

ATCA-7105/7107

AdvancedTCA Processor Blade

■ Embedded Computing for
Business-Critical Continuity™

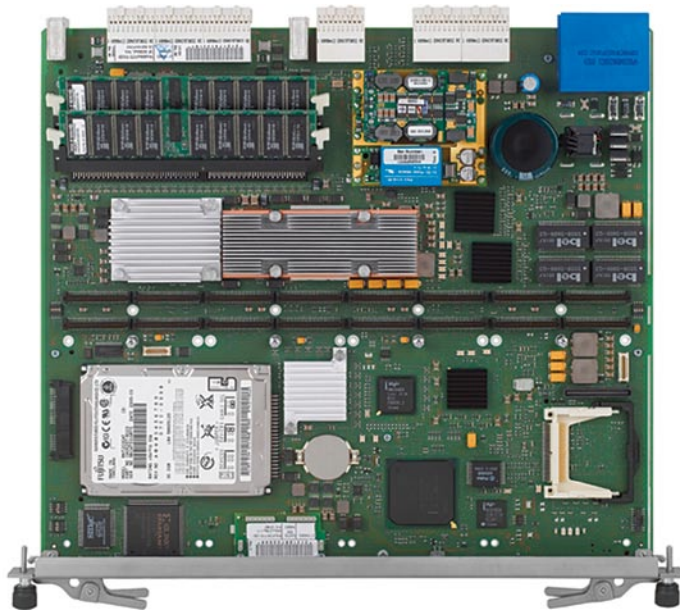
The ATCA-7105/7107 processor blade is designed to operate within the Emerson Centellis™ series of application-ready platforms

- High performance processor blade with four PMC sites
- RoHS (5 of 6) compliant
- 1.8 GHz Intel Pentium M processor
- Intel E7501 server-class chipset supporting 4.3GB/s memory bandwidth
- Up to 4GB ECC-protected DDR266 SDRAM
- Complete software operating environment including OS available to support Centellis 31K platforms
- PICMG 3.0 Gigabit Ethernet base interface support (ATCA-7107 only)
- PICMG 3.1, Option 1 and 2 fabric interface support
- Multiple hard disk drive options
- Service Availability Forum™ (SA Forum) compliant HPI interfaces
- Designed for NEBS and ETSI compliance

Designed for PICMG® 3.0 and 3.1 AdvancedTCA® compliant systems, the Emerson Network Power ATCA-7105/7107 processor blade features the 1.8 GHz Intel® Pentium® M processor with a high MIPS/watt capability in an 8U form factor. The processor delivers outstanding performance and supports light I/O and/or coprocessing via PMC sites; making it ideal for implementing almost any control plane applications. It also includes an Intel® E7501 chipset with a memory bandwidth of 4.3GB/s, accommodates four PMC modules for additional processing power and/or I/O, and supports 4GB ECC-protected DDR266 SDRAM.

The ATCA-7105/7107 blades are RoHS (5 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.

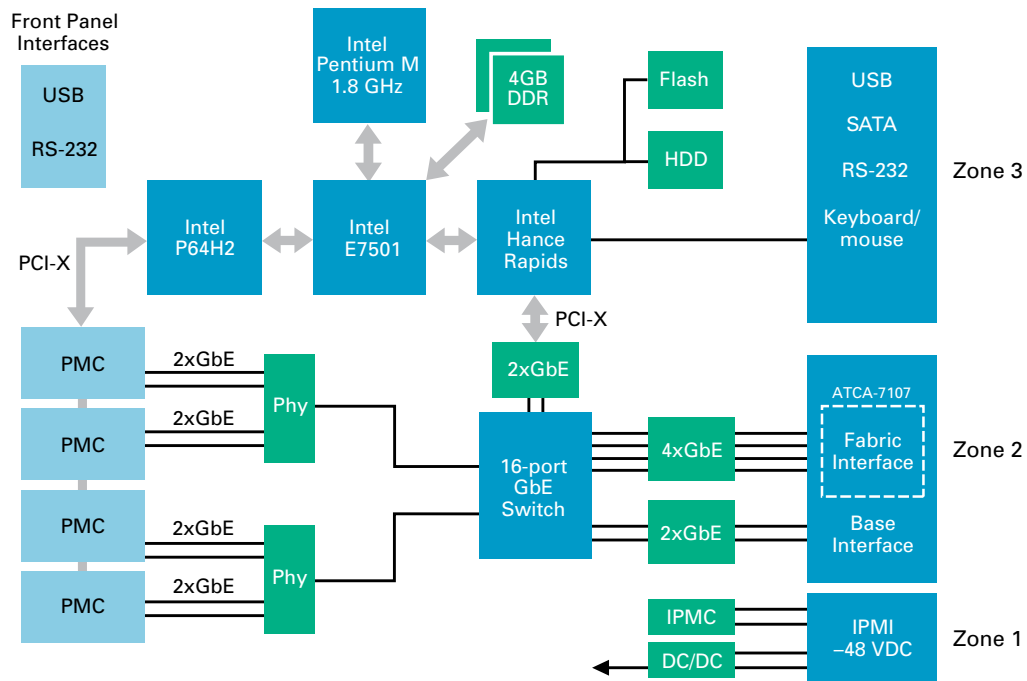
The ATCA-7105/7107 blade features a managed, multi-layered 16-port Gigabit Ethernet switch that delivers the flexibility required for routing Gigabit Ethernet interfaces between the base board control processor, the PMC-based processing or I/O nodes, and the PICMG compliant base and fabric interfaces on the ATCA-7107. The ATCA-7105/7107 is available in two memory configurations (2GB and 4GB) and supports optional, on-board parallel and serial ATA hard drive devices; adding to the performance and flexibility of this processor blade.



