AT8904



AdvancedTCA 10 GBE HUB BOARD WITH 10 GBE AdvancedMC UPLINKS

- 10GbE service to redundant hub
- 10GbE service to payload slots 2-15
- 1x 1000Base-T uplink on front panel
- non-blocking layer 2 &3 switching with VLANs
- supports comprehensive set of IP routing and ethernet/bridging protocols

POSSIBILITIES START HERE kontron

Versatile Base and Fabric AdvancedTCA 10 GbE Hub

The Kontron AT8904 10 GByte hub is the ideal platform for open modular-based broadband media servers used to support Video on Demand (VoD) from a library of movies, delivered over DSL or CableTV networks, as well as VoD short videos from online service platforms, such as YouTube for example, delivered to mobile phones and wireless clients. For design engineers of media server applications, the Kontron AT8904 offers exceptional flexibility with two (2) AdvancedMC slots to host any of the following: processor AdvancedMC modules as main controllers; storage AdvancedMC modules as mass storage devices for Processor AMCs; and dual 10GbE uplink AMCs to interlink the Fabric. Concerning the 10GbE uplinks, Kontron offers the AT8904 hub with the AM4310 Mid-Size Interlink AMC module for a redundant Interlink of multiple ATCA chassis. The AM4310 provides 2 x 10 GbE uplinks on the front panel via optical XFP connectors which are routed to the XAUI ports (ports 4-7 and 8-11) on the AMC connectors. The Kontron AT8904 is designed with built-in Layer 3 routing support and non-blocking Layer 2 switching with VLANs. Its design is based on its existing line of AdvancedTCA hub boards which, for GbE to 10 GbE migration purposes, provides tremendous economies of scale and faster deployments for designers who have aleady designed applications with the Kontron AT8901 and AT8902 hubs. The Kontron AT8904 supports full IPv6 routing and a line rate switching capacity of 200-Gbps which makes it the ideal hub for high traffic broadband media server network elements.

▶ TECHNICAL INFORMATION

SYSTEM CHARACTERISTICS FABRIC SWITCH	- Broadcom BCM56800: 20-Port 10-Gigabit Ethernet Multilayer Switch - 10-Gbps interfaces can operate at 10 GbE, 2.5 GbE and 1 GbE. - 15 ATCA Fabric ports. - 10 Gbps interfaces to the AMC slot B1 - 10 Gbps interfaces to the AMC slot B2 - 1 10 Gbps interface to the Front Fabric Uplink RJ45 operates in 1 GbE - Hardware Support for IPv6 Routing and Tunneling ready - Multicast Routing/Forwarding - PCI 32 bit/66 MHz management interface - LED interface to CPLD on Main Board - Integrated XAUI™ SerDes for all 20 10-GE ports - Uses single SerDes lane per port at GE speeds - Built-in Layer 3 routing support - 200-Gbps switching capacity at line rate - Support for eight classes of service (CoS) per port - Support for Deficit Round Robin, Weighted Round Robin and Strict priority scheduling - Support for a cut-through switching mode	- Port trunking and remote mirroring support - Fully integrated data and address memory on a single chip - Advanced packet flow control - Head of line blocking prevention - Full-duplex flow control (802.3x) - The advanced ContentAware™ engine supports ToS/DiffServ, policy based routing, priority tagging and remapping - Line rate multifield packet classification - Supports IEEE 802.1p, TOS/DiffServ, rate limiting, policing, priority tagging, and remapping - Extended security and ACL filtering - Full IPv6 routing support - Enhanced security and management capabilities - Low power consumption - Supports L2 switching with 4K VLANs, IPv4 and IPv6 full routing functionality - Implements congestion handling features such as Head- Of-Line blocking prevention and IEEE 802.3x flow control
SOFTWARE	- IPMI version 1.5 for board level management (PICMG 3.0) - Support for clock e-keying following AMC.0 Rev 2.0 Specification - 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-Plug support for AMC modules - Redundancy support for extension fabric switch - Reset of extension fabric - Modular software architecture to enable project specific customization
ETHERNET / BRIDGING	_ Static link aggregation (IEEE 802.3ad) on uplink ports and dedicated fabric channels - Classic and rapid spanning tree algorithms support (IEEE 802.1D, IEEE 802.1w) - Quality Of Service on all ports (IEEE 802.1p)	- Full Duplex operation and flow control on all ports (IEEE 802.3x) - Layer 2 multicast services using GARP/GMRP (IEEE 802.1p) - VLAN support including dynamic VLAN registration with GARP/GVRP (IEEE 802.1Q)
ROUTING	- Redundancy of routing functionality using a second switch hub board - IPv4 Forwarding on all channels and connected uplink ports - Quality of service according to the DiffServ standards - ARP for all routable interfaces - ICMP for all routable interfaces	- OSPF routing protocol version 2 - RIP routing protocol version 2 - VRRP (virtual router redundancy protocol) for transparent fail over of default routers - IGMP snooping
SERVICE / APPLICATIONS	- DHCP server - Onboard event management - Test and trace facilities - POST (power on self tests) diagnostics - The system provides a standards based SNMP implementation supporting SNMP v1, v2 and v3 for monitoring and management purposes	- IPMI based management of the onboard AMC slots (AMC.*) - Persistent storage of configuration across restarts - Support for retrieving and installing multiple configurations

TECHNICAL INFORMATION

PHYSICAL & MECHANICAL		- Size: Single slot ATCA board - Power: Under 200W (TBD) typical without AMCs - 8U form factor mechanically compliant to PICMG 3.0 and 3.1 - 2 standard mid-size/single width AMC Slots - 280 mm x 322 mm (11.024" x 12.677") - 1,8 kg	
GENERAL COMPLIANCES		The AT8904 conforms to the following specifications: - PICMG 3.0 AdvancedTCA Base Specification, Revision 2.0 - PICMG 3.1 Option 1 & 9 Ethernet/Fabric for AdvancedTCA Systems - AMC.0 R2.0 AMC Base Specification - AMC.2 R1.0 Gigabit Ethernet common region and 10GbE fat pipe region - AMC.3 Storage common region - IPMI v1.5 Intelligent Platform Management Interface Specification	
SAFETY		Meet or exceed: - Safety: UL 60950 -1: 2003; CSA C22.2 No 60950--1-03; EN 60950-1:2001; IEC60950-1 - EMI/EMC: FCC 47 CFR Part 15, Class B; CE Mark to EN55022/EN55024/ EN300386	
ENVIRONMENTAL	TEMPERATURE* HUMIDITY* ALTITUDE* SHOCK* VIBRATION* AIRFLOW:	Operating 0° C to 55° C 15 %-90 % (non-condensing) at 55° C (131° F) 4000 m (13,123 ft) 30 G/11 ms half sine 5 to 62 Hz: 1 G @ 0.25 Octave/minute 30 cfm	Storage and Transit -40 to +70° C / -10 to 158° F* 5 %-95 % (non-condensing) at 40° C (104° F) 15,000 m / 49,212 ft 50 G, 170 inches/second trapezoidal 5 to 50 Hz: 0.5 G @ 0.1

*Meet or exceed; MTBF is >180,000h @ 40°C, calculations based on Bellcore/Telcordia SR-332 Issue 1

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