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, battery 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.

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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.

To avoid Fire or Personal Injury:

- **Connect the probe correctly. The grounding end of the probe corresponds to the grounding phase. Please don't connect the grounding end to the positive phase.**
- **Use Proper Power Cord.** Use only the power cord supplied with the product and certified to use in your country.
- **Connect or Disconnect Correctly.** When the probe or test lead is connected to a voltage source, please do not connect and disconnect the probe or test lead at random.
- **Product Grounded.** This instrument is grounded through the power cord grounding conductor. To avoid electric shock, the grounding conductor must be grounded. The product must be grounded properly before any connection with its input or output terminal.

  When powered by AC power, it is not allowed to measure AC power source directly, because the testing ground and power cord ground conductor are connected together, otherwise, it will cause short circuit.

  When powered by battery, the product must ground connection. To avoid electric shock, there must be a ground wire connect between ground and the ground port (on the back of product panel).
- **Check all Terminal Ratings.** To avoid fire or shock hazard, check all ratings and markers of this product. Refer to the user's manual for more information about ratings before connecting to the instrument.
- **Do not operate without covers**. Do not operate the instrument with covers or panels removed.
- **Use Proper Fuse.** Use only the specified type and rating fuse for this instrument.
- **Avoid exposed circuit**. Do not touch exposed junctions and components when the instrument is powered.
- **Do not operate if in any doubt.** If you suspect damage occurs to the instrument, have it inspected by qualified service personnel before further operations.
- **Use your Oscilloscope in a well-ventilated area.** Make sure the instrument installed with proper ventilation, refer to the user manual for more details.
- **Do not operate in wet conditions.**
- **Do not operate in an explosive atmosphere.**
- **Keep product surfaces clean and dry.**

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.

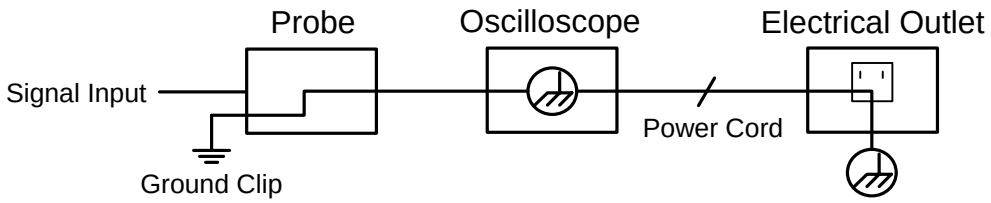
Warning:

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.

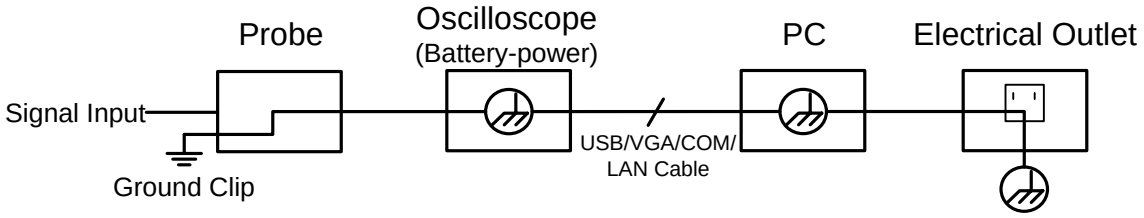
⚠ Warning:

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 battery-powered oscilloscope is connected to the AC-powered PC through the ports:



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

⚠ Warning:

To avoid fire or electrical shock, when the oscilloscope input signal connected is more than 42V peak (30Vrms) or on circuits of more than 4800VA, please take note of below items:

- **Only use accessory insulated voltage probes and test lead.**
- **Check the accessories such as probe before use and replace it if there are any damages.**
- **Remove probes, test leads and other accessories immediately after use.**
- **Remove USB cable which connects oscilloscope and computer.**
- **Do not apply input voltages above the rating of the instrument because the probe tip voltage will directly transmit to the oscilloscope. Use with caution when the probe is set as 1:1.**
- **Do not use exposed metal BNC or banana plug connectors.**
- **Do not insert metal objects into connectors.**

3. Quick Start

Introduction to the Structure of the Oscilloscope

When you get a new-type oscilloscope, you should get acquainted with its front panel at first and the SDS series digital storage oscilloscope is no exception. This chapter makes a simple description of the operation and function of the front panel of the SDS series oscilloscope, enabling you to be familiar with the use of the SDS series oscilloscope in the shortest time.

Front Panel

The SDS series oscilloscope offers a simple front panel with distinct functions to users for their completing some basic operations, in which the knobs and function pushbuttons are included. The knobs have the functions similar to other oscilloscopes. The 5 buttons (F1 - F5) in the column on the right side of the display screen or in the row under the display screen (H1 - H5) are menu selection buttons, through which, you can set the different options for the current menu. The other pushbuttons are function buttons, through which, you can enter different function menus or obtain a specific function application directly.

