XL8001

12U NEBS compliant AdvancedTCA Chassis



AdvancedTCA / AdvancedMC Open Modular Solutions

The XL8001 is Kontron's next generation 12U AdvancedTCA platform, featuring 14 board slots on a dual star backplane. It provides high computing density for carrier-grade communications applications in IMS-FMC networks.

The XL8001 offers innovative and cost effective system management and Field Replaceable Units (FRU), including hot swappable fan trays and redundant power modules. Convenient for network operators are the front and rear cable management system, and a centralized IPMB for cost-effective monitoring.

The XL8001 platform includes two Kontron Xeon-based processor blades (AT8001), and dual redundant Kontron Base Switches (AT8901).

- 12 U height, 19" Rackmount
- 14-slot, Dual Star with high performance backplane
- Slim profile dual integrated shelf manager/controllers
- Removable, redundant 48VDC power inputs
- Three hot swap fan trays each with 2 x 6,000 RPM fans
- 200 Watts / slot cooling
- Centralized IPMB for cost effective monitoring of fans, sensors and power entry modules
- Two Intel Xeon Processor blades (AT8001), and dual redundant Base Switches (AT8901)

Technical Information

Card cage

The XL8001 design provides superior rigidity, critical for supporting the weight of large ATCA boards especially during insertion/ extraction process.

- 14 8U 6HP 280mm boards in front, 14 8U 6HP 70mm boards in rear
- Features rugged/rigid card guide section designed to accommodate weight of high performance ATCA boards:
  - Card guide tooling designed to reduce tooling marks and reduce number of fabrication steps;
  - Card guides include tin plated ESD clips
- Rugged and cost effective steel riveted construction
- Filtered dual hot swappable DC power inputs;
- Optional safety ground contact (30A) for all front and rear boards

Cooling

The 12U height offers a dense packaging design while providing maximum cooling opportunity (intake/exhaust) .

- "Push" cooling scheme
- Three cost effective hot swap fan trays, each with split air intakes:
  - Each fan tray has two high performance 270m3/h (160 CFM) fans with excellent impedance profiles
  - 6 independent air inlet paths
  - Provide high level of redundancy
  - Superior failure mode performance
  - Features low cost design as the trays do not include fan controller electronics – only the DC /DC converter for power and the FRU eeprom
  - Superior MTBF due to the trays location on the intake side instead of the hotter exhaust side (a higher temperature can decrease the lifetime of the fan by a significant percentage)
  - Mounting of fans on fan tray designed for easy removal/replacement in the event of failure
- Chassis dissipation of 2800 watts (14 slots x 200W)
  - Cooling scheme supports 200 watts per slot (front), assume 5-10 watts per slot for passive RTM cooling
- Fan trays location (below the card cage) enable direct connection to the backplane, resulting in simplified wiring and lower cost
- Easily replaceable air filters
- Full thermal analysis performed (Flo Therm models available upon request)

Backplane

- Dual Star 14 or 16 slot backplane design
- Backplane layout is split into the top portion (ATCA layout) and the lower portion that provides the interface for fan trays and power entry modules.
- Radial IPMB is standard although the backplane can be factory configured with bussed IPMB for applications with on blade shelf management.
- Includes alignment pins on backplane as defined in ATCA specification
- Includes connection provisions for power, shelf manager/controllers, fan trays, and power entry modules

Management

The redundant boards will mount in what is essentially a 15th slot – with approximately 3HP of space. These 2 slot can be utilized for either the two new low profile Integrated Shelf Manager/Fan Controller boards or for the ICC boards (IPMB Chassis Controller boards which provide only fan monitoring/control, PEM and sensor monitoring).Telco alarm board mounts above the Shelf Manager slot and provides centralized alarms

Shelf manager:

- Form factor approx. 2.5U x 280mm deep – new slim profile to install in 3HP slot at end of chassis
- Cost effective integrated Shelf Manager/fan controller with option for redundancy with second Shelf Manager/fan controller
- Supports hot swap of the controller boards for improved failure mode performance
- Incorporates circuitry for fan control and monitoring, power entry module monitoring, sensor and FRU inputs; this cost effective approach eliminates the requirement for separate IPMC's throughout the chassis and for separate fan controller boards; eliminates redundant circuitry /interface requirements

Accessories

- 8U 6HP 280mm Air Baffle/Filler Panels for empty front card cage slots (panels include gasketing, mounting hardware, and alignment pin) made of stainless steel
- 8U 6HP 70mm Air Baffle/Filler Panels for empty RTM slots



AT8001 AdvancedTCA Processor Board

- Intel® Xeon™ 800 MHz FSB at 2.8 GHz
- Dual AMC.1 module support
- Dual DDR-II DIMM for 8 GB of PC2-3200 registered 400 SDRAM



AT8901 AdvancedTCA Base Switch

- Non-blocking layer 2 switching
- 4x GbE uplinks on front panel
- 2 AdvancedMC module slots for customisation

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