

XS-AMC4

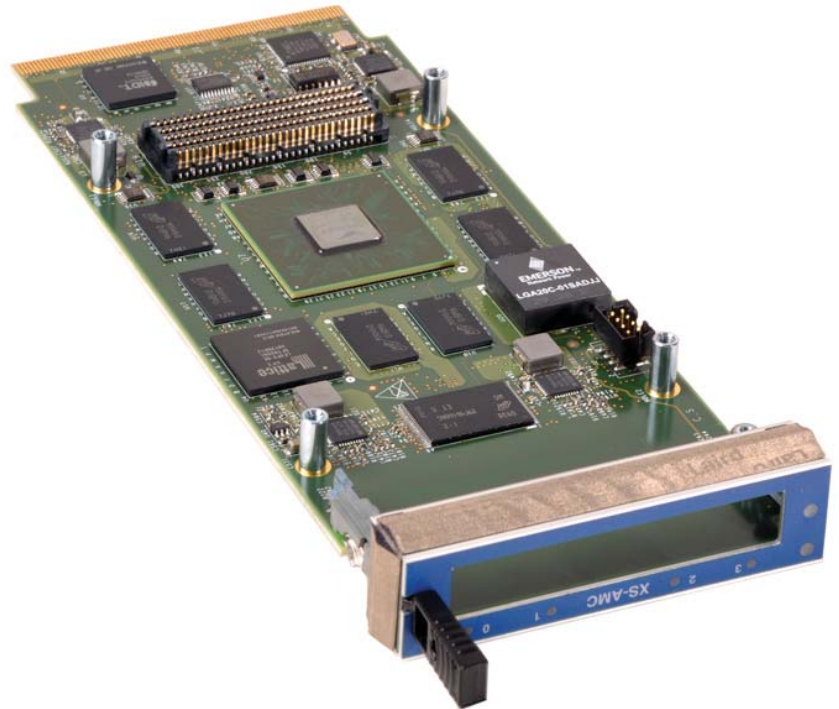
OC-3/OC-12/Gigabit Ethernet AMC

Applications

- ▶ 3G, LTE & WiMAX Network: Control, Backhaul, Baseband and PHY.
- ▶ Voice over Packet
- ▶ Video Streaming
- ▶ Broadband Networks
- ▶ ATM to IP Gateways
- ▶ DSLAMs

Main Features

- ▶ ATM AAL0, AAL1, AAL2 & AAL5
- ▶ Packet over SONET (POS)
- ▶ 4 x OC-3/STM-1
- ▶ 1 x OC-12/STM-4
- ▶ 10 x Gigabit Ethernet
- ▶ 1 x XAUI
- ▶ PCIe and/or sRIO
- ▶ Automatic Protection Switching
- ▶ PICMG® AMC.0 R2.0, AMC.1, AMC.2 and AMC.4
- ▶ WinPath3™ Network Processor
- ▶ Dual On-board 32-bit MIPS 34K™
- ▶ 3 x 256 MB DDR3
- ▶ 512 MB NAND Flash EPROM
- ▶ SFP Optical Transceivers



XS-AMC4 is a modular Advanced Mezzanine Card (AMC) which offers high-end ATM and IP services in a very compact form factor. XS-AMC4 provides termination, switching and interworking capabilities from any port to any port.

XS-AMC4 performance and features are ideally suited for applications such as Wireless networking, Voice over Packet, DSLAM and Media Signaling Gateways.

Using the state of the art third generation Wintegra™'s WinPath3™ Network Processor, XS-AMC4 is the perfect interface to handle both ATM and IP simultaneously.

XS-AMC4 on-board dual MIPS 34K processors can run advanced protocols (e.g. 3GPP, SS7, ATM, VoIP) while the Network Processor handles all the data path.

XS-AMC4 is an assembly of XS-AMC-WP3C base card and XS-MEZ-OC12 daughter card providing Ethernet and ATM/POS connectivity.

XS-AMC4 I/O ports are highly configurable and supports a mix of: OC-3/STM-1, OC-12/STM-4, 1000BASE-T and 1000BASE-X.

Compliant with PICMG Advanced Mezzanine Card AMC.0, AMC.1, AMC.2 and AMC.4, XS-AMC4 can be used on AdvancedTCA™, MicroTCA and proprietary platforms.

