

Warranty

Thanks for choosing OWON product, in the coming days, really hope you'll enjoy the time that OWON product accompanies you.

OWON product, created and made by Lilliput.

Since the delivery date, OWON product been granted 36 natural months' warranty for device, and 12 months' warranty for attached parts / accessories.

* The delivery date here means the one written onto formal shipping documents given to first-hand buying party.

Within warranty period of OWON product, provided any non-outside force defects appear, Lilliput provides 3 options for first-hand buying party -

option 1. to return the defective product only;

option 2. to replace the defective product;

option 3. to repair the defective product.

To assure first-hand buying party receive timely service within the warranty period of OWON product, the first-hand buying party should notify Lilliput of the non-outside force defects in no time, in written form.

Lilliput recommends OWON product user(s) to register your product online via "Support & Service" column from official English website.

This warranty shall not apply to any defect, damage caused by improper operation, or improper / inadequate maintenance towards OWON product. Lilliput shall not be obligated to under this warranty -

a). to repair damages resulted from attempts by personnel other than those from Lilliput, or authorized one by Lilliput to repair or service OWON product;

b). to repair damages resulted from improper operation, or improper connection to incompatible equipment towards OWON product;

c). to service OWON product that has been modified or integrated with other products, provided the effect of such modification or integration increases the difficulty of servicing non-original OWON product.

Lilliput / 31 July 2020

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Продажа измерительных приборов и инструмента:
ТОО «МЕСС-ЭЛЕКТРОНИК»
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1. General Safety Requirements

*! Before using the device, Lilliput strongly recommend to browse “**Safety Warnings**” carefully and completely, so as to avoid any possible human body injury, or any damages to the device, or its accessories, or communicated facility. !*

Safety Warnings

- i. The device only been allowed to work within specified application scenario.
- ii. Before communicating the device with PC, please refer to the user manual to familiarize the allowed rating value completely.
- iii. Making sure the allowed rating value of all terminals been well-followed, so as to avoid any potential short circuit or electric shock.
- iv. NO direct human body touch with any naked conductor of device when working the device. The naked conductor covers joints, connecting probe tip, communication interface, and others.
- v. NO further operation is allowed provided any undetermined failure appears when working the device, better to seek the assistance of qualified technicians.
- vi. DO NOT work the device in humid environment.
- vii. DO NOT work the device in the explosive atmospheres.
- viii. Keep the device in good ventilation environment, and always keep the device surface clean and dry.
- ix. Better to send the device to qualified technicians for necessary maintenance.

2. Safety Terms and Signs

Safety Terms

Terms in this quick guide. It covers,



Warning which indicates the condition or the operation may cause human body injury or permanent life loss.



Caution which indicates the condition or the operation may cause device damage, or its accessory damage, or communicated facility damage.

Terms on the device. It covers,

Danger which indicates the operation may result in the immediate human body injury.

Warning which indicates the operation may result in potential human body injury.

Caution which indicates the operation may result in potential damage to the device, or its accessory, or communicating facility.

Safety Signs

Signs on the device. It covers,



Hazardous Voltage



(please refer to user manual for further details)



Protective Earth Terminal



Chassis Ground



Communication Interface Ground

To avoid possible human body injury, and / or device damage, and / or its accessory or communicating facility damage, before working the device, Lilliput strongly recommend to read the following safety information,



Warning

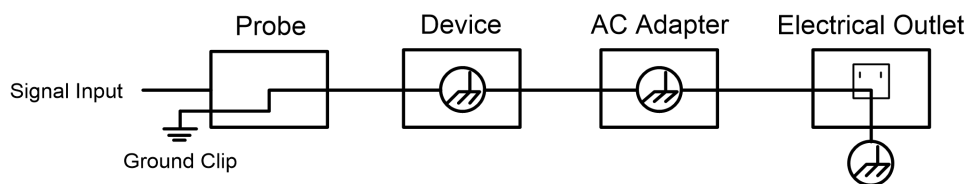
To avoid any potential short circuit or electric shock, DO use the power adapter of original local standard, or recommended by Lilliput.



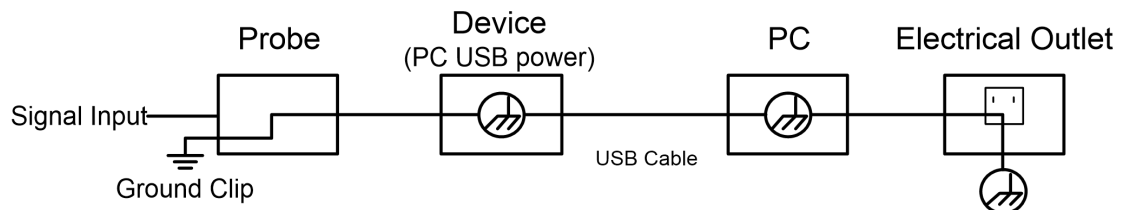
Warning

The channels of the device are non-isolated electrically. When working the device, to avoid possible short circuit, the ground of two probes are NOT allowed to connect to 2 different non-isolated DC level.

The illustration of the device's built-in ground wire connection -



When the device communicating with PC via USB communication interface (with PC powered by AC power source), the illustration of the ground wire connection -



It is NOT allowed to measure AC power when the device been powered by AC power source through the adapter, or when the device powered by by PC through USB connection cable (via USB communication interface of PC, with PC powered by AC power source)..



