General Warranty

OWON warrants that the product will be free from defects in materials and workmanship for a period of 3 years from the date of purchase of the product by the original purchaser from the OWON Company. The warranty period of accessories such as probe is 12 months. This warranty only applies to the original purchaser and is not transferable to the third party.

If the product proves defective during the warranty period, OWON either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product. Parts, modules and replacement products used by OWON for warranty work may be new or reconditioned like new performance. All replaced parts, modules and products become the property of OWON.

In order to obtain service under this warranty, customer must notify OWON of the defect before the expiration of the warranty period. Customer shall be responsible for packaging and shipping the defective product to the service center designated by OWON, and with a copy of customer proof of purchase.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. OWON shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than OWON representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of non-OWON supplies; or d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

Please contact the nearest OWON's Sales and Service Offices for services or a complete copy of the warranty statement.

For better after-sales service, please visit www.owon.com.cn and register the purchased product online.

Excepting the after-sales services provided in this summary or the applicable warranty statements, OWON will not offer any guarantee for maintenance definitely declared or hinted, including but not limited to the implied guarantee for marketability and special-purpose acceptability. OWON should not take any responsibilities for any indirect, special or consequent damages.

For more detailed information, please see the help document of the software, you can open it by pressing F1 in the window of software.

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1. General Safety Requirements

Before any operations, please read the following safety precautions to avoid any possible bodily injury and prevent this product or any other products connected from damage. In order to avoid any contingent danger, this product is only used within the range specified.

Only the qualified technicians can implement the maintenance.

Pay attention to the nominal values of all terminals: To avoid fire or electric shock, please keep a watchful eye on all nominal values and marks specified for this product. Before any connection performed on this product, carefully read the user's manual of the product for further information of nominal values.

No touch is allowed on bare conductors: When the product is powered on, do not touch any bare joints or parts of the scope meter.

Operation is prohibited in case of any undetermined failure: When in doubt any damage on this product, consult the qualified personnel for checking on it.

Keep ventilation in good condition: Refer to the user manual for detail installation instructions in order to fix this product correctly and provide it with good ventilation conditions.

No operation is allowed under a humid environment.

No operation is allowed under an explosive environment.

Keep clean and dry on the product surface.

The method which stipulated according to the factory does not use the equipment, possibly can damage the protection which the equipment provides.

2. Safety Terms and Symbols

Safety Terms

Terms in this manual. The following terms may appear in this manual:

Warning: Warning indicates the conditions or practices that could result in injury or loss of life.

Caution: Caution indicates the conditions or practices that could result in damage to this product or other property.

Terms on the product. The following terms may appear on this product:

Danger: It indicates an injury or hazard may immediately happen.

Warning: It indicates an injury or hazard may be accessible potentially.

Caution: It indicates a potential damage to the instrument or other property might occur.

Safety Symbols

Symbols on the product. The following symbol may appear on the product:


Hazardous Voltage


Refer to Manual


Protective Earth Terminal


Chassis Ground


Test Ground

To avoid body damage and prevent product and connected equipment damage, carefully read the following safety information before using the test tool. This product can only be used in the specified applications.

Warning:

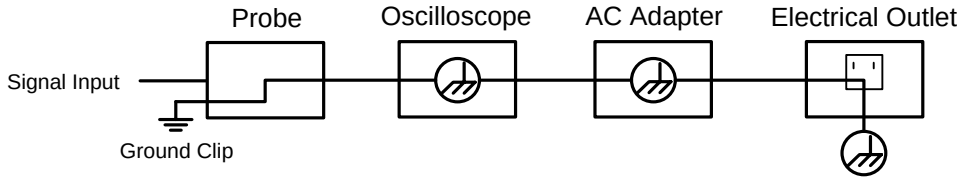
To avoid fire or electrical shock, please use proper power adapter. Use only the power adapter appointed by the manufacturer and subject to approval of being used in the user's country.

