: When the trigger delay is set to a negative value, it indicates a pre-trigger.

5.4.1.3 IF Power

A trigger signal will be generated when the system detects a IF signal whose power level exceeds the specified trigger level.

1. Trigger Level

Sets the trigger level of the IF power trigger. When the signal meets the set trigger level value, a trigger occurs.

Parameter	Remarks
Default	-25 dBm
Range	(-140+Level Offset) to (30+Level Offset)
Unit	dBm
Knob Step	1 dBm
Left/Right Arrow Key Step	5 dBm

2. Delay State

Enables or disables the trigger delay function. After the trigger delay function is enabled, you can set the trigger delay time.

3. Delay Time

Sets the time interval during which the instrument waits to start the sweep operation after the trigger signal that meets the trigger conditions is generated. You can use the numeric keys, the knob, or arrow keys to modify this parameter; you can also use the touch screen to modify the parameter.

Parameter	Description
Default	1 μ s
Range	-500 ms ^[1] to 500 ms
Unit	s, ms, μ s, ns, ps
Knob Step	Trigger Delay/100, Min. 1 μ s
Left/Right Arrow Key Step	at 1-1.5-2-3-5-7.5 step

NOTE

[1]: When the trigger delay is set to a negative value, it indicates a pre-trigger.

5.4.2 Trigger Holdoff State

Click or tap the ON/OFF tab for "Holdoff State" to enable or disable the trigger hold-off state.

5.4.3 Trigger Holdoff

Sets the holdoff time between trigger signals. You can use the numeric keys, the knob, or arrow keys to modify this parameter; you can also use the touch screen to modify the parameter.

When the trigger conditions are met, the trigger occurs. Then, the delay begins, and the holdoff time begins. During the holdoff time, new trigger signals will be ignored. For a free-running trigger, the holdoff value is the minimum time between two trigger signals.

Parameter	Remarks
Default	100 ms
Range	0 us to 500 ms
Unit	s, ms, us, ns, ps
Knob Step	trigger holdoff time/100, Min = 1 us
Left/Right Arrow Key Step	at 1-1.5-2-3-5-7.5 step

5.4.4 Auto Trig State

Enables or disables the auto trigger function.

5.4.5 Auto Trig

Sets the time that the instrument will wait for the trigger conditions to be met. When the set waiting time times out, the instrument will not wait and start to initiate the sweep measurement.

Parameter	Remarks
Default	100 ms
Range	1 ms to 100 s
Unit	s, ms, us, ns, ps
Knob Step	auto trigger time/100, Min = 1 us
Left/Right Arrow Key Step	at 1-1.5-2-3-5-7.5 step

The relationship of the trigger parameters is shown in the following figure.

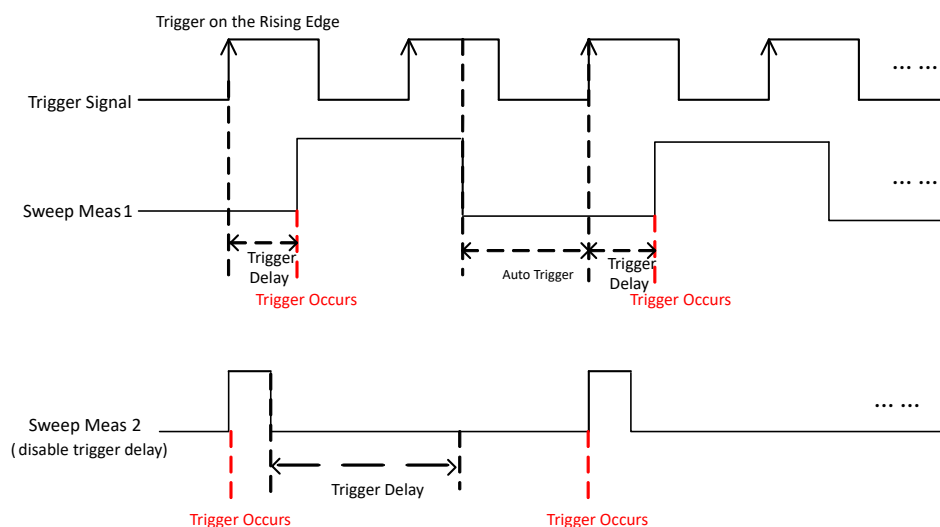


Figure 5.1 Relationship of Trigger Parameters

5.5 Measurement Settings

5.5.1 Setting

Sets the measurement setup parameters and configures the parameter settings for the pulse detection, pulse analysis, time analysis, Freq/Phase analysis, Ripple/Droop analysis, and modulation analysis.

5.5.1.1 Measure Time

Sets the time length for each frame of data, expressed in seconds.

Parameter	Description
Default	100 μ s
Range	1 μ s to 40 ms
Unit	s, ms, μ s, ns, ps
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Saved in instrument state	Yes

5.5.1.2 Sample Rate

Sets the sample rate at which the pulse detection and pulse analysis are performed. The relationship between the measurement time and sample rate is as follows:

Max. Measurement Time = Max. Sample Points^[1]/Sample Rate



NOTE

[1]: The max. number of the sample points is about 500 kpts.

Parameter	Description
Default	12.7875 MHz
Range	12.7875 MHz to 255.75 MHz
Unit	GHz, MHz, kHz, Hz, mHz
Knob Step	100 Hz
Left/Right Arrow Key Step	1 kHz
Saved in instrument state	Yes

5.5.1.3 Maximum Pulse Count

Sets the upper limit count for the pulses to be detected. The maximum value that can be set for this parameter is 100.

Parameter	Description
Default	100
Range	1 to 100
Unit	N/A
Knob Step	1
Left/Right Arrow Key Step	10
Saved in instrument state	Yes

5.5.1.4 Maximum Pulse Count State

Enables or disables the settings for maximum pulse count. By default, it is enabled.

- When it is enabled, you can set the upper limit count for the pulses to be detected. If the number of the valid pulses in the measured signal is greater than the specified max. pulse count, then only the first Maximum Pulse Count

number of detected pulses will be processed and displayed in the pulse analysis result.

- When it is disabled, all the valid detected signal pulses within the "Measure Time" interval will be displayed in the pulse analysis result.

5.5.1.5 Detect Threshold Ref

Sets the reference level of the signal pulse detection. It can be set to Top Level, Base Level, Absolute, and Trigger Level.

- Top Level: By default, it is Top Level. It indicates setting the detection threshold level as a relative threshold offset from the top level.
- Base Level: sets the detection threshold level as a relative threshold offset from the base level.
- Absolute: sets the detection threshold level as an absolute threshold level.
- Trigger Level: sets the detection threshold level as a relative threshold offset from the IF trigger level.

5.5.1.6 Detect Threshold

Sets a threshold for the pulse to be detected.

- Only when the top of a pulse is above the threshold, can the pulse be detected.
- When the detection threshold reference is set to Top Level, Base Level, or Trigger Level, the detection threshold is defined in dB, relative to the defined reference.
- When the detection threshold reference is set to Absolute, the detection threshold is defined in dBm as an absolute threshold.

Parameter	Description
Default	-10
Range	-100 to 100
Unit	dB: It is expressed in dB when the detection threshold reference is set to Top Level, Base Level, or Trigger Level; dBm: It is expressed in dBm when the detection threshold reference is set to Absolute.
Knob Step	1
Left/Right Arrow Key Step	10

Parameter	Description
Saved in instrument state	Yes

5.5.1.7

Configuration**Configure the Pulse Detection Parameters**

When performing the pulse detection, you need to set the detection threshold reference parameters and pulse width settings parameters.

1. Detect Threshold Ref

For the detailed setting of the detection threshold reference, refer to *Detect Threshold Ref*.

2. Detect Threshold

For the detailed setting of the detection threshold, refer to *Detect Threshold*.

3. Hysteresis Level

Sets the hysteresis for the pulse detection, in relative to the defined threshold.

- The measured signal is only considered to contain a valid pulse-on transition if the amplitude increases above the following:

Pulse Detection Threshold (in dBm) + Hysteresis (in dB) Offset Level.

- The measured signal is only considered to contain a valid pulse-off transition if the amplitude decreases below the following:

Pulse Detection Threshold (in dBm) - Hysteresis (in dB) Offset Level.

- For the default case of Hysteresis Level = 0 dB, both the pulse-on and pulse-off transition levels are the pulse detection threshold level (dBm).
- When increasing the hysteresis level greater than 0 dB, you can control and avoid invalid (false) pulse detections that may potentially occur when measuring either noise or low-level pulse signals. Valid signal pulses are only considered for pulse analysis when both a valid pulse-on and pulse-off transition is detected for the pulse.

Parameter	Description
Default	1 dB
Range	0 dB to 50 dB
Unit	dB
Knob Step	1
Left/Right Arrow Key Step	10

Parameter	Description
Saved in instrument state	Yes

4. Min. Pulse Width

- Enables or disables the minimum pulse width. By default, it is enabled.
- When enabled, you can set the minimum pulse width, expressed in seconds, to ensure the validation for the pulse detection. Any measured pulse width less than the specified minimum pulse width will be considered invalid and will not be included in the pulse analysis result.
- When disabled, no minimum pulse width validation check will be applied.

Parameter	Description
Default	100 ns
Range	0 to 512 μ s
Unit	s, ms, μ s, ns, ps
Knob Step	0.1 μ s
Left/Right Arrow Key Step	1 μ s
Saved in instrument state	Yes

5. PWMMax (Max. Pulse Width)

- Enables or disables the max. pulse width. By default, it is enabled.
- When enabled, you can set the max. pulse width, expressed in seconds, to ensure the validation for the pulse detection. Any measured pulse width greater than the specified max. pulse width will be considered invalid and will not be included in the pulse analysis result.
- When disabled, no max. pulse width validation check will be applied.

