PmPPC440
PMC Modules

PowerPC™-based ProcessorPMC

- AMCC PowerPC® 440GP processor running at 400MHz

- Up to 133MHz PCI-X interface, backwards compatible with PCI 2.1

- 64MB, 128MB, 256MB, 512MB or 1GB DDR ECC SDRAM in SODIMM package

- Dual 10/100BaseTX Ethernet interfaces with front bezel access

- Processor-PMC Monarch and Non-Monarch modes

- Dual serial ports via PMC P14 or single serial port via front bezel

- I²C interface

- VxWorks and Linux support

- RoHS/WEEE compliant configuration available

- Quality assured by over 30 years of design experience and a TL-9000 and ISO 9001:2000 certified quality management system. (FM 26789)

Emerson's PmPPC440 is a complete low-power processor subsystem in a very compact, industry standard form factor. It is designed to allow communication equipment manufacturers to add modular and upgradable compute functionality to their I/O baseboard and provide the localized horsepower necessary for applications such as protocol processing, packet processing, data filtering or I/O management.

Using an off-the-shelf processor subsystem saves you time-to-market by allowing you to focus your engineering efforts on the key value-add portions of the system without spending time and effort on the processor design and testing. A modular processor subsystem also lowers your lifetime cost of ownership by providing an easy upgrade path, and protecting you from obsolescence issues.

Considerable engineering effort has gone into ensuring maximum flexibility on the PmPPC440. The module can be used in both Processor-PMC Monarch and Non-Monarch modes, which means that it can act as the host (Monarch) of the local PCI bus or be a target (Non-Monarch) on the local PCI bus depending on the application or baseboard. We've also implemented the SDRAM memory using SODIMM packaging, the same memory package used dominantly in laptop computers.
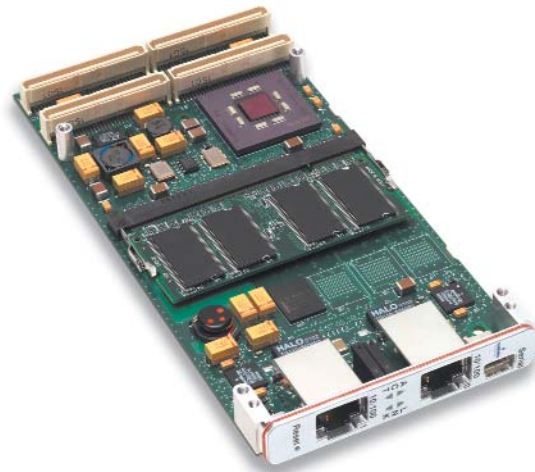
ISO 9001:2000
FM 26789

CE

EMERSON™
Network Power

PROCESSOR

AMCC PowerPC® 440GP Core

- 400+ MHz
- 32K I & 32K D L1 cache 64-way set associative
- 32-bit Book E enhanced PowerPC architecture
- MMU
- 8KB on chip SRAM

On-Chip Peripherals

- Dual serial I/O
- General Purpose Timers (GPT)
- GPIO
- I²C
- Dual 10/100 Ethernet MACs
- DDR memory controller
- PCI/PCI-X interface
- 4 Channel DMA controller

MEMORY

SDRAM

- 64, 128, 256, 512MB or 1GB of x72 DDR SDRAM with ECC
- 266MHz operation
- Modular SODIMM packaging

Flash

- 16 to 128MBytes Flash memory
- Intel StrataFlash™ architecture
- 4 banks x 16-bits organization
- Flash Architecture NOR

NVRAM

- 2K NVRAM
- I²C-based

I/O

- Ethernet
  - ▲ Two 10/100BaseTX Ethernet ports
    - • Optional front bezel access (isolated)
    - • Optional PMC P14 access (non-isolated)
  - ▲ Link/Activity LEDs for each Ethernet port on front bezel
- Serial Ports
  - ▲ Two async serial ports (RS-232 level signaling)
  - ▲ Dual serial port via PMC P14 or single serial port via front bezel with mini USB style connector
- I²C
  - ▲ Master or slave configuration
  - ▲ Access via PMC P14 connector
- Recessed front bezel reset switch
- 4 development user-pro-grammable surface mount LEDs on PMC module
- 4 GPIO via PMC P14

