



PXI and PCI Getting Started

Document Number: 0004-000012
Revision 2

February 15, 2005

Contact

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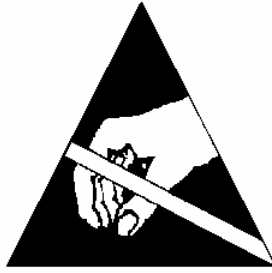
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Handling Precautions for Electronic Devices Subject to Damage by Static Electricity

PXI and PCI modules are susceptible to Electronic Static Discharge (ESD) damage. When transporting, place the module in conductive (anti-static) envelopes or carriers. Open only at an ESD-approved work surface. An ESD safe work surface is defined as follows:

- The work surface must be conductive and reliably connected to an earth ground with a safety resistance of approximately 250 kilohms.
- The surface must NOT be metal. A resistance of 30–300 kilohms per square inch is suggested.

Ground the frame of any line-powered equipment, chassis, test instruments, lamps, soldering irons, etc., directly to the earth ground. To avoid shorting out the safety resistance, ensure that the grounded equipment has rubber feet or other means of insulation from the work surface.

Avoid placing tools or electrical parts on insulators. Do NOT use any hand tool that can generate a static charge, such as a non-conductive plunger-type solder sucker. Use a conductive strap or cable with a wrist cuff to reliably ground to the work surface. The cuff must make electrical contact directly with the skin; do NOT wear it over clothing.

Note: Resistance between the skin and the work surface is typically 250 kilohms to 1 megohm using a commercially-available personnel grounding device.

Avoid circumstances that are likely to produce static charges, such as wearing clothes of synthetic material, sitting on a plastic-covered stool (especially when wearing woolen material), combing the hair, or making extensive pencil erasures. These circumstances are most significant when the air is dry.

When testing static sensitive devices, ensure DC power is ON before, during, and after application of test signals. Ensure all pertinent voltages are switched OFF while circuit boards or components are removed or inserted.

Revision History

Rev	Date	Section	Description
1	06-14-04	All	Initial Release
2	02-15-05	All	New release updating all sections and information

Table of Contents

Introduction	9
Requirements	9
System Minimum.....	9
System Recommended.....	9
Other Required Items.....	9
Application Development Enviroments	10
Software Installation	10
PXI Hardware Installation	11
PCI Hardware Installation	11
Installation Confirmation	14
Contacting Technical Support.....	14

List of Figures

Figure 1: ZT450PCI Mating Connector	13
Figure 2: Confirmation Window.....	14

List of Tables

ZTEC PCI Module Mating Connector Pin Out	13
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Introduction

The PXI/PCI Getting Started Manual and the Product CD contain the resources needed to get you up and running with your PXI or PCI instrument. This manual is intended for customers using Microsoft Windows version 95, 98, 2000, and XP. For customers using other operating systems, please review this document and then contact ZTEC Instruments for additional assistance if needed.

Requirements

The following are the minimum and recommended computer systems to use with your PXI or PCI module:

System Minimum

Processor: Pentium 200 MHz or equivalent
RAM: 64 MB
Microsoft Internet Explorer 5.5 or later
Screen resolution of 640 × 480 with 256 colors
Windows 95, 98, 2000, XP

System Recommended

Processor: Pentium III/Celeron 600 MHz or equivalent
RAM: 256 MB
Microsoft Internet Explorer 5.5 or later
Screen resolution of 640 × 480 with 256 colors—required for Scope SFP
Windows XP Professional

Other Required Items

In addition to the ZTEC PXI or PCI module and a computer, the following are needed:

1/8 in. flat-head screwdriver
Grounding Strap

For PXI Devices

A PXI chassis, a PXI/SCXI combination chassis, or a PXI/CompactPCI chassis—with a controller and the chassis documentation

For PCI Devices

A desktop computer and its documentation

Application Development Environments

The following application development environments are compatible with ZTEC PXI and PCI modules:

LabVIEW 6.0 or later
LabVIEW Real-Time Module 6.0 or later
LabWindows™/CVI™ 6.0 or later
Measurement Studio 6.0 or later
Microsoft Visual C++ (MSVC) 6.0 or later
Microsoft Visual Basic 6.0

Software Installation



Step-by-Step

To install the software:

1. Install Virtual Instrumentation Software Architecture (VISA) on your computer.

Note: *You must have VISA installed on your system. VISA can be obtained from National Instruments or Agilent.*

For customers using a National Instruments program development environment, such as LabWindows or LabVIEW, NI-VISA will most likely be already installed on your system. To check for an NI-VISA installation, open the National Instruments Measurement and Automation Explorer (NI-MAX) and check for an NI-VISA entry in the “Software” directory.

