

Real-time processing blade in a single-slot AdvancedTCA form factor

- Single or dual PowerPC MPC7448 processors running at up to 1.4 GHz
- Two-way SMP architecture
- ATCA PICMG 3.1 Node (1000Base-T Base interface + Octal high speed Gigabit Ethernet (GbE) Fabric interface)
- Layer 2/3 Ethernet switch option
- Quad PMC expansion sites
- Redundant System Management Bus with IPM Controller
- Up to 2GB DDR SDRAM w/ECC in SO-DIMM package
- Up to 64MB linear flash
- Real-time clock with supercap backup
- VxWorks and Carrier Grade Linux support
- Quality assured by over 35 years of design experience and a TL 9000 and ISO 9001:2000 certified quality management system. (FM 26789)

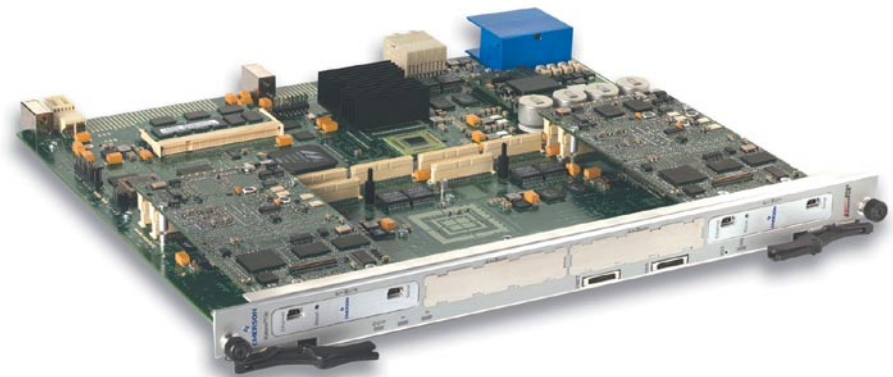
AdvancedTCA[®] (ATCA[®], PICMG[®] 3.0) is the consummate open architecture telecom platform and the Katana[®]Qp from Emerson Network Power is the ultimate configurable ATCA telecom blade. It features a two-way symmetric multi-processing (SMP) architecture with dual PowerPC[®] MPC7448 processors and a full complement of I/O for communications applications.

KatanaQp's PCI Telephony Mezzanine Card (PTMC, PICMG 2.15, VITA 32) expansion sites give telecom OEMs, who want to get started with ATCA today, instant access to a wealth of third-party PMC modules. This off-the-shelf expansion capability makes it easy to configure the KatanaQp for a wide variety of control and packet processing applications, including WAN access, SS7/SIGTRAN signaling, media gateways, traffic processing, wireless base station controllers and softswitches.

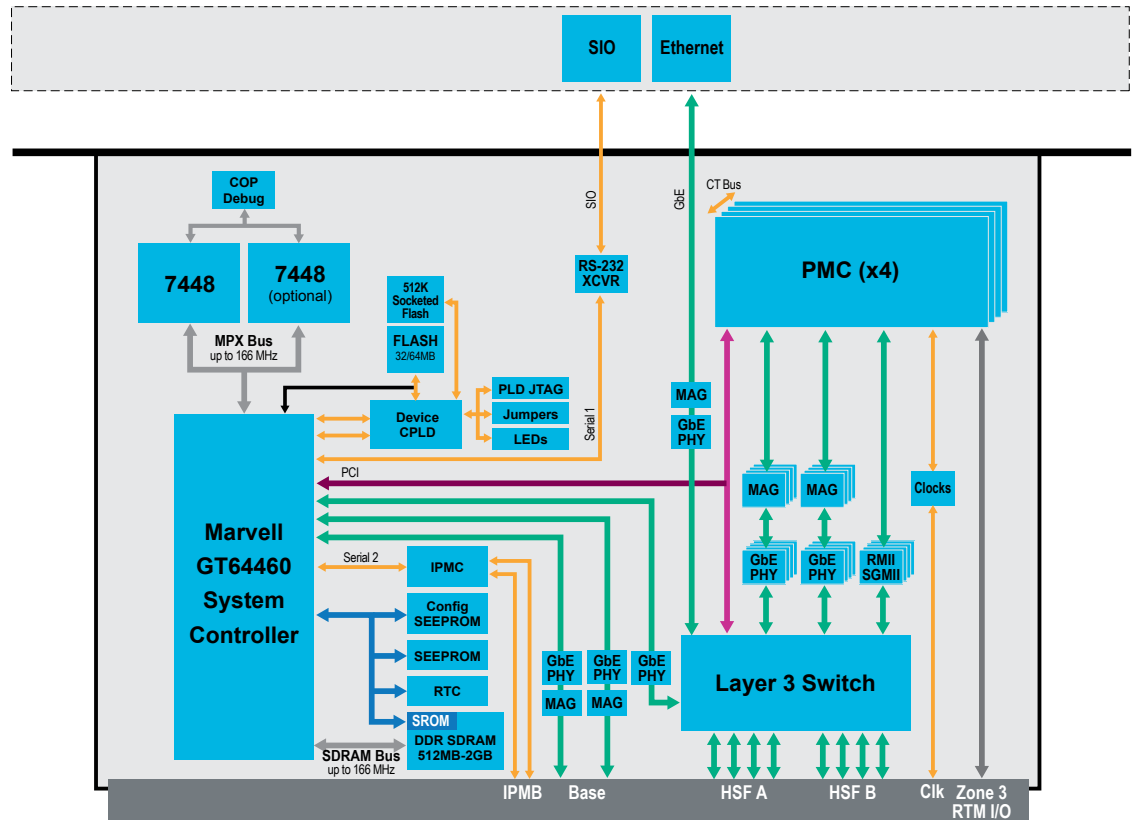
In telecom network elements, system management is essential. KatanaQp is an intelligent field replaceable unit (FRU) and implements a redundant System Management Bus (SMB). It also fully supports the Intelligent Platform Management Interface (IPMI) with AdvancedTCA extensions to support standards-based shelf management.

