DATA SHEET

EMX-2401

3U EMBEDDED CONTROLLER FOR PXI EXPRESS SYSTEMS

FEATURES

Powerful computing power with Intel® Core™ i5-520E 2.4 GHz processor

Dual Channel DDR3 SODIMM up to 8 GB 1066 MHz

Maximum System Throughput 2 GB/s

Reconfigurable PXI Express Link Capability for maximum flexibility: Four x4 links or Two x8 links

Integrated 160 GB 7200 RPM SATA hard drive

Enabling Hybrid test systems with Integrated I/O: Dual Gigabit Ethernet ports, Four USB 2.0 ports, Micro-D GPIB connector, ExpressCard/34 expansion slot, Trigger I/O for advanced PXI™ trigger functions

Integrated Intel® graphics, both DVI output and VGA output provide up to 1920 x 1200 resolution

Extended operating temperature, 0 to 55°C

Programmable watchdog timer

VTI Instruments
www.vtiinstruments.com

OVERVIEW

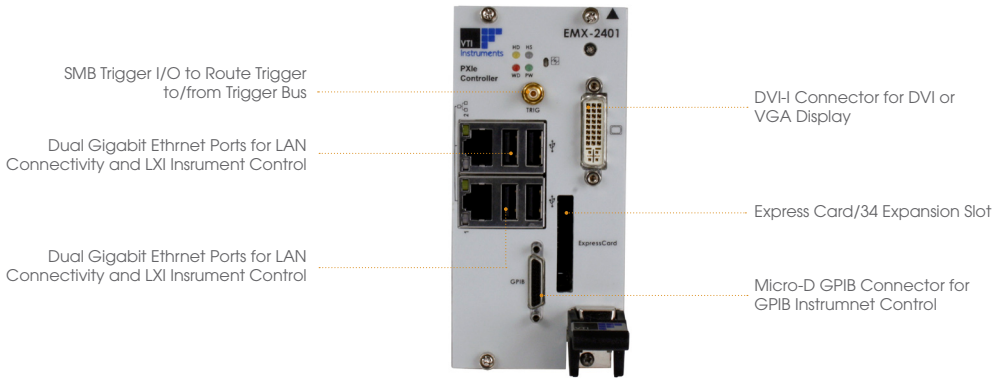
The EMX-2401 is a three-slot PXI Express embedded PC controller that enables compact test systems that combine instrumentation and host in a single mainframe. Using GPIB, USB, and LAN with the build-in front panel interfaces, the EMX-2401 simplifies communication with other instruments and integration into a hybrid test systems. The EMX-2401 is based on the Intel® Core™ i5 processor, and is ideal for electronic test or data acquisition applications that are processor-intensive or require multi-tasking environments.

Processor

Combining the Intel® Core™ i5-520E 2.4 GHz processors, and up to 8 GB of 1066 MHz DDR3 memory, the EMX-2401 utilizes two separate computing engines on a single processor. The processor supports Intel® Hyper-Threading Technology with four simultaneous threads that enable execution of independent tasks simultaneously in a multi-tasking environment.

Enabling Hybrid Test Systems

The EMX-2401 comes with various peripheral ports that allow it to be easily integrated into a hybrid test system. The front panel-mounted ExpressCard/34 expansion slot allows users to connect an additional PXI Express mainframe to the controller using a PXIe to ExpressCard bridge. Dual Gigabit Ethernet ports provide one port for LAN connection and the other for controlling LXI instruments. A Micro-D GPIB connector is available for legacy devices. Four USB 2.0 ports are available to connect keyboard, mouse, DVD drives and other peripheral devices.



Multiple PXIe backplane configuration

With a configurable Gen 2 PCIe switch, the EMX-2401 can support four links x4 or two links x8 PXI Express link capability (automatically configured based on chassis configuration), with maximum system throughput of up to 2 GB/s. When it is configured to operate in a 2-link (2x8) configuration, it will enable x8 slots in the chassis to communicate peer-to-peer at up to 4 GB/s without involving the CPU. This PCIe backplane switch is also connected to the CPU via a Gen 1, x8 PCIe link, supporting data transfers to/from memory at up to 2 GB/s..

PXI Trigger

The SMB bi-directional trigger connector on the front-panel can be used to route an external trigger signal to/from the PXI backplane. The trigger bus line that the trigger signal is routed to can be programmatically selected

Rugged and stable operating environment

The embedded controller is designed to operate at the temperature between 0 and 55°C and to be stored at the temperature between -20 to 70°C. The wide range of the operating temperature and storage temperature makes the EMX-2401 ideal for many testing and measurement applications.

