

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *National Instruments PXI-1011* at our website: *Click HERE*

PXI™

PXI-1011 Chassis User Manual

Combination Chassis for PXI, CompactPCI, and SCXI™ Modules



NATIONAL INSTRUMENTS™

PXI™

PXI-1011 Chassis User Manual

**Combination Chassis for PXI,
CompactPCI, and SCXI™ Modules**

NATIONAL INSTRUMENTS™

February 2000 Edition
Part Number 322592A-01

Worldwide Technical Support and Product Information

www.ni.com

National Instruments Corporate Headquarters

11500 North Mopac Expressway Austin, Texas 78759-3504 USA Tel: 512 794 0100

Worldwide Offices

Australia 03 9879 5166, Austria 0662 45 79 90 0, Belgium 02 757 00 20, Brazil 011 284 5011,
Canada (Calgary) 403 274 9391, Canada (Ontario) 905 785 0085, Canada (Québec) 514 694 8521,
China 0755 3904939, Denmark 45 76 26 00, Finland 09 725 725 11, France 01 48 14 24 24,
Germany 089 741 31 30, Greece 30 1 42 96 427, Hong Kong 2645 3186, India 91805275406,
Israel 03 6120092, Italy 02 413091, Japan 03 5472 2970, Korea 02 596 7456, Mexico (D.F.) 5 280 7625,
Mexico (Monterrey) 8 357 7695, Netherlands 0348 433466, New Zealand 09 914 0488, Norway 32 27 73 00,
Poland 0 22 528 94 06, Portugal 351 1 726 9011, Singapore 2265886, Spain 91 640 0085,
Sweden 08 587 895 00, Switzerland 056 200 51 51, Taiwan 02 2528 7227, United Kingdom 01635 523545

For further support information, see the *Technical Support Resources* appendix. To comment on the documentation, send e-mail to techpubs@ni.com

© Copyright 2000 National Instruments Corporation. All rights reserved.

Important Information

Warranty

The PXI-1011 is warranted against defects in materials and workmanship for a period of one year from the date of shipment, as evidenced by receipts or other documentation. National Instruments will, at its option, repair or replace equipment that proves to be defective during the warranty period. This warranty includes parts and labor.

The media on which you receive National Instruments software are warranted not to fail to execute programming instructions, due to defects in materials and workmanship, for a period of 90 days from date of shipment, as evidenced by receipts or other documentation. National Instruments will, at its option, repair or replace software media that do not execute programming instructions if National Instruments receives notice of such defects during the warranty period. National Instruments does not warrant that the operation of the software shall be uninterrupted or error free.

A Return Material Authorization (RMA) number must be obtained from the factory and clearly marked on the outside of the package before any equipment will be accepted for warranty work. National Instruments will pay the shipping costs of returning to the owner parts which are covered by warranty.

National Instruments believes that the information in this document is accurate. The document has been carefully reviewed for technical accuracy. In the event that technical or typographical errors exist, National Instruments reserves the right to make changes to subsequent editions of this document without prior notice to holders of this edition. The reader should consult National Instruments if errors are suspected. In no event shall National Instruments be liable for any damages arising out of or related to this document or the information contained in it.

EXCEPT AS SPECIFIED HEREIN, NATIONAL INSTRUMENTS MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CUSTOMER'S RIGHT TO RECOVER DAMAGES CAUSED BY FAULT OR NEGLIGENCE ON THE PART OF NATIONAL INSTRUMENTS SHALL BE LIMITED TO THE AMOUNT THERETOFORE PAID BY THE CUSTOMER. NATIONAL INSTRUMENTS WILL NOT BE LIABLE FOR DAMAGES RESULTING FROM LOSS OF DATA, PROFITS, USE OF PRODUCTS, OR INCIDENTAL OR CONSEQUENTIAL DAMAGES, EVEN IF ADVISED OF THE POSSIBILITY THEREOF. This limitation of the liability of National Instruments will apply regardless of the form of action, whether in contract or tort, including negligence. Any action against National Instruments must be brought within one year after the cause of action accrues. National Instruments shall not be liable for any delay in performance due to causes beyond its reasonable control. The warranty provided herein does not cover damages, defects, malfunctions, or service failures caused by owner's failure to follow the National Instruments installation, operation, or maintenance instructions; owner's modification of the product; owner's abuse, misuse, or negligent acts; and power failure or surges, fire, flood, accident, actions of third parties, or other events outside reasonable control.

Copyright

Under the copyright laws, this publication may not be reproduced or transmitted in any form, electronic or mechanical, including photocopying, recording, storing in an information retrieval system, or translating, in whole or in part, without the prior written consent of National Instruments Corporation.

Trademarks

BridgeVIEW™, ComponentWorks™, CVI™, LabVIEW™, Measure™, National Instruments™, ni.com™, NI-DAQ™, PXI™, SCXI™, and VirtualBench™ are trademarks of National Instruments Corporation.

Product and company names mentioned herein are trademarks or trade names of their respective companies.

WARNING REGARDING USE OF NATIONAL INSTRUMENTS PRODUCTS

(1) NATIONAL INSTRUMENTS PRODUCTS ARE NOT DESIGNED WITH COMPONENTS AND TESTING FOR A LEVEL OF RELIABILITY SUITABLE FOR USE IN OR IN CONNECTION WITH SURGICAL IMPLANTS OR AS CRITICAL COMPONENTS IN ANY LIFE SUPPORT SYSTEMS WHOSE FAILURE TO PERFORM CAN REASONABLY BE EXPECTED TO CAUSE SIGNIFICANT INJURY TO A HUMAN.

(2) IN ANY APPLICATION, INCLUDING THE ABOVE, RELIABILITY OF OPERATION OF THE SOFTWARE PRODUCTS CAN BE IMPAIRED BY ADVERSE FACTORS, INCLUDING BUT NOT LIMITED TO FLUCTUATIONS IN ELECTRICAL POWER SUPPLY, COMPUTER HARDWARE MALFUNCTIONS, COMPUTER OPERATING SYSTEM SOFTWARE FITNESS, FITNESS OF COMPILERS AND DEVELOPMENT SOFTWARE USED TO DEVELOP AN APPLICATION, INSTALLATION ERRORS, SOFTWARE AND HARDWARE COMPATIBILITY PROBLEMS, MALFUNCTIONS OR FAILURES OF ELECTRONIC MONITORING OR CONTROL DEVICES, TRANSIENT FAILURES OF ELECTRONIC SYSTEMS (HARDWARE AND/OR SOFTWARE), UNANTICIPATED USES OR MISUSES, OR ERRORS ON THE PART OF THE USER OR APPLICATIONS DESIGNER (ADVERSE FACTORS SUCH AS THESE ARE HEREAFTER COLLECTIVELY TERMED "SYSTEM FAILURES"). ANY APPLICATION WHERE A SYSTEM FAILURE WOULD CREATE A RISK OF HARM TO PROPERTY OR PERSONS (INCLUDING THE RISK OF BODILY INJURY AND DEATH) SHOULD NOT BE RELIANT SOLELY UPON ONE FORM OF ELECTRONIC SYSTEM DUE TO THE RISK OF SYSTEM FAILURE. TO AVOID DAMAGE, INJURY, OR DEATH, THE USER OR APPLICATION DESIGNER MUST TAKE REASONABLY PRUDENT STEPS TO PROTECT AGAINST SYSTEM FAILURES, INCLUDING BUT NOT LIMITED TO BACK-UP OR SHUT DOWN MECHANISMS. BECAUSE EACH END-USER SYSTEM IS CUSTOMIZED AND DIFFERS FROM NATIONAL INSTRUMENTS' TESTING PLATFORMS AND BECAUSE A USER OR APPLICATION DESIGNER MAY USE NATIONAL INSTRUMENTS PRODUCTS IN COMBINATION WITH OTHER PRODUCTS IN A MANNER NOT EVALUATED OR CONTEMPLATED BY NATIONAL INSTRUMENTS, THE USER OR APPLICATION DESIGNER IS ULTIMATELY RESPONSIBLE FOR VERIFYING AND VALIDATING THE SUITABILITY OF NATIONAL INSTRUMENTS PRODUCTS WHENEVER NATIONAL INSTRUMENTS PRODUCTS ARE INCORPORATED IN A SYSTEM OR APPLICATION, INCLUDING, WITHOUT LIMITATION, THE APPROPRIATE DESIGN, PROCESS AND SAFETY LEVEL OF SUCH SYSTEM OR APPLICATION.

Compliance

FCC/Canada Radio Frequency Interference Compliance*

Determining FCC Class

The Federal Communications Commission (FCC) has rules to protect wireless communications from interference. The FCC places digital electronics into two classes. These classes are known as Class A (for use in industrial-commercial locations only) or Class B (for use in residential or commercial locations). Depending on where it is operated, this product could be subject to restrictions in the FCC rules. (In Canada, the Department of Communications (DOC), of Industry Canada, regulates wireless interference in much the same way.)