Warning

When the device input is getting through the voltage larger than 42 Vp-p (30Vrms), or on circuit of 4800+VA, to avoid any potential short circuit or electric shock -

- i. DO use probes and adapter come along with the original device, or those ones recommended by Lilliput.
- ii. Before working the device, DO check probes and accessories carefully to see whether any mechanical damages exist, making sure probes and accessories in normal-working status.
- iii. When device in non-working condition, to remove probes and accessories firstly, then put them in suitable places.
- iv. When working the device in CAT II environment,
DO NOT get the 40+ V input voltage from earth surface through any non-isolated input;
DO NOT get the 40+ V input voltage of dropout voltage through any non-isolated input
- v. DO NOT input the voltage larger than the rated one, especially when probe attenuation set in 1:1, since the voltage from probe tip will go through to the device itself.
- vi. NO NOT contact the exposed part of metal BNC terminal directly by hand or any other human body part.
- vii. DO NOT insert any metal object into device connectors.

- Note -

- i). The rated voltage mentioned in point v. is the fixed value of working voltage, matching VACrms / 50 - 60Hz under AC sine wave application, and VDC under DC sine wave application;
- ii). CAT II indicates local level for electrical appliance and portable device.

3. Communication Interface Introduction

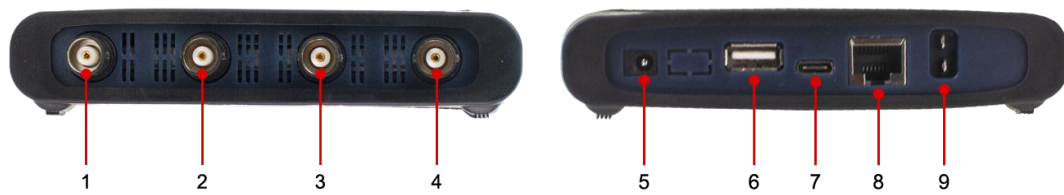


Figure 3- 1. Communication Interface of the Device

1. CH1: for signal input
2. CH2: for signal input
3. CH3: for signal input
4. CH4: for signal input
5. power input: for AC-DC adapter

6. USB host: for Wi-Fi extension
7. USB device (type-C): for PC communication

Note: when the device powered by PC USB connection cable (via USB communication interface of PC, with PC powered by AC power source), without adapter connection, the input current should reach 1.5A or above.

8. LAN: for PC communication within network
9. Built-in Signal (3.3 V/1 kHz) Output: for probe compensation

4. Device General Checking

Before working the device, Lilliput strongly recommend to check the device as per following steps:

i. to check whether any package deformation, or breakage exists

Provided any package deformation, breakage exists, firstly, take photos about the package for good records; secondly, open the package, to check whether the device inside in good shape, if not, take photos for good records, then back to your direct buying source, or back to Lilliput for the solution.

ii. to check any physical defect / damage towards the device

Provided any obvious physical defect / damage towards device surface / communication interface / protection cover found, firstly, take photos about the defect / damage for good records, then back to your direct buying source, or back to Lilliput for the solution.

iii. to check whether device accessories is complete

The complete accessory been listed onto page 15 "*Appendix I. Device Accessory List*", please check whether any accessory is missing, or with obvious physical defect, provided yes, take photos for records firstly, then back to your direct buying source, or back to Lilliput for the solution.

Provided the result of device general checking is positive, then congratulations to start working the device from now on.

5. How to Communicate Device with PC

to communicate the device with PC, it's a must to install software firstly.

i. software installation solution

i). full installation

Target user(s): general PC oscilloscope user(s), and programmer(s) get secondary development need

Installation process -

- On the basis that NI-VISA driver or similar VISA driver already worked normally onto PC, to install "VDS6000Series_PC_Software.exe" from accompanying CD which comes along with the device.
- Provided no proper VISA driver found onto target PC, as first step, to install "ni-visa_19.5_online_repack.exe*" from accompanying CD which comes along with the device.

*. This .exe file will instruct the user(s) to download NI-VISA driver, and the user(s) could choose necessary NI package kit in the process as well.

The second step is to run "VDS6000Series_PC_Software.exe".

ii). simple installation

Target user(s): general PC oscilloscope user(s)

Installation process -

To install Runtime version NI-VISA driver from accompanying CD which comes along with device firstly, after that, to run "VDS6000Series_PC_Software.exe".

iii). minimum installation

Target user(s): PC oscilloscope user(s) who only need to communicate the device with PC via direct network cable (no requirements for USB communication)

Installation process -

To run "VDS6000Series_PC_Software.exe" from accompanying CD which comes along with device directly.

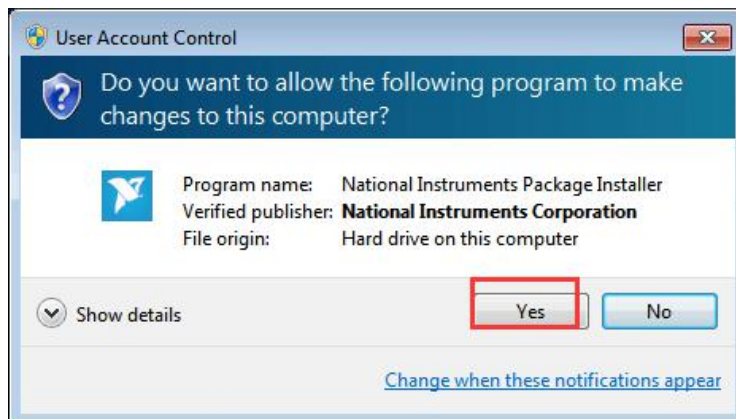
Note: The user(s) may refer to [xii.how to use socket connection](#) for "when the device communicates with PC by direct network cable" under VII. Device Operation from page 41 - 43 of e-format user manual.