Warning:

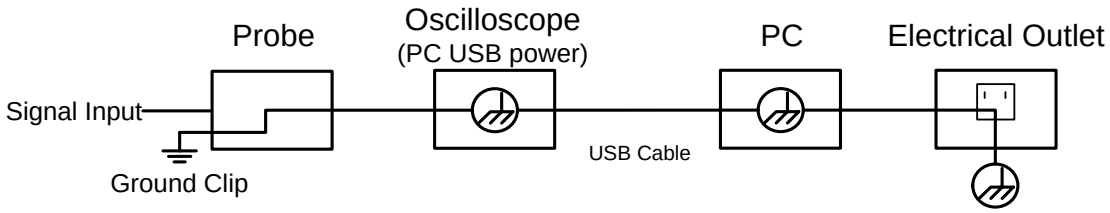
The two channels of the oscilloscope are non-isolated electrically. The channels should adopt common basis during measuring. To prevent short circuits, the 2 probe ground must not be connected to 2 different non-isolated DC level.

Warning:

The channels should adopt common basis during measuring. To prevent short circuits, the 2 probe ground must not be connected to 2 different non-isolated DC level.
The diagram of the oscilloscope ground wire connection:



The diagram of the ground wire connection when the oscilloscope powered by PC USB is connected to the AC-powered PC through the USB ports:



It is not allowed to measure AC power when the oscilloscope is AC powered through the adapter, or when the oscilloscope powered by PC USB is connected to the AC-powered PC through the ports.

Warning:

To avoid fire or electrical shock if a test tool input is connected to more 42V peak (30Vrms) or on circuits of more than 4800VA:

- **Use only insulated probes and adapter supplied with the test tool, or indicated by OWON as suitable for the Oscilloscope.**
- **Before use, inspect probes and accessories for mechanical damage and replace when damaged.**
- **Remove all probes and accessories that are not in use.**

- **Do not apply voltages that differ more than 40 V from earth ground to any non-isolated inputs when measuring in a CAT Ⅱ environment.**
- **Do not apply voltages that differ more than 40 V from each other to the non-isolated inputs when measuring in a CAT Ⅱ environment.**
- **Do not apply input voltages above the rating of the instrument Use caution when using 1:1 test leads because the probe tip voltage will be directly transmitted to the Oscilloscope.**
- **Do not touch the exposed part of metal BNC.**
- **Do not insert metal objects into connectors.**
- **Always use the Oscilloscope only in the manner specified.**
- **Voltage ratings that are mentioned in the warning are giver as limits for "working voltage". The represent V ac rms (50 – 60 Hz) for AC sine wave applications and as V dc for DC applications. Overvoltage Category Ⅱ refers to local level , which is applicable for appliances and portable equipment .**

3. Ports Introduction

VDS1022(I)

