



## PROMENTUM ATCA-2100

### Switch and Control Module

The ATCA standard (PICMG 3.x) has established itself as the open standard for Telecom OEMs to develop their next generation infrastructure equipment. To develop cost effective solutions, manufacturers need highly integrated common equipment – switching fabrics, shelf manager, timing and system management – for their open, ATCA standard based platforms.

#### Product Description

The Promentum ATCA-2100 is an ATCA switch and control module featuring integrated PICMG 3.0 Ethernet switching, PICMG 3.1 Fibre Channel switching, and optional shelf management, network timing management, and system management. The ATCA-2100 is architected to be the heart of a cost-effective ATCA platform, providing centralized interconnectivity, hardware management, and system management functionality.

#### Gigabit Ethernet Switching With 8 Uplinks

The ATCA-2100 contains an Ethernet switch fabric, which provides PICMG 3.0 compliant Gigabit Ethernet base interface connectivity to the ATCA shelf and also supports several external links to be used as uplinks or inter-shelf connections. The Ethernet fabric is a state-of-the-art solution that provides wire speed layer 2 and layer 3 switching plus a rich feature set including VLANs, packet classification and filtering, link aggregation, quality of service, spanning tree, and other layer 2/3 features.

The switch provides a total of 28 GbE ports. With 14 ports for the node slots, this module is ready to support 535mm and 23" 16-slot platforms. There are 8 GbE ports dedicated for uplinks enabling high bandwidth inter-shelf connectivity. The other ports are used for shelf management and PMC sites on board the module.

#### Fibre Channel Fabric Enabling San-in-the-Shelf

The ATCA-2100 module provides a PICMG 3.1 compliant Fibre Channel switch with 2 Gbps FC connectivity to the ATCA shelf, plus external connections from the switch module, supporting direct-attached or network-attached storage solutions. In conjunction with the ATCA-3000 module, the Fibre Channel switch provides an integrated, high performance SAN solution in the shelf with no external cabling required. The Fibre Channel switch has zoning functionality to offer flexible storage configurations for the platform.

#### High Availability

The ATCA-2100 is designed to be part of a High Availability (HA) solution providing 99.999% or better system availability. A dual redundant blade configuration is supported, with 1+1 active/standby or active/active modes supported. The redundancy mode and role assignment for switching, shelf management, and system management are all completely independent.

#### Integrated Shelf Management

The ATCA-2100 contains integrated ATCA shelf management, providing a cost-effective way to control the shelf hardware without requiring additional modules. The shelf manager implements IPMI management, FRU management, shelf environment management for power, thermal, E-keying and SA Forum HPI 1.1 compliant interfaces. This shelf management function may be disabled to support use of the ATCA-2100 switch with a dedicated shelf manager.

#### PrPMC Sites Enable Integrated System Management, Gateway, or Network Timing.

The module supports two PrPMC sites onboard with GbE connectivity (as per the PICMG 2.15 PTMC specification), to support System Management functions, allowing further system consolidation and economic benefits. Alternatively, by adding network processor PrPMC or IPSec/SSL hardware acceleration PrPMCs, users can implement a network gateway functionality in the module. These added functions – system management or network gateway – saves slots that can be used for revenue producing modules in the shelf.

#### System Management Interfaces

The ATCA-2100 supports multiple interfaces to the system manager – CLI, SNMP and SA Forum HPI 1.1.

### FEATURE SUMMARY

- Single slot ATCA PICMG 3.0/3.1 compliant module
- Highly integrated fabric module
  - GbE base interface
  - Fibre Channel fabric
  - Shelf Manager
  - Two PMC sites
- 28-port GbE PICMG 3.0 Base fabric switch
  - 14 GbE links to user slots
  - 1 GbE link to redundant switch blade
  - 8 GbE links for external connections (uplinks)
  - 4 GbE links to on-board 2 PMC sites
  - 1 GbE link to off-board shelf manager
- Wire-speed L2 and L3 switching
  - Support for 4K IEEE 802.1Q VLANs
  - Packet classification/filtering
  - Link Aggregation
  - QoS
  - CLI and SNMP management
- Fibre Channel Switch
  - 14 FC links to user slots
  - 17-port 2 Gbps FC PICMG 3.1 fabric switch
  - 1 FC link local on board with PCI interface
  - 2 FC links for external connections (uplinks)
  - Supports FC-AL-2 protocol, hub or switch

- Integrated Shelf Management
  - PICMG 3.0 compliant ShMC/ShMgr
  - HPI 1.1 compliant programmatic interface
  - CLI and SNMP management
- 2 PMC Sites can be used for System Mgmt PrPMC and Network Timing PMC or intelligent WAN unlinks

#### **Fabric L2 Software**

The ATCA-2100 module comes complete with L2 software for powerful networking capabilities as part of the base interface. It includes spanning tree protocol (STP-IEEE 802.1d), Rapid STP (RSTP-IEEE 802.1w), Multiple STP (MSTP-IEEE 802.1s), VLAN support (IEEE 802.1q), flow control in accordance with 802.3 clauses 31 and 33, and switch statistics. Other functions supported include: switch fabric watch dog, MAC address assignment, Jumbo frame support and multicast/broadcast.

Overall, the ATCA-2100 serves as highly integrated common equipment that makes it very cost effective for a platform. Its exceptional architecture, redundancy and performance make the ATCA-2100 the ideal choice for high performance blade server applications such as Media Gateway Controllers, IP Multimedia Systems (IMS), Media Servers and other server functions embedded in SGSN/GGSN and HLR/VLR.

