ATCA-7365

AdvancedTCA Processor Blade

Embedded Computing for Business-Critical Continuity™

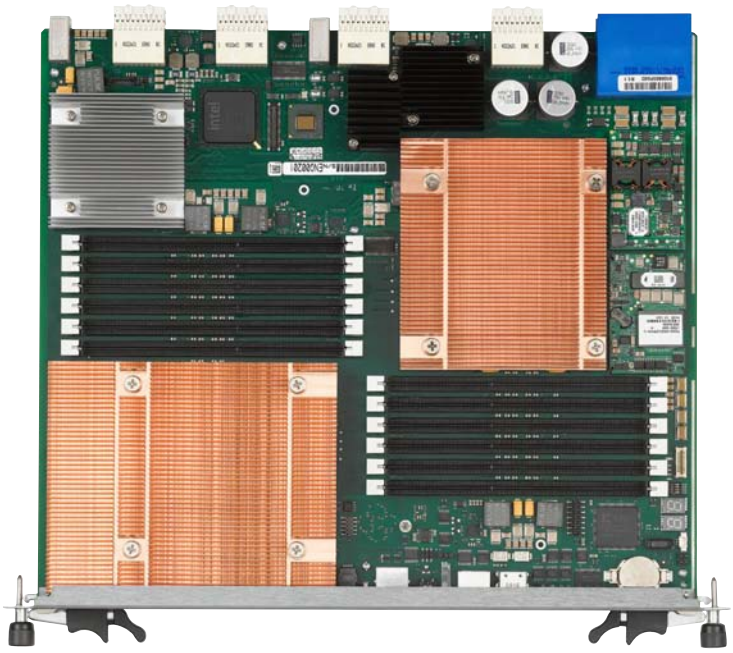
The ATCA-7365 processor blade is an ideal solution for communications equipment requiring powerful server class processing performance, flexible mass storage and network options

- High performance Intel® Architecture processor blade
- Two 6-core Intel® Xeon® processors L5638 (2.0 GHz)
- Up to **96GB** main memory
- Hot-swappable hard disk with flexible choice of storage options
- RAID 0/1 support
- Multiple network and storage I/O connectivity
- Option 9 (1/10GbE) ATCA fabric interface
- Designed for NEBS and ETSI compliance
- Multiple software packages including operating systems

The Emerson Network Power ATCA-7365 is an Intel® Architecture server blade that delivers a combination of performance and flexibility to help drive the successful implementation of next-generation telecom networks and communication infrastructures. It builds on the AdvancedTCA® (ATCA®) standard to provide the right product at the right time to meet the needs of communication industries.

With two 6-core Intel® Xeon® processors L5638, the ATCA-7365 processor blade enables best-in-class compute performance in an ATCA form factor. The PICMG® 3.1 compliant fabric interface provides 10 Gigabit Ethernet (10Gbps) capability for applications requiring higher network throughput in the backplane.

Multiple network and storage I/O interfaces allow the integration into different network infrastructures such as telecommunication central offices and network data centers. Main memory configuration and mass storage options can be flexibly configured providing a perfect fit to the applications needs. RAID 0 and 1 can be enabled when connecting to external disks or between two sets of ATCA-7365 blades, building a storage cluster capable of high availability operation.