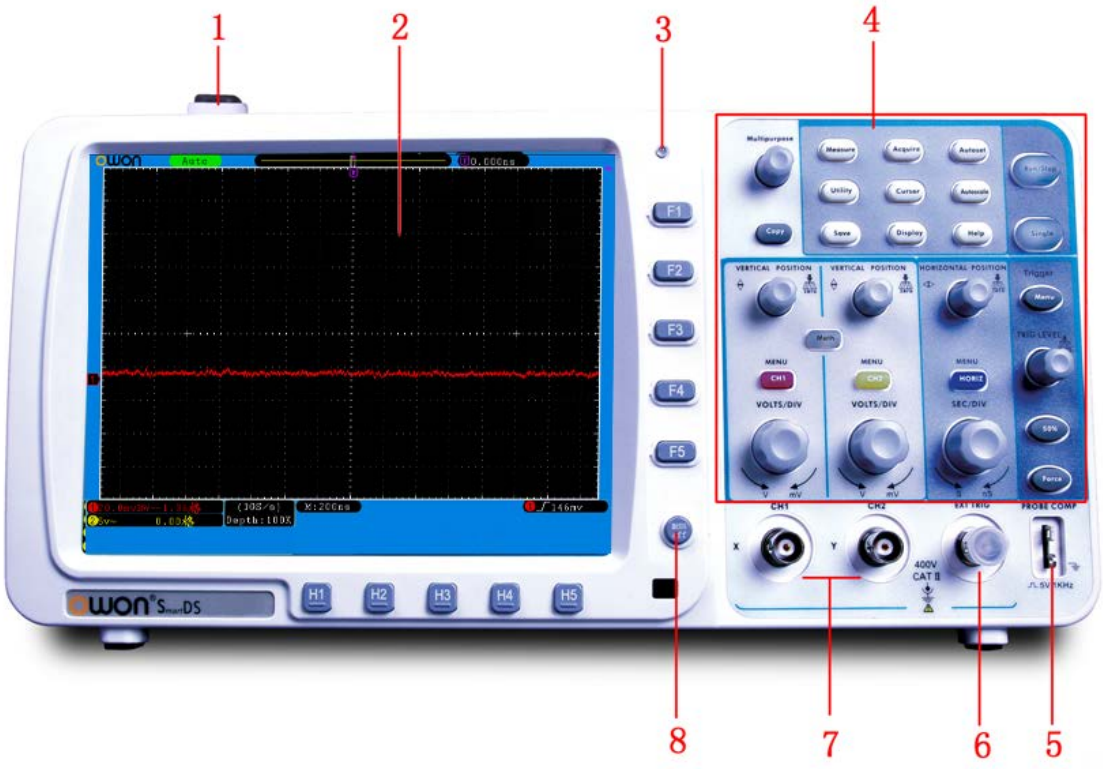


Figure 3-1 Front panel

1. Power on/off
2. Display area
3. Power indication – light

   Green light: Indicating DSO connects with AC Power, and the battery is in full (if there is battery inside DSO).

   Yellow light: Indicating DSO connect with AC Power and the battery is in charging

(if there is battery inside DSO)

Light off: Only powered by battery without connecting AC Power

4. Control (key and knob) area
5. Probe Compensation: Measurement signal (5V/1KHz) output. (The signal parameters could be adjusted in SDS7072(V))
6. EXT Trigger Input
7. Signal Input Channel
8. Menu off

Left Side Panel



Figure 3-2 Left side panel

1. Power switch: "—" represents power ON; "○" represents power OFF.
2. AC power input jack

Right Side Panel

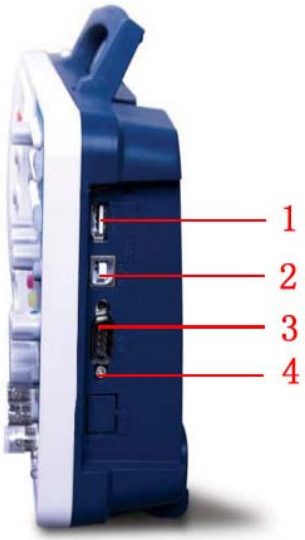


Figure 3-3 Right side panel

1. **USB Host port:** It is used to transfer data when external USB equipment connects to

the oscilloscope regarded as "host device". For example: upgrading software by USB flash disk needs to use this port.

2. **USB Device port:** It is used to transfer data when external USB equipment connects to the oscilloscope regarded as "slave device". For example: to use this port when connect PC to the oscilloscope by USB.
3. **COM / VGA port (Optional):** To connect the oscilloscope with external equipment as serial port, or to connect the oscilloscope with a monitor or a projector as VGA output (for the model with "V").
4. **LAN port**: the network port which can be used to connect with PC.

Rear Panel



Figure 3-4 Rear Panel

1. The port of trigger signal output & Pass/Fail output
2. Handle
3. Air vents
4. Foot stool (which can adjust the tilt angle of the oscilloscope)
5. Ground connection

Control (key and knob) Area

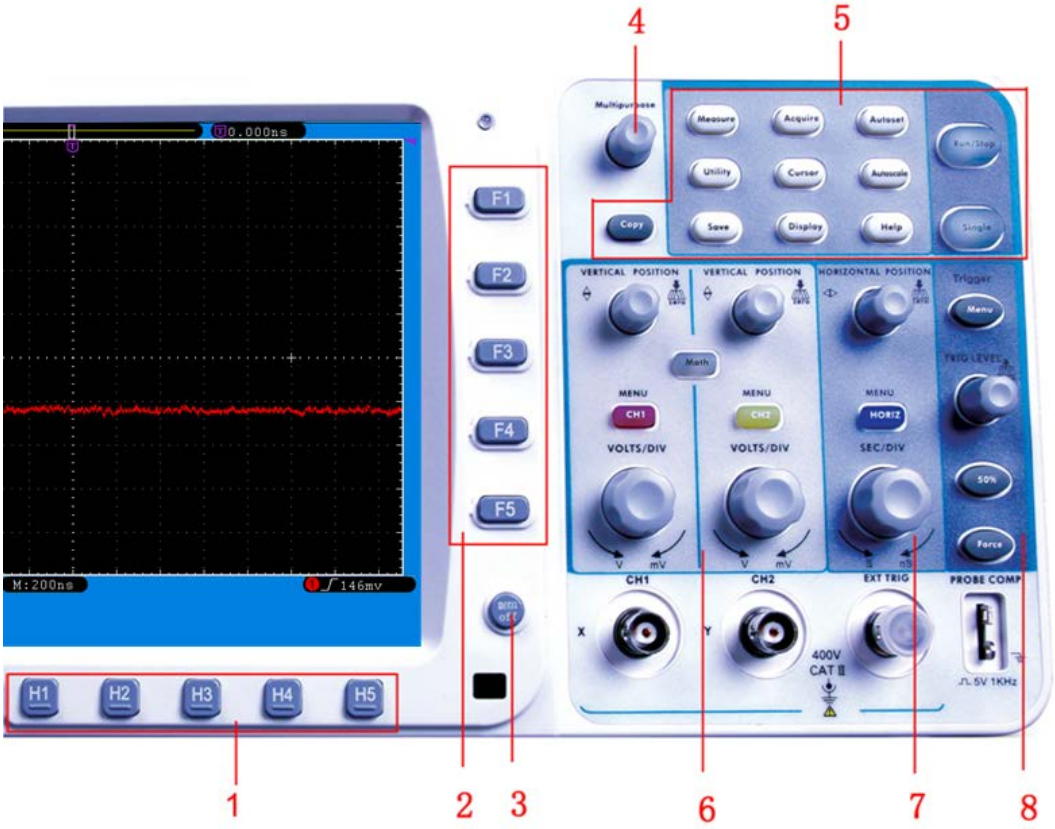


Figure 3-5 Keys Overview

1. Menu option setting: H1 - H5
2. Menu option setting: F1 - F5
3. Menu off：turn off the menu
4. **M** knob(Multipurpose knob): when a Ⓜ symbol appears in the menu, it indicates you can turn the **M** knob to select the menu or set the value. You can press it to close the menu on the left.
5. Function key area: Total 12 keys
6. Vertical control area with 3 keys and 4 knobs.