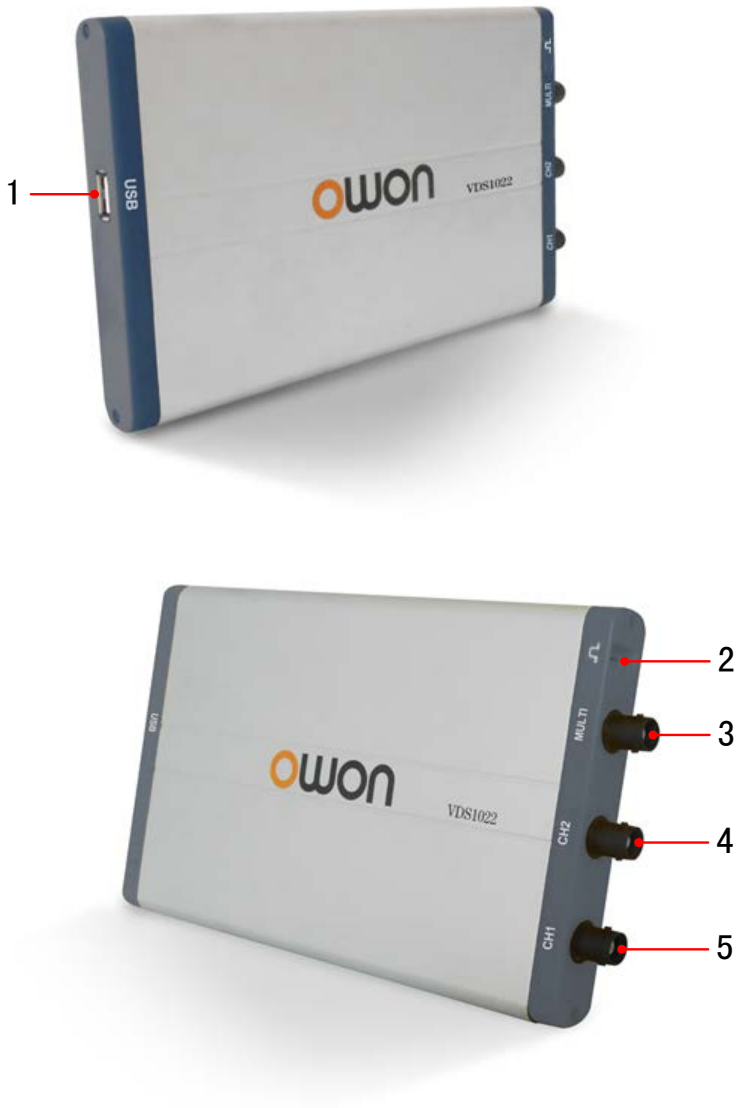


Figure 3-1 Ports of the Oscilloscope

1. USB port: Supply power by PC USB or the adapter; communicate with PC
2. Probe Compensation: Measurement signal (5 V / 1 kHz) output
3. MULTI port: EXT trigger input, trigger output or Pass/Fail output
4. Signal input of Channel 2
5. Signal input of Channel 1

VDS2062(L) / VDS3102(L)



Figure 3-2 Ports of the Oscilloscope (take VDS3102(L) for instance)

1. USB port: Supply power by PC USB or the adapter; communicate with PC
2. LAN port (optional): Network port which can be used to connect with PC
3. Probe Compensation: Measurement signal (3.3 V/1 kHz) output
4. MULTI port: EXT trigger input, trigger output or Pass/Fail output
5. Signal input of Channel 2
6. Signal input of Channel 1

Note: If you use LAN port to communicate with PC, the oscilloscope should be powered by the adapter.

VDS2064(L) / VDS3104(L)

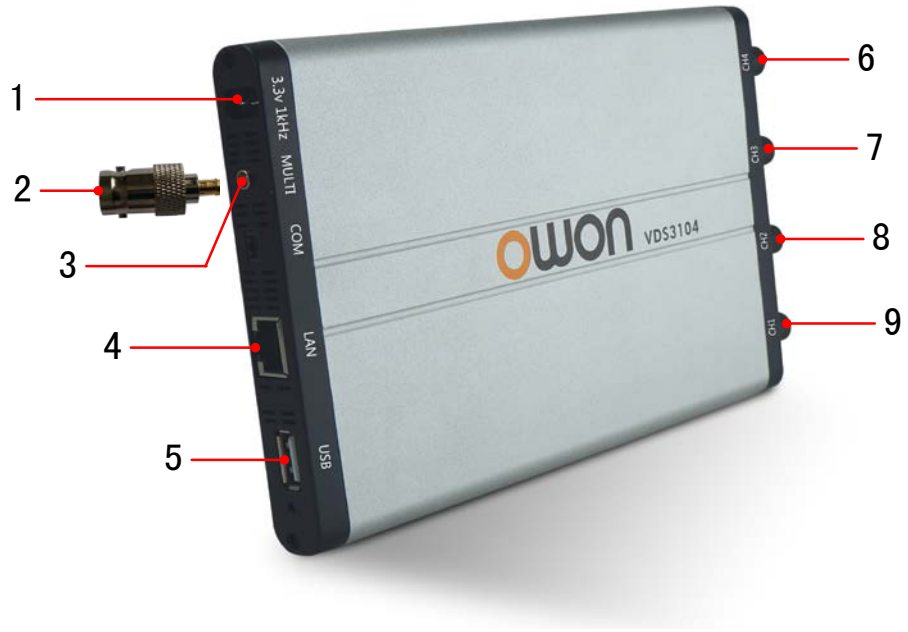


Figure 3-3 Ports of the Oscilloscope (take VDS3104(L) for instance)

