SBC310

3U VPX Single Board Computer

Features

- PowerPC® 8641D
- Freescale 8640/8640D ready
- DDR2 up to 1 Gbyte
- Up to 256 Mbyte user flash memory
- One PMC/XMC site
- PCI-X 133 Mhz
- 4-lane PCI Express
- I/O to P2
- Two 4–lane PCI Express ports to the back-plane for connection to fabric
- Two USB 2.0 ports
- Up to two SATA 300 Ports
- Two 10/100/1000BaseT ports
- Two UART ports (RS232/422)
- Air and conduction cooled versions
- 3U VPX form factor (0.8" pitch)
- Optional covers for 2-level maintenance (0.85" pitch)
- Comprehensive Deployed Test software
- Comprehensive OS support

The VPXtreme3 SBC310 is the latest member of GE Intelligent Platforms' growing portfolio of 3U VPX Single Board Computers targeted at the most demanding applications in embedded computing.

The VPXtreme3 product family offers PowerPC SBCs in 3U VPX form factor and is designed to offer long term program support by maintaining a common hardware and software interface between family members, easing customer's integration of future family members.

The SBC310's processor node features the very latest Freescale™ dual core integrated processor which is ideal for small form factor cards, delivering impressive system level performance.

The VPX form factor allows for high speed PCI Express connections to other cards in the system. The SBC310 supports two 4-lane PCI Express ports across the backplane, providing high speed data communication to other single board computers, graphics cards, PCI Express switches and PMC/XMC carrier cards in order to build complex systems.

The SBC310 provides a number of high speed interfaces for off-board communication, including two Gigabit Ethernet ports, two USB 2.0 ports and a Serial ATA disk interface.

In addition, there is support for legacy interfaces, including two RS232/422 ports, and four general purpose I/O lines.

The SBC310 utilizes state-of-the-art cooling technology to allow a PMC or XMC to be fitted without compromising processor node performance.

Available in five air- and conduction-cooled build levels, the SBC310 is fully supported by comprehensive Deployed Test Software (BIT and BCS) and OS support for VxWorks®, VxM-ILS, Open Source Linux®, with other popular Operating Systems such as LynxOS® and Integrity planned.

Optionally available as an LRM (Line Replaceable Module) in accordance with the VPX–REDI (VITA 48) standard

SBC310 3U VPX Single Board Computer

Specifications

Processor
- PowerPC 8641D @ 1.0 GHz (Dual core)
- 1 Mbyte L2 full speed on-chip cache per core

DDR2 SDRAM
- Up to 1 Gbyte DDR2 SDRAM with ECC

Flash Memory
- Up to 256 Mbyte flash memory
- Write-protection options

Fabric Interface
- Two 4-lane PCI Express ports (2.5 GHz)

Gigabit Ethernet
- Two 10/100/1000 Base-T ports

SATA
- Up to two ports (300 Mbytes/s)

Serial I/O
- Two UART ports
  - COM1 RS232
  - COM2 RS232/422

General-Purpose I/O
- Six General-Purpose I/O (GPIO) lines each capable of generating an interrupt

USB
- Two USB 2.0 ports

PMC Extension Slots
- One IEEE 1386/1386.1-2001 compatible extension slots
- PMC – up to 64-bit/133 Mhz PCI-X
- XMC compliant
- 64 IO pins to P2
- XMC PCIe x4 Support

NVRAM/Real-Time Clock/Watchdog/ETI
- 128 Kbyte non-volatile RAM with Autostore
- Real-time clock
- Watchdog timer
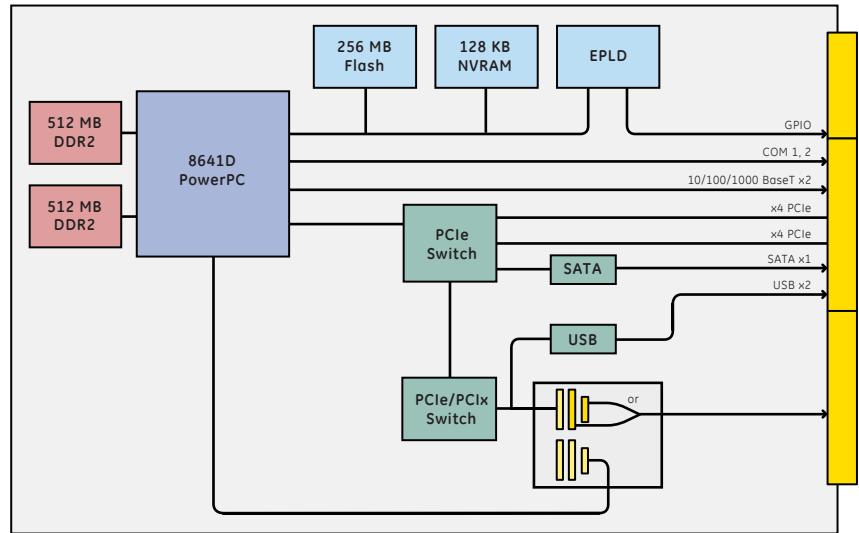- Elapsed Time Indicator (records cycles and on-time)

Temperature Sensors
- CPU die and ambient temperature

Power Requirements
- +5 V and 3.3 V – required
- ±12 V – only if required by mounted PMC module

Block Diagram

Environmental

	Level 1	Level 2	Level 3	Level 4	Level 5
Cooling Method	Convection	Convection	Convection	Conduction	Conduction
Conformal Coating	Optional	Standard	Standard	Standard	Standard
High/Low Temp	0 to 55°C	-20 to +65°C	-40 to +75°C	-40 to +75°C	-40 to +85°C
Operational	(300 ft/m)	(300 ft/m)	(600 ft/m)	At cold wall	At cold wall
Random Vibration	$0.002g^2$/Hz*	$0.002g^2$/Hz*	$0.04g^2$/Hz**	$0.1g^2$/Hz**	$0.1g^2$/Hz**
Shock	20g***	20g***	20g***	40g***	40g***

**With a flat response to 1000 Hz, 6 dB/Oct roll-off from 1000 to 2000 Hz   ** From 10 to 1000 Hz   ***Peak sawtooth 11 ms duration

About GE Intelligent Platforms

GE Intelligent Platforms, a General Electric Company (NYSE: GE), is an experienced high-performance technology company and a global provider of hardware, software, services, and expertise in automation and embedded computing. We offer a unique foundation of agile, advanced and ultra-reliable technology that provides customers a sustainable advantage in the industries they serve, including energy, water, consumer packaged goods, government and defense, and telecommunications. GE Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Home and Business Solutions. For more information, visit www.ge-ip.com.

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01.10 GFA-976A