LXI™-VXI Gigabit Ethernet Slot 0 Interface

Overview

VXI Technology's EX2500A is the industry's first gigabit LAN-based VXI slot 0 interface, merging Ethernet's robust architecture and widespread infrastructure and the fast emerging LXI standard for instrumentation with the popular VXIbus platform. Recognizing that many system designers require hardware that is compatible with legacy systems, but also desire to adopt new technologies, the EX2500A integrates key features of the LXI standard to create a versatile interface that extends the VXIbus to an external host through the power of Ethernet.

The Power of LXI

The VXI TTL trigger bus is a powerful component of VXI-based systems and is used to facilitate hardware handshaking between modules, freeing up the CPU for other tasks. With the introduction of the EX2500A, all eight of the VXI TTL triggers can now be extended across multiple mainframes and to other LXI devices through the LXI Trigger Bus compliant front panel connectors (LVDS). Additionally, the EX2500A incorporates the LXI standard VXI-11 instrument discovery mechanism, greatly simplifying integration within hybrid systems.

Data Transfer Rates

As technology moves toward more data intensive applications in the functional test and data acquisition environments, the ability to quickly offload data to the host controller for processing is critical. The EX2500A is a high-speed gigabit serial communications device and has been optimized for transferring blocks of data in excess of 40 MB/s, faster than any other serial interface currently found in the industry today. A high-performance DMA controller is used during block moves to achieve superior transfer rates. This is accomplished without compromising traditional message-based (word-serial) command performance.

Simplified Cabling and Connectivity

Communication back to the host processor is achieved using a standard CAT5e Ethernet cable. Distances between mainframe and host of up to 200 meters can be realized. A fiberoptic connection is available if even greater distances are required. Wireless control of VXI instruments is also now possible through the use of wireless routers. The EX2500A achieves top performance when connected to a gigabit LAN interface which is also a standard item in CPU motherboards. Low-cost gigabit Ethernet switches can be used to connect multiple mainframes to a single host. For legacy systems, SMB connectors are provided for single-line trigger input/output as well as external reference clock input/output.

EX2500A LXI™-VXI Gigabit Ethernet Slot 0 Interface

Features

Up to 10 kM distance from PC to mainframe through fiberoptic interface

40 MB/s block transfer rates

Embedded Web Interface provides interactive utility to control instruments

Rack-Rack TTL trigger extension through on-board LXI Trigger Bus

Backward compatibility with VXI 1.4 and 2.0 products

External Clock In/Out with on-board options for TCXO/OCXO

VXI*plug&play* compliant

Controllers

EX2500A

LXI™-VXI Gigabit Ethernet Slot 0 Interface
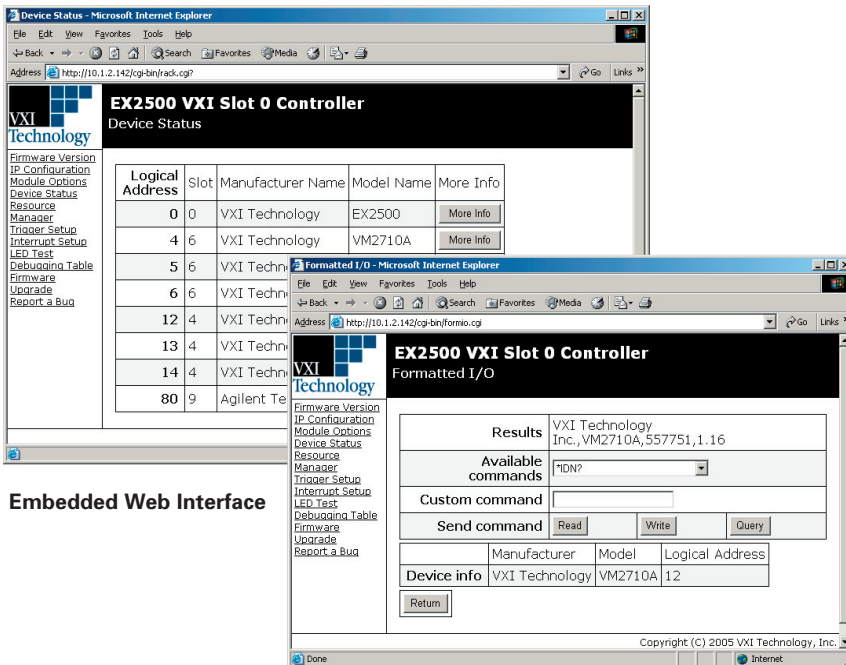
Familiar Software Interfaces

The EX2500A is fully compliant with the VXI*plug&play* specifications and implements VISA as the API communication layer. A standard VISA I/O library is included and integrates seamlessly with either Agilent Technologies or National Instruments™ versions of VISA. This greatly simplifies installation of the EX2500A into legacy systems using the VISA protocol and preserves any investment in existing TPS and driver development by eliminating the need for costly code modifications.

The VXI Resource Manager is executed automatically at power up time and all system resources are allocated without the need to run a separate utility. The EX2500A runs an embedded web interface and system status including installed VXI hardware, memory allocation, IP configuration and logical address information can be viewed through an .html LXI-style web page. Direct communication to installed devices through message or register-based commands, can be achieved through this interface. Firmware updates to the module can be accomplished through a few mouse clicks.

Specifications

Size: 1-slot, C-size

Slot 0 Capability: Yes

Resource Manager: Embedded

Embedded Web Interface

Address Space Access: A16/A24/A32

VXI Revision Compliance: 1.4, 2.0, 3.0

Maximum Data Transfer Rate (Block Move): 40MB/s

DRAM: 256 MB, 333 MHz DDR-SDRAM Options to 2 GB

CLK10 stability: +/- 50 ppm standard TCXO and OCXO options

Trigger Support: VXITTL0-7 LXI0-7 TRIG IN/TRIG OUT (Front Panel)

Processor: 833 MHz

Ethernet Protocol: TCP/IP, VXI-11 Instrument Discovery

Cable Lengths: 100 M between devices (copper) 10 kM between devices (fiber)

I/O Library: Agilent I/O Library Suite, 14.2 or greater

VISA Support: VXI*plug&play* compliant

OS Support: Windows 10/ XP/ 2000/ NT/ Me/ 98

Ordering Information

EX2500A	LXI-VXI Gigabit Ethernet Slot 0 Interface
70-0313-001:	OCXO Timebase Option
70-0313-002:	TCXO Timebase Option
70-0322-000:	TriggerBus Termination Kit
52-0515-003:	0.3 Meter TriggerBus Cable
52-0515-015:	0.6 Meter TriggerBus Cabler
52-0515-030:	3.0 Meter TriggerBus Cable
52-0515-100:	10.0 Meter TriggerBus Cable