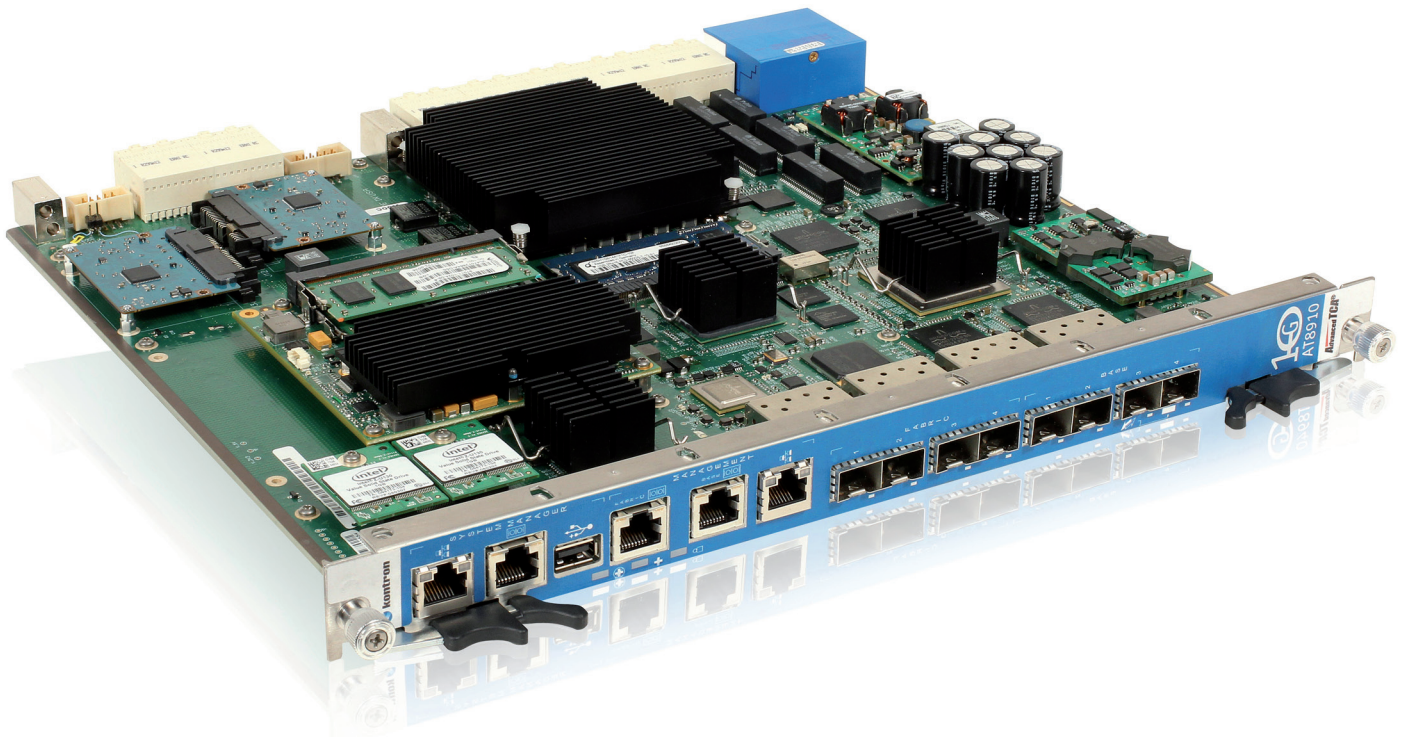# » AT8910 «

Second generation 10G ATCA Switch with 320 Gbps non-blocking switching bandwidth ideal for 4G LTE, 3G and Data Center Networks

» Support for 14x 10GbE nodes and one redundant hub meeting NEBS and ETSI standards

» Centralized system management with optional functionality based on the COMexpress form factor