Digital electronics emit weak signals during normal operation that can affect radio, television, or other wireless products. By examining the product you purchased, you can determine the FCC Class and therefore which of the two FCC/DOC Warnings apply in the following sections. (Some products may not be labeled at all for FCC; if so, the reader should then assume these are Class A devices.)

FCC Class A products only display a simple warning statement of one paragraph in length regarding interference and undesired operation. Most of our products are FCC Class A. The FCC rules have restrictions regarding the locations where FCC Class A products can be operated.

FCC Class B products display either a FCC ID code, starting with the letters **EXN**, or the FCC Class B compliance mark that appears as shown here on the right.



Consult the FCC web site `http://www.fcc.gov` for more information.

FCC/DOC Warnings

This equipment generates and uses radio frequency energy and, if not installed and used in strict accordance with the instructions in this manual and the CE Mark Declaration of Conformity**, may cause interference to radio and television reception. Classification requirements are the same for the Federal Communications Commission (FCC) and the Canadian Department of Communications (DOC).

Changes or modifications not expressly approved by National Instruments could void the user's authority to operate the equipment under the FCC Rules.

Class A

Federal Communications Commission

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian Department of Communications

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B

Federal Communications Commission

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Canadian Department of Communications

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union - Compliance to EEC Directives

Readers in the EU/EEC/EEA must refer to the Manufacturer's Declaration of Conformity (DoC) for information** pertaining to the CE Mark compliance scheme. The Manufacturer includes a DoC for most every hardware product except for those bought for OEMs, if also available from an original manufacturer that also markets in the EU, or where compliance is not required as for electrically benign apparatus or cables.

* Certain exemptions may apply in the USA, see FCC Rules §15.103 **Exempted devices**, and §15.105(c). Also available in sections of CFR 47.

** The CE Mark Declaration of Conformity will contain important supplementary information and instructions for the user or installer.

For Your Safety

Before undertaking any troubleshooting, maintenance, or exploratory procedure, read carefully the Caution and Warning notices.

Do *not* operate this equipment in a way not recommended. Misuse of this equipment could result in a hazard.



Cautions Equipment described in this document must be used in an Installation Category II environment per IEC 664. This category requires local level supply mains-connected installation.

Shock Hazard—This equipment should only be installed by qualified personnel aware of the dangers involved. If signal wires are connected to the backplane, connector, module, or terminal block, dangerous voltages may exist even when the equipment is turned off. Before you remove any installed terminal block or module, disconnect the AC power line or any high-voltage sources ($\geq 30\ V_{rms}$ and $42.4\ V_{peak}$, or 60 VDC) that may be connected to any connector, terminal block, or module.

Refer to specific product documentation pertaining to system components (cable assemblies, terminal blocks, and modules) used with the chassis for safety information such as signal wire insulation, maximum signal rating, and safety earth ground connection. National Instruments is *not* liable for any damages or injuries resulting from inadequate signal wire insulation, incorrect signal connections, or inadequate safety earth ground connections.



Warnings This equipment contains voltage hazardous to human life and safety and is capable of inflicting personal injury.

Read the following warnings before using your chassis:

- **Live Circuits**—Operating personnel and service personnel must not remove protective covers when operating or servicing the PXI-1011. Adjustments and service to internal components must be undertaken *only* by qualified service technicians. During service of this product, the mains connector to the premise wiring must be disconnected. Dangerous voltages may be present under certain conditions; use extreme caution.
- **Explosive Atmosphere**—Do *not* operate the chassis in conditions where flammable gases are present. Under such conditions this equipment is unsafe and may ignite the gases or gas fumes.
- **Part Replacement**—Service this equipment only with parts that are exact replacements, both electrically and mechanically. Contact National Instruments for replacement part information. Installation of parts with those that are not direct replacements may harm personnel operating the chassis. Furthermore, damage or fire may occur if replacement parts are unsuitable.
- **Modification**—Do *not* modify any part of the chassis from its original condition. Modifications may result in safety hazards.

Contents

About This Manual

Conventions xi
National Instruments Documentation xii
Related Documentation xiii

Chapter 1
Introduction

About the PXI-1011 Chassis 1-1
What You Need to Get Started 1-1
Unpacking 1-2
Optional Equipment 1-3
Key Features 1-3
Chassis Description 1-4
SCXI Subsystem Overview 1-7
PXI Subsystem Overview 1-7
Interoperability with CompactPCI 1-7
System Controller Slot 1-8
Peripheral Slots 1-8
Star Trigger Slot 1-8
Local Bus 1-8
SCXI Control Slot 1-9
Trigger Bus 1-9
System Reference Clock 1-9

Chapter 2
Installation and Configuration

Mounting Information 2-1
PXI-1011 Chassis Installation 2-1
Connecting Safety Ground 2-2
Installation 2-2
PXI Module Installation 2-3
PXI Filler Panel Installation 2-3
SCXI Module Installation 2-4
SCXI Filler Panel Installation 2-4
Front Filler Panel Installation 2-4
System Configuration and Initialization Files 2-5

Chapter 3
Maintenance

Maintenance Procedures 3-1
Service Interval 3-1
Preparation 3-1
Cleaning 3-1
Interior Cleaning 3-2
Exterior Cleaning 3-2
Fan Filter Cleaning 3-2
Resetting the AC Main Circuit Breaker 3-2
Troubleshooting the PXI-1011 3-3

Appendix A
Specifications

Appendix B
I/O Connectors

Appendix C
Technical Support Resources

Glossary

Index

Figures

Figure 1-1. Front View of the PXI-1011 Chassis 1-4
Figure 1-2. Rear View of the PXI-1011 Chassis 1-6
Figure 1-3. PXI Star Trigger and Local Bus Routing 1-9

Figure 2-1. Injector/Ejector Handle Position during Module Insertion 2-3

Tables

Table 1-1. Power Cables 1-2
Table 1-2. PXI-1011 Chassis Front View Items 1-4
Table 1-3. PXI-1011 Chassis Rear View Items 1-6

Table 3-1. Troubleshooting Power Failure 3-3

Table A-1. Maximum Currents Available to PXI Subsystem A-1
Table A-2. Maximum Currents Available to SCXI Subsystem A-2

Table B-1. P1 (J1) Connector Pin Assignments for the System Controller Slot..... B-1
Table B-2. P2 (J2) Connector Pin Assignments for the System Controller Slot..... B-2
Table B-3. P1 (J1) Connector Pin Assignments for the Star Trigger Slot B-3
Table B-4. P2 (J2) Connector Pin Assignments for the Star Trigger Slot B-4
Table B-5. P1 (J1) Connector Pin Assignments for the Peripheral Slot B-5
Table B-6. P2 (J2) Connector Pin Assignments for the Peripheral Slot B-6

About This Manual

The *PXI-1011 Chassis User Manual* describes the features of the PXI-1011 chassis and contains information about configuring the chassis, installing the modules, and operating the chassis.

Conventions

The following conventions appear in this manual:



This icon denotes a note, which alerts you to important information.



This icon denotes a caution, which advises you of precautions to take to avoid injury, data loss, or a system crash.



This icon denotes a warning, which advises you of precautions to take to avoid electrical shock.

bold — Bold text denotes items that you must select or click on in the software, such as menu items and dialog box options. Bold text also denotes parameter names.

italic — Italic text denotes variables, emphasis, a cross reference, or an introduction to a key concept. This font also denotes text that is a placeholder for a word or value that you must supply.

`monospace` — Text in this font denotes text or characters that you should enter from the keyboard, sections of code, programming examples, and syntax examples. This font is also used for the proper names of disk drives, paths, directories, programs, subprograms, subroutines, device names, functions, operations, variables, filenames and extensions, and code excerpts.

NI-DAQ — NI-DAQ is used throughout this manual to refer to the NI-DAQ driver software.

SCXIbus — SCXIbus refers to the backplane in the SCXI chassis subsystem. A signal on the backplane is referred to as the SCXIbus <signal name> line (or signal). The SCXIbus descriptor may be omitted when the meaning is clear.

PXI chassis — PXI chassis or simply *chassis* refers to the PXI-1011.

National Instruments Documentation

The *PXI-1011 Chassis User Manual* is one piece of the documentation set for your PXI system. You could have any of several types of documents, depending on the hardware and software in your system. Use the documents you have as follows:

- *Getting Started with SCXI*—This is the first manual you should read. It gives an overview of the SCXI system and contains the most commonly needed information for modules, chassis, and software.
- Your SCXI hardware documentation—Read these next for detailed information about signal connections and module configuration. They also explain in greater detail how the module works and contain application hints.
- Your data acquisition (DAQ) hardware documentation—This documentation has detailed information about the DAQ hardware that plugs into or is connected to your computer. Use these documents for hardware installation and configuration instructions, specification information about your DAQ hardware, and application hints.
- Software documentation—You might have several sets of software documentation, including LabVIEW, LabWindows/CVI, and NI-DAQ. After you have set up your hardware system, use either the application software (LabVIEW or LabWindows/CVI) or the NI-DAQ documentation to help you write your application. If you have a large and complicated system, review the software documentation before you configure your hardware.
- Accessory installation guides or manuals—If you are using accessory products, read the terminal block and cable assembly installation guides or accessory user manuals. They explain how to physically connect the relevant pieces of the system. Consult these guides when you are making your connections.
- *PXI-1011 Chassis User Manual*—Read this manual for maintenance information on the chassis and installation instructions. This manual serves as your SCXI chassis manual.

