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/1A.



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:

| 🛅 NeoPhotonics 🔹 🕨 🕻 | 🚡 NeoPhotonics ICR CUS Identifier Utility V1.0.19 🔸 | Ne | NeoPhotonics ICR CUS Identifier Utility |
|----------------------|---|----|---|
| | | 5 | Uninstall NeoPhotonics ICR CUS Identifier Utility |
| | | 뤈 | USB Driver Installer Application |

c) The USB driver will be installed automatically.

| 😽 NeoPhoto | nics ICR Test Kit Driv | er Installer | | × |
|--------------|---|-------------------|-----------------------|---|
| Neo Neo | Photonics Corporation Photonics ICR Test Kit | | | |
| Installation | Location: | ſ | Driver Version 3.3.11 | |
| C:\Progra | am Files\NeoPhotonics\ICRT | estKit USBXpress\ | | |
| Change | Install Location | Install | Cancel | |

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

| 捐 NeoP | hotonics | ICR Test | Kit Driver Installer | × |
|-------------------|-------------------------|-------------|-------------------------------------|--------------|
| | NeoPhoto | Success | | |
| Installa | NeoPhoto ation Locat | ٩ | Installation completed successfully | rsion 3.3.11 |
| C:\F | Program Fil | | ОК | |
| Ch | ange Insta | Il Location | Install | Cancel |



 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:

| u) | | | |
|-------|-------------------|--|----------------------|
| Found | New Hardware Wiza | rd | |
| | | Welcome to the Found New Hardware Wizard Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission). Read our privacy policy Can Windows connect to Windows Update to search for software? Yes, this time only Yes, now and every time I connect a device No, not this time Click Next to continue. | |
| | | < Back Next > Cancel | |
| | | Eound New H NeoPhotonics ICR T | ardware 💌 est Kit |
| b) | N | | |
| Found | | This wizard helps you install software for: NeoPhotonics ICR Test Kit If your hardware came with an installation CD or floppy disk, insert it now. What do you want the wizard to do? Install the software automatically (Recommended) Install from a list or specific location (Advanced) Click Next to continue. Cance | |

c) Recommended:



d)



e)

| Found New Hardware Wiz | ard |
|------------------------|--|
| | Completing the Found New Hardware Wizard The wizard has finished installing the software for: NeoPhotonics ICR Test Kit |
| | Click Finish to close the wizard. |
| | Kack Finish Cancel |

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:

| 芻 NeoPhotonics USB Testing Device Driver Installer | X |
|---|--|
| NeoPhotonics NeoPhotonics USB Testing Device | |
| Installation Location: | Driver Version 3.3 |
| C:\Program Files (x86)\NeoPhotonics\USBXpress\ | |
| Change Install Location Install | Cancel |
| 😵 Windows Security | 8 |
| Windows can't verify the pub | lisher of this driver software |
| 税 NeoPhotonics USB T | |
| Don't install this driver s You should check your manufactor your device. | oftware cturer's website for updated driver software |
| Change Install Loca Only install driver software obta disc. Unsigned software from ot information. | re anyway ined from your manufacturer's website or her sources may harm your computer or steal |
| See details | |



- 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).



- USB Device : [T20100101-001] selected
- 5. Open 'Load Configuration' menu and select the appropriate ICR configuration file (configuration files were installed in the application folder).

ICR P/N Configuration File : None ICR P/N selected



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

| Nee NeoPhotonics ICR | CUS Ident: | ifier Utility Vl | . 0. 19 | | | | | |
|----------------------|--------------|------------------|----------------|------------|-------------------|------------------------|--------------|----|
| USB Device Load C | onfiguration | Engineering Mode | Pin Definition | About | | | | |
| Block Diagram | DCR | TIA | Power ON/OFF | Sequence | | | | |
| | MPD | <u>V0A</u> | | <u>P</u> [| <u>)</u> | <u>TIA</u> | TMON | |
| | | PBS | | Angle Pl | Ds Input Stage | Gain Variable Stage(S) | Output Stage | xı |

ICR Power On/Off

 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





 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.



