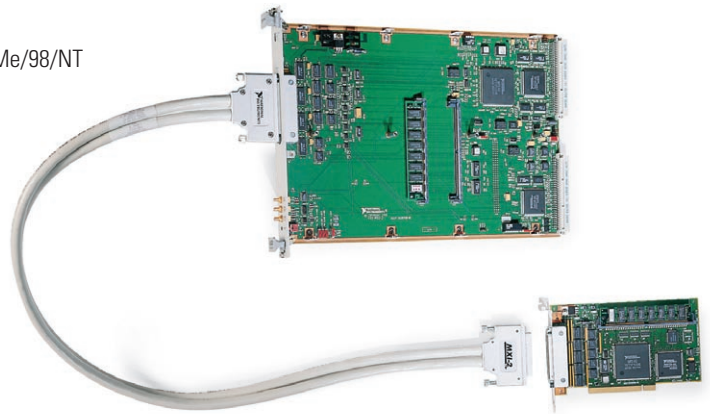


# VXIbus Interface Kits for PCI

## NI VXI-PCI80xx

- VXIplug&play compliance
  - Complete interface to VXI from any PCI-based computer or workstation
  - VXI Slot 0 capability, including Resource Manager
  - Word-serial (message-based) communication
  - Register-based communication
  - Direct trigger and interrupt control
  - Direct access to VXI memory space
  - High-performance DMA transfers using the MITE ASIC
  - Maximum throughput across MXIbus
    - 33 MB/s burst
    - 23 MB/s sustained
  - Optional dual-ported DRAM expansion
    - 64 MB maximum on VXI-MXI-2
    - 16 MB maximum on PCI-MXI-2
- Expandable to several VXI or VME mainframes using MXIbus
  - C-size and B-size options
- Driver Software**
- NI-VXI/NI-VISA
    - Windows Vista/XP/2000/Me/98/NT
    - Solaris 2
    - HP-UX
    - Mac OS
    - Linux
  - NI-VXI
    - Windows 3.1/DOS
- Application Software**
- LabVIEW
  - Measurement Studio



## Overview

NI VXI-PCI80xx interface kits link any PCI-based computer directly to the VXIbus using the high-speed MXI-2 bus. These kits make your computer perform as if it were plugged directly into the VXI backplane, giving your external computer the capability of an embedded computer. VXI-PCI80xx kits feature VXIplug&play compliance and integrated software, including intuitive tools for troubleshooting and debugging VXI systems. With the comprehensive NI-VXI/NI-VISA software and programming libraries, you can program multiple mainframe configurations, yet maintain software compatibility across a variety of VXI controller platforms.

## Hardware

Each VXI-PCI80xx kit includes one half-size PCI plug-in board, the NI PCI-MXI-2, which is installed in an available PCI slot in your computer; one C-size or B-size NI VXI-MXI-2 Slot 0 module that plugs directly into your VXI mainframe; a flexible MXI-2 cable; and NI-VXI/NI-VISA VXIbus interface software. Because a VXI-PCI80xx comes complete with NI-VXI/NI-VISA, you do not need to modify your applications written with NI-VXI and/or NI-VISA.

With a VXI-PCI80xx, you achieve superior performance by incorporating the MITE ASIC on the PCI-MXI-2 and VXI-MXI-2 devices. National Instruments developed the MITE custom ASIC to streamline the connection between PCI computers and workstations to both the MXI and VXI buses. Using the MITE, you can transfer data between the local computer memory and VXI devices at a 33 MB/s burst rate. You can consistently realize a 23 MB/s sustained throughput rate for data transfers across the MXIbus.

The VXI-PCI80xx series is a flexible, high-performance solution for stand-alone computer control of VXI systems. Any PCI-based computer running Windows Vista/XP/2000/Me/98/NT, Solaris 2, HP-UX, Mac OS, or Windows 3.1/DOS can use the VXI-PCI80xx kits, giving you the freedom to choose from the wide variety of general-purpose desktop computers. PCs equipped with a VXI-PCI80xx kit combine the high-performance MXI-2 interface with low-cost, general-purpose desktop computers to produce an attractive cost/performance solution compared to embedded VXI controllers. By using MXI as your control solution, you can upgrade your PC at any time to capitalize on the latest computer technology while using the same high-speed VXIbus interface.

The VXI-MXI-2 module installed in your VXI mainframe has VXI Slot 0 capability. The Slot 0 functions include a MODID register and a CLK10 source. The VXI-MXI-2 works with register-based Slot 0 functions, which the Resource Manager software in your PC uses to bring up the mainframe and begin normal operation. The VXI-MXI-2 can also reside in Non-Slot 0, meaning that you can also insert the VXI-MXI-2 into any slot in the VXI chassis. The VXI-MXI-2 incorporates automatic Slot 0 detection so that you can move the VXI-MXI-2 from Slot 0 to Non-Slot 0 without configuring any jumpers or switches.

## Multiple-Mainframe Systems

Because the MXIbus is a full 32-bit multimaster system bus that interconnects several devices at the hardware bus level, you can easily add more mainframes to a VXI-PCI80xx configuration in a software-transparent fashion using VXI-MXI-2 mainframe extenders. These additional mainframes are daisy chained to your

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computer and first mainframe using MXIbus cables up to 20 m in length. If your system requires VME boards, you can even integrate one or more VME chassis into your system using the NI VME-MXI-2 chassis extender. This is often much more cost-effective than using adapter brackets to install VME boards into valuable VXI slots. Your computer has full Slot 0 control of each mainframe; all devices in all mainframes can communicate with each other as if in a single mainframe, with no special programming requirements.

