



RIGOL

Probe Adapter

High Impedance Adapter

User Guide

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Guaranty and Declaration

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Contact Us

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

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

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1 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:



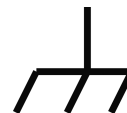
**Hazardous
Voltage**



Safety Warning



**Protective Earth
Terminal**



Chassis Ground



Test Ground

2 Document Overview

This manual is used to guide users to get a quick understanding of the High Impedance Adapter and its using method. Besides, this manual gives care and cleaning information for the maintenance of the probe adapter.

The probe adapter includes the following models.

Model	Description
BNC Adapter Input 50Ω	3.5mm(F)-to-precision BNC connector (50Ω)
High Impedance Adapter	3.5mm(F)-to-BNC connector (1MΩ)

3 Probe Adapter Overview

3.1 Probe Adapter Introduction

The probe adapter enables the probe to be used on RIGOL DS80000 series oscilloscope by extending the interface and functionality of the DS80000 series to adjust the analog channel setting. Its BNC connector can be recognized by RIGOL's various probes, making it easy to be used in different testing and measurement solutions.

The probe adapter is compatible with the interface of RIGOL's DS80000 series, and can be auto-recognized by the interface and configured.

3.2 General Inspection

1. Inspect the packaging

If the packaging has been damaged, do not dispose the damaged packaging or cushioning materials until the shipment has been checked for completeness and has passed both electrical and mechanical tests.

The consigner or carrier shall be liable for the damage to the instrument resulting from shipment. RIGOL would not be responsible for free maintenance/rework or replacement of the instrument.

2. Inspect the instrument

In case of any mechanical damage, missing parts, or failure in passing the electrical and mechanical tests, contact your RIGOL sales representative.

3. Check the accessories

Please check the accessories according to the packing lists. If the accessories are damaged or incomplete, please contact your RIGOL sales representative.

Recommended Calibration Interval

RIGOL suggests that the instrument should be calibrated every 18 months.

3.3 Probe Adapter Appearance

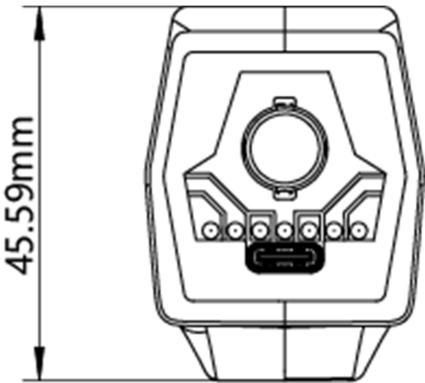


Figure 3.1 Front View

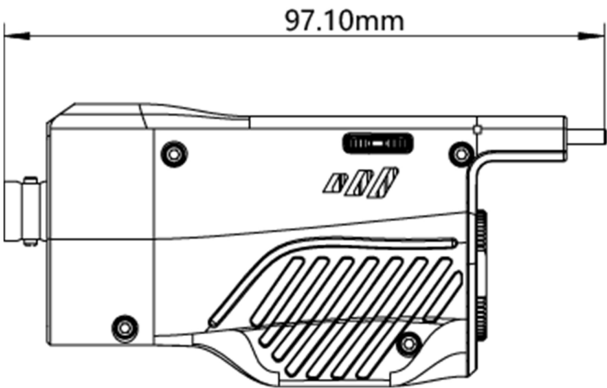


Figure 3.2 Side View

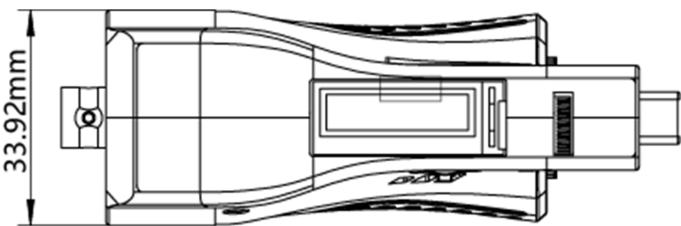


Figure 3.3 Vertical View

3.4 Specifications

Model	High Impedance Adapter
Analog Bandwidth (-3 dB) ^[1]	1 MΩ: DC to 500 MHz 50 Ω: DC to 1 GHz
Bandwidth Limit	Full, 20 MHz ± 25%

Model	High Impedance Adapter
Input Coupling	DC or AC
Input Impedance	1 M Ω $\pm$ 1%, 50 Ω $\pm$ 1%
Input Capacitance	18 pF $\pm$ 3 pF
Maximum Input Voltage	1 M Ω : CAT I 300 Vrms, 400 Vpk (DC + Vpeak) 50 Ω : 5 Vrms
DC Gain Accuracy ^[1]	$\pm$ 2%
Rise Time ^[1] (10% to 90%, typ.)	1 M Ω : $\leq$ 0.8 ns 50 Ω : $\leq$ 0.4 ns
Dynamic Range	$\pm$ 4 div

NOTE

[1]: Host instrument (DS81304) + Adapter

4 To Use the Probe Adapter

4.1 To Connect to the Oscilloscope

After the probe adapter is connected properly to RIGOL's DS80000 series oscilloscope, the oscilloscope recognizes the probe adapter automatically and provides power via the front panel to the probe adapter. At this time, you can set the parameters for the analog channel through the front-panel menu of the oscilloscope. For example, set the probe attenuation ratio, bandwidth limit, coupling mode, etc.