| NeoPhotonic | s ICR CUS Identi | fier Ut | ility V1.0.1 | 9 | | | | | | | | | |
|----------------------|--------------------|--------------------|----------------|--------|----------------|-------------|------------|--------------------|--------|--------|----------------|-------|---------------------|
| USB Device | Load Configure | ation | Engineerin | g Mode | Pin Definition | n About | | | | | | | |
| Block Diagr | am [| DCR | T | A | Power ON/O | FF Seque | nce | | | | | | |
| PD | PD Bias | , | PD Current | | MPD | | | | | R-VOA | | | |
| PD-Xlp | 4.7 | _ v [| 0 | μA | MPD Bias | 4.7 | V | Set Voltage | | - 1 | 0 | V | Set Voltage |
| PD-XIn | 4.7 | | 0 | | | | _ | | | | | | |
| PD-XQp | 4.7 | | 0 |] | | 0 | nA | Get Current | | V2 | 0 | | Get Voltage |
| PD-XQn | 4.7 | | 0 |] | | | | | | | | | |
| PD-Ylp | 4.7 | | 0 |] | | | | | | | | | |
| PD-YIn | 4.7 | | 0 | | TMON | | | | | | | | |
| PD-YQp | 4.7 | | 0 | | TMON | 3 | \vee | Set Voltage |) v1 c | urrent | 0 | mA | Get Current |
| PD-YQn | 4.7 | | 0 | | | | _ | (| | | | _ | |
| Get Voltage | Set Voltage | | Get Current |] | | U | рА | Get Current | V2C | urrent | U | | |
| | All PD Bias On | All | PD Bias Off | | | | | | | | | | |
| S Pic p data : | PEEC | D ve the bps | ability to tra | nsmit | | | | | 7 | | Contraction of | ineri | |
| JSB Device : [T2010 | 0101-001] selected | | | | | ICR P/N Cor | figuration | File : 10000(HD IC | R) | | | 4 | /24/2015 6:34:24 PM |

| Nee NeoPhotonics | ICR CUS Identif | fier Ut | ility V1.0.19 | | | | | | | | |
|------------------------|--|--------------------|---------------------|---------------|---------|----------------------|--------------|----|----------|-----|----------------------|
| USB Device | Load Configura | tion | Engineering Mode | Pin Definitio | n Ał | pout | | | | | |
| Block Diagr | am D | CR | TIA | Power ON/O | FF Se | quence | | | | | |
| TIA VCC | | | | | | AGC/MGC | | | | | |
| VCC-YI | 3.3 | V | VCC-XI | 0 | mA | MC-X | 0 | V | GC-XI | 0 | V Set Voltage |
| VCC-YQ | 3.3 | | VCC-XQ | 0 |] | MC-Y | 0 | | GC-XQ | 0 | |
| VCC-YI | 3.3 | | VCC-YI | 0 |] | SHD-X | 0 | | GC-YI | 0 | Get Voltage |
| VCC-YQ | 3.3 |] | VCC-YQ | 0 |] | SHD-X | 0 | | GC-YQ | 0 | |
| Get Voltage | Set Voltage | | AII TIA VCC ON | Get Current | | 0A-XI | 0 | V | GC-XI | 0 | mV Get GC |
| TIA PKD | | 1 | BWC | | 1 | 0A-XQ | 0 | 1 | GC-XQ | 0 | |
| PKD-XI | 0 | mV | X_BWH | 0 | | 0A-YI | 0 | | GC-YI | 0 | |
| PKD-XQ | 0 | l) | X_BWL | 0 | | OA-YQ | | 1 | GC-YQ | 0 | External Ctrl |
| PKD-YI | 0 | | Y_BWH | 0 |] | CPDB ID | | | | | |
| PKD-YQ | 0 | ľ | Y_BWL | 0 | | PDB_ID | 0 | mV | Get Volt | age | |
| | Get Voltage | | | Set Voltage | | | | - | | 5 | |
| Si PiC pi data a | PEED roducts that hav at 40 and 100 Ge | D ve the bps | ability to transmit | | Z | | | | 0 | | |
| USB Device : [T2010 | 0101-001] 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.