Parameter	Description
Default	512 μ s
Range	0 to max. measurement time
Unit	s, ms, μ s, ns, ps

Parameter	Description
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Saved in instrument state	Yes

6. Detect Threshold Line State

Enables or disables the display of the detection threshold line in the RawTime window. By default, it is enabled.

Configure the Pulse Analysis Parameters

Configures the related parameters of Thresholds and Spectrum Settings.

1. RiseTh Lower

Sets the lower threshold for the pulse amplitude rise time.

Parameter	Description
Default	10
Range	0 to 100
Unit	%
Knob Step	1
Left/Right Arrow Key Step	10
Saved in instrument state	Yes

2. RiseTh Upper

Sets the upper threshold for the pulse amplitude rise time.

Parameter	Description
Default	90
Range	0 to 100
Unit	%
Knob Step	1
Left/Right Arrow Key Step	10
Saved in instrument state	Yes

3. FallTh Lower (Fall Time Lower)

- Sets the lower threshold for the pulse amplitude fall time.
- The Top Level (dBm) item in the pulse table is used as the fall time 100% Top Level.

Parameter	Description
Default	10
Range	0 to 100
Unit	%
Knob Step	1
Left/Right Arrow Key Step	10
Saved in instrument state	Yes

4. FallTh Upper (Fall Time Upper)

- Sets the upper threshold for the pulse amplitude fall time.
- The Top Level (dBm) item in the pulse table is used as the fall time 100% Top Level.

Parameter	Description
Default	90
Range	0 to 100
Unit	%
Knob Step	1
Left/Right Arrow Key Step	10
Saved in instrument state	Yes

5. PWTh (Pulse Width Threshold)

Sets the pulse amplitude rising edge (pulse-on) and falling edge (pulse-off) threshold levels used for the calculation of the pulse table, current statistics, and cumulative statistics reported metric items such as Rise Time (sec), Fall Time (sec), Width (sec), Off Time (sec), PRI (sec), PRF (Hz), and Duty Cycle (%).

- Pulse width threshold is specified as a percentage of the pulse amplitude. The pulse amplitude is defined as the difference between the 100% Top Level and 0% Base Level.
- The Base Level (dBm) metric item in the pulse table is used as the rising edge and falling edge 0% Base Level.
- The Top Level (dBm) metric item in the pulse table is used as the rising edge and falling edge 100% Top Level.

6. Level Method

Determines the calculation method used to measure the per pulse top level and base level. The available level methods are Mode, Median, and Mean. By default, it is Mode.

- Mode: takes the pulse histogram mode levels as the top level and base level.
- Median: takes the pulse histogram median levels as the top level and base level.
- Mean: takes the pulse histogram mean levels as the top level and base level.

7. FFT Window Type

Sets the FFT window type for the Spectrum window. The available window types include Rectangular, Hanning, Flattop, and Gaussian. By default, it is Hanning.

8. Max. FFT Length

Sets the maximum FFT length for the current measurement. The smaller the length, the faster the measurement speed. The greater the length, the more accurate the frequency values. The range of the Max. FFT length is from 64 to 16384. The default value is 16384.

Configure the Time Analysis Parameters

Configures the parameters of "Time Settings" and "Selected Pulses". The parameters under the "Selected Pulses" are used to set the sample portion associated with the current acquisition detected signal pulses which can be observed in the Amplitude window, Phase window, and FM window.

1. Meas Time

For details about the descriptions of the measurement time, refer to *Measure Time*.

2. Sample Rate

For details about the descriptions of the sample rate, refer to *Sample Rate*.

3. Maximum Pulse Count

For details about the descriptions of the max. pulse count, refer to *Maximum Pulse Count*.

4. Time Ref

Controls the display mode of the Rise Edge (sec) and Fall Edge (sec) in the pulse table. The available choices are First Pulse and Trigger. By default, it is First Pulse.

- First Pulse: displays per pulse time value as the value relative to the first detected pulse start time. That is, relative to the Pulse 1 Rise Edge (s) in the pulse table.
- Trigger: displays per pulse time value as the value relative to the acquisition trigger event time based on the user-defined input trigger properties.

5. Frequency Ref

Controls how the frequency values are displayed in the pulse table and FM traces. The available choices are Center and Absolute.

- Center: Y-axis frequency values are displayed relative to the current center frequency (Hz).
- Absolute: Y-axis displays the absolute frequency value.

6. Select All

Enables or disables all the pulses. By default, it is enabled.

- ON: when it is enabled, all the valid pulse detections, with max. pulse count being enabled, will be all displayed in the RawTime window, Amplitude window, Phase window, and FM window.
- OFF: when it is disabled, only the selected range of valid pulse detections specified by the "Select Start" parameter and "Select PulseNum" can be displayed in the RawTime window, Amplitude window, Phase window, and FM window.

7. Select Start

Selects the displayed first detected pulse index.

Parameter	Description
Default	1
Range	1 to 100

Parameter	Description
Knob Step	1
Left/Right Arrow Key Step	10
Saved in instrument state	Yes

8. Select PulseNum

Selects the number of valid detected pulses.

9. Include Extra Data

Enables or disables the display of the measured data samples before and after the selected region.

- When enabled, the selected pulses, including the noise data before and after the selected pulse, are displayed in the Amplitude window, Phase window, and FM window.
- When disabled, the selected pulses are displayed in the Amplitude window, Phase window, and FM window, and will be automatically time aligned to the graticule 0% to 100% X-axis grid lines.

Configure Freq/Phase Analysis Parameters

Configures the parameters related to Freq/Phase analysis for CW/Linear FM/NLFM.

1. FreqPhase Ref

Sets the reference of the analysis region. It can be set to Center or Edge. By default, it is Center.

- When it is set to Center, it is defined as a percent of the pulse width.
- When it is set to Edge, it is defined as the time from the rising/falling edge.

2. FreqPhase Center

When FreqPhase Ref is set to Center, this value is used to set the CW or linear FM waveforms analysis range as a centered percentage of the pulse top part.

Parameter	Description
Default	75
Range	0 to 100
Knob Step	1

Parameter	Description
Left/Right Arrow Key Step	10
Saved in instrument state	Yes

3. FreqPhase Start

When FreqPhase Ref is set to Edge, this value is used to set the analysis start position offset from the rising edge of each pulse.

Parameter	Description
Default	100 ns
Range	0 s to 1 s
Unit	s, ms, μ s, ns, ps
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Saved in instrument state	Yes

4. FreqPhase Stop

When FreqPhase Ref is set to Edge, this value is used to set the analysis stop position offset from the falling edge of each pulse.

Parameter	Description
Default	100 ns
Range	0 s to 1 s
Unit	s, ms, μ s, ns, ps
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Saved in instrument state	Yes

Configures Ripple/Droop Analysis Parameters

Configures the parameters related to Ripple Ref and Droop Ref.

1. Ripple Ref

Sets the reference of the analysis region. It can be set to Center or Edge. By default, it is Center.

- When it is set to Center, it is defined as a percent of the pulse width.
- When it is set to Edge, it is defined as the time from the rising/falling edge.

2. Ripple Center

When Ripple Ref is set to Center, this value is used to set the ripple analysis range as a centered percentage of each pulse's top part.

Parameter	Description
Default	50
Range	0 to 100
Unit	%
Knob Step	1
Left/Right Arrow Key Step	10
Saved in instrument state	Yes

3. Ripple Start

When Ripple Ref is set to Edge, this value is used to set the ripple analysis start position offset from the rising edge of each pulse.

Parameter	Description
Default	100 ns
Range	0 s to 1 s
Unit	s, ms, μ s, ns, ps
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Saved in instrument state	Yes

4. Ripple Stop

When Ripple Ref is set to Edge, this value is used to set the ripple analysis stop position offset from the falling edge of each pulse.

Parameter	Description
Default	100 ns
Range	0 s to 1 s
Unit	s, ms, μ s, ns, ps

Parameter	Description
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Saved in instrument state	Yes

5. Droop Ref

Sets the reference of the analysis region. It can be set to Center or Edge. By default, it is Center.

- When it is set to Center, it is defined as a percent of the pulse width.
- When it is set to Edge, it is defined as the time from the rising/falling edge.

6. Droop Center

When Droop Ref is set to Center, this value is used to set the droop analysis range as a centered percentage of each pulse's top part.

Parameter	Description
Default	100
Range	0 to 100
Unit	%
Knob Step	1
Left/Right Arrow Key Step	10
Saved in instrument state	Yes

7. Droop Start

When Droop Ref is set to Edge, this value is used to set the droop analysis start position offset from the rising edge of each pulse.

Parameter	Description
Default	100 ns
Range	0 s to 1 s
Unit	s, ms, μ s, ns, ps
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Saved in instrument state	Yes

8. Droop Stop

When Droop Ref is set to Edge, this value is used to set the droop analysis stop position offset from the falling edge of each pulse.

Parameter	Description
Default	100 ns
Range	0 s to 1 s
Unit	s, ms, μ s, ns, ps
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Saved in instrument state	Yes

Configure the Modulation Parameters

Configures the assumed pulse modulation types. By default, CW state, LFM state, BPSK state, and QPSK state are enabled.

1. CW State

The pulse modulation is assumed to be continuous waveform, and only the amplitude of the signal is modulated on or off, while the frequency remains unchanged over the pulse-on time.

2. LFM State

The pulse modulation is assumed to be linear frequency modulation (LFM), that is, the frequency of the modulated pulse changes linearly over the pulse-on time.

3. BPSK State

The pulse modulation is assumed to be Binary Phase Shift Keying modulation (BPSK), where there are two phase states that are separated by 180 deg.

4. QPSK State

The pulse modulation is assumed to be Quadrature Phase Shift Keying modulation (QPSK), where there are four phase states that are separated by 90 deg.



NOTE

When the CW State is disabled and only CW is found for the pulse detection, the modulation type shown in the pulse table is CW by default.

