CYCLONE Microsystems™
Intelligent I/O Controllers

CPCI-824   PowerPC 440GX Communications Blade

- ♦ **440GX PowerPC**
- ♦ **Two 1000BaseTx Ports**
- ♦ **Two 100BaseTx Ports**
- ♦ **Up to One Gbyte SDRAM**
- ♦ **CompactPCI Blade Format**
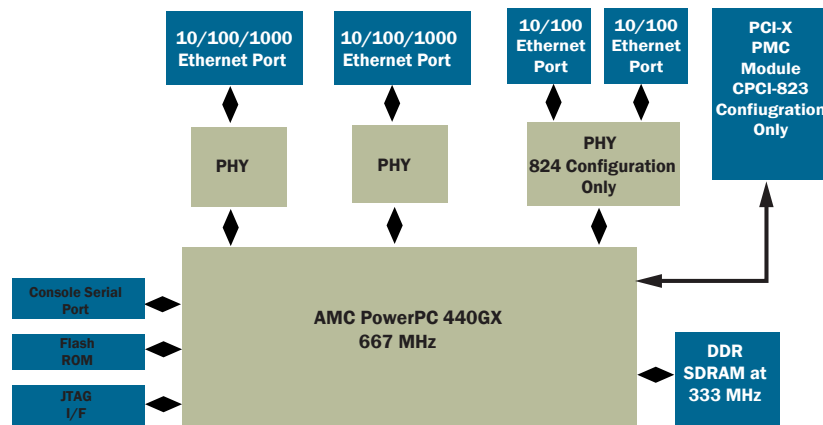- ♦ **NEBS Level III Compliance**

CPCI-824 PowerPC 440GX Communications Blade

The CPCI-824 is a CompactPCI form factor, blade-style communications processor designed for demanding telecommunications and protocol processing applications. Based on the 667 MHz AMCC PowerPC 440GX, the CPCI-824 combines a fast processor core with a 256K L2 cache, a fast memory controller, a PCI-X Bridge, and a DMA controller. The combination of these elements allows for fast protocol processing on demanding data flows. The blade board features up to 1 Gigabyte of 333 MHz DDR SDRAM, two GbE ports and two 100BaseTx Ports.

The CPCI-824 is supported by Cyclone's Breeze Development Environment, an LSP for Linux 2.6, and a BSP for Wind River System's VxWorks/Tornado.

The CPCI-824 has been certified to the demanding NEBs Level 3 requirements when installed in Cyclone Microsystem's the three-slot, dual AC powered Compact PCI 600-2014 chassis or the three-slot, dual DC powered, Compact PCI 600-2015 chassis.

CPCI-824 Block Diagram

10/100/1000 Ethernet Port	10/100/1000 Ethernet Port	10/100 Ethernet Port	10/100 Ethernet Port	PCI-X PMC Module CPCI-823 Confiugration Only
PHY	PHY	PHY 824 Configuration Only		

Console Serial Port
Flash ROM
JTAG I/F

AMC PowerPC 440GX 667 MHz

DDR SDRAM at 333 MHz

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PowerPC Processor

The boards architecture is built around an AMCC 440 GX embedded processor at 667 MHz which features an integrated PowerPC superscalar core with a 256K L2 cache, a fast memory controller, a PCI-X Bridge, and a DMA controller.

DMA Controller

The 440GX supports 4 separate DMA channels for high throughput data transfers between PCI bus agents and the local SDRAM memory.

SDRAM

Up to 1 Gigabyte of 333 MHz DDR SDRAM is supported via a 200-pin SoDIMM module.

Flash ROM

Eight Mbytes of in-circuit sector-programmable Flash ROM provides non-volatile storage. One 128 Kbyte sector of the Flash ROM is reserved for the storage of non-volatile boot and system parame
ters. System calls for storing parameters in this memory are included in the Breeze Development Environment.

Ethernet Ports

Two 10/100/1000BaseTx Ethernet ports and two 10/100BaseTx ports are provided are provided on RJ45 connectors.

Serial Console Ports

An asynchronous serial RS-232 interface is provided for a console terminal or workstation connection.

Environmental Monitoring

Two programmable temperature sensors are provided for system monitoring. When the CPCI-824 is install in the host slot of the Cyclone CPCI chassis, fan detection and power supply status signals are available for system status alarming.

Blade Style Interface

The CPCI-824 uses the Compact PCI mechanical standard and receives power, fan detect, power supply status and geographic addressing from Compact PCI J1 and J2 connectors. The board's local PCI bus is not directed the external CPCI connectors.

Hot Swap

The CPCI-824 is Basic Hot Swap compliant to PICMG 2.1 standards.

JTAG Emulator Support

A JTAG emulator interface is provided to support software development

Breeze Development Environment

Flash-resident ROM monitor/firmware package support board-level initialization and application software development.

Environmental

Physical Dimensions		Power Requirements	
Height	9.187" (233.35mm)	+3.3V	2.32 Watts Typical,
Double Eurocard	(6U)		3.19 Watt Maximum
Depth	6.299" (160mm)	+12V	17.02 Watts Typical,
Width	0.8" (20.32mm)		24.42 Watts Maximum
Operating Temperatures	0 to 55 Degrees Celsius	**Regulatory/Safety Compliance**	GR-1089-Core, EN55022, Class A, ICES-003 EN/UL/CUL/60950-1 CE Mark Conducted Emissions Radiated Emissions I/O Line Conducted Emissions FCC Part 15, Subpart B Class
Relative Humidity	0 – 95%		
Storage Temperatures	–55 to 125 Degree Celsius		

Ordering Information

CM824-aaa-bb

aaa-Memory Options	**bb-Firmware**
256 - 256 Mbyte	B - Breeze (default)
512 - 512 Mbyte	T3 - Telcordia FEP
1G - 1 Gigabyte	

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