Tornado VR™
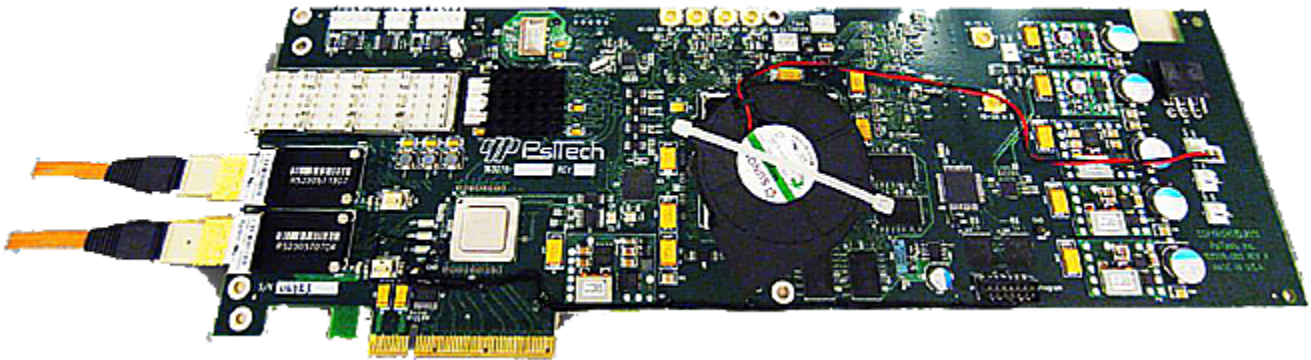
High Frame Rate Capture and HD Converter PCIe Board
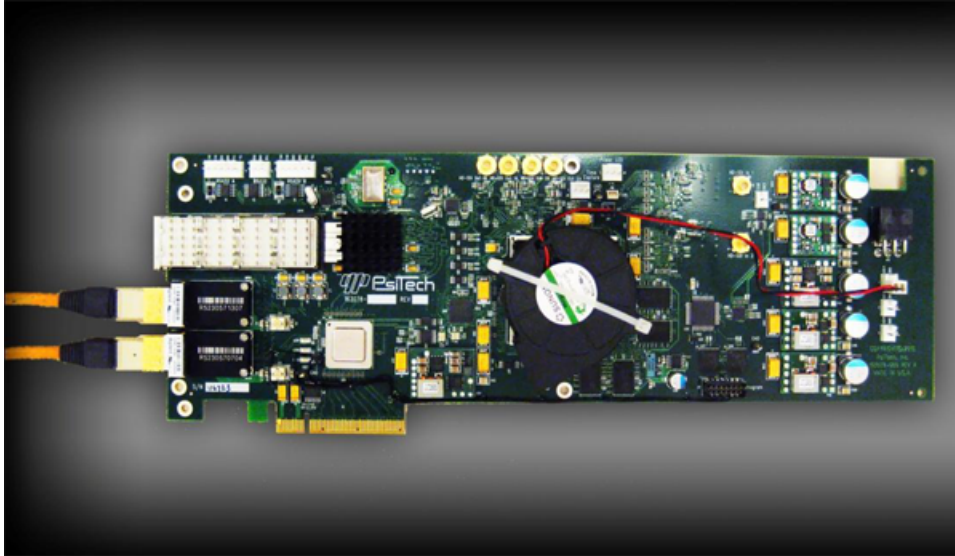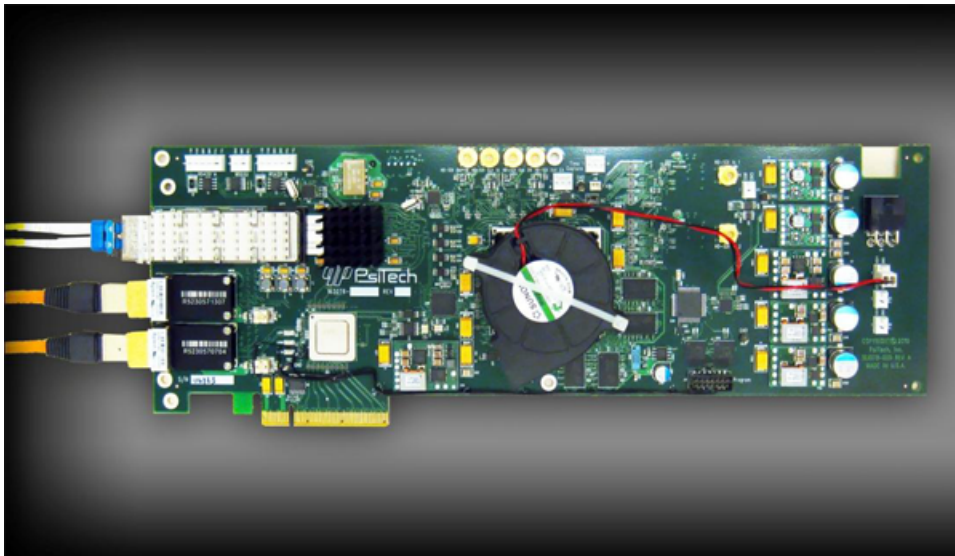

