MONTEREY 8000™ PRODUCT SHEET

8U Enhanced MicroTCA.4 Platform



FEATURES

Fully Integrated 8U Enhanced MicroTCA.4 Platforms

Supports 12 AdvancedMC™ Modules with Rear Transition Modules
- 12 Mid-Double or Mid-Single AMCs, or
- 6 Full-Double or Full-Single AMCs, or
- A mix of Mid/Full, Single/Double AMC's

For Wireless, Telecom, Aerospace, and Defense:
- High-Density Computing
- High-Speed Fabric Options: Dual Star 10GbE to Each AMC, 40GbE Uplink
- Carrier-Grade, Five-Nines Availability w/ Complete Redundancy
- Highly Flexible and Scalable Architecture
- Pre-Integrated w/ AMC's, NexusWare® Value-Add Software

Redundant MCH Modules with Rear Transition Modules
- Layer 2/3 Managed 10GbE Switch Option
- Base 1GbE Fabric Switch
- IPMI-Based System Management

Extended Power for High Performance Computing

Redundant and Hot-Swappable Cooling and Power Supplies (AC or DC)

Fits 19" and 23" Standard EIA-310 equipment racks

Designed for NEBS Level 3

Example Applications:
- LTE Evolved Packet Core
- FPGA-Based Systems
- Security Gateways
- Deep Packet Inspection
- Military Communications
- SIP-Based Services
- IMS-based Services

The MONTEREY 8000™ platform, based on the Enhanced MicroTCA.4 specification along with high performance processing, high-speed IP-based fabric switching, and integrated Linux OS, middleware, and protocols, is highly tuned for next generation networking applications. 4G Mobile and Telecom Aggregation Layer applications such as Media Gateways, Wireless Gateways, Security Services, IMS-based Services, SIP-based services, and Military Sensor Acquisition and Communications Systems can take advantage of the latest advancements in high performance, multicore processing and high-speed 10GbE fabrics in smaller, more cost-effective standards-based form factors.

Designed as a complement to AdvancedTCA based systems, whose large footprint is best suited for Telecommunication Core networks, the MONTEREY 8000 platform's support for AMC's with MicroTCA Rear Transition Modules permits precise right-sizing, added granularity in scaling, and simplified maintenance for a multitude of Aggregation Layer networking and service-based applications targeted for demanding operating environments such as telecom central offices with NEBS or ETSI requirements, data centers, wireless infrastructure, aerospace and defense applications. The system is a full integration of hardware and software components, enabling embedded designers to quickly develop high availability, compute-intensive applications, and/or high-speed networking applications.

MONTEREY 8000 is a complete MicroTCA.4 compliant, COTS-based platform ready to support next-generation applications with rapid development and fast time-to-market:

- 8U Enhanced MicroTCA.4 base platform with redundant power (AC or DC input) and cooling
- AMC671: Redundant MicroTCA® Carrier Hub ("MCH") modules for high-speed 10GbE fabrics and system management with MicroTCA Rear Transition Modules
- AMC124: Intel Multi-Core processor AMCs pre-integrated with Nexusware® Linux® Distribution with MicroTCA Rear Transition Modules
- A wide variety of AMC modules to meet your application requirements (e.g. RAID storage, IO communications, WAN communications, and video)
- A wide range of support software to quickly develop and enhance your applications

The new Enhanced MicroTCA.4 standard defines MicroTCA Rear Transition Modules (µRTM) for all AdvancedMC slots and MCH (MicroTCA Carrier Hub) slots to meet Central Office requirements, increase serviceability and achieve five-nines availability. It supports backwards compatibility with existing AMC modules.

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High-Density, High-Reliability, High-Performance

MONTEREY 8000 meets the next generation of high-performance, high speed, high-content, application-aware services. This platform supports up to twelve AdvancedMC module payload slots in an 8U shelf. Five-nines (99.999%) availability is achieved with redundant and hot-swappable MCH modules, power entry modules (AC or DC), power supplies, fan trays, and N+1 payload. Its dense architecture allows applications to be right-sized and cost effective, and minimizes space in deployments where real-estate is at a premium. For applications that require high speed fabrics, such as Deep packet Inspection or Gateways streaming video, MONTEREY 8000 offers 10Gbps Layer2/Layer3 Ethernet to each AMC slot from each MCH, and up to 40GbE of aggregated external uplink connectivity. Multiple storage options are available; a) on-board the processor AMC, b) on-board the AMC's µRTM, c) adjacent AMC storage modules for RAID configurations. The enhanced power architecture delivers the standard 80W to each AMC, supporting any standard AMC in the market today, but can also deliver an additional 80W to AMCs designed to accept the extended power.