# Promentum ATCA-2100 Specifications

Feature	Function	Description
Physical	Dimensions	8U x 6HP x 280mm ATCA, single slot
	Compliance	PICMG 3.0/3.1
Ethernet	Base fabric links	GbE links to 14 node slots and 1 "F" link to the redundant hub slot
	Uplinks	8 GbE ports on base module
	PMC	2 GbE links to each PMC site
	External ShMC	1 GbE link to (optional) external Shelf Manager
	Mgmt/Mon. links	1 FE link on base module
	Throughput	Wire speed for 64-byte frames (1.5 Mpps per port)
	Latency	4.33 µs per RFC2544
	Forwarding Tables	Up to 16K entries (L2/L3), with build option for 48K
	Packet Buffer Size	1MB with build option for 32 MB
	VLANs	Up to 4096 IEEE 802.1Q VLANs (MAC/port/subnet/protocol)
	Link Aggregation	Per IEEE 802.3ad, uplink ports only
	QoS	Provisioning on L2/3/4 and IEEE 802.1p tag, 1024 Traffic Classes
	Spanning Tree	802.1d (STP), 802.1w (RSTP), 802.1s (MSTP)
Fibre Channel	Fabric links	2.125 Gbps to 14 slots
	External links	2 2.125 Gbps links
	Protocol	FC-AL-2
	Zoning	Support for 16 independent zones
	Misc. Control	Hub/Switch operation, LIP control, Port bypass control
Switch Management	CLI	Full-featured CLI for controlling all switch features
	SNMP Agent	SNMPv2c and SNMPv3 Agent
	SNMP MIBs	Support for all switch features via standard and enterprise MIBs. Standard MIBs include: RFC1213, RFC1907, RFC2863, RFC2011, RFC2012, RFC2013, RFC1493, RFC2674, RFC2665, RFC2819, IEEE8023-LAG-MIB
Shelf Management	Operation	HW Mgmt per ATCA PICMG 3.0. Includes IPMI management, FRU HW management, shelf environment management (power, cooling, E-keying), and shelf annunciator management.
	Mgmt Interfaces	SAF SAI-HPI-B.01.01 (HPIv1.1) compliant API IPMI over LAN (RMCP/IP) per PICMG 3.0 SNMP (enterprise MIB) CLI (custom)
	Site 1	VITA-32 PrPMC compliant site (Monarch mode) with 2 GbE connections to Base fabric Ethernet switch and 1 2Gb connection to FC switch. Suitable for System Management PrPMC or I/O functions.
	Site 2	VITA-32 PrPMC compliant site (non-Monarch mode) with PIM connection for rear I/O (via RTM) and connections to PICMG 3.0 system clocking signals. 2 GbE connections to Base fabric Ethernet switch and 1 2Gb connection to FC switch. Suitable for Network Timing PMC or other.
Connectors, Front Panel	Mgmt Ethernet Link	RJ-45 connector (10/100 Ethernet)
	Serial Console	Male 9-pin Micro D-shell connector
	Base Ethernet Uplinks	8 1000Base-SX SFP connectors
	Ext FC Links	2 FC SFP connectors
RTM (optional)	Interfaces	2 BITS (DS1/E1) clock inputs (requires PIM)
		1 reference clock output (requires PIM)
		4 digital signal level alarm outputs per PICMG 3.0 DA-15P connector
		2 digital signal level alarm inputs per PICMG 3.0 DA-15P connector
		4 user-defined digital signal level alarm outputs
		64-pin PIM interface for PMC site 2

Connectors, Backplane	Power, IPMB	ATCA Zone 1, P10 connector
	Clocking	ATCA Zone 2, J20 connector
	FC Fabric	ATCA Zone 2, J20, J21, J22, J23 connectors (PICMG 3.1 Option 7 compliant)
	Ethernet Base Fabric	ATCA Zone 2, J23 and J24 connectors
LEDs	-	Hot Swap (Blu), OOS (Red/Yel), Power Good (Grn), Blade Status (Tri), FC Port Bypass (Yel), GbE Port Status (Tri), GbE Link Status (Grn)
Power	-	-48V (supply) / 2.46 (Amp) / 118 (watts)
Environment	Ambient Temperature	0° – 55°C (operating), -40° – 70°C (non-operating)
	Relative Humidity (non-condensing)	5 – 90% (operating), 5 – 90% (non-operating)
Regulatory	Safety	UL/EN/IEC 60950-1, CSA 22.2
	EMC	FCC Part 15, Class B, EN 55022: 1998, Class B
		EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8
Warranty	-	Two years, parts only

## Ordering Information

**Toll-Free:** 800-950-0044

**Phone:** 503-615-1100

**Support:** 866-385-6167

Call for pricing and availability. Refer to the order codes below.

### Description:

ATCA-2100 28 GB Port Switch and Control Module with L2 functionality. Includes 10 SFPs for Uplinks for GE and FC Uplinks..

**ORDER CODE: A2K-SWH-0P00-01**

ATCA-2100 28 GB Port Switch and Control Module with L2 functionality, no SFPs populated.

**ORDER CODE: A2K-SWH-0P00-02**

ATCA-2100 Optical SFP kit with 4 SFPs.

**ORDER CODE: A2K-SFP-O**

ATCA-2100 Copper SFP kit with 4 - Supports only 1 GE copper..

**ORDER CODE: A2K-SFP-C**



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