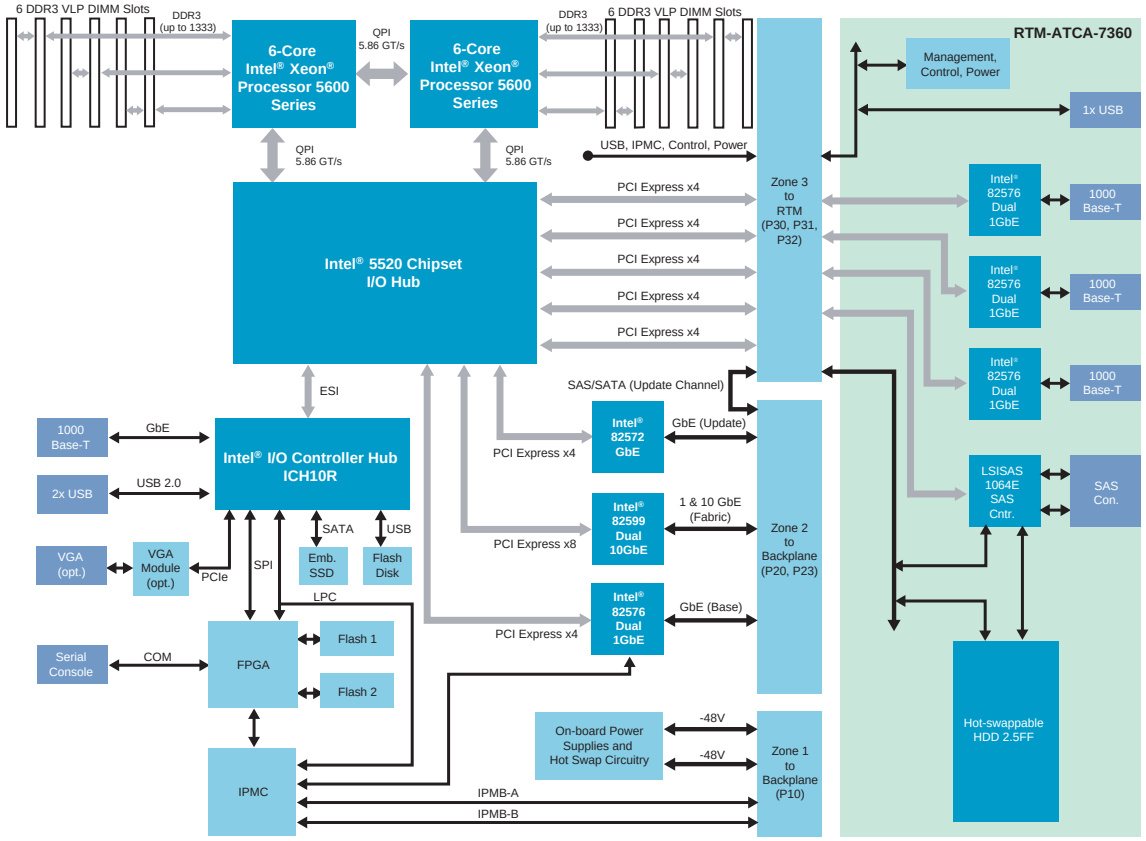


RoHS 6/6 COMPLIANT

AdvancedTCA®

EMERSON™ Network Power

ATCA-7365 Block Diagram



Standard Networking Support

The ATCA-7365 processor blade provides PICMG 3.0 base interface connectivity in a dual star configuration using standard Gigabit Ethernet (GbE) technology. The PICMG 3.1 fabric interface features both dual 10Gbps (Option 9) and dual 1Gbps (Option 1) Ethernet capability. A further 1Gbps Ethernet backplane connection is available on the ATCA update channel. External network connectivity includes 10/100/1000Base-T Ethernet via RJ-45 connector on the blade faceplate. Several rear transition module (RTM) configurations support up to six additional 10/100/1000Base-T connections.

Processor Complex

Both Intel® Xeon® processors L5638 are connected together via QPI interconnect to share memory resources. The processors can access the entire I/O subsystem via the Intel® 5520 chipset I/O hub. The I/O subsystem consists of:

- Intel® I/O Controller Hub ICH10R
- Intel® 82572 Gigabit Ethernet controller
- Intel® 82576 dual Gigabit Ethernet controllers
- Intel® 82599 dual 10 Gigabit Ethernet controller
- LSI Logic LSISAS1064E SAS controller
- Emulex 4Gbps Fibre Channel controller

Software Support

The ATCA-7365 blade can be configured with a variety of software offerings, from firmware-only to fully integrated and verified software operating environments.

FIRMWARE

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 BIOS firmware includes support for:

- Unified Extensible Firmware Interface (UEFI)
- Power management support, ACPI 3.0b
- Multiple boot options including:
  - Local and external hard disks
  - On-board flash disk
  - External USB boot media
  - PXE boot via ATCA base interface
  - iSCSI boot via ATCA base interface
- RAID 0/1 support via LSI SAS BIOS extension
- Serial redirection of the BIOS console
- Serial over LAN of the BIOS console via ATCA base interface
- BIOS upgrade via local host

INTELLIGENT PLATFORM MANAGEMENT CONTROL

The ATCA-7365 features an 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 1.5
- Rollback capability if IPMC image upgrade failed
- Firmware (BIOS, IPMC, FPGA) upgradable from IPMI interface (IPMB) and/or locally, PICMG HPM.1 support or via Basic Blade Services (BBS) firmware upgrade utility
- Support for serial port redirection over LAN interface (IPMI 2.0 compliant)

SUPPORTED OPERATING SYSTEMS

- Red Hat RHEL 5.5 certified
- Wind River PNE LE 3.0
- Prepared for Microsoft® Windows® Server 2008
- VMware ESX/ESXi 430 certified (requires VGA module)

To better exploit the CPU and I/O resources of the blade, RHEL 5.5 supports CPU and I/O virtualization using XEN/KVM. In addition RHEL 5.5 provides code for enabling the processor power management to help enhancing energy efficiency of the blade.