Installation Guide

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1 Tornado VR Installation Guide

Thank you for purchasing the Tornado VR™ PCIe board.The Tornado board provides high frame rate capture and HD data conversion for high end video camera devices while providing an interface to various Vision Research Phantom Series cameras with RTO outputs.

Standard Tornado VR PCIe Board

This Installation Guide covers initial installation of the PCIe board, installation of optional equipment, removal of the PCIe board, as well as installing and removing the Tornado VR software.

Tornado VR PCIe Board with Optional Sonnet Communication Interface
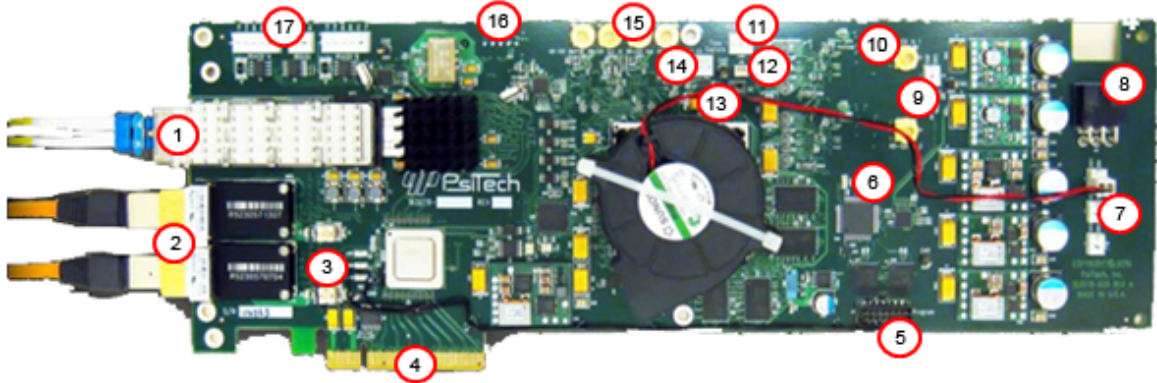
1.1   Getting Started

Check to see that you have all the parts.

- Tornado VR™PCIe Board

- CD-ROM

- Antistatic Wrist Strap

- Vision Research Camera (DS440, Phantom v7, Cinestream)

- Fiber optic cables

Optional:

- HD monitor

- 75 ohm coaxial cable, mini-SMB to BNC

1.2   Ports and Connections

1	Optional Sonnet Communication Interface	10	HD Input Group
2	Two Vision Research RTO Input Ports	11	External Poer LED

3	Status LEDs:
	    PCIe Link to Host (Top)
	    PCIe Link to FPGA Status (Middle)
	    PCIe Link to Option Board (Bottom)
		12	5V Fan Power Port

4	PCIe 8x Connector	13	IIC Optional Port (12C)
5	Configuration Programming Port	14	Top of Frame Sync Out
6	Health LED	15	HD Output Group
7	Optional 12V Power Out, Fan Power	16	Optional Board Connector (Reverse Side)
8	PCIe 12V Power	17	Two RS-422; One RS-232
9	Analog Iris Control		