Related Documentation

The following document contains information you may find useful as you read this manual:

- Your computer technical reference manual

If you are designing your own PXI module, the following National Instruments specification, available by request, describes the physical, electrical, and timing requirements for PXI:

- *PXI Specification*, Revision 1.0

1

Introduction

This chapter describes the PXI-1011, lists what you need to get started, describes the optional equipment, and explains how to unpack the PXI-1011 chassis.

About the PXI-1011 Chassis

Thank you for purchasing the National Instruments PXI-1011 chassis. This chassis integrates a high-performance 4-slot PXI subsystem with an 8-slot SCXI subsystem to offer a complete solution for signal conditioning applications. The PXI section of the chassis accepts an embedded controller and a wide variety of peripheral modules (such as multifunction I/O, digital I/O, and instrument modules). The eight SCXI slots integrate signal conditioning modules into your PXI system. These modules provide analog and digital input conditioning, isolation, and other functions. The PXI-1011 is ideal for applications where rack-mount space is limited because it combines the computer, plug-in devices, and signal conditioning modules in a single chassis. You can daisy-chain additional SCXI chassis to the PXI-1011 to build very high channel-count systems.

What You Need to Get Started

To set up and use your PXI-1011 chassis, you will need the following items:

- ❑ PXI-1011 chassis
- ❑ Power cable (see Table 1-1)
- ❑ *PXI-1011 Chassis User Manual*
- ❑ One of the following software packages and documentation:
  - BridgeVIEW
  - ComponentWorks
  - LabVIEW for Windows
  - LabWindows/CVI for Windows

  - Measure
  - VirtualBench

- ❑ NI-DAQ for PC compatibles
- ❑ PXI Chassis Initialization File for PXI-1011, version 1.0 (floppy disk) with `chassis.ini`. See Chapter 2, *Installation and Configuration*, for detailed information on initializing your PXI-1011 chassis.
- ❑ PXI system controller and system initialization file `pxisys.ini`.
- ❑ PXI DAQ module
- ❑ SCXI module
- ❑ Flathead screwdriver
- ❑ Needle-nose pliers

Table 1-1. Power Cables

Power Cable	Reference Standards
Standard 120 V (USA)	ANSI C73.11/NEMA 5-15-P/IEC83
Switzerland 220 V	SEV
Australia 240 V	AS C112
Universal Euro 240 V	CEE (7), II, IV, VII IEC83
North America 240 V	ANSI C73.20/NEMA 5-15-P/IEC83
United Kingdom 240 V	BS 1363/IEC83

If you are missing any of the above items or if you have the incorrect power cable, contact National Instruments.

Unpacking

While unpacking your new product, do the following:

- Carefully inspect the shipping container and the chassis for damage.
- Look for visible damage to the chassis enclosure.
- Make sure all handles, external hardware, and switches are undamaged.

- Inspect the chassis slots for any possible damage, debris, or detached components.
- If damage appears to have been caused in shipment, file a claim with the carrier.
- Retain the packing material for possible inspection and/or reshipment.

Optional Equipment

National Instruments offers a variety of products to use with your PXI-1011 chassis, such as:

- Cables and cable accessories, shielded and ribbon
- Shielded and unshielded 68- and 100-pin screw-terminal connector blocks
- SCXI modules and accessories for isolating, amplifying, exciting, filtering, and multiplexing signals
- PXI modules and accessories for multifunction I/O and instrumentation

For more specific information about these products, refer to your National Instruments catalog, or contact the sales office nearest you.

Key Features

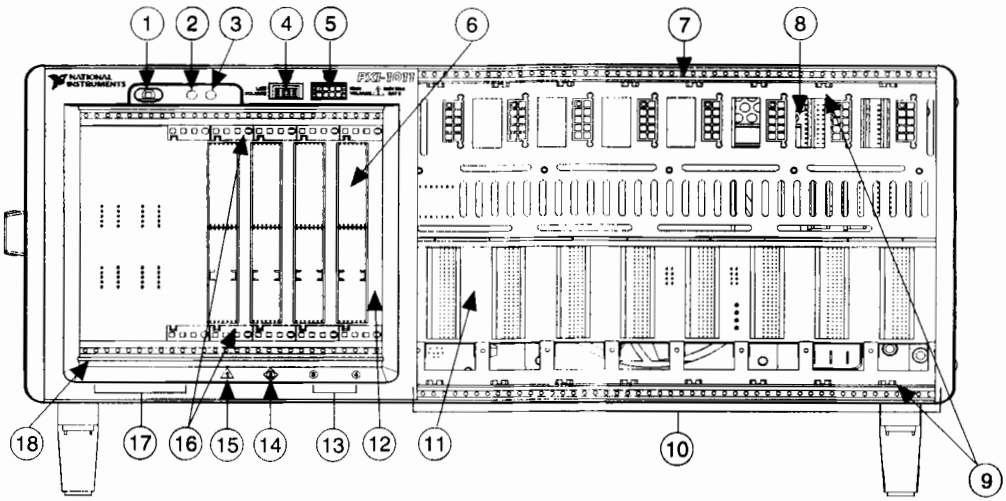
The PXI-1011 combines a high-performance 4-slot PXI subsystem with an 8-slot SCXI subsystem. The PXI-1011 has a structural design that is optimized for use in a wide range of applications. The PXI-1011 fully complies with the *PXI Specification*, Revision 1.0, offering advanced timing and synchronization features.

The SCXI subsystem supplies a low-noise environment for signal conditioning, supplying power and control circuitry for SCXI modules. Use this general-purpose chassis with current and future SCXI modules.

The PXI-1011 has a built-in interconnect ion between the PXI and SCXI subsystems that allows a DAQ device in the fourth PXI slot to control the SCXI subsystem without additional cables.

Chassis Description

Figure 1-1 shows the front view of the PXI-1011. Table 1-2 describes the front view items.



1 System Power Switch
2 System Power Indicator LED
3 SCXI Subsystem Power Indicator LED
4 SCXI Low-Voltage Analog Bus Connector
5 SCXI High-Voltage Analog Bus Connector
6 PXI Backplane Connectors
7 SCXI Front-Threaded Strips
8 SCXI High-Voltage Backplane
9 SCXI Module Guides
10 SCXI Module Slots
11 SCXI Subsystem Backplane
12 PXI Subsystem Backplane
13 PXI Peripheral Slots
14 PXI Star Trigger Slot
15 PXI System Controller Slot
16 PXI Module Guides
17 PXI Controller Expansion Slots
18 Injector/Ejector Rail

Figure 1-1. Front View of the PXI-1011 Chassis

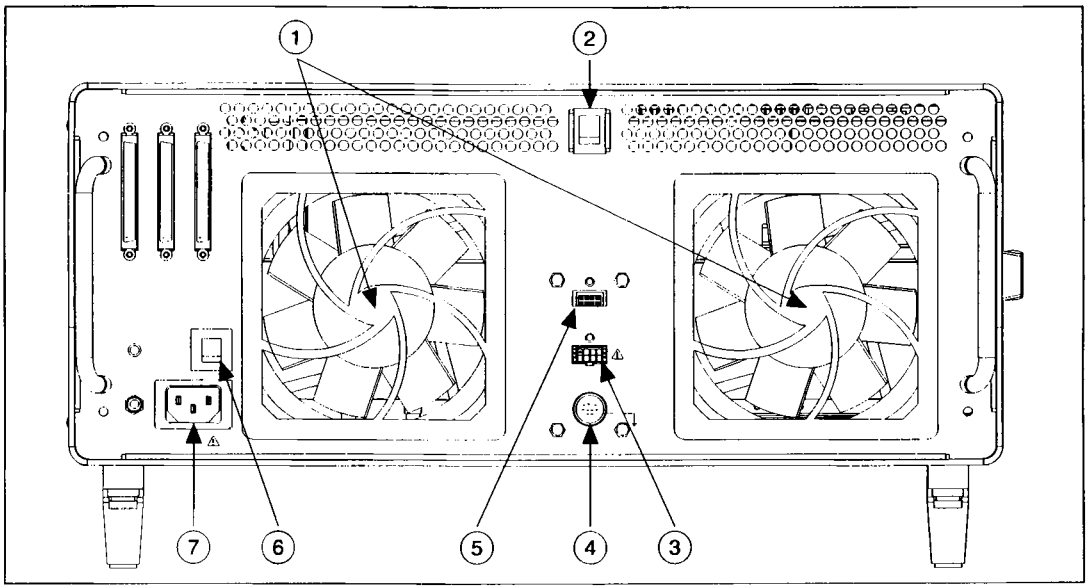
Table 1-2. PXI-1011 Chassis Front View Items

Item	Description
System Power Switch	Turns the chassis on and off
System Power Indicator LED	When lit, indicates that the chassis is on. The PXI subsystem is always powered as long as the chassis is on.
SCXI Subsystem Power Indicator LED	When lit, indicates that the SCXI subsystem power is on. The SCXI subsystem power can be turned on/off by the SCXI subsystem power switch on the rear panel.

