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ATCA-7221, R3

AdvancedTCA Processor Blade

Embedded Computing for Business-Critical Continuity™

The ATCA-7221 processor blade is designed to operate within both the Centellis™ 3000 and Avantellis™ 3000 series of communications servers

- High performance processor blade with SMP support
- Dual 2.8 GHz Intel® Xeon™ LV processors
- Support for up to 16GB memory
- Complete software operating environment including OS
- PICMG 3.0 Gigabit Ethernet base interface support
- PICMG 3.1, Option 1 and 2 fabric interface support
- PMC site for I/O flexibility
- SATA or SAS hard disk drive options
- Service Availability Forum™ (SA Forum) compliant HPI and AIS software interfaces
- Designed for NEBS and ETSI compliance

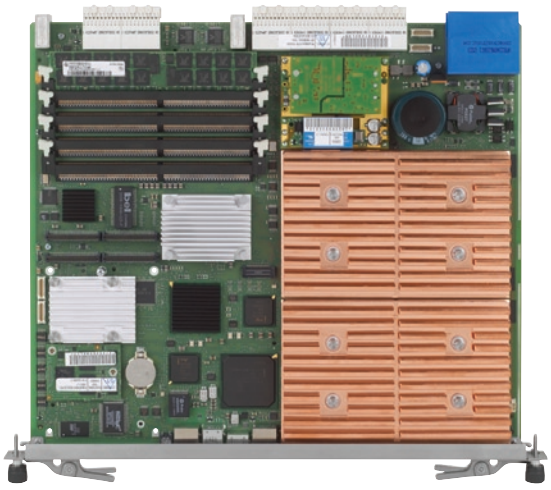
The Emerson Network Power ATCA-7221 processor blade delivers a combination of performance, functionality and cost efficiency to help drive the successful implementation of next generation telecom networks. It builds on the AdvancedTCA® (ATCA®) standard to provide the right product at the right time to meet the needs of the telecom industry.

The Emerson ATCA-7221 processor blade is designed to operate within both the Emerson Centellis™ 3000 and Avantellis™ 3000 series of communications servers. Dual Intel Xeon LV processors operating at 2.8 GHz in a two-way symmetric multiprocessing (SMP) configuration deliver outstanding performance. The ATCA-7221 blade is ideal for implementing almost any control plane applications for next generation wireless and wireline telecommunications infrastructure equipment.

The ATCA-7221 blades are RoHS (6 of 6) compliant, eliminating the need for customers to incur the time, resource and expense associated with creating and/or converting existing product to meet this international requirement.

With dual Intel Xeon processors, the ATCA-7221 processor blade is the highest performance processing blade in the AdvancedTCA form factor. It also provides Gigabit Ethernet interfaces to the PICMG® 3.0 base interface and the PICMG 3.1 fabric interface in a dual star configuration. This allows the base interface to be used for control, signaling, or management while the fabric interface can be used for high performance data transport, providing control and data traffic separation.

An array of memory options, including up to 16GB of main memory, SAS and SATA storage interfaces and multiple hard drive options add to the performance and flexibility of the ATCA-7221 processor blade.

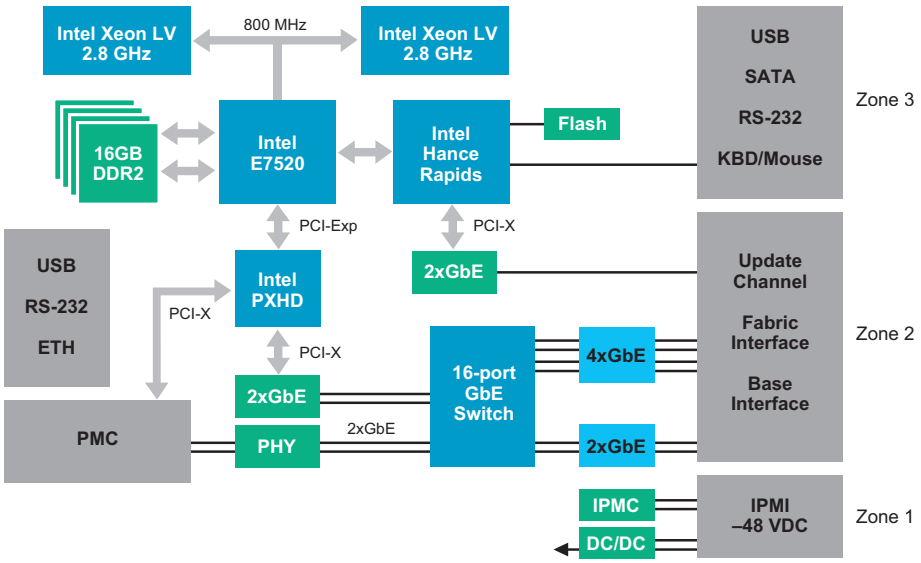


RoHS 6/6 COMPLIANT

AdvancedTCA®

EMERSON™ Network Power

ATCA-7221 Block Diagram



Standard Networking Support

The ATCA-7221 processor blade provides PICMG 3.0 base interface connectivity in a dual star configuration using standard Gigabit Ethernet technology. The PICMG 3.1 fabric interface is also supported and several configurations are available depending on application bandwidth requirements.

