

OM9141-10G



OM9141-10G OPEN MODULAR CORE
INTEGRATED 10GbE ATCA PLATFORM

The OM9140-10G Open Modular Core platform is a basic platform building block to provide an ATCA infrastructure as per the PICMG specification and is the foundation for pre-integrated carrier grade systems. A core ATCA-built infrastructure enables Telecom Equipment Manufacturers (TEMS) to take full advantage of the ATCA eco-system and enjoy the freedom of choice to build dedicated platforms for wireless and wireline applications. Developing telecom equipment and applications based on standard-based, pre-integrated platforms ensures faster time to market and therefore faster time to revenue. A pre-integrated Open Modular Core platform saves the Telecom Equipment Manufacturer significant development time and resources by using standard based hardware and integrated data transport and management functionalities. Platform thermal pre-qualification according to standard based guidance, such as CP-TA B.4, ensures thermal interoperability and the flexibility to create different platform configurations of CPU, NPU, DSP storage or even specialized and custom ATCA based line cards that meet the requirements for 3G/4G, LTE, WIMAX, GPON and IP-TV network elements.

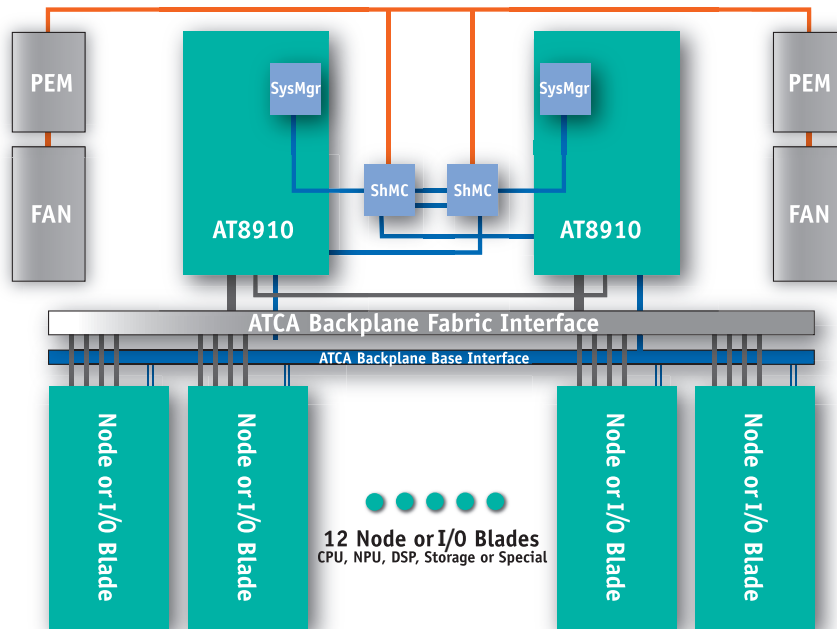
Typical applications to build systems based on the OM9140-10G Open Modular Core platform include but are not limited to:

- 3G/4G and LTE Network Elements
- GPON/EPON and Optical Transport Network Elements
- QoS and Test Platform Network Elements
- Service and Content Delivery platforms with Security and DPI functionality

The platform core is a pre-integrated building block that provides the ATCA infrastructure with:

- 1) Chassis/ mechanical, power and cooling
- 2) Data Transport for Base and Fabric interconnectivity
- 3) Platform Manageability such as Shelf Management and System Management with a standard-based HPI implementation
- 4) Open Modular Core Platform interoperability

The Open Modular Core Platform is the result of Kontron's long-standing expertise in driving specifications and developing standard-based hardware components and integrated platforms for the telecommunications market. As an integrated core platform, it provides redundant power entry modules, cooling infrastructure with hot swappable redundant fans, and 10GbE switching capabilities based on the AT8910 ATCA switch blade with platform synchronization interfaces. Also included is redundant Shelf Management with interoperability-tested Shelf Manager Cross Connects as per PICMG specification, and optional systems management functionality based on the COMexpress form factor – 25GB and 50GB SATA MO-297 or 16GB eUSB system management storage option – which resides on the AT8910 for centralized system management. A Telco Alarm panel provides telecom grade external system alarm notification.