1. Probe Compensation: Measurement signal (3.3 V/1 kHz) output
2. MULTI Connector (optional): Connect Q9 cable with the MULTI port
3. MULTI port: EXT trigger input, trigger output or Pass/Fail output
4. LAN port (optional): Network port which can be used to connect with PC
5. USB port: Supply power by PC USB or the adapter; communicate with PC
6. Signal input of Channel 4
7. Signal input of Channel 3
8. Signal input of Channel 2
9. Signal input of Channel 1

Note: If you use LAN port to communicate with PC, the oscilloscope should be powered by the adapter.

4. How to Implement the General Inspection

After you get a new VDS series oscilloscope, it is recommended that you should make a check on the instrument according to the following steps:

1. **Check whether there is any damage caused by transportation.**

   If it is found that the packaging carton or the foamed plastic protection cushion has suffered serious damage, do not throw it away first till the complete device and its accessories succeed in the electrical and mechanical property tests.

2. **Check the Accessories**

   The supplied accessories have been already described in the "*Appendix A: Enclosure*" of this Manual. You can check whether there is any loss of accessories with reference to this description. If it is found that there is any accessory lost or damaged, please get in touch with the distributor of OWON responsible for this service or the OWON's local offices.

3. **Check the Complete Instrument**

   If it is found that there is damage to the appearance of the instrument, or the instrument can not work normally, or fails in the performance test, please get in touch with the OWON's distributor responsible for this business or the OWON's local offices. If there is damage to the instrument caused by the transportation, please keep the package. With the transportation department or the OWON's distributor responsible for this business informed about it, a repairing or replacement of the instrument will be arranged by the OWON.

5. How to Connect with PC

1. **Install the Software**

   Install the software on the supplied CD (*.exe).

2. **Double-click the created desktop shortcuts**.

Model	Shortcut
VDS1022(I)	VDS_C2
VDS2062(L)/VDS3102(L)	VDS_S2
VDS2064(L)/VDS3104(L)	VDS_S4

3. **Connection**

   Use the supplied USB cable to connect the **USB port** of the Oscilloscope in *Ports Introduction* to the USB port of a PC.

Note: If you use a USB cable which is not supplied by us, some problems such as connection error and signal disturbing might occur.

4. **Install the USB driver**

   In the window of software, press F1 to open the help document of the software. Follow the steps of title "**I. PC Software USB Driver Install Guide**" in the document to install the driver.

6. How to Implement the Function Inspection

Make a fast function check to verify the normal operation of the instrument. First, connect the oscilloscope with PC successfully, and then do the following steps:

1. Click  in the software interface to restore to factory settings. The default attenuation coefficient set value of the probe in the software is 10X.

2. Set the Switch in the Oscilloscope Probe as 10X and Connect the Oscilloscope with CH1 Channel.

Align the slot in the probe with the plug in the CH1 connector BNC, and then tighten the probe with rotating it to the right side.

Connect the probe tip and the ground clamp to the connector of the probe compensator.

3. Click  on the right top of the software interface to auto set.

The square wave of 1 kHz frequency and 3.3 V peak-peak value will be displayed.

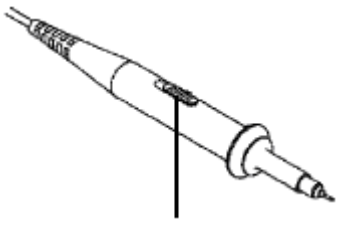
4. Check CH2 by repeating Step 2 and Step 3.

(VDS2064(L)/VDS3104(L) needs to continue to check CH3 and CH4).