5.5.2

Global CF Mode

1. Global CF Mode

Turns on or off the global center frequency. In any working mode, if you enable the global center frequency mode, then the global center frequency will be set to the center frequency of the current mode. When a different working mode is selected, the global center frequency will be set to the center frequency of the previous working mode, that is, the one that is before switching the working mode. If you change the center frequency in any working mode, then the global center frequency will change with it.

2. Global CF

Sets the global center frequency. It is only available when you enable the global CF mode.

5.6 Trace

Sets the Trace-related parameters.

5.6.1 Trace Setting

Sets the on/off display status of the measurement trace, reference trace, and error trace in the specified window. By default, they are enabled. The settings for these traces are only valid in the Amplitude window, Phase window, and FM window.

5.6.1.1 Measurement Trace

The definition of the measurement trace is different in different windows. The following table lists the definitions of the measurement trace in the amplitude window, phase window, and FM window.

Table 5.33 Definition of Measurement Trace in Different Windows

Window	Description	Remarks
Amplitude Window	In the Amplitude window, the measurement trace reflects the pulse synchronized measurement signal amplitude variation over time.	- Its unit is determined by the "Y Axis Unit". - X-axis time value is displayed relative to acquisition trigger event occurrence.
Phase Window	In the Phase window, the measurement trace reflects the pulse synchronized measurement signal phase variation over time.	- The unit is deg. - X-axis time value is displayed relative to acquisition trigger event occurrence.

Window	Description	Remarks
FM Window	In the FM window, the measurement trace reflects the pulse synchronized measurement signal FM samples over time.	- Its unit is Hz. - X-axis time value is displayed relative to acquisition trigger event occurrence.

5.6.1.2 Reference Trace

The definition of the reference trace is different in different windows. The following table lists the definitions of the reference trace in the amplitude window, phase window, and FM window.

Table 5.34 Definition of Reference Trace in Different Windows

Window	Description	Remarks
Amplitude Window	In the Amplitude window, the reference trace reflects the pulse synchronized reference signal amplitude variation over time.	- Its unit is determined by the "Y Axis Unit". - X-axis time value is displayed relative to acquisition trigger event occurrence.
Phase Window	In the Phase window, the reference trace reflects the pulse synchronized reference signal phase variation over time.	- The unit is deg. - X-axis time value is displayed relative to acquisition trigger event occurrence.
FM Window	In the FM window, the reference trace reflects the pulse synchronized reference signal FM samples over time.	- Its unit is Hz. - X-axis time value is displayed relative to acquisition trigger event occurrence.

5.6.1.3 Error Trace

The definition of the error trace is different in different windows. The following table lists the definitions of the error trace in the amplitude window, phase window, and FM window.

Table 5.35 Definition of Error Trace in Different Windows

Window	Description	Remarks
Amplitude Window	In the Amplitude window, the error trace reflects the pulse synchronized signal amplitude error variation over time.	- Its unit is determined by the "Y Axis Unit". - X-axis time value is displayed relative to acquisition trigger event occurrence. - Amplitude Error Time = Amplitude Meas Time - Amplitude Ref Time
Phase Window	In the Phase window, the error trace reflects the pulse synchronized signal phase error variation over time.	- The unit is deg. - X-axis time value is displayed relative to acquisition trigger event occurrence. - Phase Error Time = Phase Meas Time - Phase Ref Time
FM Window	In the FM window, the error trace reflects the pulse synchronized FM signal error variation over time.	- Its unit is Hz. - X-axis time value is displayed relative to acquisition trigger event occurrence. - FM Error Time = FM Meas Time - FM Ref Time

5.7 Marker Measurement

5.7.1 Marker Setting

Marker is a triangle sign (as shown in the following figure), which is used for marking the point on the trace. Reads the X-axis value and Y-axis value of a certain point on the trace via marker.



Figure 5.2 Marker

Selected Marker

There are 8 markers available to choose. By default, Marker 1 is selected. After you select a marker, you can set parameters such as the marker mode and the marker trace. The currently enabled marker will be displayed in the window selected under "Marker Window". The readout of the currently activated marker at the marker point will be displayed at the upper-right corner of the window.

Marker Window

Click or tap the drop-down button of **Marker Window** to select the window where the selected marker resides. At most, 4 windows are available to choose.

Marker Mode

Sets the marker mode. It includes Position, Delta, and OFF.

1. Position

It is used to measure the X and Y values of a certain point on the trace. When "Position" is selected, a marker indicated by a number (e.g., "1") appears on the trace. If no active marker exists currently, a marker will be enabled in the center of the X-axis of the current trace.

2. Delta

It is used to measure the difference between "reference point" and "certain point on the trace".

Key Points:

- When "Delta" is selected, a pair of markers appears on the trace: Reference Marker and the Delta Marker.
- If an active marker exists currently, then activate a reference marker at the current marker; otherwise activate both the reference marker and Delta marker at the same time at the center frequency.

- When you change the position of the Delta marker, the position of the reference marker remains unchanged, but the frequency (or time) difference between the two markers will change along with it.
- The difference between the two markers are displayed in the measurement result bar at the upper-right corner of the screen.
- The measurement result of the Delta marker: difference between the current marker and the absolute measurement value of the reference marker.
- When the reference marker is disabled, the Delta marker is changed to Position marker.
- When the Delta marker is enabled, if its reference marker is disabled, then the reference marker will be enabled and stays on the same trace with the Delta marker. The marker taken as the reference marker is by default a Position one. Its readout is the same as the current marker.

3. OFF

Turns off the marker currently selected. Then, the marker information displayed on the screen and the functions concerning the marker will also be disabled. The marker function is also disabled.

Reference Marker

Sets the reference marker for the current marker. By default, the reference marker is the marker next to it.

Key Points:

- Each marker can have another marker to be its reference marker.
- If the current marker is a Delta marker, the measurement result of the marker will be determined by the reference marker.
- Any marker cannot take itself to be the reference marker.

Marker X Value

Sets the position of the marker on the trace. When the marker is enabled for the first time, by default, it is in the center of the X-axis.

Table 5.36 Marker X Value

Parameter	Description
Default	0
Range	-1.00E+12 to 1.00E+12
Unit	Determined by the selected window
Knob Step	Marker X Value/100
Left/ Right Arrow Key Step	Marker X Value/100
Accuracy	1
Saved in instrument state	Yes

Couple Markers

Enables or disables the marker coupling function. By default, it is OFF.

Key Points:

- When this function is enabled, moving any marker will enable other markers (except the Off marker) to move with it.
- In the coupling state, moving the marker will cause the Delta marker and reference marker to change accordingly. You need to ensure the Y-axis values that correspond to the X values of two markers are valid, otherwise, the Delta measurement result shows "--".

All Marker Off

Turns off all the enabled markers and their related functions.

5.7.2 Marker Function

5.7.2.1 Interval Function

Sets the interval function type to "Pulse Count" or "OFF". By default, it is OFF.

- This menu is only available to set in RawTime window.

- When "Pulse Count" is selected, the pulse count value together with the marker value will be displayed at the upper-right corner of the RawTime window. The pulse count result is displayed in a real-time manner.

5.7.2.2 Interval Function

Sets the interval in the marker function calculation for the selected marker.

Table 5.37 Interval Function

Parameter	Description
Default	20 μ s
Range	0 s to 40 ms
Unit	s, ms, μ s, ns, ps
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Accuracy	1
Saved in instrument state	Yes

5.7.2.3 Interval Left

Sets the interval left edge for the band of the selected marker. It is indicated in orange. When the interval left value is modified, the interval span will be updated automatically.

Table 5.38 Interval Left

Parameter	Description
Default	40 μ s
Range	0 to 40 ms
Unit	s, ms, μ s, ns, ps
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s

Parameter	Description
Accuracy	1
Saved in instrument state	Yes

5.7.2.4 Interval Right

Sets the interval right edge for the band of the selected marker. It is indicated in orange. When the interval right value is modified, the interval span will be updated automatically.

Table 5.39 Interval Right

Parameter	Description
Default	60 μ s
Range	0 to 40 ms
Unit	s, ms, μ s, ns, ps
Knob Step	1 μ s
Left/Right Arrow Key Step	10 μ s
Accuracy	1
Saved in instrument state	Yes

5.7.3 Peak Setting

Used to search for peak on the current trace.

5.7.3.1 Peak Search

Performs the peak search function.

Key Points:

- Searches for the maximum value on the trace and marks it with a marker.
- When the peak that is compliant with the condition is not found, a prompt message "no peak found" is displayed on the screen.

5.7.3.2 Next Peak

Searches for and marks the peak whose amplitude on the trace is next to that of the current peak and which meets the peak search condition.

If no peak condition is found, a prompt message "no peak found" is displayed.

5.7.3.3 Minimum Search

Searches for and marks the peak with the minimum amplitude on the trace.

5.8 Display

5.8.1 Display Meas

You can enable or disable the display of the specified metric items in the pulse table, current statistics table, and cumulative statistics table based on your requirements.

5.8.1.1 Pulse Table Column Visibility

Selects the metric items to be displayed in the pulse table. Check the checkbox of the specified metric item to select the metric. After selecting it, click or tap **Save** to save the edited pulse table. Click or tap **Cancel** to cancel the editing operation.

