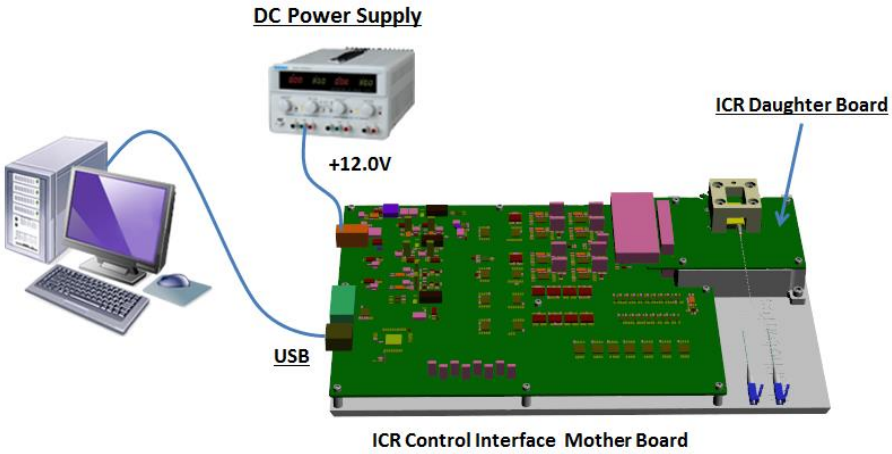
Minimum System and Hardware Requirement

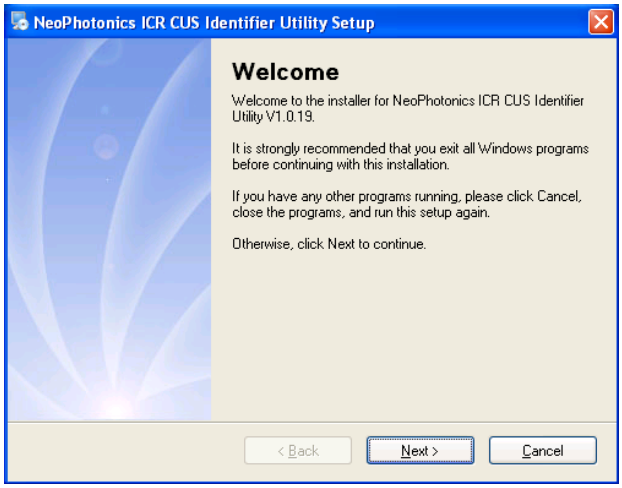
1. Operating system: 32-bit Windows XP SP3 or Windows 7 SP1 with Microsoft .NET Framework 4.0 installed.
2. Power supply: DC +**12.0V/1.0A**.



NeoPhotonics ICR Control Interface Hardware Setup

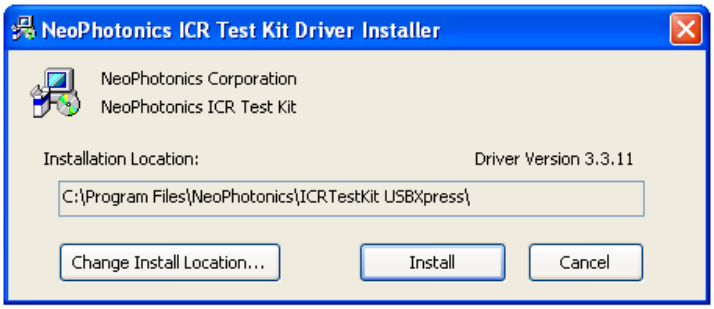
Software and USB Driver Installation on Windows XP OS

1. Follow One-button-Install, and complete the installation as prompted.

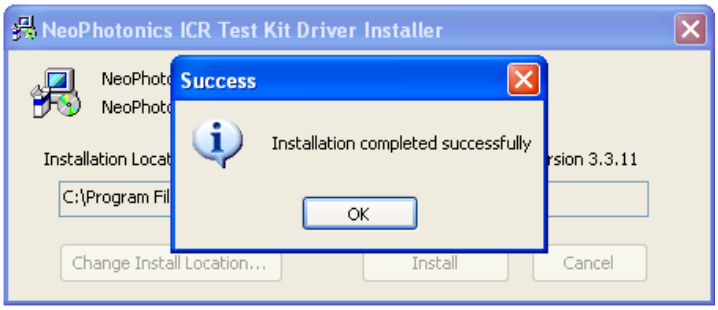


2. After software installation, the USB driver must be installed.
   a) Disconnect the USB port to the evaluation board, before driver installation.
   b) Run the USB driver installation software. The program can be found in the installation directory. Its shortcut is located in Start Menu:

   c) The USB driver will be installed automatically.



   d) Warning dialog boxes generated MS Windows may occur. It is recommended to click “Continue Anyway”
   e) Wait for successful installation completion dialog box.

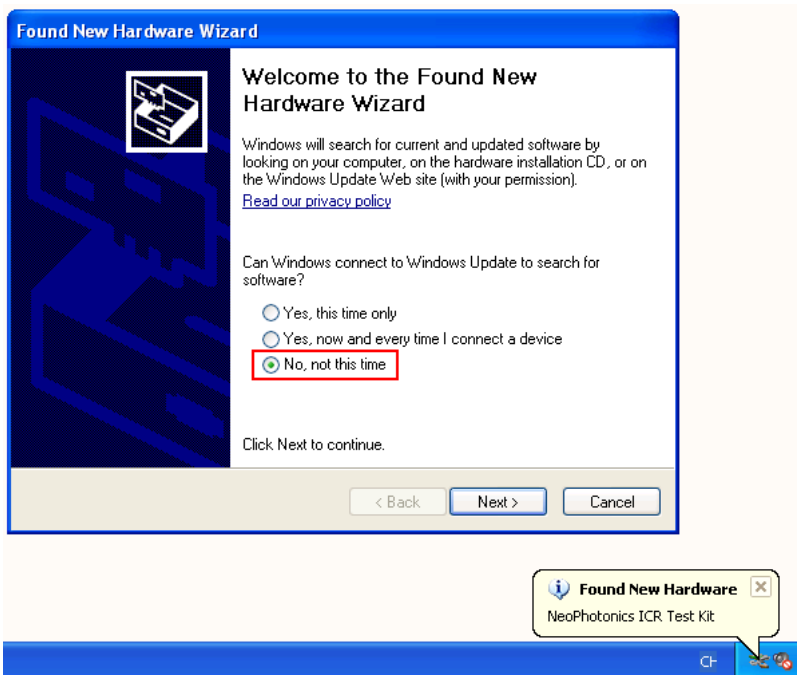


3. Power on Mother Board and connect Mother Board to the computer by USB cable.
   Follow the step-by-step instructions once the new hardware is detected.

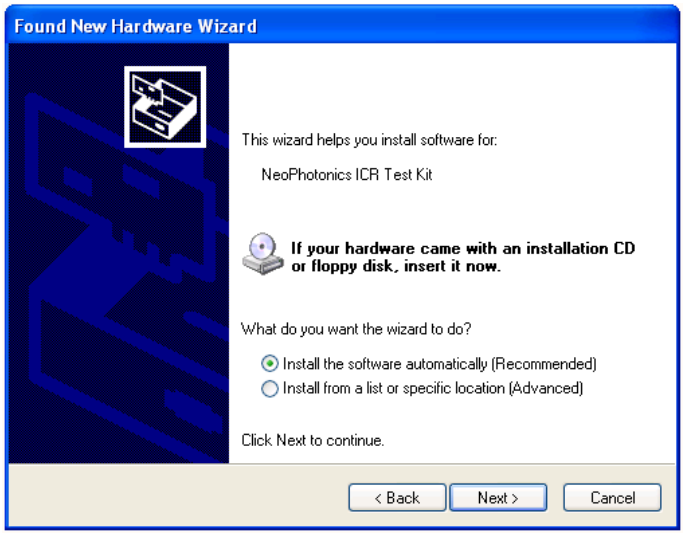
Note: If system asks to select SiUXBXp.sys, it can be found in subfolder '**x86**' of USB driver directory, for example: *C:\Program Files\NeoPhotonics\ICRTestKit USBXpress\x86\ SiUXBXp.sys.*

The sequence of dialog boxes are typically as follows:

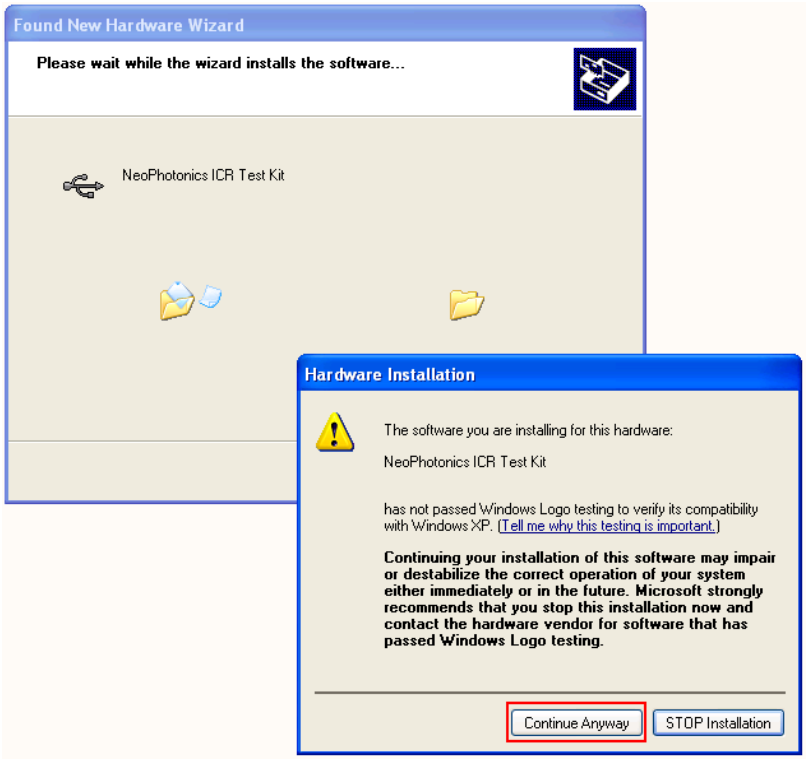
a)



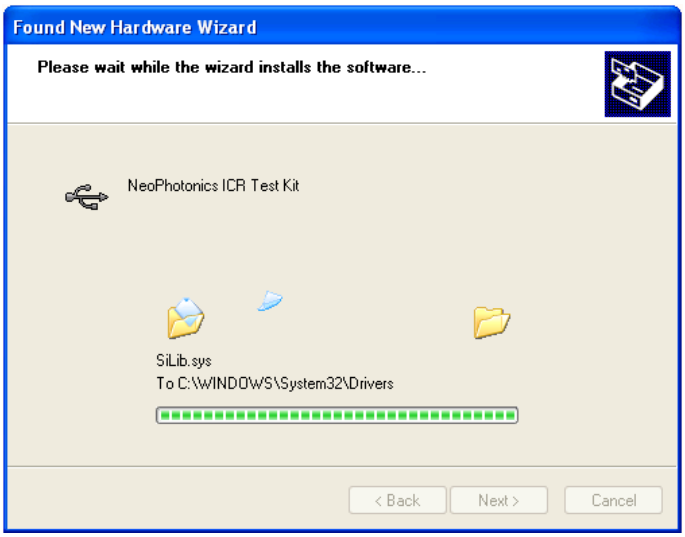
b)