Table 1-2. PXI-1011 Chassis Front View Items (Continued)

Item	Description
SCXI Low-Voltage Analog Bus Connectors	Connect to the low-voltage analog bus (LVAB0-3) on the SCXI subsystem backplane
SCXI High-Voltage Analog Bus Connectors	Connect to the high-voltage analog bus (HVAB0-3) on the SCXI high-voltage backplane
PXI Backplane Connectors	Connect PXI modules to the PXIbus
SCXI Front-Threaded Strips	Secure modules in the SCXI subsystem and attach front panels
SCXI High-Voltage Backplane	Brings high-voltage analog bus (HVAB0-3) connections to SCXI modules
SCXI Module Guides	Guide modules to SCXIbus connectors
SCXI Module Slots	Hold SCXI modules
SCXI Subsystem Backplane	Brings power, control lines, and low-voltage analog bus connections to SCXI modules
PXI Subsystem Backplane	Brings CompactPCI 64-bit bus, PXI trigger bus, PXI star trigger bus, and PXI local bus connections to PXI modules
PXI Peripheral Slots	Hold PXI peripheral modules
PXI Star Trigger Slot	Holds PXI star trigger controller or any PXI peripheral module
PXI System Controller Slot	Holds PXI system controller
PXI Module Guides	Guide PXI modules to PXIbus connectors
PXI Controller Expansion Slots	Provide space for large controllers
Injector/Ejector Rails	Used to inject/eject the Injector/Ejector handle of a PXI module when the module is pushed in/out

Figure 1-2 shows the chassis rear view items that are described in Table 1-3.



1 Fans and Filters
2 SCXI Subsystem Power Switch
3 SCXI High-Voltage Analog Bus Connector
4 SCXI Auxilary I/O Connector
5 SCXI Low-Voltage Analog Bus Connector
6 Circuit Breaker
7 Power Entry Module

Figure 1-2. Rear View of the PXI-1011 Chassis

Table 1-3. PXI-1011 Chassis Rear View Items

Item	Description
Fans and Filters	Cool the chassis; prevent dirt from contaminating the chassis circuitry
SCXI Subsystem Power Switch	Turns on/off SCXI subsystem power when the chassis is on
SCXI High-Voltage Analog Bus Connector	Connects to the high-voltage analog bus on the SCXI high-voltage backplane
SCXI Auxilary I/O Connector	Connects to the control lines on the SCXI subsystem backplane
SCXI Low-Voltage Analog Bus Connector	Connects to the low-voltage analog bus on the SCXI subsystem backplane

Table 1-3. PXI-1011 Chassis Rear View Items (Continued)

Item	Description
Circuit Breaker	Protects both you and the chassis from electrical injury/damage in case of a overcurrent fault
Power Entry Module	IEC receptacle for power input

SCXI Subsystem Overview

You can use the SCXI subsystem in the following ways:

- Install several SCXI modules and use a DAQ device in slot 4 of the PXI subsystem to control and/or acquire data from all the SCXI modules.
- Install several SCXI modules and connect one of them to a DAQ device that controls and/or acquires data from all of the SCXI modules.
- Install SCXI modules that are each dedicated to conditioning signals for only a single DAQ device (for example, in parallel mode) or that operate independently and only use the SCXI subsystem as a power source and/or container. You can use the chassis this way in addition to or instead of one of the first two methods.
- The chassis address of a PXI-1011 chassis is hard-wired as 0.

PXI Subsystem Overview

The following sections describe the PXI subsystem.

Interoperability with CompactPCI

The PXI subsystem is interoperable with PXI-compatible products and standard CompactPCI products. This is an important feature because many PXI-compatible systems may require components that do not implement PXI-specific features.

For example, you may want to use a standard CompactPCI network interface card in a PXI chassis. The signals on the PXI-1011 backplane P1 connector meet the requirements of the CompactPCI specification for both the peripheral and system modules. The PXI-specific signals are located on the P2 connector and are found only on the signals that are reserved or not used in the CompactPCI 64-bit specification. Therefore, all modules that meet the CompactPCI 64-bit specification requirements will function in the PXI-1011.

System Controller Slot

The System Controller slot is located in slot 1 of the chassis as defined by the PXI specification. It has three controller expansion slots, which are used for system controller modules wider than one slot. As defined in the PXI specification, these slots allow the controller to expand to the left so it does not use up peripheral slots.

Peripheral Slots

The PXI-1011 has three peripheral slots located in slots 2 through 4. You can use PXI modules in peripheral slots to add functionality to the PXI subsystem not already provided by the system controller. Examples of PXI peripheral modules are multifunction I/O, digital I/O, and instrument modules. Some peripheral slots also have special capabilities, such as the Star Trigger slot and the SCXI Control slot, which are explained in the following sections.

Star Trigger Slot

The Star Trigger slot is located at slot 2. This slot has a dedicated trigger line connected to each peripheral slot (see Figure 1-3) and is intended for modules with Star Trigger functionality to provide individual triggers to all other peripherals. However, if you do not require advanced trigger functionality, you can install any standard peripheral module into this slot.

Local Bus

The PXI backplane local bus is a daisy-chained bus that connects each PXI peripheral slot with its adjacent left and right peripheral slots, as shown in Figure 1-3.

For example, a given right local bus of the PXI peripheral slot connects to the left local bus of the adjacent slot and so on. Each local bus is 13 lines wide and can pass analog signals between modules or provide a high-speed side-band communication path that does not affect the PXI bandwidth.

Local bus signals may range from high-speed TTL signals to analog signals as high as 42 V. Initialization software keys adjacent modules to prohibit the use of incompatible devices. This software uses the configuration information specific to each peripheral module to evaluate compatibility. This method is a flexible way to define local bus functionality that is not limited by keying hardware.

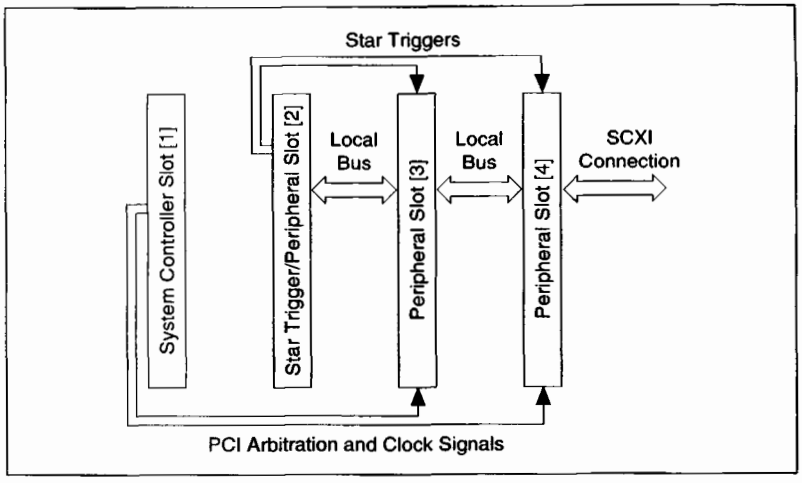


Figure 1-3. PXI Star Trigger and Local Bus Routing

SCXI Control Slot

Slot 4 of the PXI backplane has connections for a PXI peripheral module to control the SCXI subsystem. These connections use the available local bus right pins (PXI_LBR0:12). The SCXI connection passes communication, timing, and low-voltage analog bus signals between the SCXI subsystem and the PXI module in slot 4.

Trigger Bus

The eight PXI trigger lines are bused to each slot. You can use the trigger lines in a variety of ways. For example, you can use triggers 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. Modules can pass triggers to one another, allowing precisely timed responses to asynchronous external events the system is monitoring or controlling.

System Reference Clock

The PXI-1011 supplies the PXI 10 MHz system clock signal (PXI_CLK10) independently to each peripheral slot. An independent buffer (having a source impedance matched to the backplane and a skew of less than 1 ns between slots) drives the clock signal to each peripheral slot. You can use this common reference clock signal to synchronize multiple modules in a measurement or control system. You can drive PXI_CLK10 from an external source through the PXI_CLK10_IN pin

on the P2 connector of the Star Trigger slot. (See Table B-4, *P2 (J2) Connector Pin Assignments for the Star Trigger Slot*, in Appendix B, *I/O Connectors*.) Sourcing an external clock on this pin automatically disables the backplane 10 MHz source.