2. Copy the contents of the Product CD to your computer:

**[product cd]:/zt...pxi_pci/
[local drive]:/ztec/**

3. Open the following directory:

[local drive]:/ztec/zt...pxi_pci/drivers/device

4. Install the ZTEC Instruments PXI device driver: This device driver will allow your operating system to recognize the ZTEC PXI or PCI hardware.

- Windows 95, 98 ZTEC_9x.inf
- Windows NT ZTEC_NT4.inf
- Windows 2000, XP ZTEC_NT5.inf
- LabVIEW Real Time ZTEC_RT.inf

Right click on the appropriate file and select “Install” from the pup-up menu. For example, if you are using Windows XP, right click on the “ZTEC_NT5.inf” file and select “Install.”

5. The instrument drivers are located in the following directory:

[local drive]:/ztec/zt...pxi_pci/drivers/cvi

6. Programming examples are located in the following directory:

[local drive]:/ztec/zt...pxi_pci/examples

7. Manuals are located in the following directory:

[local drive]:/ztec/zt...pxi_pci/manuals

PXI Hardware Installation



Step-by-Step

To install the PXI hardware:

1. Power off the cPCI/PXI chassis.
2. With a grounding strap properly connected, slide the ZTEC PXI module into an available slot on the chassis until the front panel handle contacts the chassis.
3. Complete unit installation by pressing upward on the front panel handle until the handle lock engages.
4. Once the module is seated, tighten the captive screw at the top and bottom into the mainframe.

PCI Hardware Installation



Step-by-Step

To install a single PCI module:

1. Power down the Personal Computer (PC) before opening and accessing the PCI slots.
2. Unscrew and remove the dedicated blind-bracket usually mounted to cover the unused PCI slots of the PC. Keep the screw in reach to secure the PCI board in the PCI slot afterwards.



CAUTION

- While inserting the PCI module, take care not to tilt the retainer in the track. Failure to do so may cause damage to the module.
- Be very careful when inserting the board in the PCI slot, as most of the main boards are mounted with spacers and therefore might be damaged if they are exposed to high pressure.

3. With a grounding strap properly connected, insert the PCI module slowly into the PC. This is done best with one hand each at both fronts of the board.
4. After inserting the PCI module, fasten the screw of the bracket carefully and without over-tightening.



Step-by-Step

To install several synchronized boards for a multi-channel system into the PC:

1. Power down the PC before opening and accessing the PCI slots.
2. Unscrew and remove the dedicated blind-brackets usually mounted to cover unused slots of the PC. Please keep the screws in reach to secure the boards afterwards.



CAUTION

- Determine if there is enough space in the computer case (e.g., a big tower case) in order to mount all of the required boards before inserting and connecting any boards.
- While inserting the PCI boards, take care not to tilt the retainers in the tracks. Failure to do so may cause damage to the boards.
- Be very careful when inserting any board in the PCI slot, as most of the main boards are mounted with spacers and therefore might be damaged if they are exposed to high pressure.

3. With a grounding strap properly connected, insert the ZTEC PCI module and other required boards slowly into the computer. This is done best with one hand each at both fronts of the board.

4. After inserting the boards, fasten the screw of the bracket carefully and without over-tightening.
5. Connect the boards in daisy-chain using the appropriate ribbon cable (FFSD-10-D-6.00-01-N-D4) to the mating connectors (See Figure 5) on the top of the boards. The ribbon cable is matched to the same length to achieve a zero clock delay between the boards. Table 2 shows the pin out for the mating connectors.

Note: When using this configuration, one board acts as a timing and arm source; all of the other boards are receivers.

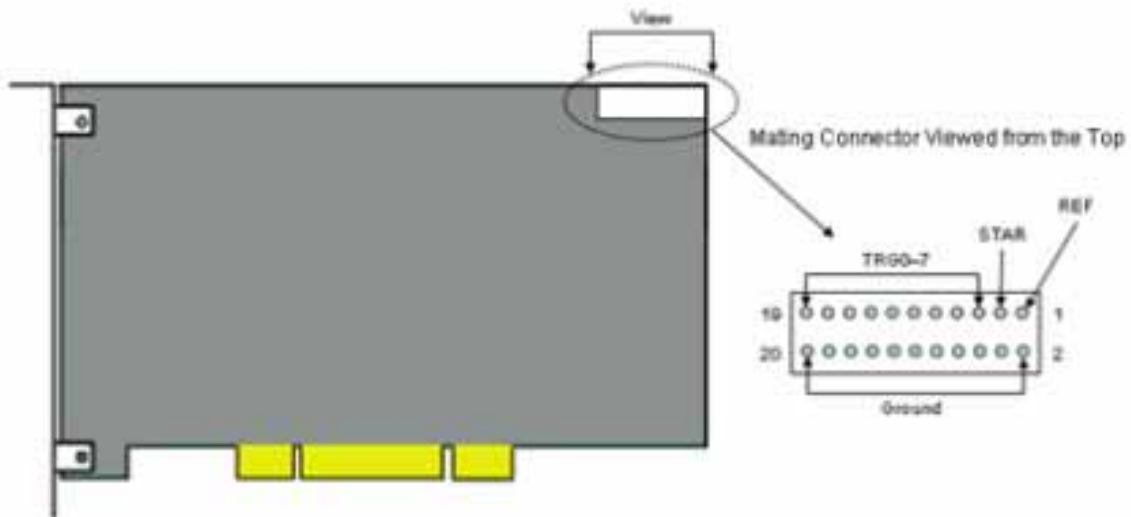


Figure 1: Mating Connector

Pin	Function	Pin	Function
1	REF	2	GND
3	STAR	4	GND
5	TRG7	6	GND
7	TRG6	8	GND
9	TRG5	10	GND
11	TRG4	12	GND
13	TRG3	14	GND
15	TRG2	16	GND
17	TRG1	18	GND
19	TRG0	20	GND

ZTEC PCI Module Mating Connector Pin Out

Installation Confirmation



Step-by-Step

To confirm your installation and device:

1. Power on the chassis and then reboot the controller. The operating system should automatically detect and configure the support driver for the new PXI or PCI Instrument.
2. If using NI-VISA, you can confirm the installation using NI-MAX. To do so, open NI-MAX and locate the new PXI or PCI instrument under the “Devices and Interfaces” folder. The PXI or PCI instrument should have NI-VISA resource identifier, such as “PXI2::13::INSTR” for example. As shown below, the ZTEC instrument will have a 4172 Manufacturer ID.

Note: If using PCI, NI-MAX will show the PCI card as PXI.

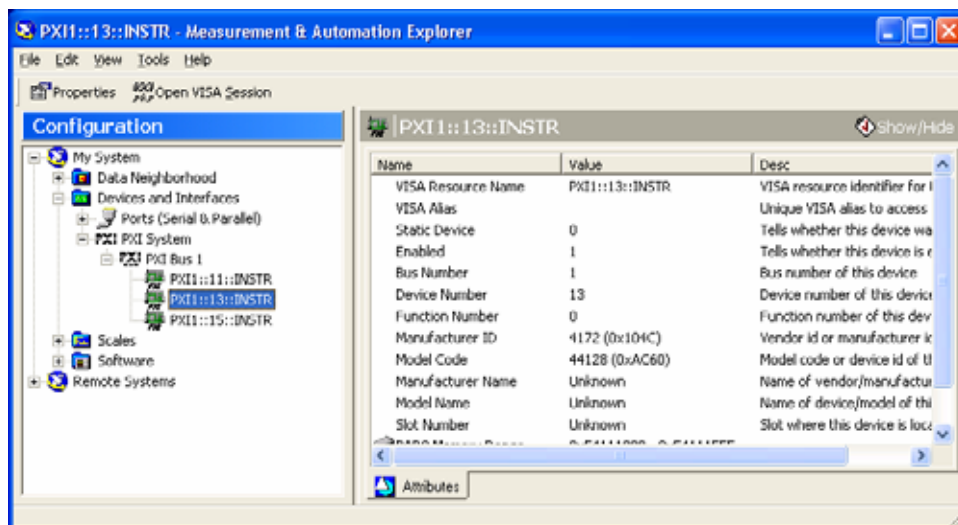


Figure 2: Confirmation Window

Contacting Technical Support

We are very interested to hear from you. Please do not hesitate to contact ZTEC Instruments technical support at:

ZTEC Instruments
7715 Tiburon St NE
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www.ztec-inc.com/support



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