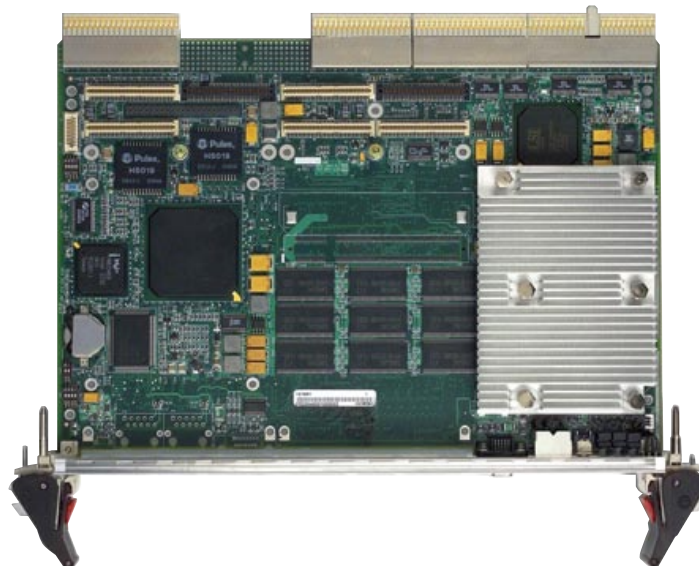# CPCI7147

PICMG 2.16 Processor Board

You can design with confidence knowing that the CPCI7147 SBC is based on a history of successful CompactPCI products