ii. to install NI-VISA driver

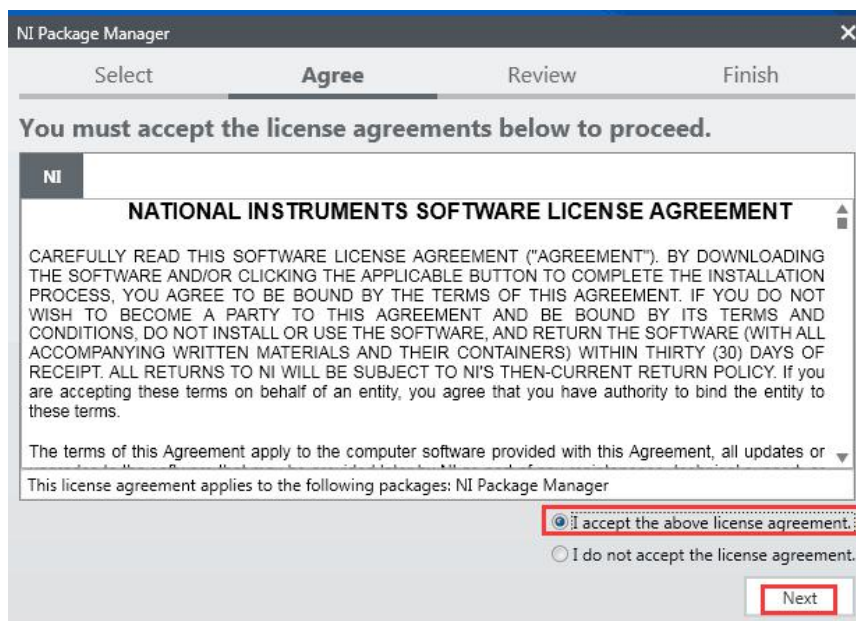
To assure PC software running normally, and smoothly, it is a must to install NI-VISA driver firstly.

Note: On condition that NI-VISA driver, or similar VISA driver already worked normally onto the target PC, step ii could be skipped.

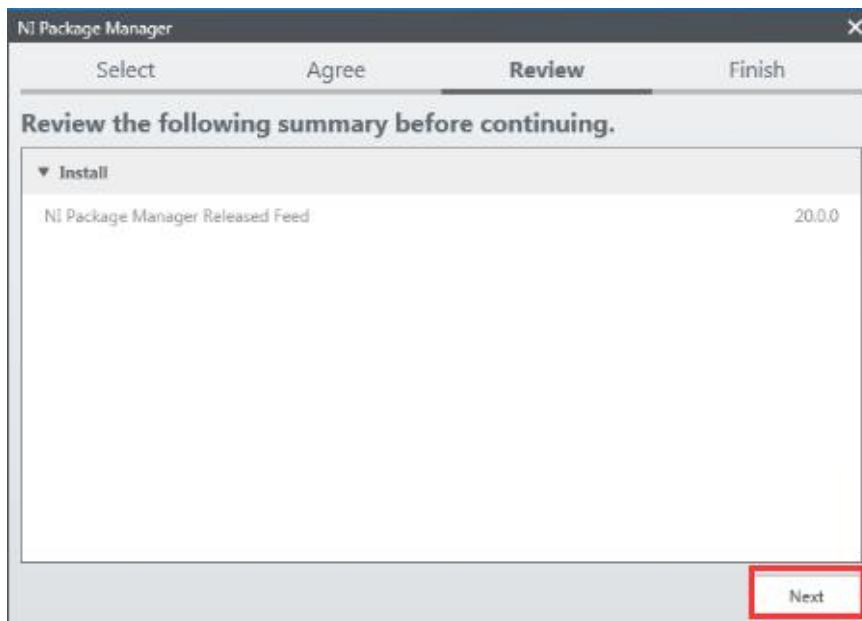
To run `ni-visa_19.5_online_repack.exe` from accompanying CD which comes along with device, to start NI-VISA driver installation,



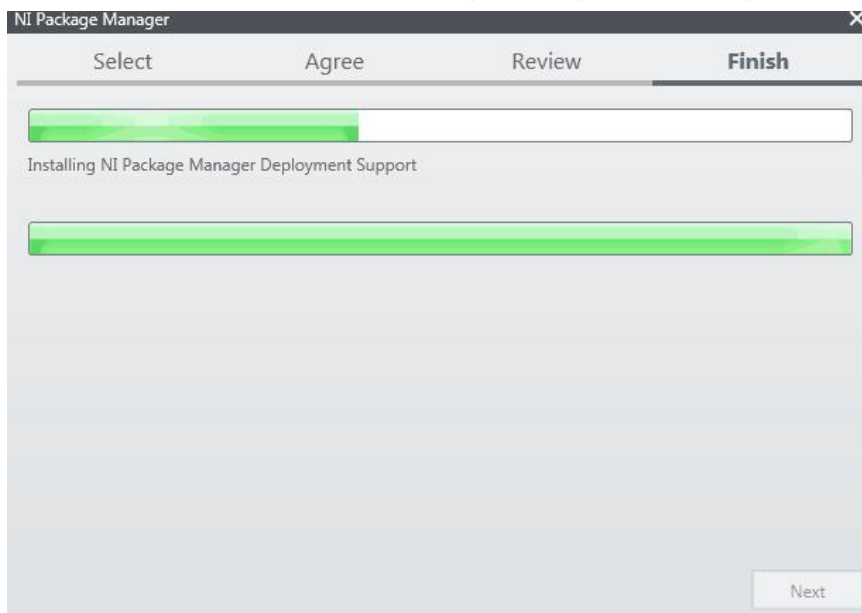
click "Yes" to continue, and following window comes,