Caution Sourcing the 10 MHz clock externally could result in unwanted harmonic noise emissions at any or several even and odd harmonics of the clock. The party implementing this option could be liable for any interference created by the clock and be required to take whatever measures are needed to eliminate interference to radio, television, and other wireless applications. Such measures include switching off this device until other means are found to control the interference problem.

400 Hz power applications—The PXI-1011 can operate on 400 Hz power systems but is not qualified for use in aircraft. A navigation hazard could exist if the PXI-1011 is operated in-flight with common avionics in use.

2

Installation and Configuration

This chapter describes how to install and configure your PXI-1011 chassis.

Before connecting the chassis to a power source, read this chapter and the *For Your Safety* section located at the beginning of this document.

Mounting Information

The PXI-1011 is designed to operate on a bench or in an instrument rack. Determine where you want to use your PXI-1011 and follow the appropriate installation instructions.

Apertures in the rear and along both sides of the chassis facilitate power supply and module cooling. Air enters through filters and fan inlets located in the lower rear of the chassis and exits through the upper sections of the sides. Place your PXI-1011 on a bench or in an instrument rack so that the fans (air inlets) and the air outlet apertures along both sides of the chassis have adequate ventilation. Keep other equipment a minimum of 3.0 in. (76.2 mm) away from the air inlets and outlets.

Install your chassis for easy access to the rear panel. This simplifies air filter replacement.

Rack-mount applications require the optional rack-mount kit available from National Instruments. Refer to the rack-mount kit documentation to install your PXI-1011 in an instrument rack.

PXI-1011 Chassis Installation



Caution Equipment described in this document must be used in an Installation Category II environment per IEC 644. This category requires local level supply mains-connected installation.

Connecting Safety Ground

Warning The PXI-1011 chassis is designed with a three-position NEMA 15-5 style plug that connects the ground line to the chassis ground. To minimize shock hazard, make sure your electrical power outlet has an appropriate earth safety ground that is connected whenever you power on the chassis.

If your power outlet does not have an appropriate ground connection, you must connect the premise safety ground to the chassis grounding screw located on the rear panel. Refer to Figure 1-2, *Rear View of the PXI-1011 Chassis*, for a diagram locating the chassis grounding screw. To connect the safety ground, complete the following steps:

1. Connect a 16 AWG (1.3 mm) wire to the chassis grounding screw using a toothed grounding lug. The wire must have green insulation with a yellow stripe or must be non-insulated (bare).
2. Attach the opposite end of the wire to permanent earth ground using toothed washers or a toothed lug.

Installation

Follow these steps to install the PXI-1011 chassis:

1. Place the PXI chassis on a sturdy, level surface. Leave at least 10 cm (4 in.) of space behind the chassis for adequate air circulation.
2. Turn off the system power switch.
3. Insert the female end of your power cable into the power-entry module.
4. Insert the male end of your power cable into the wall outlet.
5. Install the SCXI and PXI modules into the chassis (see the appropriate sections later in this chapter).
6. Install any front and rear filler panels (see the appropriate sections later in this chapter).
7. Turn on the system power switch.

   The system power indicator LED should be lit now, which indicates that system power is available to both the PXI and SCXI subsystems. The PXI subsystem remains powered as long as the system power is on. The SCXI subsystem power, however, can be controlled using the SCXI subsystem power switch on the rear panel.
8. If the SCXI subsystem power indicator LED is lit, then the SCXI subsystem power is on. If not, turn the SCXI subsystem power switch on the rear panel to the On position. The SCXI subsystem power switch can be used to turn the SCXI subsystem on and off only when the system power is on.

PXI Module Installation

Caution Turn off the system power using the power switch shown in Figure 1-1, *Front View of the PXI-1011 Chassis*, before installing CompactPCI or PXI modules.

Follow these steps to install a PXI module into a chassis slot:

1. First place the module edges into the PXI chassis module guides (top and bottom), as shown in Figure 1-1, *Front View of the PXI-1011 Chassis*.
2. Slide the module to the rear of the chassis, making sure that the injector/ejector handle is pushed down as shown in Figure 2-1.
3. When you begin to feel resistance, push up on the injector/ejector handle to inject the module into the frame.
4. Secure the module's front panel to the chassis using the module front-panel mounting screws.

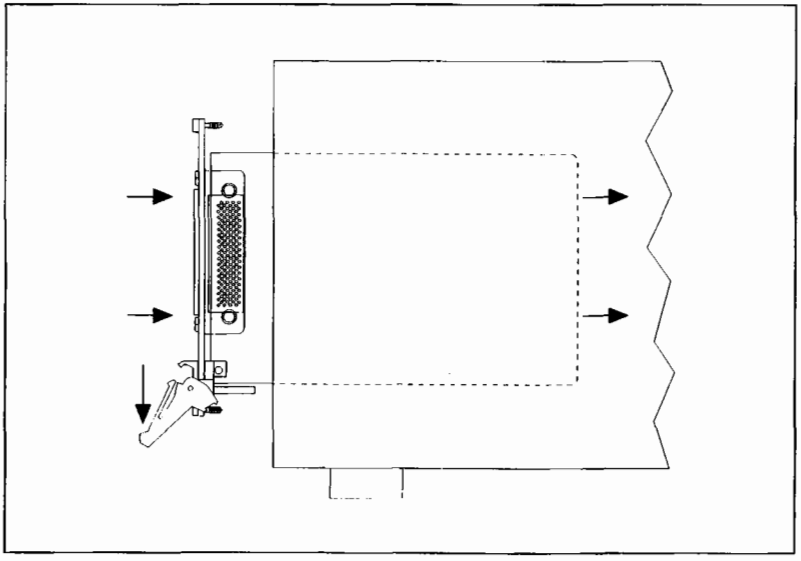


Figure 2-1. Injector/Ejector Handle Position during Module Insertion

PXI Filler Panel Installation

To optimize module cooling performance, install filler panels into unused or empty slots. Secure the filler panels with the captive mounting screws.

SCXI Module Installation

Follow these steps to install SCXI modules:

1. Turn off the SCXI subsystem using the switch shown in Figure 1-2, *Rear View of the PXI-1011 Chassis.*
2. Remove the front filler panel of an empty SCXI slot, if any.
3. Insert the module into the module guide rails and slide the module to the back of the chassis. Do *not* force the module into place.
4. Screw the front mounting panel of the module to the top and bottom threaded strips of the SCXI chassis using the thumbscrews on the module front panel.
5. Install any necessary cables, cable accessories, or terminal blocks.

Refer to your SCXI module documentation for specific instructions pertaining to the module, especially configuration and signal connections.

SCXI Filler Panel Installation

The SCXI front filler panel accessories protect the inside of the SCXI subsystem by preventing unwanted material from entering the PXI chassis and damaging modules or forming conductive paths that may degrade performance. Install all SCXI modules first, then, in any unused SCXI slots, install filler panels.

Front Filler Panel Installation

Front filler panels are the height of a full slot. Follow these steps to install SCXI front filler panels:

1. Place the filler panel with the captive screws in front of unused SCXI slots. Line up the screws with the threaded strip holes.
2. Using a flathead screwdriver, screw the two captive screws into the threaded strip holes.

System Configuration and Initialization Files

The PXI specification allows many combinations of PXI chassis and system modules. To assist system integrators, the manufacturers of PXI chassis and system modules must document the capabilities of their products. The minimum documentation requirements are contained in `.ini` files, which consist of ASCII text. The `.ini` files can be read by the system integrator and also can be used by configuration utilities and device drivers, if needed.

The documentation for PXI-1011 chassis is contained in the `chassis.ini` file on a diskette. The information in this file is combined with information about the system controller into a single system initialization file called `pxisys.ini`. The system controller manufacturer will either provide a `pxisys.ini` file for the particular chassis model that contains the system controller, or provide a utility that can read an arbitrary `chassis.ini` file and generate the corresponding `pxisys.ini` file. System controllers from National Instruments provide the `pxisys.ini` file for the PXI-1011 chassis so that the user should not need to use the `chassis.ini` file. Refer to the documentation provided by the system controller for more information on `pxisys.ini` and `chassis.ini` file.

Device drivers and other utility software read the `pxisys.ini` (PXI System Initialization) file to determine information about the system. The device drivers should have no need to directly read the `chassis.ini` file. For detailed information regarding initialization files, please refer to the PXI specification.

3

Maintenance

This chapter describes basic maintenance procedures for the PXI-1011 chassis.

Maintenance Procedures

Service Interval

Clean the chassis fan filters at a maximum interval of six months. Depending upon the amount of chassis use and ambient dust levels in the operating environment, the filters may require more frequent cleaning.