TIP

The probe adapter is connected to the oscilloscope via the Type-C interface. Note that the Type-C interface is compliant with the RIGOL's own protocol, rather than the standard USB protocol, thus do not use it to charge for other devices.

Please connect the probe to the oscilloscope following the steps below:

1. Connect the Probe Adapter to the Oscilloscope

Connect the other end of the probe adapter to the front-panel input terminal of the analog channel of the oscilloscope and the Type-C interface. Note that after the probe adapter is inserted into the front-panel Type-C interface of the oscilloscope, rotate the coaxial connector of the analog channel to tight it up.

2. Connect the Probe to the Probe Adapter

Take RP3500A (passive high-impedance probe) as an example, connect the probe head of RP3500A to one end of the probe adapter, as shown in [Figure 4.1](#).

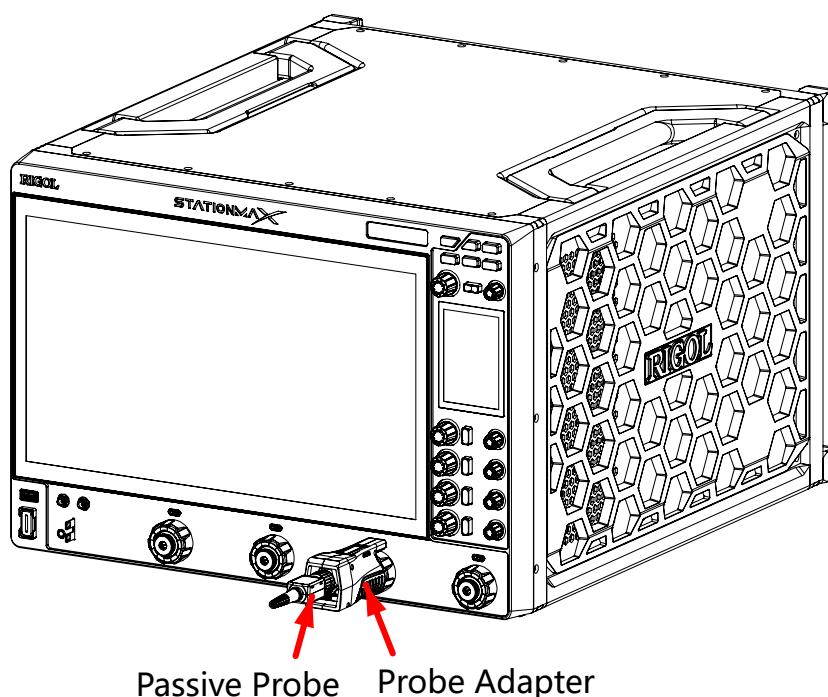


Figure 4.1 Connect the Passive Probe



NOTE

- After the 1 M Ω probe adapter is connected properly to RIGOL's DS80000 series oscilloscope, the oscilloscope recognizes the probe adapter automatically and provides power via the front panel to the probe adapter. At this time, the impedance of oscilloscope turns out to be 1 M Ω , and you can set the channel coupling and other relevant parameters via the front-panel menu of the oscilloscope.
- After the 1 M Ω probe adapter is connected properly to RIGOL's DS80000 series oscilloscope, the self-calibration interface is displayed, prompting you to perform the probe calibration.

4.2 To Adjust the Analog Channel Setting

You can move the switch lever (as shown in the figure below) at one side of the probe adapter to control some functions of the adapter. For example, in the probe module, you can view the probe attenuation ratio, impedance and probe type. In the vertical system module, you can set the coupling, impedance, scale, offset, and bias. In the system module, you can perform self-check for the adapter, restart the adapter, work with the oscilloscope to use Auto key to perform Auto configuration and set the power-on status for the oscilloscope.



5 RIGOL Probes and Accessories Supported

This section lists the probes and accessories that match the probe adapter. All the products listed here can be purchased from RIGOL.

Probes available for 1M Ω adapter

Model	Type	Description
 PVP2150	High-impedance Probe	- Attenuation Ratio: 10:1/1:1 1X BW: DC to 35 MHz 10X BW: DC to 150 MHz - Compatibility: All models of RIGOL's digital oscilloscopes
 PVP2350	High-impedance Probe	- Attenuation Ratio: 10:1/1:1 1X BW: DC to 35 MHz 10X BW: DC to 350 MHz - Compatibility: All models of RIGOL's digital oscilloscopes
 RP3500A	High-impedance Probe	- Attenuation Ratio: 10:1 - BW: DC to 500 MHz - Compatibility: MSO/DS7000, MSO8000/A, DHO4000/1000, MHO/DHO5000, and DS70000/80000 series
 RP5600A	High-impedance Probe	- BW: DC to 600 MHz - Compatibility: MSO/DS7000, MSO8000/A, and DS70000/80000 series
 RP1300H	High-voltage Probe	- Attenuation Ratio: 100:1 - BW: DC to 300 MHz - CAT I 2000 V (DC+AC) - CAT II 1500 V (DC+AC) - Compatibility: All models of RIGOL's digital oscilloscopes