dot-tick "I accept the above license agreement", then "Next",



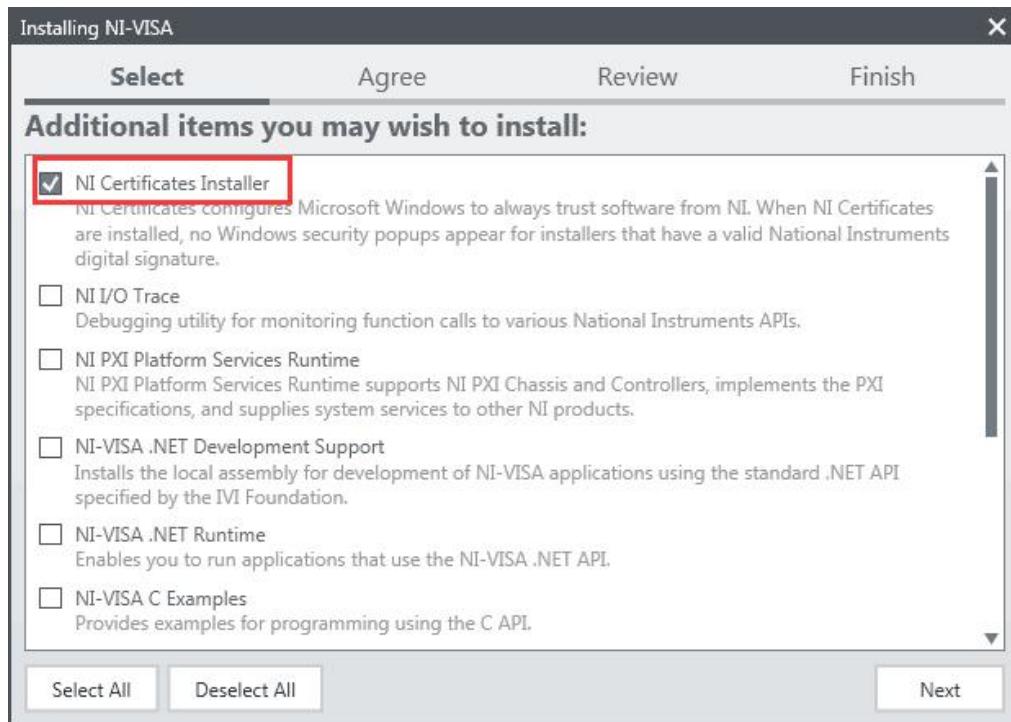
another “Next”, to enter into NI Package Manager processing window,