OM9141 - 10G Open Modular Core Platform connectivity

CHASSIS/ MECHANICAL SPECIFICATION, POWER AND COOLING

▶ PLATFORM OVERVIEW

Based on PICMG 3.0 and PICMG 3.1 with support for 1, 10 and 40GbE support
13U high, 19" with brackets for 19" equipment practice
Mechanical Dimensions: Height – 577mm, Width – 435mm with no brackets, Depth – 573mm with Cable Trays
12 available slots for Node Blades and RTMs
Dual Star Platform configuration with 1GbE Base Interface and 1, 10 or 40GbE Fabric Interface support
Front to rear cooling supports 300W per slot plus 35W per RTM
4x hot-swappable fans
Front pluggable Air Filter with redundant presence sensor
Redundant DC Power Entry Module (PEM) with Fuse failure and reverse voltage indicator for -40 to -72V DC
Redundant Shelf Field Replaceable Unit with data boards with Telco Alarm
Redundant, hot swappable Shelf Manager with RS232 and Ethernet front access (single Shelf Manager operation support)
Bussed IPMB architecture

DATA TRANSPORT FOR BASE AND FABRIC INTER-CONNECTIVITY

▶ PLATFORM OVERVIEW

Dual Star Platform configuration with 1GbE Base Interface and 1,10 or 40GbE Fabric Interface support
Redundant AT8940 ATCA switch blade with Shelf Manager Cross Connect implementation
RTM for 1GbE, 10GbE and Telco Clock support
Expansion with optional COM-Express with storage for full System Management implementation (please refer to Platform Manageability)
The Base Interface switch supports L2/L3 switching including VLAN support in environments where there exist both IPv4 and IPv6 traffic
The Fabric Interface switch supports L2/L3 switching including VLAN support in environments where there exist both IPv4 and IPv6 traffic
Compliant to PICMG 3.0 R3.0 and PICMG 3.0 R3.0, PICMG 3.1 (R1.0), specification
Validated towards CP-TA Interoperability Compliance Document 3.0
Single Switch Management for Base and Fabric Interface
Supports up to 12x nodes and one inter hub slot with 10/100/1000 BASE-T on Base Interface as per PICMG 3.0
Provides clock interconnection between zone 2 and zone 3 connectors for the RTM to provide the Telco clocking option. Clock interconnection via update channel is supported for synchronizing redundant clock module
Base package includes 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 unicast forwarding protocols & functions (ARP, OSPF, VRRP, RIP...)
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:
<ul style="list-style-type: none">- Virtual LAN's per IEEE 802.1Q-2005- Tag based IEEE 802.1p frame priority- GARP VLAN Registration Protocol (GVRP)- group addresses according to IEEE 802.1- support for GMRP- Link Aggregation (LAG)- Link Aggregation Control Protocol (LACP)- SNMP, Telnet, TFTP, DHCP, SSH, SFTP, ICMP-echo (ping)- Address Resolution Protocol (ARP)- Reverse Address Resolution Protocol (RARP)- Internet Control Message Protocol (ICMP)- Internet Group Management Protocol (IGMP)
<ul style="list-style-type: none">- Link aggregation load sharing- Rapid Spanning Protocol (RSTP)- Multiple Spanning Tree Protocol (MSTP)- Flow control- Link Layer Discovery Protocol (LLDP)- IGMPv3 snooping- Dynamic Host Configuration Protocol (DHCP)- SNMPv3- Trivial File Transfer Protocol (TFTP)- Secure Shell (SSH)- Simple Network Management Protocol (SNMP)

PLATFORM MANAGEABILITY, SHELF MANAGEMENT AND OPTIONAL SYSTEM MANAGEMENT WITH STANDARD BASED HPI IMPLEMENTATION

▶ PLATFORM OVERVIEW

Single or redundant shelf management option - based on PPS ShM500; HPI support

Extended System Management as COM-express module integrated on AT8940 ATCA switch blade as part of platform core