Pulse NO	Mod	Top Level(dBm)	Base Level(dBm)	Top/Base(dB)	Rise Time(S)	Fall Time(S)	Rise Edge(S)	Fall Edge(S)	Width(S)	Off
1	CW	-7.59	-15.21	7.62	4.61 u	78.20 n	0.00 p	4.61 u	4.61 u	1
2	CW	-7.08	-14.07	6.99	938.42 n	156.40 n	6.10 u	6.80 u	703.81 n	1
3	CW	-7.36	-16.64	9.28	3.91 u	78.20 n	8.05 u	11.96 u	3.91 u	70
4	CW	-7.97	-14.07	6.10	3.52 u	78.20 n	12.67 u	16.19 u	3.52 u	86
5	CW	-7.59	-17.58	9.99	1.09 u	78.20 n	17.05 u	18.14 u	1.09 u	23
6	CW	-6.68	-17.58	10.89	1.88 u	78.20 n	18.38 u	20.18 u	1.80 u	70

Previous 1 / 2 Next Go to 1 Page

Figure 5.3 Pulse Table



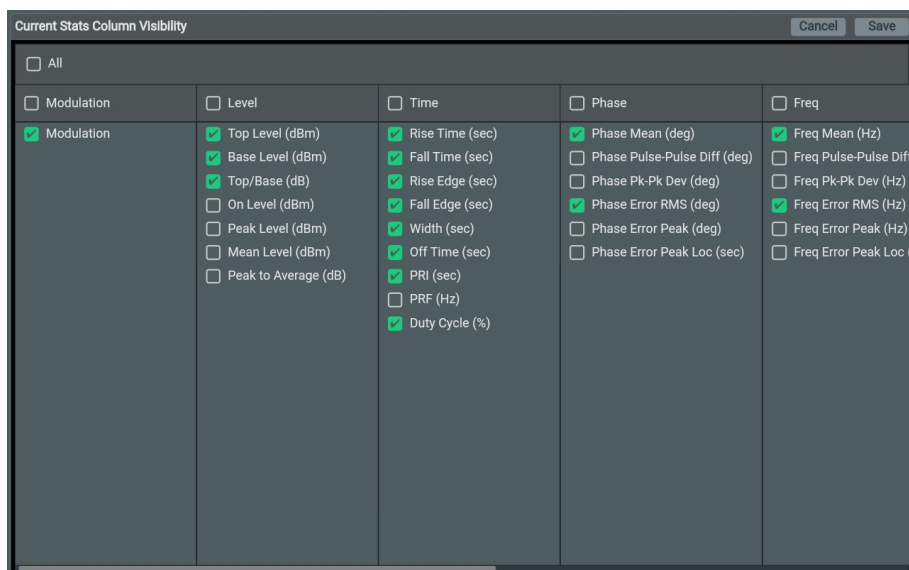
Figure 5.4 Pulse Table Column Visibility Interface

5.8.1.2 Current Statistics Table Column Visibility

Selects the metric items to be displayed in the current statistics table. Check the checkbox of the specified metric item to select the metric. After selecting it, click or tap **Save** to save the edited cumulative statistics table. Click or tap **Cancel** to cancel the editing operation.

2- Current Statistics									
Pulse	Top Level(dBm)	Base Level(dBm)	Top/Base(dB)	Rise Time(S)	Fall Time(S)	Rise Edge(S)	Fall Edge(S)	Width(S)	Off Time(S)
Min	-11.52	-83.32	3.49	78.20 n	78.20 n	0.00 p	1.96 u	156.40 n	0.00 p
Max	-3.07	-11.52	71.80	2.42 u	547.41 n	97.60 u	97.91 u	2.42 u	3.13 u
Avg	-7.69	-21.38	13.69	477.27 n	156.40 n	50.99 u	51.50 u	505.49 n	503.07 n
RMS	7.89	23.00	15.94	670.93 n	193.52 n	58.38 u	58.81 u	690.24 n	707.16 n
Std Dev	1.76	8.49	8.17	471.55 n	113.96 n	28.42 u	28.40 u	470.02 n	496.99 n
Count	97	97	97	97	97	97	97	97	97

Figure 5.5 Current Statistics Table



The interface shows a dialog titled "Current Stats Column Visibility" with "Cancel" and "Save" buttons. It contains a list of metrics organized into five columns: All, Modulation, Level, Time, Phase, and Freq. Each metric has a checkbox to indicate its visibility.

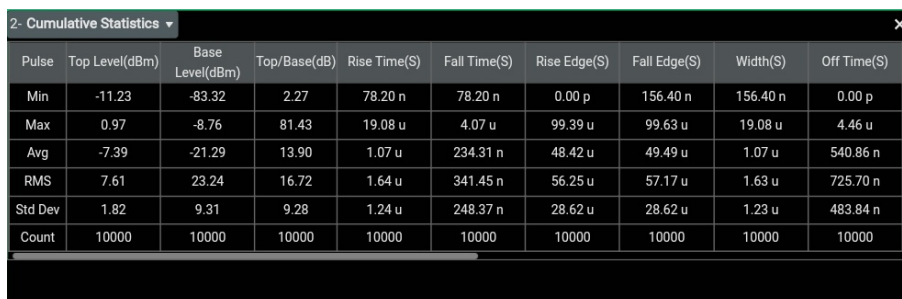
All	Modulation	Level	Time	Phase	Freq
☐	☒	☒	☒	☒	☒
		☒	☒	☒	☒
		☒	☒	☐	☐
		☐	☒	☐	☐
		☐	☒	☒	☒
		☐	☒	☐	☐
		☐	☒	☐	☐
		☐	☒	☐	☐
		☐	☒	☐	☐
		☐	☐	☐	☐
		☐	☒	☐	☐
		☐	☐	☐	☐
		☐	☒	☐	☐

Figure 5.6 Current Statistics Table Column Visibility Interface

5.8.1.3

Cumulative Statistics Column Visibility

Selects the metric items to be displayed in the cumulative statistics table. Check the checkbox of the specified metric item to select the metric. After selecting it, click or tap **Save** to save the edited cumulative statistics table. Click or tap **Cancel** to cancel the editing operation.



The table displays cumulative statistics for various metrics. The columns are: Pulse, Top Level(dBm), Base Level(dBm), Top/Base(dB), Rise Time(S), Fall Time(S), Rise Edge(S), Fall Edge(S), Width(S), and Off Time(S). The rows show Min, Max, Avg, RMS, Std Dev, and Count values for each metric.

Pulse	Top Level(dBm)	Base Level(dBm)	Top/Base(dB)	Rise Time(S)	Fall Time(S)	Rise Edge(S)	Fall Edge(S)	Width(S)	Off Time(S)
Min	-11.23	-83.32	2.27	78.20 n	78.20 n	0.00 p	156.40 n	156.40 n	0.00 p
Max	0.97	-8.76	81.43	19.08 u	4.07 u	99.39 u	99.63 u	19.08 u	4.46 u
Avg	-7.39	-21.29	13.90	1.07 u	234.31 n	48.42 u	49.49 u	1.07 u	540.86 n
RMS	7.61	23.24	16.72	1.64 u	341.45 n	56.25 u	57.17 u	1.63 u	725.70 n
Std Dev	1.82	9.31	9.28	1.24 u	248.37 n	28.62 u	28.62 u	1.23 u	483.84 n
Count	10000	10000	10000	10000	10000	10000	10000	10000	10000

Figure 5.7 Cumulative Statistics Table



Figure 5.8 Cumulative Statistics Column Visibility Interface

5.8.1.4 Scatterplot X/Y Scale

When you select the Scatter 1 or Scatter 2 window, you can set the Scatterplot X Scale and Scatterplot Y Scale. The available choices for Scatterplot X Scale or Scatterplot Y Scale include Pulse No., Top Level, Base Level, Top/Base, On Level, Peak Level, Mean Level, Peak to Average, Rise Time, Fall Time, Rising Edge, Falling Edge, Width, Off Time, PRI, PRF, Ducus Cycle, Phase Mean, Phase Pulse-Pulse Diff, Phase Pk-Pk Dev, Phase Error RMS, Phase Error Peak, Phase Error Peak Loc, Freq Mean, Freq Pulse-Pulse Diff, Freq Pk-Pk Dev, Freq Error RMS, Freq Error Peak, Freq Error Peak Loc, Droop (dB), Droop (%), Droop Rate, Droop Start, Droop Stop, Overshoot (dB), Overshoot (%), Ripple (dB), and Ripple (%). The options cover level, time, phase, frequency, droop, overshoot, and ripple related parameters.

The following table lists the name of the scatterplot X and Y scale and their definitions.

Type	Name	Description
Pulse No.	Pulse No.	Indicates the pulse No.
Level	Top Level (dBm)	Indicates the power level measured in the pulse flat area over the stable pulse-on time.
	Base Level (dBm)	Indicates the power level measured in the pulse base noise area over the stable pulse-off time.

Type	Name	Description
	Top/Base	Indicates measured top/base level ratio expressed in dB.
	On Level (dBm)	Indicates the average amplitude of the individual pulse during the pulse-on time.
	Peak Level (dBm)	Indicates the maximum amplitude of the pulse.
	Mean Level (dBm)	Indicates the average amplitude over the entire measurement time.
	Peak to Average	Indicates the ratio of peak amplitude to the average amplitude.
Time	Rise Time (s)	Indicates the duration of the rising edge.
	Fall Time (s)	Indicates the duration of the falling edge.
	Rising Edge (s)	Indicates the absolute time for the pulse to exceed the rising time lower threshold.
	Falling Edge (s)	Indicates the relative time for each detected pulse falling edge amplitude threshold transition, that is, the pulse-off level transition point.
	Width (s)	Indicates the time interval difference between the detected pulse rising edge pulse width (%) threshold level transition to the detected pulse falling edge

Type	Name	Description
		pulse width (%) threshold level transition.
	Off Time (s)	Indicates the time interval difference between the detected pulse falling edge pulse width (%) threshold level transition to the subsequent detected pulse rising edge pulse width (%) threshold level transition.
	PRI (s)	Indicates the pulse repetition interval difference between the detected pulse rising edge pulse width (%) threshold level transition to the subsequent detected pulse rising edge pulse width (%) threshold level transition.
	PRF (Hz)	Indicates the pulse repetition frequency, that is the number of pulses that are repeated per second.
	Duty Cycle (%)	Indicates the percentage ratio of pulse width to the PRI.
Phase	Phase Mean (deg)	Indicates the mean phase value measured over the user-defined sample analysis time interval.
	Phase Pulse-Pulse Diff (deg)	Indicates the mean phase pulse-to-pulse difference value relative to the first valid detected pulse (Pulse 1).