   "CH1 MENU" and "CH2 MENU" correspond to setting menu in CH1 and CH2, "Math" key refer to math menu, the math menu consists of six kinds of operations, including CH1-CH2, CH2-CH1, CH1+CH2, CH1*CH2, CH1/CH2 and FFT. Two "VERTICAL POSITION" knob control the vertical position of CH1/CH2, and two "VOLTS/DIV" knob control voltage scale of CH1, CH2.
7. Horizontal control area with 1 key and 2 knobs.

   "HORIZONTAL POSITION" knob control trigger position, "SEC/DIV" control time base, "HORIZ MENU" key refer to horizontal system setting menu.
8. Trigger control area with 3 keys and 1 knob.

   "TRIG LEVEL" knob is to adjust trigger voltage. Other 3 keys refer to trigger system setting.

User Interface Introduction

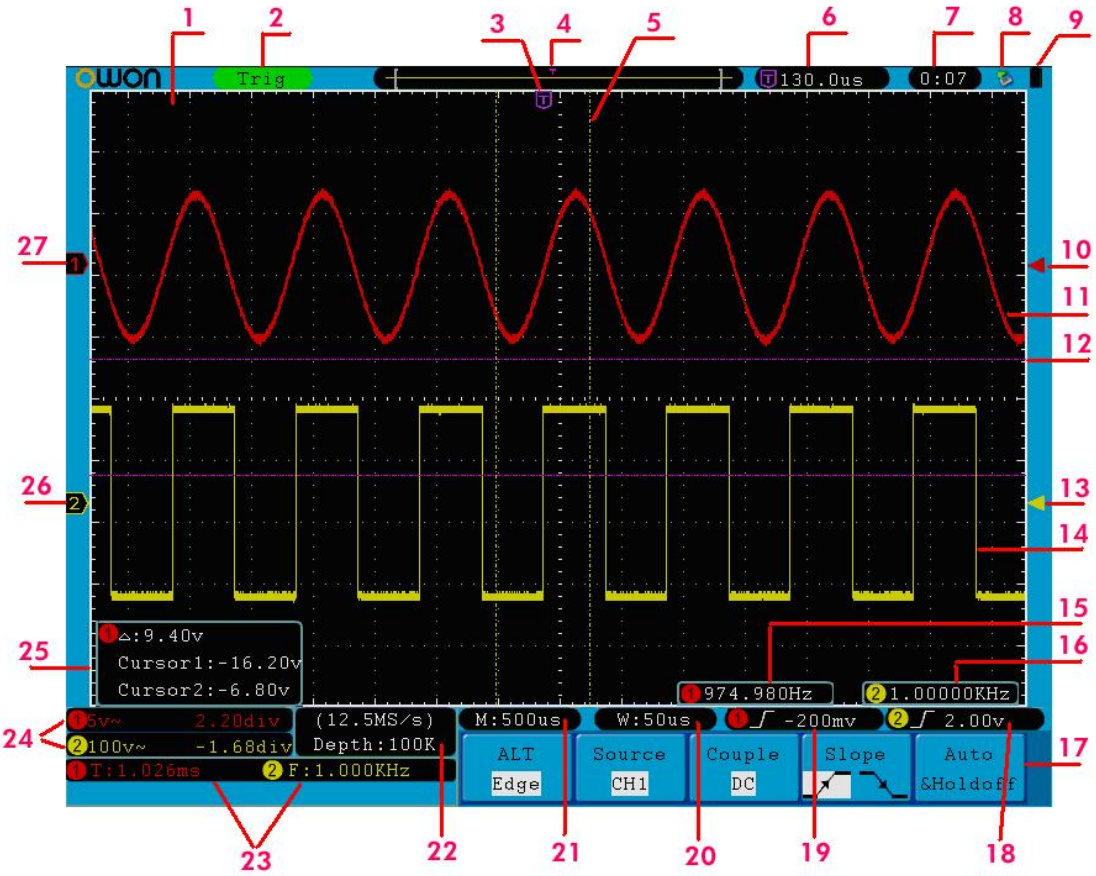


Figure 3-6 Illustrative Drawing of Display Interfaces

1. Waveform Display Area.
2. The state of trigger, including:

   Auto: Automatic mode and acquire waveform without triggering.

   Trig: Trigger detected and acquire waveform.

   Ready: Pre-triggered data captured and ready for a trigger.

   Scan: Capture and display the waveform continuously.

   Stop: Data acquisition stopped.
3. The purple T pointer indicates the horizontal position for the trigger.
4. The pointer indicates the trigger position in the internal memory.
5. The two yellow dotted lines indicate the size of the viewing expanded window.
6. It shows present triggering value and displays the site of present window in internal memory.
7. It shows setting time.
8. It indicates that there is a USB disk connecting with the oscilloscope.
9. Indicating battery power status.
10. The red pointer shows the trigger level position for CH1.

11. The waveform of CH1.
12. The positions of two purple dotted line cursors measurements.
13. The yellow pointer shows the trigger level position for CH2.
14. The waveform of CH2.
15. The frequency of the trigger signal of CH1.
16. The frequency of the trigger signal of CH2.
17. It indicates the current function menu.

18/19. Current trigger type:

 Rising edge triggering

 Falling edge triggering

 Video line synchronous triggering

 Video field synchronous triggering

The reading shows the trigger level value of the corresponding channel.

20. The reading shows the window time base value.
21. The reading shows the setting of main time base.
22. The readings show current sample rate and the record length.
23. It indicates the measured type and value of the corresponding channel. "F" means frequency, "T" means cycle, "V" means the average value, "Vp" the peak-peak value, "Vk" the root-mean-square value, "Ma" the maximum amplitude value, "Mi" the minimum amplitude value, "Vt" the Voltage value of the waveform's flat top value, "Vb" the Voltage value of the waveform's flat base, "Va" the amplitude value, "Os" the overshoot value, "Ps" the Preshoot value, "RT" the rise time value, "FT" the fall time value, "PW" the +width value, "NW" the -Width value, "+D" the +Duty value, "-D" the -Duty value, "PD" the Delay A->B value, "ND" the Delay A->B value, "TR" the Cycle rms, "CR" the Cursor rms, "WP" the Duty cycle, and "RP" the Phase.
24. The readings indicate the corresponding Voltage Division and the Zero Point positions of the channels.