- 1.4 GHz Intel® Pentium® M processor

- 400 MHz frontside bus

- Intel® 855GME 1.6GB/s memory controller

- 2GB ECC-protected DDR SDRAM

- Dual on-board Gigabit Ethernet interfaces

- Support for PICMG® 2.16 CompactPCI Packet Switching Backplane specification

- Full PICMG 2.1, R2.0 Hot Swap specification compliance

- PICMG 2.9 System Management specification support

- Dual PCI mezzanine card (PMC) sites

- Optional on-board Compact-Flash or hard disk drive accessory kits

- Optional rear transition module in PICMG 2.16 and rear I/O variants

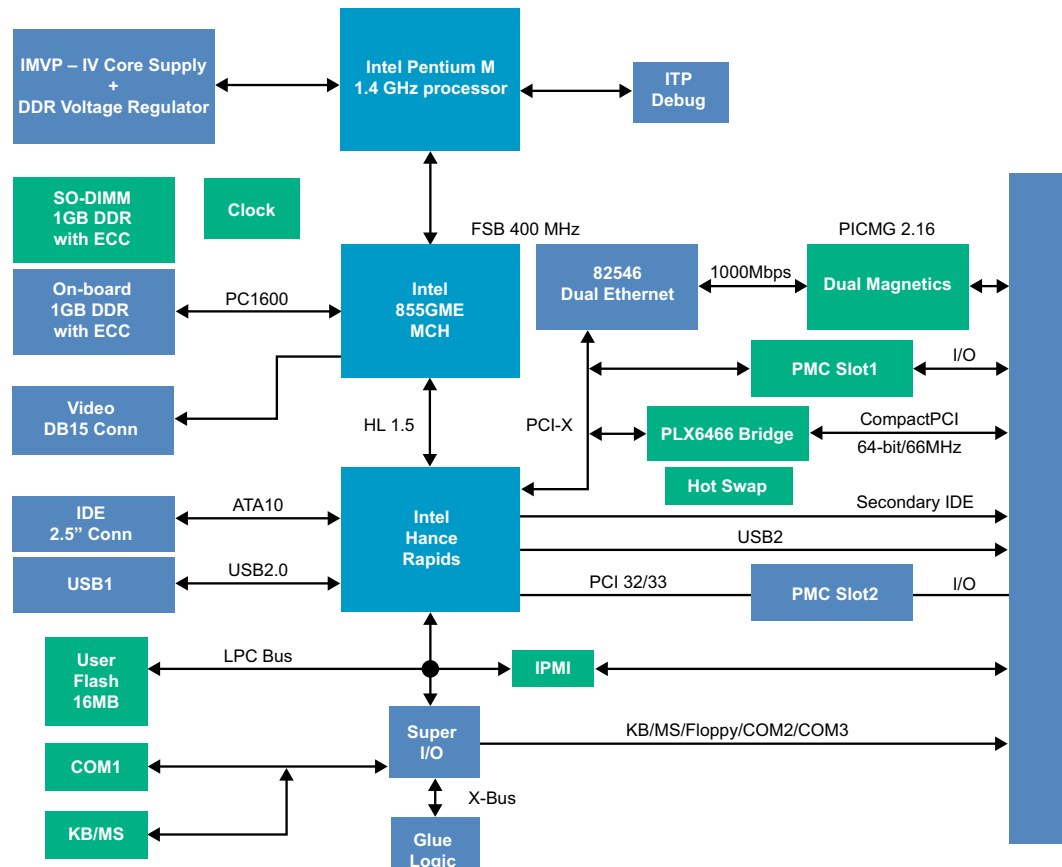- PLX6466 PCI-to-PCI bridge technology

The Emerson Network Power CPCI7147 single-board computer (SBC) uses a robust design with extensive test and validation for demanding control plane and packet switching applications. Breakthrough performance is delivered while maintaining low-power consumption and significant I/O capabilities. The CPCI7147 features an Intel Pentium M processor, dual Gigabit Ethernet, universal CompactPCI® interface, and dual PMC expansion sites. This SBC accesses 2GB of DDR memory at 1.6GB/s and also uses an embedded PCI-X south bridge.

In addition to PICMG 2.16, the CPCI7147 board is compliant and tested to the full PICMG 2.1 Hot Swap specification. A full and robust implementation of the Intelligent Platform Management Interface (IPMI) specification is included with all variants. Compliant to PICMG 2.9, this IPMI architecture delivers remote platform management in both baseboard management controller (BMC) and peripheral modes. Other value added features include the PLX6466 PCI-to-PCI bridge (PPB) technology for implementing an SBC in either the system or peripheral slot of a CompactPCI platform. This universal-mode capability allows developers to provide quickly scalable density, functionality, and easy sparing for their customers.

With breakthrough Intel Pentium M processor performance, Gigabit Ethernet, PMC expansion, PLX6466 universal-mode capabilities, robust testing, and documentation, the CPCI7147 series is a superior choice for developers of control plane and packet switching applications.

EMERSON™
Network Power

Block Diagram

```
IMVP – IV Core Supply          Intel Pentium M              ITP
+                              1.4 GHz processor           Debug
DDR Voltage Regulator

SO-DIMM                Clock
1GB DDR
with ECC                                    FSB 400 MHz              PICMG 2.16

On-board                                    Intel          82546          1000Mbps   Dual Magnetics
1GB DDR        PC1600               855GME         Dual Ethernet
with ECC                             MCH                                   PMC Slot1          I/O

Video                                                       PCI-X          PLX6466 Bridge    CompactPCI
DB15 Conn            HL 1.5                                                                  64-bit/66MHz
                                                                          Hot Swap

IDE            ATA10               Intel                                  Secondary IDE
2.5" Conn                          Hance
                                   Rapids                                  USB2
USB1           USB2.0
                                                            PCI 32/33      PMC Slot2          I/O

User           LPC Bus                                      IPMI
Flash
16MB                                         Super                        KB/MS/Floppy/COM2/COM3
                                             I/O
COM1
                                                    X-Bus
KB/MS                                        Glue
                                             Logic
```

Specifications

PROCESSOR
- 1.4 GHz Intel Pentium M processor
- 2MB internal full-speed L2 cache (on-die)
- 400 MHz frontside bus
  - Intel 855GME/6300ESB low power chipset
  - 1.6GB/s to memory
  - 64-bit/66 MHz PCI-X bus to Ethernet

MEMORY
- 1.6GB/s memory architecture
- 2GB ECC-protected DDR SDRAM

USER FLASH MEMORY
- 14MB user
- 1MB BIOS
- 1MB BIOS backup

ADDITIONAL FEATURES ON FRONT I/O VARIANT:
- SVGA via HD15 connector
- USB 1.1, 2.0 interface