Type	Name	Description
	Phase Pk-Pk Dev (deg)	Indicates the deviation of maximum and minimum phase on the measurement trace in the Phase window over the user-defined sample analysis time interval.
	Phase Error RMS (deg)	Indicates the root-mean-square phase error difference between measurement trace in the Phase window and reference trace in the Phase window measured over the user-defined sample analysis time interval.
	Phase Error Peak (deg)	Indicates the absolute maximum phase error difference between the measurement trace in the Phase window and reference trace in the Phase window over the user-defined sample analysis time interval.
	Phase Error Peak Loc (s)	Indicates the index location offset from the start time of the user-defined sample analysis time interval to the occurrence of the phase error peak (Hz).
Frequency	Freq Mean (Hz)	Indicates the mean frequency value measured over the user-defined sample analysis time interval.

Type	Name	Description
	Freq Pulse-Pulse Diff (Hz)	Indicates the mean frequency pulse-to-pulse difference value relative to the first valid detected pulse (Pulse 1).
	Freq Pk-Pk Dev (Hz)	Indicates the deviation of maximum and minimum frequency on the measurement trace in the FM window over the user-defined sample analysis time interval.
	Freq Error RMS (Hz)	Indicates the root-mean-square frequency error difference between measurement trace in the FM window and reference trace in the FM window measured over the user-defined sample analysis time interval.
	Freq Error Peak (Hz)	Indicates the absolute maximum frequency error difference between the measurement trace in the FM window and reference trace in the FM window over the user-defined sample analysis time interval.
	Freq Error Peak Loc (s)	Indicates the index location offset from the start time of the user-defined sample analysis time interval to the occurrence of the frequency error peak (Hz).
Droop	Droop (dB)	Indicates the reduction of pulse amplitude between

Type	Name	Description
		the beginning of the pulse-on time to the end of the pulse-on time.
	Droop (%)	Indicates the ratio of droop to the amplitude (range), expressed in percent.
	Droop Rate (dB/μs)	Indicates the rate at which the pulse top level decays. It is calculated as the difference between the power at the beginning of the pulse-on time and the power at the end of the pulse-on time, then divided by the pulse-on time.
	Droop Start (dBm)	Indicates the amplitude level where the droop begins.
	Droop Stop (dBm)	Indicates the amplitude level where the droop ends.
Overshoot	Overshoot (dB)	Indicates the amplitude of the peak level occurred after the pulse rising edge.
	Overshoot (%)	Overshoot (dB) divided by pulse amplitude, expressed in percent.
Ripple	Ripple (dB)	Indicates the amplitude level ripple of each pulse as a dB value.
	Ripple (%)	Indicates the maximum difference between the waveform and the On Line while in the pulse-on

Type	Name	Description
		stage, divided by range, and expressed in percent.

5.8.2 Display View

Allows you to set the view types displayed on the current screen. You can select the view type and restore the view. By default, **Basic** is selected for the **Combination View**.

Combination View

Selects the view type to be displayed on the current screen. The available combination view types include Basic, Frequency, Table, and Scatter.

The preset windows are different for different combination view types.

- Basic: After selecting "Basic", the RawTime window and Pulse Table window are displayed on the screen.
- Frequency: After selecting "Frequency", the Amplitude, FM, and Phase windows are displayed on the screen.
- Table: After selecting "Table", the Current Statistics and Cumulative Statistics windows are displayed on the screen.
- Scatter: After selecting "Scatter", Scatter 1 and Scatter 2 windows are displayed on the screen.

Key Points:

- You can modify, add, or delete the specified view to adjust the view layout display.
- You can click or tap the multi-pane windowing table at the upper-right corner of the screen on the quick operation toolbar to add the specified view.

Restore View

Restores the combination view that you select under **Comb View**.

5.8.3 X Scale

Sets the X-axis related parameters, such as X Auto Scaling, X Ref Value, X Ref Position, and X Scale/Div.

5.8.3.1 X Auto Scaling

Enables or disables the auto scaling of X-axis.

- When it is enabled, the system will automatically adjust the X Ref Value and X Scale/Div value for the current window.
- when it is disabled, you can set the X Ref Value and X Scale/Div value manually.

5.8.3.2 X Ref Position

Sets X-axis scale's reference value of the selected trace. It can be set to "Left", "Center", and "Right".

5.8.3.3 X Ref Value

Sets the X-axis reference value for the selected trace. The units for the X Ref Value are different when you select different windows.

Table 5.41 X Ref Value

Parameter	Description
Default	0
Range	-1e+12 to 1e+12
Unit	Units are different in different windows. For details, refer to the following table.

Table 5.42 Units of X Ref Value and X Scale/Div

Window Name	X Ref Value	X Scale/Div
Raw Time	s	s
Spectrum	Hz	Hz
Amplitude	s	s
Phase	s	s
FM	s	s
Spectrogram	Hz	Hz

Window Name	X Ref Value	X Scale/Div
Scatter 1	X/Y axis units of Scatter 1 and Scatter 2 are determined based on the unit of the selected scatterplot X scale and scatterplot Y scale.	
Scatter 2		
TrendLine Top Level	sample	sample
TrendLine Base Level	sample	sample
TrendLine Top/Base	sample	sample
TrendLine On Level	sample	sample
TrendLine Peak Level	sample	sample
TrendLine Mean Level	sample	sample
TrendLine Peak to Average	sample	sample
TrendLine Rise Time	sample	sample
TrendLine Fall Time	sample	sample
TrendLine Rise Edge	sample	sample
TrendLine Fall Edge	sample	sample
TrendLine Width	sample	sample
TrendLine Off Time	sample	sample
TrendLine PRI	sample	sample
TrendLine PRF	sample	sample
TrendLine Duty Cycle	sample	sample
TrendLine Phase Mean	sample	sample
TrendLine Phase Pulse-Pulse Diff	sample	sample
TrendLine Phase Pk-Pk Dev	sample	sample
TrendLine Phase Error RMS	sample	sample
TrendLine Phase Error Peak	sample	sample

Window Name	X Ref Value	X Scale/Div
TrendLine Phase Error Peak Loc	sample	sample
TrendLine Freq Mean	sample	sample
TrendLine Freq Pulse-Pulse Diff	sample	sample
TrendLine Freq Pk-Pk Dev	sample	sample
TrendLine Freq Error RMS	sample	sample
TrendLine Freq Error Peak	sample	sample
TrendLine Freq Error Peak Loc	sample	sample
TrendLine Droop (dB)	sample	sample
TrendLine Droop (%)	sample	sample
TrendLine Droop Rate	sample	sample
TrendLine Droop Start	sample	sample
TrendLine Droop Stop	sample	sample
TrendLine Overshoot (dB)	sample	sample
TrendLine Overshoot (%)	sample	sample
TrendLine Ripple (dB)	sample	sample
TrendLine Ripple (%)	sample	sample
Histogram Top Level	dBm	dB
Histogram Base Level	dBm	dB
Histogram Top/Base	dB	dB
Histogram On Level	dBm	dB
Histogram Peak Level	dBm	dB
Histogram Mean Level	dBm	dB

Window Name	X Ref Value	X Scale/Div
Histogram Peak to Average	dB	dB
Histogram Rise Time	s	s
Histogram Fall Time	s	s
Histogram Rise Edge	s	s
Histogram Fall Edge	s	s
Histogram Width	s	s
Histogram Off Time	s	s
Histogram PRI	s	s
Histogram PRF	Hz	Hz
Histogram Duty Cycle	%	%
Histogram Phase Mean	deg	deg
Histogram Phase Pulse-Pulse Diff	deg	deg
Histogram Phase Pk-Pk Dev	deg	deg
Histogram Phase Error RMS	deg	deg
Histogram Phase Error Peak	deg	deg
Histogram Phase Error Peak Loc	N/A	N/A
Histogram Freq Mean	Hz	Hz
Histogram Freq Pulse-Pulse Diff	Hz	Hz
Histogram Freq Pk-Pk Dev	Hz	Hz
Histogram Freq Error RMS	Hz	Hz
Histogram Freq Error Peak	Hz	Hz

Window Name	X Ref Value	X Scale/Div
Histogram Freq Error Peak Loc	N/A	N/A
Histogram Droop (dB)	dB	dB
Histogram Droop (%)	%	%
Histogram Droop Rate	dB/ μ s	dB/ μ s
Histogram Droop Start	dBm	dB
Histogram Droop Stop	dBm	dB
Histogram Overshoot (dB)	dB	dB
Histogram Overshoot (%)	%	%
Histogram Ripple (dB)	dB	dB
Histogram Ripple (%)	%	%

5.8.3.4

X Scale/Div

Sets the X-axis scale per division.

Table 5.43 X Scale/Div

Parameter	Description
Default	10
Range	1e-11 to 1e+11
Unit	Units are different in different windows. For details, refer to <i>Units of X Ref Value and X Scale/Div</i>

5.9

Input/Output

Sets the input/output interface.

5.9.1

Input Impedance

Sets the input impedance for voltage-to-power conversions. The default input impedance is 50 Ω . To measure a 75 Ω device, you should use a 75 Ω to 50 Ω adapter

(option) supplied by RIGOL to connect the analyzer with the system under test, and then set the input impedance to 75 Ω .

5.9.2 Ext Gain

Compensates for gain or loss in the measurement system outside the instrument.

Key Points:

- This value can change the trace position, but will not change the Y-axis reference value and scale.
- You can use the numeric keys, the knob, or arrow keys to modify this parameter; you can also use the touch screen to modify the parameter.

Parameter	Remarks
Default	0 dB
Range	-120 dB to 120 dB
Unit	dB
Knob Step	1 dB
Left/Right Arrow Key Step	1 dB

5.9.3 Trig Out

Enable or Disable the Trigger Output

Select to enable or disable the trigger output.