    The icon shows the coupling mode of the channel.

    "—" indicates direct current coupling

    "∼" indicates AC coupling

    " ⏚ " indicates GND coupling
25. It is cursor measure window, showing the absolute values and the readings of the two cursors.
26. The yellow pointer shows the grounding datum point (zero point position) of the waveform of the CH2 channel. If the pointer is not displayed, it shows that this channel is not opened.
27. The red pointer indicates the grounding datum point (zero point position) of the waveform of the CH1 channel. If the pointer is not displayed, it shows that the channel is not opened.

How to Implement the General Inspection

After you get a new SDS 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.

How to Implement the Function Inspection

Make a fast function check to verify the normal operation of the instrument, according to the following steps:

1. **Connect the power cord to a power source. Turn on the Power Switch Button**  **on the left side (make sure the "—" side is pressed down). Then, push down the button of the "⏻" signal on the top.**

   The instrument carries out all self-check items and shows the Boot Logo. Press the "**Utility**" button, then, press **H1** button to get access to the "**Function**" menu. Turn the **M** knob to select **Adjust** and press **H3** button to select "**Default**". The default attenuation coefficient set value of the probe in the menu 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. **Press the "Autoset" Button.**

   The square wave of 1 KHz frequency and 5V peak-peak value will be displayed in several seconds (see *Figure 3-7*).

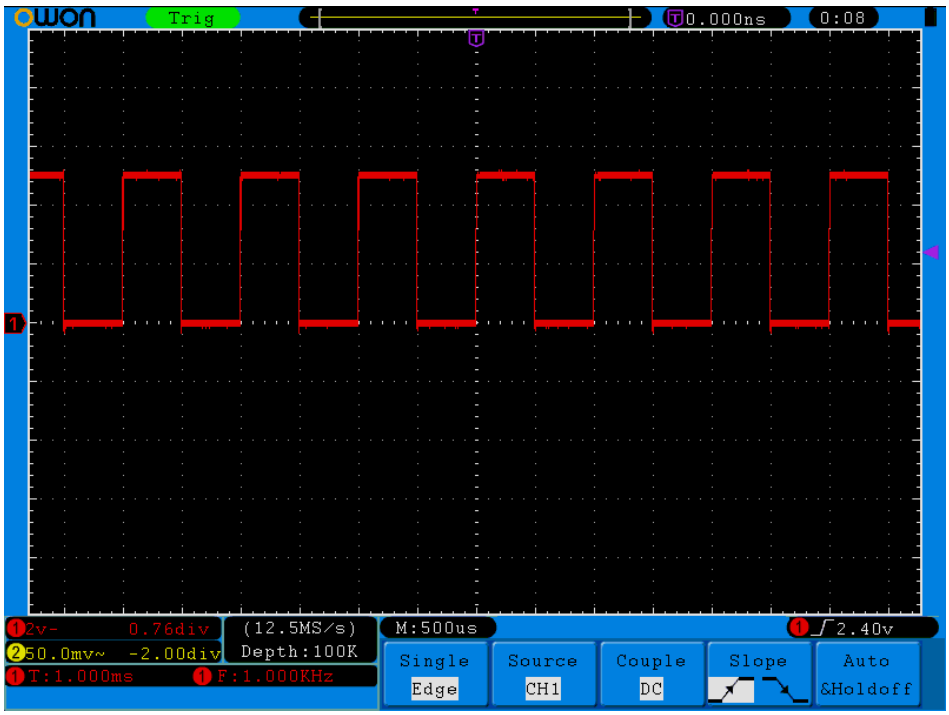


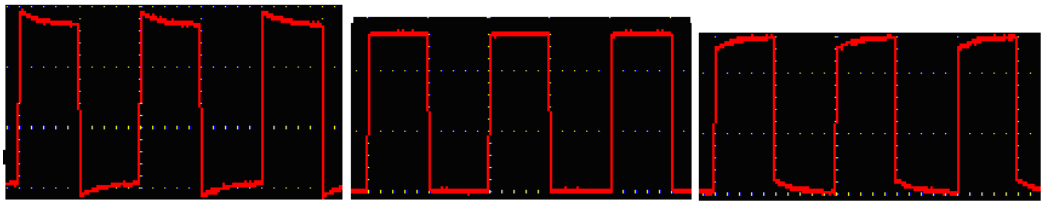
Figure 3-7 Auto set

Check CH2 by repeating Step 2 and Step 3.

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. Set the attenuation coefficient of the probe in the menu as 10X and that of the switch in the probe as 10X (see "*How to Set the Probe Attenuation Coefficient*" on P12), 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 press the button "Autoset".
2. Check the displayed waveforms and regulate the probe till a correct compensation is achieved (see *Figure 3-8* and *Figure 3-9*).



Overcompensated **Compensated correctly** **Under compensated**

Figure 3-8 Displayed Waveforms of the Probe Compensation

3. Repeat the steps mentioned if needed.

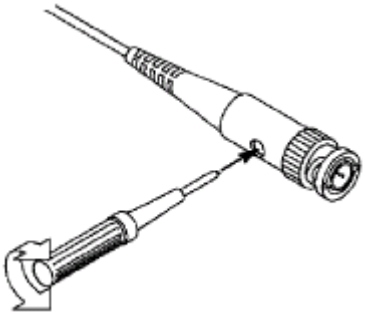


Figure 3-9 Adjust Probe

How to Set the Probe Attenuation Coefficient

The probe has several attenuation coefficients, which will influence the vertical scale factor of the oscilloscope.

To change or check the probe attenuation coefficient in the menu of oscilloscope:

(1) Press the function menu button of the used channels (**CH1 MENU** or **CH2 MENU**).

(2) Press **H3** button to display the Probe menu; select the proper value corresponding to the probe.

This setting will be valid all the time before it is changed again.

Caution:

The default attenuation coefficient of the probe on the instrument is preset to 10X.

Make sure that the set value of the attenuation switch in the probe is the same as the menu selection of the probe attenuation coefficient in the oscilloscope.

The set values of the probe switch are 1X and 10X (see *Figure 3-10*).