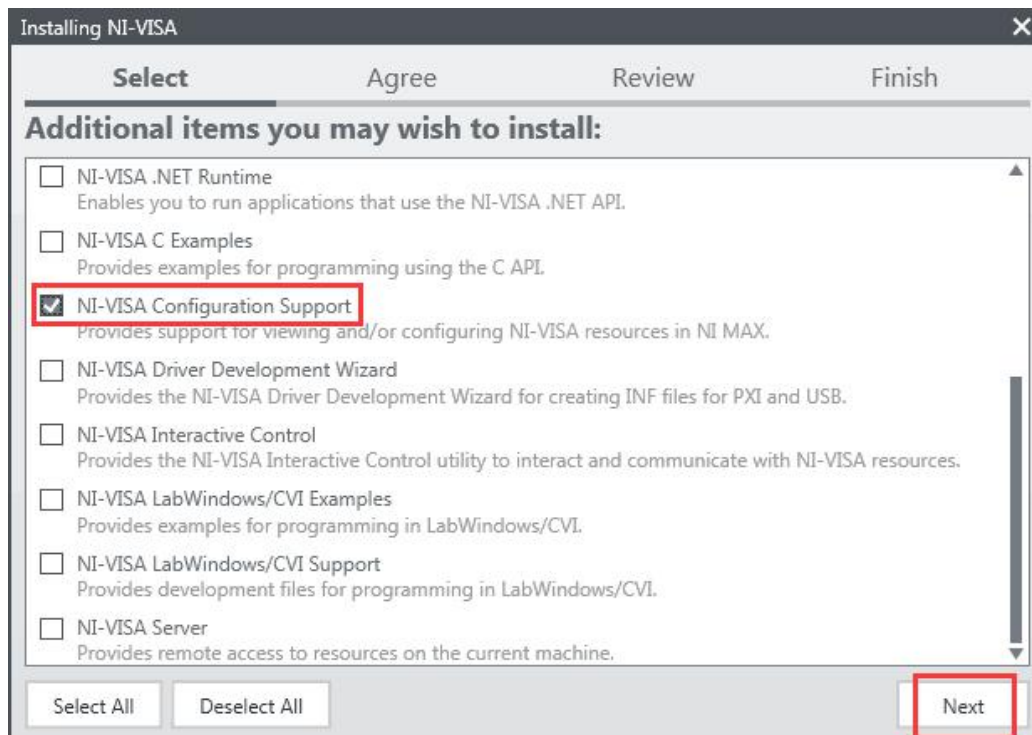
then this window,



later, when following window appears,

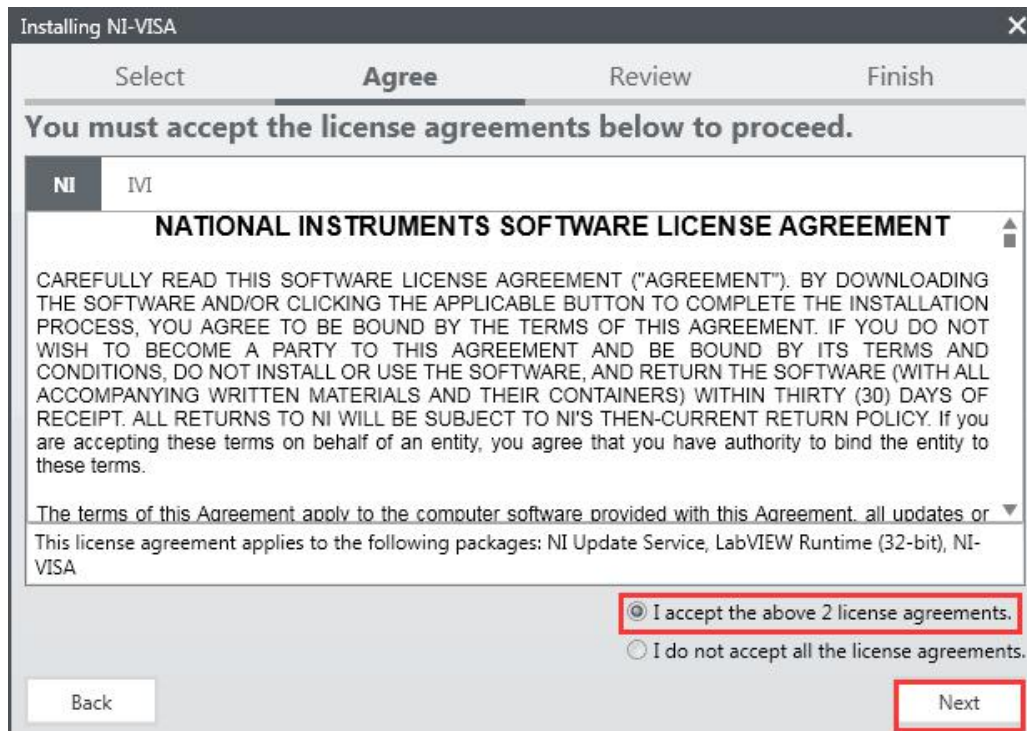


to select additional items you may wish to install,



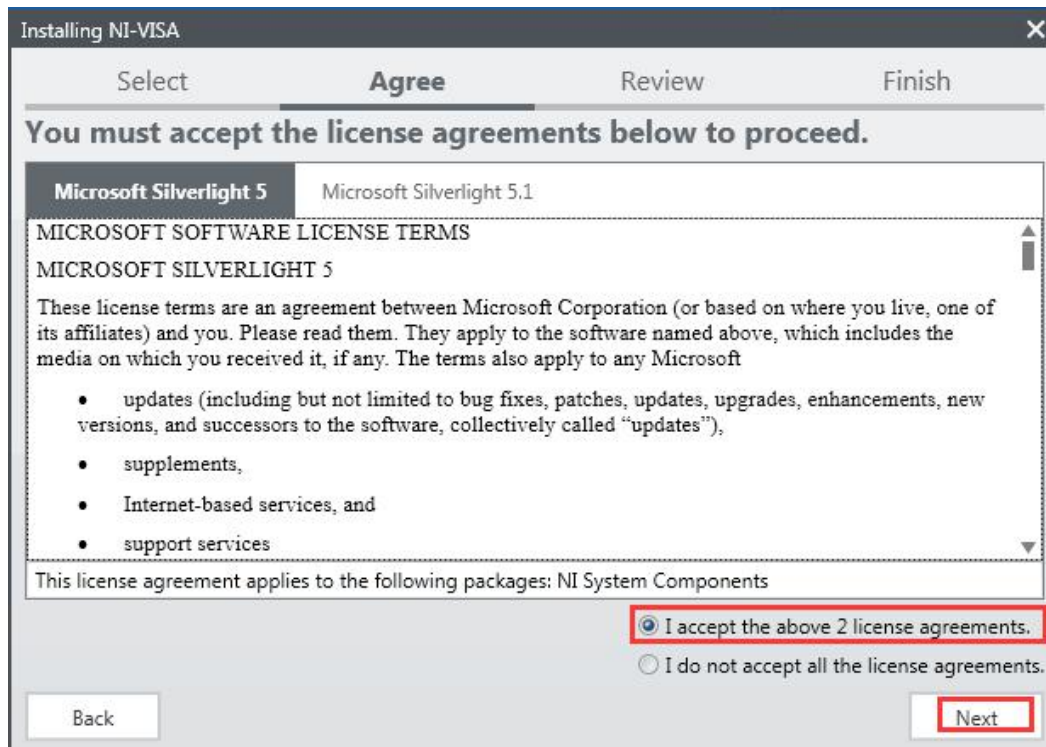
via scroll bar, to select more necessary options,

from here,



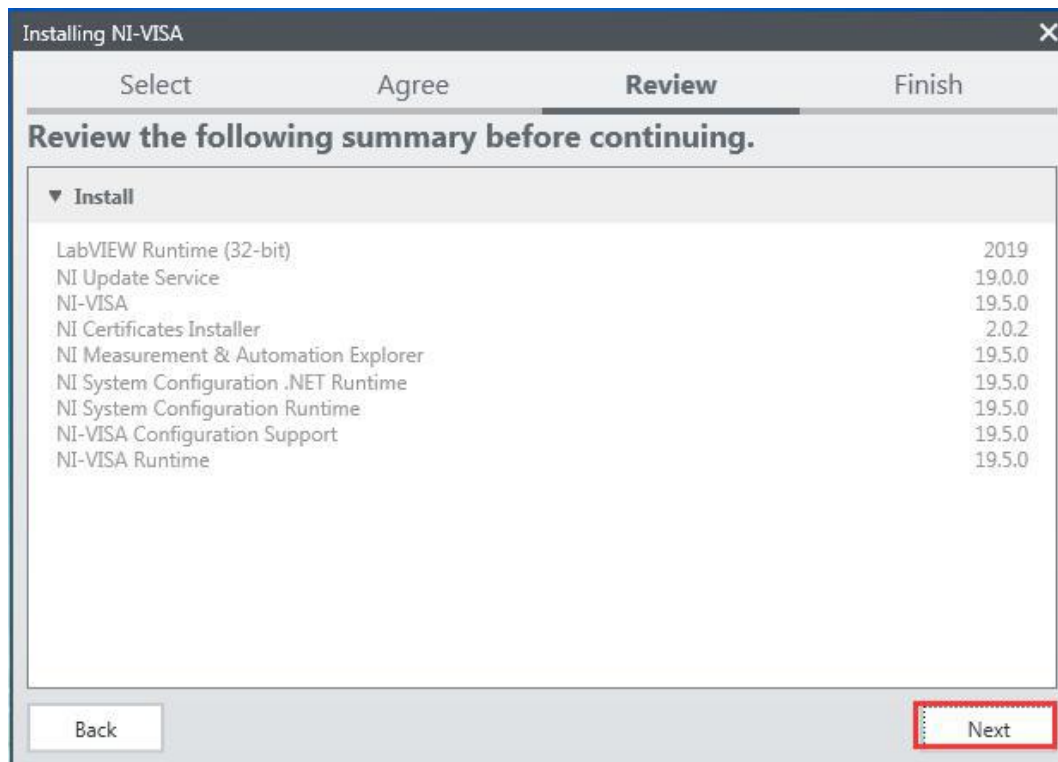
dot-tick "I accept the above 2 license agreements", again "Next",

