cPCI-6240 Series

6U CompactPCI Network Processor Blade



The cPCI-6240 is an IXP2400 based PICMG® 2.16 compliant Network Processor Board. Dual PMC sites are provided to support PTMC and control plane processing PMC modules. An on-board Ethernet switch provides flexibility in the routing of packets to and from the network processor, front panel, and PICMG 2.16 interface. This board, in conjunction with ADLINK Framer-Mapper Quad OC-3 or Single OC-12 PMC-8500 modules, provide an ideal solution for the conversion of SONET ATM, or Packet-over-Sonet (PoS) to IP (Gigabit Ethernet). The cPCI-6240 is designed to meet the needs of network access and edge applications for wireless and broadband markets including BSC/RNC/MSC, CMTS, DSLAM, FTTx, NG-DLC, etc. The cPCI-6240 delivers ultimate performance in multi-service switch and layer 4-7 applications including firewall, IDS, and load balancing, etc.

Features

- ***Intel® IXP2400 Network Processor***
- ***6U CompactPCI support 64-bit, 66MHz universal operation***
- ***PICMG 2.0, 2.1, 2.16, 2.9, 2.15 Compliant***
- ***Dual Front Panel 10/100/1000Mbps Ethernet Ports***
- ***Dual 10/100/1000Mbps Ethernet port on J3 per PICMG 2.16***
- ***Onboard Gigabit Ethernet Switch for maximum flexibility***
- ***One PTMC site provides 16-bit 50MHz Utopia Bus***
- ***One PrPMC/PMC site provides additional control plane processor***
- ***Serial Debug Port with Front or rear I/O access***
- ***Additional Dual Rear I/O GbE Ports for transition module***
- ***Optional dual optical GbE ports on the font panel***
- ***Boot monitor, Diagnostic utility and VxWorks BSP supported***

Ordering Information

cPCI-6240-1	6U CompactPCI Network Process Board with Dual PMC sites
cPCI-6240-2	6U CompactPCI Network Process Board with Dual Optical GbE ports and PTMC sites
PMC-8500Q	SONET Quad OC-3 Interface PTMC Module
PMC-8500S	SONET Single OC-12 Interface PTMC Module

Specifications

CPU / Memory

IXP2400	Integrated 32-bit 600MHz XScale™ core
	Eight multi-threaded 600MHz microengines supporting 5.4 Giga-operations per second
	Hyper Task Chaining enables deep packet inspection via software pipeline at 2.5Gbps
	14 million enqueue/dequeue packet operations per second
Memory	One 200 pin SO-DIMM socket, Max. 512MB PC-333 un-buffered DDRSDRAM. ECC protected
	4MB Queue Data Memory. ECC protected
	16MB of FLASH for boot storage

Bus / Form Factor

Standards	PICMG 2.0 R3.0 CompactPCI Core Specification
	PICMG 2.16 R1.0 CompactPCI Packet Switched Backplane
	PICMG 2.1 R2.0 CompactPCI Hot Swap
	PICMG 2.9 R1.0 CompactPCI System Management, support IPMI 1.0
	PICMG 2.15 R1.0 PCI Telecom Mezzanine/Carrier Card
CompactPCI Bus	64-bit/66MHz universal PCI bridge (PLX PCI-6254)
	Operational on peripheral slot, and stand-alone blade (no PCI bus)
PTMC Site	16-bit 50MHz Utopia Bus, PT1MC or PT4MC Configurations
	Supports ADLINK quad OC-3 or single OC-12 PTMC mezzanine modules
PMC Site	Can be used to support an additional control plane processor
	64-bit 66MHz PCI bus interface, Jn4 connected to J3 and RTM

