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PCI-8252

NI PCI-8252 Quick Start Guide

The NI PCI-8252 is a highly flexible IEEE 1394a interface device for PCI. The following sections describe how to get started using the NI PCI-8252.

Installing the NI PCI-8252

The following section contains a list of necessary and optional items for acquiring images with the NI PCI-8252. This section also explains how to unpack, configure, and install the NI PCI-8252.

What You Need to Get Started

You need the following items to set up and use the NI PCI-8252:

- NI-IMAQ for IEEE 1394 Cameras Software Installation Guide*
- NI-IMAQ for IEEE 1394 Cameras and documentation



Note PDFs of the NI-IMAQ for IEEE 1394 Cameras documentation are installed on your computer at <NI-IMAQ for IEEE 1394>/docs where <NI-IMAQ for IEEE 1394> is the location to which NI-IMAQ for IEEE 1394 Cameras is installed.

- Computer with at least one PCI slot running Windows 2000/XP
- IEEE 1394 Camera
- Optional software packages and documentation:
 - IMAQ Vision for LabVIEW, LabWindows™/CVI™, or Measurement Studio (Visual Basic)
 - Vision Builder for Automated Inspection
 - LabVIEW
 - LabWindows/CVI
 - Measurement Studio
- IEEE 1394 cable

Safety Information



Caution The following paragraphs contain important safety information you *must* follow when installing and operating the device.

Do *not* operate the device in a manner not specified in the documentation. Misuse of the device may result in a hazard and may compromise the safety protection built into the device. If the device is damaged, turn it off and do *not* use it until service-trained personnel can check its safety. If necessary, return the device to National Instruments for repair.

Keep away from live circuits. Do *not* remove equipment covers or shields unless you are trained to do so. If signal wires are connected to the device, hazardous voltages can exist even when the equipment is turned off. To avoid a shock hazard, do *not* perform procedures involving cover or shield removal unless you are qualified to do so. Disconnect all field power prior to removing covers or shields.

If the device is rated for use with hazardous voltages ($>30 V_{\text{rms}}$, $42.4 V_{\text{pk}}$, or $60 V_{\text{dc}}$), it may require a safety earth-ground connection wire. Refer to the device specifications for maximum voltage ratings.

Because of the danger of introducing additional hazards, do *not* install unauthorized parts or modify the device. Use the device only with the chassis, modules, accessories, and cables specified in the installation instructions. All covers and filler panels *must* be installed while operating the device.

Do *not* operate the device in an explosive atmosphere or where flammable gases or fumes may be present. Operate the device only at or below the pollution degree stated in the specifications. Pollution consists of any foreign matter—solid, liquid, or gas—that may reduce dielectric strength or surface resistivity. The following is a description of pollution degrees.

- Pollution Degree 1—No pollution or only dry, nonconductive pollution occurs. The pollution has no effect.
- Pollution Degree 2—Normally only nonconductive pollution occurs. Occasionally, nonconductive pollution becomes conductive because of condensation.
- Pollution Degree 3—Conductive pollution or dry, nonconductive pollution occurs. Nonconductive pollution becomes conductive because of condensation.

Clean the device and accessories by brushing off light dust with a soft, nonmetallic brush. Remove other contaminants with a stiff, nonmetallic brush. The unit *must* be completely dry and free from contaminants before returning it to service.

You *must* insulate signal connections for the maximum voltage for which the device is rated. Do *not* exceed the maximum ratings for the device. Remove power from signal lines before connection to or disconnection from the device.



Caution National Instruments measurement products may be classified as either Measurement Category I or II. Operate products at or below the Measurement Category level specified in the hardware specifications.

Measurement Category¹: Measurement circuits are subjected to working voltages² and transient stresses (overvoltage) from the circuit to which they are connected during measurement or test. Measurement Category establishes standardized impulse withstand voltage levels that commonly occur in electrical distribution systems. The following is a description of Measurement (Installation³) Categories:

- Measurement Category I is for measurements performed on circuits *not* directly connected to the electrical distribution system referred to as MAINS⁴ voltage. This category is for measurements of voltages from specially protected secondary circuits. Such voltage measurements include signal levels, special equipment, limited-energy parts of equipment, circuits powered by regulated low-voltage sources, and electronics.
- Measurement Category II is for measurements performed on circuits directly connected to the electrical distribution system. This category refers to local-level electrical distribution, such as that provided by a standard wall outlet (e.g., 115 V for U.S. or 230 V for Europe). Examples of Measurement Category II are measurements performed on household appliances, portable tools, and similar products.
- Measurement Category III is for measurements performed in the building installation at the distribution level. This category refers to measurements on hard-wired equipment such as equipment in fixed installations, distribution boards, and circuit breakers. Other examples are wiring, including cables, bus-bars, junction boxes, switches, socket-outlets in the fixed installation, and stationary motors with permanent connections to fixed installations.

¹ Measurement Categories as defined in electrical safety standard IEC 61010-1.

² Working voltage is the highest rms value of an AC or DC voltage that can occur across any particular insulation.

³ Measurement Category is also referred to as Installation Category.

⁴ MAINS is defined as the (hazardous live) electrical supply system to which equipment is designed to be connected for the purpose of powering the equipment. Suitably rated measuring circuits may be connected to the MAINS for measuring purposes.

- Measurement Category IV is for measurements performed at the primary electrical supply installation (<1,000 V). Examples include electricity meters and measurements on primary overcurrent protection devices and on ripple control units.