» Separate switch silicon for Base and Fabric interface

» 4x 10GbE Front Fabric Uplinks; 4x 10GbE Front Base Uplinks

» 1x GE Mgmt. and 2x Serial Console

» Support for Synchronous Ethernet on RTM

» Optional integration Wind River Hypervisor

» Validated with OM9141-10G Open Modular Core Platform

AT8910
Next Generation 10 GbE ATCA Switch

Technical Information

10G Fabric Interface	Broadcom StrataXGS®IV Metro Ethernet Switch Architecture
	Broadcom BCM56842 high performance Ethernet Multilayer Switch: o 320Gbps Switching Capacity; o Support of up 14 Fabric IF 10GBase-BX4 (XAUI) or 1GBase-BX; o Support one port 10G HUB interlink to backplane at 10GBase-BX4 (XAUI) or 1GBase-BX.
	Support of 4 10G interfaces to RTM
	Support of 4 1G/10G SFP+ front uplinks with 10GBase-SR/LR/LRM/ direct attach copper cables
	SFP+ monitoring
	SyncE and BroadSync(tm) interface connection to FPGA for future usage
Base Interface	Broadcom StrataXGS®IV Metro Ethernet Access Switch Architecture
	Broadcom BCM56334 24-Port GbE Ethernet Multilayer Switch with 4 10GbE Uplinks: o 14 Base Interface ports running at 10/100/1000Base-T/TX/T; o One Hub interlink running at 10/100/1000Base-T/TX/T.
	One port configurable either as Hub interlink via Update Channel or IPMC link for IPMI/Serial over LAN
	Hub interlink running at 1000Base-BX
	ShMC A/B connect running at 10/100Base-T/TX
	4 1G/10G SFP+ front uplinks with 10GBase-SR/LR/LRM/ direct attach copper cables
	3 RTM uplinks running at 10/100/1000Base-T/TX/T (SGMII) or 1000Base-x (Fiber)
	SFP/SFP+ monitoring
	One port connected to Unit Computer running at 1000Base-BX
	One port connected to System Manager running at 1000Base-BX
Unit Computer and System Memory	Dual-core Freescale P2020 1000MHz processor
	1GB DDR3 SODIMM; 2x 128MByte NOR FLASH with dual Image Support
	Windriver Hypervisor running Windriver Linux as guest OSs on each core
Switch Management Software	
Broadcom FASTPATH®	Base package including switching, Quality of Service and Management Switching protocols and functions including Ethernet Multicast (GVRP, GARP, RSTP, LAG, IGMP Snooping, DiffServ, ACL ...)
	IPv4 unicast and multicast routing: o unicast forwarding protocols & functions (ARP, OSPF, VRRP, RIP...); o multicast forwarding protocols & functions (PIM-DM, PIM-SM, DVMRP, IGMP ...).
	IPv6 unicast and multicast routing: IPv6 unicast forwarding protocols and functions (discovery, OSPFv3, MLD, 6to4/4to6 tunneling)
	Switching protocol support: o Virtual LAN's per IEEE 802.1Q-2005; o IGMPv3 snooping; o Link aggregation load sharing; o Dynamic Host Configuration Protocol (DHCP); o Tag based IEEE 802.1p frame priority; o SNMP, Telnet, TFTP, DHCP, SSH, SFTP, ICMP-echo (ping); o Rapid Spanning Protocol (RSTP); o SNMPv3; o GARP VLAN Registration Protocol (GVRP); o Address Resolution Protocol (ARP); o Multiple Spanning Tree Protocol (MSTP); o Trivial File Transfer Protocol (TFTP); o Group addresses according to IEEE 802.1; o Reverse Address Resolution Protocol (RARP); o Flow control; o Secure Shell (SSH); o Support for GMRP; o Internet Control Message Protocol (ICMP); o Link Layer Discovery Protocol (LLDP); o Simple Network Management Protocol (SNMP); o Link Aggregation (LAG); o Internet Group Management Protocol (IGMP). o Link Aggregation Control Protocol (LACP);

Kontron Software Feature Extensions	Ethernet Switching:
	    o Meshed multicast, multicast and RSTP interoperability, same port bridging, link aggregation,
	      LLDP, lossless Ethernet

	IP Routing: o IPinIP tunneling, automatic tunnel failover, multicast

	Management Enhancements:
	    o Access control lists, monitoring, SNMP, provisioning, KEX control API, diagnostics, reliable field upgrades,
	      location based DHCP server, file services, watchdog, real time clock.