| USB Device | Load Configure | ation | Engineering Mode | Pin Definition | Abc | ut | | | | | | |
|--------------------|-----------------------------------|----------------|---------------------|----------------|---------|---------|---|------|------------|-----------|----|---------------|
| Block Diagra | am [| DCR | TIA | Power ON/OF | FF Sequ | ience | | | | | | |
| TIA VCC | | | | | | AGC/MGC | | | | | | |
| VCC-YI | 3.3 | V | VCC-XI | 0 | mA | MC-X | 0 | V | GC-XI | 0 | V | Set Voltage |
| VCC-YQ | 3.3 |] | VCC-XQ | 0 | | MC-Y | 0 | | GC-XQ | 0 |] | |
| VCC-YI | 3.3 |] | VCC-YI | 0 | | SHD-X | 0 | | GC-YI | 0 |] | Get Voltage |
| VCC-YQ | 3.3 |] | VCC-YQ | 0 | | SHD-X | 0 | | GC-YQ | 0 |] | |
| Get Voltage | Set Voltage | | AII TIA VCC ON | Get Current | | OA-XI | 0 | V | GC-XI | 0 | m∨ | Get GC |
| TIA PKD | 79 | | BWC | | | OA-XQ | 0 | = | GC-XQ | 0 | i | |
| PKD-XI | 0 | mν | X_BWH | 0 | V | 0A-YI | 0 | - | GC-YI | 0 | i | |
| PKD-XQ | 0 |] | X_BWL | 0 | | OA-YQ | 0 | - | GC-YQ | 0 | iſ | External Ctrl |
| PKD-YI | 0 |] | Y_BWH | 0 | | | | | | | | |
| PKD-YQ | 0 |] | Y_BWL | 0 | | | 0 | mV | GotVolts | 0.00 | | |
| | Get Voltage |] | | Set Voltage | | 100_0 | | Jury | Cler volte | rde | | |
| PiC pr data a | oducts that has t 40 and 100 C | ve the ibps | ability to transmit | | | | | | | | 4 | |
| D Davies - [T20100 | 2101 001 | | | | | 1 | * | | 1 | na star e | Y | |

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| ISB Device | Load Configura | ation Engine | ering Mode 🛛 F | Pin Definition | n Abou | t | | | | | | |
|---|----------------------------|---|----------------|--|----------------------------------|---------|------------------------|---------------------------------------|--------------------------|--------|----|---------------|
| Block Diagr | am [| DCR | TIA F | ower ON/OI | FF Seque | nce | | | | | | |
| TIA VCC | | | | | | AGC/MGC | | | | | | |
| VCC-YI | 3.3 | V | VCC-XI | 0 | mA | MC-X | 0 | V | GC-XI | 0 | V | Set Voltage |
| VCC-YQ | 3.3 |] | VCC-XQ | 0 | | MC-Y | 0 | 1 | GC-XQ | 0 | | |
| VCC-YI | 3.3 |] | VCC-YI | 0 | | SHD-X | 0 | ī | GC-YI | 0 | | Get Voltage |
| VCC-YQ | 3.3 |] | VCC-YQ | 0 | | SHD-X | 0 | | GC-YQ | 0 | | |
| Get Voltage | Set Voltage | All TIA | AVCC ON G | et Current | | 0A-XI | 0 | V | GC-XI | 0 | m∨ | Get GC |
| TIA PKD | | BV | VC | | | OA-XQ | 0 | 1 | GC-XQ | 0 | 1 | |
| PKD-XQ | | Control Op | tion E | xternal Inp | ut Pin N | ame | | | | 0 | | External Ctrl |
| PKD-XU | | Control On | tion E | vternal Inn | ut Pin N | ame | | | | 0 | | External Ctrl |
| PKD-YQ | 0 | 🗖 GC-XI | J | IA EXT_ | GC_XI | | | | | | | |
| | CotVolt | 🔲 GC-XQ | J | IS EXT_ | GC_XQ | | | | | | | |
| | Gervoir | GC-YI | J | I6 EXT_ | GC_YI | | | | | | | |
| = | | 🗖 GC-YQ | J | 17 EXT_1 | GC_YQ | | | | | 1 | | |
| the second se | | | | | ~ | | All Se | lected | | 1 | | |
| PIC p | roducts the | UA-XI | ل | 10 EAL_ | UA_XI | | L | | | 452 | | |
| PIC p data a | roducts the it 40 and 1 | | ل ل | 10 EXT_ 19 EXT_ | UA_XI OA_XQ | | All UnS | electe | 3 | 14 | | |
| PIC pi data a | roducts the it 40 and 1 | 0A-XI | ل ل ال | 10 EXT_ 19 EXT_ 20 EXT_ | 0A_XI 0A_XQ 0A_YI | | All UnS Selected: I | electe External | J Control | a star | | |
| PIC p data a | roducts the it 40 and 1 | OA-XI OA-XQ OA-XQ OA-YQ OA-YQ | ل ل ل. | 10 EXT_ 19 EXT_ 20 EXT_ 21 EXT_ | 0A_XQ 0A_XQ 0A_YI 0A_YQ | | All UnS Selected: I | electe External d: Mothe | Control er Board Cont | rol | | |

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