Set the Trig Out Polarity

Select the trigger output as "Positive" or "Negative".

5.10 Save

RSA6000 allows you to save various types of files to the internal or external memory.

Click or tap  > **Save** to enter the file management interface. The file types to be saved include: State, Preset, Measurement Data, and Screen.

5.10.1 State

Click or tap **State** to enter the state saving menu. The state can be saved to the register or the file.

1. Save to File

Click or tap **Save to File** to save the current state in the default filename or user-defined filename.

2. Register1 through Register16

When any one of the items from Register1 to Register16 is selected, the current state of the instrument will be saved to the corresponding register. The register supports quick save and recalling instrument state. The register menu displays the time for saving the instrument state.

5.10.2 Preset

1. Select Preset

Click or tap **Select Preset** to select the desired preset settings. The available choices include "Default", "User1", "User2", "User3", "User4", "User5", and "User6".

2. Register1 through Register16

When any one of the items from Register1 to Register16 is selected, the current state of the instrument will be saved to the corresponding register. The register supports quick save and recalling instrument state. The register menu displays the time for saving the instrument state.

5.10.3 Measurement Data

Click or tap **Meas Data** to enter the measurement data saving menu. The selected measurement data can be saved to the specified file. The data will be saved in .csv format. They are separated with a comma, and this is convenient for you to analyze the data in software like Excel.

1. Save to File

Click or tap this menu to save the currently selected type of measurement data in the default filename or user-defined filename.

2. Measure Type

Selects the measurement data type to be saved. The measurement types supported include Raw Data, Pulse Table, Current Statistics Table, and Cumulative Statistics Table.

5.10.4 Screenshot

Click or tap **Screen** to enter the screenshot saving interface.

1. Save to File

Click or tap this menu to save the current screenshot in the default filename or user-defined filename.

2. Format

Click or tap **Format** to select the file format of the current screen image to be "*.png", "*.bmp", or "*.jpg".

3. Invert

Enables or disables the invert function.

4. Screenshot Path

Selects the location where to save the screenshot. You can save the screenshot to the local path or the external storage device.

5.11 Recall

RSA6000 allows you to recall various types of files from the internal or external storage memory.

Click or tap  > **Recall** to enter the file recalling menu. The available file types include: State and Measurement Data.

5.11.1 State

Click or tap **State** to enter the state recalling menu. The state can be recalled from the register or the file.

1. Load from File

Click or tap **Load from File** to enter the file management interface. Select a file and then click or tap **Recall** to recall the specified file.

2. Register1 through Register16

When any one of the items from Register1 to Register16 is selected, the state of the specified register will be recalled.

5.11.2 Measurement Data

Click or tap **Meas Data** to enter the measurement data recalling menu.

1. Load from File

Click or tap **Load from File**, then the file management file is displayed. Select the file to be loaded, click or tap **Recall** to load the file.

2. Measure Type

Select the measurement type to be loaded. The available measurement types include Raw Data and Pulse Table.

6 Shortcut Key

6.1 Preset

Recalls the preset setting and restores the system settings of the analyzer to a specified status.

Press  on the front panel to restore the instrument to its factory default settings.

You can also click or tap  at the upper-right corner of the screen to recall the factory settings. The following table lists the factory default settings (except items specified in Note [1]) or user-defined settings.

Parameter Name	PULSE Parameter Value
Frequency	
Center Frequency	4.25 GHz
CF Step	Auto, 1 MHz
Amplitude	
Range	0 dBm
Y Auto Scaling	ON
Y Ref Value	-1e+12 to 1e+12
Y Scale/Div	1e-11 to 1e+11
Y Ref Position	Top
Y Axis Unit	dBm
Sweep	
Sweep Mode	Continuous
Trigger	
Trigger Source	Free Run
Trigger Hold	OFF, 100 ms
Auto Trig	OFF, 100 ms

Parameter Name	PULSE Parameter Value
Slope	POS
Trigger Delay	OFF, 1 μ s
Meas Setup	
Setting	
Measure Time	100 μ s
Sample Rate	12.7875 MHz
Maximum Pulse Count	ON, 100
Detect Threshold Ref	Top Level
Detect Threshold	-10 dB
Pulse Detection	
Detect Threshold Ref	Top Level
Detect Threshold	-10 dB
Hysteresis Level	1 dB
Min. Pulse Width	On, 100 ns
PWMax (Max. Pulse Width)	ON, 512 μ s
Detect Threshold Line State	ON
Pulse Analysis	
RiseTh Lower (Rise Time Lower)	10%
RiseTh Upper (Rise Time Upper)	90%
FallTh Lower (Fall Time Lower)	10%
FallTh Upper (Fall Time Upper)	90%

Parameter Name	PULSE Parameter Value
PWTh (Pulse Width Threshold)	50%
Level Method	Mode
FFT Window Type	Hanning
Max. FFT Length	16384
Time Analysis	
Measure Time	100 μ s
Sample Rate	12.7875 MHz
Maximum Pulse Count	ON, 100
Time Ref	First Pulse
Freq Ref	Center
Select All	ON
Select Start	1
Select PulseNum	1
Include Extra Data	ON
Freq/Phase Analysis for CW/Linear FM/NLFM	
FreqPhase Ref	Center
FreqPhase Center	75%
FreqPhase Start	100 ns
FreqPhase Stop	100 ns
Ripple/Droop	
Ripple Ref	Center
Ripple Ref	50%
Ripple Start	100 ns
Ripple Stop	100 ns

Parameter Name	PULSE Parameter Value
Droop Ref	Center
Droop Center	100%
Droop Start	100 ns
Droop Stop	100 ns
Modulation (Assumed Pulse Modulation)	
CW State	ON
LFM State	ON
BPSK State	ON
QPSK State	ON
Global Setting	
Global CF Mode	OFF, 4.25 GHz
Trace	
Measurement Trace	ON
Reference Trace	ON
Error Trace	ON
Cursor	
Marker Setup	
Selected Marker	Marker1
Marker Window	Window 1
Marker Mode	OFF
Reference Marker	Marker2
Marker X Value	0
Couple Markers	OFF
Marker Function	

Parameter Name	PULSE Parameter Value
Interval Function	OFF
Interval Span	20 μ s
Interval Left	40 μ s
Interval Right	60 μ s
Display	
Display Meas	Pulse Table Column Visibility
Display View	
Combination View	Basic
X Scale	
X Auto Scaling	ON
X Ref Position	Left
X Ref Value	0 s
X Scale/Div	10 μ s
Input/Output	
Input Impedance	50 Ω
Ext Gain	0 dB
Trig Out	OFF
Trig Out Polarity	Positive
System^[1]	
Power On	Preset
Power Switch	ON
Beeper	OFF
Screen Brightness	80%
Fan Speed	49%

Parameter Name	PULSE Parameter Value
Display Time	ON
Calibrate Auto	OFF
Language	English

**NOTE**

[1]: Not affected by Preset settings.

6.2 Single/Continue

Press  to set the sweep mode to Single or Continuous. For detailed setting methods, refer to the descriptions in *Sweep Mode*.

6.3 Restart

Press  to restart sweeping. After performing this operation, the sweep or measurement is restarted. All the previously measured data will be remeasured.

7 System Function

7.1 System

Sets the system parameters.

7.1.1 I/O Setting

The analyzer supports the LAN or USB communication interface. In the **System** menu, click or tap **I/O** to enter the I/O setting menu to configure the following parameters.

Network Status

Different prompts will be displayed according to the current network connection status.

- DISCONNECTED!
- CONNECTED

MAC Address

The MAC address of each oscilloscope is unique. MAC is used to identify the instrument when you assign the IP address to the instrument.

VISA Address

Displays the VISA address currently used by the the instrument.

IP Configuration Type

The configuration type of the IP address can be DHCP, Auto IP, or Static IP. In different IP configuration types, the configurations for IP address and other network parameters are different.

- **DHCP**
If "DHCP" is selected, the DHCP server in the current network will assign the network parameters (e.g. IP address, Subnet, Gateway, and DNS) for the the instrument.
- **Auto IP**
When "Auto IP" is selected, the instrument will acquire the IP address ranging from "169.254.0.1" to "169.254.255.254" and the subnet mask (255.255.0.0) automatically based on the current network configuration. The "Auto IP" works only when "DHCP" is not selected or connection is failed.
- **Static IP**

If "Static IP" is selected, the instrument is configured with static IP. In this case, you need to disable DHCP and Auto IP manually. At this time, you need to set the IP address, Subnet, Gateway, and DNS manually. At this time, you can self-define the network parameters (e.g. IP address) of the instrument.

- **Set the IP address**

The format of the IP address is nnn.nnn.nnn.nnn. The range of the first segment (nnn) of the address is from 0 to 255 (except 127); wherein, the valid range is from 0 to 223. The range for the other three segments is from 0 to 255. You are recommended to ask your network administrator for an IP address available.

This setting will be saved to the non-volatile memory; if "Power On" is set to "Last", then DHCP and Auto IP are disabled at the next power-on. The instrument will load the preset IP address automatically.

- **Set the subnet mask**

The format of the subnet mask is nnn.nnn.nnn.nnn. Wherein, the range of "nnn" is from 0 to 255. You are recommended to ask your network administrator for a subnet mask available.

This setting will be saved in the non-volatile memory; if "Power On" is set to "Last", then DHCP and Auto IP are disabled at the next power-on. The instrument will load the preset subnet mask automatically.

- **Set the default gateway**

You can set this parameter in Static IP mode. The format of the gateway is nnn.nnn.nnn.nnn. The range of the first segment (nnn) is from 0 to 223 (except 127), and the range for the other three segments is from 0 to 255. You are recommended to ask your network administrator for a gate address available.

This setting will be saved to the non-volatile memory; if "Power On" is set to "Last", then DHCP and Auto IP are disabled at the next power-on. The instrument will load the preset gateway automatically.