AdvancedTCA®


EMERSON™
Network Power

Block Diagram



Standard Networking Support

The ATCA-7105/7107 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 on the ATCA-7107 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 Intel Pentium M processor is an array of high performance components that combine to form a powerful processor complex. Features include:

- Up to 4GB, ECC-protected DDR2 SDRAM.
- Intel E7501 server-class chipset supporting 4.3GB/s memory bandwidth
- 1.0MB boot flash
- Parallel and SATA hard disk drive options

Software Support

The ATCA-7105/7107 AdvancedTCA blade can be configured with a variety of software offerings, from simple firmware to fully integrated and verified software operating environment for the Centellis 31KX platform.

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.

SOFTWARE PACKAGES

The Centellis 31KX package is based on a standard Carrier Grade Linux (CGL) distribution, MontaVista CGE 3.1, including HPI-A Remote Client and BIOS upgrade utility. It will be installed to the blade within a pre-configured 31KX system environment.

The Basic Blade Services (BBS) software package is based on MontaVista CGE 4.01, including BIOS and IPMI firmware upgrade utilities, HPI-A and HPI-B support.

Software add-ons including BIOS upgrade utility and device driver for Red Hat Linux RHEL5 and MontaVista CGE 4.01.

Available system software services:

- Remote Update services to update the firmware of all IPMCs and Shelf Management Controller within a system environment
- PXE based boot of diskless clients
- Rolling upgrade of application software

RELEVANT STANDARDS

- Linux Foundation
- SA Forum
 - ▲ Hardware Platform Interface (HPI) – rev. 1.0, A .01.01

For more information on the Centellis 31KX platform, please refer to the Centellis 31KX datasheet.

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-7105/7107 blade implements this functionality using 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 a rear transition module (RTM) for the ATCA-7105/7107 processor blade for access to an assortment of interfaces like USB, keyboard/mouse as well as SATA storage interfaces.

PMC Site

The ATCA-7105/7107 blade provides four, single width IEEE1386.1-2001 PMC sites. The PMC site supports PCI-X 64-bit 133 MHz capable PMC modules. These can be used for any combination of processor, coprocessor or I/O functions.

Hardware

PROCESSOR

- 1.8 GHz Intel Pentium M Processor
- 512KB L2 on-chip cache
- 400 MHz frontside bus
- Intel E7501 system controller

MEMORY

- Up to 4GB, ECC-protected SDRAM. Supported configurations – 2GB and 4GB
- 256Byte CMOS NVRAM for BIOS configuration
- 1.0MB boot flash, single bank architecture
- 1.0MB backup boot flash (can alternatively be used as application flash)
- Support for CompactFlash card

COUNTERS/TIMERS

- Real-time clock
- Programmable watchdog timer

PCI MEZZANINE CARD

Four PMC sites with 100 MHz PCI-X interface and 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)
 - ▲ Keyboard/mouse, PS2 (1)
- Via Optional RTM
 - ▲ USB 2.0, Type A (2); Serial, RJ-45 (2); SATA (1).
 - ▲ From PTMC: E1/T1, RJ-45 (16); Serial, RJ-45 (2)
 - ▲ Keyboard/mouse, PS2 (1)

POWER REQUIREMENTS

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

THERMAL CHARACTERISTICS

Operating range: –5° C to 55° C

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 or authorized distributor 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.

PICMG, AdvancedTCA and the AdvancedTCA logo are registered trademarks of the PCI Industrial Computer Manufacturers Group. Service Availability is a proprietary trademark used under license. Intel and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. All other product or service names are the property of their respective owners.

This document identifies products, their specifications, and their characteristics, which may be suitable for certain applications. It does not constitute an offer to sell or a commitment of present or future availability, and should not be relied upon to state the terms and conditions, including warranties and disclaimers thereof, on which Emerson Network Power may sell products. A prospective buyer should exercise its own independent judgment to confirm the suitability of the products for particular applications. Emerson Network Power reserves the right to make changes, without notice, to any products or information herein which will, in its sole discretion, improve reliability, function, or design. Emerson Network Power does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent or other intellectual property rights or under others. This disclaimer extends to any prospective buyer, and it includes Emerson Network Power's licensee, licensee's transferees, and licensee's customers and users. Availability of some of the products and services described herein may be restricted in some locations.

Emerson Network Power.
The global leader in enabling
Business-Critical Continuity™.

■ AC Power Systems
■ Connectivity
■ DC Power Systems
■ **Embedded Computing**

■ Embedded Power
■ Integrated Cabinet Solutions
■ Outside Plant
■ Power Switching & Control

■ Precision Cooling
■ Services
■ Site Monitoring
■ Surge & Signal Protection

Emerson Network Power

Offices: Tempe, AZ U.S.A. 1 800 759 1107 or +1 602 438 5720 • Madison, WI U.S.A. 1 800 356 9602 or +1 608 831 5500
Shanghai, China +86 10 85631 122 • Paris, France +33 1 69 35 77 00 • Tokyo, Japan +81 3 5424 3101
Munich, Germany +49 (0) 89 9 608 2 333 • Hong Kong, China +852 2966 3210 • Tel Aviv, Israel +972 3 568 4387

www.EmersonNetworkPower.com/EmbeddedComputing

Business-Critical Continuity, Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co.
©2008 Emerson Electric Co.