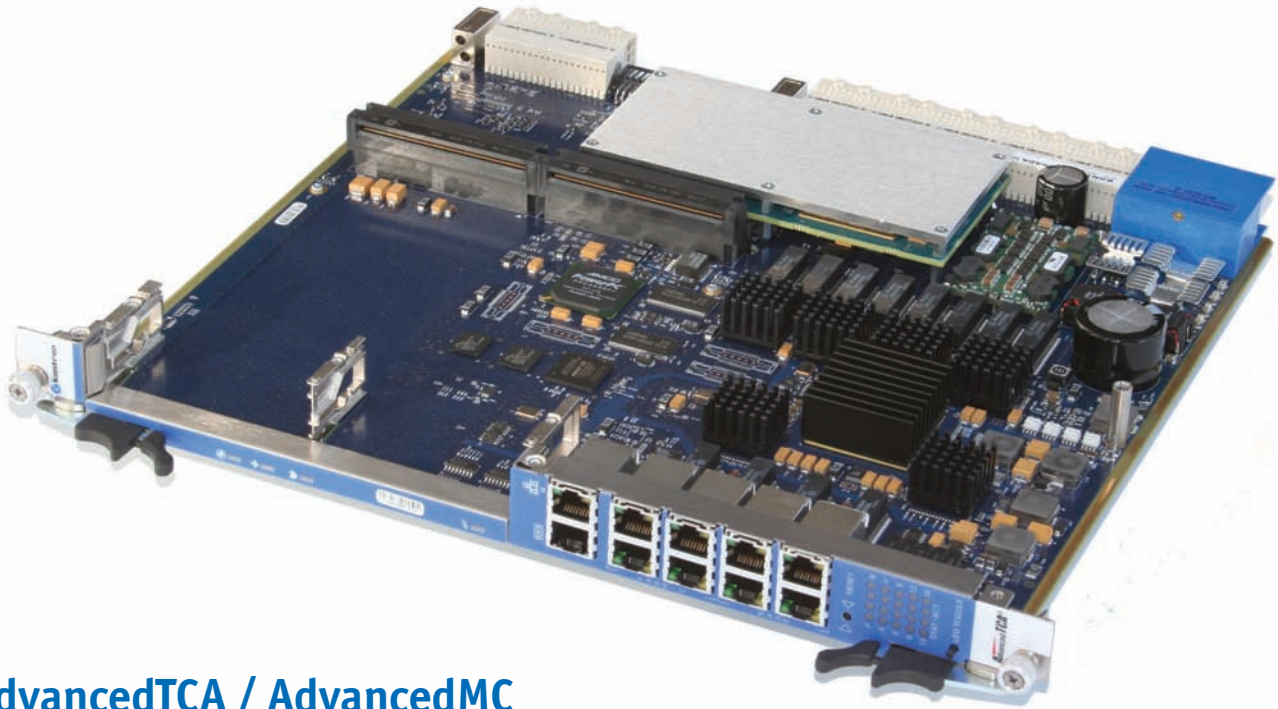# AT8902

AdvancedTCA Base/Fabric Hub board with dual AdvancedMC support

AdvancedTCA®

AdvancedTCA / AdvancedMC
Open Modular Solutions

Versatile Base and Fabric AdvancedTCA Switch

The Kontron AT8902 is an AdvancedTCA Base and Fabric Switch board that is PICMG 3.0/3.1 compliant. Built to support two Mid-Size or two Full-Size AdvancedMC modules, the AT8902 is the ideal high-end switch platform that provides maximum design flexibility for a wide range of wireless and wireline network applications, and employs leading-edge switching technology for full wire-speed throughput during all load conditions for any network topology.

Full Redundancy and High Availability

Suitable for dual-star and full-mesh configurations in 14- and 16-slot systems, the AT8902 is hot swappable, supports full redundancy, Layer 2 / 3 protocols (option for Layer 4), and provides 2x 10 Gigabit Ethernet uplink options via one AdvancedMC slot.

AdvancedMC-Everywhere integration for customization

With the support for two AdvancedMC modules, the AT8902 supports an assortment of AdvancedMC modules, such as for processing, mass storage, and I/O GbE inter-links to enable multi-shelf AdvancedTCA systems.

IPMI Support

The AT8902 supports the Intelligent Platform Management Interface Specification (IPMI) 1.5 to manage power, cooling and interconnect needs of intelligent devices, as well as to monitor events and to log events to a central repository.

- **PICMG 3.0/3.1-compliant base interface (GbE) switch**
- **Non-blocking layer 2 / 3 switching /routing**
- **Advanced Level 3, IPv4 & IPv6**
- **Options for QoS support and Jumbo Packet line rate switching**
- **4x GbE x Base/Fabric uplinks on front panel**
- **2 Mid-Size or Full-Size AdvancedMC module slots for customization**
- **2 x 10 GbE connections to one AdvancedMC slot**
- **Supports 14- and 16-slot AdvancedTCA shelves**
- **IPMI v1.5 support**

If it´s Embedded, it´s Kontron.