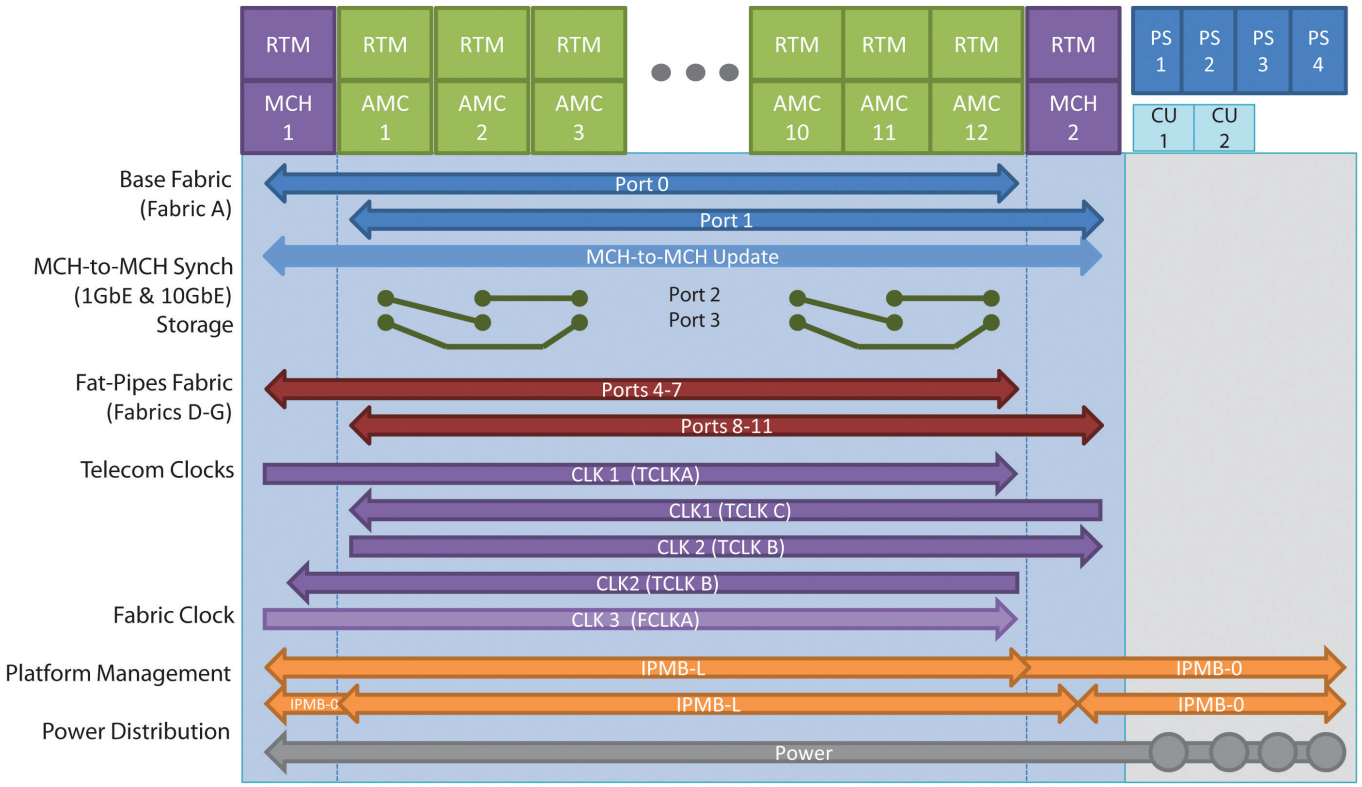
A comprehensive suite of system management interfaces, both user-based and programmatic-based, increase availability and reduce cost-of-ownership when systems are deployed.

Pre-Integrated Software Options

Equipment manufacturers and providers can immediately begin development of their application upon receipt of MONTEREY 8000 Systems, eliminating the time and costs normally associated with integrating, troubleshooting, and configuring building blocks from one or more vendors.

PT integrates an operating system, drivers, APIs, and other value-added software options.

- **NexusWare® Core** is a complete Carrier Grade Linux® (CGL) distribution, with web-based management, GUI-based IDE, and Image Builder
- **NexusWare SIP** is an installable Session Initiation Protocol (SIP) stack and API software package
- **NexusWare C7** is a comprehensive SS7 MTP-2 installable software package
- **NexusWare WAN** protocols provides a wide range of WAN protocols
- **Xpress™ SIP Services** provides the service creation and service deployment products that carriers need to rapidly build and deploy SIP-based services.



Redundant/Flexible Midplane Topology

MONTEREY 8000 is flexible and can support numerous fabric and IO topologies.