The Kontron ETXexpress®-AI COM Express™ Computer-on-Module offers a new level of design flexibility thanks to its 32 nm Intel Core i7 / Core i5 processor technology. The module offers improved computing performance in the high-end performance sector and is ideal for the extended and centralized system management implementation:

» COMe-bAI i5 SV 38010-0000-24-2 Intel® Core(tm) i5SV (2.4GHz, 3M L2)

» RS232 RJ45 Front Panel Access for Management; RJ45 10/100/1000Base-T front access; Front panel USB access; 1000Base-BX connectivity to secondary redundant System Manager Module via ATCA Update Channel through the backplane; and, 1000Base-BX connectivity to Base Interface

SSD storage for COM-express for System Management Functions. Support for : 2x SATA M0-297 SSD; 2x eUSB Flash Modules; 2x SATA connection to the RTM

Note: System Manager Implementation and integration optional

▶ REGULATORY COMPLIANCE

DESIGNED TO MEET NEBS	GR-63-Core, Level3; GR-1089-Core, Level 3; SR-3580, Level 3; EN 300 019; EN 55022; EN 55024; UL/CSA/IEC/EN 60950-1
ENVIRONMENTAL	Operating/ Storage Temperature GR-63; EN 300 019-2-3 Class 3.1E; EN 300 019-2-2 Class 2.3; EN 300 019-2-1 Class 1.2;
SAFETY	UL/CSA/EN/IEC 60950-1; Low Voltage Directive, EC Council Directive 2006/95/EC; GR-63 UL94V-0, V1
EMC	FCC Part 15, GR-1089, EN 300 388, EN 55022, EN 55024; GR-1089 (3.1.2); GR-1089; GR-1089 (2.1.2); GR-1089 (3.3.1); GR-1089 (2.2); GR-1089 (4.6.9.1); EC Council Directive 2004/108/EC
ROHS/WEEE	RoHS/WEEE compliant

RTM8940 REAR TRANSITION MODULE (RTM)

Up to 80Gbps uplink capability on Fabric Interface:

- 2x QSFP for 40Gbps Active Copper Cables
- 4x SFP/SFP+ supporting SX, LX, SR, LR, LRM and Copper Modules

Support for 2x SFP 1 GbE uplinks on Base Interface:

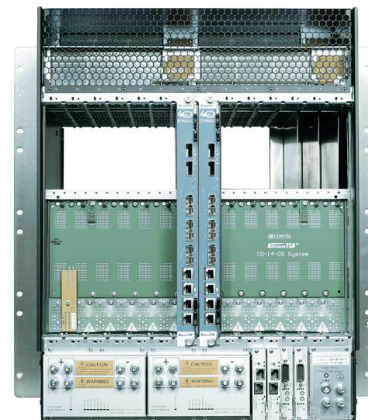
- 1000Base-SX/LX Optical Modules
- 10/100/1000Base-T Copper Module

Master Clock Generator with Stratum 3 accuracy and SyncE support:

- 2x ETSI T3 E1/T1 BITS input/outputs
- 2x ETSI T4 E1/T1 Upstream/Downstream Chassis Clock Support.
- ATCA Synchronisation Clock Support CLK1 A/B, CLK2 A/B, CLK3 A/B
- Clock Synchronisation to MCG of redundant HUB/RTM.

AMC like Management Interface:

- Renesas H8S2472 MMC
- FRU EEPROM of 128kB
- SPI Firmware Flash
- Voltage Sensors
- Temperature Sensors



► ORDERING INFORMATION

ARTICLE	DESCRIPTION
OM9141-10G OPEN MODULAR CORE - NON REDUNDANT	OM9141 – 10G with 1x ShMC, 1x AT8910, 1x RTM8940, 1x COM-Express
OM9141 – 10G OPEN MODULAR CORE - REDUNDANT	OM9141 – 10G with 2x ShMC, 2x AT8910, 2x RTM8940, 2x COM-Express

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