until this window,



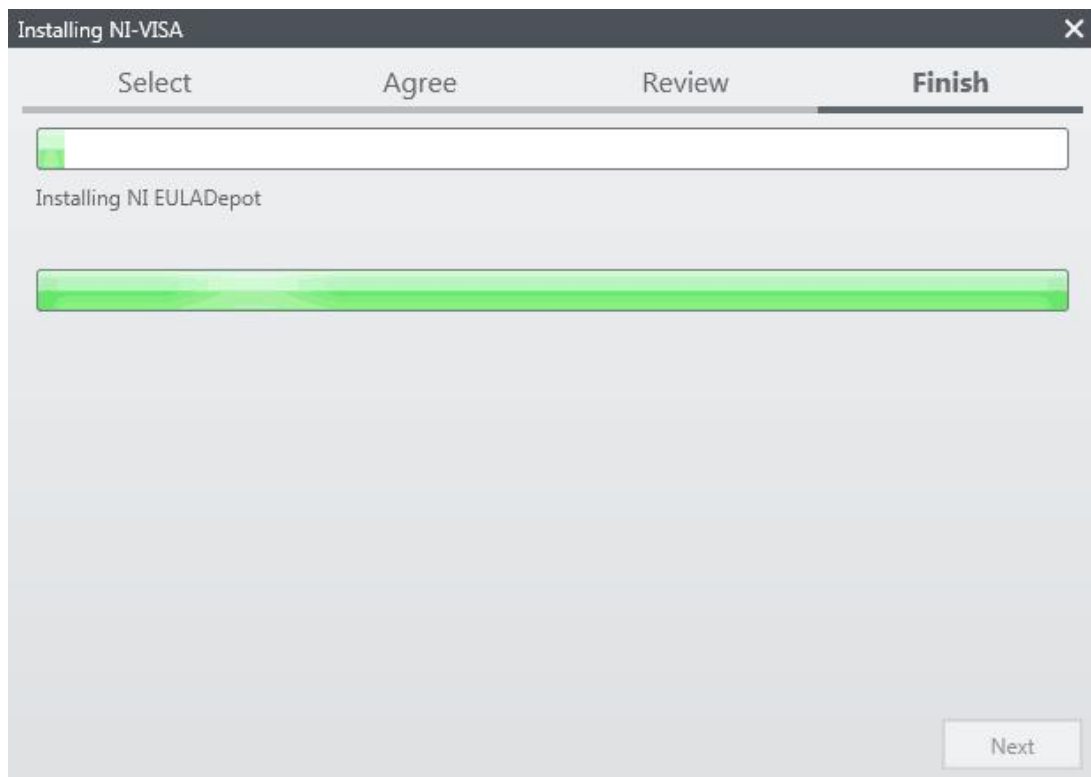
dot-tick "I accept the above 2 license agreements" for another time, and another "Next",