- **Base Fabric:** A dual-star topology, it provides redundant 1Gbps Ethernet links to Fabric A for all AMCs and an MCH- to-MCH update link. See the AMC671 Datasheet for details on the MCH.
- **Fat-Pipes Fabric:** A dual-star topology, the midplane is designed to support redundant high-speed fabric interconnects of four lanes to each AMC slot (e.g. 10Gbps Ethernet, 40Gbps Ethernet, 4x Serial RapidIO® or x4 PCI-Express). The AMC671 MCH's Fat-Pipe option determines what type of protocol is utilized. See the AMC671 Datasheet for details on the MCH options currently available. The MONTEREY 8000 midplane is designed for 40GbE to each AMC slot. An application with 10GbE fabrics today can migrate to 40GbE in the future without a forklift upgrade.
- **Storage:** The midplane is designed with the option to attach up to two storage AMC's (such as the AMC590) to one processor AMC site (e.g. a RAID storage solution). NOTE: The processor µRTM can also support storage (e.g. Hard Disk Drive or Solid State Drive).
- **Clock Distribution:** Telecom clocks interconnects for CLK1, CLK2, and CLK3. CLK1 are inputs into the MCH, while CLK2 are outputs from the MCH. CLK3 are outputs and can be configured as the PCI-Express 100MHz Reference Clock (FCLK) to all AMCs FCLK, fabric clock interconnects.
- **IPMI-based System Management:** A dual-star topology, it provides an IPMI management interface to/from each AMC, MCH, fan tray, and redundant power system.

Redundant and Comprehensive System Management Subsystem and Fabrics

The MONTEREY 8000 platform supports up to two redundant AMC671 MicroTCA® Carrier Hub (MCH) modules operating in active/standby mode. The AM671 supports remote IPMI-based system management, base fabric, Fat-Pipe options, and telecom clock distribution options. The RMC670 MicroTCA Rear Transition Module provides rear IO for each AMC671.

- System Management: Monitors, manages, and controls the AMC payload boards, the MCH itself and the active system functions: power and cooling subsystems. It also provides the In-Service, Out-of-Service LEDs for the system. The IPMI standards-based MCH interfaces to external management systems via an out-of-band 10/100 Mbps Ethernet port located on the on the front panel or on the RMC670 µRTM.
- Base Fabric: Redundant 1GbE links to each slot.
- 10GbE Fat-Pipes Fabric option: Redundant 10GbE links to each slot.
- Telecom Clock distribution of CLK1, CLK2 and CLK3 are supported to each AMC slot.

Redundant Power Subsystem

PT's unique extended power architecture delivers up to 160W of 12 V payload power and 3.3 V management power to each AMC site, where the AMC modules designed to this architecture can utilize 120W and pass 40W to the µRTM. Standard AMC modules, designed to the AMC.0 R2.0 specification and up to 80W of power, are also supported.

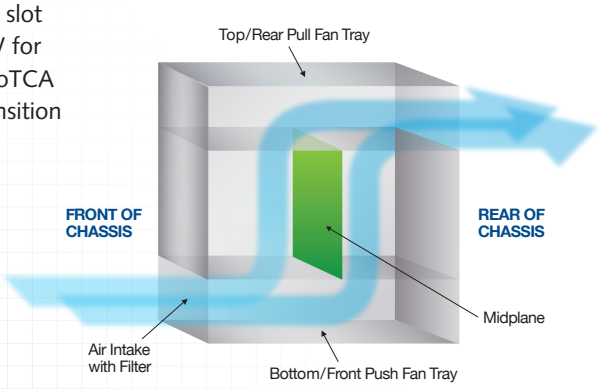


MONTEREY 8000 supports either an AC or DC input option, with Redundant Power Entry Modules. The system power is provided by redundant, load sharing, and hot-swappable intelligent power supplies that are monitored by the system management subsystem. The system can be configured with up to four 1100WDC supplies or 500WAC supplies.

Each AC PEM is rated for a voltage range of 100-240VAC, 50-60Hz. Each DC PEM has a terminal block and is rated for a voltage range of -40.5-60VDC.

Redundant Front-to-Back Cooling Subsystem

MONTEREY 8000 features a front-to-back push/pull cooling system, critical in NEBS specified installations. The hot-swappable fan tray in the front bottom pushes air through the AMCs, while a second hot-swappable fan tray in the top rear pulls the air through the chassis and exhausts out the back. This fan configuration offers an N+1 redundancy, such that if one fan fails, the other fans continue to cool the system until the fan tray can be replaced. The fan trays are intelligent, with fan speed control, fan tachometers, hot-swap, and status LEDs. The removable air intake grills allow for routine replacement of NEBS specified filters. Each slot receives an ample airflow to ensure cooling of up to 120W per front slot and 40W for the MicroTCA Rear Transition Module.