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Technical Information

Processor and Memory
- IBM PowerPC® 405 32-bit RISC processor core operating up to 400MHz with 16KB I- and D-caches
- PC-133 synchronus DRAM (SDRAM) interface
- 40-bit interface serves 32 bits of data plus 8 check bits for ECC applications

Ethernet
- Broadcom fifth generation of StrataSwitch/StrataXGS product line
- 24 10/100/1000 Mbps Ethernet ports
- Line-rate switching for all packet sizes and conditions
- On-chip data packet memory and table memory
- Advanced Fast Filter Processor (FFP) ContentAware classification
- Advanced security features in hardware
- Port-trunking and mirroring supported across stack
- Advanced packet flow control:
- Head-of-line-blocking prevention
- Back pressure support
- Standard compliant 802.1ad provider bridging
- IEEE 1149.1 (JTAG) boundary scan

Base Interface (PICMG 3.0)
- Non-blocking layer 2 / 3 switching/routing

Fabric Interface (PICMG 3.1)
- Non-blocking layer 2 / 3 switching/routing with VLANs
- Dual GbE services to redundant Hub Board
- Dual GbE services to payload slots 2-5
- GbE service to payload slots 6-15

Project Customization with AdvancedMC Slots - Mid-Size / Full-Size
- Dual 10GbE connection to one AMC slot
- Processor-AMC
- Storage-AMC
- I/O - AMC

Interfaces on front panel
- 4 X 10/100/1000Base-T Uplinks for Base Interface (B1-B4)
- 4 X 10/100/1000Base-T Uplinks for Fabric Interface (F1-F4)
- 1 X 10/100Base-T Management
- 1 X RS232 Management
- 8 RTM Channels from each AMC Slot
- Storage interface for HDD or Flash mass storage (SAS/SATA/FC) from each AMC Slot

Interfaces to ATCA backplane
- Zone 2 connectors
- Fabric channels 1-5: 2 x GbE (1000Base-BX)
- Fabric channels 6-15: 1 x GbE (1000Base-BX)
- Base channel 1 x Ethernet to ShMC(s) (10/100Base-T)*
- Base channels 2-16: 1 x GbE (1000Base-T)
- CLK 1/2/3 A/B
- Update Channels: 4 x GbE (1000Base-BX)
- Zone 1 connector
- Power
- IPMB A
- IPMB B

* Although the Ethernet controller supports 1 Gb/s, the ShMC is set to 10/100Base-T.

Board Management
- Based on IPMI 1.5
- FRU Management
- Sensors (Voltage, Current, Temperature, Fuse)
- Status and Alerting
- Hot Swap
- Electronic Keying of Base and Fabric Interfaces

Management and Protocols
- Management via SNMP, TELNET, CLI
  - In-band
  - Out of band via Ethernet or RS232
- IPMI version 1.5
- Ethernet/Bridging protocols include
- Link aggregation (802.3ad)
- VLANs (802.1Q)
- Spanning tree (802.1D, 802.1w)
- Flow control (802.3x)
- GVRP, GMRP

Physical & Mechanical
- Size: Single slot ATCA board
- Power: 50W typical without AMCs
- 8U form factor mechanically compliant to PICMG 3.0 and 3.1
- 2 Mid-Size / Full-Size AMC Slots
- 280 mm x 322 mm (11.024" x 12.677")
- 1,8 kg

General Compliances
The AT8901 conforms to the following specifications:
- PICMG 3.0 AdvancedTCA Base Specification, Revision 2.0
- PICMG 3.1 Ethernet/Fibre Channel for AdvancedTCA Systems, Revision 1.0
- AMC.0 AMC Base Specification
- AMC.1 PCI-Express and Advanced Switching on AMC
- D0.96 of AMC.2 Revision 1.0 Gigabit Ethernet
- D0.9d of AMC.3 Revision 1.0 Storage
- IPMI v1.5 Intelligent Platform Management Interface Specification

Environmental

	Operating	Storage and Transit
Temperature*:	0 °C to 55 °C	-40 to +70°C / -10 to 158°F*
Humidity*:	15%-90% (non-condensing) at 55°C (131°F)	15%-90% (non-condensing) at 55°C (131°F)
Altitude*:	4000 m (13,123 ft)	15,000m / 49,212 ft
Shock*:	30G/11 ms half sine	50G, 170 inches/second trapezoidal
Vibration*:	5 to 100Hz: 1G @ 0.25 Octave/minute	5 to 50Hz: 0.5G @ 0.1 Octave/minute

*Meet or exceed

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

Corporate Offices

Europe, Middle East & Africa
Oskar-von-Miller-Straße 1
85386 Eching/Munich - Germany

Tel.: +49 (0)8165 77 0
Fax: +49 (0)8165 77 279

sales@kontron.com

US/ Canada
14118 Stowe Dr
Poway, CA 92064-7147

Tel.: (858) 677-0877
Fax: (858) 677-0898

sales@us.kontron.com

Asia Pacific
Far East Science Park, 2nd Floor No.2, Lane50,
Nan Kang Road Section 3 Nan Kang District Taipei, Taiwan

Tel: +886 2 2782 0201
Fax: +886 2 2782 7486

sales@kontron.com.tw

kontron