ATCA-9301

AdvancedTCA Many-core Processor Blade

Embedded Computing for Business-Critical Continuity™

The ATCA-9301 is a 10 Gigabit processor blade with two many-core Cavium OCTEON 16-core processors

- Two Cavium OCTEON CN5860 16-core MPUs running at up to 800 MHz for high bandwidth packet processing applications
- Hardware acceleration with thread pinning, security, packet queuing, and scheduling functions
- 10-port Gigabit Ethernet (GbE) rear transition module network interfaces
- Designed to deliver telco-grade reliability
- Comprehensive integration with Emerson ATCA® hardware and software ecosystem for rapid application deployment

The Emerson Network Power ATCA-9301 many-core 10 Gigabit processor blade enables the next wave of high throughput, high compute, and telecommunications data plane applications. Operating at 10Gbps full duplex speeds, the ATCA-9301 brings definitive packet processing performance and vastly improved control plane processing capabilities to the 10G application space.

Core processing is performed using two Cavium OCTEON 16-core processors for a total of 32 cores per blade. Targeted applications include network gateway and edge functions (IPsec, tunnel termination, NAT, SBC, MGW, MGC, encryption/decryption), deep packet inspection (IDS, IPS and control plane applications (signaling, call control). By employing multi-threading and parallel processing techniques the ATCA-9301 brings a new level of performance to AdvancedTCA® systems.

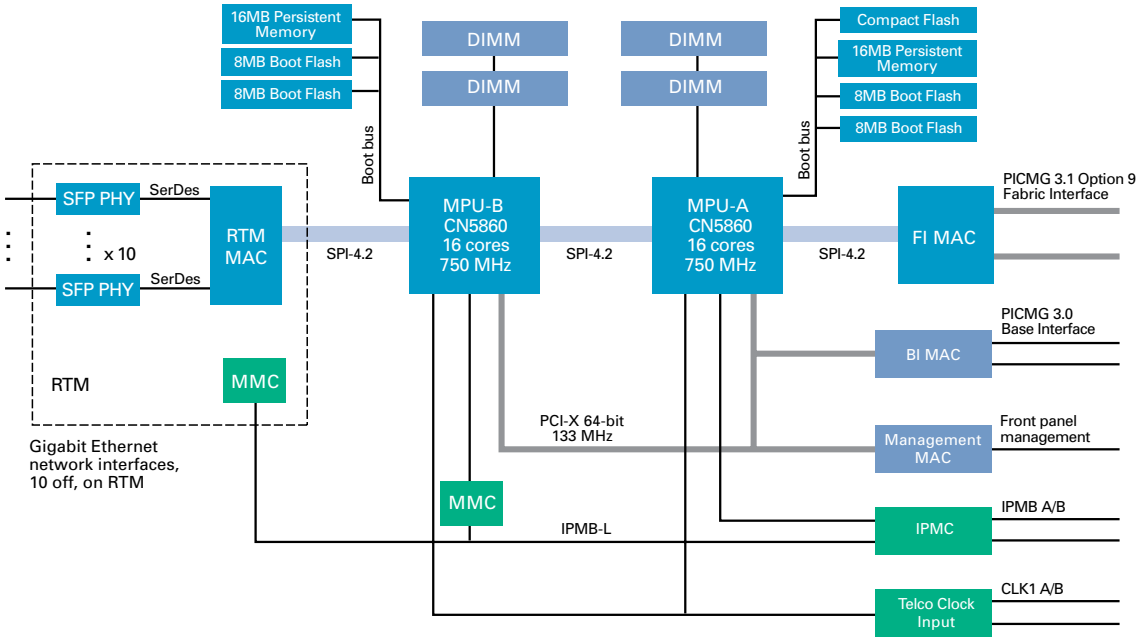
Data plane elements in 4G wireless applications, including WiMAX and next-generation IPTV networks, will see dramatic increases in throughput and packet processing when implemented with the ATCA-9301 blade.

RoHS 6/6 COMPLIANT

AdvancedTCA®

EMERSON™ Network Power

ATCA-9301 Block Diagram



Standard Networking Support

- PICMG 3.0, Dual, redundant Gigabit Ethernet pair (1.0Gbps) – Base Interface
- PICMG 3.1, Option 9 – Dual, redundant 10 Gigabit Ethernet pair (10.0Gbps) – Fabric Interface

Processor Complex

Surrounding the dual Cavium OCTEON many-core processing units (MPUs) (MPU-A and MPU-B) is an array of high performance components that combine to deliver unparalleled packet processing performance. Features include:

- Up to 8GB ECC-protected DDR2 SDRAM per MPU
- CN5860 packet interfaces using SPI-4.2 configuration
- PCI bus operation in 64-bit PCI-X mode
- Redundant GbE links to base channel on backplane and front panel GbE port
- Redundant 10 GbE links to backplane fabric interface
- Dual 64MB boot flash, dual bank architecture per MPU for boot redundancy
- Serial over LAN (SOL) support enables MPU-A/B communication across the network

Software Support

Emerson ATCA blades can be configured with optional software that, when combined with the hardware, create a fully integrated and verified telecom platform.