XALYO SYSTEMS

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XS-AMC4

OC-3/OC-12/Gigabit Ethernet AMC

ATM

- ▶ AAL0, AAL1, AAL2 & AAL5 **1**
- ▶ ATM cell switching
- ▶ AAL2 CID switching
- ▶ Traffic management as per TM 4 .1: CBR, VBR, GFR and UBR
- ▶ Per VC queueing
- ▶ Full UNI/NNI VPI/VCI range
- ▶ OAM F4 and F5 as per ITU-T I.610

AMC

- ▶ PICMG® AMC.0 Rev 2, AMC.1, AMC.2 and AMC.4 compliant **4**
- ▶ Single width
- ▶ Mid-size or Full-size
- ▶ Intelligent Platform Management Interface (IPMI)
- ▶ 2 x 1000BASE-BX links (AMC.2) towards switching Fabric (Lane 0,1)
- ▶ 1 x XAUI (AMC.2) or sRIO (AMC.4) towards Switching Fabric (Lane 8-11)
- ▶ 622 mbps APS (Lane 12)
- ▶ Hot-Swap

Network Processor

- ▶ Wintegra™ WinPath3™ **5**
- ▶ 256 MBytes Packet DDR3
- ▶ 256 MBytes Parameter DDR3
- ▶ 256 MBytes Application DDR3
- ▶ 32-bit / 533 MHz DDR3
- ▶ Dual MIPS 34K™ CPU @ 700 MHz
- ▶ 12 WinGines @ 450 MHz
- ▶ 2.5 MBytes Internal Memory
- ▶ For more details see www.wintegra.com