to welcome “Review” window,



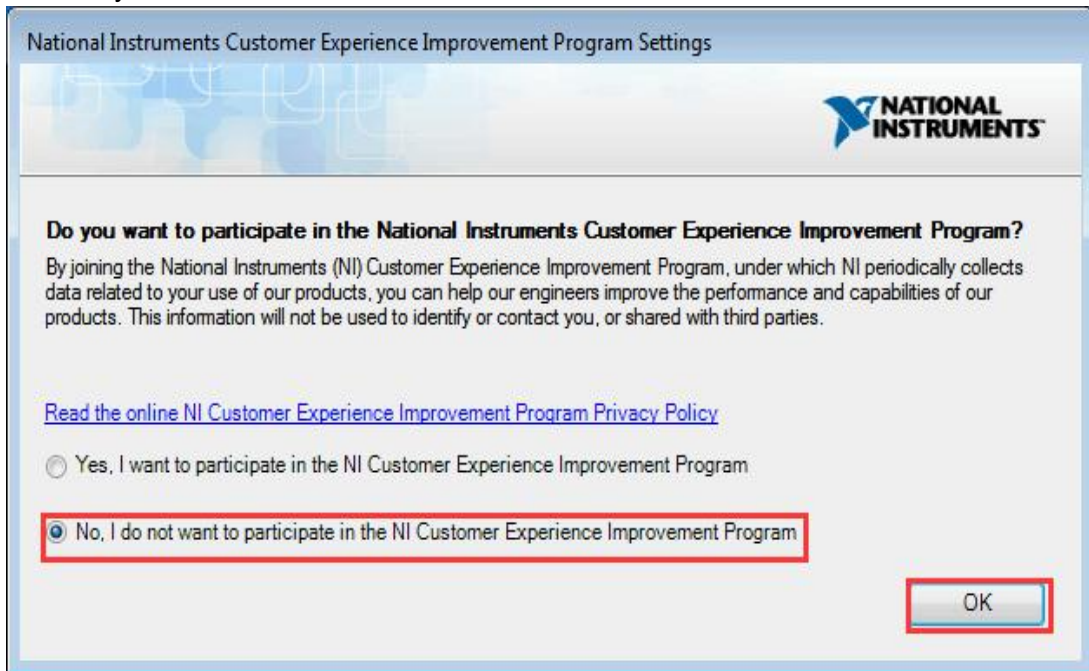
via “Next”,

to get access to NI-VISA installation,



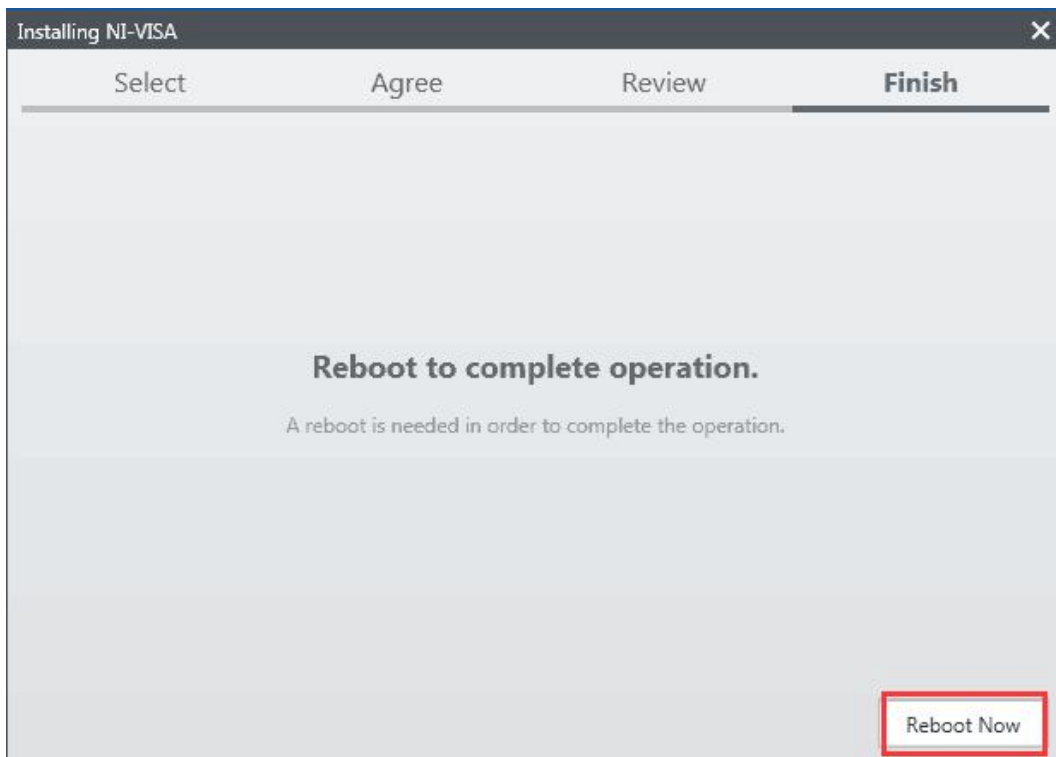
one more “Next”,

to make your decision at this window,



press "Ok" to finish the whole process,

this window indicates the successful installation,



to reboot the PC through mouse-clicking "Reboot Now".

After PC restarts, the NI-VISA driver been installed onto target PC successfully.

iii. to install PC Software

To run "VDS6000Series_PC_Software.exe" from accompanying CD which comes along with device directly, to install PC software accordingly.

iv. to work PC Software

Via short-cut to PC software from the desktop of target PC, double-click “VDS6000 Series PC DSO” to start the software.

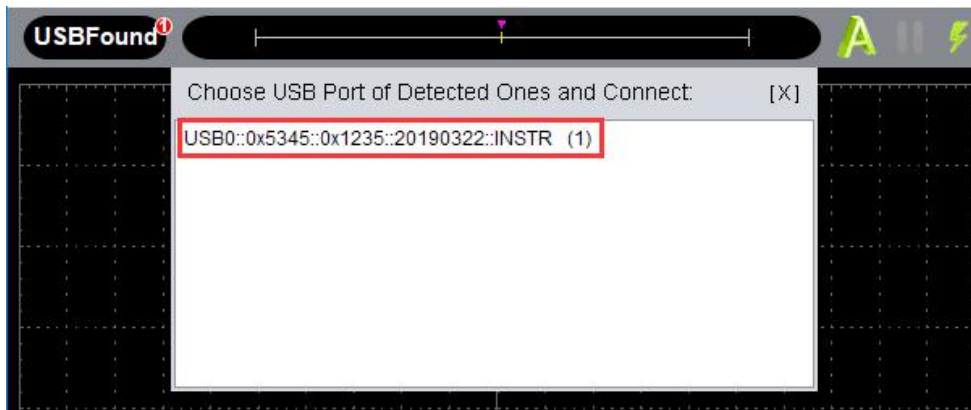
v. to communicate the device with PC

The user(s) gets 2 options to communicate the device with PC: through USB communication port, or through LAN port.

to communicate the device with PC through USB communication port

After powering the device via AC-DC adapter, its status indicator lights red for seconds.

Via USB connection cable (type-C), through matching communication interface, to connect the device with PC. When the status indicator lights green, PC software detects effective USB port, mouse-click the detected option to communicate the device with PC.



to communicate the device with PC through LAN port



2 solutions available to communicate the device with PC through LAN port -

Solution 1. By socket connection, upon with the combination of IP address and port, please refer to [xii. how to use socket connection](#) under VII. Device Operation from page 40 - 43 of e-format user manual.

Solution 2. By adding LAN/LXI network device, please refer to [xiii. how to use LAN communication interface](#) and [xiv. how to work WiFi with PC software](#) under VII. Device Operation from page 44 - 51 and page 52 - 58 of e-format user manual.