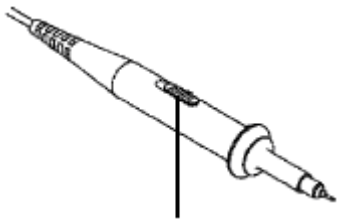


Figure 3-10 Attenuation Switch

Caution:

When the attenuation switch is set to 1X, the probe will limit the bandwidth of the oscilloscope in 5MHz. To use the full bandwidth of the oscilloscope, the switch must be set to 10X.

How to Use the Probe Safely

The safety guard ring around the probe body protects your finger against any electric shock, shown as *Figure 3-11*.

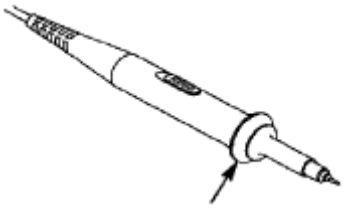


Figure 3-11 Finger Guard

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.

How to Implement Self-calibration

The self-calibration application can make the oscilloscope reach the optimum condition rapidly to obtain the most accurate measurement value. You can carry out this application program at any time. This program must be executed whenever the change of ambient temperature is 5℃ or over.

Before performing a self-calibration, disconnect all probes or wires from the input connector. Press the "**Utility**" button, then, press **H1** button to call out the **Function**

menu; turn the **M** knob to choose **Adjust**. Press **H2** button to choose the option "**Self Cal**"; run the program after everything is ready.

Introduction to the Vertical System

As shown in *Figure 3-12*, there are a few of buttons and knobs in **VERTICAL CONTROLS**. The following practices will gradually direct you to be familiar with the using of the vertical setting.



Figure 3-12 Vertical Control Zone

1. Use the "**VERTICAL POSITION**" knob to show the signal in the center of the waveform window. The "**VERTICAL POSITION**" knob functions the regulating of the vertical display position of the signal. Thus, when the "**VERTICAL POSITION**" knob is rotated, the pointer of the earth datum point of the channel is directed to move up and down following the waveform.

   Measuring Skill

   If the channel is under the DC coupling mode, you can rapidly measure the DC component of the signal through the observation of the difference between the wave form and the signal ground.

   If the channel is under the AC mode, the DC component would be filtered out. This mode helps you display the AC component of the signal with a higher sensitivity.

   Vertical offset back to 0 shortcut key

   Turn the **VERTICAL POSITION** knob to change the vertical display position of channel and press the position knob to set the vertical display position back to 0 as a shortcut key, this is especially helpful when the trace position is far out of the screen and want it to get back to the screen center immediately.

2. Change the Vertical Setting and Observe the Consequent State Information Change.

   With the information displayed in the status bar at the bottom of the waveform window, you can determine any changes in the channel vertical scale factor.

- Turn the vertical "**VOLTS/DIV**" knob and change the "Vertical Scale Factor (Voltage Division)", it can be found that the scale factor of the channel corresponding to the status bar has been changed accordingly.
- Press buttons of "**CH1 MENU**", "**CH2 MENU**" and "**Math**", the operation menu, symbols, waveforms and scale factor status information of the corresponding channel will be displayed in the screen.

Introduction to the Horizontal System

Shown as *Figure 3-13*, there are a button and two knobs in the "**HORIZONTAL CONTROLS**". The following practices will gradually direct you to be familiar with the setting of horizontal time base.



Figure 3-13 Horizontal Control Zone

1. Use the horizontal "**SEC/DIV**" knob to change the horizontal time base setting and observe the consequent status information change. Rotate the horizontal "**SEC/DIV**" knob to change the horizontal time base, and it can be found that the "**Horizontal Time Base**" display in the status bar changes accordingly.
2. Use the "**HORIZONTAL POSITION**" knob to adjust the horizontal position of the signal in the waveform window. The "**HORIZONTAL POSITION**" knob is used to control the triggering displacement of the signal or for other special applications. If it is applied to triggering the displacement, it can be observed that the waveform moves horizontally with the knob when you rotate the "**HORIZONTAL POSITION**" knob.

   Triggering displacement back to 0 shortcut key

   Turn the **HORIZONTAL POSITION** knob to change the horizontal position of channel and press the **HORIZONTAL POSITION** knob to set the triggering displacement back to 0 as a shortcut key.
3. With the "**HORIZ MENU**" button, you can do the Window Setting and the Window Expansion.

Introduction to the Trigger System

As shown in *Figure 3-14,* there are one knob and three buttons make up "**TRIGGER CONTROLS**". The following practices will direct you to be familiar with the setting of the trigger system gradually.



Figure 3-14 Trigger Control Zone

1. Press the "**Trigger Menu**" button and call out the trigger menu. With the operations of the menu selection buttons, the trigger setting can be changed.
2. Use the "**TRIG LEVEL**" knob to change the trigger level setting.
   By rotating the "**TRIG LEVEL**" knob, the trigger indicator in the screen will move up and down. With the movement of the trigger indicator, it can be observed that the trigger level value displayed in the screen changes accordingly.
   PS: Turning the **TRIG LEVEL** knob can change trigger level value and it is also the hotkey to set trigger level back to 0.
3. Press the button "**50%**" to set the trigger level as the vertical mid point values of the amplitude of the trigger signal.
4. Press the "**Force**" button to force a trigger signal, which is mainly applied to the "Normal" and "Single" trigger modes.

How to Measure Automatically

Press the **Measure** button to display the menu for the settings of the Automatic Measurements. At most 8 types of measurements could be displayed on the bottom left of the screen.

The oscilloscopes provide 24 parameters for auto measurement, including Period, Freq, Mean, PK-PK, RMS, Max, Min, Vtop, Vbase, Vamp, OverShoot, PreShoot, Rise Time, Fall Time, +D width, -D width, +Duty, -Duty, Delay A→B, Delay A→B, Cycle RMS, Cursor RMS, Duty cycle, and Phase.

The measured values can be detected on each channel simultaneously. Only if the waveform channel is in the ON state, the measurement can be performed. The automatic measurement cannot be performed in the following situation: 1) On the saved waveform. 2) On the mathematical waveform. 3) On the XY format. 4) On the Scan format.