OFF-CHIP PERIPHERALS

- Real-time clock
- Supercap backup power
- I²C-based

PCI/PCI-X

- 33/66/133 MHz operation
- 32/64-bit data path
- Monarch and Non-Monarch mode support (local PCI host or peripheral)
- PCI 2.2 and PCI-X v1.0 compliant

DEVELOPMENT MEZZANINE CARD (DMC)

- Optional plug-on card (side 2) to speed development
  - ▲ Processor JTAG/COP header for software development
  - ▲ Four software-readable configuration jumpers
  - ▲ 32-pin PLCC socket for software development
  - ▲ Four development user-programmable LEDs
  - ▲ Single connector to attach to PMC module

Note: Ethernet and serial connectors not used when connected to PmPPC440

PHYSICAL CHARACTERISTICS

- Specifications
  - ▲ IEEE 1386.1 CMC/PMC
  - ▲ VITA 32 Processor-PMC
- Power requirements: 3.3 Vdc @ <7W (est)
- Operating range: 0º to 55º C, 5-95% relative humidity (non-condensing)

SOFTWARE SUPPORT

- Monitor/Boot loader
- Board support package for VxWorks 5.5
- Board support package for Linux

REGULATORY COMPLIANCE

- UL/CSA/IEC 60950
- FCC Part 15 (US)
- EN 300386
- Applicable sections of NEBS Telcordia GR-63 and GR-1089
- ICES 003 (Canada)
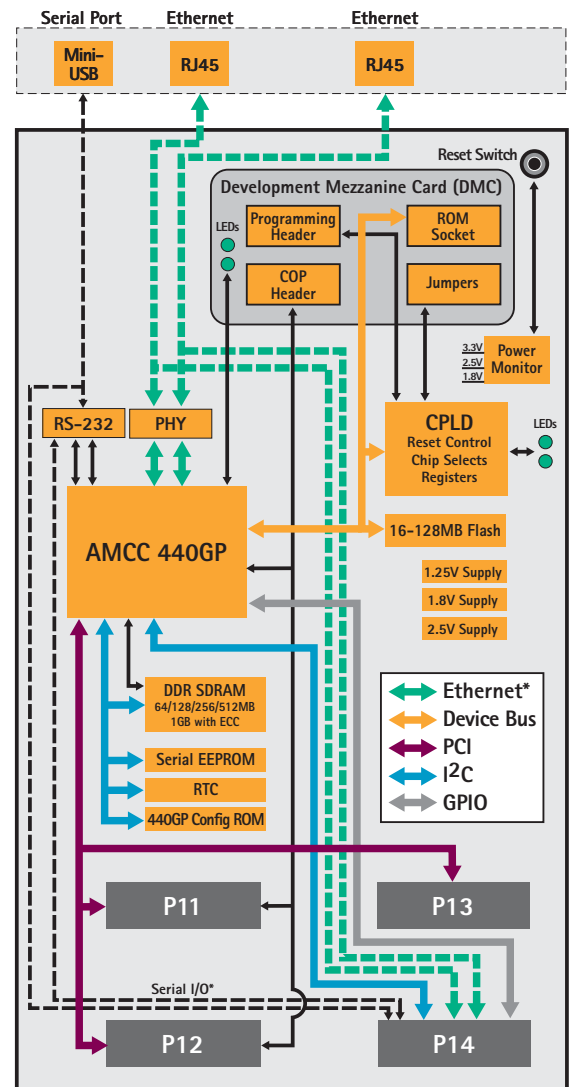
* Ethernet and Serial I/O configuration options:
  – I/O via front panel
  – I/O via P14 connector

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