Emerson ATCA blades can be configured with optional software that includes Basic Blade Services. When integrated in one of the Emerson ATCA Centellis™ platforms, the ATCA-7365 comes complete with, and is verified with, Wind River PNE 3.0. 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 platform. This platform is ready for customers HA middleware and application environment.

Basic Blade Services include:

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

RELEVANT STANDARDS

- Linux Foundation
- Service Availability Forum™ (SA Forum)
  - Hardware Platform Interface (HPI) – HPI-B.02

Please check with your local sales contact for availability of supported Centellis™ platforms.

Rear Transition Modules

Several RTM variants, already introduced with the ATCA-7360 blades, are available to support different I/O configurations at the RTM faceplate.

RTM-ATCA-7360 includes:

- One (1) USB 2.0 interface
- Six (6) Gigabit Ethernet interfaces, 10/100/1000Base-T, RJ-45 connector
- Two (2) SAS interfaces, SFF-8470 connector
- Disk bay for one (1) hot-swappable hard disk, 2.5”

RTM-ATCA-7360-L includes:

- One (1) USB 2.0 interface
- Two (2) Gigabit Ethernet interfaces, 10/100/1000Base-T, RJ-45 connector
- Two (2) SAS interfaces, SFF-8470 connector
- Disk bay for one (1) hot-swappable hard disk, 2.5”

RTM-ATCA-7360-FC supports:

- One (1) USB 2.0 interface
- Six (6) Gigabit Ethernet interfaces, 10/100/1000Base-T, RJ-45 connector
- Two (2) SAS interfaces, SFF-8470 connector
- Two (2) Fibre Channel interfaces, up to 4Gbps, prepared for SFP modules

Hardware

PROCESSOR

- Two 6-core Intel® Xeon® L5638 (2.0 GHz) processors
- QuickPath Interface (QPI) – 5.86 GT/s
- 12MB L3 cache (per processor)
- 64-bit mode extension (EM64T)
- SMP support

MEMORY

- DDR3-800/1066/1333 memory controllers integrated into processors
- Total of six independent memory channels
- From 2 to 96GB memory configurations supported
- 4MB primary firmware flash, 4MB redundant flash for failsafe operation
- Reset persistent memory, 16MB SRAM, 64MB flash (optional) Note 1

MASS STORAGE

- Embedded USB flash disk, 4GB (higher capacity upon request)
- On-board solid state disk at SATA, 32GB or 64GB (optional) Note 1
- Hot-swappable hard disk on RTM
- Hard disk drive options including
  - Enterprise class disks (various capacity options)
  - 80GB SATA disk with extended temperature range

BASE AND FABRIC INTERFACES

- Dual star configuration
- PICMG 3.0 base interface compliant, Gigabit Ethernet (1.0Gbps)
- PICMG 3.1 fabric interface compliant
  - PICMG 3.1, Option 1 – Single, redundant Gigabit Ethernet pair (1.0Gbps)
  - PICMG 3.1, Option 9 – Single, redundant 10 Gigabit Ethernet pair (10Gbps)
- PICMG 3.0 Update Channel Gigabit Ethernet (1.0Gbps)

COUNTERS/TIMERS

- Real-time clock
- Programmable watchdog timer

EXTERNAL INTERFACES

- Front panel
  - 10/100/1000Base-T Ethernet (1), RJ-45
  - Serial console (1), RJ-45
  - USB 2.0 (2)
  - Optional VGA interface (on request)
- Rear transition module
  - USB 2.0 (1)
  - Gigabit Ethernet interfaces (2 or 6), optional, RJ-45
  - SAS interfaces (2), SFF-8470
  - 1/2/4Gbps Fibre Channel interfaces (2), optional, prepared for SFP modules

POWER REQUIREMENTS

- Dual-redundant –48 to -60 VDC (TNV-2) rail
- Input range: 39 – 72 VDC
- Power consumption including RTM
  - Typical: 180 - 220 W
  - Maximum: 260 W

THERMAL CHARACTERISTICS

- Operating range: –5 °C to 55 °C
- Airflow requirements according to CP-TA B.4 (B.3 with specific configurations)

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, 9

Note 1: Persistent memory and solid state disk mutually exclusive

Ordering Information

Part Number	Description
ATCA-7365-D-12GB	ATCA processor blade, dual L5638 6-core (2.0 GHz), 12X DIMM sockets, 6X 2GB, 10G support
ATCA-7365-D-24GB	ATCA processor blade, dual L5638 6-core (2.0 GHz), 12X DIMM sockets, 6X 4GB, 10G support
ATCA-7365-D-24GB-V	ATCA processor blade, dual L5638 6-core (2.0 GHz), 12X DIMM sockets, 6X 4GB, 10G support, on-board VGA module
ATCA-7365-D-48GB	ATCA processor blade, dual L5638 6-core (2.0 GHz), 12X DIMM sockets, 6X 8GB, 10G support
ATCA-7365-D-48GB-V	ATCA processor blade, dual L5638 6-core (2.0 GHz), 12X DIMM sockets, 6X 8GB, 10G support, on-board VGA module.
ATCA-7365-D-0GB	ATCA processor blade, dual L5638 6-core (2.0 GHz), 12X DIMM sockets, 0GB, 10G support. See Note 1
ATCA-7365-D-0GB-V	ATCA processor blade, dual L5638 6-core (2.0 GHz), 12X DIMM sockets, 0GB, 10G support, on-board VGA module. See Note 1
ATCA-7360-MEM-2G	2GB DDR3 VLP memory module for ATCA-736X product series
ATCA-7360-MEM-4G	4GB DDR3 VLP memory module for ATCA-736X product series
ATCA-7360-MEM-8G	8GB DDR3 VLP memory module for ATCA-736X product series
RTM-ATCA-7360	RTM for the ATCA-736X product series, 6X GbE, 2X SAS,1X slot for optional HDD
RTM-ATCA-7360-L	RTM for the ATCA-736X product series, 2X GbE, 2X SAS, 1X slot for optional HDD
ATCA7360-HDD1-SAS	147GB SAS HDD for the RTM-ATCA-7360. See Note 2
ATCA7360-HDD2-SAS	300GB SAS HDD for the RTM-ATCA-7360. See Note 2
ATCA7360-HDD3-SATA	80GB SATA HDD (ext. temp.) for the RTM-ATCA-7360. See Note 2
RTM-ATCA-7360-FC	RTM for the ATCA-736X product series, 6X GBE, 2X SAS, 2X FC. See Note 3
ATCA7360-MMOD-SATA1	32GB on-board solid state disk at SATA for ATCA-736X product series. See Note 4
ATCA7360-MMOD-SATA2	64GB on-board solid state disk at SATA for ATCA-736X product series. See Note 4
ATCA7360-SFMMOD	Reset persistent memory, 16MB SRAM, 64MB flash for the ATCA-736X product series. See Note 4
RJ45-DSUB-ATCA7140	RJ-45 DSUB cable for the ATCA-7140, 7150, 7350, 736X
SA-BBS-WR30-7360	CD - BBS SW and WR PNE 3.0 for ATCA-7360 and ATCA-7365. See Note 5

Note 1: No memory installed
Note 2: HDD kit option for RTM-ATCA-7360 and RTM-ATCA-7360-L
Note 3: RoHS 5/6 (lead exemption)
Note 4: Persistent memory and solid state disk mutually exclusive
Note 5: License for a single blade

Regulatory Compliance

Item	Description
Designed to comply with NEBS, Level 3	Telcordia GR-63-CORE, NEBS Physical Protection
	Telcordia GR-1089-CORE, Electromagnetic Compatibility and Electrical Safety – Generic Criteria for Network Telecommunications Equipment. Equipment Type 2
Designed to comply with ETSI	ETSI Storage, EN 300 019-1-1, Class 1.2 equipment, Not Temperature Controlled Storage Locations
	ETSI Transportation, EN 300 019-1-2, Class 2.3 equipment, Public Transportation
	ETSI Operation, EN 300 019-1-3, Class 3.1(E) equipment, Temperature Controlled Locations
	ETSI EN 300 132-2 Environmental Engineering (EE); Power supply interface at the input to telecommunications equipment; Part 2: Operated by direct current (dc)
	ETSI ETS 300 753, Equipment Engineering (EE); Acoustic noise emitted by telecommunications equipment
CE Conformity	Directive 2004/108/EC, Directive 2006/95/EC
EMC	ETSI EN 300 386 Electromagnetic compatibility and Radio spectrum Matters (ERM); telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements, Telecommunication equipment room (attended)
	CFR 47 FCC Part 15 Subpart B, Class A (US); FCC Part 15 - Radio Frequency Devices; Subpart B: Unintentional Radiators
	AS/NZS CISPR 22 (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
	CISPR 22 Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
	CISPR 24 Information technology equipment – Immunity characteristics – Limits and methods of measurement
Safety	Certified to UL/CSA 60950-1, EN 60950-1 and IEC 60950-1 CB Scheme
	Safety of information technology equipment, including electrical business equipment
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)
Interoperability	Designed to operate within a CP-TA B.4 system environment at full performance

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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