ATCA-9305

AdvancedTCA Many-core Processor Blade

Embedded Computing for Business-Critical Continuity™

PRELIMINARY DATASHEET

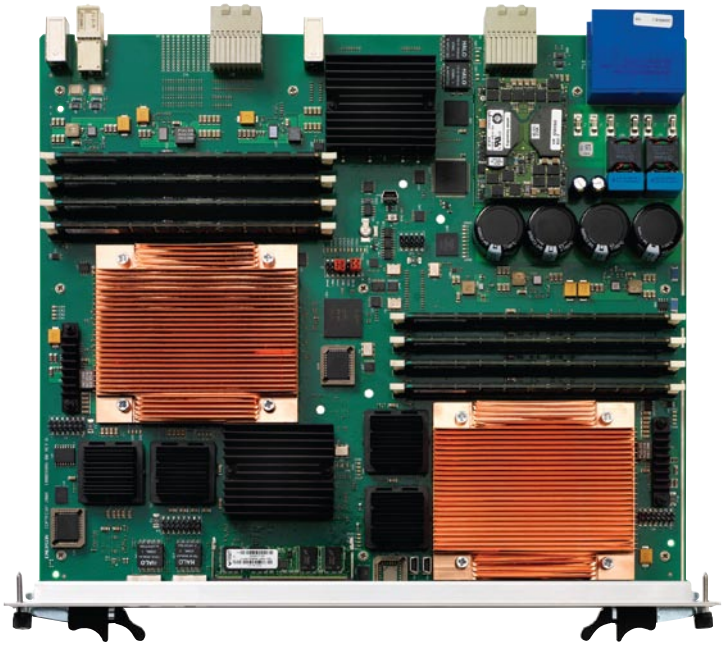
The ATCA-9305 is a 1 and 10 Gigabit processor blade with two many-core Cavium OCTEON 16-core processors

- Two Cavium OCTEON 16-core CN5860 processors operating at 800 MHz
- Freescale MPC8548 PowerQuicc III integrated communications processor operating at 1 GHz
- Hardware acceleration with thread pinning, security, de-/compression, regexp, packet queuing and scheduling functions
- Broadcom BCM56802 10 Gigabit Ethernet (GbE) multilayer switch
- Easy access front panel Ethernet and serial management ports
- Designed to deliver telco-grade reliability
- PCI Express x4 port lane enables design of custom rear transition module with storage
- Full hot swap support

The ATCA-9305 from Emerson Network Power is an AdvancedTCA® (ATCA®) blade based on dual Cavium OCTEON CN5860 processors and the Freescale Semiconductor MPC8548 management processor. The AdvancedTCA specification incorporates the latest trends in high speed interconnect technologies, next generation processors, and improved reliability, manageability and serviceability.

The ATCA-9305 is targeted at security and packet-processing applications in the wireless and transport market segments. This market includes data plane packet-processor, security coprocessor, video compression, and pattern matching. The ATCA-9305 complies with the SCOPE recommended profile for central office ATCA systems, PICMG® 3.0 ATCA mechanical specifications, and E-keying.

This blade is hot-swappable, which allows blades to be replaced by operators or service organizations in the field without bringing down an entire ATCA system. This reduces spares costs and mean time to repair (MTTR), lowering both CapEx and OpEx. The ATCA-9305 also provides an IPMI-based system management interface, which enables operators to pinpoint and fix problems at the blade level, also lowering MTTR and OpEx.