Using an off-the-shelf processor blade 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 processor subsystem blade also lowers your lifetime cost of ownership by providing an easy upgrade path and protecting you from obsolescence issues.

Katana is a Japanese word for 'sword'. Emerson's Katana family of processor blades embodies the power and swiftness of this sword.



Block Diagram



Specifications

PROCESSOR

Processor Blades

- Single or dual PowerPC 7448 processors running at up to 1.4 GHz
- Optional two-way SMP architecture
- Dynamic frequency switching
- Each processor:
 - ▲ 166 MHz MPX bus (single processor)
 - ▲ 133 MHz MPX bus (dual processor)
 - ▲ 64-bit data bus
 - ▲ 36-bit address bus
 - ▲ 32K I/32K D L1 cache
 - ▲ 1MB L2 cache with ECC for 7448 configuration
 - ▲ AltiVec vector unit

SYSTEM CONTROLLER

- Marvell Discovery III system controller
- PCI bridge

- Two Gigabit Ethernet (GbE) interfaces to ATCA 3.0 base fabric
- GbE interface to an optional Marvel L2/3 98DX253 switch
- I²C interface
- DDR SDRAM controller
- Four timer/counters, each selectable as a counter or timer
- 32-bit watchdog timer
- Four IDMA controllers

MEMORY

SDRAM

- Up to 2GB SDRAM with Error Checking and Correction (ECC)
- Dual data rate DDR-266/DDR-333
- Modular and upgradeable 200-pin SO-DIMM packaging

User Flash

- 32 or 64MB flash configurations
- True Flash File System (TFFS) support under VxWorks
- Flash Architecture NOR

Serial EEPROM

- 64KB Serial EEPROM on I²C bus for configuration data

EXPANSION

PTMC/PrMC

- Quad PCI Telephony Mezzanine Card Sites comply w/ IEEE 1386.1, VITA 32 and PICMG 2.15 (PT2CC, PT5CC)
- PCI 2.2 compliant, 32-bit, 33 MHz PCI Bus interface
- User I/O pins from each site routed to ATCA RTM Interface (Zone 3 connector)
- RMII/PHY support from Jn3 connector to Ethernet switch
- 32 CTbus TDM streams are bussed across PTMC sites
- CTbus clocks are sourced from or drive the ATCA synchronization clock interface
- Dual GbE interfaces to an optional Marvel L3 98DX253 switch
- PMC site can be configured as a monarch with a Processor PMC module installed

BLADE I/O

Ethernet

- 10/100/1000 front panel access for debug purposes
- Embedded System Area Network (ESAN)
 - ▲ AdvancedTCA (ATCA – PICMG 3.1) Node
 - ▲ Dual 1000Base-T Base interface for control plane
 - ▲ Octal GbE high speed serializer/deserializer (SerDes) ports for Fabric interface
 - ▲ Synchronization clock interface

Serial I/O

- One console serial port
- EIA-232 signal levels
- Connector with front panel access
- IPM controller

JTAG/COP

- JTAG/COP Processor debug interface
- IEEE 1149.1 compatible
- Access to internal processor scan chains for debug
- Serial connection to processor core for emulator support

I²C

- Master/Slave I²C bus connecting
 - ▲ Serial EEPROMs
 - ▲ Real-time clock device w/ supercap backup

Management

- Intelligent Platform Management Controller (IPMC)
- Dual redundant IPM Bus interfaces (IPMB-A/B)
- Supports Intelligent Platform Management Interface (IPMI) w/ PICMG 3.0 enhancements
- Intelligent Platform Management features:
 - ▲ E-Keying
 - ▲ Payload power control
 - ▲ Payload reset
 - ▲ Temp/voltage monitor
 - ▲ FRU data structure

Synchronization Clock Interface

- CTbus clocks are sourced from or drive the ATCA synchronization clock interface

LEDS AND RESET SWITCH

- ATCA Hot Swap front panel LED
- ATCA LED1 Failure/Out of Service
- ATCA LED2 User Defined
- ATCA LED3 User Defined
- Recessed front panel reset switch

SOFTWARE SUPPORT

- Bootloader monitor with power-on self test
- Board support package for Wind River VxWorks
- Carrier Grade Linux support for MontaVista CGE and Wind River PNE LE

PHYSICAL CHARACTERISTICS

- ATCA PICMG 3.0 form factor
- Dimensions: 322.25 mm W x 280 mm D x <30.48 mm H (not including front panel, handles)
- Power requirements: Dual –48Vdc nominal supplies, 50W estimated typical (no mezzanines, 30W maximum per mezzanine site)
- Operating range: 0 to 55°C ambient, not to exceed 85% relative humidity (non-condensing)
- Storage range: -40°C to 105°C, not to exceed 95% relative humidity (non-condensing)
- Altitude: 0 to 4,000 meters above sea level

AGENCY COMPLIANCE

- UL/CSA/IEC 60950
- FCC Part 15 (US)
- ICES 003 (Canada)
- NEBS: Telcordia GR-1089 and GR-63 applicable sections
- EN55022
- EN55024
- EN300386

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