E.g. Measure the period, the frequency of the CH1 and the mean, the peak-to-peak voltage of the CH2, following the steps below:

1. Press the **Measure** button to show the automatic measurement function menu.
2. Press the **H1** button to display the **Add** menu.
3. Press the **F2** button and choose **CH1** as the source.
4. Press the **F1** button, the type items will display at the left of screen, and turn the **M** knob to choose **Period**.
5. Press the **F4** button, the period options added completes.
6. Press the **F1** button again, the type items will display at the left of screen, and turn the **M** to choose **Freq**.
7. Press the **F4** button, the frequency added completes, finish setting of CH1.
8. Press the **F2** button and choose **CH2** as the source.
9. Press the **F1** button, the type items will display at the left of screen, and turn the **M** to choose **Mean**.
10. Press the **F4** button, the Mean added completes.
11. Press the **F1** button, the type items will display at the left of screen, and turn the **M** to choose **PK-PK**.
12. Press the **F4** button, the PK-PK added completes, finish setting of CH2.

    The measured value will be displayed at the bottom left of the screen automatically.

How to Use Autoscale

This is a very useful function for first time users to carry out a simple and quick test on the input signal. The function is applied to follow-up signals automatically even if the signals change at any time. Autoscale enables the instrument to set up trigger mode, voltage division and time scale automatically according to the type, amplitude and frequency of the signals.

E.g. If you want to measure the two-channel signal, you can do as the follows:

1. Press **Autoscale** button, the function menu will appear.
2. Press **H1** to choose **ON.**
3. Press **H2** and choose  for **Mode** item.
4. Press **H3** and choose  for **Wave** item.

4. Communication with PC

SDS series digital storage oscilloscope support communications with a PC through USB, LAN or COM port. You can use the Oscilloscope communication software to store, analyze, display the data and remote control.

Here is how to connect with PC. First, install the Oscilloscope communication software on the supplied CD. Then there are several ways of connection to choose from.

Using USB Port

(1) **Connection:** Use a USB data cable to connect the **USB Device port** in the right panel of the Oscilloscope to the USB port of a PC.

(2) **Install the driver:** Run the Oscilloscope communication software on PC, press F1 to open the help document. Follow the steps of title "**I. Device connection**" in the document to install the driver.

(3) **Port setting of the software:** Run the Oscilloscope software; click "Communications" in the menu bar, choose "Ports-Settings", in the setting dialog, choose "Connect using" as "USB". After connect successfully, the connection information in the bottom right corner of the software will turn green.

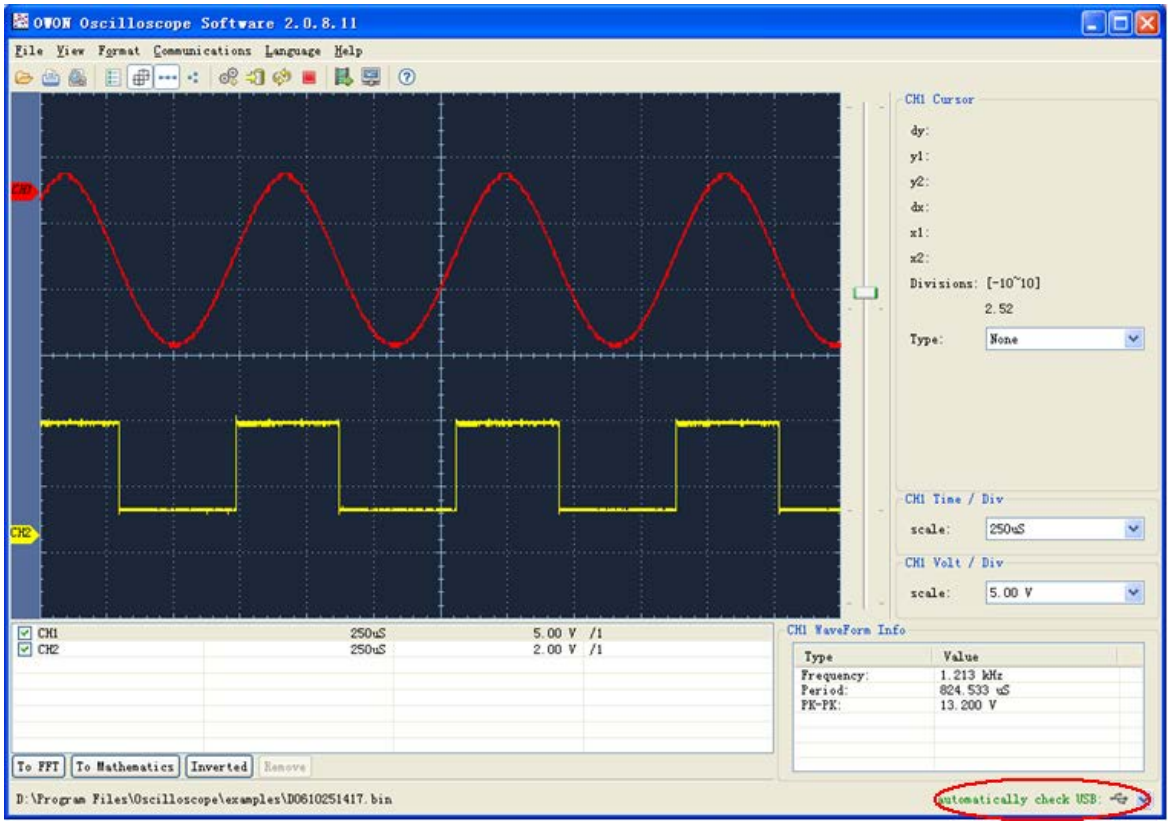


Figure 4-1: Connect with PC through USB port

Using LAN Port

Connect directly

(1) **Connection**. Plug in the LAN line to the LAN port in the right side panel of the oscilloscope; plug the other end into the LAN interface of the computer.

(2) **Set the network parameters of the computer**. Since the oscilloscope can not support obtaining an IP address automatically, you should assign a static IP address. Here we set the IP address to 192.168.1.71.

