

ATCA-7140

AdvancedTCA Processor Blade

■ Embedded Computing for
Business-Critical Continuity™

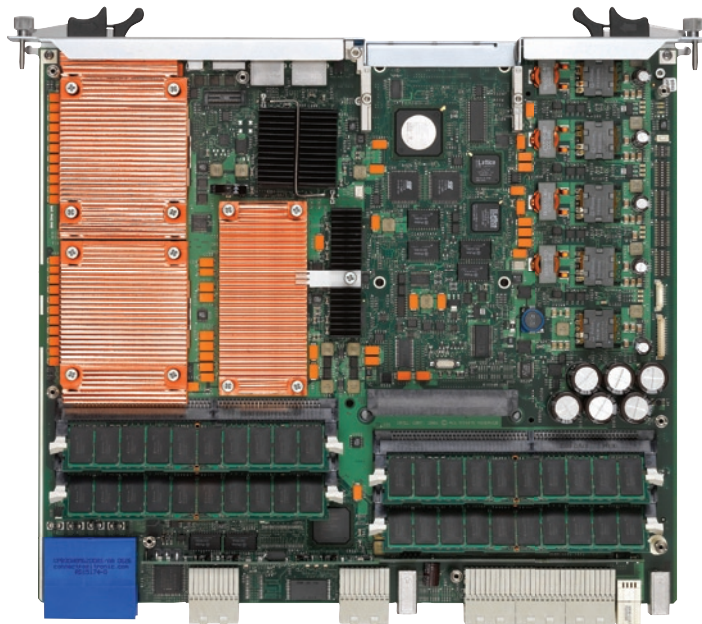
The ATCA-7140 is ideal for any 32-bit or 64-bit application requiring high performance processing and/or high memory capacity

- High performance processor blade with SMP support
- Two, Dual-Core Intel® Xeon™ (2.13 GHz) LV processors
- Multiple software packages including operating system
- PICMG 3.0 Gigabit Ethernet base interface support
- PICMG 3.1, Option 1 and 2 fabric interface support
- AMC site for I/O, coprocessing or SAS hard disk drive flexibility
- Service Availability Forum™ (SA Forum) compliant HPI interface
- Designed for NEBS and ETSI Compliance
- RoHS (6 of 6) compliant

The Emerson Network Power ATCA-7140 is Emerson's third generation of Intel based processing blades and delivers a combination of performance and flexibility 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 ATCA-7140 blade is 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 two Dual-Core Intel Xeon processors, the ATCA-7140 processor blade is the highest performance processing blade in an AdvancedTCA form factor. It also provides Gigabit Ethernet (GbE) interfaces to the PICMG® 3.0 base interface and the PICMG 3.1 fabric interface in a dual star configuration. Several other network configurations are also available.

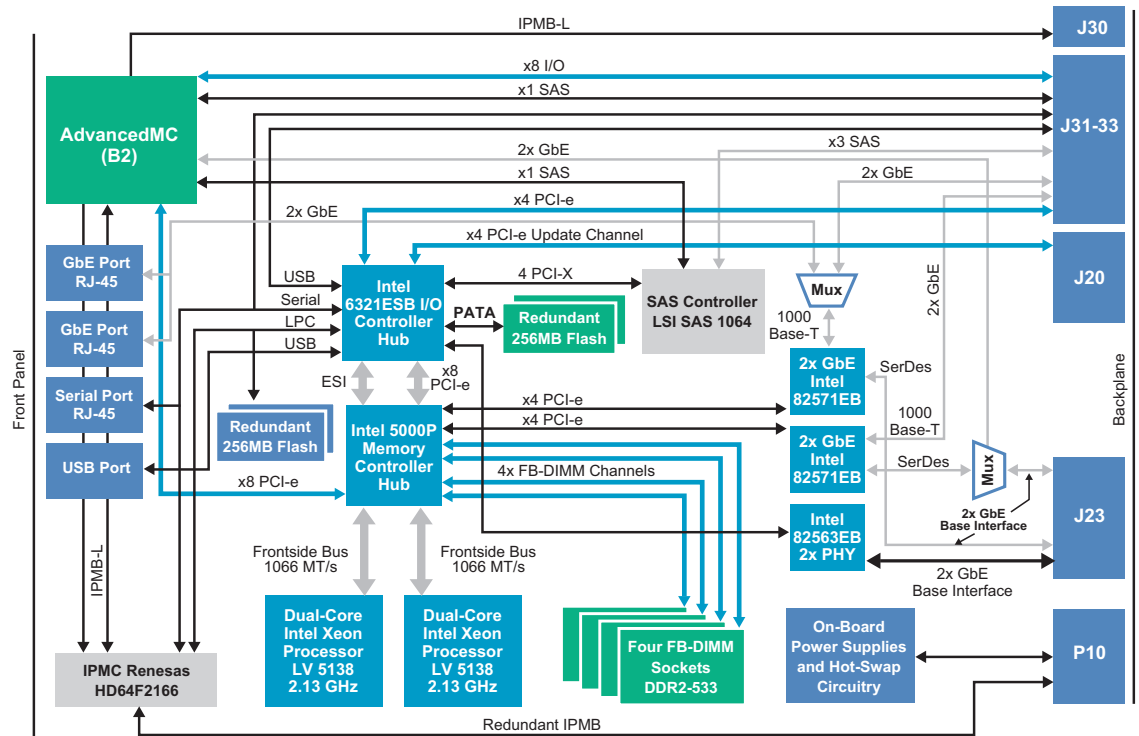
An array of main memory options, SAS storage interfaces and local hard drive options add to the performance and flexibility of the ATCA-7140 processor blade.