### Shared Memory

With a VXI-PCI80xx, VXI devices also have access to the computer's internal memory. In other words, your computer memory is dual-ported to the VXIbus. VXI bus masters can move data directly to or from the computer memory. You can effectively manage this operation by using the NI-VXI/NI-VISA software driver provided with the VXI-PCI80xx kits. By using shared memory, the computer acts as a VXI slave device. The computer memory, which you can dual-port to the VXIbus, resides in either the VXI A24 or A32 space. This means that VXI devices that have VXI bus master capability can move data directly to and from the local memory of your computer.

### Software

VXI-PCI80xx kits come with NI-VXI/NI-VISA software, making them completely compliant with VXIplug&play Systems Alliance specifications. You can run all the latest VXIplug&play software, including executable soft front panels, with which you can operate the instrument immediately, and standardized LabVIEW and Measurement Studio instrument drivers to simplify your programming tasks. NI-VXI/NI-VISA software features a VXIbus interface library that works with several popular programming environments and compilers, including Microsoft Visual C++, Borland C++, Microsoft Visual Basic, Measurement Studio, and LabVIEW. Application software developed using a VXI-PCI80xx and NI-VXI/NI-VISA bus interface software is compatible with many other VXI controller platforms, including embedded controllers and computers equipped with MXI interfaces. NI-VXI and NI-VISA I/O software compatibility across platforms protects your software investment in the future. You can easily port VXI software to other platforms as your controller requirements change or expand in the future.

### Ordering Information

NI VXI-PCI8015 (Windows Vista/XP/2000/NT).....	777119-02
NI VXI-PCI8012 (Windows Me/98) .....	777119-03
NI VXI-PCI8010 (Windows 3.1/DOS).....	777119-01
NI VXI-PCI8040 (Mac OS).....	777119-04
NI VXI-PCI8022 (Solaris 2).....	777119-05
NI VXI-PCI8024 (HP-UX) .....	777119-06
NI VXI-PCI8026 (Linux) .....	777119-084

Kits include one PCI-MXI-2 board, one C-size VXI-MXI-2 module, NI-VXI/NI-VISA software, and a MXI-2 cable.

### BUY NOW

For complete product specifications, pricing, and accessory information, call 800 813 3693 (U.S.) or go to [ni.com/vxi](http://ni.com/vxi).

# VXIbus Interface Kits for PCI

## Specifications

### VXI-PCI80xx

Address access .....	A32, A24, A16
Transfer width (master).....	D64, D32, D16, D08 (EO)
Transfer width (slave).....	D32, D16, D08 (EO)
Maximum MXI throughput (peak).....	33 MB/s
Maximum MXI throughput (sustained)....	23 MB/s
Read, modify, write cycles .....	Yes
VME block cycles .....	Yes

### VXI-MXI-2

#### Physical

DRAM options.....	4, 8, 16, 32, 64 MB
MXIbus automatic termination.....	Yes
Automatic Slot 0 detection.....	Yes
Software configurable.....	Yes
Dimensions.....	23.3 by 34.0 cm (9.2 by 13.4 in.)
Weight.....	1.0 kg (2.2 lb)
Size .....	C-size, C-1

#### Operating Environment

Temperature.....	0 to 55 °C
Humidity.....	10 to 90% noncondensing

#### Storage Environment

Temperature.....	-40 to 85 °C
Humidity.....	0 to 95% noncondensing

#### Power Requirements

VDC	Typical	Maximum
+5	2.50 A	3.5 A
-2	80 mA	100 mA
-5.2	180 mA	255 mA

#### Cooling

Average power.....	19 W
Airflow.....	1.5 liters/s
Back pressure.....	0.08 mm H <sub>2</sub> O

### PCI-MXI-2

PCI interrupts.....	1 (INTA)
Software configurable.....	Yes
Dimensions.....	10.7 by 17.5 cm (4.2 by 6.9 in.)
Weight.....	181.8 g (0.4 lb)

#### Power requirement

+5 VDC.....	2.2 A, typical, 3.5 A, maximum
DRAM options.....	4, 16 MB

## Safety and Compliance

### 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, CSA 61010-1

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

### Electromagnetic Compatibility

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

- EN 61326 EMC requirements; Minimum Immunity
- EN 55011 Emissions; Group 1, Class A
- CE, C-Tick, ICES, and FCC Part 15 Emissions; Class A

**Note:** For EMC compliance, operate this device according to product documentation.

### CE Compliance

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

- 2006/95/EC; Low-Voltage Directive (safety)
- 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

**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](http://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

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start-up assistance to turnkey system integration. Visit [ni.com/alliance](http://ni.com/alliance).

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## Hardware Services

### System Assurance Programs

NI system assurance programs are designed to make it even easier for you to own an NI system. These programs include configuration and deployment services for your NI PXI, CompactRIO, or Compact FieldPoint system. The NI Basic System Assurance Program provides a simple integration test and ensures that your system is delivered completely assembled in one box. When you configure your system with the NI Standard System Assurance Program, you can select from available NI system driver sets and application development environments to create customized, reorderable software configurations. Your system arrives fully assembled and tested in one box with your software preinstalled. When you order your system with the standard program, you also receive system-specific documentation including a bill of materials, an integration test report, a recommended maintenance plan, and frequently asked question documents. Finally, the standard program reduces the total cost of owning an NI system by providing three years of warranty coverage and calibration service. Use the online product advisors at [ni.com/advisor](http://ni.com/advisor) to find a system assurance program to meet your needs.

### Calibration Services

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