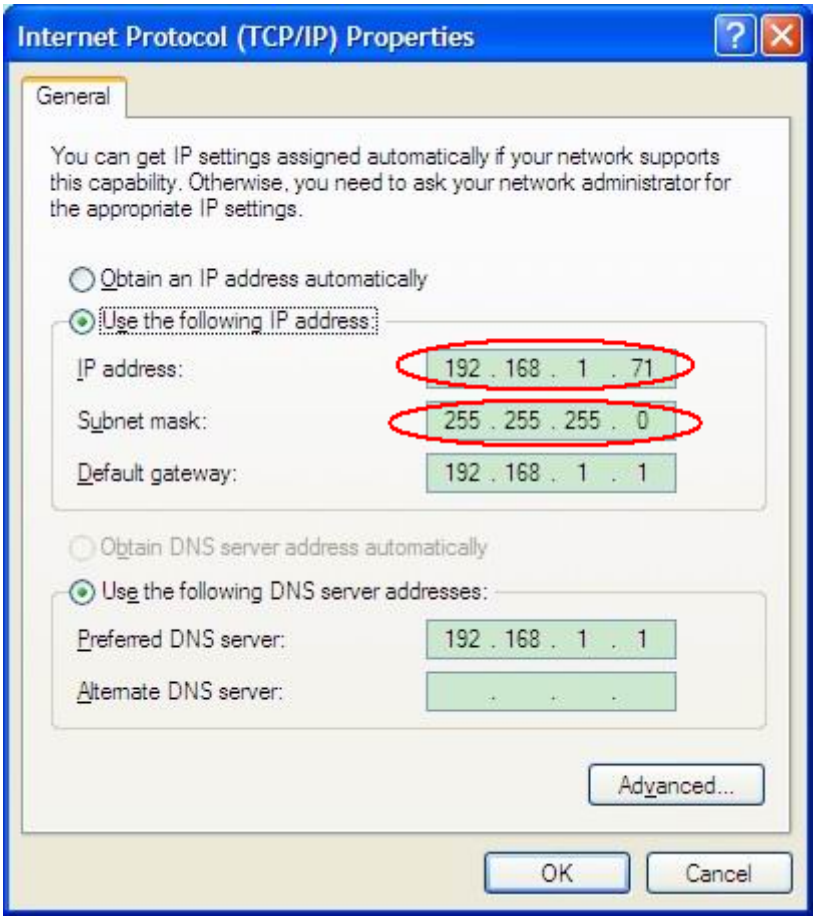


Figure 4-2 Set the network parameters of the computer

(3) **Set the network parameters of the OWON Oscilloscope Software.** Run the software on the computer; choose the "Ports-settings" of the "Communications" menu item. Set "Connect using" to LAN. About the IP, the first three bytes is same as the IP in the step (2), the last byte should be different. Here, we set it to 192.168.1.72. The range of the port value is 0 - 4000, but the port which under 2000 is always be used, so it is suggested to set it to the value above 2000. Here, we set it to 3000.

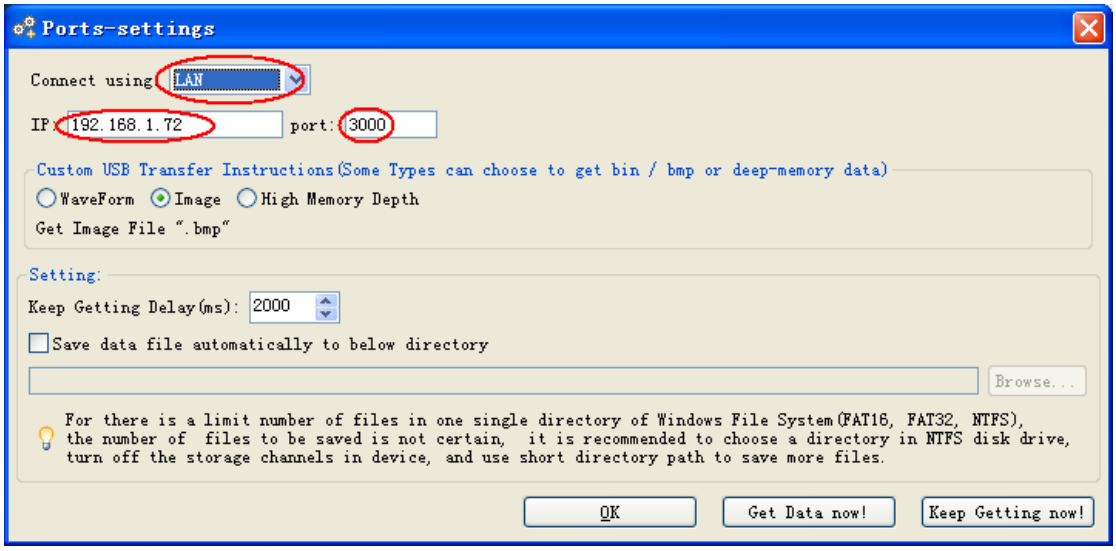


Figure 4-3 Set the network parameters of the OWON Oscilloscope Software

(4) **Set the network parameters of the oscilloscope**. In the oscilloscope, press the **Utility** button and press **H1** button, turn the **M** knob to select the **LAN Set**; press the **H2** button, the set menu is displayed on the right. Set the **IP** and the **Port** to the same value as the "Ports-settings" in the software in step (3). Press the **H3** button to select "**Save set**", it prompts "reset to update the config". After resetting the oscilloscope, if you can get data normally in the oscilloscope software, the connection is successful.

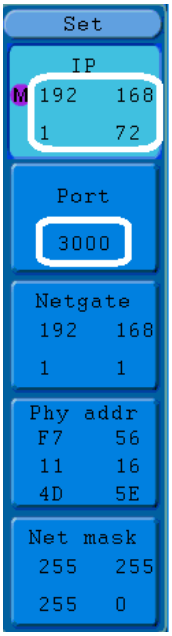


Figure 4-4 Set the network parameters of the oscilloscope

Connect through a router

(1) **Connection**. Use a LAN line to connect the oscilloscope with a router, the LAN port of the oscilloscope is in the right side panel; the computer should be connected to the router too.

(2) **Set the network parameters of the computer**. Since the oscilloscope can not support obtaining an IP address automatically, you should assign a static IP address. The Default gateway and Subnet mask should be set according to the router. Here we

set the IP address to 192.168.1.71, Subnet mask is 255.255.255.0, Default gateway is 192.168.1.1.

