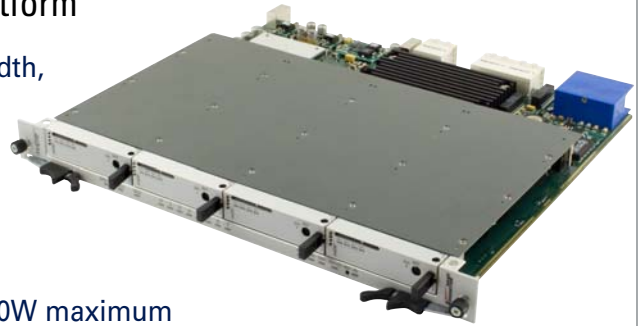


Ensemble BCC-201 Quad AMC AdvancedTCA[®] Carrier Blade

Flexible Foundation for the Ensemble[™] Application Platform

- 10 Gbps serial RapidIO with multicast support for high-bandwidth, low-latency applications
- Enables open-standard modular configurations based on AMC
- Scalable with 2-, 5-, and 14-slot AdvancedTCA[®] chassis options
- Supports both RapidIO and Gigabit Ethernet switching
- Handles thermal cooling of processor and FPGA AMCs up to 60W maximum



The Ensemble[™] BCC-201 Quad AMC AdvancedTCA[®] Carrier Blade from Mercury Computer Systems is the foundation of the Ensemble Application Platform. This carrier blade has four RapidIO-enabled, mid-height AMC modules and is compliant with an 8U AdvancedTCA[®] form factor. The AMC modules extend and diversify the functionality of the carrier blade, making the BCC-201 ideal for a wide variety of network, telecom, medical, industrial control, test and measurement, and defense applications.

The BCC-201 AMC Carrier Blade is designed to support dual star-switched backplanes, as well as a 5-slot, full-mesh, serial RapidIO backplane. Within a 5-slot chassis, the card can also function as a base specification switch board. The four AMC sites each support a dual 4x serial RapidIO interface. Each AMC bay has dual direct serial RapidIO connections to an 8-port serial RapidIO switch. The carrier supports the ATCA optional, dual redundant synchronization clock channels. An onboard IPMI controller is responsible for power control and monitors all temperatures, and power-supply voltage and currents.

Flexible, High-Bandwidth Connectivity

The BCC-201 is a high-performance, quad AdvancedTCA AMC carrier blade with serial RapidIO switch fabric communications and the following high-performance features:

- 4 single-wide, mid-height AMC bays for dense packing of mezzanine modules
- SATA support for HDD AMCs
- AMC bays connected by onboard Gigabit Ethernet switch fabric that connects into the base interface via four 1-Gigabit Ethernet ports
- Dual 10-Gbps serial RapidIO switches with multicast support
- 1x/4x serial RapidIO links over AMC connector
- Hot-swap support

Ensemble Platform

The Ensemble BCC-201 Carrier Blade is part of the Ensemble Serial RapidIO ATCA Platform. The Ensemble Platform is a standards-based solution built around the power, functionality, and scalability of serial RapidIO[®], AdvancedMC[®], AdvancedTCA[®], and MicroTCA[®]. The platform supports a variety of I/O sources and heterogeneous processing endpoints, thereby reducing integration costs, improving efficiency, and minimizing risks in design of next-generation applications.

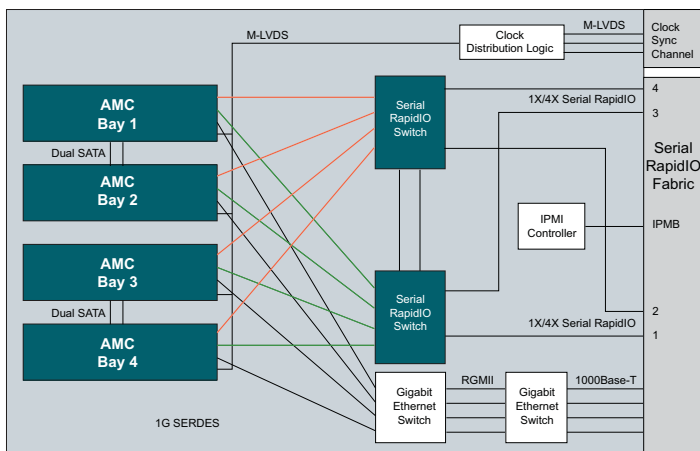


Figure 1. Ensemble BCC-201 functional block diagram

The Ensemble Platform has many advantages that accelerate application development activities:

- The variety of heterogeneous Ensemble AMCs allows developers to customize applications with options to plug in host processors, radio cards, or a network interface card (NIC) AMC.
- AMCs can be combined with Ensemble carrier boards that provide RapidIO chip-to-chip and across-the-chassis connectivity, enabling seamless scaling from a single-sector system to multisector, multi-antenna, multicarrier base-station implementations.
- Ensemble offers developers the flexibility to easily expand specific processing nodes to address application performance bottlenecks. Additional FPGA or DSP modules over RapidIO can be used to support specific application requirements.
- The homogeneous RapidIO interconnect among processing nodes enables ease of programming of DSPs, communication processors, and FPGAs.

Specifications

AMC bays

4 bays
Mid-height support, single width
Removable rails for double-width AMC support
Power per bay
 With current sensing Up to 60W
Maximum power to all AMCs
 200W chassis slot Up to 150W
 300W chassis slot Up to 240W
B+ connectors
Two 4x or four 1x serial RapidIO ports per slot

Ethernet

10/100/1000Base-T 8-port Ethernet switch
Base-specification-compliant node interface/five-slot chassis switch board
Gigabit Ethernet to each AMC

Serial RapidIO switches

Dual 8-port Tundra® Tsi578™ serial RapidIO switches
Four links configurable as 1x or 4x links
1.25, 2.5, or 3.125 Gbaud/sec per link
Mesh/switch enabled backplane support

IPMI

Voltage monitor/control
Geographical address monitor
Temperature monitors
Power/reset controller
Monitor/control all jumper plugs
AMC power control/monitor

Backplane connectors

Fabric interface Four 1x/4x serial RapidIO links (Ports 1-4)
Base interface Four 10/100/1000Base-T Ethernet ports (Ports 1-4)
Control interface IPMB-A and IPMB-B link
Synchronization clock interface
 CLK1A, CLK1B, CLK2A, CLK2B, CLK3A, and CLK3B

Front panel

Front-panel LEDs
 Out of service (OOS) LED Red
 User LED 2 (LED2) Green
 User LED 3 (LED3) Yellow
 Hot-swap LED (H/S) Blue
Backplane port link indicators
Ejector handle switch
Hardware address

Power consumption

<300W at 48V
Depends on AMC installed, limited by cooling capability of the ATCA chassis.

Environmental

Temperature
 Operating 0°C to 55°C
 Storage -40°C to +70°C
Humidity
 Operating 5-90% non-condensing
Vibration 0.003g²/Hz, 20-2000 Hz, 1 hr/axis
Shock x/y axes: 32g; z axis: 20g; 11 ms, half-sine

Specification compliance

AdvancedTCA Base R2.0 (PICMG® 3.0) compliant
AdvancedTCA RapidIO (PICMG 3.5) compliant

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