- **Set the DNS address**

You can set this parameter in Static IP mode. The format of the DNS address is "nnn.nnn.nnn.nnn". The range for the first segment (nnn) of the address is from 0 to 223 (except 127); and the range for the other three segments is from 0 to 255. You are recommended to ask your network administrator for an address available.

Generally, you do not need to set the DNS, therefore this parameter setting can be ignored.

**TIP**

- When the three IP configuration types are all turned on, the priority of the parameter configuration from high to low is "DHCP", "Auto IP", and "Static IP".
- The three IP configuration types cannot be all turned off at the same time.

mDNS

Click or tap the ON/OFF tab for mDNS to enable or disable the multicast Domain Name System (mDNS). This system is used to provide the function of DNS server for service discovery in a small network without a DNS server.

Host Name

If mDNS is enabled, you need to configure the mDNS host name, supporting inputting a maximum of 26-byte strings.

GPIO

Sets the GPIO address. Its settable range is from 1 to 30. By default, it is 1. When controlling the instrument via the GPIO, first use the USB-GPIO module to extend a GPIO interface, then use the GPIO cable to connect it to the PC.

Apply the Network Parameter Setting

Click or tap **Apply** to validate the current network parameter setting.

Reset the Communication Interface

Click or tap **Reset**, then the prompt message "Are you sure to reset interface settings" is displayed. Click or tap **Confirm** to confirm resetting interface settings.

7.1.2 Basic Settings

In the **System** menu, click or tap **Setup** to enter the basic setting menu.

Language

This product supports menus in multiple languages. Both Chinese and English are available for the display of the help information, prompt messages, and interface. Click or tap the drop-down button of **Language** to select the specified system language from the drop-down list.

Power On

You can set the system configuration to be recalled when the oscilloscope is powered on again after power-off. Click or tap "Preset" or "Last" for **Power On**.

- Last: returns to the setting of the system at last power-off.
- Preset: restores the system to its factory setting.

Power Switch

- **OFF:** After the analyzer is connected to power, you need to press the Power key on the front panel to power on the instrument.
- **ON:** After the analyzer is connected to power, it will be powered on automatically.

Beeper

Click or tap the ON/OFF tab for **Beeper** to enable or disable the beeper. When the beeper is enabled, you can hear the sound of the beeper when you perform the following operations:

- Press a key or a menu key on the front panel
- Enable the touch screen
- When a prompt message is displayed

Screen Brightness

Drag the slide bar of **Screen Brightness** to set the screen brightness. Its settable range is from 0% to 100%.

Fan Speed

Click or tap the slide bar at the right side of **Fan Speed** to set the fan speed of the instrument. Its settable range is from 0% to 100%.

Display Time

Click or tap the ON/OFF tab for **Display Time** to enable or disable the display of the system time.

The system time (date and time) is displayed in the Notification Area at the lower-right corner of the screen. The date is displayed in "yyyy-mm-dd" format, and the time is displayed in "hh:mm:ss" format. When you save the waveform, the output file will contain the time information. Users can set the system time.

- **Date:** Click or tap the "Date" area, then the date setting interface is displayed. Select a proper date, then click or tap **Confirm** to confirm the date modification.
- **Time:** Click or tap the "Time" area, then the time setting interface is displayed.
 - Click or tap the Hour/Minute number and then drag the hour/minute hand to modify the time.
 - After setting, click or tap **Confirm** to confirm the setting.

7.1.3 About this Spectrum

In the **System** menu, click or tap **About**, and then you can view the model, version, and other information about this spectrum analyzer in **About** menu.

- **Model**
Indicates the product model.
- **Serial number**
Indicates the serial number of the product, the unique identification for the product.
- **Firmware**
Indicates the firmware version number of the product.
- **Hardware**
Indicates the hardware version number of the product.
- **Build**
Indicates the creation time for the software version.
- **Android.Build**
Indicates the creation time of the Android operating system.
- **Android.Version**
Indicates the version number of the Android operating system. For example, 7.1.0.
- **Launcher**
Indicates the desktop UI version number of the Android operating system.
- **WebControl**
Indicates the version number of browser remote control module.
- **Upgrade**
Click or tap **Upgrade**, and the file management interface is displayed. Select the desired upgrade file to upgrade the system. For detailed operations, refer to *Update*.

7.1.4 Options

In the "System" menu, click or tap **Options**, then all the options that have currently been installed can be displayed. For the procedures of installing the option, refer to descriptions in *To Install the Option*.

7.1.5 Calibration

1. Calibrate Now

Click or tap this menu, and the analyzer will use the internal calibration source to perform the self-calibration immediately.

2. Auto Calibrate

Enables or disables auto self-calibration. If auto self-calibration is enabled, the analyzer will perform one self-calibration after it is launched.

7.1.6 Update

This instrument supports local upgrade.

1. Click or tap  > **Update**, then the file management interface is displayed. Select the desired upgrade file from the specified path.
2. Click or tap **Confirm** to complete the local upgrade.

7.1.7 Help Menu

The built-in help file provides information about the functions and menu

introductions of the instrument. Click or tap  > **Help** to enter the help system.

You can get its help information by clicking on the link for the introduction of the specified function.

7.1.8 Shutdown

- Click or tap the function navigation icon  at the lower-left corner of the screen to enter the function navigation. Click or tap **Shutdown** to shut down the instrument. Then, a prompt message "Are you sure to shutdown?" is displayed. Click or tap **Confirm** to confirming shutting down the instrument.
- Press down the power key , then a prompt message "Are you sure to shutdown?" is displayed. Click or tap **Confirm** to confirming shutting down the instrument.
- Press the power key  continuously for two times to turn off the instrument.
- Long press the power key  for three seconds to turn off the instrument.

7.1.9 Restart

Click or tap the function navigation icon  at the lower-left corner of the screen to enter the function navigation. Click or tap **Restart** to restart the instrument. Then, a prompt message "Are you sure to restart?" is displayed. Click or tap **Confirm** to restart the instrument.

7.1.10 Auto

Auto function is disabled in PULSE mode.

7.2 File

RSA6000 series spectrum analyzer allows you to save various types of files to the internal or external memory, and recall them when necessary.

Click or tap  > **File** to enter the file management interface.

7.2.1 File Management

Click or tap **File**, then the file management interface is displayed. You can select the desired file or folder. You can also use the touch screen or externally connected mouse to operate on the screen. Displays all the files with the specified file types. When you select a file or folder, you can click or tap **Rename**, **Cut**, **Copy**, **Paste**, **Cancel**, **Delete**, or **Security Clear** to perform the specified operation.

The available file types include: State, Preset, Measurement Data, and Screen. The descriptions for various file types are shown in the following table.

File Type	Format	Suffix Name
State	BIN	.sta
Preset	JSON	.sta
Measurement Data	CSV	.csv
Screenshot	IMAGE	.jpg/bmp/png



NOTE

RSA6000 can only recognize files whose filenames consist of Chinese characters, English letters, or numbers. If the filename or folder name contains strings other than the above mentioned characters, the file or the folder might not be displayed normally in the file manager interface.

7.2.2 Copy

Copies the currently selected file or folder.

7.2.3 Cut

Cuts the currently selected file or folder from the specified path.

7.2.4 Paste

Pastes the file or folder.

When the current path has contained a file or folder whose name is the same as the one that you want to paste, after you perform the paste operation, the original file or folder will be overwritten.

7.2.5 Rename

Renames a file that has been stored. After you select a file, click or tap this menu name to input a new filename.

7.2.6 Delete

Deletes the selected file.

7.2.7 New Folder

Creates a folder under the current directory, and the file is named with a default filename. To modify this filename, click or tap **Rename** to rename the file.

7.2.8 Security Clear

Click or tap **SecurityClear**, then a prompt message "Confirm SecurityClear?" is displayed. Click or tap **Confirm** to clear all the saved files from the internal memory. Click or tap **Cancel** to cancel security clear operation.

8 Remote Control

This instrument supports Web Control remote operation. Web Control is Web-based remote control operation. With Web control, you can access and operate the LAN-connected instrument via the web page on any smart terminals such as PC, mobile, and iPad, without needing to install any software. The operation procedures are as follows:

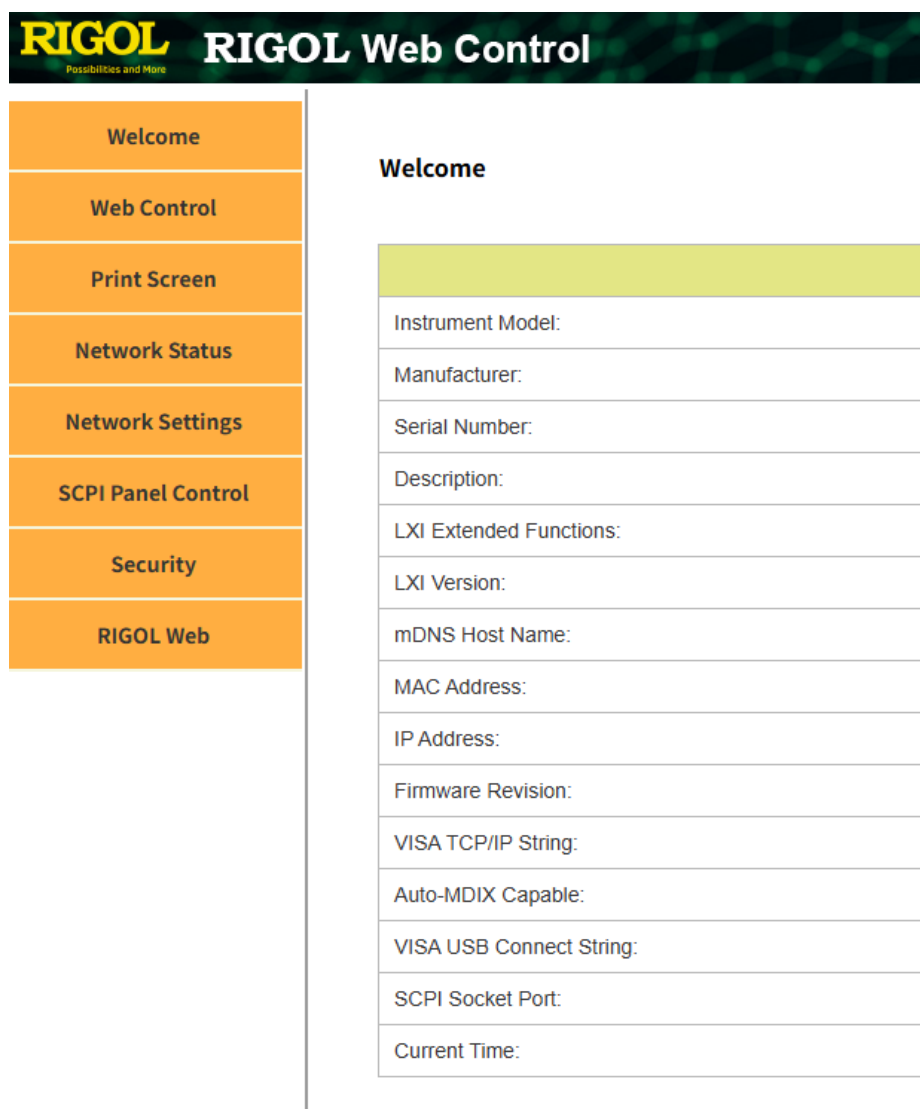
1. Connect the instrument to the network

