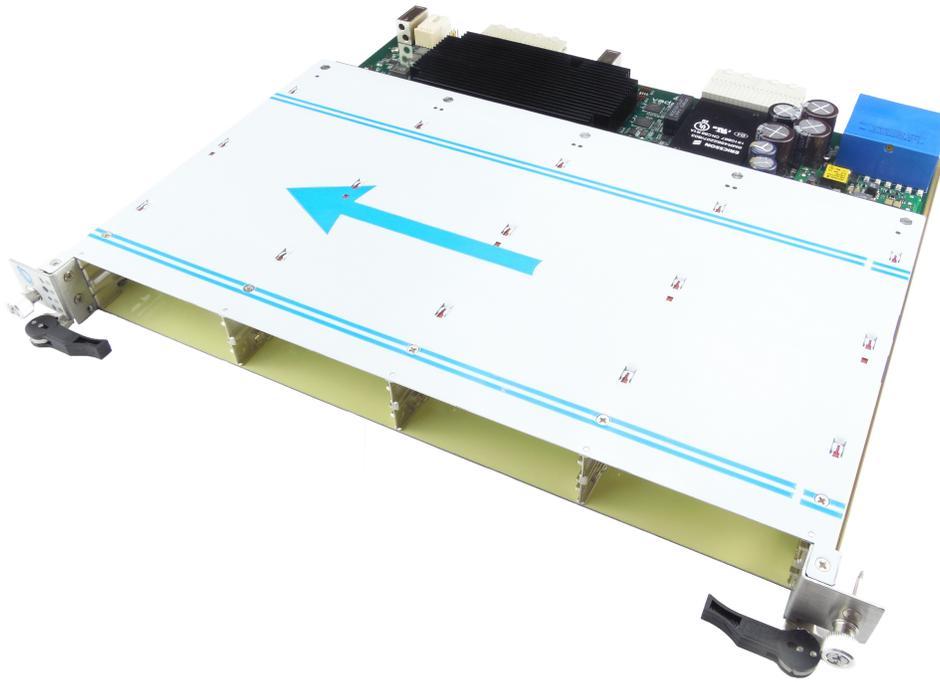


## ATC114



### KEY FEATURES

- Seven AMC.1 and/or AMC.2 slots
- Slot B4 ports 2 and 3 to B3 per AMC.3
- Slot B2 ports 2 and 3 to B1 per AMC.3
- PCIe up/down stream on any AMC slot with expansion capability via VadaTech AMC113 product
- PCIe expansion to ATC103/104/105/106/107/108/109/114/118 or any external host
- 48-lane PCI Express Gen2 switch
- Managed layer two GbE switch
- The RMT pinout is to the common pinout definition which mates to RTM's such as VadaTech ART112, ART113, ART114, etc.
- IPMI 2.0 compliant
- RoHS compliant
- OS support for:
  - Linux
  - Windows
  - Solaris
  - VxWorks

The ATC114 is VadaTech second generation AdvancedTCA AMC carrier that provides six half-height AMC and one half/mid/full-height slots that can accept any AMC.1 and/or AMC.2. In addition, slot B4/B2 ports 2 and 3 are routed directly to slots B3/B1 per AMC.3 specification.

The ATC114 can be connected via the PCIe up/downstream port to other server blades or additional carriers such as the ATC103/ATC104/ATC105/ATC106/ATC107/ATC108 or ATC109. The ATC114 can be utilized in distributed as well as non-distributed applications. Any of the ATC114 slots can be used as the upstream port (root complex). If the root complex is not a PrAMC, the ATC114 may use an external blade as its root complex.

The ATC114 supports Non-Transparent mode on any of its AMC slots. This feature allows two root complexes to co-exist in the same system. In addition, the ATC114 has a managed layer two switch GbE switch which connects to seven of the AMC slots.

The IPMI management handles, thermal, E-keying, communication to the shelf etc.

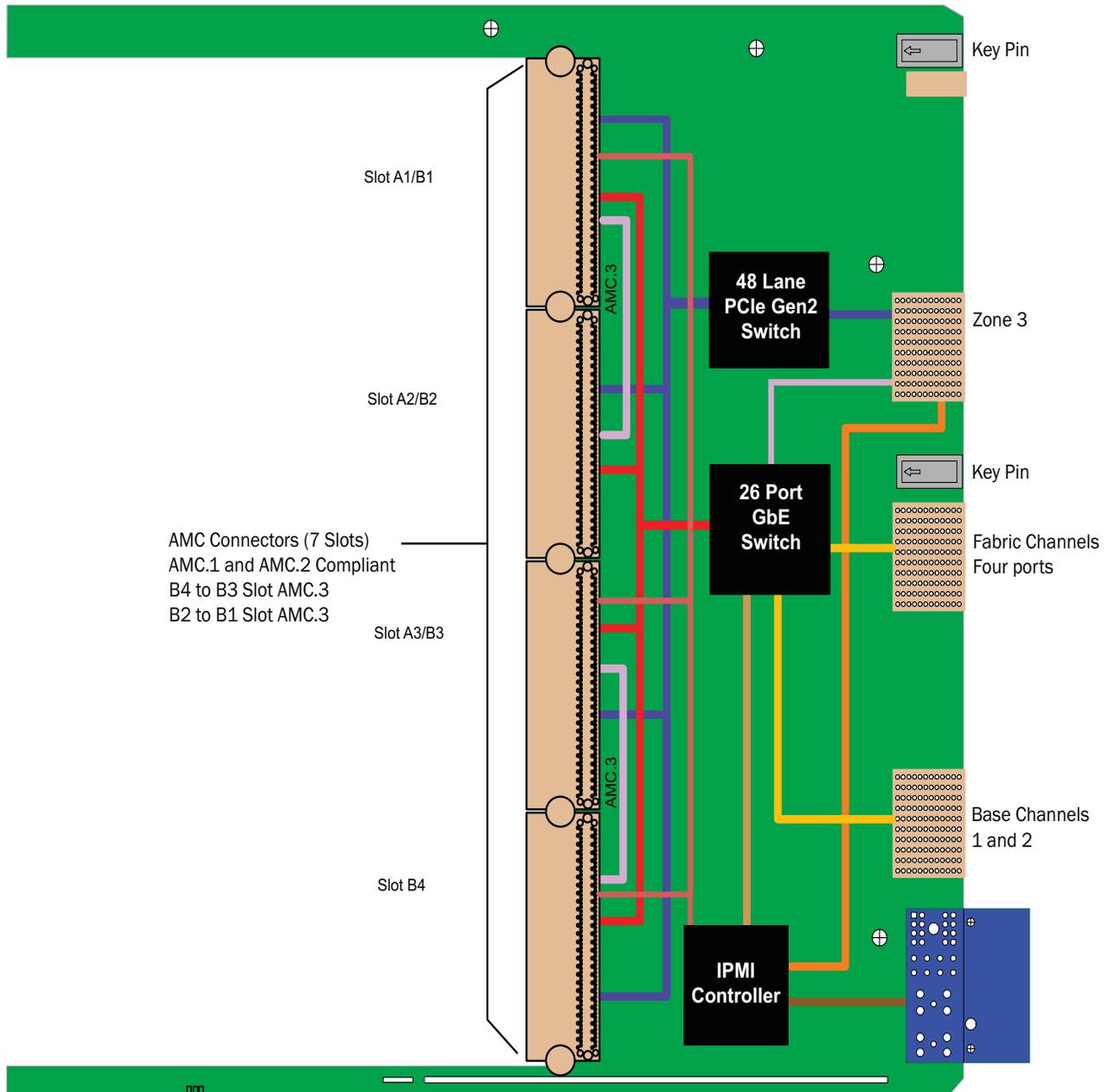
**AdvancedTCA®**

# ATCA Carrier for Seven AMC Modules

## SPECIFICATIONS

Architecture		
Physical	Dimensions	Width: 12.687in. (322.25 mm)
		Depth: 11.024 in. (280 mm)
Type	AMC Carrier	Seven AMC.0
		Layer two managed GbE switch
		PCIe x48 lane switch
Standards		
AMC	Type	AMC.1, AMC.2 (AMC.3 between Slot B4 and B3, B2 and B1)
PCIe	Lanes	Each AMC slot may negotiate PCIe x1, x2 or x4 lane and two x4 or single x8 to the Zone three
GbE	1000-BX	Two to each AMC
		Four to the Fabric channel
	10/100/1000-BaseTX	Two to the Base Channel
Module Management	IPMI	IPMI Version 2.0
Configuration		
Power	ATC114	16W with no AMCs
		Up to 150 watts is available for the AMCs
Environmental	Temperature	Operating Temperature: 0° to 60° C (Air flow requirement is to be greater than 300 LFM)
		Storage Temperature: -40° to +90° C
	Vibration	0.5Gs RMS, 20-2000Hz random (Operating): 6Gs RMS (non-operating)
	Shock	30Gs each axis
Conformal Coating		Humiseal 1A33 Polyurethane
		Humiseal 1B31 Acrylic
Other		
MTBF	MIL handbook 217-F@ TBD Hrs.	
Certifications	Designed to meet FCC, CE and UL certifications where applicable	
Standards	VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards	
Compliance	RoHS and NEBS	
Warranty	Two (2) years	
Trademarks and Logos	The VadaTech logo is a registered trademark of VadaTech, Inc. Other registered trademarks are the property of their respective owners. AdvancedTCA™ and the AdvancedMC™ logo are trademarks of the PCI Industrial Computers Manufacturers Group. All rights reserved. Specification subject to change without notice.	

# ATCA Carrier for Seven AMC Modules



**FIGURE 1.** ATC114 Functional Block Diagram

VadaTech can modify this product to meet special customer requirements without NRE (minimum order placement is required).

## Managed Layer Two GbE

The GbE layer two managed switch fabric routes dual GbE to each AMC, two ports to the Base Channel, four ports to the Fabric channel and two ports to the Zone three.

### Key features:

- ❖ Configuration
  - ◆ Ethernet/IEEE 802.3 Packet size (64 bytes to 1522 bytes)
  - ◆ Jumbo packets up to 9216 bytes
- ❖ L2 Switching
  - ◆ Supports up to 8K MAC address
  - ◆ Line rate switching for all packet sizes
  - ◆ Independent VLAN learning
  - ◆ VLAN flooding for broadcast and DLF packets
  - ◆ Hardware-based address learning
  - ◆ Six CPU-managed learning (CML) modes per port
  - ◆ Hardware-and-software-based aging
  - ◆ Software insertion/deletion/lookups of the L2 table
  - ◆ Same port bridging supported
  - ◆ Station movement control
- ❖ L2 Multicast
  - ◆ 4K VLANs
  - ◆ Protocol-based VLANs
  - ◆ IEEE 802.1p
  - ◆ IEEE 802.1Q
  - ◆ Independent VLAN learning (IVL)
  - ◆ Ingress filtering for IEEE 802.1Q VLAN security
  - ◆ VLAN-based packet filtering
  - ◆ MAC-based VLAN
- ❖ Source Port Filtering
  - ◆ Egress port block masks
  - ◆ Trunk group blocking masks
- ❖ Storm Control Per-Port:
  - ◆ Unknown unicast packet rate control
  - ◆ Broadcast packet rate control
  - ◆ Multicast packet rate control
- ❖ Spanning Tree:
  - ◆ IEEE 802.1D spanning tree protocol (single spanning tree per port)
  - ◆ IEEE 802.1s for multi spanning trees
  - ◆ IEEE 802.1w rapid spanning tree protocol-delete and/or replace per:
    - Port
    - VLAN
    - Port, per VLAN
  - ◆ Spanning tree protocol packets detected and sent to the CPU
- ❖ Double-Tagging:
  - ◆ Unqualified learning/forwarding
  - ◆ IEEE 802.1 Q-in-Q
- ❖ Mirroring
  - ◆ Ingress/egress mirroring support
  - ◆ Mirror-to-port receives the unmodified packet for ingress mirroring
  - ◆ Mirror-to-port receives the modified packet for egress mirroring
- ❖ Content Aware Filter Processing
  - ◆ Intelligent Protocol Aware processor with backward-compatible, byte-based classification option
  - ◆ Parses up to 128 bytes per packet
  - ◆ -512 ACL rules support
  - ◆ Multiple matches and actions per packet
  - ◆ ACL-based policing
  - ◆ Ingress/egress port based filtering
  - ◆ MAC destination address remarking
  - ◆ Traffic class definition based on the filter
  - ◆ Programmable meters allows policing of flows
  - ◆ Metering granularity from 64 Kbps to 1Gbps
  - ◆ Multiple look-ups per packet
  - ◆ Metering support on ingress ports and CPU queues
- ❖ QoS Features
  - ◆ Four CoS queues per port
  - ◆ Per-port, per CoS drop profiles
  - ◆ Port level shaping
  - ◆ Traffic shaping available on CPU queues
  - ◆ Programmable priority to CoS queue mapping
  - ◆ Provides two levels of drop precedence per queue
  - ◆ Strict Priority (SP), Weighted Round Robin (WRR), and Deficit round Robin (DRR) mechanisms for shaped queue selection
- ❖ DSCP
  - ◆ DSCP-based prioritization
  - ◆ Back pressure metering
  - ◆ DSCP to IEEE 802.1p mapping
- ❖ Port Security
  - ◆ Per port blocking
  - ◆ Supports IEEE 802.1x
  - ◆ MAC address blocking
- ❖ DoS Prevention
  - ◆ Denial of Service detection/prevention
- ❖ Management Information Base
  - ◆ SMON MIB, IETF RFC 2613
  - ◆ RMON statistics group, IETF RFC 2819
  - ◆ SNMP interface group, IETF RFC 1213, 2836
  - ◆ Ethernet-like MIB, IETF RFC 1643
  - ◆ Ethernet MIB, IEEE 802.3u
  - ◆ Bridge MIB, IETF RFC 1493

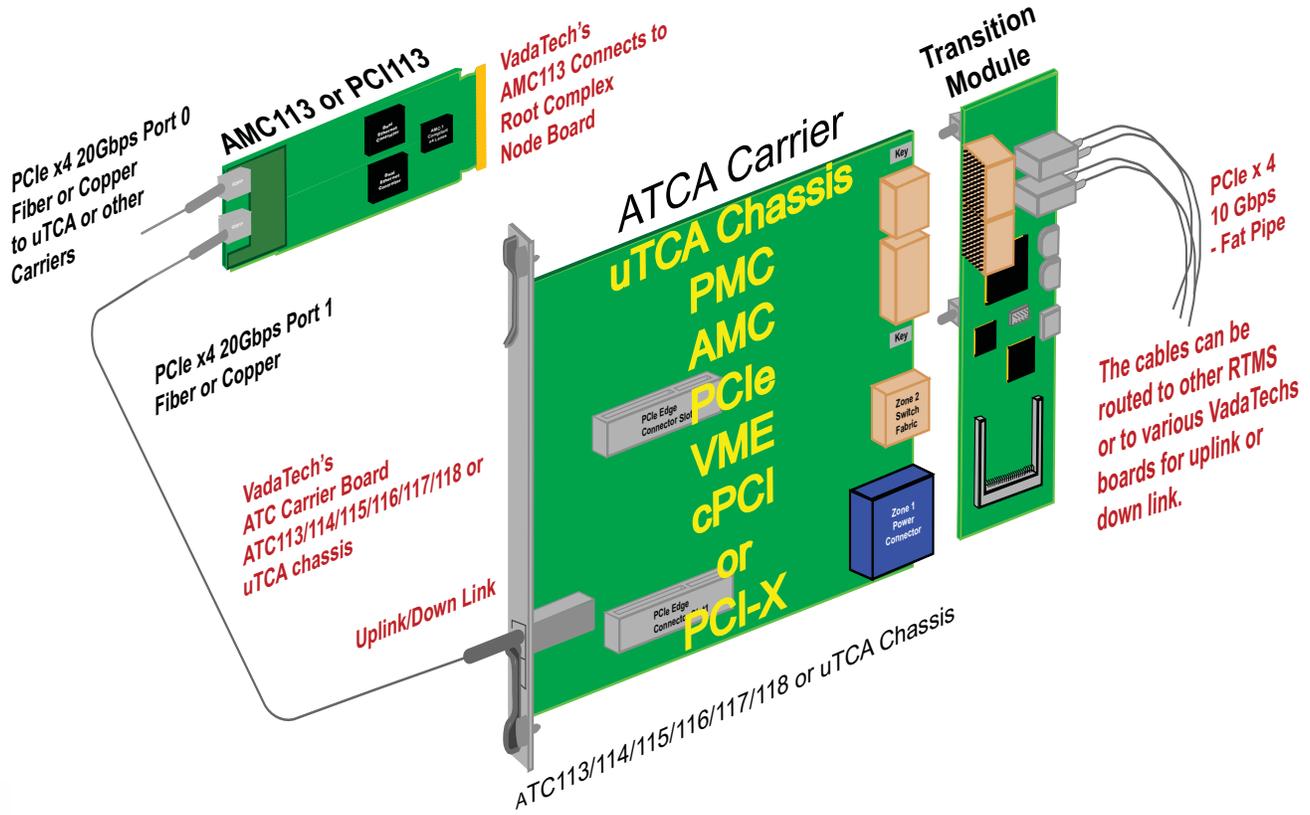
## PCIe Gen2 Switch Fabric

The PCIe Gen2 switch has 48 lanes. The ATC114 provides x4 lane to each AMC slot. Further it routes two x4 lanes to the Rear Transition Module (RTM) which can be configured as x8 lane as well. The PCIe Gen2 lanes run at 5Gb/s which is twice the speed of the PCIe Gen1.

Anyone of the slots can be a root complex. The Module IPMI detects the root complex and configures the Fabric prior to enabling the payload power to each AMC.

# ATCA Carrier for Seven AMC Modules

**FIGURE 2.** An Example of using the carrier with the PCIe up/down stream ports



## ORDERING OPTIONS

ATC114 - 000 - 000 - 00J

**J = Conformal Coating**

- 0 = None
- 1 = Humiseal 1A33 Polyurethane
- 2 = Humiseal 1B31 Acrylic