

VT857 – 1U μ TCA Chassis, 12 AMC, 10 GbE

1U μ TCA Chassis, 12 AMCs



KEY FEATURES

- Twelve mid-size single module AMC slots or six mid-size double module AMC slots
- Cascade any number of 1U Carriers for expansion and management
- Management can run as Shelf/MCMC (MicroTCA Carrier Management Controller) or MCMC
- AMC.2 and AMC.3 compliant
- Fabric Expansion to other 1U chassis
- 10GbE available on ports 4-7 and 8-11
- GbE Managed Layer Two (ports 0 and 1)
- Telco Alarm and Carrier Locator
- JTAG Switch Module (JSM) with front port access
- Telecom/GPS Clock on TCLKA, TCLKB, TCLKC and TCLKD and Fabric Clock on FCLK
- Redundant 1+1 Power supply
- Redundant Cooling Units (CU)
- Removable Power supply, Air Filter and Fan Trays

μ TCA™

Benefits of Choosing VadaTech

Vast performance density with dual 10 GbE in a 1U chassis

Scorpionware Shelf Management Software included at no charge

Redundant, swappable power and cooling

Electrical, mechanical, software, and system-level expertise in house

Full ecosystem of front and rear boards, enclosures, specialty modules, and test/dev products from one source

AS9100 and ISO9001 certified company

The VT857 is a 1U μ TCA chassis that provides twelve mid-size AMC slots that supports 10GbE on ports 4-7 and 8-11, AMC.2 (ports 0 and 1) and AMC.3 (ports 2 and 3 are routed to adjacent slots). It provides FLCK, TCLKA, TCLKB, TCLKC and TCLKD to each AMC.

The VT857 has redundant power supplies as well as redundant Cooling Units for high availability. The power supplies, Air Filter and Fan Trays are all hot swappable.

The chassis has a JTAG Switch Module (JSM) per μ TCA specification. This provides transparent communication between the front JTAG port and the selected AMC device. It can operate up to 50 MHz.

The VT857 runs VadaTech proven second generation Management software based on its VT002 product. The shelf manager implements IPMI management, FRU management, and shelf environment management for power, thermal, E-keying, etc. The VT002 can run as the Shelf/MCMC or MCMC.

COOLING AND TEMPERATURE SENSORS

The VT857 has dual intelligent cooling units. This redundancy allows fail-safe operation in case one of the cooling units becomes non-operational. The cooling airflow is from right to left, as well as pushin through the back. The removable air filter has a switch to detect its presence and can be monitored for when it needs to be replaced. There are a total of 12 temperature sensors in the chassis that monitor the intake and the outtake air temperature throughout the chassis.

FRONT PANEL

The I/O interfaces with the chassis to provide out of band 10/100 Ethernet which interfaces to the Shelf Manager/MCMC directly, Serial interface (RS-232) to the Shelf Manger/MCMC, GbE link to the on board GbE Switch, Serial interface RS-232 to the power module, GPS/Telco clock, dual 10GbE via SFP+ as well as provide status indication such as Telco Alarm, Health Monitoring LED, etc. The front panel also has dual hot swappable Fan Tray.

REAR

The rear of the chassis consists of four AMC slots, dual hot swappable power supplies as well as dual Fan Tray which are hot swappable.

MANAGED LAYER 2

The GbE layer two managed switch fabric routes GbE to each of the AMC slots. The GbE fabric has an interface to the on-board Carrier/Shelf manager. It also has a port routed to the front for uplink. Ethernet/IEEE 802.3 Packet size (64 bytes to 1522 bytes) with Jumbo packets up to 9216 bytes.

10 GBE LAYER 3 MANAGED SWITCH

The 10GbE switch fabric is layer two/three managed and each of the AMC modules has a 10GbE interface to the Fabric. Further via the update channel the two switch fabrics are cross linked. This switch has the richest set of features in the market by running carrier grade management software under Linux.

TELCOM, GPS AND FABRIC CLOCKS

The μ TCA specification defines a set of clocks for Telecom and non-Telecom applications. The VadaTech VT857 has the most sophisticated clocking distribution in the market to meet the most stringent requirements such as wireless infrastructure, high speed A/D, etc. The VT857 has three types of clocks defined:

- Telecom clock
- GPS clock
- Fabric clock

The VT857 has two SMA clock connectors on the front panel. One is used as an external reference clock and the second one is an output for expansion. This provides the most flexibility to the overall system architecture.

TELCO ALARM

The VT857 provides Telco alarm functionality to alert about any anomaly within the chassis. The Telco Alarm is provided via a Micro DB-9 as well as LEDs in the front to show any anomaly. The Telco alarm module is built into the chassis, located next to the left fan tray.

FRU INFORMATION AND CARRIER LOCATOR

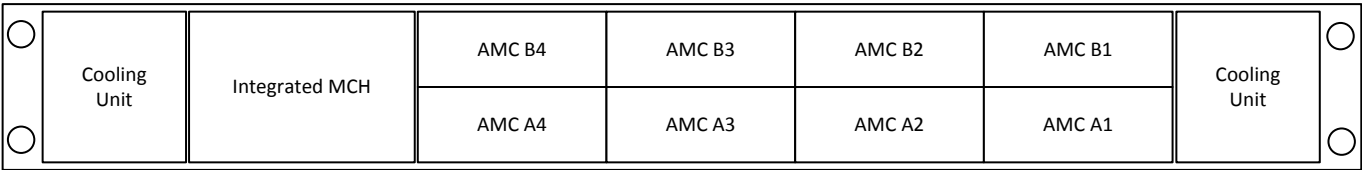
The VT857 has FRU information and a Carrier Locator. The Carrier Locator is assigned by mechanical dip switches which are easily accessible via the front panel. The MCH reads the Locator via its private I2C bus.

SCORPIONWARE™ SOFTWARE

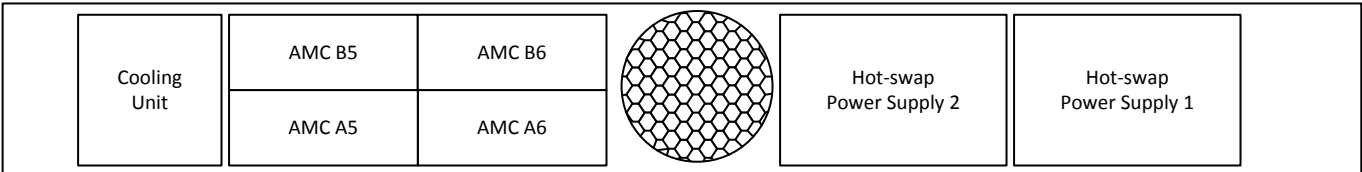
VadaTech's Scorpionware software can be used to access information about the current state of the Shelf or the Carrier, obtain information such as the FRU population, or monitor alarms, power management, current sensor values, and the overall health of the Shelf. The software GUI is very powerful, providing a Virtual Carrier and FRU construct for a simple, effective interface.

CHASSIS CONFIGURATION

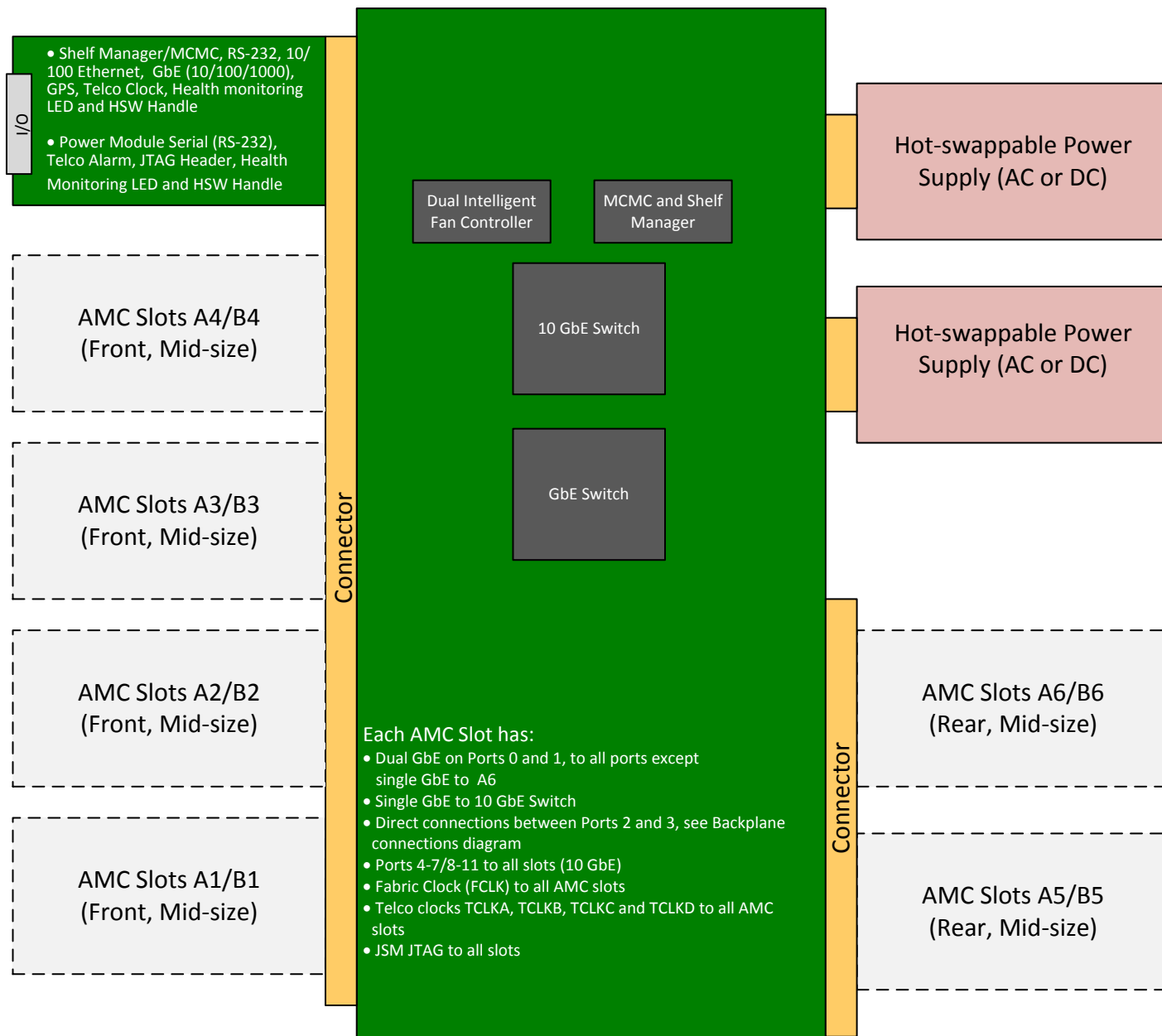
Front View



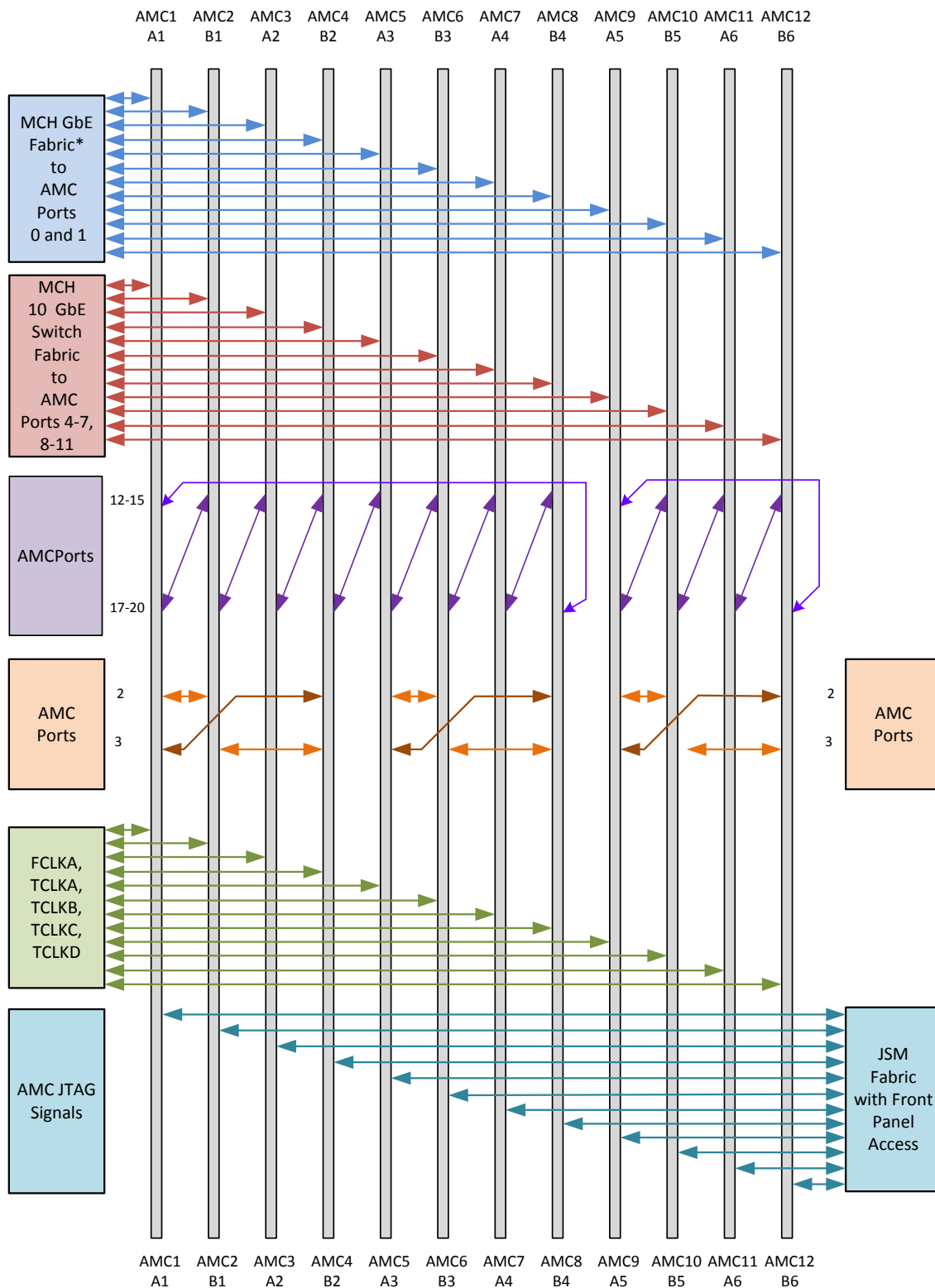
Rear View



BLOCK DIAGRAM



BACKPLANE CONNECTIONS



*Dual GbE is routed to all slots except A6. Only single GbE is routed to A6

SPECIFICATIONS

Architecture		
Physical	Dimensions	Height 1U
		Width 19"
		Depth 23.6"(600 mm)
Type	μTCA Chassis	12 AMC.0 mid-size slots
Standards		
AMC	Type	AMC.0, AMC.1, AMC.2, AMC.3
Module Management	IPMI	V2.0
Configuration		
10 GbE	Lanes	Each AMC slot has a dual XAUI interface routed
GbE	1000-BX	Two GbE SerDes per AMC (except the A6 slot which has a single GbE)
Telco Clock	MLVDS	Per AMC.0 specifications for TCLKA, TCLKB, TCLKC and TCLKD
Fabric Clock	HCSL	Per AMC.1 100 MHz HCSL
Power	VT857	650/850W per supply AC or DC 396/796W
		110-240VAC with frequency from 47-63Hz or DC -36V to -75V
Environmental	Temperature	Operating Temperature: 0° to 55° C
		Storage Temperature: -40° to +90° C
	Vibration	0.5G RMS, 20-20,000 Hz random (Operating): 6G RMS (non-operating)
	Shock	30G on each axis
	Relative Humidity	5 to 95 percent, non-condensing
Conformal Coating		Humiseal 1A33 Polyurethane (Optional)
		Humiseal 1B31 Acrylic (Optional)
Other		
MTBF	MIL Hand book 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	

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA and μ TCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTM), Power Modules, and more. The company also offers integration services as well as pre-configured Application-Ready Platforms. Please contact VadaTech Sales for more information.

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ORDERING OPTIONS

VT857 – ABC – DEF – GHJ

A = Management Software

- 1 = MCMC
- 2 = MCMC and Shelf Manager

B = Telco/GPS Clock

- 0 = None
- 1 = Telco TCXO*
- 2 = GPS TCVCXO* 30.72 MHz**
- 3 = GPS TCVCXO* 10.0 MHz**
- 4 = Clock Distribution Only
- 5 = Reserved

C = JSM

- 0 = None
- 1 = Included

D = SFP+ Transceivers on Port 1***

- 0 = None
- 1 = 10GBASE-SR
- 2 = Reserved
- 3 = 10GBASE-LR
- 4 = 1Gb LC/SX (850nm)
- 5 = 1Gb LC/LX (1310nm)
- 6 = Copper 1000 Mbit

E = SFP+ Transceivers on Port 2***

- 0 = None
- 1 = 10GBASE-SR
- 2 = Reserved
- 3 = 10GBASE-LR
- 4 = 1Gb LC/SX (850nm)
- 5 = 1Gb LC/LX (1310nm)
- 6 = Copper 1000 Mbit

F = 10 GbE Switch Software

- 0 = Layer 2
- 1 = Layer 3

G = Power Supply****

- 0 = 650W
- 1 = 1300W (2x 650W)
- 2 = 850W
- 3 = 1700W (2x 850W)
- 4 = DC -36V to -75V (398W)
- 5 = DC -36V to -75V (2x398W)
- 6 = DC -36V to -75V (796W)
- 7 = DC -36V to -75V (2x796W)

H = Operating Temp

- 1 = Commercial
- 2 = Industrial

J = Conformal Coating

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

* The Crystal Oscillator is Stratum-3; for lower cost solutions contact VadaTech Sales

** Frequencies from 8MHz to 52MHz are available

*** Both Transceivers must have the same speed (either 1GbE or 10GbE)

**** When installing two power supplies they will run as redundant when the total power demand is less than a single supply.

RELATED PRODUCTS



AMC720 Core i
Processor



AMC626 HBA
Storage Module



AMC515 Virtex-7
FPGA

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