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Technical Specifications

ORDERING INFORMATION

PT's systems can be ordered as configured systems specifically tailored to your requirements with payload AMC's and software.

PT-MTY8000-12486
8U MicroTCA® Platform, 12 AMC sites, DC input, Dual MCHs w/Base Fabric Only

PT-MTY8000-12487
8U MicroTCA® Platform, 12 AMC sites, AC input, Dual MCHs w/Base Fabric Only

PT-MTY8000-1xxx
8U MicroTCA® Platform, 12 AMC sites, DC input, Dual MCHs w/10GbE Fat Pipes

PT-MTY8000-1xxx
8U MicroTCA® Platform, 12 AMC sites, AC input, Dual MCHs w/10GbE Fat Pipes

PT-AMC671-12540
MTCA.4 MCH, 1GbE, IPMI Management

PT-AMC671-12481
MTCA.4 MCH, 1GbE, 16-port 10GbE, IPMI Management

PT-AMC671-12541
MTCA.4 MCH, 1GbE, 20-port 10GbE, IPMI Management

PT-RMC670-12524
MTCA.4, MCH µRTM, Dual 1GbE, Quad 10GbE

PT-MTC6203-12483
720W, AC PSU, for MTCA.4

PT-MTC6213-12482
1100W, DC PSU, for MTCA.4

PT-MTC5134-12536
4HP, Double, Air Management Blade (Front)

PT-MTC5135-12537
4HP, Double, Air Management Blade (Rear)

PT-MTC5136-12539
4HP, Single, Slot Adapter (Monterey)

CONTACT US

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AMC's Supported

The MONTEREY 8000 features twelve 4HP (Mid-Size) Double slots that can support the following:

- Up to twelve 4HP (Mid-Size) Double or Single AMC's
- Up to six 6HP (Full-Size) Double or Single AMC's
- Supports a mix of 4HP/6HP (Mid/Full) and Double/Single AMC's
- Each 6HP (Full-size) AMC consumes two slots and requires a 2HP Filler
- Each Single AMC requires a Single Slot Adapter

Accessories and FRUs

- 4HP, Double, Air Management Blade
- 4HP, Single, Slot Adapter
- Front Fan Tray
- Front Fan Tray Air Filter
- Rear Fan Tray
- 500 W, AC Removable Power Supply
- 1100 W, DC Removable Power Supply

PICMG® Specifications

- Full Compliance with MicroTCA.4, AMC.0, AMC.2, AMC.3, AMC.4
- Supports mid or full and single or double size AdvancedMC™ modules

Advanced MC Interconnects

- Fabric A to twelve AMCs
- Fabrics D-G to twelve AMCs via Fat-Pipes Switch
- Telco Clock Distribution: CLK1,CLK2, CLK3/FCLK
- IPMI Management to Twelve AMCs, MCHs, Power Supplies, Fan Trays

Power

The system can be configured with up to four 1100WDC supplies or 500WAC supplies

- AC input: 100 to 240 V AC, 50 to 60 Hz
- DC input: -40.5 to -60 V DC

Mechanical

- Height: 8U, 352 mm (14 in.)
- Width: 443 mm (17.5 in.) without rack-mount flanges. (Rack-mount flanges allow mounting to 19 in. racks)
- Depth: 526 mm (20.7 in.)
- Weight: 17.5 kg (38.5 lbs) with 4 power supplies

Technology Equipment

- CB Certificate and Report Scheme

EMC Test Regulations

- FCC, Class A
- CE Declaration of Conformance

Network Equipment-Building System (NEBS)

- Designed for NEBS Level 3 and ETSI installations
- GR-1089-CORE Issue 4
- GR-63-CORE Issue 3

Environmental

- The MONTEREY 8000 platform (enclosure, fan trays, Power supplies, and Motherboard) is designed for harsh environments. The system features sturdy steel construction with a durable powder coat finish
- Operating: 5 to 40°C (41 to 104°F) for both AC and DC supplies. Up to 55°C (131°F) for 96 hours for DC power supplies
- Storage: -40 to 70°C (-40 to 158°F)
- Relative humidity: 5 to 85%, up to 90% for 96 hours, non-condensing

NOTE: To provide proper cooling of the MONTEREY 8000 platform, each unused AMC slot in the chassis must be populated with the proper Air Management Blade.

MTBF

TBD

Agency Certifications (Pending)

Safety

- UL/cUL 60950 Safety for Information Technology Equipment
  - UL File Number E170533
- EN/IEC 60950 Safety for Information Technology Equipment
- CB Certificate and Report Scheme

EMC Test Regulations

- FCC, Class A
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RoHS 6/6 Compliant

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