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Find the *National Instruments VXI-MXI-2* at our website: *Click HERE*

Technical Sales

(866) 531-6285
orders@ni.com

Requirements and Compatibility | Ordering Information

For user manuals and dimensional drawings, visit the product page resources tab on ni.com.

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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
- 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
- Direct trigger and interrupt control
- High-performance DMA transfers using the MITE ASIC
- Direct access to VXI memory space
- Expandable to several VXI or VME mainframes using MXIbus
- C-size and B-size options

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.

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Requirements and Compatibility

OS Information

- Linux®
- Windows

Driver Information

- NI-VISA
- NI-VXI

Software Compatibility

- LabVIEW
- LabWindows/CVI
- Measurement Studio

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Application and Technology

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, Linux, Solaris, and Mac OS 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.

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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.

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.

The shipping kits work with Windows 7, Windows Vista, and Windows XP OSs. For alternate OSs, NI-VXI is available online under Drivers and Updates. These older drivers work with the VXI-PCI80xx kits.

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 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.

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Ordering Information

For a complete list of accessories, visit the product page on ni.com.

Products	Part Number	Recommended Accessories	Part Number
VXI-MXI-2 for PCI			
NI VXI-PCI8026 (Linux)	777119-084	No accessories required.	
NI VXI-PCI8015 (Windows)	777119-02	No accessories required.	

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Support and Services

Technical Support

Get answers to your technical questions using the following National Instruments resources.

- **Support** - Visit ni.com/support to access the NI KnowledgeBase, example programs, and tutorials or to contact our applications engineers who are located in NI sales offices around the world and speak the local language.
- **Discussion Forums** - Visit forums.ni.com for a diverse set of discussion boards on topics you care about.
- **Online Community** - Visit community.ni.com to find, contribute, or collaborate on customer-contributed technical content with users like you.

Repair

While you may never need your hardware repaired, NI understands that unexpected events may lead to necessary repairs. NI offers repair services performed by highly trained technicians who quickly return your device with the guarantee that it will perform to factory specifications. For more information, visit ni.com/repair.

Training and Certifications

The NI training and certification program delivers the fastest, most certain route to increased proficiency and productivity using NI software and hardware. Training builds the skills to more efficiently develop robust, maintainable applications, while certification validates your knowledge and ability.

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- **On-site training at your facility** - an excellent option to train multiple employees at the same time.
- **Online instructor-led training** - lower-cost, remote training if classroom or on-site courses are not possible.
- **Course kits** - lowest-cost, self-paced training that you can use as reference guides.
- **Training memberships** and training credits - to buy now and schedule training later.

Visit ni.com/training for more information.

Extended Warranty

NI offers options for extending the standard product warranty to meet the life-cycle requirements of your project. In addition, because NI understands that your requirements may change, the extended warranty is flexible in length and easily renewed. For more information, visit ni.com/warranty.

OEM

NI offers design-in consulting and product integration assistance if you need NI products for OEM applications. For information about special pricing and services for OEM customers, visit ni.com/oem.

Alliance

Our Professional Services Team is comprised of NI applications engineers, NI Consulting Services, and a worldwide National Instruments Alliance Partner program of more than 700 independent consultants and integrators. Services range from start-up assistance to turnkey system integration. Visit ni.com/alliance.

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