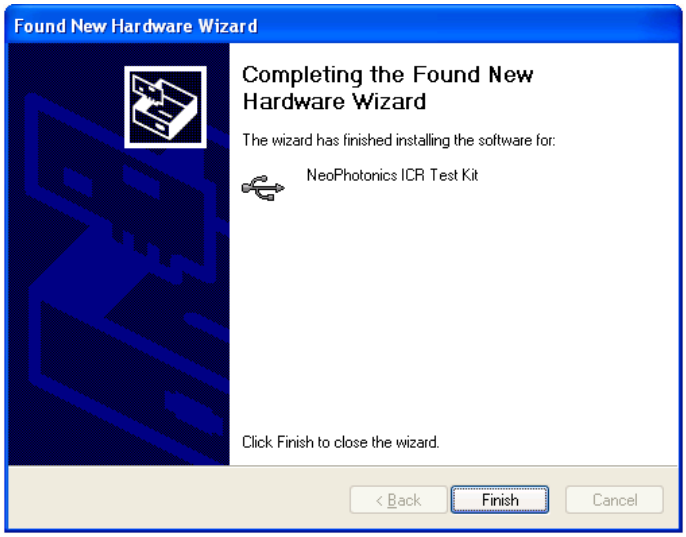
c) Recommended:



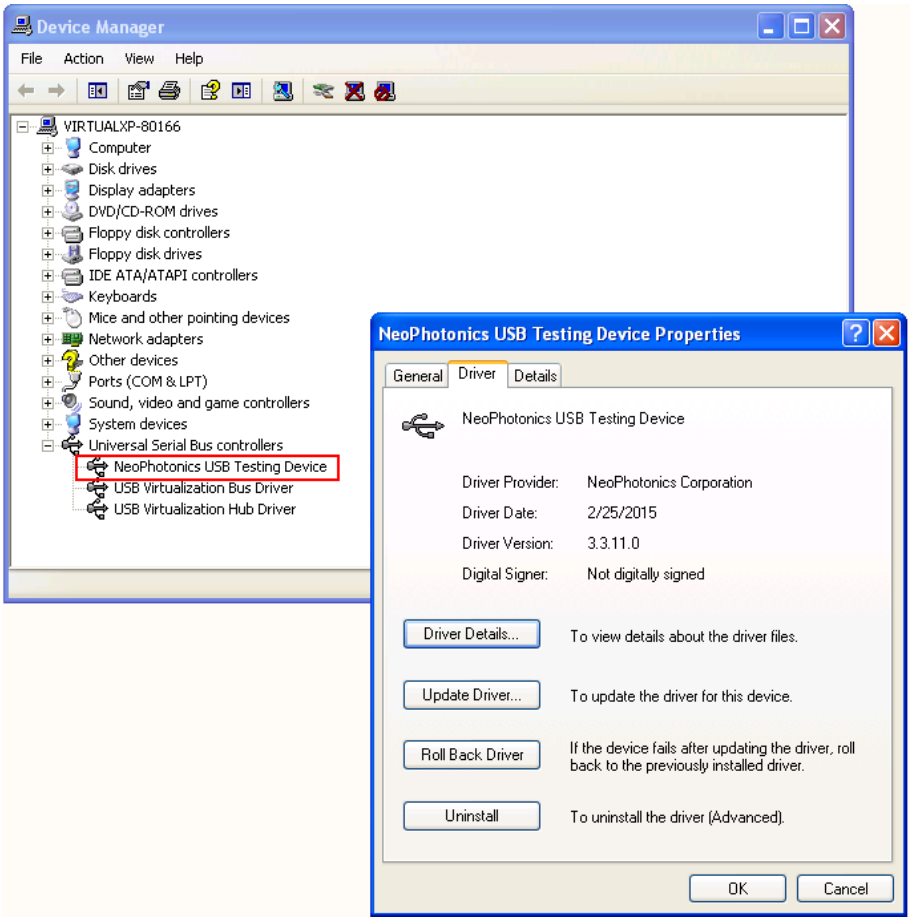
d)



e)



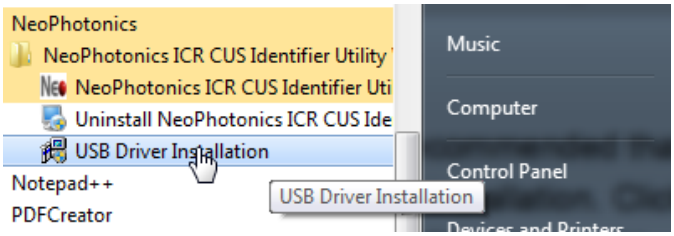
4. The new device can be found in Windows Device Manager.



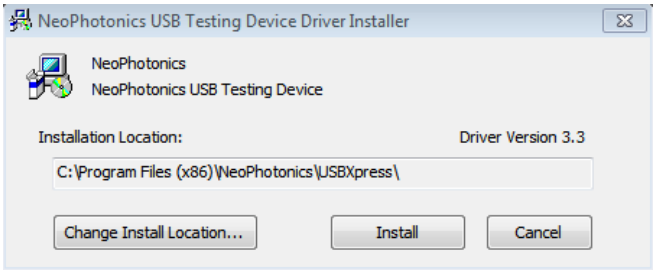
Software and USB Driver Installation on Windows 7 OS

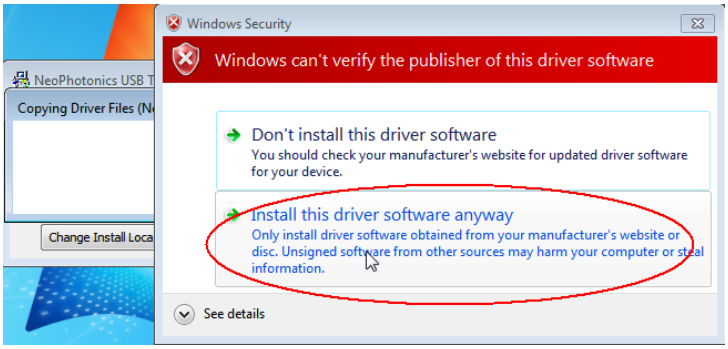
1. Follow One-button-Install, and complete the installation as prompted.

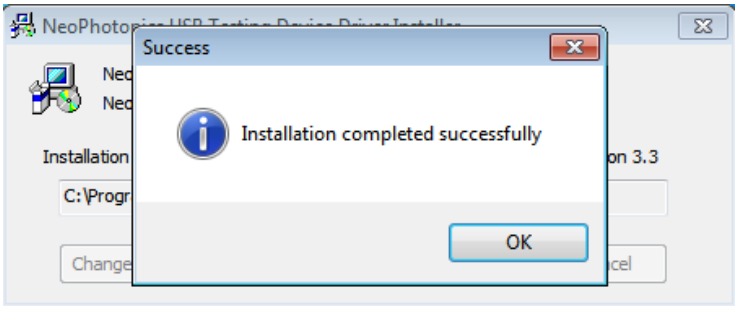
2. After software installation, the USB driver must be installed
   a) Disconnect the USB port to the evaluation board, before driver installation.
   b) Run the USB driver installation software. The program can be found in the installation directory. Its shortcut is located in Start Menu



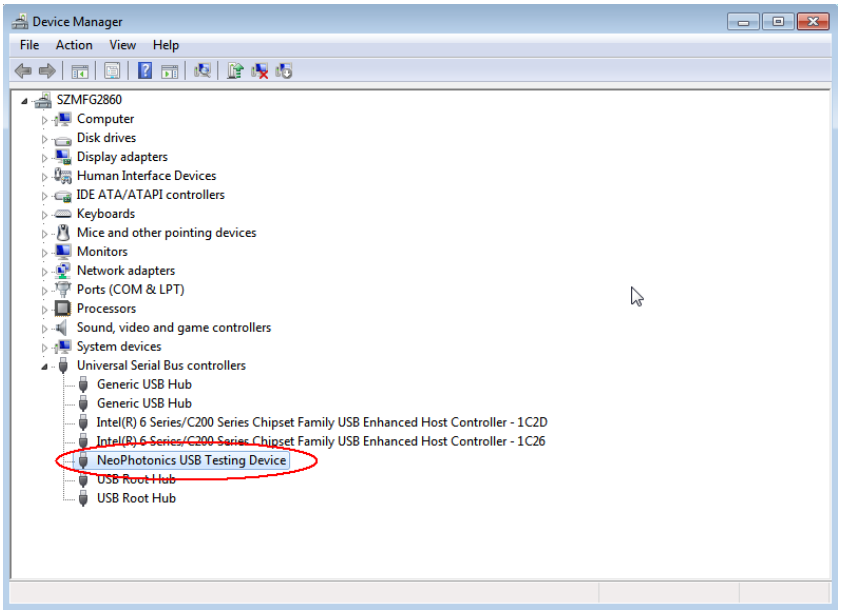
   c) Follow step by step instructions, as prompted:







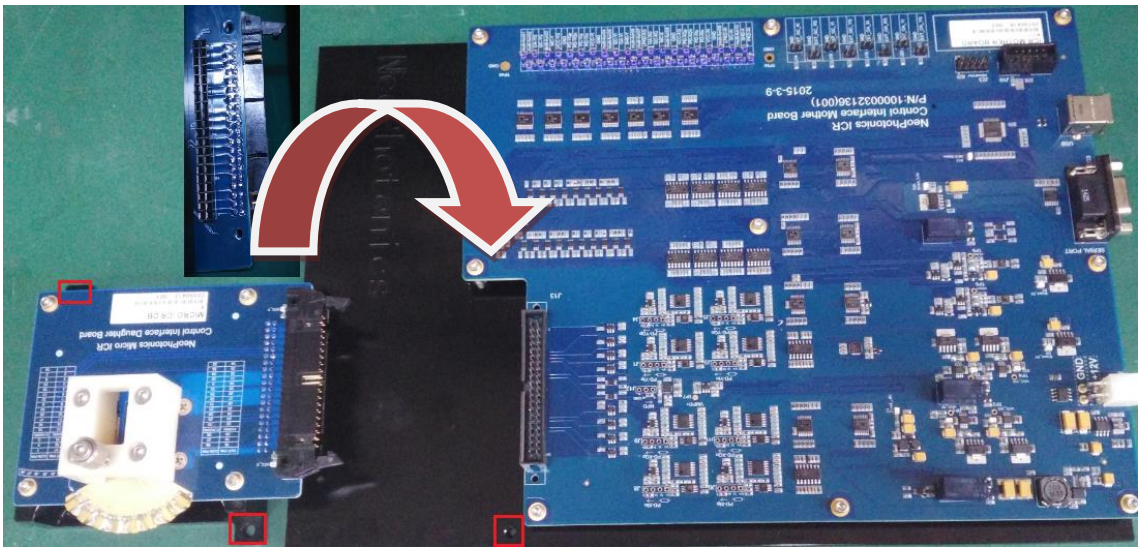
3. Power on Mother Board and connect Mother Board to the computer by USB cable. Follow the step-by-step instructions once the new hardware is detected.
4. The new device can now be found in Windows Device Manager:

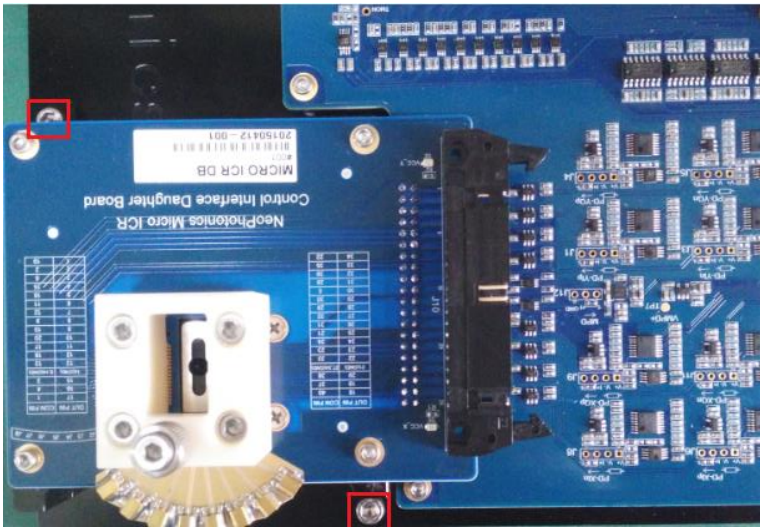


Connection between Mother Board and Daughter Board

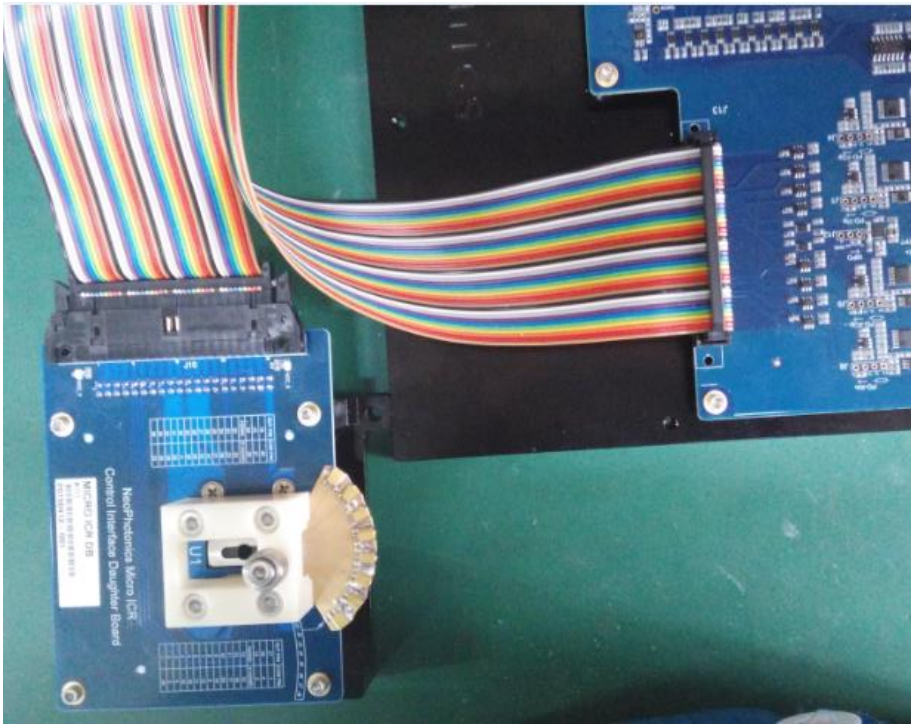
There are two possible configurations to connect Mother Board and Daughter Board.

1. Mounting Daughter Board on Mother Board Directly
    a) Insert Daughter Board female-connector into Mother Board male-connector.
    b) Make sure two screws hole are aligned.
    c) Pushing Daughter Board lightly
    d) Secure connection with the 2 screws.



