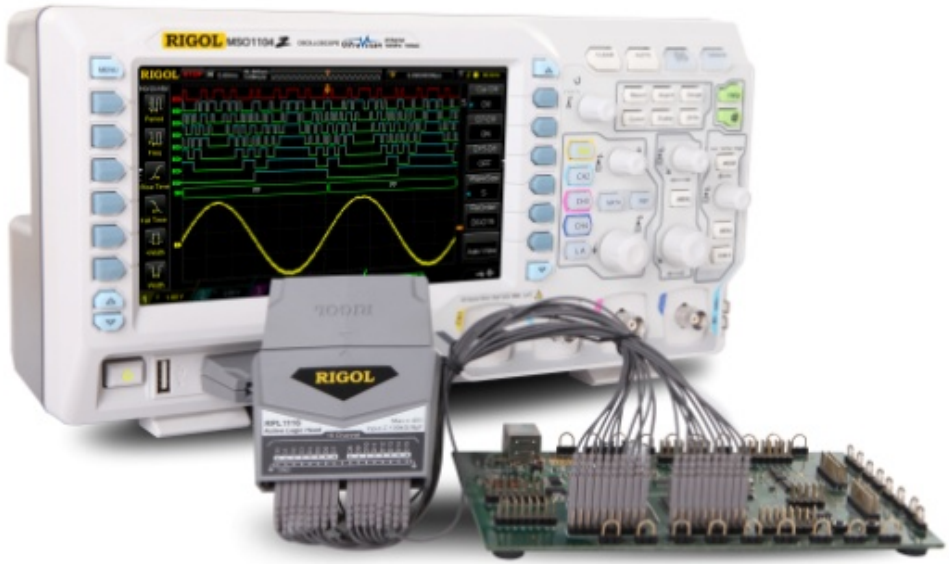
RIGOL

User's Guide



RPL1116

RPL1116 Active Logic Probe

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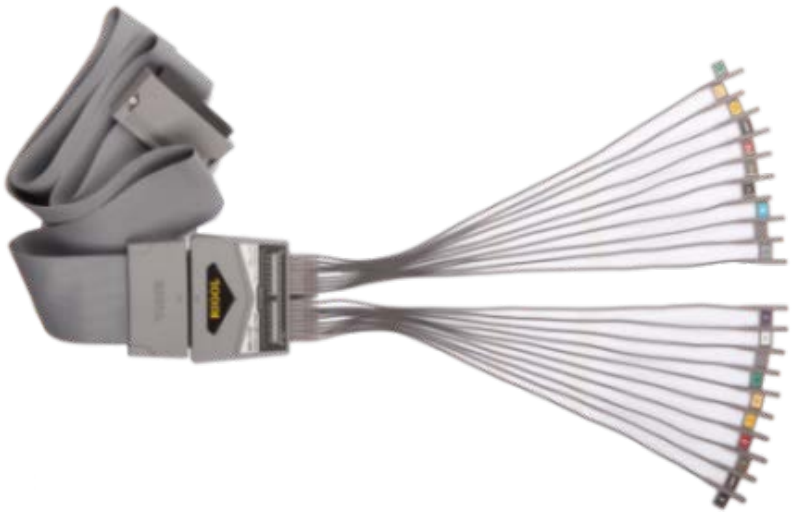
General Safety Summary

- Connect and disconnect the probe properly.
- Observe all terminals ratings.
- Do not touch exposed connections and components after power on.
- Do not operate with suspected failures.
- Do not operate without covers.
- Do not operate in an explosive atmosphere.
- Do not operate in wet conditions.
- Keep product surface clean and dry.
- Pay attention to handling safety.

Product Overview

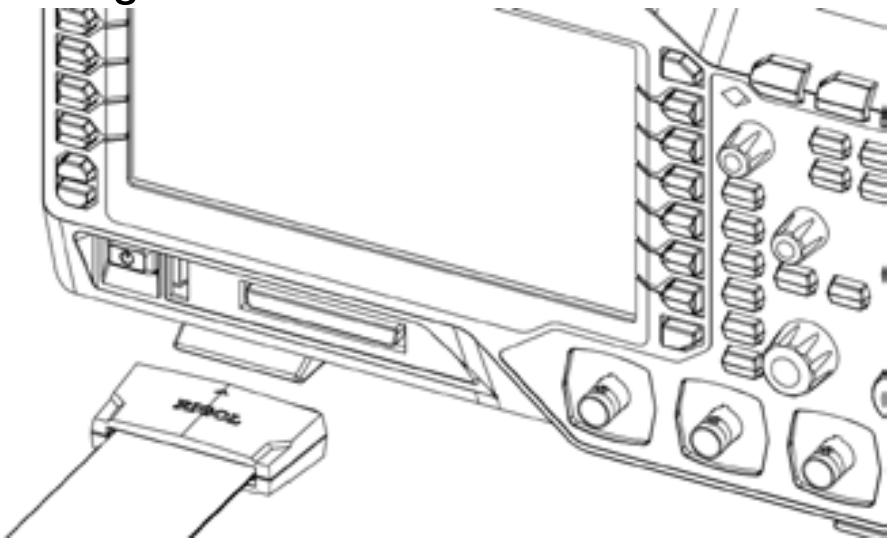
Being a high-performance active logic probe, RPL1116 connects the digital signals under test to the MSO1000Z series digital oscilloscope to realize the logic analyzer function.