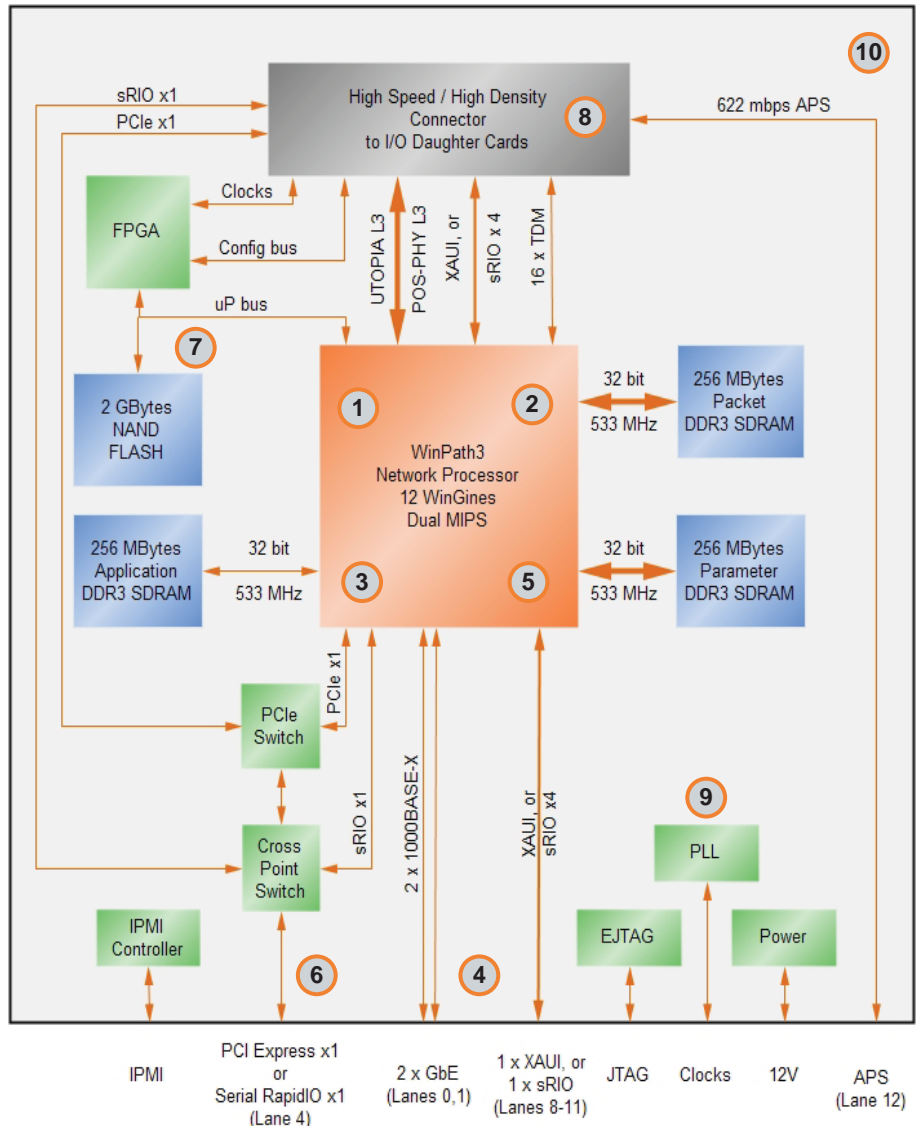
Interworking and QoS

- ▶ IPv4 and IPv6 Routing **2**
- ▶ Multicast
- ▶ MPLS
- ▶ Packet Switching
- ▶ IEEE1588v2
- ▶ Synchronous Ethernet
- ▶ NAT/PAT
- ▶ PWE3 (CESoPSN & SATOP)
- ▶ GRE, GTP and L2TP
- ▶ Bridging
- ▶ VLAN Stacking
- ▶ Ethernet OAM
- ▶ Per-flow Queueing
- ▶ WRED
- ▶ Interworking at 10Gbps @ 64 bytes packet or 15M PPS including classification, policing and shaping.

Security

- ▶ DES, 3DES **3**
- ▶ AES-128/192/256
- ▶ Kasumi F-9
- ▶ UEA2/UIA2 (Snow 3G)
- ▶ HMAC-MD5/SHA-1
- ▶ AES CCM/GCM

XS-AMC-WP3C Base card Block Diagram



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XS-AMC4

OC-3/OC-12/Gigabit Ethernet AMC

System busses

- PCI Express 6
 - ▶ x1 (lane 4)
 - ▶ 2.5 Gbps
 - ▶ Supports reference clock (FCLKA)

- Serial RapidIO
 - ▶ x1 (lane 4)
 - ▶ x4 (lane 8-11)
 - ▶ 1.25, 2.5 or 3.125 Gbps

- Microprocessor bus 7
 - ▶ 16 bit
 - ▶ 2 GBytes NAND Flash support

Physical Layer

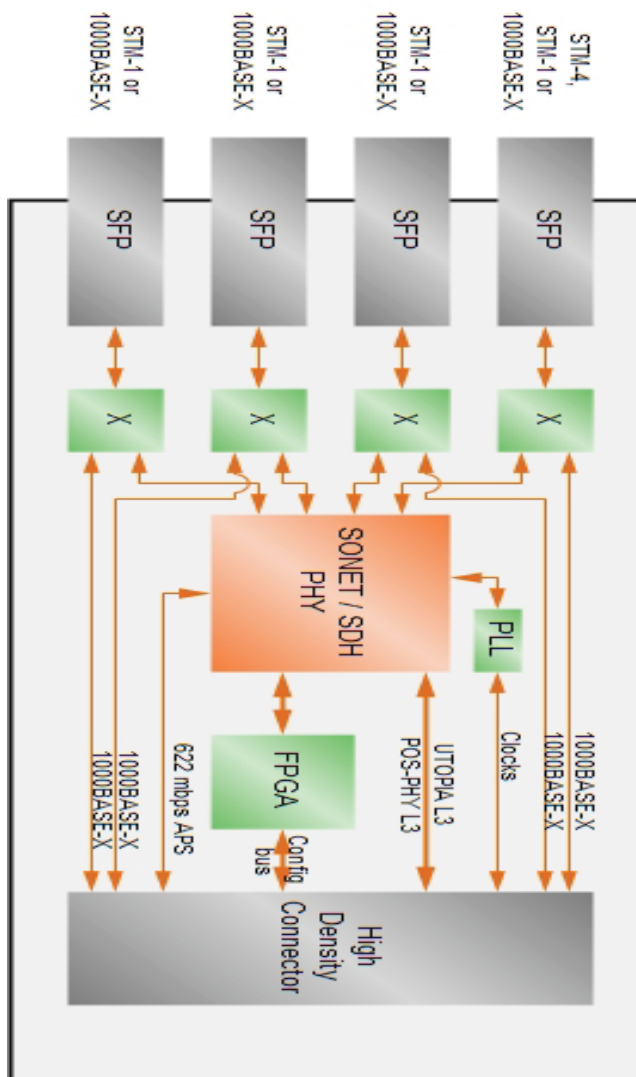
- SONET/SDH 8
 - ▶ Single OC-12/STM-4 port, or
 - ▶ Quad OC-3/STm-1 ports
 - ▶ APS (Automatic Protection Switching)
 - ▶ ATM (ITU-T I.432)
 - ▶ POS (RFC 1619, RFC 1662)