The software package available is the Centellis 4000 software package, which comes complete with:

- Wind River PNE
- Basic Blade Services

The Centellis 4000 platform comes complete with, and is verified with Wind River PNE. This distribution comes with all Linux Support Packages (LSPs) to support Emerson ATCA blades as well as user applications.

Basic Blades Services (BBS) software is provided to enable a set of ATCA hardware and software components into a fully integrated and verified telecom platform – the Centellis 4000 platform. This platform is ready for customers HA middleware and application environment.

Basic Blade Services (generic to all ATCA blades):

- Hardware Platform Management including local IPMC, LED, EKeying and blade extraction software
- Firmware upgrade utility
- Local management access (SNMP, CLI)

RELEVANT STANDARDS

- Linux Foundation
- Service Availability Forum™ (SA Forum)
  - Hardware Platform Interface (HPI) – Rev. B
  - Application Interface Specification (AIS) – Rev. B

For more information on the Centellis 4000 platforms please refer to the Centellis 4000 series datasheet.

Intelligent Platform Management Control

The PICMG 3.0 ATCA standard specifies a low-level, environmental management architecture referred to as intelligent platform management interface (IPMI). The ATCA-9301 blade implements this functionality using an off-the-shelf hardware and software based IPM controller that monitors all local, blade-specific environmental information. Management access to this information is provided through the SA Forum defined HPI interface.

Rear Transition Modules

- SPI-4.2 on Zone 3 connected to MPU-B
- Ten 1000BASE-X or 1000BASE-T network interfaces
- SFP PHY modules support 1000BASE-SX, LX
- SFP PHY modules support also 1000BASE-T (but not 10/100/1000BASE-T)

Telco Clock Features

- Optional 8 kHz clock interrupt to MPU software
- Optional sync of real-time clock to 8 kHz backplane clock

Hardware

PROCESSOR

- Two Cavium OCTEON CN5860 16-core MPUs running at up to 800 MHz, with single MPU option

MEMORY

- 8GB ECC-protected SDRAM per MPU
- 8MB boot flash, dual bank architecture
- Support Type I or Type II Compact flash with MPU-A
- 64MB persistent memory

BASE AND FABRIC INTERFACES

- Dual star configuration
  - Option 9 fabric interface
  - Dual 10GBASE-BX4 MAC
  - PI-4.2 connection to MPU-A
  - Option 9 only
- Base interface
  - Dual 10/100/1000BASE-T MAC/PHY

EXTERNAL INTERFACES

- Front panel
  - Serial, RJ-45 to each MPU
  - Gigabit Ethernet to MPU-A for management
- Via optional RTM (ARTM-9301)
  - Gigabit Ethernet (10 ports)

POWER REQUIREMENTS

- Dual-redundant –48V rail
- Input range: 39.5 – 72 VDC
- Max Power 200W

THERMAL CHARACTERISTICS

- Operating range: –5° C to 55° C

RELEVANT BLADE SIZE

- 8U form factor, 280 mm X 322.5 mm, single slot

RELEVANT STANDARDS

- PICMG 3.0 (form factor, IPMI, base interface, hot swap, RTM)
  - PICMG 3.1, Option 9

Ordering information

Please contact an Emerson sales representative to order this product.

Regulatory Compliance

Item	Description
Designed to comply with NEBS	GR-63-CORE, NEBS Physical Protection, Level 3
	GR-1089-CORE, Electromagnetic Compatibility and Electrical Safety — Generic Criteria for Network Telecommunications Equipment. Level 3, Equipment Type 2
Designed to comply with ETSI	ETSI Storage, ETS 300 019-2-1, Class 1.2 equipment, Not Temperature Controlled Storage Locations
	ETSI Transportation, ETS 300 019-2-2, Class 2.3 equipment, Public Transportation
	ETSI Operation, ETS 300 019-2-3, Class 3.2 equipment, Partly Temperature Controlled Locations
Designed to comply with Acoustic	ETS-300-753, Equipment Engineering (EE); Acoustic noise emitted by telecommunications equipment
EMC	EN-300-386 Electromagnetic compatibility and Radio spectrum Matters (ERM); telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements, Telecommunication equipment room (attended)
	FCC 47 CFR Part 15 Subpart B (US), Class A
	EMC Directive 89/336/EEC (EU)
	AS/NZS 3548 (Australia/New Zealand), Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment
	VCCI Class A (Japan), Voluntary Control Council for Interference by Information Technology Equipment
Safety	Compliance to UL/CSA 60950-1, EN 60950-1 and IEC 60950-1 CB Scheme. Marked with U.S. NRTL, Canadian Safety and CE Mark. Safety of information technology equipment, including electrical business equipment
	ETS 300-132-2 Environmental Engineering (EE); Power supply interface at the input to telecommunications equipment; Part 2: Operated by direct current (dc)
RoHS/WEEE compliance	DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
	DIRECTIVE 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on waste electrical and electronic equipment (WEEE)

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.

Emerson Network Power

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ATCA9301-D5 11/08