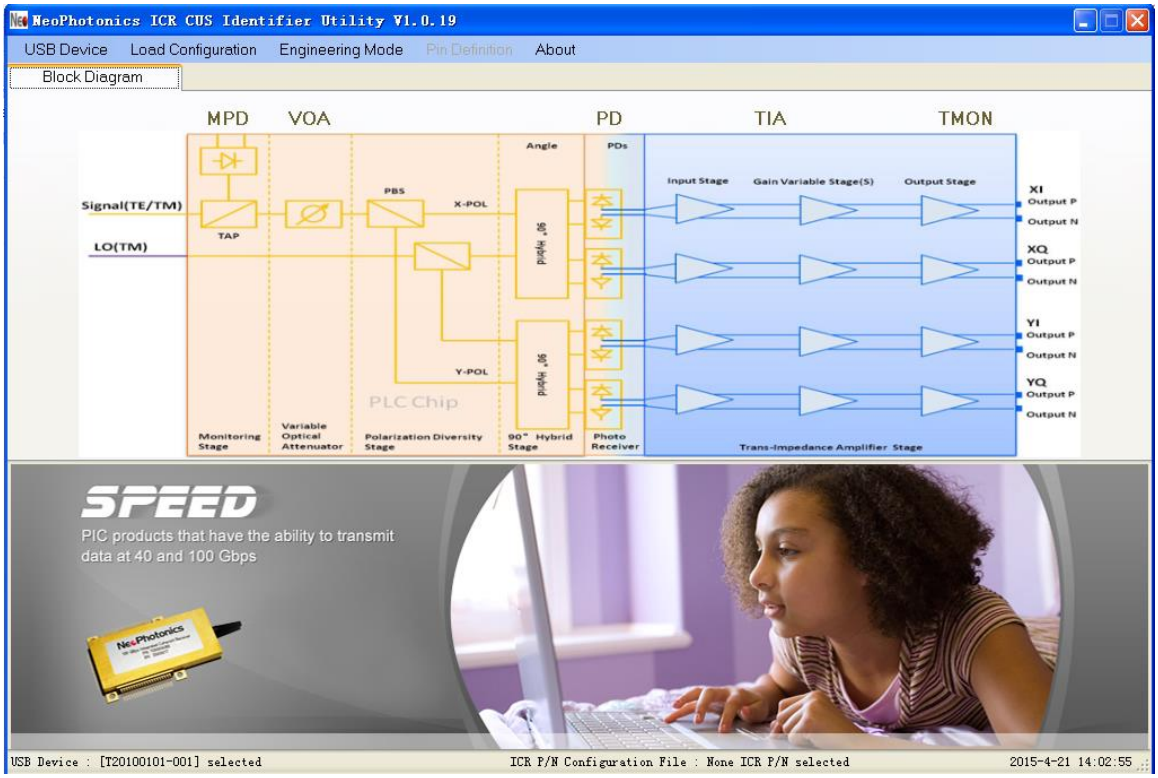


2. Connecting Daughter Board and Mother Board with ribbon cable:
    a) Replicate the set-up below:

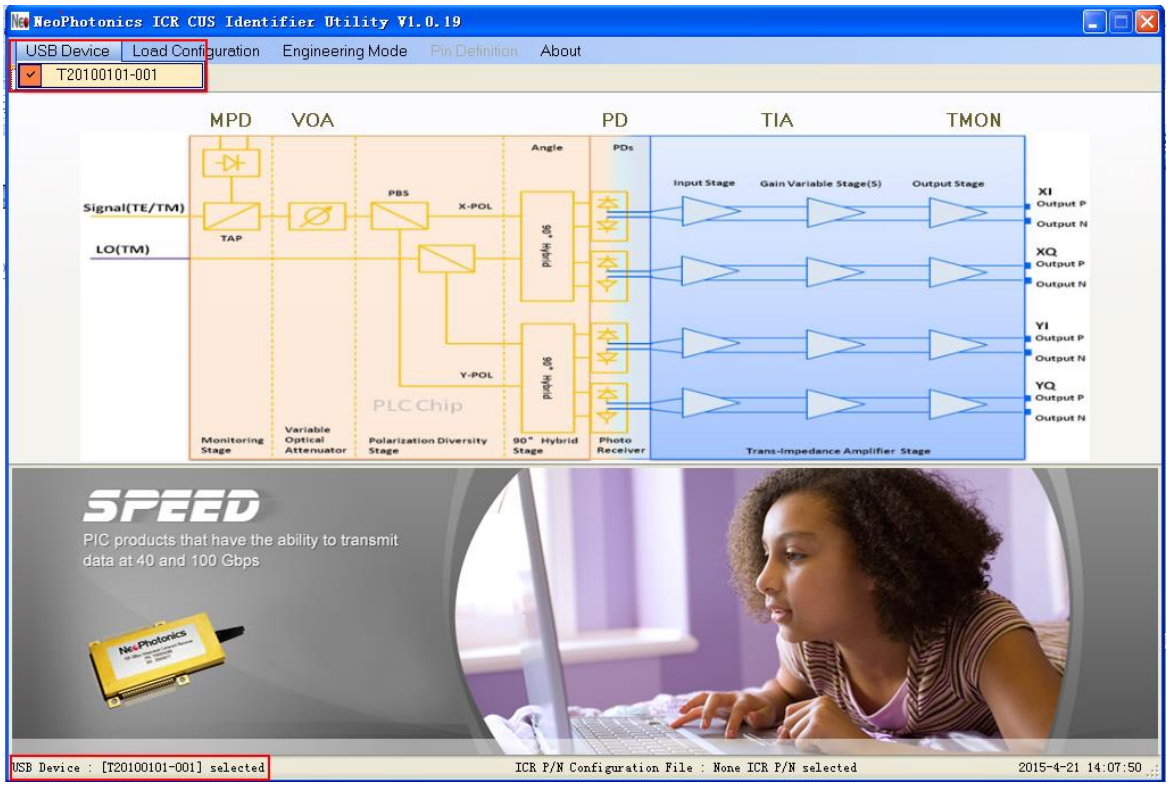


Software Utility Set-Up

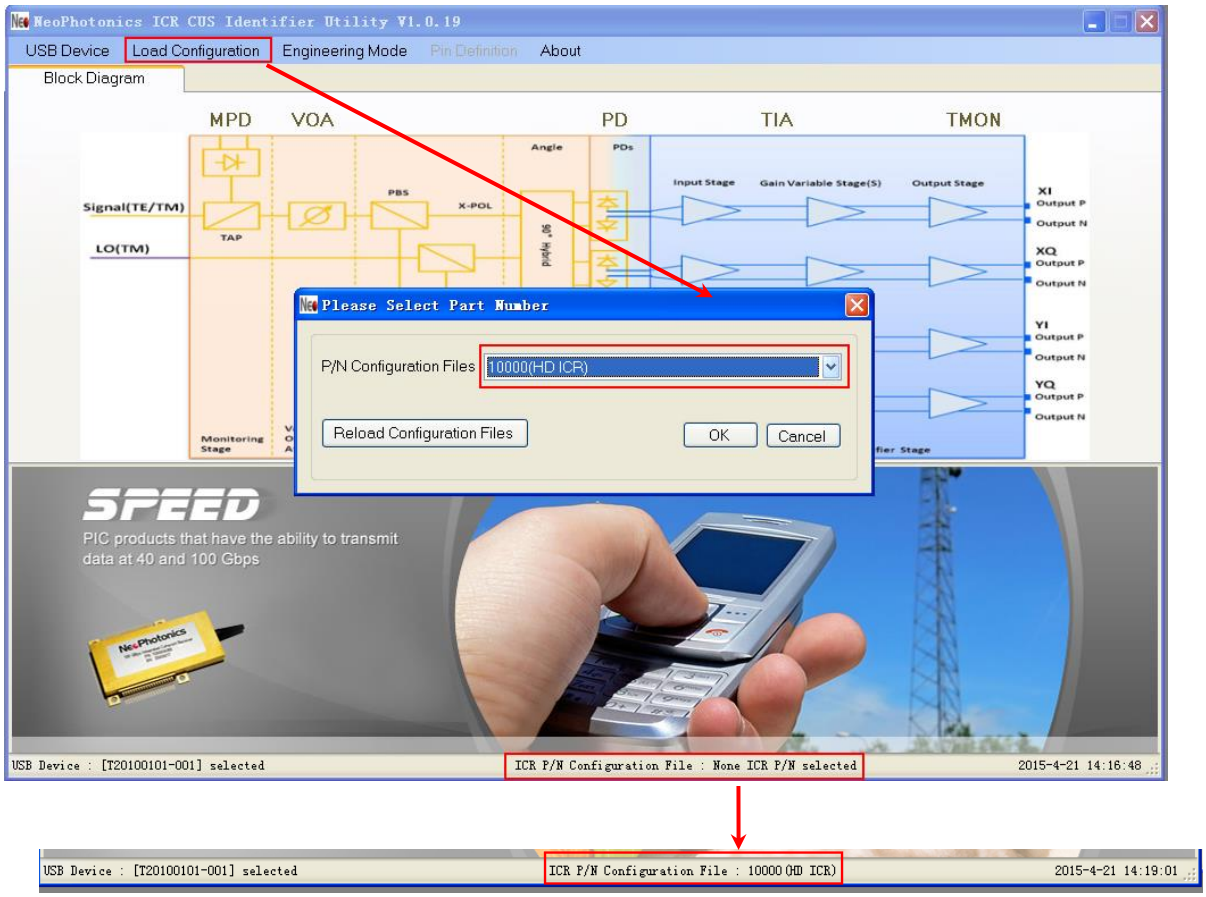
1. Run '**NeoPhotonics ICR CUS Identifier Utility**'.
2. Make sure that the Mother Board is powered on with +12V power supply and USB port connection between Mother Board and host computer is OK.
3. Open '**USB Device**' menu



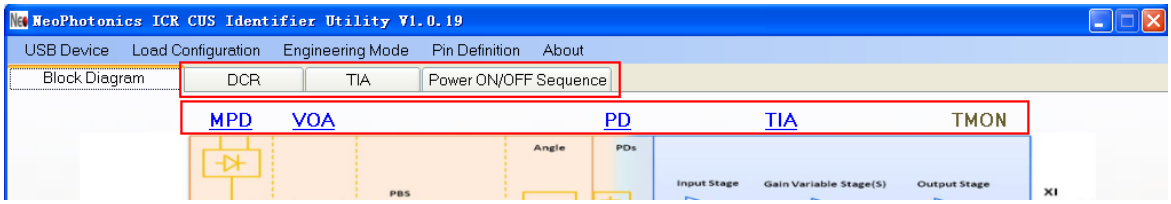
4. The supported communication ports appear, select the correct USB port with Mother Board Serial Number (see label on Mother Board).



5. Open '**Load Configuration**' menu and select the appropriate ICR configuration file (configuration files were installed in the application folder).

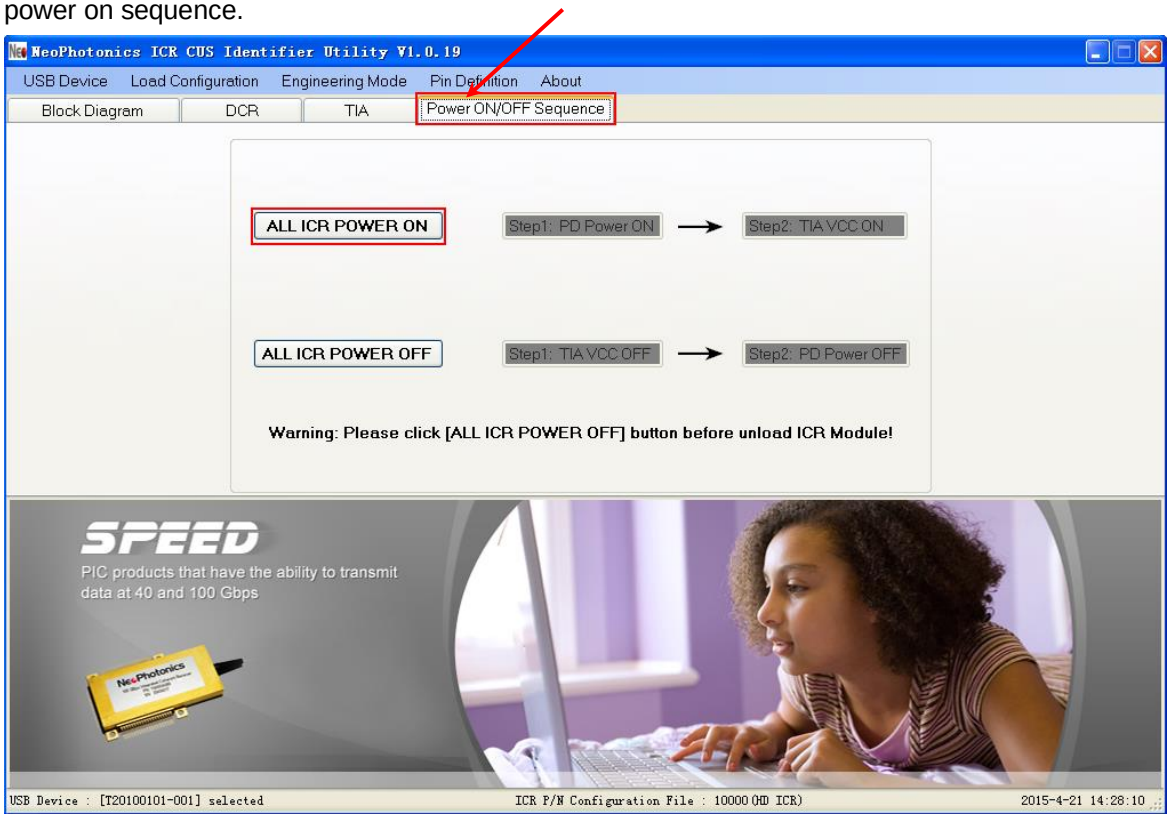


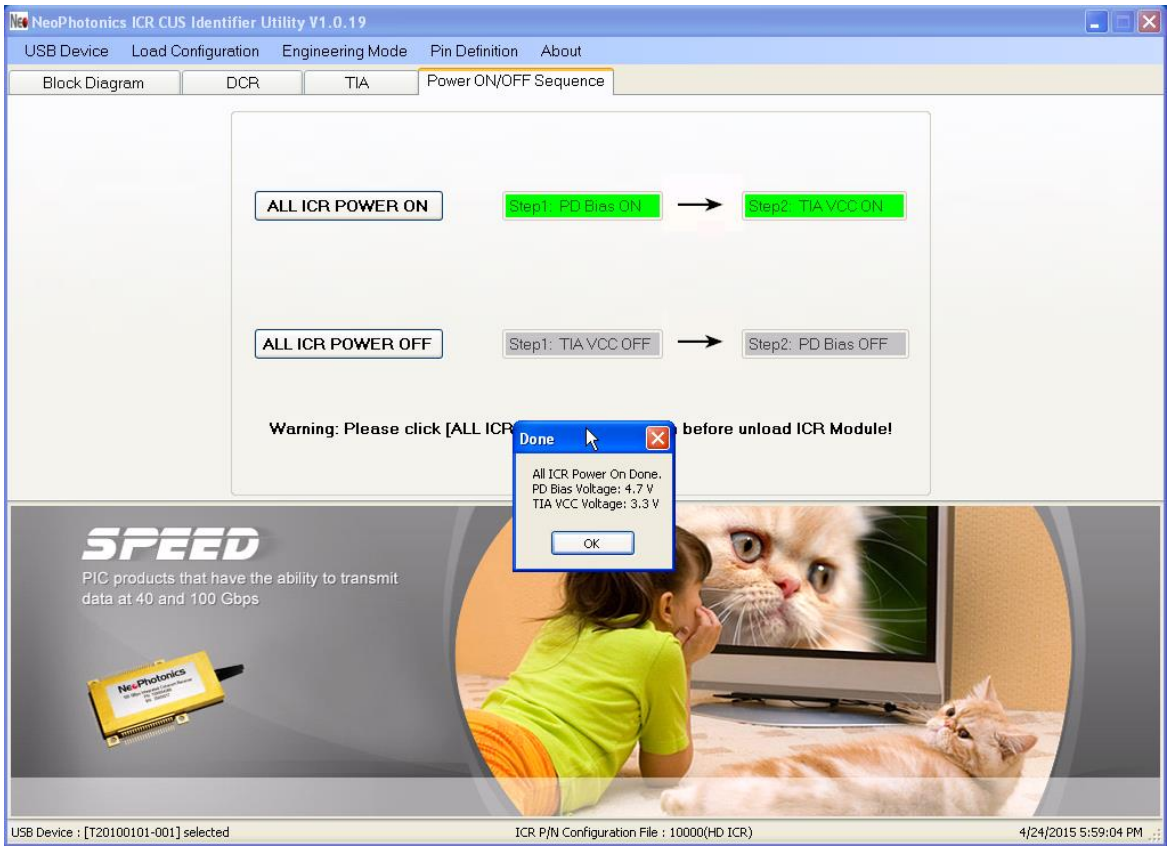
6. After loading ICR Configuration file, all functional menus and buttons related to this ICR are ready to use.



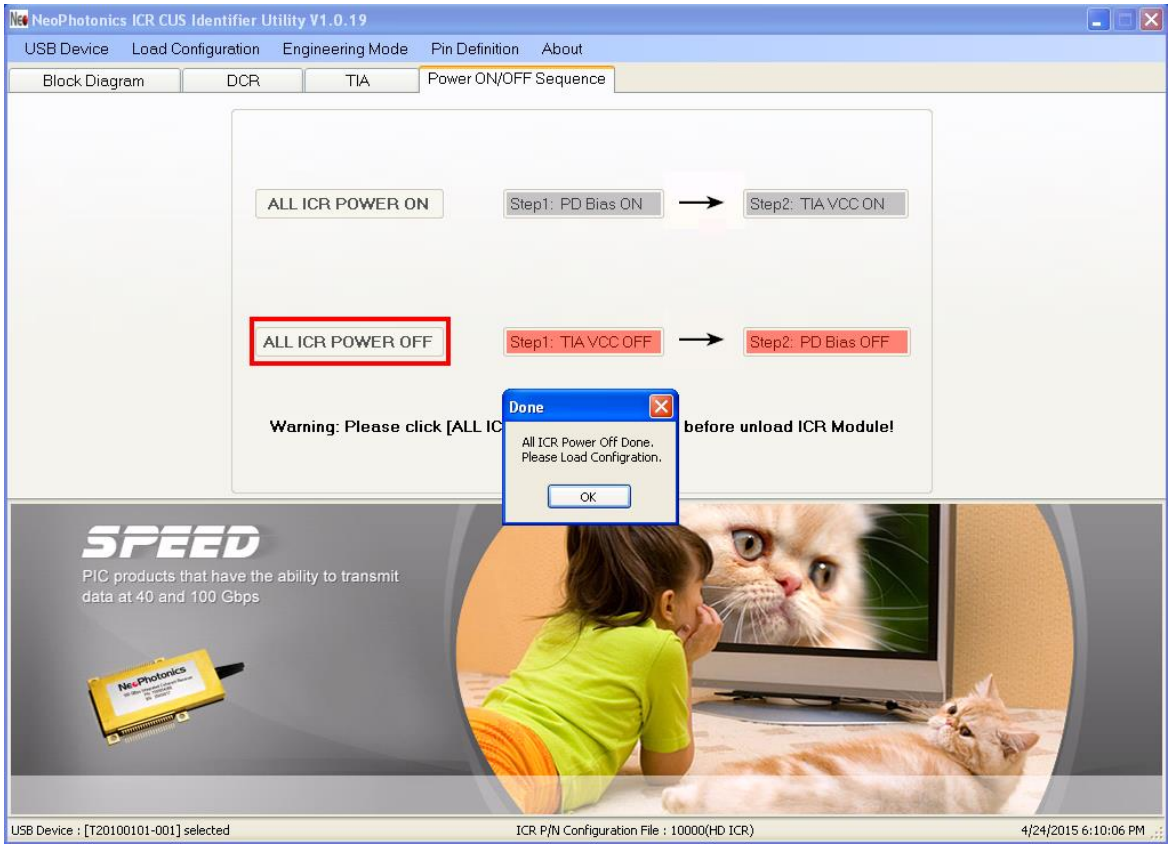
ICR Power On/Off

1. ICR Power ON: Select table 'Power ON/OFF sequence' for ICR Power ON/OFF operation.
   The recommended ICR power-on sequence is (1) PD Bias, then (2) TIA VCC. The Software will follow this power on sequence.