- Gigabit Ethernet
 - ▶ 4 x 1000BASE-X, or
 - ▶ 4 x 1000BASE-T

Telecom Clock

- ▶ Reference clock output to backplane (TCLKB: 19.44 MHz) 9
- ▶ Reference clock input from the backplane (TCLKA: 8 KHz, 1.544 MHz, 2.048 MHz or 19.44 MHz)

XS-MEZ-OC12 Daughter Card



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Specifications

Form factor	AMC	
Dimensions	180.6 mm x 73.5 mm Single Width Mid-size or Full-Size	
Processor	WinPath3	
PCIExpress	1 lane, or	
Serial rapidIO	1 lane (4) or/and 4 lanes (8-11)	
UTOPIA/POS-PHY bus	32-bit, 104 MHz, L2/L3	
TDM bus	16 ports	
Ethernet ports	2 x 1000BASE-X 2 x XAUI	
Optical connector	LC (SFP)	
Telecom reference clock	2 KHz and multiple of 8KHz up to 77.66 MHz	
Communication ports	Quad OC-3/STM-1 Single OC-12/STM-4 Quad Gigabit Ethernet	
Protocols	ATM and IP	
Flash memory	512 MBytes NAND	
Host memory	256 MBytes DDR3, 533 MHz	
Parameter memory	256 MBytes DDR3, 533 MHz	
Packet memory	256 MBytes DDR3, 533 MHz	
Operating systems	Linux	
Operating temperature	0 to 55°C	
Storage temperature	-40 to 85°C	
Relative humidity	5% to 90% non-condensing	
Altitude	0 to 15'000 ft	
Power consumption	30 W max (est.) 12 V	2.5 A

Standards compliance

PICMG AMC	AMC.0, AMC.1, AMC.2 and AMC.4
IEEE 1149.1	JTAG
IEEE 802.3	CSMA/CD (Ethernet)
MSA SFP	MultiSource Agreement SFP
RFC 1483	Multiprotocol Encapsulation over AAL5
RFC 1577	Classical IP and ARP over ATM
RFC 1619	PPP over SONET/SDH
RFC 1661	The Point-to-Point Protocol (PPP)
RFC 1662	PPP in HDLC-like Framing
RFC 2474	Definition of the Differentiated Services Field in the IPv4 and IPv6 Headers
RFC 2475	An Architecture for Differentiated Services
RFC 2615	PPP over SONET/SDH
RFC 2684	Multiprotocol Encapsulation over AAL5
ITU-T I.432	B-ISDN User-Network Interface
ITU-T I.363.1	B-ISDN ATM Adaptation Layer Type 1
ITU-T I.363.2	B-ISDN ATM Adaptation Layer Type 2
ITU-T I.363.5	B-ISDN ATM Adaptation Layer Type 5
ITU-T I.366.1	Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL type 2
ITU-T I.610	B-ISDN Operation and Maintenance Principles and Functions

Why choose XS-AMC4 ?

XS-AMC4: A Flexible Solution

XS-AMC4 brings even more flexibility to the concept of AMC with the use of a Network Processor which is entirely re-configurable to support new standards. The AMC standard adds modularity to the way building blocks are connected together at the system level. Support for ATM, POS, Ethernet and IP provides the user with all the options on a very compact form factor. The use of modular I/O and processing daughter cards allows for new designs implementing new functionality to be marketed in record time and cost.

XS-AMC4: A Modern Solution

Xalyo Systems' ATM and IP interfaces are based on a leading edge Network Processor handling all the data path in hardware while the control path is handled by a processor running Linux, Solaris or VxWorks®. An open API is provided on the PCI bus which makes the solution plug and play on virtually any platform, any processor, and any operating system. All the software and drivers are backward compatible with all the Xalyo System PMC and AMC family for an easy upgrade from PMC to AMC.

Ordering Information

XS-AMC4

WinPath3 ATM and IP AMC
450 MHz, 768 MB SDRAM, 512 MB Flash
Quad STM-1 or Single STM-4 / Quad 1000BASE-X

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