The 16 digital channels (D0-D15) of RPL1116 are divided into two channel groups (D0-D7 and D8-D15) each of which includes signal interfaces and ground interfaces. All the channels are marked with different numbers on the label of the probe head to identify different channels. RPL1116 provides 16 signal leads and 16 ground leads to realize flexible connection of signals and reference ground. Users can calibrate the probe zero by using the auto-calibration function in the LA menu of the oscilloscope.

The Using Method of the Logic Probe

1. **Connect RPL1116 to the oscilloscope:** connect the active logic head to the main cable input, and then connect the main cable output to the digital signal input terminal at the front panel of the oscilloscope as shown in the figure below.



2. **Connect the signals under test to RPL1116:** users can connect any number (≤16) of the signals under test to RPL1116 according to the test need. Note that the amplitude of the input signal should not exceed the maximum working voltage range of the probe. RPL1116 provides two connection methods to realize convenient and flexible detection.

   - Method one: users can connect the signals under test through the probe leads separately. You can easily identify the corresponding channel of each signal by the channel label on the probe leads and the color information on the probe head as shown in Figure 1.

     Note: If crosstalk or ground bounce occurs during use, it might be caused when channels share a single ground lead. So you are recommended to add a ground wire to the signal lines of each channel and twist them.

   - Method two: on the basis of method one, you can connect a grabber to each lead and connect it to the device under test as

shown in Figure 2.

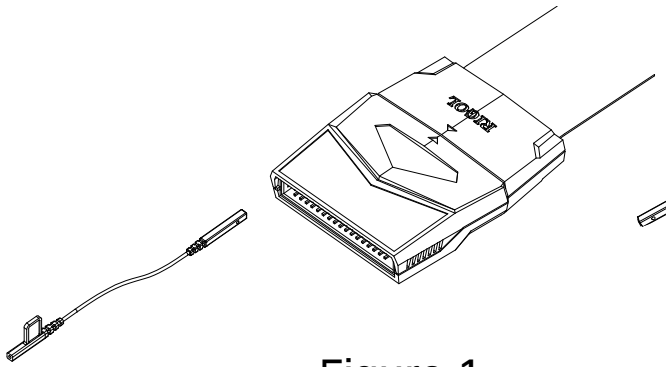


Figure 1

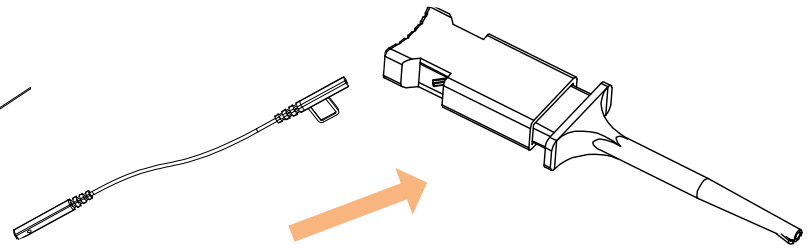


Figure 2

3. **Set the probe:** press **LA** at the front panel of the oscilloscope to enter the probe setting menu. Users can view and set the following parameters under this menu: threshold level (the threshold levels of D0-D7 and D8-D15 can be adjusted independently), waveform size (applicable to all the channels; wherein, item L is only available when the number of active channels is no more than 8), channel label, probe calibration and so on.

   Note: When the probe is connected to the oscilloscope for the first

time or the temperature change is more than 5 degrees, you are recommended to calibrate the probe zero using the auto-calibration function in the LA menu and please disconnect all the connections to the RPL1116 input terminal during the calibration.

4. **Function Check:** after finishing the above operations, the signal under test will be displayed on the corresponding digital channel on the oscilloscope screen. If no signal is displayed, please adjust the oscilloscope to select proper general settings (such as the trigger mode and timebase). If signal is still not displayed, please check the electric connection and parameter settings again or please try to use other probe (such as analog probe) to check the signal state of the test point.

Probe Specifications

Input channels	16
Threshold range	±15 V
Threshold accuracy	±100m V+3% of threshold setting
Max input voltage	±40 V
Max input dynamic range	±10 V + threshold setting
Min voltage swing	500 mV
Min detectable pulse width	10 ns
Input impedance	100 kΩ±2%
Input capacitance	About 8 pF
Cable length	About 90 cm
Lead length	About 25 cm
Operation environment	0℃~50℃, 0~80%RH
Storage environment	-20℃~60℃, 0~90%RH

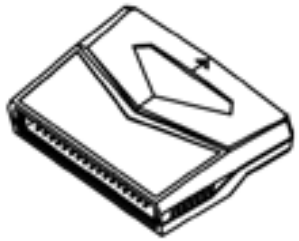
Accessories

Item	Description	Quantity
1	Main Cable	1
2	Active Logic Head	1
3	Lead	32 (2×16)
4	Grabber	32
5	Chinese and English User's Guide	1
6	RPL1116 Packing Box	1

Accessories Sketch Map



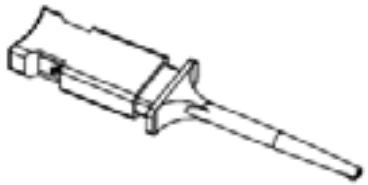
Main Cable



Active Logic Head



Lead



Grabber

Contact Us

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

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UGE26X02-1110

Aug. 2014