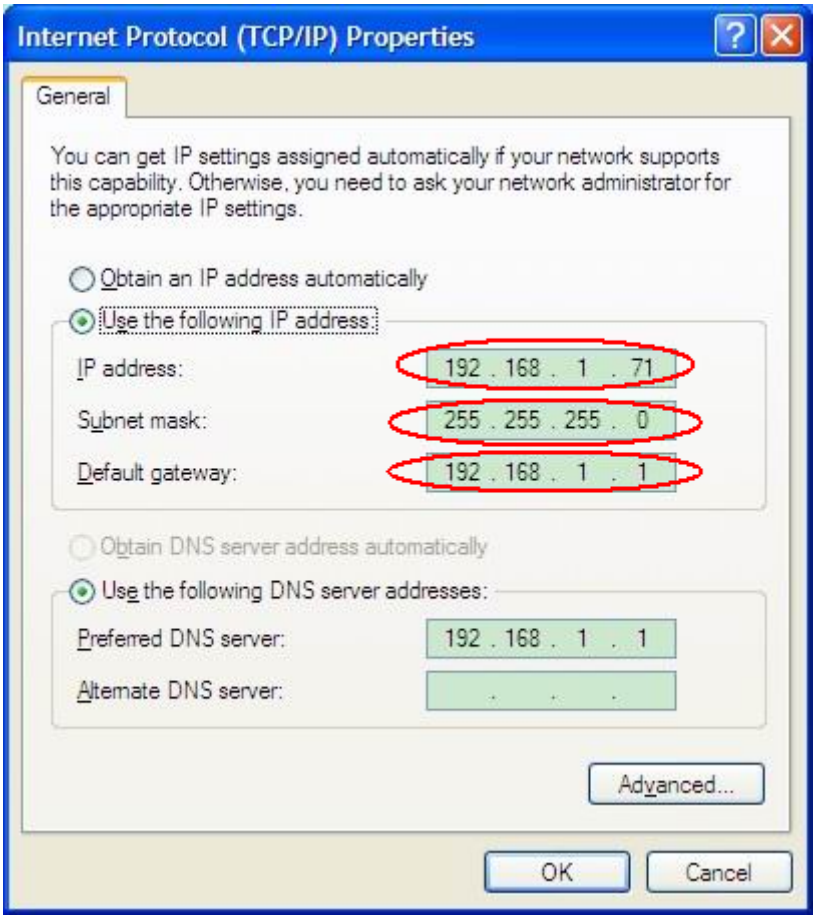


Figure 4-5 Set the network parameters of the computer

(3) **Set the network parameters of the OWON Oscilloscope Software.** Run the software on the computer; choose the "Ports-settings" of the "Communications" menu item. Set "Connect using" to LAN. About the IP, the first three bytes is same as the IP in the step (2), the last byte should be different. Here, we set it to 192.168.1.72. The range of the port value is 0 - 4000, but the port which under 2000 is always be used, so it is suggested to set it to the value above 2000. Here, we set it to 3000.

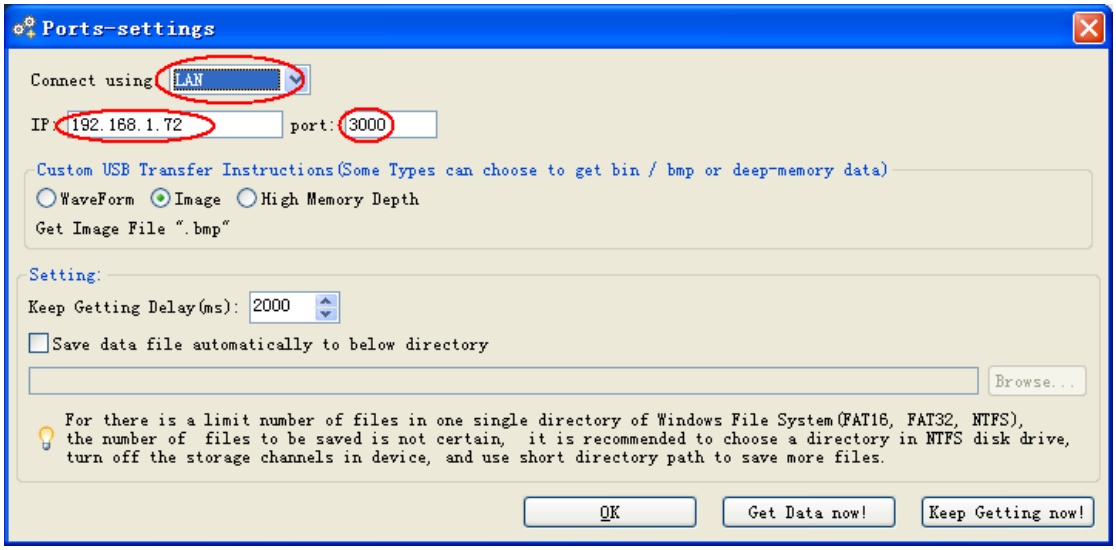


Figure 4-6 Set the network parameters of the OWON Oscilloscope Software

(4) **Set the network parameters of the oscilloscope**. In the oscilloscope, press the **Utility** button and press **H1** button, turn the **M** knob to select the **LAN Set**; press the **H2** button, the set menu is displayed on the right. Set the **IP** and the **Port** to the same value as the "Ports-settings" in the software in step (3). The Netgate and Net mask should be set according to the router. Press the **H3** button to select "**Save set**", it prompts "reset to update the config". After resetting the oscilloscope, if you can get data normally in the oscilloscope software, the connection is successful.

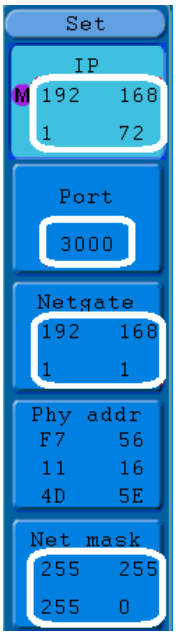


Figure 4-7 Set the network parameters of the oscilloscope

Using COM Port

(1) **Connection**. Use a data cable to connect the **COM port** in the right panel of the Oscilloscope, to the COM port of a PC.

(2) **Port setting of the software:** Run the Oscilloscope software; click "Communications" in the menu bar, choose "Ports-Settings", in the setting dialog, choose "Connect using" as COM.

To learn about how to operate the software, you can press F1 in the software to open the help document.

5. Appendix

Appendix A: Enclosure

Standard Accessories:

- A pair of Passive probe: 1.2 m, 1:1 (10:1)
- 1x CD (PC link application software)
- 1x Power cord: up to the standards of the country in which it is used.
- 1x USB cable
- 1x Quick Guide

Options:

- Battery

Appendix B: General Care and Cleaning

General Care

Do not store or leave the instrument where the liquid crystal display will be exposed to direct sunlight for long periods of time.

Caution: 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. Do not make any scuffing on the transparent LCD protection screen when clean the LCD screen.
2. Disconnect power 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.

Appendix C: USB Disk Requirements

The supported format of the USB disk: FAT32 file system, allocation unit size cannot exceed 4K, mass storage USB disk is also supported. If the USB disk doesn't work properly, format it into the supported format and try again. About the methods to format the USB disk, refer to *SDS Series Smart Digital Storage Oscilloscopes User Manual*.