Clean dust from the chassis exterior and interior as needed, based on the operating environment. Periodic cleaning increases reliability.

Preparation

The information in this section is designed for use by qualified service personnel. Read the *For Your Safety* section at the beginning of this document before attempting any procedures in this chapter.



Caution Many components within the chassis are susceptible to static discharge damage. Service the chassis only in a static-free environment. Observe standard handling precautions for static-sensitive devices while servicing the chassis. Always wear a grounded wrist strap, or equivalent, while servicing the chassis.

Cleaning

Cleaning procedures consist of cleaning the exterior and interior of the chassis and fan filters. Refer to your PXI module documentation for information on cleaning the individual CompactPCI or PXI modules.



Caution Always power off the chassis and disconnect the power cable before cleaning or servicing the chassis.

Interior Cleaning

Use a dry, low-velocity stream of air to clean the chassis interior. Use a soft-bristle brush for cleaning around components. If you must use a liquid for minor interior cleaning, use a 75% isopropyl alcohol solution and rinse with deionized water.

Exterior Cleaning

Clean the exterior surfaces of the chassis with a dry lint-free cloth or a soft-bristle brush. If any dirt remains, wipe with a cloth moistened in a mild soap solution. Remove any soap residue by wiping with a cloth moistened with clear water. Do not use abrasive compounds on any part of the chassis.



Cautions Avoid getting moisture inside the chassis during exterior cleaning. Use just enough moisture to dampen the cloth.

Do *not* wash the front- or rear-panel connectors or switches. Cover these components while cleaning the chassis.

Do *not* use chemical cleaning agents: they may damage the chassis. Avoid chemicals that contain benzene, toluene, xylene, acetone, or similar solvents.

Fan Filter Cleaning

To easily remove the chassis cooling filters from the rear of the chassis, turn the power off, and remove the plastic housing attached to each fan.

To clean the fan filters, wash them in a mild soap solution and then vacuum or blow air through them. Rinse the filters with water and allow them to dry before reinstalling them onto the chassis.

Resetting the AC Main Circuit Breaker

If your PXI chassis encounters an over-current condition, the circuit breaker located on the rear panel will trip to prevent chassis damage. Refer to Figure 1-1, *Front View of the PXI-1011 Chassis*, and Figure 1-2, *Rear View of the PXI-1011 Chassis*, as you use the following procedures:

1. Turn off the system power switch.
2. Depress the circuit breaker to reset it.
3. Turn on the system power switch.

If the circuit breaker trips again, perform the following steps:

1. Turn off the system power switch.
2. Remove all modules from the chassis.
3. Depress the circuit breaker to reset it.
4. Turn on the system power switch and verify that the circuit breaker does not trip.
5. Verify that your PXI-1011 can meet the power requirements of your CompactPCI or PXI modules. Overloading the chassis can trip the breaker. Refer to Appendix A, *Specifications*, for power requirements.
6. The over-current condition that caused the circuit breaker to trip may be due to a faulty CompactPCI or PXI module. Refer to your module documentation to troubleshoot your modules.

Troubleshooting the PXI-1011

Refer to Table 3-1 to troubleshoot the PXI-1011 chassis. The table lists possible causes for power failure and recommends ways to correct the problem.

Table 3-1. Troubleshooting Power Failure

Possible Cause	What to Do
PXI-1011 chassis is not connected to power source	Make sure that the PXI-1011 is connected to a live electrical outlet. Try operating another piece of equipment from this outlet.
System power switch is not switched on	Set the system power switch to the On position.
SCXI power switch is not switched on	Set the SCXI power switch to the On position.
Short circuit condition exists	Remove all the module from the chassis. Carefully inspect all the wiring and remove the short circuit condition.
Circuit breaker is tripped	Reset the circuit breaker. Refer to the *Resetting the AC Main Circuit Breaker* section in this chapter.
Power supply has failed	Contact National Instruments.

A

Specifications

This appendix contains complete specifications for the PXI-1011 chassis.

System Electrical Characteristics

AC Input

Input voltage range..... 85-264 VAC

Input frequency range ..... 47 to 440 Hz

Over-current protection..... 5 A circuit breaker

Operating current ..... 4.2 A at low power line

AC to DC Power
Conversion Efficiency..... 70% typ

DC Output

Max usable power..... 140 W

PXI subsystem DC current capacity

Table A-1. Maximum Currents Available to PXI Subsystem

Voltage	I_{MAX} (Steady-state current)
+3.3 V	15.0 A
+5 V	12.0 A
+12 V	2.0 A
−12 V	0.5 A

SCXI subsystem DC current capacity

Table A-2. Maximum Currents Available to SCXI Subsystem

Voltage	I_{MAX} (Steady-state current)
+5 V	400 mA
V+(+20 V nominal)	1.36 A
V–(+20 V nominal)	1.36 A

Scaling the maximum current gives the allotted current per slot as follows:

V+ output.....170 mA

V– output.....170 mA

+5 V output.....50 mA

Regulation.....±5%, all outputs

Max ripple and noise .....1% from 0 to 20 MHz bandwidth

Over-current protection .....Constant current limiting at 140–150% of rated output

Over-voltage protection.....110% + 0.5V for each output

Power supply unit mean time between failure (MTBF).....100,000 h at 75% load and 25 °C ambient temperature

PXI Subsystem Cooling

Per slot cooling capacity.....Slot cooling capacity in worst-case slot is 20 W

Module cooling system.....Forced air circulation (positive pressurization) via two fans

Slot airflow direction .....P1 to P2, bottom of module to top of module

Module cooling intake .....Bottom rear of chassis

Module cooling exhaust.....Top sides of chassis

Power supply cooling system..... Forced air circulation via integrated fan

Power supply cooling intake..... Rear of chassis

Power supply cooling exhaust..... Sides of chassis

Safety

Safety characteristics..... UL 3111-1, IEC 1010-1, CSA; 22.2 No. 1010.1; Installation category II; Pollution degree 2; Safety class 1

Environmental

Operating temperature..... 0 to 50 °C

Storage temperature ..... –20 to 70 °C

Operating relative humidity ..... 10% to 90% (noncondensing)

Functional shock (operating) ..... MIL-T-28800E CLASS 3, Half-Sine Shock Pulse, 11 ms duration, 30 g peak

Random vibration (operational)..... 5 to 500 Hz, 0.31 g_{RMS}

Random vibration (non-operational)[1] ..... 10 to 500 Hz, 2.46 g_{RMS}

Altitude..... 2 km (1.24 mi)

[1] Random vibration profiles were developed in accordance with MIL-T-28800E CLASS 3 and MIL-STD-810E Method 514. Test levels exceed those recommended in MIL-STD-810E for Category 1 (Basic Transportation), Figures 514.4-1 through 514.4-3.

Compliance

EMC emissions	FCC Class A using limits of CISPR-11 and FCC Part 15 above 1 GHz; refer to DOC supplied with chassis for compliance to relevant directives
EMC immunity	Refer to DOC supplied with chassis for compliance to relevant directives

PXI Backplane

Size	3U-sized PXI subsystem; one system slot (with three system expansion slots) and three peripheral slots. Compliant with IEEE 1101.10 mechanical packaging. *PXI Specification Revision 1.0* compliant. Accepts both PXI and CompactPCI (PICMG 2.0 R2.1) 3U modules.
Backplane bare-board material	UL 94 V-0 rated
Backplane connectors	Conform to IEC 917 and IEC 1076-4-101, and are UL 94 V-0 rated

Mechanical

Overall dimensions	44.7 by 43.9 by 17.7 cm (17.6 by 17.3 by 7 in.)
Weight	9 kg (20 lb)

B

I/O Connectors

This appendix describes the P1 and P2 connector pin assignments for the PXI subsystem backplane.

Table B-1 shows the P1 (J1) connector pin assignments for the System Controller slot.

Table B-2 shows the P2 (J2) connector pin assignments for the System Controller slot.

Table B-3 shows the P1 (J1) connector pin assignments for the Star Trigger slot.

Table B-4 shows the P2 (J2) connector pin assignments for the Star Trigger slot.

Table B-5 shows the P1 (J1) connector pin assignments for the peripheral slots.

Table B-6 shows the P2 (J2) connector pin assignments for the peripheral slots.

Note PXI signals are shown in **bold**.