Easy maintenance

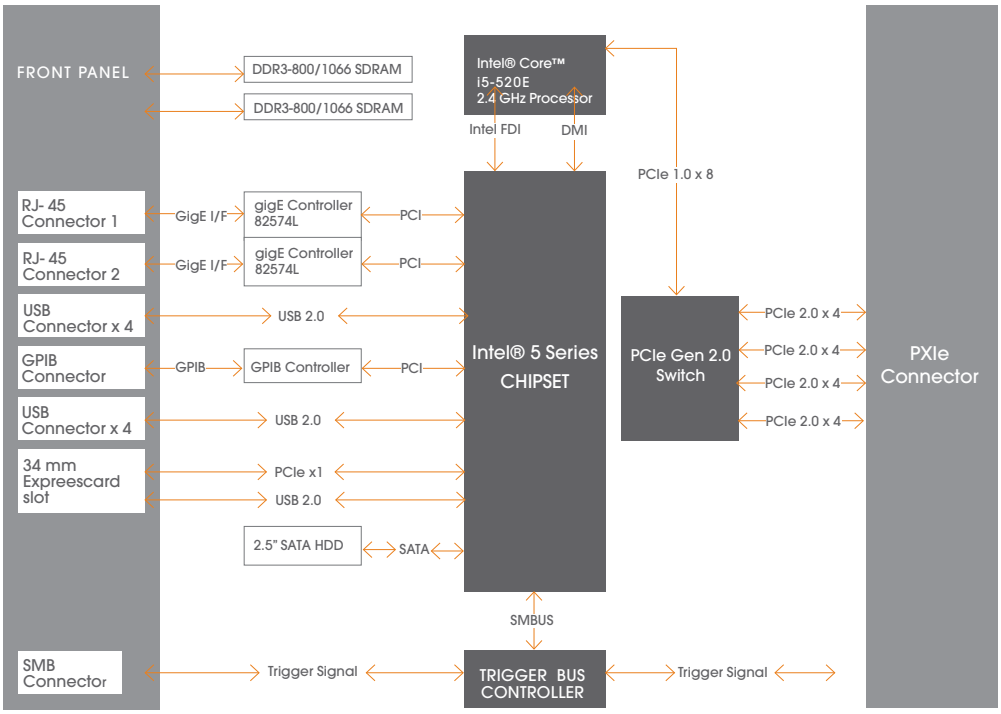
The EMX-2401 is easy to maintain or upgrade. The hard drive and memory can be removed or replaced without having to remove any cover.

Windows operating systems support

The embedded controller supports Microsoft Windows operating systems and can be purchased with Windows 7 64-bit operating system pre-installed.

High-resolution Display Support

With integrated Intel® graphics, both DVI output and VGA output provide up to 1920 x 1200 at 60 Hz resolution or up to 2048 x 1536 at 75Hz. For use with a monitor via VGA connection, a DVI-to-VGA adapter is required



Detailed Specifications

GENERAL	
CPU	Intel® Core™ i5-520E
CPU CLOCK FREQUENCY	2.4 GHz
CPU THREADS	4
DMI	2.5 GT/s
CHIPSET	Intel® QM57 Express Chipset
MEMORY	
RAM TYPE	Dual-channel DDR3 SDRAM, 800/1066 MHz
CACHE	3 MB
RAM CAPACITY	Up to 8 GB SO-DIMM memory
HARD DRIVE	
TYPE	2.5'' SATA II SSD
STORAGE	160 GB
VIDEO	Integrated Intel graphics
DISPLAY	
DVI RESOLUTION	1920 x 1200 at 60Hz or up to 2048 x 1536 at 75Hz
VGA RESOLUTION	1920 x 1200 at 60Hz or up to 2048 x 1536 at 75Hz
OPERATING SYSTEMS	Microsoft Windows® 7 (64-bit) is available pre-installed Other operating systems can be installed by the user
I/O CONNECTIVITY	
FRONT PANEL	
ETHERNET	Two RJ-45 connectors Intel® 82574L Gigabit Ethernet controller
USB	4 x USB 2.0 on the faceplate
GPIB	Micro-D 25-pin connector on the faceplate (ACL-IEEE488-MD1-A cable required) Onboard IEEE488 GPIB controller
TRIGGER I/O	SMB connector, programmable direction
EXPRESSCARD/34	ExpressCard 34mm expansion slot
BACKPLANE	
PCIE LINK CONFIGURATION	2x8 or 4x4, automatically selected based on chassis configuration
BANDWIDTH	2 GB/s max to/from the processor 4 GB/s max between PCIe backplane links in 2-link mode
PXI TRIGGER BUS ROUTING	Selectable to/from all 8 PXI_TRIG lines
MECHANICAL AND ENVIRONMENTAL SPECS	
SLOT REQUIREMENTS	3 PXIe slots, 1 system slot plus two controller expansion slots
WEIGHT	0.9 kgs (1.98 lbs)
OPERATING TEMPERATURE	0 to 55°C
STORAGE TEMPERATURE	-20 to 70°C
HUMIDITY	5 to 95%, non-condensing
SHOCK	30 G, half-sine, 11 ms pulse duration
VIBRATIONOPERATING:	5 to 500 Hz, 0.21 Grms, 3 axes; Non-operating: 5 to 500 Hz, 2.46 Grms, 3 axes
EMISSIONS COMPLIANCE	EN 61326-1; FCC Class A
CE COMPLIANCE	Immunity: EN 61326-1

Specifications contained within this document are subject to change without notice

Ordering Information

EMX-2401	3U Embedded Controller for PXI Express systems
OPTION 101	Windows 7, 64-bit pre-installed
RELATED PRODUCTS	
EMX-2500	Gigabit Ethernet Controller for PXIe Mainframes
CMX18	18-Slot 3U PXI Express chassis – Up to 4 GB/s