Gigabit Ethernet

Ethernet Switch	Broadcom BCM5682 8-port GbE switch
	Line rate layer 2 forwarding and layer 3 IP switching
	Advanced packet flow control HOL prevention, back-pressure support and packet rate control (802.3x)
	Integrated 512K packet memory
2 Gigabit Ethernet MACs Ports	Connected Two ports connected to IXP-2400 on-board and software selected ports through switch:
	Dual front panel 10/100/1000Mbps Ethernet Ports (RJ-45)
	Dual 10/100/1000Mps Ethernet ports on J3 per PICMG 2.16
	Additional dual 10/100/1000Mps ports on J5 for rear I/O transition module
	Optional dual optical GbE ports available on the front panel of cPCI-6240-2

Other Features

Front Panel LEDs	Power status (green)
	Hot Swap status indicator (blue)
	2 user programmable (red/amber)
	Ethernet ports (x2): link (green), activity (amber)
Front Panel Connectors	Serial console/debug port (RJ-11)
	Ethernet ports (x2) (RJ-45)

Mechanical and Environmental

Form Factor	6U CompactPCI
Dimensions	233mm x 160mm (L x W), 1 slot (4HP) wide
Operating Temp.	0 to 60˚C
Storage Temp.	-20 to 80˚C
Shock	15G peak-to-peak, 11ms duration, non-operation
Vibration	Non-operation: 1.88Grms, 5-500Hz, each axis
	Operation: 0.5Grms, 5-500Hz, each axis, with 2.5" HDD

Typical Power Consumption	Configurations	+5V	+3.3V	+12V	-12V
	600MHz IXP2400	3.5A	4.0A	0A	0A

Note: The above values are the measured power consumption for the cPCI-6240 without PMC sites populated.

Certificate or Test	CE, FCC class A

Software Support

Firmware	Boot monitor based on RedBoot for command line interface, POST, flash management, boot scripting and file transfers
	Diagnostics application programs, including loopback tests for the IXF1104 and PMC-8500
	The VxWorks bootrom: the boot loader for VxWorks
	A RAM based ROMable version of VxWorks for serial connections
VxWorks	cPCI-6240 VxWorks Board Supporting Package (BSP)
	IXF1104 VxWorks driver
	PMC-8500 IXF6012 SONET Framer-Mapper driver
Linux	Call for availability