6. Device Function Checking

To verify whether the device in normal-working status, better to do a fast function check. After communicating device with PC successfully, please follow up following steps to do a fast function check -



- i. From PC software operation interface, mouse-click  to restore the device to factory settings. The default probe attenuation value in PC software reads x10.
- ii. To switch the probe attenuation in x10, work probe with Channel 1 via communication interface. The operation step goes in -
 - i) to align the probe slot with the BNC connector of CH1 communication interface, insert it through, then rotate the probe rightwards, to make the connection tightly.
 - ii) to connect the probe tip and its ground clamp with the coupler of the probe compensator.
- iii. Mouse-click  from right top of the PC software operation interface, the square wave of 1 kHz / 3.3 V will come.

These 3 steps are to check the status of device's Channel 1, the user(s) may repeat these 3 steps to check the status of device's Channel 2 / 3 / 4, in the checking process, remember to choose the Channel 2 / 3 / 4 communication interface accordingly.

7. Probe Compensation

Before working the probe with any of input channels (Channel 1 / 2 / 3 / 4), better to adjust its compensation, to assure ideal measurement effect. Since the probe in status of non-compensated, or improperly-compensated (overcompensated / under-compensated) always cause possible error or mistake to the measurement result.

Following operation steps to adjust probe compensation -

- i. From PC software operation interface, mouse-click  to get access to device function menu, choose "**Channel**", then "**CH1**", set the "**Probe Rate**" as "**x10**". Switch probe attenuation to **X10** option, then get the probe through Channel 1 input via device communication interface. Provided the probe hook tip been introduced, make sure it is in close touch with the probe. Connect the probe tip with the signal output coupler of probe compensator, and connect the reference wire clamp with the ground wire coupler of the probe compensator, and then click  to do auto set.

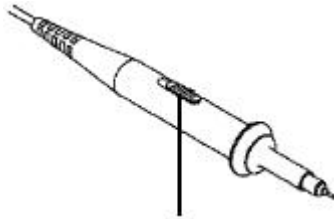


Figure 7-1. Probe Attenuation Switch Position (could set in 1X or 10X option)

- ii. The probe compensation goes in 3 different status (as *Figure 7-2* shows),

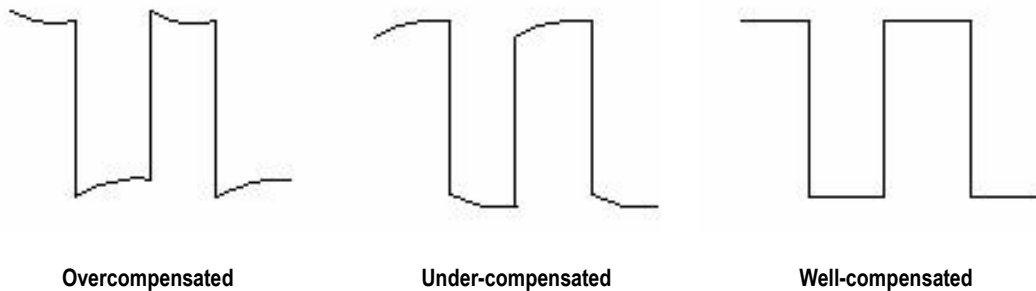


Figure 7-2. Different Status of Probe Compensation

provided probe in overcompensated or under-compensated status, use probe adjust (from device accessories) to adjust the screw (leftwards or rightwards) of probe body (*Figure 7-3*).

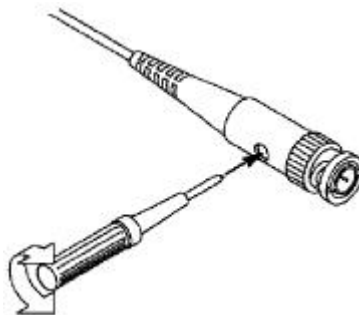


Figure 7-3. Probe Screw Adjusting

For different brand-new probe, please repeat these steps to get ideal compensation.

8. How to Use the Probe Safely

The safety guard ring around the probe body protects human finger from any electric shock, its location as *Figure 8-1*.

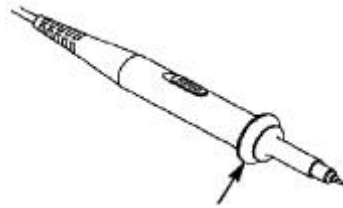


Figure 8-1 Finger Guard Location



Warning:

To avoid possible electric shock, when working the probe, always keep human finger behind the safety guard ring.

To avoid possible human body injury from electric shock, DO NOT touch any metal part of the probe tip when probe working with voltage source.

Before any measurement operation, always connect the probe to the device, and connect the ground terminal to the earth.

9. Appendix

Appendix I. Device Accessory List

Accessories -

- 4 x passive probe
- 1 x type-C cable
- 1 x hard copy quick guide
- 1 x AC-DC adapter
- 1 x PC software / user manual CD

Optional Accessories -

- 1 x Wi-Fi module
- 1 x soft case

Note: Optional accessories is subject to extra purchasing.

Appendix II. Device Maintenance

Storage

To avoid any possible damage to the device, and probe, keep these items FAR AWAY from sprays, liquids, or solvents.

Surface Cleaning

As per the operation condition requirements, DO check the device and probe surface from time to time.

When cleaning the device / probe surface, please follow up with operation steps as follows -

- i. Before the surface cleaning, making sure the device is powered off, without any accessory / outer communicating facility connected; making sure probe not working with the device / outer communicating facility.
- ii. DO use non-electrostatic soft cloth to remove the surface dust.
- iii. For further surface cleaning, recommend to use a wet-but-no-water-dripping soft cloth, or soft detergent.

Note: To avoid permanent damage to the surface of device and probe, DO NOT introduce any corrosive chemical cleaner / detergent.



Warning:

After device surface cleaning, before working the device for next time, please confirm that the device surface in a relative dry condition, so as to avoid any possible short circuit risk, or possible human body injury caused by electric conduction from the wet surface.