	Enhanced Optical/Copper module support: o XFP, SFP+, SFP, auto detection and selection
	Wind River Hypervisor support for FASTPATH BSP

Technical Information

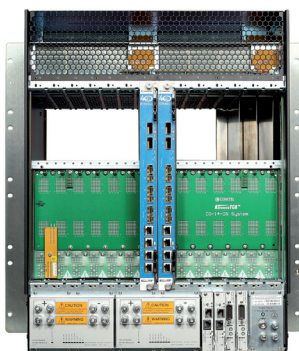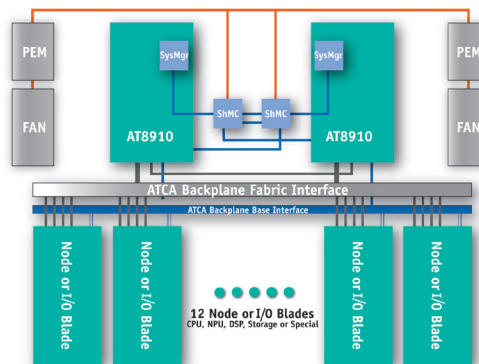|	
I/O Interfaces	Front: 1 SFP+ cage to support multi-rate fiber SFP+ modules
	Front: RJ45 for RS232 access to Processor
IPMI	PICMG 3.0 / PICMG 3.1 / HPM.1 / IPMI 2.0 compliant
	IOL/SOL support
	Temperature, Current and Voltage Sensors
Support	RTM8940 Rear Transition Module (RTM)

	Up to 80Gbps uplink capability on Fabric Interface:
	   o 2x QSFP configured as (2x 40G; AT8940 only) or 8x 10G uplinks using 2 active copper cables;
	   o 1x QSFP configured as (1x 40G; AT8940 only) or 4x 10G and 4x SFP+ uplinks;
	   o Telco clocking is standard;
	   o Option to remove the QSFP uplinks and/or Teclo clocking is available on demand.

	Support for 2x SFP 1 GbE uplinks on Base Interface:
	   o 1000Base-SX/LX Optical Modules;
	   o 10/100/1000Base-T Copper Module.

	Master Clock Generator with Stratum 3 accuracy and SyncE support:
	   o 2x ETSI T3 E1/T1 BITS input/outputs;
	   o 2x ETSI T4 E1/T1 Upstream/Downstream Chassis Clock Support;
	   o ATCA Synchronisation Clock Support CLK1 A/B, CLK2 A/B, CLK3 A/B;
	   o Clock Synchronisation to MCG of redundant HUB/RTM.

	AMC like Management Interface
System Manager	Support for basic and micro COM Express ETX Modules with Type 1 connector, according COMExpress 0 R1.0
	Management connection to System Manager via RS232 front RJ45, or 10/100/1000Base-T front RJ45
	Front panel USB port
	Support of ETX modules up to 30W
	Additional Ethernet Connection to Base IF and redundant HUB
	Support on-board for JEDEC SerialATA MO-297 SSD
	Support for RTM SATA applications
	Support on-board of up to 2 eUSB Flash Modules
Power	ATCA compliant Power Input System
	Total power is below 220 W

RTM8940 Rear Transition Module (RTM)

OM9141 – 10G Open Modular Core Platform connectivity

Technical Information

Environmental	
Temperature*	Operating: 0-55°C/32-131°F with 30CFM airflow
	Storage and Transit: -40 to +70°C/-40 to 158°F
Humidity*	Operating: 15% to 90% @55°C/131°F non-condensing
	Storage and Transit: 5% to 95% @ 40°C/104°F non-condensing
Altitude*	Operating: 4,000 m / 13,123 ft
	Storage and Transit: 15,000 m / 49,212 ft
Shock*	Operating: 3G each axis
	Storage and Transit: 18G each axis
Vibration*	Operating: 5-200Hz. 0.2G, each axis
	Storage and Transit: 5Hz to 20Hz @ 1 m2/s3 (0.01g2 /Hz) (flat)
	20Hz to 200Hz @ -3dB/oct (slope down)
Reliability	MTBF to meet or exceed approximately 280,000 hours
	Whole board protected by active breaker
	USB voltage protected by an active breakers
Safety / EMC	Meet or exceed:
	Safety: UL 60950-1; 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
Warranty	Two years limited warranty

* Designed to meet or exceed.

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