Ensure that the rear-panel LAN interface is connected to the network. Note that the instrument must be connected to the network where the control terminal is located. Then you can operate the instrument in remote way by accessing the network.

2. Obtain the IP address

In the **System** menu, click or tap **IO** to view the IP address of the instrument.

3. Input the IP address of the instrument into the browser address bar, then press Enter to access the web page, as shown in the following figure.



4. Click **Web Control** on the left side of the screen to enter the instrument remote control interface. You can use the mouse to remotely control the instrument in real time, with the same effect as operating the instrument directly.
5. Click **Print Screen**, and you can select "Take Screenshot" or "Record Screen" to capture the current screen shot.
6. Click **Network Settings** to configure the network. Note that login is required when changing the network configuration. When you first log in to the Web Control, use the user name "admin" and the password "rigol"..
7. The SCPI Panel Control function allows the user to send SCPI commands through the web interface for remote programming control of the instrument. Click **SCPI Panel Control** to enter the commands into the SCPI Command input field. After inputting the commands, click the **Send&Read** button to send the command and read the returned value.

You can program and control the instrument by using the SCPI (Standard Commands for Programmable Instruments) commands. For details about the SCPI

commands and programming, refer to *Programming Guide* of this series of product.

8. Close the browser to exit the instrument remote control interface.

Only one user can access the instrument IP address for remote control operation at a time. First come, first served. Concurrent logins are not allowed. If the connection is interrupted, you can refresh the browser to load the page.



CAUTION

Before setting up communication, please turn off the instrument to avoid causing damage to the communication interfaces.

9 Troubleshooting

1. When I power on the instrument, the instrument stays black and does not display anything.

- a. Check whether the power is correctly connected.
- b. Check whether the power key is really pressed.
- c. Check whether the fuse is blown. If you need to replace the fuse, use only the specified fuse that conforms to the product.
- d. Restart the instrument after finishing the above inspections.
- e. If the problem still persists, please contact RIGOL.

2. The USB storage device cannot be recognized.

- a. Check whether the USB storage device can work normally when connected to other instruments or PC.
- b. Make sure that the USB storage device is FAT32 format and flash type. The instrument doesn't support hardware USB storage device.
- c. After restarting the instrument, insert the USB storage device again to check whether it can work normally.
- d. If the USB storage device still cannot work normally, please contact RIGOL.

3. The touch functions cannot be used normally.

- a. Check whether you have locked the touch screen. If yes, unlock the touch screen.
- b. Check whether the screen or your finger is stained with oil or sweat. If yes, please clean the screen or dry your hands.
- c. Check whether there is a strong magnetic field around the instrument. If the instrument is close to the strong magnetic field (e.g. a magnet), please move the instrument away from the magnet field.
- d. If the problem still persists, please contact RIGOL.

10 Appendix

10.1 Appendix A: Options and Accessories

	Description	Order No.
Model	Real-time Spectrum Analyzer, 5 kHz to 8.5 GHz	RSA6085
	Real-time Spectrum Analyzer, 5 kHz to 14 GHz	RSA6140
	Real-time Spectrum Analyzer, 5 kHz to 26.5 GHz	RSA6265
Standard Accessory	Power Cord	-
Options	Vector Signal Analysis Application Software	RSA6000-VSA
	EMI Measurement Application Software	RSA6000-EMI
	Analog Demodulation Application Software	RSA6000-ADM
	Phase Noise Measurement Application Software	RSA6000-PNM
	Pulse Measurement Application Software	RSA6000-PMA
	Preamplifier (PA), 8.5 GHz	RSA6000-P08
	Preamplifier (PA), 14 GHz	RSA6000-P14
	Preamplifier (PA), 26.5 GHz	RSA6000-P26
	200 MHz Analysis Bandwidth	RSA6000-B200
	200 MHz Real-time Bandwidth	RSA6000-RB200
	Advanced Measurement Kit	RSA6000-AMK
	8.5 GHz Tracking Generator Output	RSA6000-T08
Optional Accessories	DSA utility kit. Refer to Note[1] for details.	DSA Utility Kit
	RF adaptor kit. Refer to Note[2] for details.	RF Adaptor Kit
	Includes: 50 Ω to 75 Ω adaptor (2pcs)	RF CATV Kit
	Includes: 6 dB attenuator (1pcs), 10 dB attenuator (2pcs)	RF Attenuator Kit
	30 dB high-power attenuator, with the max. power of 100 W	ATT03301H
	N(M)-N(M) RF Cable	CB-NM-NM-75-L-12G
	N(M)-SMA(M) RF Cable	CB-NM-SMAM-75-L-12G
	Near-field Probe	NFP-3
	USB Cable x1	CB-USBA-USBB-FF-150

**NOTE**

- For all the mainframes, accessories, and options, please contact the local office of RIGOL.
- [1]: Includes N-SMA cable, BNC-BNC cable, N-BNC adaptor, N-SMA adaptor, 75 Ω -50 Ω adaptor, 900 MHz/1.8 GHz antenna (2pcs), 2.4 GHz antenna (2pcs)
- [2]: Includes: N(F)-N(F) adaptor (1pcs), N(M)-N(M) adaptor (1pcs), N(M)-SMA(F) adaptor (2pcs), N(M)-BNC(F) adaptor (2pcs), SMA(F)-SMA(F) adaptor (1pcs), SMA(M)-SMA(M) adaptor (1pcs), BNC T type adaptor (1pcs), 50 Ω SMA load (1pcs), 50 Ω BNC impedance adaptor (1pcs)

10.2 Appendix B: Warranty

RIGOL TECHNOLOGIES CO., LTD. (hereinafter referred to as RIGOL) warrants that the product mainframe and product accessories will be free from defects in materials and workmanship within the warranty period. If a product proves defective within the warranty period, RIGOL guarantees free replacement or repair for the defective product.

To get repair service, please contact your nearest RIGOL sales or service office.

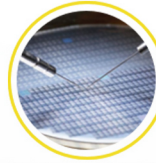
There is no other warranty, expressed or implied, except such as is expressly set forth herein or other applicable warranty card. There is no implied warranty of merchantability or fitness for a particular purpose. Under no circumstances shall RIGOL be liable for any consequential, indirect, ensuing, or special damages for any breach of warranty in any case.

Boost Smart World and Technology Innovation

Industrial Intelligent
Manufacturing



Semiconductors



Education &
Research



Communication

System Integration



New Energy



- 5G Cellular-5G/WIFI
- UWB/RFID/ ZIGBEE
- Digital Bus/Ethernet
- Optical Communication

- Digital/Analog/RF Chip
- Memory and MCU Chip
- Third-Generation Semiconductor
- Solar Photovoltaic Cells

- New Energy Automobile
- PV/Inverter
- Power Test
- Automotive Electronics

*Provide Testing and Measuring Products
and Solutions for Industry Customers*

HEADQUARTER

RIGOL TECHNOLOGIES CO., LTD.
No.8 Keling Road, New District,
Suzhou, Jiangsu, P.R.China
Tel: +86-400620002
Email: info-cn@rigol.com

JAPAN

RIGOL JAPAN CO., LTD.
5F, 3-45-6, Minamitsuka, Toshima-Ku,
Tokyo, 170-0005, Japan
Tel: +81-3-6262-8932
Fax: +81-3-6262-8933
Email: info.jp@rigol.com

EUROPE

RIGOL TECHNOLOGIES EU GmbH
Friedrichshafener Str. 5
82205 Gilching
Germany
Tel: +49(0)8105-27292-21
Email: info-europe@rigol.com

KOREA

RIGOL KOREA CO., LTD.
5F, 222, Gonghang-daero,
Gangseo-gu, Seoul, Republic of Korea
Tel: +82-2-6953-4466
Fax: +82-2-6953-4422
Email: info.kr@rigol.com

NORTH AMERICA

RIGOL TECHNOLOGIES, USA INC.
10220 SW Nimbus Ave.
Suite K-7
Portland, OR 97223
Tel: +1-877-4-**RIGOL**-1
Email: sales@rigol.com

For Assistance in Other Countries

Email: info.int@rigol.com

RIGOL® is the trademark of **RIGOL TECHNOLOGIES CO., LTD.** Product information in this document is subject to update without notice. For the latest information about **RIGOL's** products, applications and services, please contact local **RIGOL** channel partners or access **RIGOL** official website: **www.rigol.com**