

VT858

1U MTCA Chassis Platform with 6 AMC Slots



VT858

Key Features

- MicroTCA 1U 19" rack mount chassis platform
- Six mid-size AMC slots per 1U Carrier or two double module mid-size with two mid-size AMC slots
- MIL-38999 connectors for the I/O
- Cascade any number of 1U Carriers for Fabric expansion and management
- Management can run as Shelf/MicroTCA Carrier Management Controller (MCMC) or MCMC
- AMC.1, AMC.2, AMC.3, AMC.4 compliant
- PCIe, SRIO, 10GbE available on Ports 4 to 7 and 8 to 11
- GbE Managed Layer Two (Ports 0 and 1)
- Telecom/GPS Clock on TCLKA, TCLKB, TCLKC and TCLKD and Fabric Clock on FCLK
- Telco Alarm and Carrier Locator
- Front to back cooling

Benefits

- Scorpionware Shelf Management Software included at no additional cost
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

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The VT858 is a 1U MTCA chassis that provides six mid-size AMC slots that can accept any of the following Fabrics: PCIe, SRIO or 10GbE (on Ports 4 to 7 and 8-11), AMC.2 (Ports 0 and 1) and AMC.3 (Ports 2 and 3 are routed to adjacent slots). It provides FCLKA, TCLKA, TCLKB, TCLKC and TCLKD to each AMC.

The VT858 Ports 4-7 and 8-11 are routed so that any mix of the fabrics are allowed (for example Ports 4-7 could be PCIe and 8-11 could be 10GbE). Contact VadaTech for ordering options.

The VT858 has redundant Cooling Units. The Air Filter and Fan Trays are hot swappable.

The I/O is cabled to the AMC via MIL-38999 connectors. The VT858 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.



Figure 1: VT858 Chassis

Power Supplies

The VT858 DC power module (-36V to -75V) is located at the rear of the chassis

Cooling and Temperature Sensors

The VT858 has intelligent Cooling Units that are removable. The cooling airflow is from front to back. There are Temperature sensors throughout the chassis that monitors the intake and the outtake air temperature.

Front Panel

The VT858 front panel provides six AMC slots. 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, Dual GbE link to the on board GbE Switch, Dual QSFP to the Fabric, Serial interface RS-232 to the power module, GPS/Telco clock, as well as provide status indication such as Telco Alarm, Health Monitoring LED, etc. The Front I/O is routed to the MIL-38999 connectors.

Managed Layer 2 GbE

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.

Telecom, GPS and Fabric Clocks

The MTCA specification defines a set of clocks for Telecom and non-Telecom applications. The VadaTech VT858 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 VT858 has three types of clocks defined:

- Telecom clock
- GPS clock
- Fabric clock

The VT858 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.

10GbE 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. This switch has the richest set of features in the market by running carrier grade management software under Linux.

Fabrics on Ports 4-7 and 8-11

The VT858 supports the following fabrics:

- PCIe Gen 2
- 10GbE layer three managed (option for unmanaged)
- SRIO

Scorpion™ 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.

Block Diagram

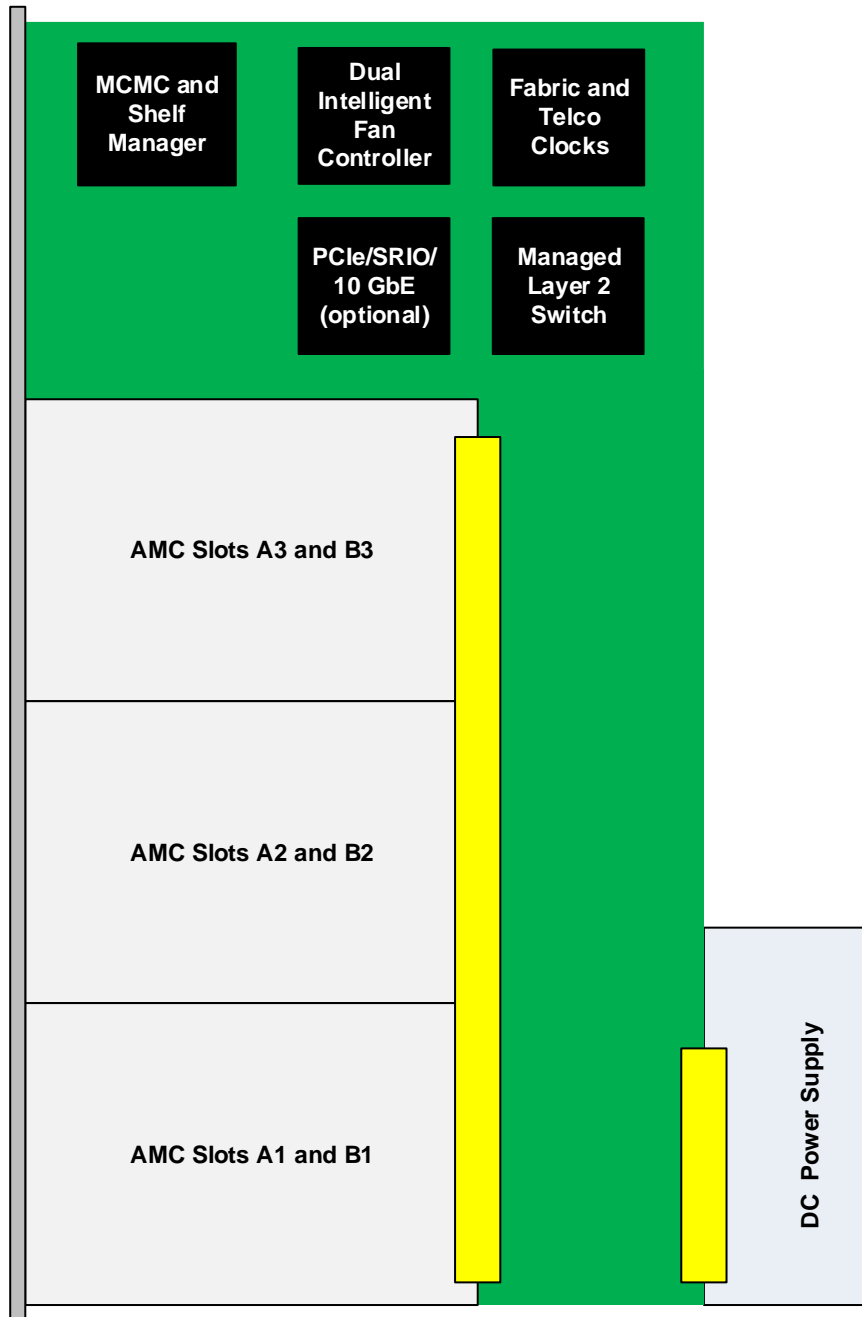


Figure 2: VT858 Block Diagram

Backplane Connections

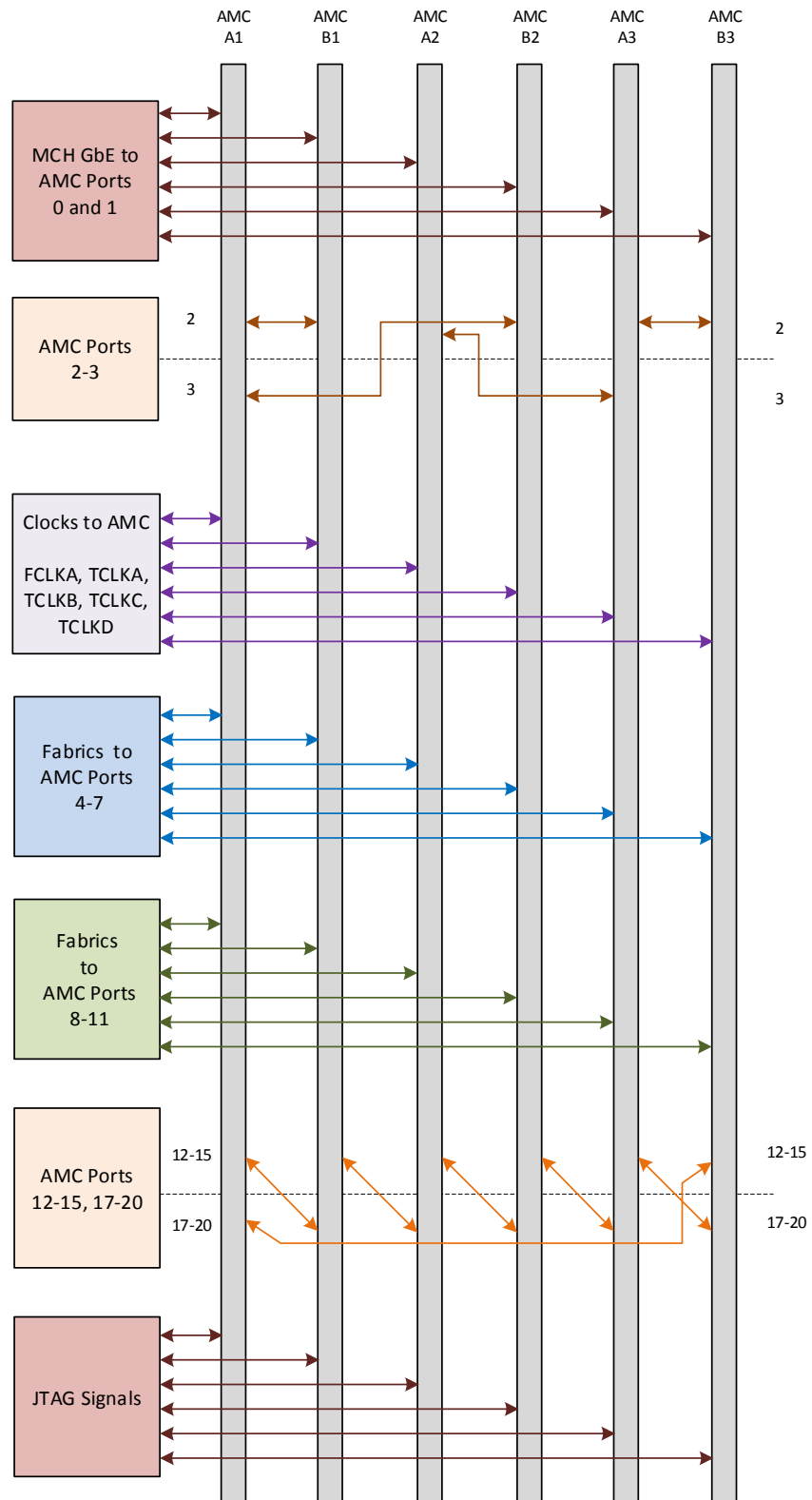


Figure 3: VT858 Backplane Connections

Chassis Layout

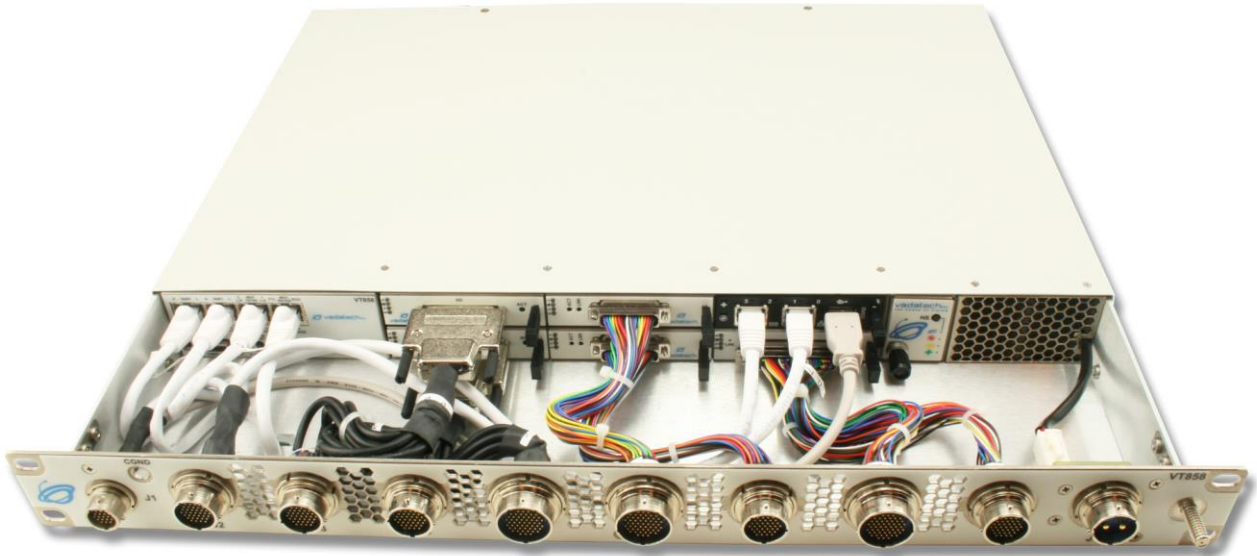


Figure 4: VT858 Chassis Layout – Front View

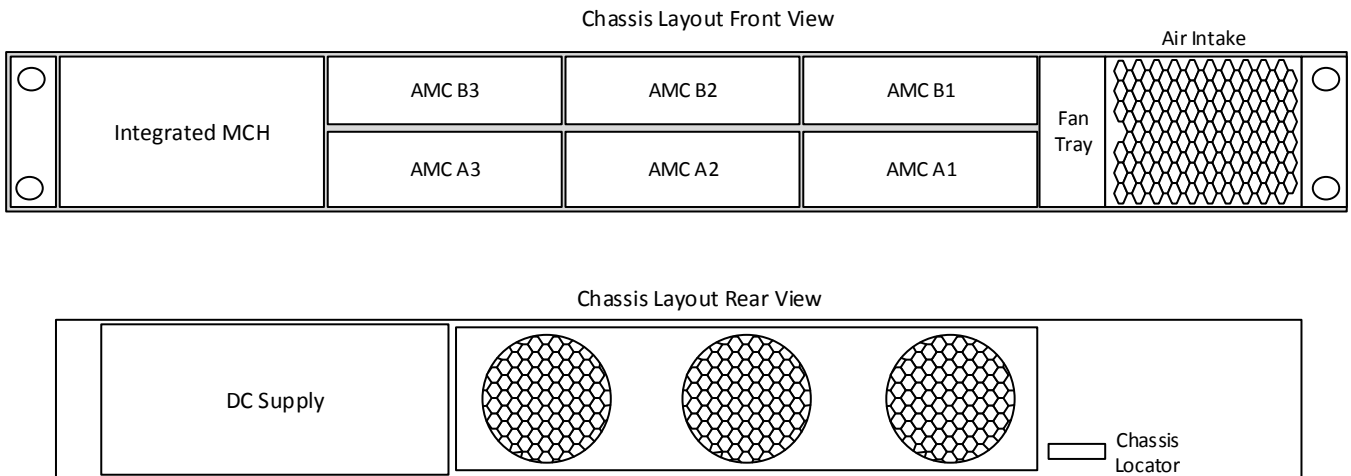


Figure 5: VT858 Chassis Configuration (Front and Rear)

Specifications

Architecture		
Physical	Dimensions	Width: 19"
		Depth: 14.47 (367 mm)"
		Height: 1U
Type	MTCA Chassis	Six AMC.0 single module, mid-size slots
Standards		
AMC	Type	AMC.0, AMC.1, AMC.2, AMC.3 and AMC.4
MTCA	Type	PICMG 3.0 Rev 3.0
Module Management	IPMI	IPMI v2.0