Model	Type	Description
 RP1010H	High-voltage Probe	- Attenuation Ratio: 1000:1 - BW: DC to 40 MHz - DC: 0 to 10 kV DC - AC: pulse ≤ 20 kVp-p - AC: sine ≤ 7 kV_{rms} - Compatibility: All models of RIGOL's digital oscilloscopes
 RP1018H	High-voltage Probe	- Attenuation Ratio: 1000:1 - BW: DC to 150 MHz - DC+AC_{peak}: 18 kV CAT II - AC_{rms}: 12 kV CAT II - Compatibility: All models of RIGOL's digital oscilloscopes
 PCA1030	Current Probe	- BW: DC to 50 MHz (-3 dB) - Max. continuous input range: 30 A_{rms} - Max. peak-peak current value: 50 A peak, non-continuous - Compatibility: MSO/DS7000, MSO8000/A, DHO4000, MHO/DHO5000, and DS70000/80000 series
 PCA2030	Current Probe	- BW: DC to 100 MHz (-3 dB) - Max. continuous input range: 30 A_{rms} - Max. peak-peak current value: 50 A peak, non-continuous - Compatibility: MSO/DS7000, MSO8000/A, DHO4000, MHO/DHO5000, and DS70000/80000 series
 PCA1150	Current Probe	- BW: DC to 10 MHz (-3 dB) - Max. continuous input range: 150 A - Max. peak-peak current value: 300 A (non-continuous), 500 A (pulse width ≤ 30 μs) - Compatibility: MSO/DS7000, MSO8000/A, DHO4000, MHO/DHO5000, and DS70000/80000 series
 Current Probe	Current Probe	- BW: DC to 300 kHz - Maximum Input - AC: ± 100 A - AC P-P: 200 A

Model	Type	Description
RP1001C		- AC RMS: 70 A - Compatibility: All models of RIGOL's digital oscilloscopes
	Current Probe	- BW: DC to 1 MHz - Maximum Input - AC: ± 70 A - AC P-P: 140 A - AC RMS: 50 A - Compatibility: All models of RIGOL's digital oscilloscopes
RP1002C		
	Current Probe	- BW: DC to 50 MHz - Maximum Input - AC P-P: 50 A (non-continuous) - AC RMS: 30 A - Compatibility: All models of RIGOL's digital oscilloscopes - Required to order RP1000P power supply.
RP1003C		
	Current Probe	- BW: DC to 100 MHz - Maximum Input - AC P-P: 50 A (non-continuous) - AC RMS: 30 A - Compatibility: All models of RIGOL's digital oscilloscopes - Required to order RP1000P power supply.
RP1004C		
	Current Probe	- BW: DC to 10 MHz - Maximum Input - AC P-P: 300 A (non-continuous), 500 A (@pulse width ≤ 30 us) - AC RMS: 150 A - Compatibility: All models of RIGOL's digital oscilloscopes - Required to order RP1000P power supply.
RP1005C		
	Current Probe	- BW: DC to 2 MHz - Maximum Input - AC P-P: 700 A peaks, non-continuous - AC RMS: 500 A

Model	Type	Description
RP1006C		• Compatibility: All models of RIGOL's digital oscilloscopes • Required to order RP1000P power supply.

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.



CAUTION

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

Cleaning

Clean the instrument regularly according to its operating conditions.

1. Disconnect the probe adapter from the oscilloscope or power source.
2. Clean the external surfaces of the probe adapter with a soft cloth dampened with mild detergent or water.



WARNING

To avoid short-circuit resulting from moisture or even personal injuries, ensure that the probe adapter is completely dry before use.

7 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.

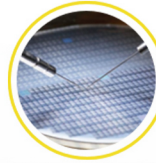
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Boost Smart World and Technology Innovation

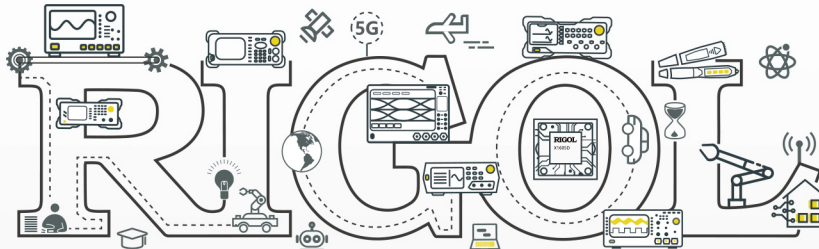
Industrial Intelligent
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Semiconductors

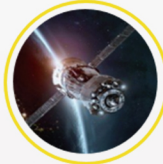


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Research



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System Integration



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- UWB/RFID/ ZIGBEE
- Digital Bus/Ethernet
- Optical Communication

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

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