COMPACTPCI INTERFACE
- Universal PLX6466 PPB
- System- and peripheral-slot capability (64-bit/66 MHz)

I/O CAPABILITIES
- Two Gigabit Ethernet interfaces
- Variants with PICMG 2.16, rear or front I/O routing
- Two PMC sites
- IPMI remote management support (PICMG 2.9)
- Dual ATA-100 interfaces
- USB 1.1, 2.0 interface
- Two COM interfaces
- Keyboard/mouse interface
- FDD interface

OTHER FEATURES

- Watchdog unit
- Status and user LEDs
- Reset switch
- Locking ejector handles
- Power-up ramping and in-rush current protection
- Hot swap support (PICMG 2.1, R2.0)
- Optional on-board CompactFlash or 2.5 inch HDD

POWER REQUIREMENTS

- Maximum for 1.4 GHz, 2GB variant is 27.33 Watts
  - ▲ 3.3V 2.6A   (8.58 Watts)
  - ▲ 5V   3.75A (18.75 Watts)

ENVIRONMENTAL REQUIREMENTS

- Operating temperature 0° to +40°C
- Relative humidity 5% to 95% at +40°C (non-condensing)
- Operating altitude: –300 m to +3000 m
- Product complies with flammability ratings according to UL-94V0
- Airflow: 300LFM = 1.54 m/s
- Designed for NEBS Level 3 and ETSI requirements
- Operating shock: 5 g/11 ms halfsine (HDD not mounted)
- Operating vibration: 10 to 15 Hz: 2 mm amplitude; 15 to 150 Hz: 2g (HDD not mounted)

MTBF

Calculated per Telcordia SR-332, Issue 1 and based on a ground fixed, controlled environment assuming an inlet air temperature of between 0° C and 50° C. 124,308 hours

Ordering Information	
Part Number	**Description**
CPCI7147A-2G-14-5E	CPCI7147, 1.4 GHz, 2GB, Front Ethernet, 1 PMC site
CPCI7147-2G-14-5E	CPCI7147, 1.4 GHz, 2GB, Rear Ethernet, 2 PMC sites
CPCI7147-2G-14-P-5E	CPCI7147, 1.4 GHz, 2GB, 2.16 PSB, 2 PMC sites
CPCI7147-2G-14-PB-5E	CPCI7147, 1.4 GHz, 2GB, 2.16 PSB, 2 PMC sites, MS064/21KX BIOS
Transition Module	
RTB-714x/PSB-5E	Rear transition module for CPCI-714x. PSB compatible. 2 RJ-45 COM ports, 1 KBD/MS connector, 1 RJ-45 IPMB connector, 1 USB connector, CompactFlash slot
RTB-714x-5E	Rear transition module for CPCI-714x. Non-PSB version. 2 RJ-45 COM ports, 1 KBD/MS connector, 1 RJ-45 IPMB connector, 1 USB connector, CompactFlash slot, 2 Ethernet ports
RTB-714x PIM-5E	Rear transition module for CPCI-714x with PIM. Non-PSB version. 2 RJ-45 COM ports, 1 KBD/MS connector, 1 RJ-45 IPMB connector, 1 USB connector, 2 Ethernet ports
RTB-714x PIM/PSB-5E	Rear transition module for CPCI-714x with PIM. PSB compatible. 2 RJ-45 COM ports, 1 KBD/MS connector, 1 RJ-45 IPMB connector, 1 USB connector
Related Products	
CPCI714x-CAB-ACC	CPCI-714x Cable kit, Y adapter for keyboard/mouse, serial cable and adapter

SOLUTION SERVICES

Emerson Network Power provides a portfolio of solution services optimized to meet your needs throughout the product lifecycle. Design services help speed time-to-market. Deployment services include global 24x7 technical support. Renewal services enable product longevity and technology refresh.

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The global leader in enabling
Business-Critical Continuity™.

- AC Power
- Connectivity
- DC Power
- **Embedded Computing**
- Embedded Power
- Infrastructure Management & Monitoring
- Outside Plant
- Power Switching & Controls
- Precision Cooling
- Racks & Integrated Cabinets
- Services
- Surge Protection

Emerson Network Power

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