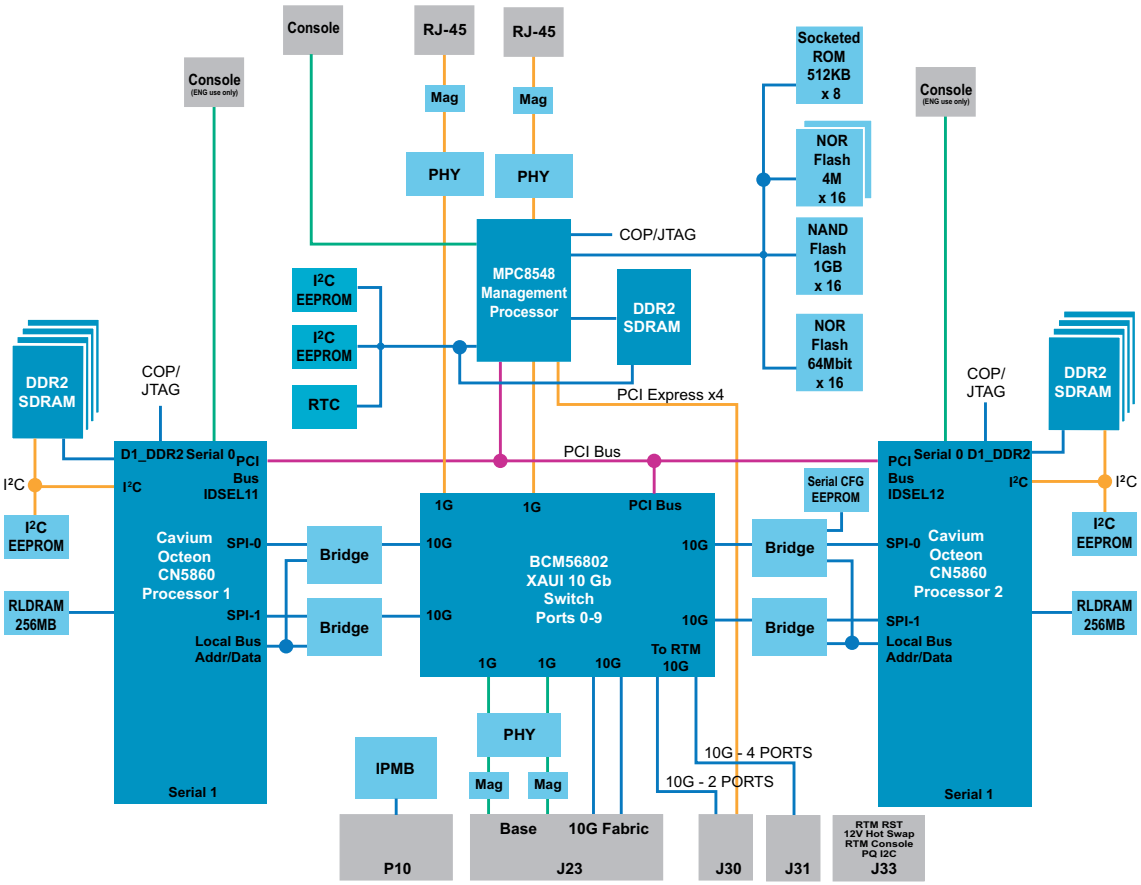


RoHS 6/6 COMPLIANT

AdvancedTCA®

EMERSON™ Network Power

Block Diagram



Standard Networking Support

- PICMG 3.0, Dual, redundant Gigabit Ethernet (GbE) pair (1.0Gbps) – Base Interface
- PICMG 3.1, Option 1 – Dual, redundant Gigabit Ethernet pair (1.0Gbps) – Fabric 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 is an array of high performance components that combine to deliver unparalleled packet processing performance. Features include:

- Up to 8GB DDR2 SDRAM per processor
- Up to 256MB RLDRAM per processor
- 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 1/10 GbE links to backplane fabric interface
- Broadcom BCM56802 10GbE multilayer switch with Integrated 10GbE XAUI SerDes and 1GbE SGMII PHY
- Two Altera Stratix II GX bridges per processor for SPI-4.2 high-speed interconnect and XAUI
- Management Processor Freescale PowerQuicc III MPC8548

Software Support

The ATCA-9305 is provided with the following software

- Monitor based on the Embedded PowerPC Linux Universal Boot (U-Boot)
- Linux Support Package (LSP) for MontaVista Carrier Grade Edition (CGE) 5.0

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

The Centellis™ 2000 platform comes complete with, and is verified with Wind River PNE. This distribution comes with Linux Support Packages (LSPs) to support Emerson ATCA blades as well as user applications.

For more information on the Centellis 2000 platforms please refer to the Centellis 2000 series data sheet.

RELEVANT STANDARDS

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

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-9305 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

The ATCA-9305 provides on Zone 3 the following interfaces to the RTM:

- Six 10Gigabit Ethernet
- One PCI Express x4
- 12V hot swap

Clocking

- ST Microelectronics M41T00 real time clock (RTC)
- I^2C bus compatible and super cap backup

Hardware

PROCESSOR COMPLEX

- Two Cavium OCTEON CN5860 16-core processors running at 800 MHz
- Up to 8GB ECC-protected DDR2 SDRAM per processor
- Up to 256MB RLDRAM per processor
- 64MB soldered NOR flash provides CN5860 code storage and non-volatile memory

MANAGEMENT PROCESSOR COMPLEX

- Freescale PowerQuicc III MPC8548 at 1 GHz
- 32KB instruction and data L1 caches
- 64-bit PCI operating at 66 MHz
- 2GB DDR2 SDRAM SO-CDIMM with ECC
- 2 x 4MB soldered NOR flash
- 1GB soldered NAND flash for non-volatile RAM storage and True Flash File System (TFFS)
- Two I^2C EEPROMs for user NVRAM and initialization

BASE AND FABRIC INTERFACES

- Dual star configuration
  - Option 1 fabric interface
  - Option 9 fabric interface
  - Dual 10GBASE-BX4 MAC connection to both processors via 10G switch
- Base interface
  - Dual 10/100/1000BASE-T MAC/PHY

EXTERNAL INTERFACES

- Front panel
  - One serial console port for the MPC8548 management processor
  - Two 10/100/1000BASE-T Ethernet ports accessible via RJ-45 connectors

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 1
  - 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
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)

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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