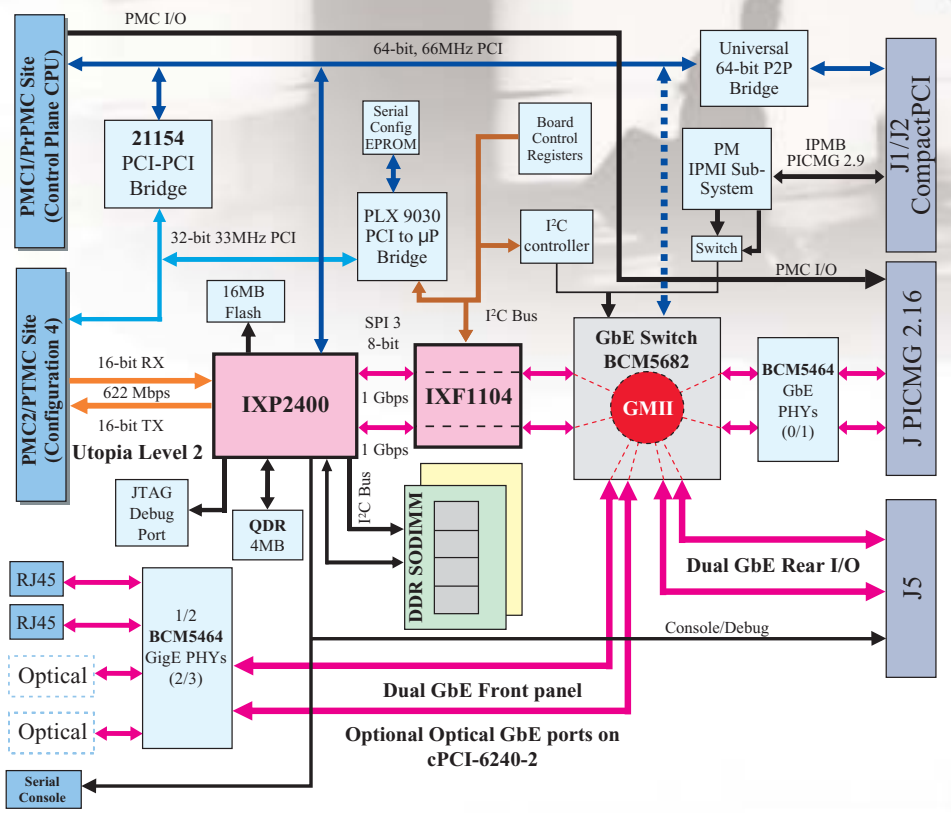
Required Software Tools

VxWorks	Tornado 2.2 / VxWorks 5.5 for development and re-building the BSP
IXP-2400	Intel's IXA SDK and its Software Framework for developing microcode of the eight microengines
Cyqwin	Cyqwin tools for Windows (http://www.cygwin.com/)
	Cyqwin for development of Boot monitor and Diagnostics
	GNUPro Toolkit for Intel XScale Microarchitecture, release 010827

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Applications

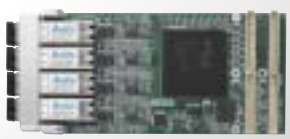
- *Wireless infrastructure applications*
- *Radio Network Controller (RNC)*
- *Node B, SGSN, GGSN*
- *OC-12 ATM RAN*
- *Boardband applications*
- *Milti-service switches (MSS)*
- *Intelligent DSLAMs*
- *Core Network Car, Core Router*
- *L2 bridging, IP/MPLS forwarding*
- *L2-IP/MPLS interworking*
- *L2-VPN service*



cPCI-6240 Block Diagram

PMC-8500 Series

SONET Quad OC-3/Single OC-12 Interface Board



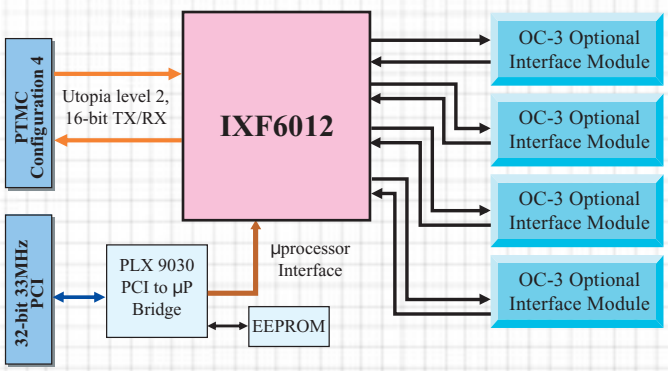
PMC-8500Q



PMC-8500S

Features

- *PTMC Site, with 16-bit, 50MHz, Level 2 Utopia Bus*
- *PICMG 2.15 PT4MC Configuration*
- *Intel IXF 6012 SONET interface chip, ATM Mode*
- *PMC-8500Q supports quad OC-3 Ports, STS-3c/STM-1/STS-1*
- *PMC-8500S supports single OC-12 Port, STS-12c/STM-4c/STS-12/STM-4*
- *622Mbps Data rate (4 x 155Mbps Quad OC-3, 1 x 622Mbps Single OC-12)*
- *Packet Over SONET (POS) Mode, UTOPIA-type FIFO-based Interface*
- *Line Side Loop-back capabilities and system Loop-back Capabilities*



PMC-8500 Block Diagram

This board, in conjunction with cPCI-6240 IXP2400 Network Processor board, provides a SONET Interface with ATM or POS capabilities. The PMC-8500 boards SONET interface is via a single OC-12 or quad OC-3 ports. This board utilizes Intel's IXF6012 SONET interface chip. The board is compliant to the PICMG 2.15 specification as a PT4MC interface board. The PTMC interface provides a 16-bit, 50MHz Level 2 Utopia bus allowing transfer rates up to 622Mbps. Also, a standard 33MHz PMC PCI bus is provided for board configuration.

All specifications are subject to change without further notice.

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