Table B-1. P1 (J1) Connector Pin Assignments for the 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

Table B-1. P1 (J1) Connector Pin Assignments for the System Controller Slot (Continued)

Pin	Z	A	B	C	D	E	F
17	GND	3.3V	SDONE	SBO#	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]#	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	BRSVP1A4	GND	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. P2 (J2) Connector Pin Assignments for the System Controller Slot

Pin	Z	A	B	C	D	E	F
22	GND	**PXI_RSVA22**	**PXI_RSVB22**	**PXI_RSVC22**	**PXI_RSVD22**	**PXI_RSVE22**	GND
21	GND	RSV	GND	RSV	RSV	RSV	GND
20	GND	RSV	RSV	RSV	GND	RSV	GND
19	GND	RSV	GND	RSV	RSV	RSV	GND
18	GND	**PXI_TRIG3**	**PXI_TRIG4**	**PXI_TRIG5**	GND	**PXI_TRIG6**	GND
17	GND	**PXI_TRIG2**	GND	PRST#	REQ6#	GNT6#	GND
16	GND	**PXI_TRIG1**	**PXI_TRIG0**	DEG#	GND	**PXI_TRIG7**	GND
15	GND	**PXI_BRSVA15**	GND	FAL#	REQ5#	GNT5#	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

Table B-2. P2 (J2) Connector Pin Assignments for the System Controller Slot (Continued)

Pin	Z	A	B	C	D	E	F
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	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. P1 (J1) Connector Pin Assignments 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	SDONE	SBO#	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]#	IDSEL	AD[23]	GND	AD[22]	GND

Table B-3. P1 (J1) Connector Pin Assignments for the Star Trigger Slot (Continued)

Pin	Z	A	B	C	D	E	F
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	BRSVP1A4	GND	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. P2 (J2) Connector Pin Assignments for the Star Trigger Slot

Pin	Z	A	B	C	D	E	F
22	GND	**PXI_RSVA22**	**PXI_RSVB22**	**PXI_RSVC22**	**PXI_RSVD22**	**PXI_RSVE22**	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	PRST#	**PXI_CLK10_IN**	**PXI_CLK10**	GND
16	GND	**PXI_TRIG1**	**PXI_TRIG0**	DEG#	GND	**PXI_TRIG7**	GND
15	GND	**PXI_BRSVA15**	GND	FAL#	**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

Table B-4. P2 (J2) Connector Pin Assignments for the Star Trigger Slot (Continued)

Pin	Z	A	B	C	D	E	F
4	GND	V(I/O)	**PXI_BRSVB 4**	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**	SYSEN#	**PXI_STAR7**	**PXI_STAR8**	GND
1	GND	**PXI_STAR9**	GND	**PXI_STAR10**	**PXI_STAR11**	**PXI_STAR12**	GND

Table B-5. P1 (J1) Connector Pin Assignments 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	SDONE	SBO#	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]#	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	BRSVP1A4	GND	V(I/O)	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	5V	INTD#	GND

Table B-5. P1 (J1) Connector Pin Assignments for the Peripheral Slot (Continued)

Pin	Z	A	B	C	D	E	F
2	GND	TCK	5V	TMS	TDO	TDI	GND
1	GND	5V	–12V	TRST#	+12V	5V	GND

Table B-6. P2 (J2) Connector Pin Assignments for the Peripheral Slot

Pin	Z	A	B	C	D	E	F
22	GND	**PXI_RSVA22**	**PXI_RSVB22**	**PXI_RSVC22**	**PXI_RSVD22**	**PXI_RSVE22**	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	PRST#	**PXI_STAR**	**PXI_CLK10**	GND
16	GND	**PXI_TRIG1**	**PXI_TRIG0**	DEG#	GND	**PXI_TRIG7**	GND
15	GND	**PXI_BRSVA15**	GND	FAL#	**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**	SYSEN#	**PXI_LBL7**	**PXI_LBL8**	GND
1	GND	**PXI_LBL9**	GND	**PXI_LBL10**	**PXI_LBL11**	**PXI_LBL12**	GND

C

Technical Support Resources

This appendix describes the comprehensive resources available to you in the Technical Support section of the National Instruments Web site and provides technical support telephone numbers for you to use if you have trouble connecting to our Web site or if you do not have internet access.

NI Web Support

To provide you with immediate answers and solutions 24 hours a day, 365 days a year, National Instruments maintains extensive online technical support resources. They are available to you at no cost, are updated daily, and can be found in the Technical Support section of our Web site at `www.ni.com/support`

Online Problem-Solving and Diagnostic Resources

- **KnowledgeBase**—A searchable database containing thousands of frequently asked questions (FAQs) and their corresponding answers or solutions, including special sections devoted to our newest products. The database is updated daily in response to new customer experiences and feedback.
- **Troubleshooting Wizards**—Step-by-step guides lead you through common problems and answer questions about our entire product line. Wizards include screen shots that illustrate the steps being described and provide detailed information ranging from simple getting started instructions to advanced topics.
- **Product Manuals**—A comprehensive, searchable library of the latest editions of National Instruments hardware and software product manuals.
- **Hardware Reference Database**—A searchable database containing brief hardware descriptions, mechanical drawings, and helpful images of jumper settings and connector pinouts.
- **Application Notes**—A library with more than 100 short papers addressing specific topics such as creating and calling DLLs, developing your own instrument driver software, and porting applications between platforms and operating systems.

Software-Related Resources

- **Instrument Driver Network**—A library with hundreds of instrument drivers for control of standalone instruments via GPIB, VXI, or serial interfaces. You also can submit a request for a particular instrument driver if it does not already appear in the library.
- **Example Programs Database**—A database with numerous, non-shipping example programs for National Instruments programming environments. You can use them to complement the example programs that are already included with National Instruments products.
- **Software Library**—A library with updates and patches to application software, links to the latest versions of driver software for National Instruments hardware products, and utility routines.

Worldwide Support

National Instruments has offices located around the globe. Many branch offices maintain a Web site to provide information on local services. You can access these Web sites from `www.ni.com/worldwide`

If you have trouble connecting to our Web site, please contact your local National Instruments office or the source from which you purchased your National Instruments product(s) to obtain support.

For telephone support in the United States, dial 512 795 8248. For telephone support outside the United States, contact your local branch office:

Australia 03 9879 5166, Austria 0662 45 79 90 0, Belgium 02 757 00 20,
Brazil 011 284 5011, Canada (Calgary) 403 274 9391,
Canada (Ontario) 905 785 0085, Canada (Québec) 514 694 8521,
China 0755 3904939, Denmark 45 76 26 00, Finland 09 725 725 11,
France 01 48 14 24 24, Germany 089 741 31 30, Greece 30 1 42 96 427,
Hong Kong 2645 3186, India 91805275406, Israel 03 6120092,
Italy 02 413091, Japan 03 5472 2970, Korea 02 596 7456,
Mexico (D.F.) 5 280 7625, Mexico (Monterrey) 8 357 7695,
Netherlands 0348 433466, New Zealand 09 914 0488,
Norway 32 27 73 00, Poland 0 22 528 94 06, Portugal 351 1 726 9011,
Singapore 2265886, Spain 91 640 0085, Sweden 08 587 895 00,
Switzerland 056 200 51 51, Taiwan 02 2528 7227,
United Kingdom 01635 523545

Glossary

Prefix	Meaning	Value
n-	nano-	10^{-9}
μ-	micro-	10^{-6}
m-	milli-	10^{-3}
c-	centi-	10^{-2}
k-	kilo-	10^{3}
M-	mega-	10^{6}

Symbols

°	degrees
≥	equal or greater than
≤	equal or less than
%	percent

A

A	amperes; unit of current
AC	alternating current
ANSI	American National Standards Institute
asynchronous timing	1. Hardware—a property of an event that is not synchronized to a reference clock 2. Software—a property of a function that begins an operation and returns before the operation is complete
AWG	American Wire Gauge

B

backplane	An assembly, typically a printed circuit board, with connectors and signal paths that bus the connector pins
bandwidth	The range of frequencies present in a signal, or the range of frequencies to which a measuring device can respond
bus	The group of connectors that interconnect individual circuitry in a computer. Typically, a bus is the expansion vehicle to which I/O or other devices are connected. The ISA and PCI buses are examples of PC buses.