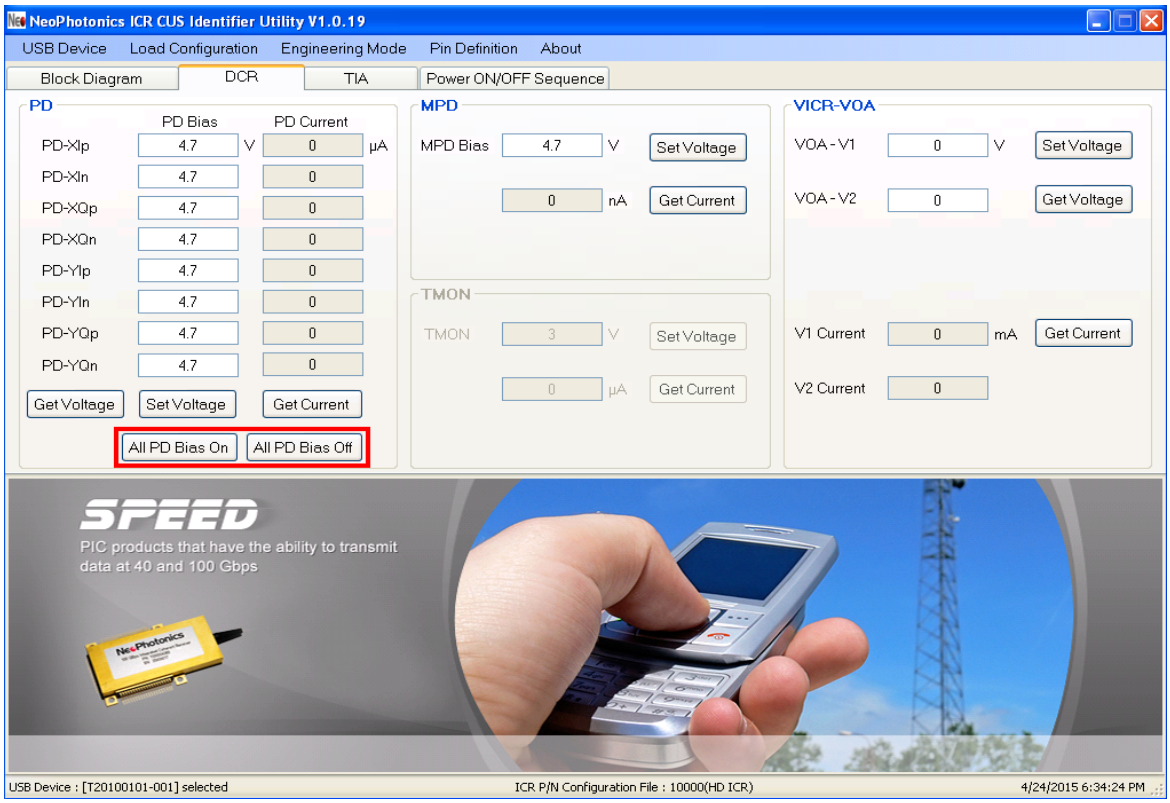


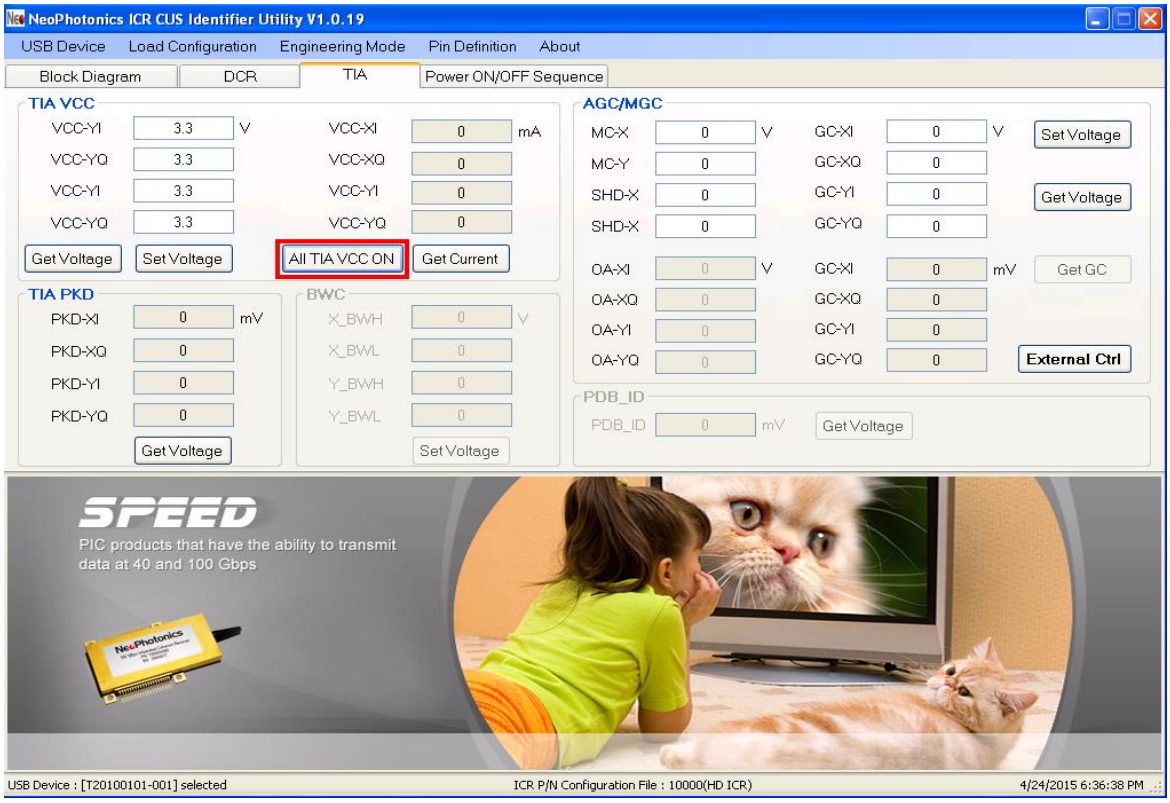

NeoPhotonics ICR CUS Identifier Utility V1.0.19
USB Device
Load Configuration
Engineering Mode
Pin Definition
About
Block Diagram
DCR
TIA
Power ON/OFF Sequence
ALL ICR POWER ON
Step1: PD Bias ON
Step2: TIA VCC ON
ALL ICR POWER OFF
Step1: TIA VCC OFF
Step2: PD Bias OFF
Warning: Please click [ALL ICR
before unload ICR Module!
Done
All ICR Power On Done.
PD Bias Voltage: 4.7 V
TIA VCC Voltage: 3.3 V
OK
SPEED
PIC products that have the ability to transmit
data at 40 and 100 Gbps
USB Device : [T20100101-001] selected
ICR P/N Configuration File : 10000(HD ICR)
4/24/2015 5:59:04 PM

2. ICR Power OFF: Select table 'Power ON/OFF sequence' for ICR Power ON/OFF operation.
   The recommended ICR power-on sequence is (1) TIA Vcc Off, then (2) PD bias. The Software will follow this power off sequence.
   It is recommended to follow this sequence at the end of the test session.



3. The software also supports manual power-on/off operation. Select DCR page for PD Bias control, and TIA page for TIA VCC setting.


NeoPhotonics ICR CUS Identifier Utility V1.0.19
USB Device
Load Configuration
Engineering Mode
Pin Definition
About
Block Diagram
DCR
TIA
Power ON/OFF Sequence
PD
PD Bias
PD Current
PD-XIp
PD-XIn
PD-XQp
PD-XQn
PD-YIp
PD-YIn
PD-YQp
PD-YQn
Get Voltage
Set Voltage
Get Current
All PD Bias On
All PD Bias Off
MPD
MPD Bias
TMON
VICR-VOA
VOA - V1
VOA - V2
V1 Current
V2 Current
SPEED
PIC products that have the ability to transmit data at 40 and 100 Gbps
USB Device : [T20100101-001] selected
ICR P/N Configuration File : 10000(HD ICR)
4/24/2015 6:34:24 PM


NeoPhotonics ICR CUS Identifier Utility V1.0.19
USB Device
Load Configuration
Engineering Mode
Pin Definition
About
Block Diagram
DCR
TIA
Power ON/OFF Sequence
TIA VCC
VCC-YI
VCC-YQ
VCC-XI
VCC-XQ
Get Voltage
Set Voltage
All TIA VCC ON
Get Current
TIA PKD
PKD-XI
PKD-XQ
PKD-YI
PKD-YQ
BWC
X_BWH
X_BWL
Y_BWH
Y_BWL
AGC/MGC
MC-X
MC-Y
SHD-X
SHD-X
OA-XI
OA-XQ
OA-YI
OA-YQ
GC-XI
GC-XQ
GC-YI
GC-YQ
Get GC
External Ctrl
PDB_ID
SPEED
PIC products that have the ability to transmit data at 40 and 100 Gbps
USB Device : [T20100101-001] selected
ICR P/N Configuration File : 10000(HD ICR)
4/24/2015 6:36:38 PM