1.3   Installation

STEP-BY-STEP PROCEDURE

1. Wear the Antistatic Wrist Strap connected to the computer chassis

2. Install the PCIe board; refer to section "Hardware Installation"

3. Remove Antistatic Wrist Strap from the computer chassis

4. Power on the computer

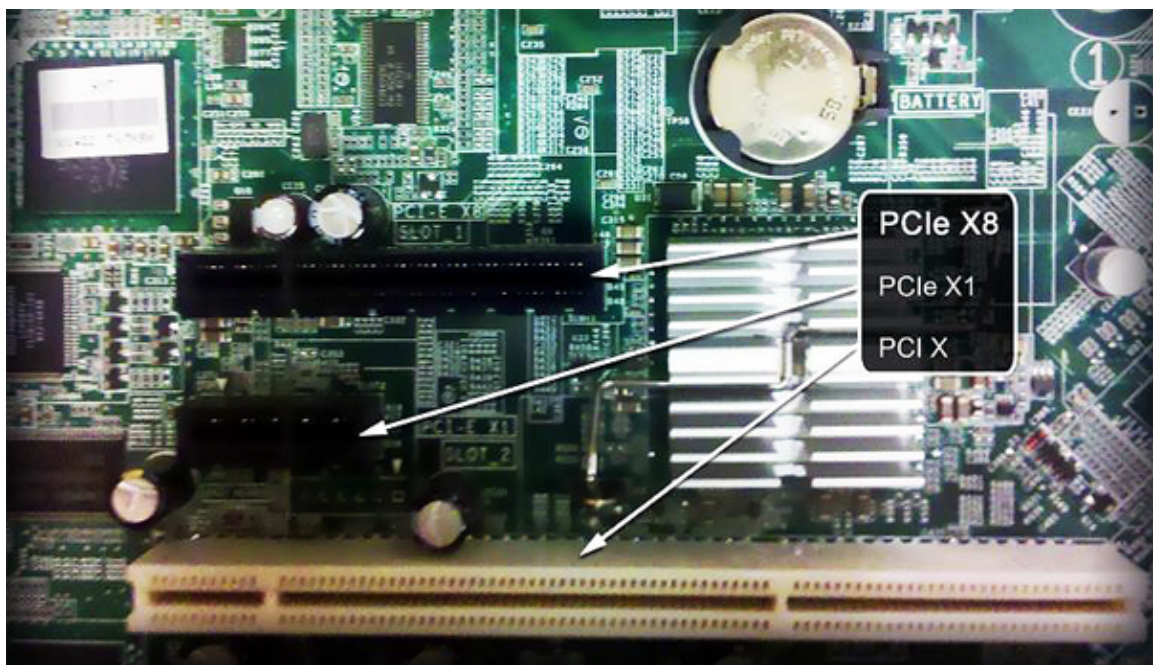5. Install Software; refer to section "Software Installation"

1.3.1   Hardware Installation

NOTE:

To avoid damage to the PCIe card and your computer system due to static electricity, but sure you are properly grounded by using your anti-static wristband.

STEP-BY-STEP PROCEDURE

1. Open your computer system as described in the computer owner□s manual.

2. Locate an available PCIex8slot; install Tornado VR PCIe board into the slot, ensuring the optical connectors are accessible through the panel.

3. Connect 6-pin PCIe12V power connector into the power source.

4. Tighten hold-down screw in PCIe bracket. Shut down the system.

5. Attach optional internal HD cable to port J4, J5, J6 or J7.

6. Plug optional primary RTO fiber cable into upper RTO connector. Plug second optional RTO fiber cable into lower RTO connector.

7. Close your computer system as described in the computer owner□s manual.

8. Locate all included cables and hardware (mini SMB video display cable, serial control cable and/or fiber optic data cable). Attach mini SMB cable to the installed board and attach opposite end (BNC port) to external HD video display. If using a DS440 camera, attach serial data cable to your computer and to the camera. Attach fiber optic data cable to the computer and to the camera.

9. Power on your computer system, proceed to Software Installation.

1.3.2 Software Installation (Windows)

NOTE:

System Requirements: Windows XP 32bit or Windows 7 32bit/64bit

STEP-BY-STEP PROCEDURE

1. After installing the new hardware, turn on your computer system and follow the steps given by the New Hardware Wizard and skip to Step 5. If the New Hardware Wizard does not appear, follow the steps below.

2. Locate the Computer directory (My Computer on XP)in the Start Menu.

   a. Right click Computer

   b. Left click Properties

   c. Left click Device Manager

   d. Locate Other Devices

   e. Locate Multimedia Video Controller with a yellow exclamation point icon

      1) Locate Sound, Video, and Game Controllers with the same icon and repeat the following instructions:

         a) Right click Multimedia Video Controller

         b) -Left click Update Driver Software

         c) -Left click Browse my computer for driver software

         d) -Left click Let me pick

         e) -Left click Show all devices

         f) -Left click Next

         g) -Left click I have disk

         h) -Left click browse and navigate to drive containing install disk.

3. In the install disk, open Windows> drivers. Select driver folder based on your operating system:

   a. Windows 7 64bit = amd64

   b. Windows 7 32bit = i386

   c. Windows XP 32bit = xp

4. Within your operating-system-specific folder

   a. Left click cyvrwd

   b. Left click open

   c. Left click OK

   d. Left click Next.

      1) If a warning appears, click Yes to continue.

      2) If a message concerning publisher verification appears, click Install Driver Software Anyway.

      3) If update is successful:

         a) Click Close

         b) Close Device Manager

         c) Close Properties

        d) Reboot your computer system

5. Install the Java software located in

    a. CD> Windows> Support

    b. Reboot your computer system.

6. Install the Vortex server located in

    a. CD>Windows> Applications by clicking vortex_setup.msi

    b. Follow the instructions given by the setup wizard.