7. How to Implement the Probe Compensation

When connect the probe with any input channel for the first time, make this adjustment to match the probe with the input channel. The probe which is not compensated or presents a compensation deviation will result in the measuring error or mistake. For adjusting the probe compensation, please carry out the following steps:

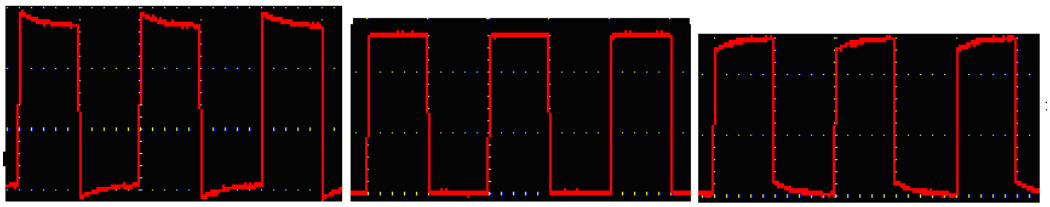
1. Click  in the software interface to show the function menu, choose "**Channel**". Click to select "**CH1**", set the "**Probe Rate**" in the menu as **10**. Set the switch in the probe as 10X and connect the probe with the CH1 channel. If a probe hook tip is used, ensure that it keeps in close touch with the probe. Connect the probe tip with the signal connector of the probe compensator and connect the reference wire clamp with the ground wire connector of the probe connector, and then click  on the right top of the software interface to auto set.



The set values of the probe switch are 1X and 10X

Figure 7-1 Attenuation Switch

2. Check the displayed waveforms and regulate the probe till a correct compensation is achieved (see *Figure 7-2* and *Figure 7-3*).



Overcompensated Compensated correctly Under compensated

Figure 7-2 Displayed Waveforms of the Probe Compensation

3. Repeat the steps mentioned if needed.

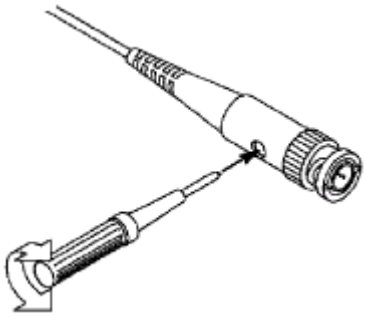


Figure 7-3 Adjust Probe

8. How to Use the Probe Safely

The safety guard ring around the probe body protects your finger against any electric shock, shown as *Figure 8-1*.

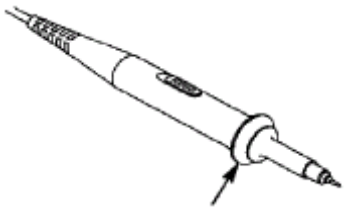


Figure 8-1 Finger Guard

Warning:

To avoid electric shock, always keep your finger behind the safety guard ring of the probe during the operation.

To protect you from suffering from the electric shock, do not touch any metal part of the probe tip when it is connected to the power supply.

Before making any measurements, always connect the probe to the instrument and connect the ground terminal to the earth.

9. Appendix

Appendix A: Enclosure

Standard Accessories:

- Passive probe: 1.2 m, 1:1 (10:1) (2 for dual-channel, 4 for four-channel)
- 1x CD (Supplied Software)
- 1x USB cable
- 1x Quick Guide
- 1x AC-DC adapter (only for the model with LAN port)

Options:

- 1x Soft case

Appendix B: General Care and Cleaning

General Care

To avoid any damage to the instrument or probe, do not exposed it to any sprays, liquids, or solvents.

Cleaning

Inspect the instrument and probes as often as operating conditions require.
To clean the instrument exterior, perform the following steps:

1. Wipe the dust from the instrument and probe surface with a soft cloth.
2. Disconnect the USB cable before cleaning your Oscilloscope. Clean the instrument with a wet soft cloth not dripping water. It is recommended to scrub with soft detergent or fresh water. To avoid damage to the instrument or probe, do not use any corrosive chemical cleaning agent.



Warning: Before power on again for operation, it is required to confirm that the instrument has already been dried completely, avoiding any electrical short circuit or bodily injury resulting form the moisture.