ICR Operation

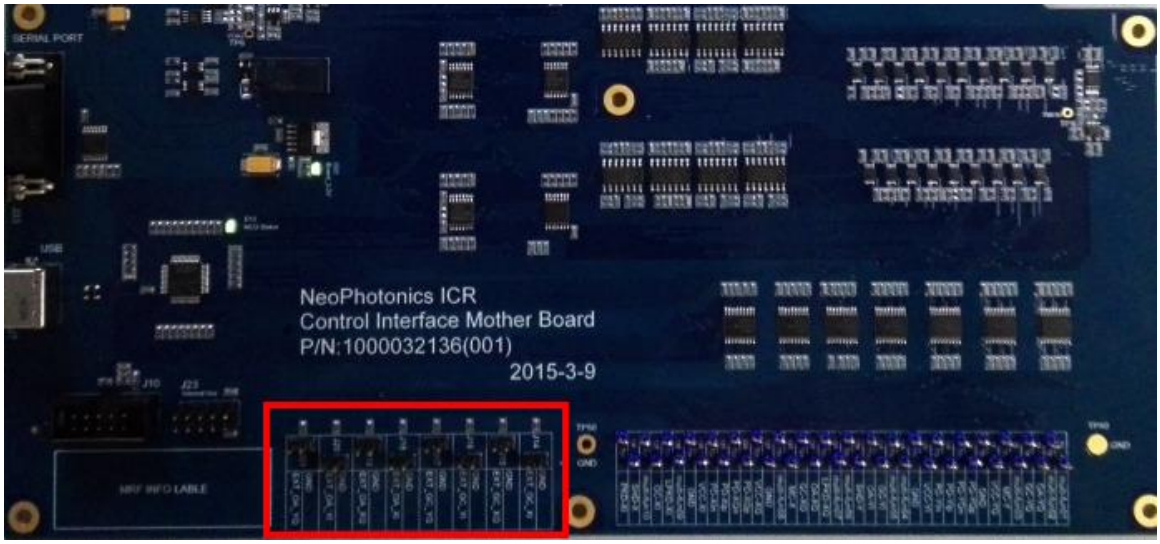
1. Software Control

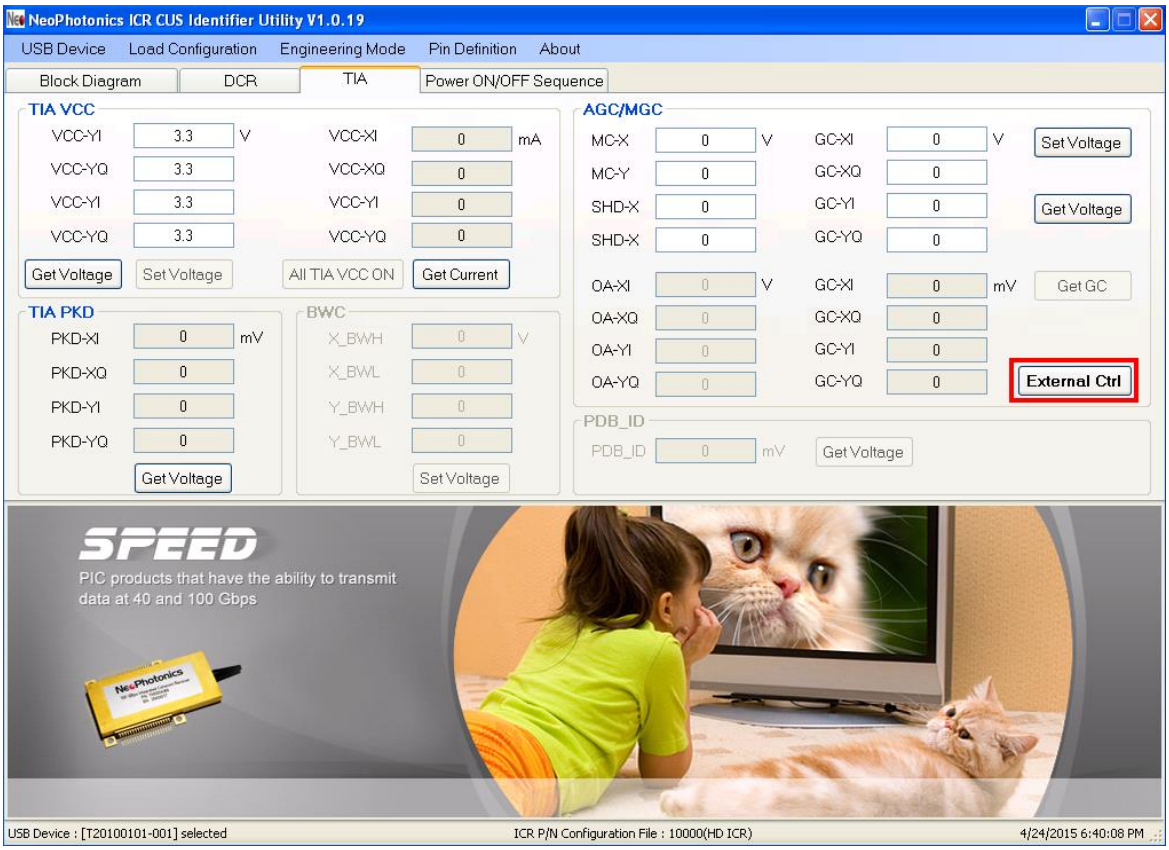
   Software interface allows to set the control voltages to the device by using DCR and TIA control tables. The on-board precision is based on a 16-bit DAC.

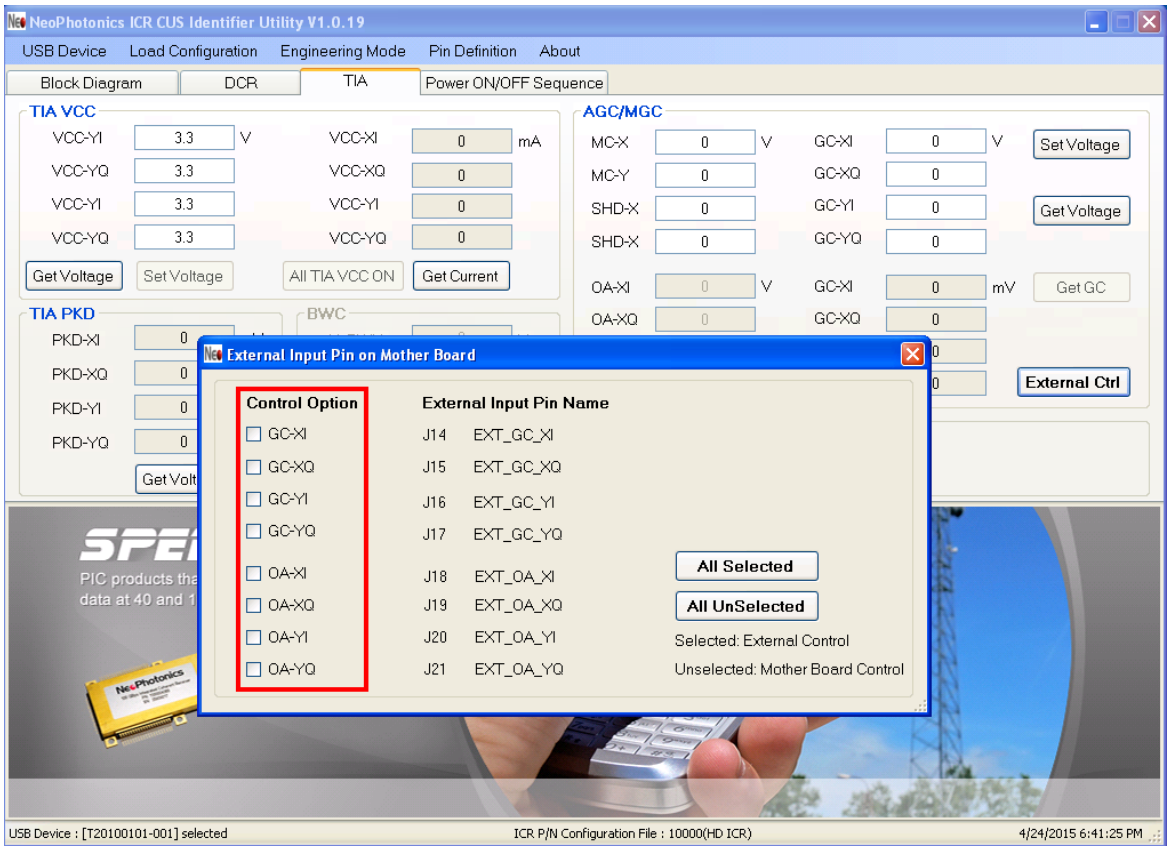
2. External Control

   Gain control or Output amplitude adjustments can be done externally. In TIA control table click on “External Ctrl”, then select which input to be controlled externally.

   Input pins on Mother Board (J14 to J21) can be used for direct control of the voltages.



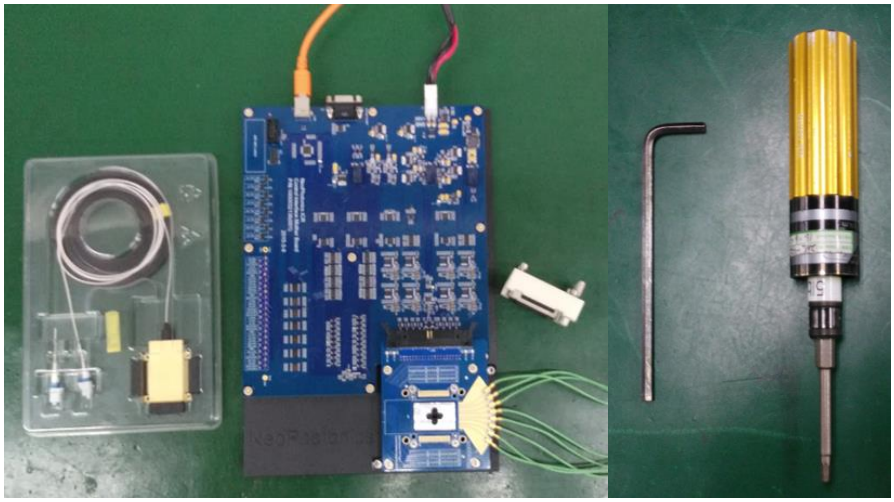



NeoPhotonics ICR CUS Identifier Utility V1.0.19
USB Device
Load Configuration
Engineering Mode
Pin Definition
About
Block Diagram
DCR
TIA
Power ON/OFF Sequence
TIA VCC
VCC-YI
VCC-YQ
VCC-XI
VCC-XQ
Get Voltage
Set Voltage
All TIA VCC ON
Get Current
AGC/MGC
MC-X
MC-Y
SHD-X
SHD-X
GC-XI
GC-XQ
GC-YI
GC-YQ
OA-XI
OA-XQ
Set Voltage
Get Voltage
Get GC
External Ctrl
TIA PKD
PKD-XI
PKD-XQ
PKD-YI
PKD-YQ
BWC
External Input Pin on Mother Board
Control Option
GC-XI
GC-XQ
GC-YI
GC-YQ
OA-XI
OA-XQ
OA-YI
OA-YQ
External Input Pin Name
J14 EXT_GC_XI
J15 EXT_GC_XQ
J16 EXT_GC_YI
J17 EXT_GC_YQ
J18 EXT_OA_XI
J19 EXT_OA_XQ
J20 EXT_OA_YI
J21 EXT_OA_YQ
All Selected
All UnSelected
Selected: External Control
Unselected: Mother Board Control
USB Device : [T20100101-001] selected
ICR P/N Configuration File : 10000(HD ICR)
4/24/2015 6:41:25 PM