7. Locate vortex_server in the Windows Start Menu programs. Click vortex_server to launch the Vortex server application and graphical user interface (GUI).

NOTE:

If your system does not automatically apply PsiTech's root certifice, follow the steps below:

8. Navigate to addrootcertfile located in Vortex DVD >Windows >Drivers

    a. Right click addrootcert

    b. Left click Run as Administrator

    c. Left click Yes

9. Navigate to the Command Prompt window located in Start Menu> All Programs> Accessories > Command Prompt. In the black window that opens, type "certmgr". This will open the Certificate Manager window, which contains two columns.In the left column, select Certificates –Current User (default selection). In the right column:

    a. -right click Third-Party Root Certification Authorities

    b. -hover over All Tasks

    c. -right click Import…

    d. This opens the Certificate Import Wizard. In this wizard:

    e. Left click Next

    f. Left click Browse

    g. Select and open testcert located in Vortex DVD > Windows > Drivers

    h. Left click Next

    i. Select Place all certificates in the following store (Third-Party Root… will be default)

    j. Left click Next

    k. Left click Finish

10.The PsiTech Root Certificate should now be installed. Close Certificate Manager and Command Prompt. Reboot your system.

1.3.3   Software Installation (LINUX

NOTE:

Installation System Requirements: LINUX 2.6

STEP-BY-STEP PROCEDURE

1. Locate all software utilities (QuickstartPDF Guide, Programming Reference Manual, Build Directory LINUX Kernel, Directory Example Applications)

2. Copy module directory to the appropriate place for building kernel modules.

3. If necessary, create a LINUX revision-specific make file by copying and editing an existing revision Make file.

4. Build module using Make.

5. Execute load script „./load_cyvr.

6. Use programTestHD to start HD output with test pattern.

7. Use program Set RTO to start camera.

1.4   EEProms Update

1. Open Administrator Command Prompt(Windows Vista/7)

   a. Left click the Start Menu.

   b. In the Search programs and files bar, type cmd.

   c. Right click cmd that appears under Programs.

   d. Left click Run as Administrator.

   e. The computer will ask if you would like to allow this program to make changes to you computer, left click Yes.

   f. A black window will appear. This is the Administrator Command Prompt.

2. Install New Driver in Administrator Command Prompt

An additional driver is needed to allow updates to be applied to the tornado card.

   a. This window has C:\Windows\system32>listed by default. To the right of the default text, type:

   …32>cd"\Program Files (x86)\Psitechinc\vortex_setup\plx"

   b. Hit Enter on your keyboard.

   c. The line C:\Program Files <x86>\Psitechinc\vortex_setup\plx>will appear.

   d. To the right of this text, type:

   …plx>PlxSvcCtrl.bat install

   e. Hit Enter on your keyboard. This will install the driver.

3. Open Standard Command Prompt

   a. Left click the Start Menu.

   b. In the Search programs and files bar, type cmd.

   c. Left click cmd that appears under Programs.

   d. A black window will appear. This is the standard Command Prompt.

      1) This window has C:\Users\yourusername>listed by default.

4. Step 4: Programming Flash EEProms

   a. To the right of the default text, type:

      1) "C:\Program Files (x86)\Psitechinc\vortex_setup\programjtag.exe" programD:\Update\Tornado_150_XXXXXXXX.svf

      2) "D:\"in the above text is the drive containing the Vortex CD, and is the location of the update file. To locate the drive containing the Vortex CD on your machine, left click Start and then left click Computer.

      3) "XXXXXXXX"is the current disk date stamp and will appear as 8 numbers on your Vortex CD. Navigate to (CD drive):/Update/ to find this number.

   b. Hit Enter on your keyboard.

   c. Allow 15 minutes to complete the EEProms update. Do not power off the system.

   d. Close Command Prompt, Close Administrator Command Prompt.

   e. Shut Down the computer (full shut down, not restart).

   f. Turn the computer on; the updated software is now applied to the Tornado Card.

1.5   PsiTech, Inc Contact Information

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                  Fountain Vallrey, California 92708

Phone: 714-964-7818
                  800-872-7385

Fax: 714-968-7884

URL: http://www.psitech.cpm

Email: info@psitech.com
                  suuport@psitech.com

ftp: ftp.psitech.com
                  login: anonamous
                  password: your email address

1.6 Vision Research Service Centers

Updated: 2/11/2011

Contacting Vision Research Service Centers

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www.visionresearch.com

For general product, account, order/RMA status inquires and other non-technical questions please e-mail us at:
customer.support@visionresearch.com

For technical product support, product operation or applications support please e-mail us at:
technical.support@visionresearch.com

For comments, suggestions or complaints please e-mail us at:
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