AdvancedTCA®


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ATCA-7140 Block Diagram



Standard Networking Support

The ATCA-7140 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 requirements.

- Configuration #1 – PICMG 3.1, option 2. This is useful for applications that require maximum bandwidth (redundant, 2.0Gbps) from the processing unit to the backplane for inter-blade connectivity.
- Configuration #2 – PICMG 3.1, option 1 (redundant, 1.0Gbps) and two GbE interfaces to the blade front panel. This is useful for applications that require flexibility between backplane bandwidth and external, front panel connectivity.
- Configuration #3 – PICMG 3.1, option 1 (redundant, 1.0Gbps) and two GbE interfaces to the rear transition module (RTM). This is useful for applications that require flexibility between backplane bandwidth and external, rear access connectivity.

- Configuration #4 – PICMG 3.1, option 1 (redundant, 1.0Gbps) connectivity driven from the AMC module and utilizing the on-board switch chip for two GbE interfaces to the RTM and two GbE interfaces to the blade front panel or all four GbE interfaces to the RTM.

Processor Complex

Surrounding the dual-core processors is an array of high performance components that combine to form a powerful processor complex.

FEATURES INCLUDE:

- Intel® 5000 memory controller
- Intel® 6321ESB I/O controller
- Intel® 82571EB Gigabit Ethernet controllers
- LSI 1064 SAS controller
- PMC HPFC-67X0 Fibre Channel controller

Software Support

The ATCA-7140 blade can be configured with a variety of software offerings, from firmware-only to fully integrated and verified software operating environments.

- All required firmware
- Centellis 3000 software package

Firmware-only 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.

The Centellis 3000 software packages come complete with, and are verified with, a standard Carrier Grade Linux (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. 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
- 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
 - ▲ Hardware Platform Interface (HPI) – rev. 1.0, B.01.01

For more information on the Centellis 3000 platforms, please refer to the Centellis 3000 datasheets.

Intelligent Platform Management Control

The ATCA-7140 uses the Renesas HD64F2166 processor, as the intelligent platform management controller (IPMC). The IPMC is a management

subsystem providing monitoring, event logging, and recovery control. The IPMC serves as the gateway for management applications to access the platform hardware. Features include:

- Compliance with PICMG 3.0 and IPMI v2.0
- Automatic rollback capability if an operational image upgrade fails
- Upgradeable from both IPMI interfaces (KCS and IPMB)
- Support for serial port redirection over LAN interface
- Supports the initiation of a graceful shutdown on the host CPU

Rear Transition Modules

Emerson provides an optional rear transition module (RTM) for the ATCA-7140 processor blade for the ultimate in storage flexibility as well as external Gigabit Ethernet connectivity. Interfaces include:

- One (1) serial management interface
- One (1) USB management interface
- Four (4) SAS storage interfaces
- Two (2) Fibre Channel interfaces

AdvancedMC Site

A single, mid-sized AdvancedMC™ (AMC) site is available on the ATCA-7140 processor blade. This can be used for coprocessing, light I/O or security applications.

Hardware

PROCESSOR

- Two dual-core LV 5138 (2.13 GHz)
- Frontside bus – 1,066 MT/s
- 4MB L2 cache (per processor)
- Multi-threading (4 cores, 4 threads)
- SMP support

MEMORY

- Intel® 5000 memory controller
- 2, 4, 8 and 16GB memory configurations supported (32GB configuration will be verified in a future release)
- 1.0MB primary boot flash, dual bank architecture
- 256MB application flash, dual bank architecture

COUNTERS/TIMERS

- Real-time clock
- Programmable watchdog timer

AMC SITE

- Single (1) mid-size AMC slot
- AMC.0, AMC.1, AMC.2 and AMC.3 compliant
- Connectivity – Two (2) Gigabit Ethernet interfaces
- Connectivity – Single (1) x8 PCI Express interface
- Connectivity – Single (1) SAS interface (SAS controller)
- Power budget – 20 watts

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
 - ▲ Serial, RJ-45 (1)
 - ▲ USB (1)
 - ▲ Gigabit Ethernet (2)
 - ▲ AMC site (1)
- Rear Transition Module
 - ▲ Serial, RJ-45 (1)
 - ▲ USB (1)
 - ▲ SAS interfaces (4)
 - ▲ Gigabit Ethernet interfaces (4)
 - ▲ Fibre Channel interfaces (2)

POWER REQUIREMENTS

- Dual-redundant – 48V rail
- Input range: 39.5 – 72 VDC
- Typical power: 140 – 160W

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, 2 and 3
- AMC.0, AMC.1, AMC.2 and AMC.3

Ordering Information	
Part Number	Description
ATCA7140-0GB	ATCA processor blade with dual Intel Xeon processors (2.13 GHz), 0GB, 1 AMC slot (RoHS 6/6)
RTM-ATCA-7140	Rear transition module for the ATCA-7140 blade (RoHS 6/6)
ATCA7140-HDD-SAS	146GB SAS HDD and mounting kit for the RTM-ATCA-7140 (RoHS 6/6)
ATCA7140-MEM-4G	4GB DDR2 memory module for ATCA-7140 (RoHS 6/6)
ATCA7140-MEM-2G	2GB DDR2 memory module for ATCA-7140 (RoHS 6/6)

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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