- PICMG 3.1, Option 1 – Single, redundant Gigabit Ethernet pair (1.0Gbps)
- PICMG 3.1, Option 2 – Dual, redundant Gigabit Ethernet pairs (2.0Gbps)

Processor Complex

Surrounding the dual Intel Xeon SMP processor configuration is an array of high performance components that combine to form a powerful processor complex.

FEATURES INCLUDE:

- Up to 16.0GB, ECC-protected DDR2 SDRAM. Supported configurations: 2, 4, 8 and 16GB
- Intel® E7520 high performance chipset
- Dual 64MB flash, dual bank architecture
- SATA or SAS hard disk drive (HDD) on RTM
- Dual, external Ultra320 SCSI interfaces on RTM
- Dual external Fibre Channel interfaces on RTM

Software Support

The ATCA-7221 AdvancedTCA blade can be configured with a variety of software offerings, from simple firmware to fully integrated and verified software operating environments.

FIRMWARE

This blade-level support is offered for customers taking on the integration and verification responsibilities. It provides all the boot and IPMC firmware required for an ATCA blade.

CENTELLIS 31KX SOFTWARE PACKAGE

This software package is based on a standard Carrier Grade Linux (CGL) distribution, MontaVista CGE 3.1, with remote management via SNMP v2/3. The switching software is based on Wind River TMS 2.1.1 providing:

- Wireline speed switching at 10/100/1000B/s
- IEEE 802.3x Flow Control (full duplex)
- IEEE 802.1d Spanning Tree Protocol
- IEEE 802.1Q VLAN
- IEEE 802.1p Class of Service

Available system S/W services:

- DHCP server located on the ATCA-F103 and ATCA-F300 switch blades responds to shelf internal DHCP requests
- Remote Update services to update the firmware of all IPMCs and Shelf Management Controller
- PXE-based boot of diskless clients
- Rolling upgrade of application software

CENTELLIS 3000 SOFTWARE PACKAGES

This software package comes complete with, and is verified with, a standard CGL distribution; MontaVista CGE 4.0, the market leader in Carrier Grade Linux. MontaVista CGE 4.0 comes complete with all required Linux Support Packages (LSPs) and Basic Blade Services software.

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 3000 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
- Switch management
- Firmware upgrade utility
- Local management access (SNMP, CLI)

RELEVANT STANDARDS

- Linux Foundation
- SA Forum
  - Hardware Platform Interface (HPI) – rev. 1.0, A .01.01
- For more information on the Centellis and Avantellis 3000 platforms, please refer to the Centellis 3000 and Avantellis 3000 series datasheets.

Intelligent Platform Management Control

The PICMG 3.0 AdvancedTCA standard specifies a low-level, environmental management architecture referred to as intelligent platform management interface (IPMI). The ATCA-7221 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

Emerson offers two rear transition modules (RTMs) for the ATCA-7221 processor blade for the ultimate flexibility in storage interconnect and capacity options as well as external Gigabit Ethernet connectivity.

PMC Site

The ATCA-7221 blade includes a single width IEEE1386.1-2001 PMC site. The PMC site supports PCI-X 64-bit 133 MHz capable PMC modules.

Hardware

PROCESSOR

- Dual 2.8 GHz Intel Xeon LV processors in an SMP configuration
- 1MB L2 on-chip cache
- 800 MHz frontside bus
- Intel® E7520 system controller

MEMORY

- Up to 16GB, ECC-protected SDRAM. Supported configurations – 2GB, 4GB, 8GB, 16GB
- 256Byte CMOS NVRAM for BIOS configuration
- 1.0MB boot flash, dual bank architecture
- 32MB application flash, dual bank architecture
- 16MB CPU reset-persistent memory

COUNTERS/TIMERS

- Real-time clock
- Programmable watchdog timer

PCI MEZZANINE CARD

- PMC site with 64-bit 133 MHz PCI-X interface
- Dual Gigabit Ethernet interface

BASE AND FABRIC INTERFACES

- Dual star configuration
- PICMG 3.0 base interface compliant, Gigabit Ethernet (1.0Gbps)
- PICMG 3.1 fabric interface compliant, Gigabit Ethernet
  - PICMG 3.1, Option 1 – Single, redundant Gigabit Ethernet pair (1.0Gbps)
  - PICMG 3.1, Option 2 – Dual, redundant Gigabit Ethernet pairs (2.0Gbps)

EXTERNAL INTERFACES

- Front Panel
  - USB 2.0, mini USB Type AB (2)
  - Serial, RJ-45 (2)
  - 10/100/1000BaseT Ethernet, RJ-45 (1)

- Via Optional RTM (RTM-ATCA-7221/SCS/6E)
  - USB 2.0, Type A (2)
  - Serial, RJ-45 (2)
  - SAS interface (1)
  - Keyboard/mouse, PS2 (1)
  - SCSI interface (2)
  - Gigabit Ethernet (2)
  - SAS HDD slot (1)

- Via Optional RTM (RTM-ATCA-7221/FC/6E)
  - USB 2.0, Type A (2)
  - Serial, RJ-45 (2)
  - Keyboard/mouse, PS2 (1)
  - SATA HDD slot (1)

POWER REQUIREMENTS

- Dual-redundant –48V rail
- Input range: 39.5 – 72 VDC
- Typical power: 120 – 140W

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 and 2

Ordering Information

Please contact a 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. Plus solution extras include enhanced warranty and repairs.

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