Appendix: ICR Mounting and Un-mounting

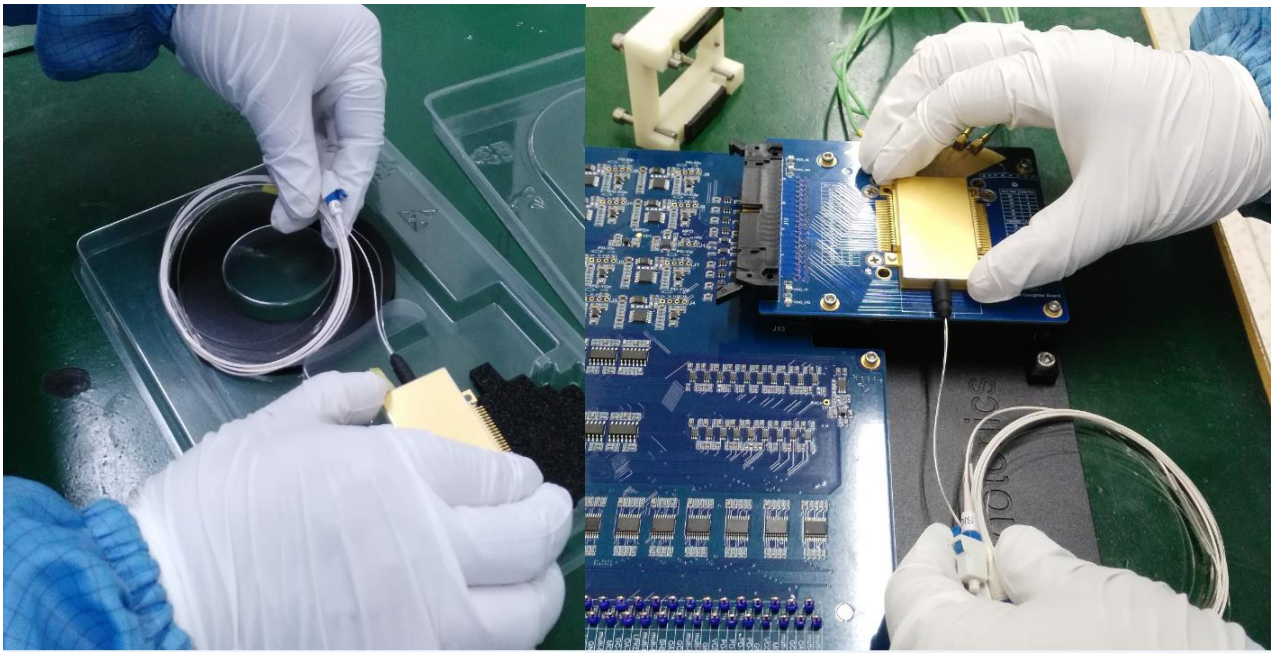
Mounting ICR to Daughter Board

1. Make sure the around of Mother Board are clean and no hard and spiked components. Make sure the work bench are roomy.
   Tools: screw tool, fiber cleaner,end face inspector.

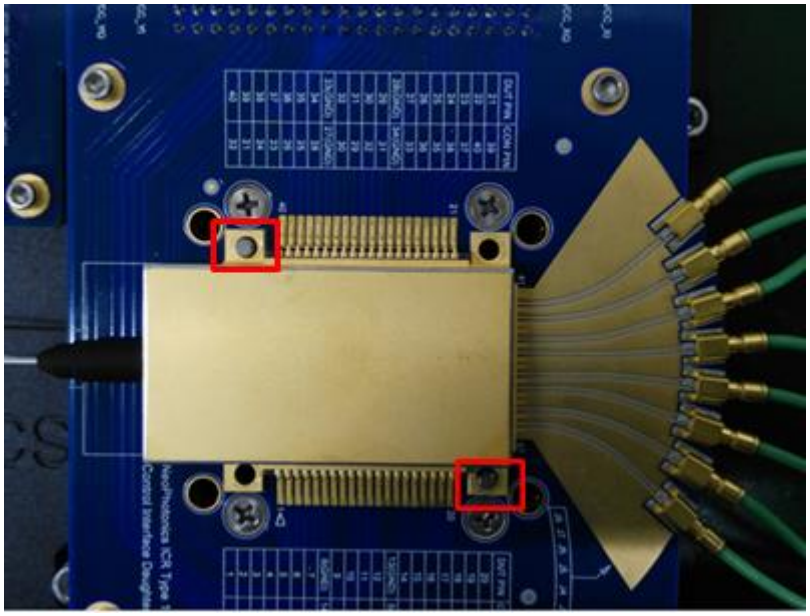


2. Open the packing box and take away the foam beside of ICR, then move out the ICR from the bed carefully and put it on the box which canbe moved easily.

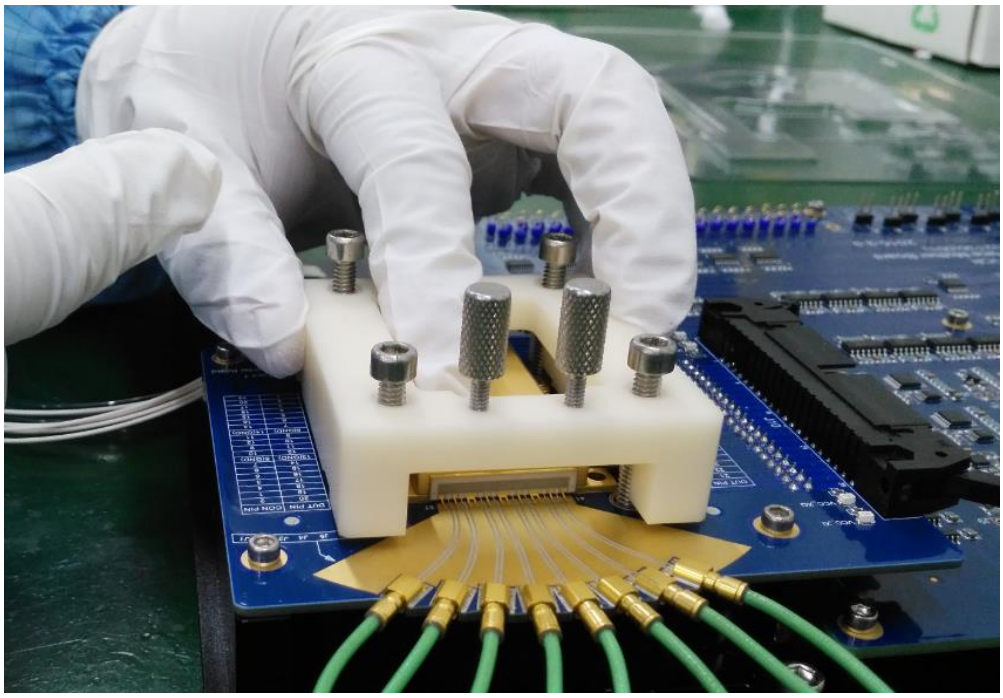
3. Use right hand hold ICR diagonally,use left hand hold fiber ring and connector carefully and move it to daughhter board and put on it.



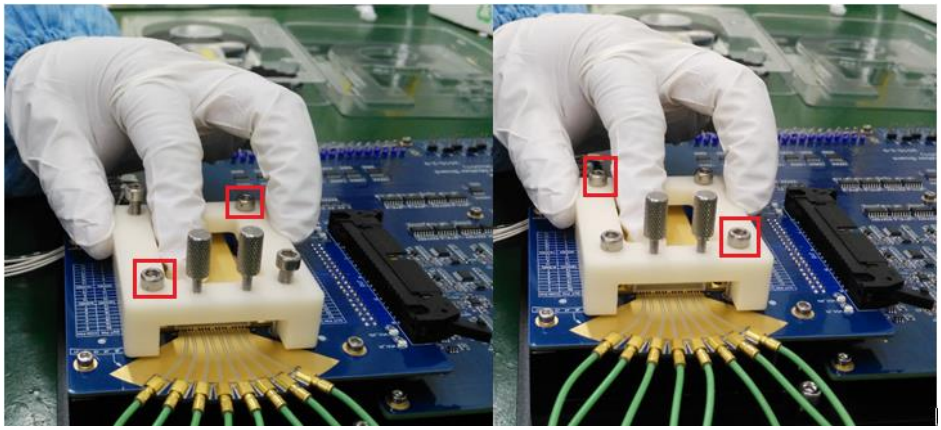
4. When put ICR on board, please take care that ICR hole aligned with two pillars. Then move ICR lightly and make sure all DC pins and RF pins be aligned well with PCB gold finger.



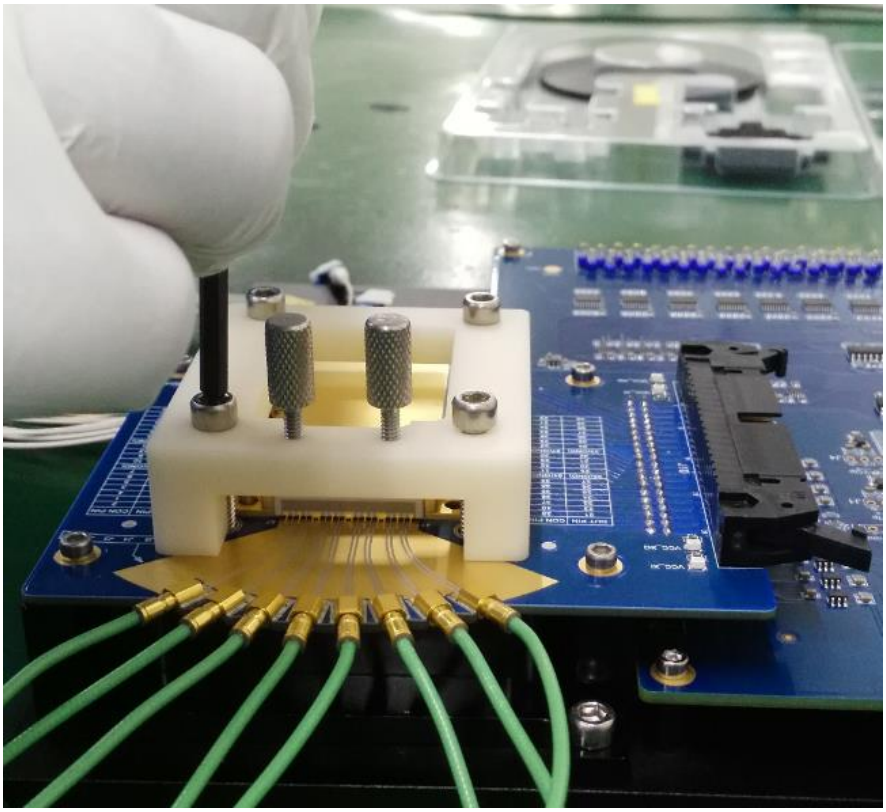
5. Mount clamp on ICR, Please make sure 4screws are aliged well with 4screw holes, use index finger press ICR top lightly and make sure ICR can not move ,press the clamp slightly make sure the clamp touched PCB.