C

C	Celsius
cfm	cubic feet per minute
CFR	code of Federal Regulations
combination chassis	A chassis that integrates the PXI and SCXI systems
CompactPCI	An adaptation of the Peripheral Component Interconnect (PCI) Specification 2.1 or later for industrial and/or embedded applications requiring a more robust mechanical form factor than desktop PCI. It uses industry standard mechanical components and high performance connector technologies to provide an optimized system intended for rugged applications. It is electrically compatible with the PCI Specification, which enables low cost PCI components to be utilized in a mechanical form factor suited for rugged environments.
CSA	Canadian Standards Association

D

daisy-chain	A method of propagating signals along a bus in which the devices are prioritized on the basis of their position on the bus
DAQ	data acquisition—collecting and measuring electrical signals from sensors, transducers, and test probes or fixtures and inputting them to a computer for processing

DC	direct current
DOC	Declaration of Conformity

E

ECL	emitter-coupled logic
EIA	Electronic Industries Association
EMC	Electromagnetic Compatibility

F

FCC	Federal Communications Commission

G

g	1. grams 2. A measure of acceleration equal to 9.8 m/s^2
GND	ground signal
GPIB	General Purpose Interface Bus (IEEE 488)
g_{RMS}	A measure of random vibration. The root mean square of acceleration levels in a random vibration test profile

H

h	hour
Hz	hertz; cycles per second

I

IEC	International Electrotechnical Commission; an organization that sets international electrical and electronics standards
IEEE	Institute of Electrical and Electronics Engineers

I_{MP}	mainframe peak current
in.	inches
I/O	input/output

L

lb	pounds
local bus	A group of signals that connect two peripheral slots

M

m	meters
max	maximum
min	minimum
MTBF	mean time between failure
MTTR	mean time to repair

N

NEMA	National Electrical Manufacturers Association

O

overcurrent condition	When the load on a power supply draws more current than what the power supply is rated for

P

PXI	PCI eXtensions for Instrumentation
PXI_CLK10	The pin that provides the PXI 10 MHz system clock signal to a peripheral slot

PXI_CLK_10_IN	The pin that a star trigger module uses to supply the PXI 10 MHz system clock signal
PXI backplane	The board section in the PXI subsystem that connects the PXI modules
PXI peripheral module	A PXI module that plugs into a PXI peripheral slot
PXI module	A PXI module that plugs into a PXI slot
PXI peripheral slot	Holds PXI peripheral modules
PXI subsystem	The PXI-1011 chassis section that uses PXI modules
PXI 10 MHz system clock signal	A 10 MHz clock reference provided by the PXI backplane to all peripheral modules

R

RH	relative humidity
RMS	root mean square—a method used to measure electrical output in volts and watts

S

s	seconds
SCXI	SCXI stands for Signal Conditioning eXtensions for Instrumentation and is a National Instruments product line designed to perform front-end signal conditioning for National Instruments plug-in DAQ devices.
SCXI subsystem	The PXI-1011 chassis section that uses SCXI modules
slot	The slot in the chassis where a module is inserted
ST	star trigger
Star Trigger slot	This slot is located at slot 2 and has a dedicated trigger line connected to each peripheral slot. Use this slot for a module with ST functionality that can provide individual triggers to all other peripherals.

synchronous timing
1. Hardware—a property of an event that is synchronized to a reference clock
2. Software—a property of a function that begins an operation and returns only when the operation is complete

system integrator — The party who connects pieces of hardware and software to create a complete system for the end user

System controller — A module configured for installation in Slot 0 of a PXIbus mainframe. This device is unique in the PXIbus system in that it performs the VMEbus system controller functions, including clock sourcing and arbitration for data transfers across the backplane. Installing such a device into any other slot can damage the device, the PXIbus backplane, or both.

T

trigger — Any event that causes or starts some form of data capture

TTL — transistor-transistor logic

typ — typical

U

UL — Underwriters Laboratories

V

V — volts

V_{PP} — peak to peak voltage

VAC — volts alternating current

W

W — watts

Index

A

AC main circuit breaker, resetting, 3-2 to 3-3

C

cables
    optional, 1-3
    power cables (table), 1-2
circuit breaker, resetting, 3-2 to 3-3
cleaning procedures, 3-1 to 3-2
    exterior cleaning, 3-2
    fan filters, 3-2
    interior cleaning, 3-2
    precautions, 3-2
clock, system reference, 1-9 to 1-10
CompactPCI, interoperability with PXI subsystem, 1-7
compliance specifications, A-4
configuration. *See also* installation.
    configuration and initialization files, 2-5
cooling specifications, PXI subsystem backplane, A-2 to A-3

D

diagnostic resources, online, C-1
documentation
    conventions used, *xi*
    National Instruments documentation, *xii*
    related documentation, *xiii*

E

environmental specifications, A-3
equipment, optional, 1-3

F

fans and filters
    filter cleaning procedures, 3-2
    PXI subsystem cooling specifications, A-2 to A-3
    rear view of PXI-1011 (figure), 1-6
filler panel installation
    PXI subsystem, 2-3
    SCXI subsystem, 2-4

G

ground connection, 2-2

I

initialization files, 2-5
installation
    configuration and initialization files, 2-5
    mounting information, 2-1
    PXI filler panel, 2-3
    PXI module, 2-3
    PXI-1011 chassis, 2-1 to 2-2
        connecting safety ground, 2-2
        procedure, 2-2
    SCXI filler panels, 2-4
    SCXI module, 2-4
    unpacking the PXI-1011 chassis, 1-2 to 1-3
I/O connector, B-1 to B-6
    P1 (J1) connector pin assignments
        peripheral slot (table), B-5 to B-6
        Star Trigger slot (table), B-3 to B-4
        System Controller slot (table), B-1 to B-2

P2 (J2) connector pin assignments
peripheral slot (table), B-6
Star Trigger slot (table), B-4 to B-5
System Controller slot (table), B-2 to B-3

L

LEDs on front panel
description (table), 1-4
parts locator diagram, 1-4
local bus
description, 1-8 to 1-9
Star Trigger and local bus routing (figure), 1-9

M

maintenance, 3-1 to 3-3
cleaning, 3-1 to 3-2
fan filter cleaning, 3-2
preparation for maintenance, 3-1
resetting AC main circuit breaker, 3-2 to 3-3
service interval, 3-1
static discharge damage (caution), 3-1
troubleshooting the PXI-1011, 3-3
manual. *See* documentation.
mounting information, 2-1

N

National Instruments Web support, C-1 to C-2

O

online problem-solving and diagnostic resources, C-C-1
optional equipment, 1-3

P

P1 (J1) connector pin assignments
peripheral slot (table), B-5 to B-6
Star Trigger slot (table), B-3 to B-4
System Controller slot (table), B-1 to B-2
P2 (J2) connector pin assignments
peripheral slot (table), B-6
Star Trigger slot (table), B-4 to B-5
System Controller slot (table), B-2 to B-3
peripheral slots
description, 1-8
P1 (J1) connector pin assignments (table), B-5 to B-6
P2 (J2) connector pin assignments (table), B-6
parts locator diagram, 1-4
power cables (table), 1-2
power failure, troubleshooting (table), 3-3
problem-solving and diagnostic resources, online, C-1
PXI subsystem, 1-7 to 1-10
backplane specifications, A-4
cooling specifications, A-2 to A-3
electrical characteristics, A-1 to A-2
AC input, A-1
DC output, A-1 to A-2
installation, 2-1 to 2-2
connecting safety ground, 2-2
filler panel installation, 2-3
procedure, 2-2
interoperability with CompactPCI, 1-7
local bus, 1-8
peripheral slots, 1-8
SCXI control slot, 1-9
Star Trigger and local bus routing (figure), 1-9
Star Trigger slot, 1-8
System Controller slot, 1-8
system reference clock, 1-9 to 1-10
trigger bus, 1-9

PXI-1011 chassis
front view items
descriptions (table), 1-4 to 1-5
parts locator diagram, 1-4
initialization files, 2-7
installation, 2-1 to 2-2
key features, 1-3
maintenance procedures, 3-1 to 3-2
optional equipment, 1-3
overview, 1-1
PXI subsystem. *See* PXI subsystem.
rear view items
descriptions (table), 1-6 to 1-7
parts locator diagram, 1-6
requirements for getting started, 1-1 to 1-2
resetting AC main circuit breaker, 3-2 to 3-3
SCXI subsystem overview, 1-7
specifications. *See* specifications.
troubleshooting power failure, 3-3
unpacking, 1-2 to 1-3

R

reference clock, 1-9 to 1-10
requirements for getting started, 1-1 to 1-2
resetting AC main circuit breaker, 3-2 to 3-3

S

safety ground connection, 2-2
safety information, *vi*
safety specifications, A-3
SCXI subsystem
control slot for PXI peripheral module, 1-9
installation
filler panel installation, 2-4
procedure, 2-4
overview, 1-7
software-related resources, C-2
specifications, A-1 to A-4
backplane, A-4
compliance, A-4
environmental, A-3
mechanical, A-4
PXI subsystem cooling, A-2 to A-3
PXI subsystem electrical characteristics, A-1 to A-2
safety characteristics, A-3
Star Trigger slot
description, 1-8
P1 (J1) connector pin assignments (table), B-3 to B-4
P2 (J2) connector pin assignments (table), B-4 to B-5
parts locator diagram, 1-4
Star Trigger and local bus routing (figure), 1-9
System Controller slot
description, 1-8
P1 (J1) connector pin assignments (table), B-1 to B-2
P2 (J2) connector pin assignments (table), B-2 to B-3
parts locator diagram, 1-4
system reference clock, 1-9 to 1-10

T

technical support resources, C-1 to C-2
trigger bus, overview, 1-9
troubleshooting PXI-1011 power failure (table), 3-3

U

unpacking the PXI-1011 chassis, 1-2 to 1-3

W

Web support from National Instruments, C-1 to C-2
  online problem-solving and diagnostic resources, C-1
  software-related resources, C-2
Worldwide technical support, C-2

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP