AT8402



AdvancedTCA CARRIER BOARD WITH 4x MID-SIZE AdvancedMC SUPPORT

- PICMG 3.0/3.1-compliant base and fabric carrier board
- four (4) Mid-Size AMC slots
- PCI Express® and Gigabit Ethernet switching
- redundant base interface, and dual redundant fabric interface
- Telco Clock for all AMC slots

POSSIBILITIES START HERE kontron

Built for Maximum Design Versatility

The Kontron AT8402 carrier board is a PICMG 3.0 and 3.1 compliant node board for AdvancedTCA shelves, supporting 4 AdvancedMC Mid-Size slots, ideal for a multitude of application requirements.

AdvancedMC-Everywhere integration for customization

With support for four AdvancedMC modules, the AT8402 provides equipment manufacturers with exceptional flexibility to customize the design of their network applications. The AT8402 supports a wide assortment of AdvancedMC modules used for processing, storage and I/O applications. A prime example is for the AT8402 to be configured for RAID 5 storage using three (3) SAS AMC Mid-Size modules and one (1) Processor Mid-Size AMC. This enables quick and reliable look up times of wireless customer information integrated into HLR/HSS network elements already built on open modular platforms.

Full Redundancy and High Availability

Suitable for dual-star and full-mesh configurations in 14- and 16-slot systems, the AT8402 is hot swappable, supports full redundancy, and provides PCI Express® and Gigabit Ethernet connectivity. With full IPMI 1.5 support, the AT8402 also fearures a dedicated µController as an additional Firmware Update Manager (FWUM) for field upgrades, rollbacks and watchdog functions.

TECHNICAL INFORMATION

STANDARDS COMPLIANCE	This board is compatible to the following standards: - PICMG 3.0 Advanced Telecommunications Computing Architecture (ATCA) - PICMG 3.1 opt. 3 Ethernet/Fibre Channel for AdvancedTCA Systems - AMC.0 Advanced Mezzanine Card Base Specification - AMC.1 PCI Express and Advance Switching - D0.96 of AMC.2 Revision 1.0 Gigabit Ethernet - D0.9d of AMC.3 Revision 1.0 Storage - IPMI v1.5 - PCI Express® 1.0a
BUILDING BLOCKS	- Ethernet Switch - PCI Express® Infrastructure - SAS/SATA Infrastructure - Ethernet Switch Controller + Memory - IPMI - Synchronous Clock Distribution - AMC sites - RTM sites (Zone 3) - Power Supply Mezzanine incl. Holdup Circuit
ETHERNET SWITCH	- Broadcom Strataswitch/StrataGX Gigabit Layer-2 Switch - PCI 32b/66MHz Management IF - Line rate switching for all packet sizes and conditions - Supports 2 Base Channels 10/100/1000Base-T via external Copper PHY - Supports 2 Fabric Channels with 4 1000Base-BX each via internal SERDES - Supports 2 AMC GbE interfaces per AMC slot - Supports 2 SGMII interfaces to the RTM - PHY for Base Interface Connections
PCI EXPRESS® INFRASTRUCTURE	- 32-Lane PCI Express® Switch - Serial EEPROM for Configuration Data - Supports 8 PCI Express® Lanes to AMC B2 and B4 - Supports 4 PCI-Express Lanes to AMC B1 and B3 - Supports 4 PCI-Express Lanes to SAS Controller
SAS/SATA INFRASTRUCTURE	- 3.0 Gbit/s Serial Attached SCSI Controller - 3.0 Gbit/s Serial Attached SCSI Expander - SAS controller connected to PCI Express switch via 4 PCI Express® Lanes - SAS Expander connected to SAS Controller via 4 SAS Lanes - SAS Expander connects to each AMC slot via 1 SAS Lane 2 SAS lanes can be used via RTM - AMC B1 and B2 as well as B3 and B4 are directly interconnected via SATA SAS connection - Onboard SAS/SATA MUX for initiator selection
ETHERNET SWITCH CONTROLLER AND SYSTEM MEMORY	- Socketless PowerPC IBM PPC405GP 400 MHz - 256 MB SDRAM 133 MHz; 64 MB Flash (supports multiple OS images); used for switch provisioning and diagnostics
SYNCHRONOUS CLOCK AND PCI EXPRESS® CLOCK DISTRIBUTION	- Multi-service Line Card PLL - MLVDS Buffer - CPLD for clock distribution and control - PCI Express® compliant clock source with optional Spread Spectrum Clock - Switchable PCI Express clock source to all AMCs and to adjacent board via Update Channel 4
IPMI	- Dedicated µController - PICMG 3.0 / IPMI 1.5 compliant - Dedicated µController as additional Firmware Update Manager (FWUM) for field upgrades, rollbacks and watchdog functions
AMC SITES	- 4 Slot carrier with partial PCB cutaway in the AMC area - B+ connectors (will be updated to press fit connectors as soon as available) - AMC.1 Type 4E2S1 on AMC B1 and B3 - AMC.1 Type 8E2S2 support on AMC B2 and B4 - Telecom clocks and/or PCI Express® clock support

TECHNICAL INFORMATION

RTM SITES		- 3 TYCO/ERNI ZD-F-4-10-2-B-22 Connectors. - Support for 8 RTM lanes from each AMC - FE and RS232 (RJ45) management ports - 4x SAS / SATA connections - 12 V and 3 V 3sus Supply Voltage connections - I^2C support - JTAG and production I/O support	
POWER SUPPLY MEZZANINE		- Isolated 48 V to 12 V Standard Quarterbrick intermediate bus converter - Hot swap support - 'Holdup' Circuit using high voltage Capacitor and charge pump - 48 V power Supply 'ORing' circuit - Point of load regulators for secondary supply voltages (derived from 12 V intermediate rail) on base board	
SOFTWARE & FIRMWARE		The system shall support IPMI version 1.5 for board level management (PICMG 3.0). - Reliable field upgrades for all software components - Dual boot images with roll-back capability - Management via SNMP and Command Line Interface - System access via TELNET, SSH and serial line - Hot-Swap support - Hot-Plug support for AMC modules - Redundancy support for base and extension fabric switches	
ENVIRONMENTAL	TEMPERATURE* HUMIDITY* ALTITUDE* SHOCK* VIBRATION*	Operating 0° C to 55° C 15 %-90 % (non-condensing) at 55° C (131° F) 4000 m (13,123 ft) 30G/11 ms half sine 5 to 100 Hz: 1 G @ 0.25 Octave/minute	Storage and Transit -40 to +70° C / -10 to 158° F* 15 %-90 % (non-condensing) at 55° C (131° F) 15,000m / 49,212 ft 50G, 170 inches/second trapezoidal 5 to 50 Hz: 0.5 G @ 0.1 Octave/minute
MECHANICAL		(8U x 280 mm x 30.48 mm)	

Targeted MTBF is 150,000h @ 30°C, calculations based on Bellcore/ Telcordia SR-332 Issue 1

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