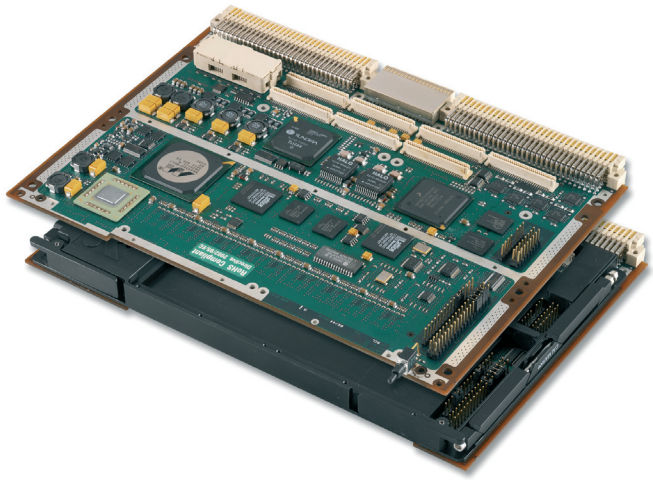
GE
Intelligent Platforms



EP2A

6U VME Single Board Computer

Features

- Power Architecture 7448 processor
- Discovery V Integrated System Controller
- DDR2 SDRAM up to 1 GByte
- 128 MBytes Flash memory
- Two PMC sites
- AFIX (Additional Flexible I/O Xtension)
- Two USB 2.0 ports
- Two 10/100/1000 BaseT ports
- Two UART ports (RS232)
- Four high speed sync/async serial ports (HDLC
  - capable) software selectable RS232/422/485
- Air- and conduction-cooled
- Comprehensive Deployed Test software
- Comprehensive operating system support

The EP2A is a member of the EmPower family of fully rugged single board computers (SBCs) offering high performance Power Architecture processing for the most demanding embedded computing applications. By maintaining the same hardware and software envelope as previous EmPower SBCs, the EP2A provides an opportunity for technology insertion for existing EmPower users, and, in conjunction with the PowerXtreme and XtraPower SBC families, extends the options available to the rugged Power Architecture SBC market.

The EP2A's processor node features the latest Discovery V Integrated System Controller with a Power Architecture 7448 and DDR2 SDRAM, in combination with a unique and highly flexible set of I/O features. In addition to standard SBC capabilities such as USB 2.0 and Gigabit Ethernet, the EP2A features four fast HDLC-capable serial channels, making this board ideal for many communications-oriented embedded applications.

The EP2A's I/O flexibility comes from its two PMC sites and its AFIX site, the latter supporting a range of useful plug-ons including dual MIL-STD-1553B interfaces, SCSI, graphics and Flash memory modules. The AFIX site is also a useful option to add custom functionality at minimum cost and in minimum time.

Available in five air- and conduction-cooled build levels, the EP2A is fully supported by comprehensive Deployed Test Software (BIT and BCS) and BSPs for VxWorks from Wind River Systems, LynxOS from LynuxWorks and Integrity from Green Hills Software. Flash memory modules. The AFIX site is also a useful option to add custom functionality at minimum cost and in minimum time.

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EP2A 6U VME Single Board Computer

Specifications

Processor Node
- Freescale Power Architecture MPC7448 @ 1.0 GHz
- 1 MByte L2 on-chip cache
- Marvell Discovery V Integrated System Controller

DDR2 SDRAM
- 1 GByte soldered DDR SDRAM
- 64-bit 200 MHz Memory Bus (72-bit with ECC)

Flash Memory
- 128 MBytes Flash memory (8 MB Boot Area, in four sectors including BANC - Boot Area Non Corruptible)
- Write-protection options
- Enhanced survivability when NED (Nuclear Event Detection) option is selected – configured as two banks of 64 MBytes which act as one bank for error correction

VME Interface
- Tsi148 VME Bridge (2eSST compliant)

Gigabit Ethernet
- Two 10/100/1000 Base-TX ports from Discovery V : one to P2 and one to P0

Serial I/O
- Two UART ports and four high speed ports
  COM1 – UART RS232 to P2
  COM2 – UART RS232 to P2
  COM3 – hi- speed sync / async RS232/422/485 to P2
  COM4 – hi- speed sync / async RS232/422/485 to P2
  COM5 – hi- speed sync / async RS232/422/485 to P2
  COM6 – hi- speed sync / async RS232/422/485 to P0

General Purpose I/O
- Eight GPIO lines each capable of generating an interrupt

USB
- Two USB 2.0 ports from Discovery V to P0

PMC Extension Slots
- Two IEEE 1386/1386.1-2001 compatible extension slots
- PMC1 - up to 32 bit / 66 MHz, 46 I/O pins to P2
- PMC2 - up to 64 bit / 100 MHz, 64 I/O pins to P0

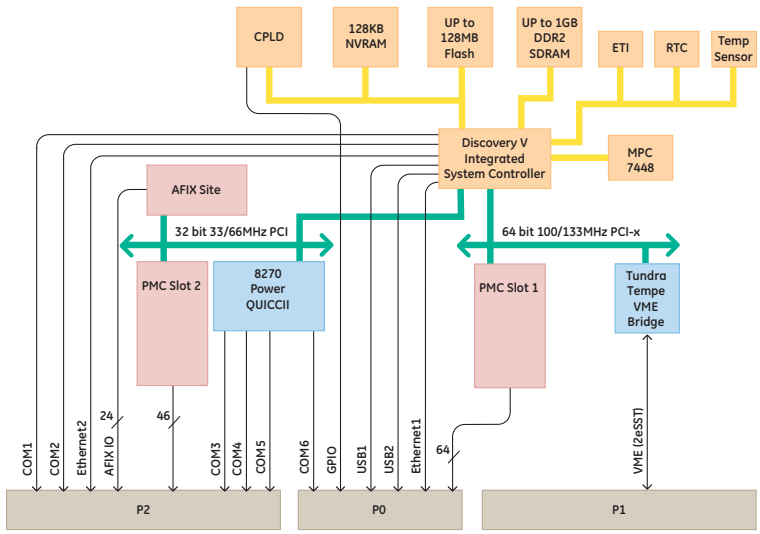
AFIX (Additional Flexible Interface Xtension)
- Unique mezzanine site for plug-on modules including MIL-STD-1553B, SCSI, graphics, Flash memory

NVRAM / Real-Time Clock / Watchdog / ETI
- 128 KBytes non-volatile RAM with Autostore
- Real-Time Clock with 1 second resolution
- Watchdog timer in Discovery V
- Elapsed Time Indicator (records cycles and on-time)

Temperature Sensors
- CPU die and ambient temperature

Nuclear Event Detection
- Support for NED Input

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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