6. Using screw tool pre-tighten four screws diagonally.

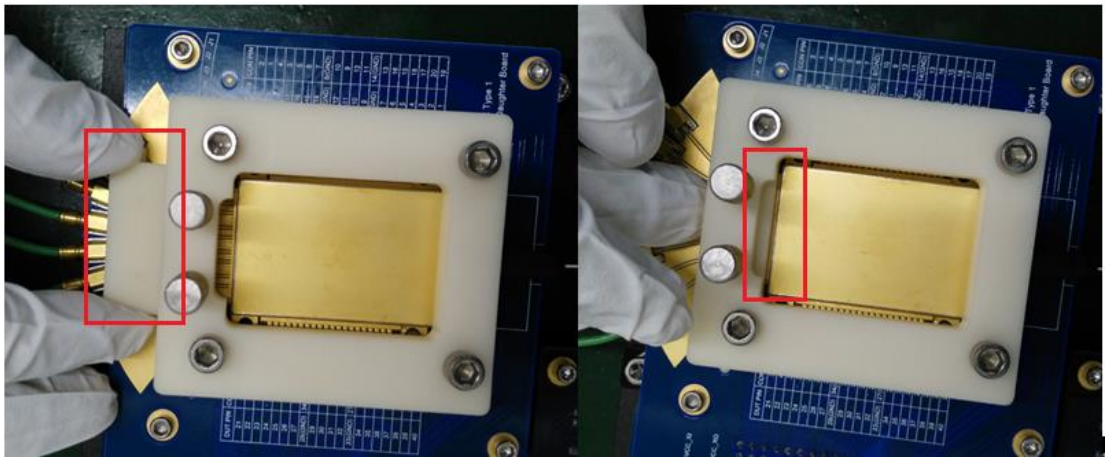


7. Tightening four screws.

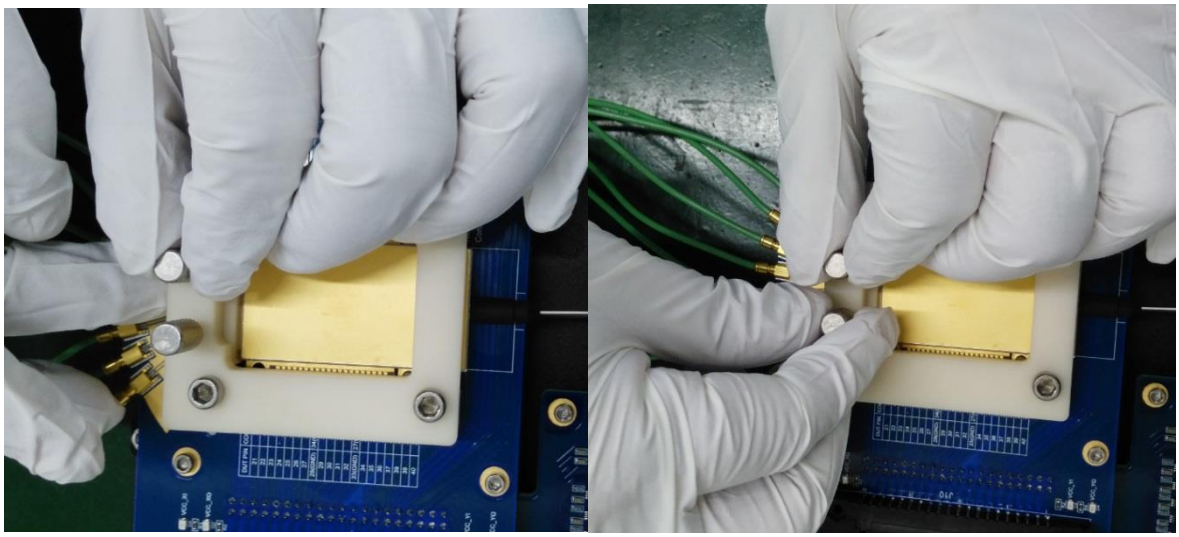


8. Put RF clamp on PCB at RF pins side, then push clamp to touch ICR side.

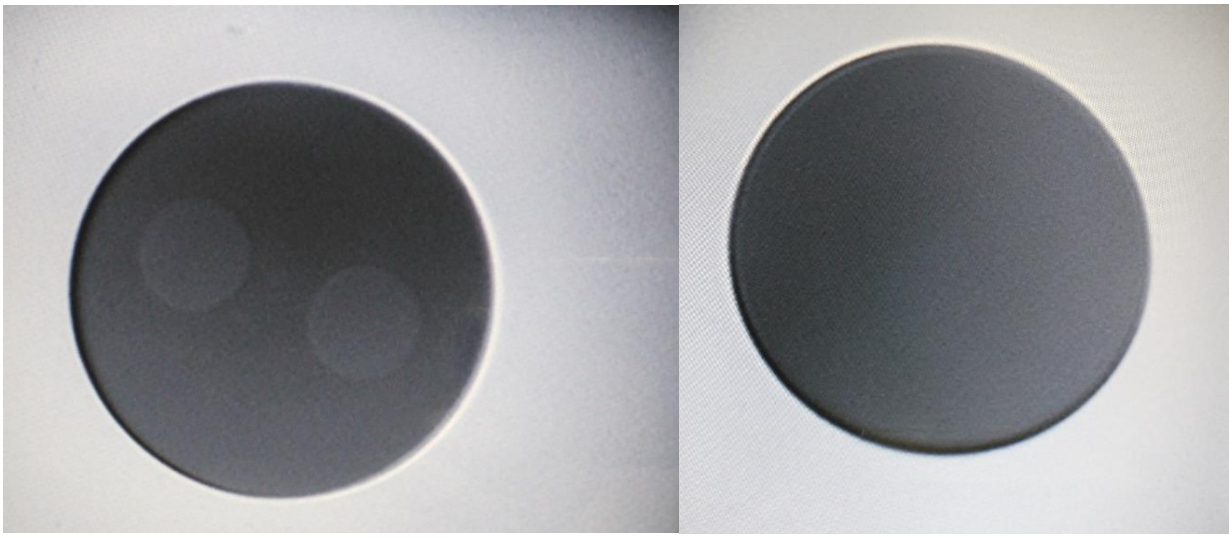
Note: Please take care that don't damage RF pins when push clamp.



9. Pre-tighten two screws one by one, after that, tighten two screws half circle at the same time.



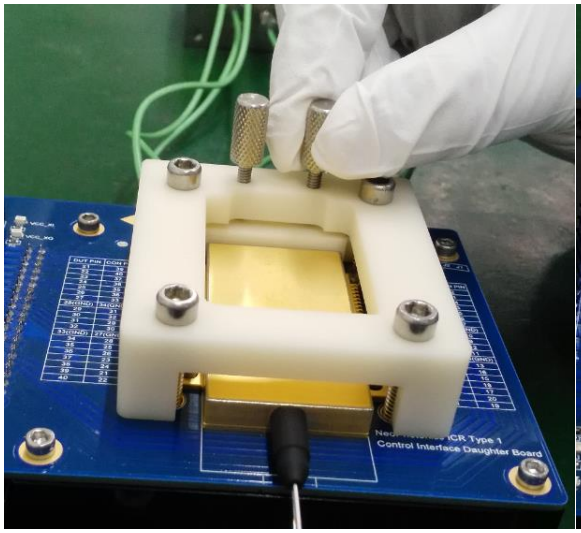
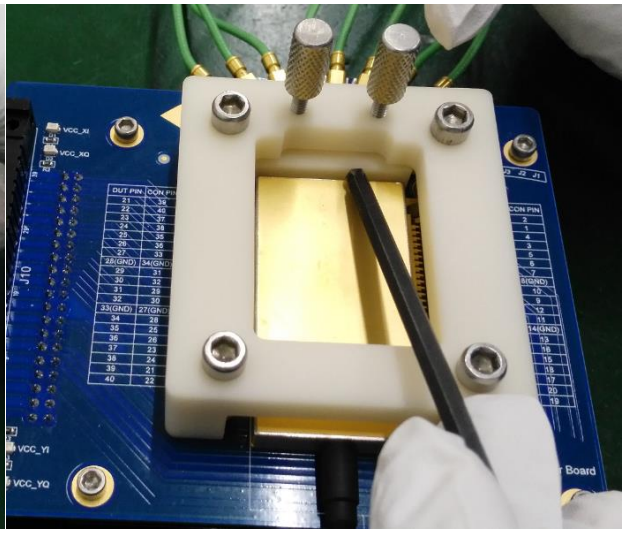
10. Fiber Connection, please make sure connectors end face are clean.

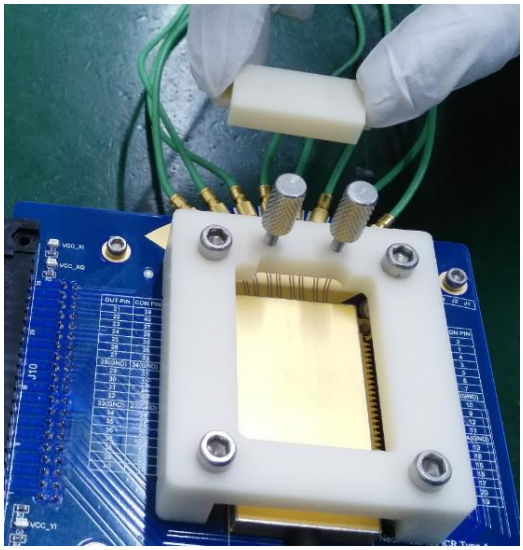


11. Checking ICR mounting is ok or not accoding to reading PD/TIA current before testing.

Un-mounting ICR from Daughter Board

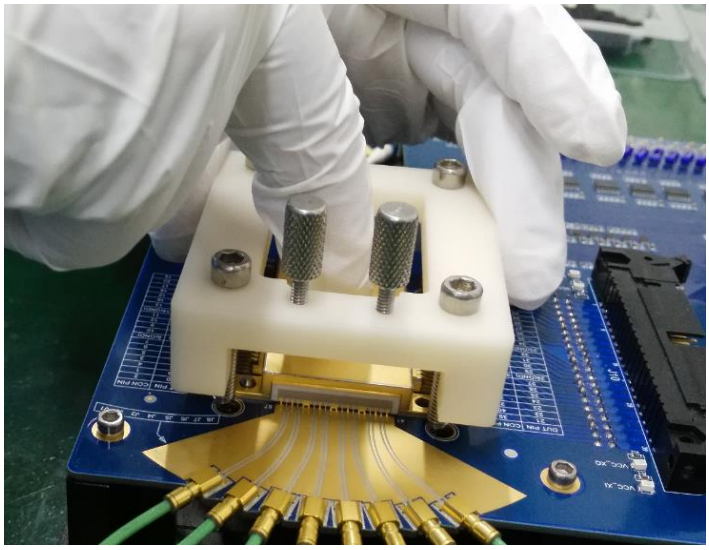
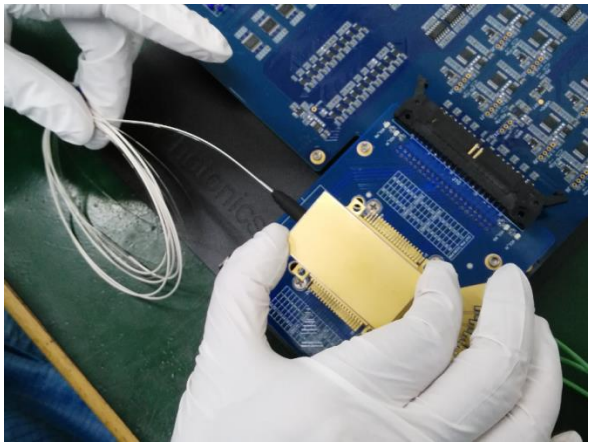
1. Loose two RF clamp screws. Then push out and take away RF clamp lightly.



2. Loose 4screws and take the clamp away.

   Note: please press ICR by index finger when take clamp away.



3. Taking the ICR away and put it into packing box.