Unpacking

The NI PCI-8252 ships in an antistatic package to prevent electrostatic discharge from damaging device components. To avoid such damage in handling the device, take the following precautions:

- Ground yourself via a grounding strap or by holding a grounded object, such as the computer chassis.
- Touch the antistatic package to a metal part of the computer chassis before removing the device from the package.



Caution *Never* touch the exposed pins of connectors.

Remove the device from the package and inspect it for loose components or any other signs of damage. Notify National Instruments if the device appears damaged in any way. Do *not* install a damaged device in the computer.

Store the NI PCI-8252 in the antistatic package when not in use.

Installation

The following instructions are for general installation. Refer to the documentation provided by your computer manufacturer for specific instructions and warnings. Refer to the [Specifications](#) section for a list of the typical power requirements for the device.

1. Install the NI-IMAQ for IEEE 1394 Cameras driver software before installing the NI PCI-8252 device.



Note For information about how to install NI-IMAQ for IEEE 1394 Cameras, refer to the *NI-IMAQ for IEEE 1394 Cameras Software Installation Guide*.

2. Power off and unplug the computer.



Caution To protect yourself and the computer from electrical hazards, the computer *must* remain unplugged until the installation is complete.

3. Remove the computer cover to expose access to the expansion slots.
4. Choose an unused PCI slot, and remove the corresponding expansion slot cover on the back panel of the computer.

5. Touch a metal part on the computer case to discharge any static electricity that might be on your clothes or body before handling the NI PCI-8252. Static electricity can damage the device.
6. Remove the NI PCI-8252 from the antistatic package and gently rock the NI PCI-8252 into the slot. The connection may be tight, but do *not* force the device into place.



Note Check that the bracket of the NI PCI-8252 lines up with the hole in the back panel rail of the computer chassis.

7. Unless your computer secures expansion devices in a different manner, screw the mounting bracket of the device to the back panel rail of the computer.
8. Replace the cover.
9. Plug in and power on the computer.

Your NI PCI-8252 is now installed.

Configuring the NI PCI-8252

After you have installed the NI PCI-8252 and powered on your computer, Windows will recognize the device and assign resources to it. Use Measurement & Automation Explorer (MAX), the National Instruments configuration utility, to configure the IEEE 1394 camera connected to the NI PCI-8252 for acquisition.



Note You must install NI-IMAQ for IEEE 1394 Cameras 2.0.1 or later before configuring your camera in MAX. Refer to the *NI-IMAQ for IEEE 1394 Cameras Software Installation Guide* for more information about how to configure your camera.

Specifications

These specifications are typical at 25 °C, unless otherwise stated.



Caution Misuse of this equipment may impair the protection features included.

Physical

Dimensions

PCI 6.40 × 12.16 cm (2.52 × 4.79 in.)

Connector

| | |
|------------|-------------------|
| 1394 | Female, 6 pin (3) |
| PCI | 32-bit, Universal |

Signaling

| | |
|---------------------------|---|
| PCI V _{io} | Universal, 33 MHz |
| 1394 | IEEE 1394a-1995 S100, S200, S400 transfer rates, OHCI v1.1 software interface. Actual 1394 transfer rates are system dependent. |

Power Consumption

| | |
|---------------|------------------------------|
| Typical | 0 mA at 5 V = 0 mW |
| | 0 mA at 3.3 V = 0 mW |
| | 40 mA at 12 V = 480 mW (max) |

Bus Power

| | |
|------------|--|
| 1394 | 12 V ±10%, 12 W total, up to 9.6 W/port with ATX power connected |
|------------|--|

Operating Environment

The NI PCI-8254 device is intended for indoor use only.

| | |
|-----------------------------------|--|
| Ambient temperature range | 0 °C to 55 °C |
| Operating relative humidity | 20% to 80%, noncondensing |
| Altitude | 2,000 m (at 25 °C ambient temperature) |
| Pollution Degree | 2 |
| Measurement Category | I |



Caution Do *not* use the NI PCI-8252 for connection to signals within Measurement Categories II, III, or IV.

Storage Environment

Ambient temperature range..... –20 °C to 60 °C

Storage relative humidity 20% to 95%, noncondensing

Safety

This product is designed to meet the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1
- CAN/CSA-C22.2 No. 61010-1



Note For UL and other safety certifications, refer to the product label, or visit ni.com/certification, search by model number or product line, and click the appropriate link in the Certification column.

Electromagnetic Compatibility

Emissions EN 55011 Class A at 10 m
FCC Part 15A above 1 GHz

Immunity EN 61326:1997 + A2:2001,
Table 1

CE, C-Tick, and FCC Part 15 (Class A) Compliant



Note For EMC compliance, operate this device with shielded cabling.

CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE Marking, as follows:

Low-Voltage Directive (safety) 73/23/EEC

Electromagnetic Compatibility
Directive (EMC) 89/336/EEC



Note Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit ni.com/certification, search by model number or product line, and click the appropriate link in the Certification column.

Where to Go for Support

The National Instruments Web site is your complete resource for technical support. At ni.com/support you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

A Declaration of Conformity (DoC) is our claim of compliance with the Council of the European Communities using the manufacturer's declaration of conformity. This system affords the user protection for electronic compatibility (EMC) and product safety. You can obtain the DoC for your product by visiting ni.com/certification. If your product supports calibration, you can obtain the calibration certificate for your product at ni.com/calibration.

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