GX7800

3U PXI Instrumentation Platform Series

User's Guide

Last updated: January 10, 2014

MARVIN TEST SOLUTIONS

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Chapter 1 - Introduction

Manual Scope and Organization

Manual Scope

The purpose of this manual is to provide all the necessary information to install, use, and maintain the GX7800 PXI chassis. This manual assumes the reader has a general knowledge of PC based computers, Windows operating systems, and some understanding of digital to analog conversion.

This manual also provides programming information using the GxChassis driver. Therefore, good understanding of programming development tools and languages may be necessary.

Manual Organization

The GX7800 PXI chassis manual is organized in the following manner:

Chapter	Content
Chapter 1 - Introduction	Introduces the GX7800 PXI chassis manual. Lists all the supported boards and shows warning conventions used in the manual.
Chapter 2 – Overview	Describes the GX7800 PXI chassis features, chassis description, its architecture, specifications and the GxChassis panel description and operation.
Chapter 3 – Installation and Connections	Provides instructions on how to install the GX7800
Appendix A – Specifications	Provides the GX7800 specifications.
Appendix B – PXI Slots Pin Outs	Describes the P1 and P2 connector pin outs for the GX7800 backplane.
Appendix C – Rear Panel Connector Layout	Provides information on the rear panel connectors of the of the GX7800
Appendix D – Model Numbers	Describes the Chassis Model Numbers.

Conventions Used in this Manual

Symbol Convention	Meaning
	Static Sensitive Electronic Devices. Handle Carefully.
	Warnings that may pose a personal danger to your health. For example, shock hazard.
	Cautions where computer components may be damaged if not handled carefully.
	Tips that aid you in your work.

Formatting Convention	Meaning
`Monospaced Text`	Examples of field syntax and programming samples.
Bold type	Words or characters you type as the manual instructs, programming function names and window control names.
Italic type	Specialized terms. Titles of other reference books. Placeholders for items you must supply, such as function parameters

Chapter 2 - Overview

Introduction

Thank you for selecting the GX7800 PXI instrumentation chassis. This state-of-the-art chassis is designed for test, data acquisition, process control, and factory automation applications. The GX7800 chassis series is a 3U, PXI chassis and can be used for desktop or rack-mount applications. The GX7800 is based on the CompactPCI™ (cPCI) and PXI™ (PCI eXtentions for Instrumentation) standards and accommodates up to 8 3U PXI or cPCI instruments. The design of the GX7800 allows integration of PXI and cPCI boards from any vendor.

Figure 2-1: GX7800 Instrumentation Chassis

GX7800 Series Features

The GX7800 models offer the following features:

- 8 PXI/cPCI, 3U slots. Slot 1 is dedicated for an embedded controller or for a remote controller. Slot 2 can be used by a PXI Star Trigger Controller or by a PXI/cPCI instrument. Slots 3 through 8 support the PXI Star Trigger.
- Full compliance with PXI Hardware Specification Revision 2.2. Supports features such as trigger bus, star trigger, local bus, and system clock.
- Interoperability with 32-bit 33MHz CompactPCI.
- Front-loading mechanism. Boards are inserted from the front for simplified maintenance.
- Board connectors face the front side of the platform enabling easy access to board connectors and cables and a short path to the interface.
- Separate fan provides cooling for the chassis power supply.
- Back plane incorporates a local bus, trigger bus, and a 10MHz reference clock.
- Additional chassis may be daisy-chained using a PXI bus expander.
- Innovative HW and PXI-Explorer ™ software provides easy configuration tools for the chassis and instruments.

When bundled with ***ATEasy***™, Marvin Test Solutions' award-winning software development environment, the GX7800 provides a complete system for creating any test and measurement application.

The PXI Standard

The PXI standard has been developed in response to the needs of test systems developers and users who required a new platform that is high-performance, functional and reliable, yet easy to integrate and use.

Based on the PCI, CompactPCI, Microsoft Windows, and VXI standards, PXI brings together the right technologies for PC-based test and measurement, instrumentation, and industrial automation. Further, since PXI is a PC-based platform, it maintains software compatibility with industry-standard personal computers, as well as all PC-Based operating systems, software tools, and instruments drivers. Not only is PXI fully compatible with existing operating systems and software, it also integrates with the Virtual Instrument Software Architecture (VISA) standard that was created by the VXIplug&play System Alliance (see http://www.vxi.org/). VISA is used to locate and communicate with PXI, serial, VXI, and GPIB peripheral modules and is supported by test development software packages such as ***ATEasy***™, LabVIEW™, LabWindows/CVI™ and Agilent VEE™.

PXI expands upon the PCI bus resulting in PXI users receiving all the benefits of PCI and cPCI within an architecture that also supports mechanical, electrical and software features. These features are typically focused on test & measurement, data acquisition, industrial instrumentation and factory automation applications.

The PXI standard is maintained by the PXI Systems Alliance (see http://www.pxisa.org). Manufacturers of PXI products are members of the alliance and sub-committees are assigned to manage different aspects of the specifications. Consequently, PXI users experience full interoperability between devices as all are designed to the same standards. PXI products also are subjected to higher and more carefully defined levels of environmental performance, necessary in today's industrial environments.

GX7800 Models

The GX7800 is available in several configurations for maximum flexibility:

- GX7800: The GX7800 is designed to operate with the GX7900 family of embedded controllers or any 3rd party controllers that is up to 3 slots wide. Internal circuits connect the embedded controllers to the peripheral devices.

  NOTE: Your GX7900 controller is provided with documentation that describes its available connections and configuration separately. A separate hard drive module (GX7909) may be required as well.

- GX7800R: This is the rack mounted version.

Optional Equipment

Marvin Test Solutions offers a variety of products to use with your GX7800 chassis as follows:

- Embedded Controllers
- Remote Controllers
- 3U PXI instruments and switches
- Rack mount kits
- Blank panels

For part numbers, refer to Appendix B or call the office nearest you.

Chassis Description – Front View (GX7800)

The GX7800 is a modular 3U PXI chassis. **Figure 2-1** shows the front view of the GX7800.

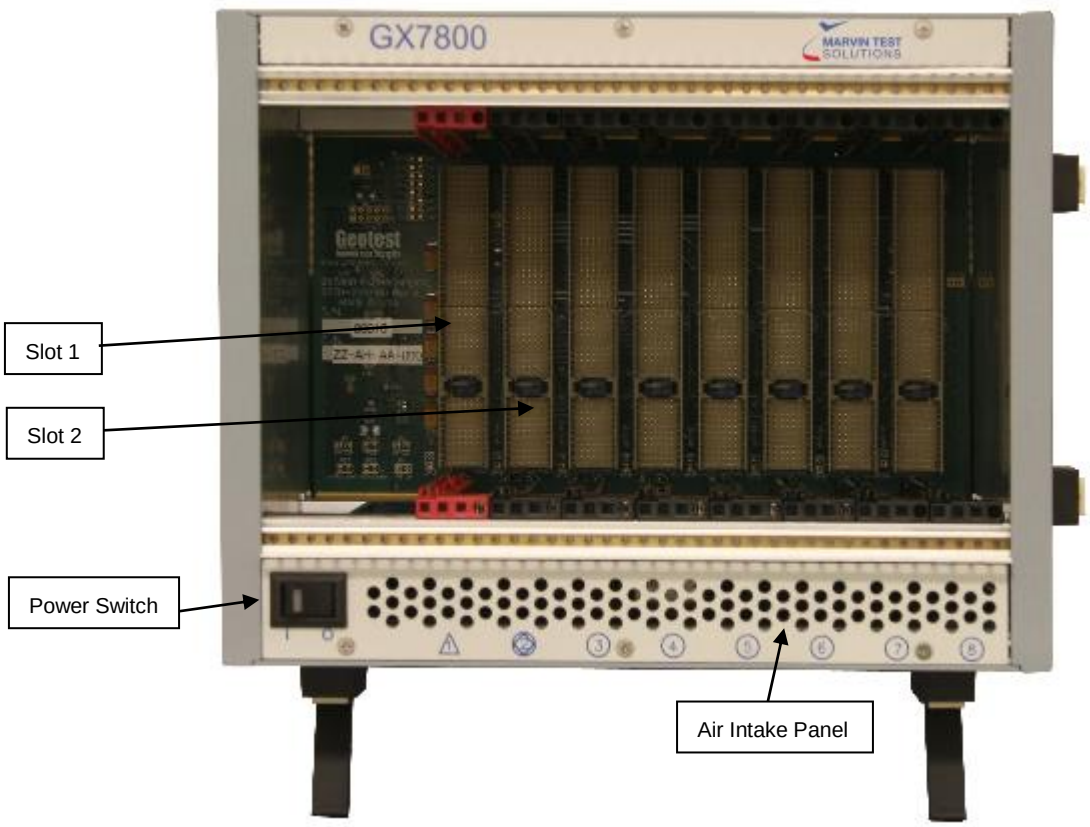

Figure 2-2: GX7800 with Controller Front View

Power Switch

On/Off rocker switch with a power On LED.

System Slot (Slot #1)

The System Slot is the leftmost slot and is used for embedded or remote controllers. The system slot can accept any embedded controller that is 1 to 3 slots wide.

Star Trigger Controller Slot (Slot #2)

Either a Star Trigger controller or any PXI/cPCI instrument can use the Star Trigger Controller slot.

Air Intake Panel

This panel, located below the card cage, provides the intake for cooling the GX7800. DO NOT BLOCK THIS PANEL.

Chassis Description – Rear View

Figure 2-3: shows the rear view of the GX7800.

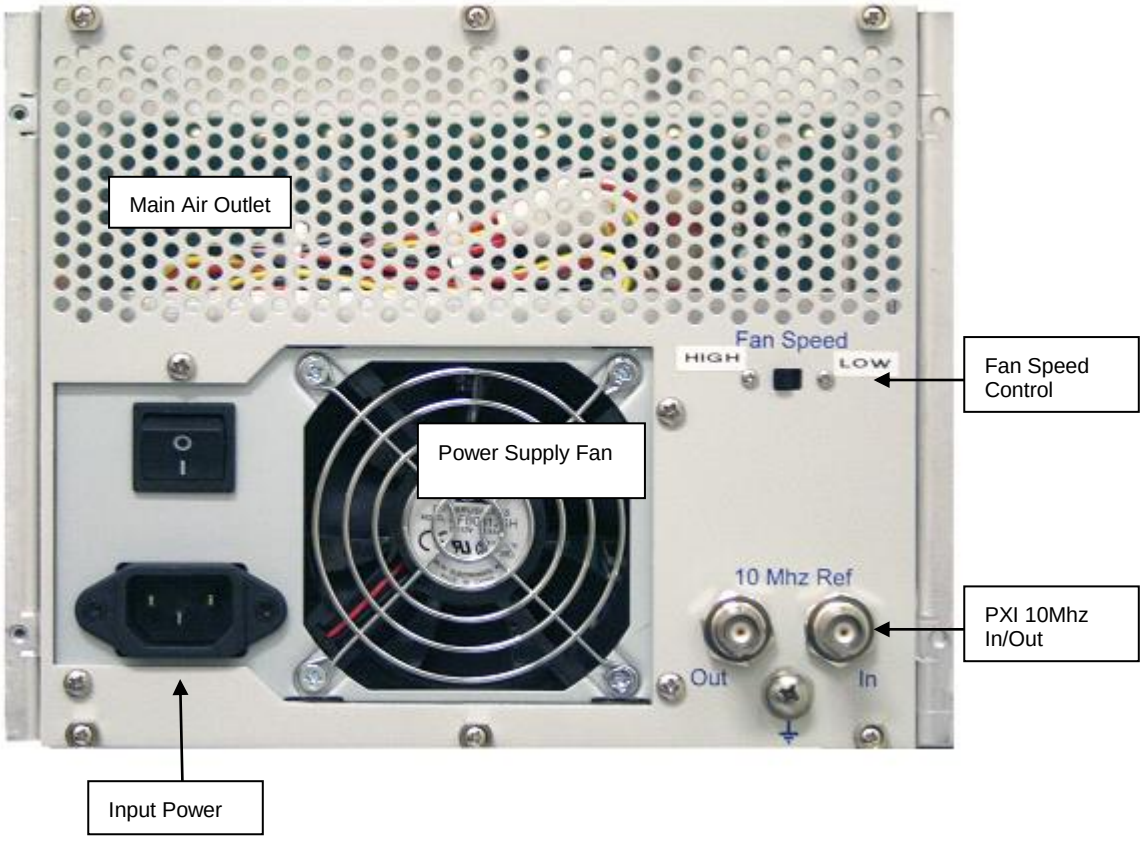

Figure 2-3: GX7800 Rear View

Input Power Receptacle

This receptacle connects to the power cord provided.

PXI 10 MHz Input and Output Connections

An external 10 MHz clock can be provided to the chassis via this connection. When present, the chassis will automatically select this input as the 10 MHz reference for the PXI backplane. The 10 MHz output connection provides a buffered 10 MHz PXI clock output.

High / Low Fan Speed Control

The fan speed control allows the user to select the fan speed to be low or high based on the amount of power dissipated within the chassis

PXI Slots

The GX7800 contains 8 3U slots numbered 1 to 8 as shown in Figure 2-4. Slot number 1 is dedicated for an embedded controller or for a remote controller such as a MXI-4. Slot 2 can be used by a PXI Star Trigger Controller or by a PXI/cPCI instrument. Slots 3 through 8 supports the PXI Star trigger.

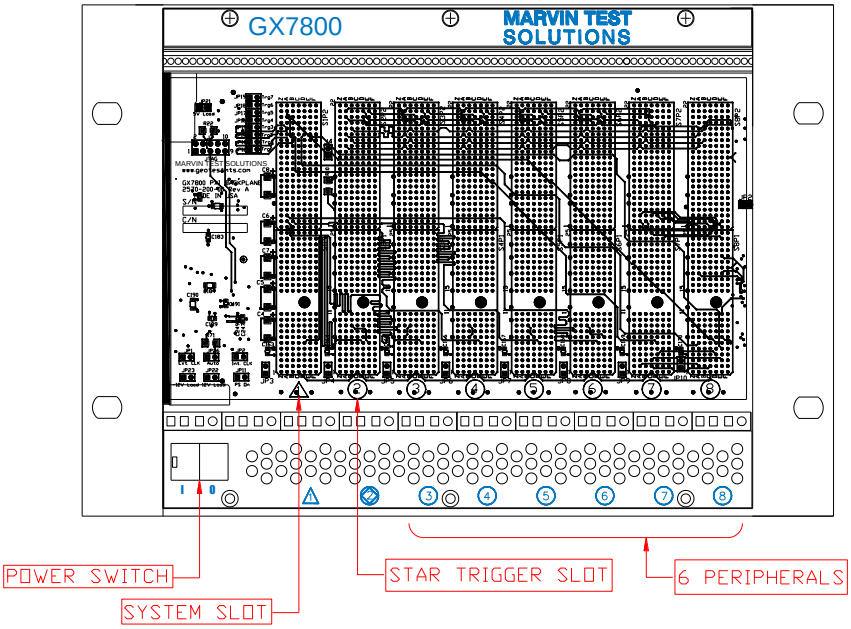

Figure 2-4: GX7800 Slots (Slave chassis with rack mount ears)

System Controller Slot

The System Controller slot is located in slot #1 of the chassis and has a width of 3 PXI slots with the PXI connector residing at the left side of the backplane. Slot numbers are clearly labeled below each slot where slot #1 is the left-most slot and slot #8 is the right most. The GX7800 can accept 3U embedded controllers that are 1 to 3 slots wide.

Star Trigger Controller Slot

Slot 2 is the Star Trigger (ST) Controller slot (2nd from the left). This slot has a dedicated trigger line going to slots 3 through 8. The Star Trigger is used to synchronize between instruments and it utilizes back plane traces that are of equal length, providing for a skew of less than 1nSec between slots. If you do not need a Star Trigger Controller, any PXI or cPCI instrument can be used in this slot. See Figure 2-4**Error! Reference source not found.** in this chapter for more information about the available trigger architectures.

Slots 2 through 8 support the Star Trigger.

3U Boards

The GX7800 supports PXI instruments with form factor of 3U (100 by 160 mm, or 3.94 by 6.3 in.) shown in Figure 2-5:

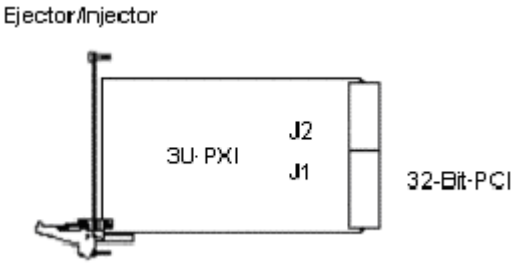

Figure 2-5: 3U PXI Boards

The PXI board has two rear connectors J1 and J2. J1, are used to carry the PCI signals, and J2, which is used to carry the PXI signals. PXI signals include the local bus, star trigger signals and trigger bus signals. They are described later in this chapter.

The GX7800 backplane carries the interface connectors (P1 and P2) and provides the interconnection between the controller and peripheral modules.

Local Bus

The PXI local bus is a daisy-chained bus connecting peripheral slots in the same bus segment. Each local bus is 13 user-defined lines and can be used to pass analog or digital signals between two adjacent modules or to provide a high-speed side-band digital communication path that does not affect the PXI bandwidth.

Local bus signals can support voltages from 0 to 42V DC and up to 200 mA DC current into any local bus line.

The local bus lines for the leftmost peripheral slot of a PXI back plane (slot 2) are used for the star trigger. Figure 2-6 schematically shows a complete PXI system demonstrating the local buses.

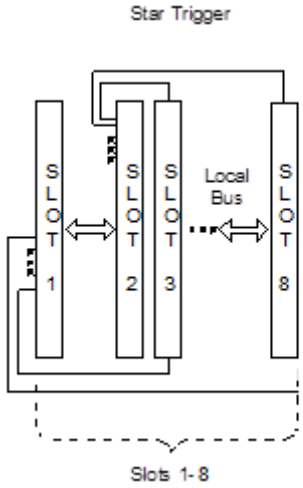

Figure 2-6: PXI Local Bus Routing

Trigger Bus

The eight PXI bused trigger lines can be used in a variety of ways. For example, triggers can be used to synchronize the operation of several different PXI peripheral modules. In other applications, one module can control carefully timed sequences of operations performed on other modules in the system. Triggers may be passed from one module to another, allowing precisely timed responses to asynchronous external events that are being monitored or controlled. The number of triggers that a particular application requires varies with the complexity and number of events involved.

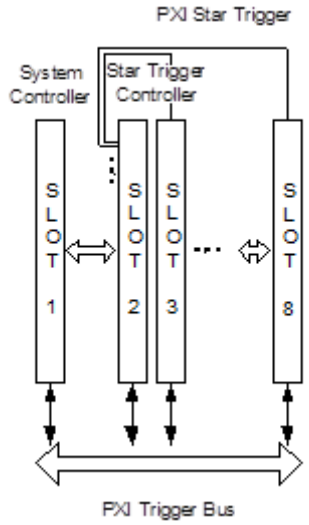

Figure 2-7: PXI Trigger Architecture

Star Trigger Lines

Thirteen PXI trigger lines are connected to slots 3 to 8. The PXI star trigger lines can be used to synchronize the operation of several different PXI peripheral modules.

The PXI star trigger bus offers ultra-high performance synchronization features to users of PXI systems. The star trigger bus implements a dedicated trigger line between the first peripheral slot (adjacent to the system slot) and the other peripheral slots. A star trigger controller can be installed in this slot and can be used to provide very precise trigger signals to other peripheral modules. Systems that do not require this advanced trigger can install any standard peripheral module in this slot. Through the required use of line-length equalization techniques for routing the star triggers, PXI systems can meet demanding triggering requirements for which bused triggers are not appropriate. Note that the star trigger can be used to communicate information back to the star trigger controller, as in the case of reporting a slot's status, as well as responding to information provided by the star trigger controller.

This trigger architecture for PXI gives two unique advantages in augmenting the bused trigger lines. The first advantage is a guarantee of a unique trigger line for each module in the system. For large systems, this eliminates the need to combine multiple module functions on a single trigger line or to artificially limit the number of trigger times available. The second advantage is the low-skew (1nSec) connection from a single trigger point. The PXI backplane defines specific layout requirements such that the star trigger lines provide matched propagation time from the star trigger slot to each module for very precise trigger relationships between each module.

System Reference Clock

The PXI 10 MHz system clock (PXI_CLK10) is distributed to all slots of the GX7800. This common reference clock can be used for synchronization of multiple instruments in a measurement or control system. The PXI clock supports the use of an external 10 MHz clock that is supplied via a Star Trigger module or external input via the 10 MHz rear panel. If an external clock is detected from the rear panel or Slot 2, the internal 10 MHz clock will automatically be disconnected. Precedence for the 10 MHz source is as follows:

1. 10 MHz source from Slot 2 timing slot
2. 10 MHz source from external input (rear panel)
3. 10 MHz source from the GX7800 backplane

System Power Supplies – GX7800

One power supply provides system power to all slots of the GX7800. A total power of 450 watts is available.

Power Distribution

The GX7800 meets or exceeds the requirements of the PXI specifications regarding the power provided to each slot. The table below lists the power per slot required by the PXI specifications:

Slot \ Voltage	5V	3.3V	+12V	-12V
System Slot	6A	6A	0.5A	0.25A
Instrument Slot	2A	2A	0.5A	0.25A
Total for an 8-Slot Chassis	20A	20A	4A	2A

Table 2-1: The power per slots required by the PXI

The maximum current provided by the GX7800 power supply is listed in the table below.

Note: Maximum power cannot exceed 450 W.

Voltage	5V	3.3V	+12V	-12V
Maximum Current	30A	30A	10A	5A

Table 2-2: The power provided by the GX7800

Chapter 3 - Setup and Installation

This chapter describes how to set up the GX7800 chassis and boards.

Unpacking and Inspecting the Chassis

1. Before unpacking the GX7800, check the outside of the shipping package for damage. Note any damage on the shipping bill.
2. Remove the chassis from the shipping carton.
3. Read the packing list to ensure all listed items are enclosed, including hardware, power cords, manuals, etc.
4. Inspect the unit. If any missing items, defects, or damage are noticed, notify Marvin Test Solutions immediately.

Mounting Information

The GX7800 is designed to operate on a bench or within an instrument rack system. Follow the appropriate installation instructions for your GX7800.

Openings in the rear and along the bottom-front panel of the chassis facilitate power supply and instrument cooling. This is very important to the operation of your GX7800. Make sure to place your GX7800 on a bench top or in an instrument rack so the air intake openings in the front and the air outlet openings along the rear panel are not blocked. Keep other equipment a minimum of 3 inches away from the air intake and outlets.

Rack-mount applications require the optional rack-mount kit available from Marvin Test Solutions. Refer to the rack-mount kit documentation to install your GX7800 in an instrument rack.

AC Line Voltage

The AC line voltage input selection for the GX7800 is automatic. The GX7800 chassis can operate with line voltages from 90 to 264 VAC, 47 to 63 Hz. Maximum input current for the GX7800 is 7 A (PFC).

Chassis Installation

Follow these steps to install the GX7800 chassis:

1. Place the GX7800 chassis on a sturdy, level surface. Leave space behind the chassis for ventilation.
2. Turn off the power switches.
3. Connect the power cable to the chassis and an outlet.
4. Install an embedded or a remote controller in slot #1 if not installed.
5. Connect a keyboard, mouse and VGA monitor to the controller using the controller's front panel connections (if using an embedded controller).
6. Turn on the chassis power and the optional external system.
7. Download and install the **HW** software from the Marvin Test Product CD or www.marvintest.com.
8. Optionally. Install third party VISA resource manager (e.g. NI-VISA). This will be used by third party VISA/IVI instrument drivers.
9. Configure your system using the **PXI/PCI Explorer** applet.

10. Install any additional drivers for PXI instruments.
11. Turn off the system.
12. Install PXI modules into the chassis as described in the next procedure.
13. Turn on the chassis power switch and follow the Found New Hardware Wizard instructions for new instruments installed.

Configuring Your PXI System using the PXI/PCI Explorer

To configure your PXI/PCI system using the **PXI/PCI Explorer** applet follow these steps:

1. **Start the PXI/PCI Explorer applet**. The applet can be start from the Windows Control Panel or from the Windows Start Menu, **Marvin Test Solutions**, **HW**, **PXI/PCI Explorer**.
2. **Identify Chassis and Controllers**. After the PXI/PCI Explorer started it will scan your system for changes and will display the current configuration. The PXI/PCI Explorer automatically detects systems that have Marvin Test Solutions controllers and chassis. In addition, the applet detects PXI-MXI-3/4 extenders in your system (manufactured by National Instruments). If your chassis is not shown in the explorer main window, use the Identify Chassis/Controller commands to identify your system. Chassis and Controller manufacturers should provide INI and driver files for their chassis and controllers to be used by these commands.

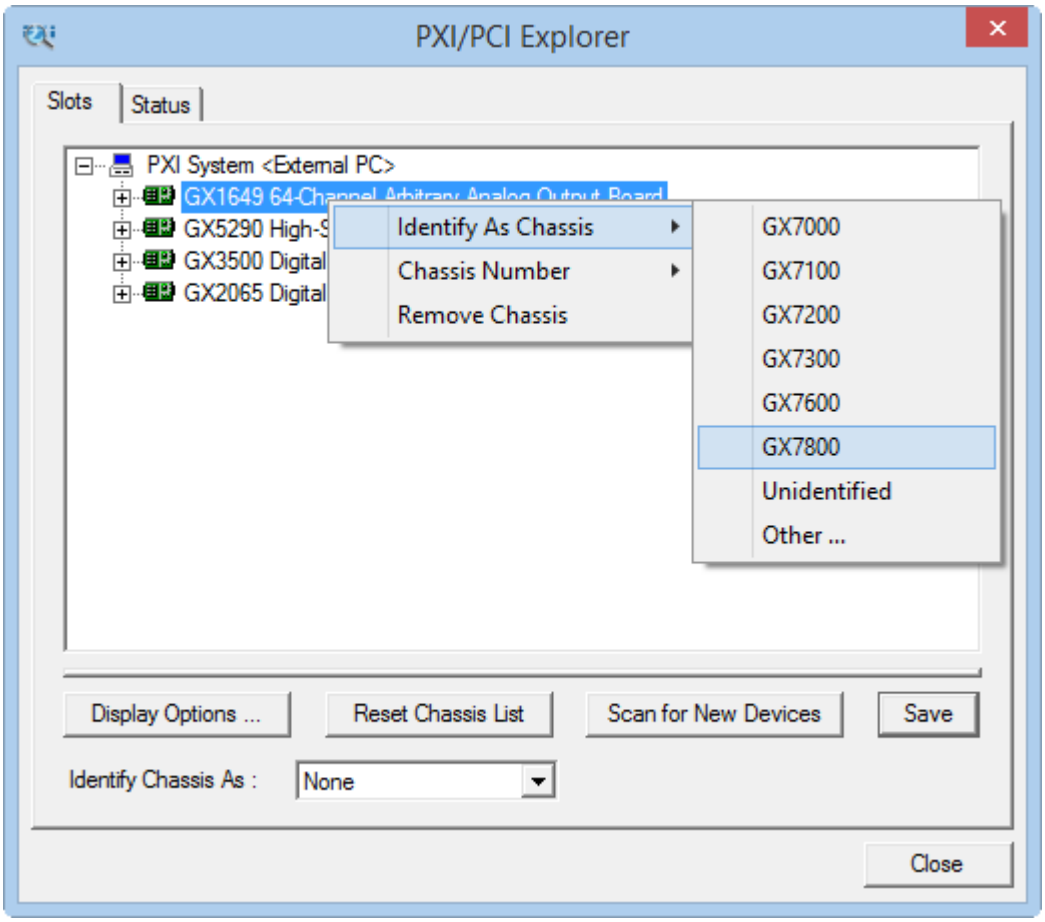

Figure 3-1: PXI/PCI Explorer Identify Chassis

Setting the chassis will cause the PXI exporer to determine the slot numbering as shown herefor external PC connected via MXI interface to the PXI chassis:

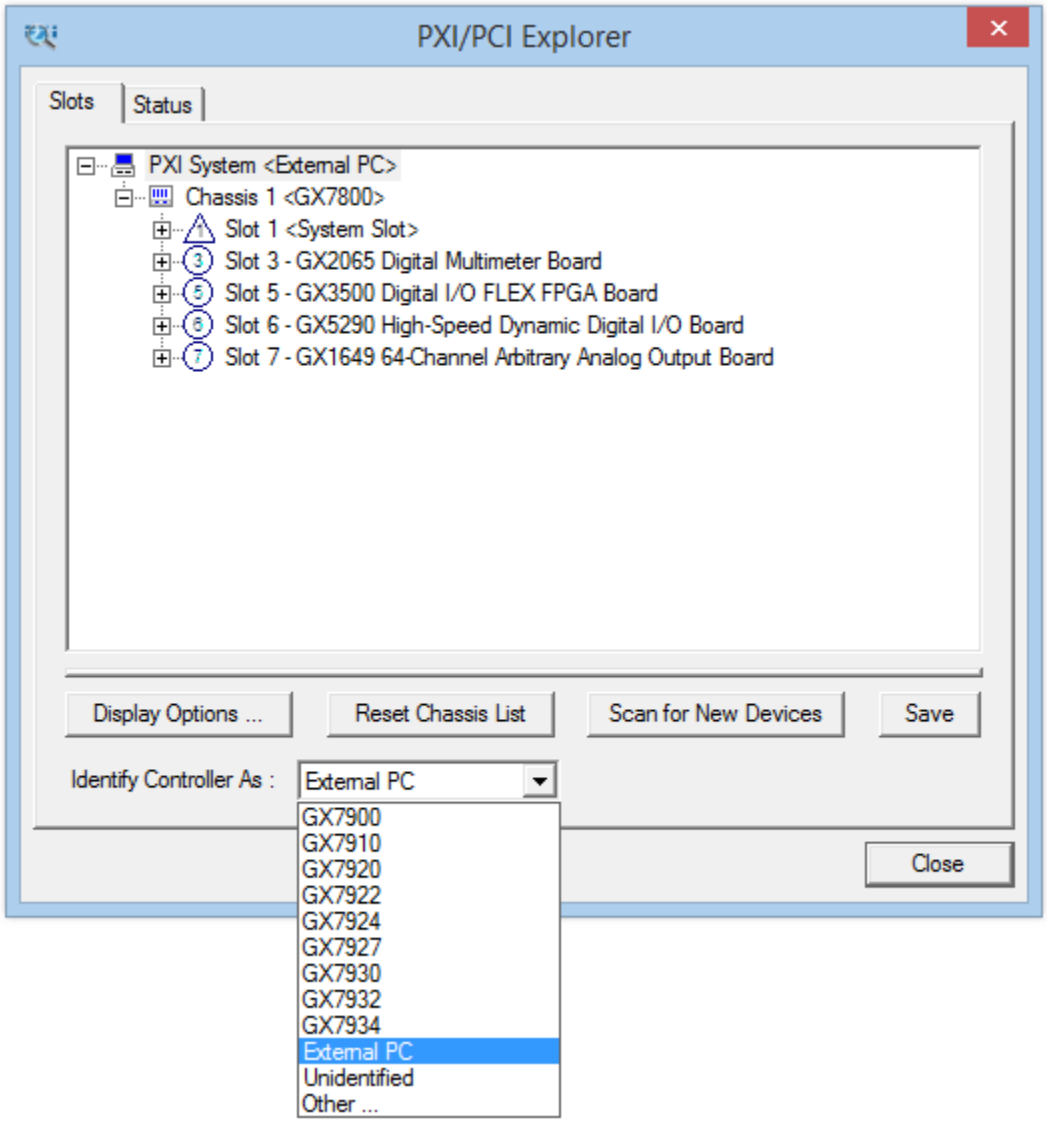

Figure 3-2: PXI/PCI Explorer Identify External Controller

For a master configuration, use the **Identify Controller As** command to select a predefined control (as shown here) or select a Controller.INI for third party controller manufacturer (select **Other…** from the drop list).

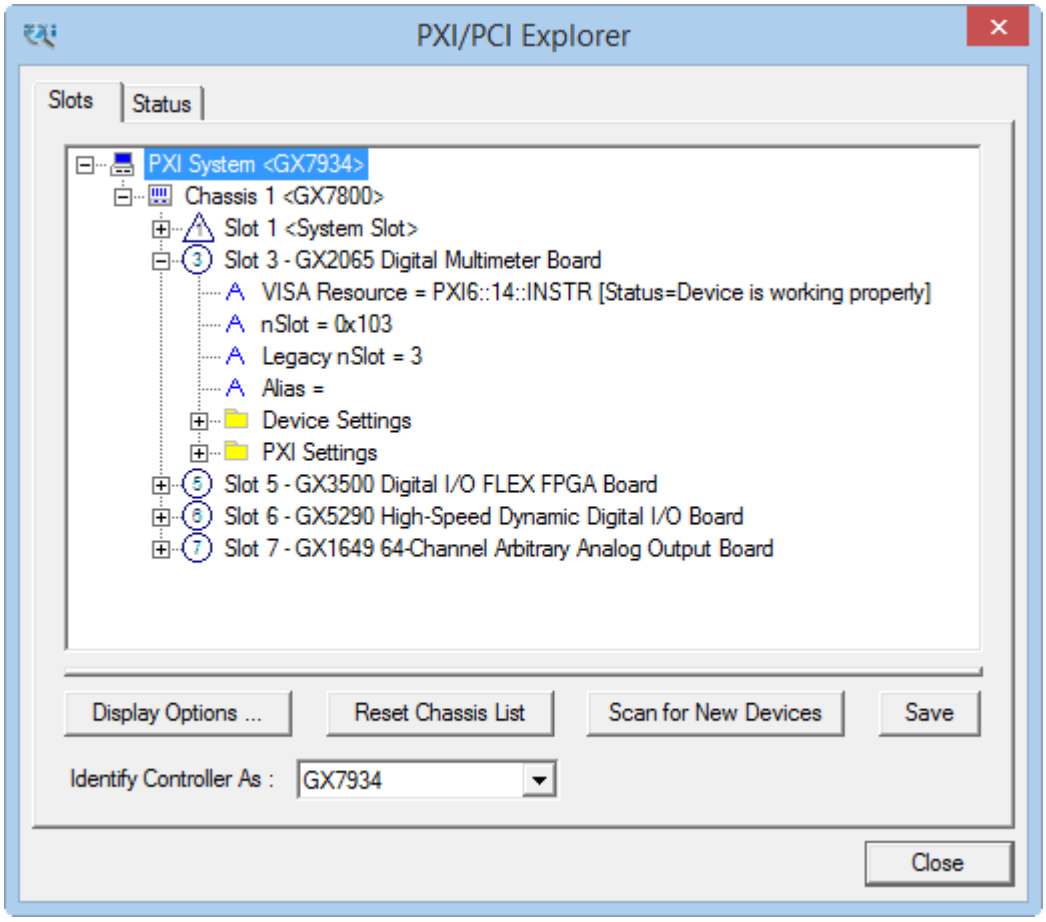

Figure 3-3: PXI/PCI Explorer Identify Master (GX7934) Controller

4. **Change chassis slot numbers if needed, PXI devices Legacy Slot numbering and PXI devices Alias names.** These are optional steps to be performed if you would like your chassis to have different numbers. Legacy slots numbers are used by older Marvin Test Solutions instrument drivers. Alias names can provide a way to address a PXI device using your logical name (e.g. “DMM1”). For more information regarding these numbers, see the **GxXXXInitialize** and **GxXXXInitializeVisa** functions of your Marvin Test instrument.

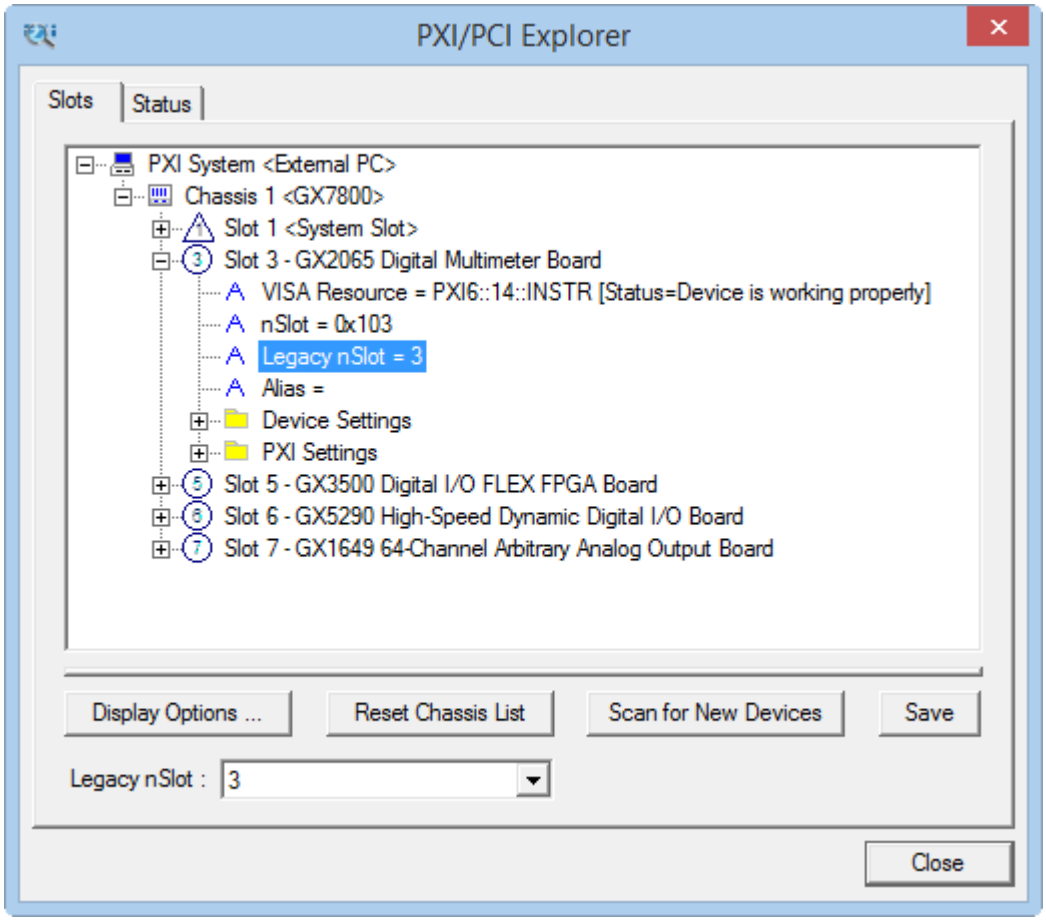

Figure 3-4: PXI/PCI Explorer

5. **Save your work.** PXI Explorer saves the configuration to the following files located in the Windows folder: PXISYS.ini, PXIeSYS.ini and GxPxiSys.ini. Click on the Save button to save you changes. The PXI/Explorer prompt you to save the changes if changes were made or detected (an asterisk sign '*' in the caption indicated changes)

Installing PXI Instruments

Install a PXI Instrument board (PXI module) as follows:

1. Turn off the PXI chassis and unplug the power cord.
2. Set the board switches and jumpers if required.

Caution - Electrostatic discharge can damage components on the GX7800 and other PXI module.

Check the board documentation for details on jumpers and switch settings before the installation.

3. Locate an empty PXI Slot on the chassis.
4. Place the module edges into the PXI chassis rails (top and bottom).
5. Carefully slide the PXI board to the rear of the chassis, make sure that the ejector handles are pushed out (as shown in Figure 3-5).

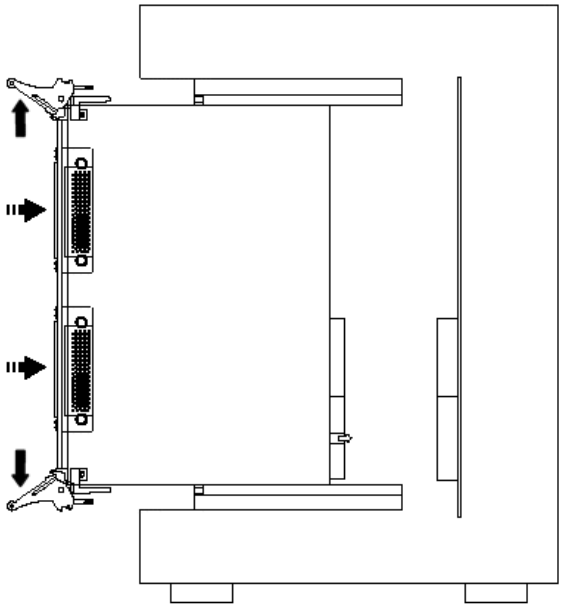

Figure 3-5: Ejector handles position during module insertion

6. After you feel resistance, push in the ejector handles as shown in Figure 3-6 to secure the module into the frame.

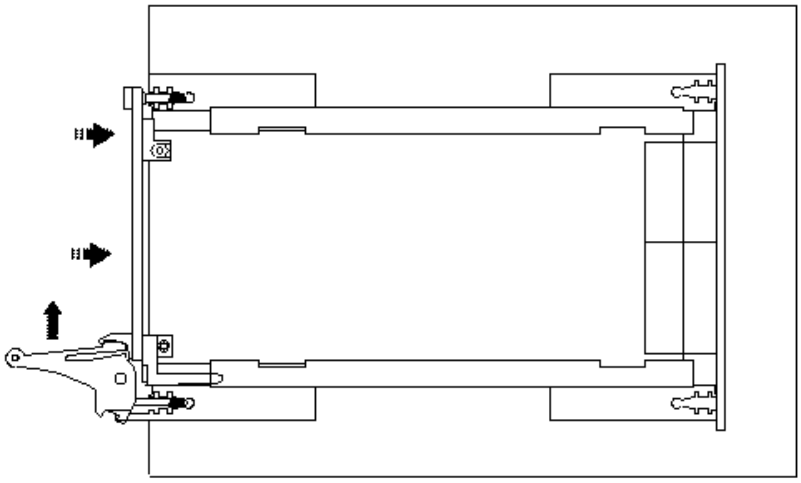

Figure 3-6: Ejector handles position after module insertion

7. Tighten the board's front panel screws to the chassis to secure the module in.
8. Connect any necessary cables to the board.
9. Plug the power cord in and turn on the PXI chassis' power switch.

PXI Instrument Removal

Remove a PXI instrument board as follows:

1. Shut down your system from the Windows Start menu.
2. Turn off the PXI chassis (master and slaves) and unplug the power cord.
3. Disconnect and remove any cables/connectors connected to the board.
4. Unscrew the module's front panel screws from the chassis.
5. Push **outward** the ejector handles and pull the PXI board away from the chassis.

Using External Instruments

Your GX7800 chassis supports all PXI and cPCI instruments. . In some cases however, you may need to connect additional instruments to the GX7800. These additional instruments are typically GPIB (IEEE-488) or VXI. To use external instruments, you will need a Plug-in PXI module that provides an interface to GPIB or to VXI (MXI-2). Such interfaces are available from numerous vendors.

Appendix A – Specifications

AC Input Power

GX7800

90VAC to 264 VAC, 8 A max, (PFC)

47 – 63 Hz

Power Supplies

GX7800 System Power

One DC power supply providing a total of 450W. The specifications for the power supply are listed in the table below.

Power Supply Load, Regulation, Ripple, and Noise Specifications

Output		Load Range		Regulation		Ripple & Noise*	
Voltage		Min.	Max.	Min.	Max.	Max.	mV P-P
1	+3.3V	0.0 A	30.0 A	- 3 %	+ 5 %	50	mV
2	+5.0V	0.0 A	30.0 A	- 3 %	+ 5 %	50	mV
3	+12.0V	0.5 A	10.0 A	- 3 %	+ 5 %	120	mV
4	-12.0V	0.0 A	5.0 A	- 5 %	+ 5 %	120	mV

*Noise Bandwidth: DC – 20 MHz

Cooling

Two 79 CFM fans mounted under the card cage. on rear panel. A separate fan provides cooling for the power supply. Fan speed control for the chassis fans is controlled manually by a rear mounted switch (low or high).

PXI 10 MHz Clock

All GX7800 chassis include an integrated 10MHz PXI system clock with auto-detect function. Presence of an external 10 MHz PXI clock will disable the internal clock source. External source can be from the Star Trigger Controller Slot (slot 2) or an external input. Precedence is as follows:

1. 10 MHz source from Slot 2 timing slot
2. 10 MHz source from external input (rear panel)
3. 10 MHz source from the GX7800 backplane

10 MHz clock accuracy: +/- 100 ppm

External 10 MHz Clock

External 10 MHz input: TTL compatible

External 10 MHz output: TTL compatible

Slots

The GX7800 has a total of 8 slots:

- 1 System Controller Slot
- 1 PXI Star Trigger Controller Slot (can be used by any PXI/cPCI instrument)
- 6 PXI/cPCI Instruments with Star Trigger

Physical Dimensions

Empty Weight:	GX7800: 13lbs
Dimensions:	GX7800: 8.9" W x 7" H (4U) x 18" D

Environmental and Compliance

Operating Temperature Range:	0ºC to 50ºC
Storage Temperature Range:	-20ºC to +60ºC
Operating relative humidity:	10 to 90%, non-condensing
Storage relative humidity:	5 to 95%, non-condensing
Emissions:	EN 55011:1991 Group 1 Class A at 10 m FCC Class A at 10 m
CE compliance:	EN61010-1 EN61326
PXI compliance	PXI Hardware Specification Revision 2.2

Appendix B –PXI Slots Pin Outs

This appendix describes the P1 and P2 connector pin outs for the GX7800 backplane.

- Table B-1 shows the P1 (J1) connector pin out for the System Controller slot.
- Table B-2 shows the P2 (J2) connector pin out for the System Controller slot.
- Table B-3 shows the P1 (J1) connector pin out for the Star Trigger slot.
- Table B-4 shows the P2 (J2) connector pin out for the Star Trigger slot.
- Table B-5 shows the P1 (J1) connector pin out for the peripheral slots.
- Table B-6 shows the P2 (J2) connector pin out for the peripheral slots.

To help in reviewing the tables in this section and locating the appropriate specification for signal requirements, Table B-1 lists all signals alphabetically by original specification (PXI, CompactPCI, or PCI).

System	Signals		
PXI	PXI_BRSV	PXI_LBL[0:12]	PXI_STAR[0:12]
	PXI_CLK10	PXI_STAR[0:12]	PXI_TRIG[0:7]
	PXI_CLK10_IN	PXI_TRIG[0:7]	
CompactPCI	BD_SEL#	HEALTHY#	REQ#[0:6]
	BRSV	INTP	RSV
	CLK[0:6]	INTS	SYSEN#
	DEG#	IPMB_PWR	SMB_ALERT#
	ENUM#	IPMB_SCL	SMB_SCL
	FAL#	IPMB_SDA	SMB_SDA
	GA0-GA4	PRST#	UNC
	GNT#[0:6]		
PCI	ACK64#	AD[0:63]	C/BE[0:7]#
	CLK	DEVSEL#	FRAME#
	GND	GNT#	IDSEL
	INTA#	INTB#	INTC#
	INTD#	IRDY#	LOCK#
	M66EN	PAR	PAR64
	PERR#	REQ#	REQ64#
	RST#	SERR#	STOP#
	TCK	TDI	TDO
	TMS	TRDY#	TRST#
	V(I/O)	3.3 V	5 V
	+12 V	-12 V	

Table B-1: Signal Names grouped by BUS

P1 (J1) Connector Pin Out for System Controller Slot

Pin	Z	A	B	C	D	E	F
25	GND	5V	REQ64#	ENUM#	3.3V	5V	GND
24	GND	AD[1]	5V	V(I/O)	AD[0]	ACK64#	GND
23	GND	3.3V	AD[4]	AD[3]	5V	AD[2]	GND
22	GND	AD[7]	GND	3.3V	AD[6]	AD[5]	GND
21	GND	3.3V	AD[9]	AD[8]	M66EN	C/BE[0]#	GND
20	GND	AD[12]	GND	V(I/O)	AD[11]	AD[10]	GND
19	GND	3.3V	AD[15]	AD[14]	GND	AD[13]	GND
18	GND	SERR#	GND	3.3V	PAR	C/BE[1]#	GND
17	GND	3.3V	IPMB_SCL	IPMB_SDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND
15	GND	3.3V	FRAME#	IRDY#	GND	TRDY#	GND
12–14	Key	Area					
11	GND	AD[18]	AD[17]	AD[16]	GND	C/BE[2]#	GND
10	GND	AD[21]	GND	3.3V	AD[20]	AD[19]	GND
9	GND	C/BE[3]#	GND	AD[23]	GND	AD[22]	GND
8	GND	AD[26]	GND	V(I/O)	AD[25]	AD[24]	GND
7	GND	AD[30]	AD[29]	AD[28]	GND	AD[27]	GND
6	GND	REQ0#	GND	3.3V	CLK0	AD[31]	GND
5	GND	BRSVP1A5	BRSVP1B5	RST#	GND	GNT0#	GND
4	GND	IPMB_PWR	HEALTHY#	V(I/O)	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	5V	INTD#	GND
2	GND	TCK	5V	TMS	TDO	TDI	GND
1	GND	5V	–12V	TRST#	+12V	5V	GND

Table B-2: P1 (J1) Connector Pin Out for the System Controller Slot

P2 (J2) Connector Pin Out for System Controller Slot

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	CLK6	GND	TDN1	RDN1	RDP1	GND
20	GND	CLK5	GND	TDP1	GND	VCC	GND
19	GND	GND	GND	RES	RES Bat	+3.3V	GND
18	GND	KDAT[1]	UV2-	UV4+	RTC	+3.3V	GND
17	GND	KCLK[1]	ROUT(GND)	PRST#	REQ6#	GNT6#	GND
16	GND	PMDAT[1]	UV2+	DEG#	GND	UV4-	GND
15	GND	PMCLK[1]	GOUT (GND)	FAL#	REQ5#	GNT5#	GND
14	GND	2RIN	2DSR	2RTS	VSYNC (GND)	2CTS	GND
13	GND	2RXD	FANSENSE(GND)	BOUT (VIO)	2DTR	2DCD	GND
12	GND	1DSR	1RTS	1CTS	HSYNC (GND)	2TXD	GND
11	GND	1DTR	BOUT (GND)	IDE_PD[9]	1DCD	1RIN	GND
10	GND	IDE_PD[8]	IDE_RST#	1TXD	IDE_PD[10]	1RXD	GND
9	GND	IDE_PD[6]	IDE_PD[7]	IDE_PD[4]	IDE_PD[5]	IDE_PD[11]	GND
8	GND	IDE_PD[3]	IDE_PD[12]	IDE_PD[2]	GND	IDE_PD[1]	GND
7	GND	IDE_PD[14]	IDE_PD[0]	IDE_PD[15]	IDE_PDRQ#	IDE_PIOW#	GND
6	GND	IDE_PIOR	IDE_PIORDY	IDE_PDACK #	IDE_PD[13]	IDE_PIRQ14	GND
5	GND	IDE_PA[1]	GND	IDE_PA[0]	IDE_PA[2]	TH_GP/SLP _S3	GND
4	GND	VIO	VCC	IDE_PCS1#	GND	IDE_PCS3#	GND
3	GND	CLK4	GND	GNT3#	REQ4#	GNT4#	GND
2	GND	CLK2	CLK3	SYSEN#	GNT2#	REQ3#	GND
1	GND	CLK1	GND	REQ1#	GNT1#	REQ2#	GND

Table B-3: P2 (J2) Connector Pin Out for the System Controller Slot

P1 (J1) Connector Pin Out for the Star Trigger Slot

Pin	Z	A	B	C	D	E	F
25	GND	5V	REQ64#	ENUM#	3.3V	5V	GND
24	GND	AD[1]	5V	V(I/O)	AD[0]	ACK64#	GND
23	GND	3.3V	AD[4]	AD[3]	5V	AD[2]	GND
22	GND	AD[7]	GND	3.3V	AD[6]	AD[5]	GND
21	GND	3.3V	AD[9]	AD[8]	M66EN	C/BE[0]#	GND
20	GND	AD[12]	GND	V(I/O)	AD[11]	AD[10]	GND
19	GND	3.3V	AD[15]	AD[14]	GND	AD[13]	GND
18	GND	SERR#	GND	3.3V	PAR	C/BE[1]#	GND
17	GND	3.3V	IPMB_SCL	IPMB_SDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND
15	GND	3.3V	FRAME#	IRDY#	BD_SEL#	TRDY#	GND
12–14	Key	Area					
11	GND	AD[18]	AD[17]	AD[16]	GND	C/BE[2]#	GND
10	GND	AD[21]	GND	3.3V	AD[20]	AD[19]	GND
9	GND	C/BE[3]#	IDSEL	AD[23]	GND	AD[22]	GND
8	GND	AD[26]	GND	V(I/O)	AD[25]	AD[24]	GND
7	GND	AD[30]	AD[29]	AD[28]	GND	AD[27]	GND
6	GND	REQ#	GND	3.3V	CLK	AD[31]	GND
5	GND	BRSVP1A5	BRSVP1B5	RST#	GND	GNT#	GND
4	GND	IPMB_PWR	HEALTHY#	V(I/O)	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	5V	INTD#	GND
2	GND	TCK	5V	TMS	TDO	TDI	GND
1	GND	5V	–12V	TRST#	+12V	5V	GND

Table B-4: P1 (J1) Connector Pin out for the Star Trigger Slot

P2 (J2) Connector Pin Out for the Star Trigger Slot

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	PXI_LBR0	GND	PXI_LBR1	PXI_LBR2	PXI_LBR3	GND
20	GND	PXI_LBR4	PXI_LBR5	PXI_STAR0	GND	PXI_STAR1	GND
19	GND	PXI_STAR2	GND	PXI_STAR3	PXI_STAR4	PXI_STAR5	GND
18	GND	PXI_TRIG3	PXI_TRIG4	PXI_TRIG5	GND	PXI_TRIG6	GND
17	GND	PXI_TRIG2	GND	RSV	PXI_CLK10_IN	PXI_CLK10	GND
16	GND	PXI_TRIG1	PXI_TRIG0	RSV	GND	PXI_TRIG7	GND
15	GND	PXI_BRSVA15	GND	RSV	PXI_STAR6	PXI_LBR6	GND
14	GND	AD[35]	AD[34]	AD[33]	GND	AD[32]	GND
13	GND	AD[38]	GND	V(I/O)	AD[37]	AD[36]	GND
12	GND	AD[42]	AD[41]	AD[40]	GND	AD[39]	GND
11	GND	AD[45]	GND	V(I/O)	AD[44]	AD[43]	GND
10	GND	AD[49]	AD[48]	AD[47]	GND	AD[46]	GND
9	GND	AD[52]	GND	V(I/O)	AD[51]	AD[50]	GND
8	GND	AD[56]	AD[55]	AD[54]	GND	AD[53]	GND
7	GND	AD[59]	GND	V(I/O)	AD[58]	AD[57]	GND
6	GND	AD[63]	AD[62]	AD[61]	GND	AD[60]	GND
5	GND	C/BE[5]#	GND	V(I/O)	C/BE[4]#	PAR64	GND
4	GND	V(I/O)	PXI_BRSVB4	C/BE[7]#	GND	C/BE[6]#	GND
3	GND	PXI_LBR7	GND	PXI_LBR8	PXI_LBR9	PXI_LBR10	GND
2	GND	PXI_LBR11	PXI_LBR12	UNC	PXI_STAR7	PXI_STAR8	GND
1	GND	PXI_STAR9	GND	PXI_STAR10	PXI_STAR11	PXI_STAR12	GND

Table B-5: P2 (J2) Connector Pin out for the Star Trigger Slot

P1 (J1) Connector Pin Out for the Peripheral Slot

Pin	Z	A	B	C	D	E	F
25	GND	5V	REQ64#	ENUM#	3.3V	5V	GND
24	GND	AD[1]	5V	V(I/O)	AD[0]	ACK64#	GND
23	GND	3.3V	AD[4]	AD[3]	5V	AD[2]	GND
22	GND	AD[7]	GND	3.3V	AD[6]	AD[5]	GND
21	GND	3.3V	AD[9]	AD[8]	M66EN	C/BE[0]#	GND
20	GND	AD[12]	GND	V(I/O)	AD[11]	AD[10]	GND
19	GND	3.3V	AD[15]	AD[14]	GND	AD[13]	GND
18	GND	SERR#	GND	3.3V	PAR	C/BE[1]#	GND
17	GND	3.3V	IPMB_SCL	IPMB_SDA	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)	STOP#	LOCK#	GND
15	GND	3.3V	FRAME#	IRDY#	BD_SEL#	TRDY#	GND
12–14	Key	Area					
11	GND	AD[18]	AD[17]	AD[16]	GND	C/BE[2]#	GND
10	GND	AD[21]	GND	3.3V	AD[20]	AD[19]	GND
9	GND	C/BE[3]#	IDSEL	AD[23]	GND	AD[22]	GND
8	GND	AD[26]	GND	V(I/O)	AD[25]	AD[24]	GND
7	GND	AD[30]	AD[29]	AD[28]	GND	AD[27]	GND
6	GND	REQ#	GND	3.3V	CLK	AD[31]	GND
5	GND	BRSVP1A5	BRSVP1B5	RST#	GND	GNT#	GND
4	GND	IPMB_PWR	HEALTHY#	V(I/O)	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	5V	INTD#	GND
2	GND	TCK	5V	TMS	TDO	TDI	GND
1	GND	5V	–12V	TRST#	+12V	5V	GND

Table B-6: P1 (J1) Connector Pin out for the Peripheral Slot

P2 (J2) Connector Pin Out for the Peripheral Slot

Pin	Z	A	B	C	D	E	F
22	GND	GA4	GA3	GA2	GA1	GA0	GND
21	GND	PXI_LBR0	GND	PXI_LBR1	PXI_LBR2	PXI_LBR3	GND
20	GND	PXI_LBR4	PXI_LBR5	PXI_LBL0	GND	PXI_LBL1	GND
19	GND	PXI_LBL2	GND	PXI_LBL3	PXI_LBL4	PXI_LBL5	GND
18	GND	PXI_TRIG3	PXI_TRIG4	PXI_TRIG5	GND	PXI_TRIG6	GND
17	GND	PXI_TRIG2	GND	RSV	PXI_STAR	PXI_CLK10	GND
16	GND	PXI_TRIG1	PXI_TRIG0	RSV	GND	PXI_TRIG7	GND
15	GND	PXI_BRSVA15	GND	RSV	PXI_LBL6	PXI_LBR6	GND
14	GND	AD[35]	AD[34]	AD[33]	GND	AD[32]	GND
13	GND	AD[38]	GND	V(I/O)	AD[37]	AD[36]	GND
12	GND	AD[42]	AD[41]	AD[40]	GND	AD[39]	GND
11	GND	AD[45]	GND	V(I/O)	AD[44]	AD[43]	GND
10	GND	AD[49]	AD[48]	AD[47]	GND	AD[46]	GND
9	GND	AD[52]	GND	V(I/O)	AD[51]	AD[50]	GND
8	GND	AD[56]	AD[55]	AD[54]	GND	AD[53]	GND
7	GND	AD[59]	GND	V(I/O)	AD[58]	AD[57]	GND
6	GND	AD[63]	AD[62]	AD[61]	GND	AD[60]	GND
5	GND	C/BE[5]#	GND	V(I/O)	C/BE[4]#	PAR64	GND
4	GND	V(I/O)	PXI_BRSVB4	C/BE[7]#	GND	C/BE[6]#	GND
3	GND	PXI_LBR7	GND	PXI_LBR8	PXI_LBR9	PXI_LBR10	GND
2	GND	PXI_LBR11	PXI_LBR12	UNC	PXI_LBL7	PXI_LBL8	GND
1	GND	PXI_LBL9	GND	PXI_LBL10	PXI_LBL11	PXI_LBL12	GND

Table B-7: P2 (J2) Connector Pin out for the Peripheral Slot

Appendix C – Model Numbers

Chassis and Controller Model Numbers

The following are the PXI chassis and controller model numbers:

Model #	Description
GX7800	2U, 8 Slot PXI Chassis.
GX7800R	3U, 8 slot PXI chassis with rack mount

Chassis Accessory Model Numbers

The following are the PXI chassis accessory model numbers:

Model #	Description
GX97111	Blank Panel for GX7800, 1-slot wide
GX97112	Blank Panel for GX7800, 2-slots wide
GX97114	Blank Panel for GX7800, 4-slots wide

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