

ATM4-AMC and ATM5-PCle



Signaling and ATM to IP Interworking for Small Cells and Access Concentration

Overview

These ATM cards are high performance AdvancedTCA Mezzanine and PCle controllers designed for use in all aspects of telecommunications networks. The ATM4-AMC and ATM5-PCle include support for ATM host termination, switching and L2/L3/L4 or higher interworking between Gigabit Ethernet and ATM interfaces. With support for AAL2 and AAL5, the ATM4/5 has the ability for real-time voice and video over AAL2, as well as signaling and IP over AAL5 in 3G/4G networks. The ATM4/5 is ideal for demanding carrier applications in Wireless 3G, 4G, LTE, IMS, Internet Access, Fixed/Mobile Convergence and Next Generation Mobile Networks such as:

- 4G, LTE-SAE
- WiMAX
- ASN Gateways
- 3G RNC, MSC, SGSN, and NodeB
- Voice over Packet
- Video Streaming
- Broadband Networks (incl GPON)
- ATM to IP Gateways
- Femtocell Access Controller

ATM5-PCle

- PCle Full Height Form Factor
- 5 SFPs for flexible configuration options:
 - 4x OC-3 Ports with 1xGbE or
 - 1x or 2x OC-12 Ports
 - 2x GbE SFPs, Copper/Fiber w/ 3x OC3s
 - or 2x OC12
 - Wintegra WP3 w/ 12 Wingines
- 1GB DDR3 Memory
- Seamless Migration from ATM4
- CE support with Partner Software
- PWE3 support*
- *Factory revision option to add TDM ports



ATM4-AMC

- AMC form factor for ATCA & uTCA Platforms
- Four OC-3c/STM-1 or Two OC-12/STM-4
- Up to Eight OC-3c/STM-1 paths over Two OC-12/STM-4 lines
- IPMI subsystem provides ATCA/AMC.0 hot swap and board management services
- Wintegra WinPath2 Network Processor
- Four Gigabits Ethernet & One PCle Lane to Carrier
- SFP Optical Transceivers for Multi-Mode, Single Mode and OC12



Features

- Multi-Purpose I/O board for 3GPP/IMS/LTE/NGMN Wireless Networks
- On-board interworking in 3 different modes:
 - IP Over AAL5 to IP over Ethernet
 - AALx to UDP/IP over Ethernet
 - GTP Interworking
- 32,560 bi-directional IW channels
- ATM AAL2 & AAL5 on a single trunk
- 256 Virtual Circuits (VCs) for AAL5 termination
- APS for 1+1, 1:1, 1:3 or 1:7 ports between two ATM4 cards
- External or Internal clock synchronization
- Transparent field upgrades, without host rebooting, saving downtime
- Multiple cards per system providing highly flexible and completely scalable solutions
- SAAL software; SSCOP, SSCF/SSCS and SSSAR/SSTED/SSADT
- Comprehensive alarms and status reporting capabilities
- Software drivers for Linux and Solaris as standard. Other OS support on request

ATM Termination

- AAL5
- ATM cell switching*
- AAL2 CID switching*
- Traffic management as per TM 4.1: CBR, VBR, GFR and UBR+
- Per VC queuing
- Dual leaky bucket policing*
- Full UNI/NNI VPI/VCI range
- OAM F4 and F5 as per ITU-TI.610

GTP (GPRS Tunnelling Protocol)

- Interworking between IP and GTP-U
- Interworking between two separate GTP tunnels
- Handling GTP-C and GTP traffic
- GTP Bypass Ports
- 256 separate bi-directional GTP tunnels
- Up to 32,750 GTP PDP contexts

IP

- IPv4 and IPv6*
- PPP support*
- Parsing of PPP over HDLC frames (RFC 2615 and RFC 1662)*
- Packet Scheduling*
- Diffserv (RFC 2474/2475)*

* Future Release

Technical Specifications – ATM4/5

Protocol Support

- ATM AAL2, ITU-T I.363.2
- ATM AAL5, ITU-T I.363.5
- SSCOP, Q.2110
- SSCF NNI, Q2140
- SSCF at UNI per Q.2130
- SSSC Layer Management Q.2144
- SSSAR/SSTED/SSADT, ITU-T I.366.1
- HSL over AAL5, Telcordia GR-2878-Core

AMC System Interconnect

- PCI Express One x1 Express Interface
- Gigabit Ethernet Four Gigabit Ethernet links on AMC ports 0-1 and 8-9

AMC Front Panel LEDs

- AMC.0 IPMI (2x)
- Hot Swap (Adjacent to Latch)
- Per Port Status (4x)
- Board Status/User Programmable

Processor

- Wintegra WP3 w/12 Wingines (ATM5)
- Wintegra WinPath2 (ATM4)

Interfaces

- Four OC-3/STM-1
- Two OC-12/STM-4
- Support for single mode fiber and multi-mode fiber (ITU G.957)
- Up to 2 GbE interfaces per PCIe
- Up to 4 GbE interfaces per AMC card

ATM/POS*

- STM-1 / STS-3c
- STM-4 / STS-12c
- ATM (ITU I.432)
- POS (RFC 1619 / RFC 1662)*

SDH/SONET APS (Automatic Protection Switching)

- G.841
- ANSI T1.105-01
- GR253-core

Telecom Clock

- 8 kHz or 19.44 MHz PLL
- Meets TR62411, ETS300.011 and GR – 1244 for Jitter/Wander for Stratum 3 and higher
- 8 kHz selectable from backplane or any STM-1/STS-3c port
- 8 kHz reference output to backplane
- Locks to 8 kHz +/- 100 ppm

Optical Transceivers

- Multisource agreement (MSA) compliant SFP package
- LC duplex receptacle connector
- Hot pluggable electrical interface
- One AMC card for all variants: Multimode, single mode, short, intermediate and long reach

Power Requirements

- AMC: 24 Watts max
- PCIe: 7-12 watts typical-maximum power consumption

Compliance

AMC

- PICMG AMC.0 Specification R2.0
- PICMG AMC.1 PCI Express Advanced Switching R1.0
- PICMG AMC.2 Gigabit Ethernet R1.x
- IPMI V1.5 Intelligent Platform Management Interface Specifications

PCIe

- PCI Specification Revision 2.3
- PCI Express Electromechanical Specification Revision 1.1
- PCISIG PCI Express ExpressModule Electromechanical Specification Revision 1.0

Electrical and Safety

- Certified:
- US/16222/UL IEC 60950-1 (2005) Second Edition
- FCC Part 15B, Class A
- VCCI (Voluntary Control Council for Interference)
- EN55022:2006 +A1
- EN55024:1998 +A1:2001, +A2:2003
- Designed to Meet:
- EN61000-4-2,3,4,6

Environmental Conditions

- Operating Temperatures -5C to 55C
- Storage Temperatures -40C to 65C
- Relative Humidity 10% to 90% (non-condensing)
- Vibration: Operating: 5-100Hz: 0.25G RMS, Passive: 100-500Hz: 1G RMS

Flammability

- All components meet a flammability rating of UL 94-V0 RMS

Board Dimensions

AMC – 18.15 cm x 7.35 cm mid-size, single module

PCIe – 16.77 cm x 11.11 cm

* Future Release

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Adax is an industry leader in high performance packet processing, security and network infrastructure for Legacy to LTE networks. Modular, scalable and flexible, the Adax LTE-EPC solutions, SIGTRAN and SS7 Signaling platforms, as well as the DPI, IPsec Security, and GTP acceleration products enable customers to build the solutions they need, creating a smarter network infrastructure for all.



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