PCIe	Lanes	PCIe x1, x2, x4 on each AMC slot
SRIO	Lanes	x4 on each AMC slot
10GbE	Lanes	XAUI interface on each AMC slot
GbE	Lanes	Two GbE SerDes per AMC (Ports 0 and 1)
Telecom Clock	MVLDS	TCLKA, TCLKB, TCLKC and TCLKD per AMC.0
Fabric Clock	HCSL	100 MHz HCSL per AMC.1
Configuration		
Power	VT858	392W DC
		Input supply: -36V to -75V
Environmental	Temperature	See Ordering Options
		Storage Temperature: -40° to +90°C
	Vibration	0.5Gs RMS, 20-2000 Hz random (Operating): 6Gs RMS (non-operating)
		Shock
	Relative Humidity	5 to 95% non-condensing
Cooling		Right to Left
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
Warranty		One (1) year, see VadaTech Terms and Conditions

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of OpenVPX, ATCA and MTCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTMs), 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.

Ordering Options

VT858 – ABC-0E0-GHJ

A = Management Software 1 = MCMC 2 = MCMC and Shelf Manager		G = Power Module 0 = DC -36V to -75V 1 = Reserved
B = JTAG Switch Module (JSM) 0 = No JSM 1 = JSM	E = Telecom/GPS Clock 0 = No Telecom/GPS Clock 1 = Clock Distribution only 2 = Telecom TCXO* 3 = GPS TCVCXO* 30.72MHz** 4 = GPS TCVCXO* 10.00MHz** 5 = Reserved	H = Temperature Range 1 = Commercial 2 = Industrial
C = Fabric on Ports 4-7 and 8-11 0 = No Ports 1 = PCIe Gen2 2 = SRIO 3 = 10GbE Full Managed Layer 2/3 4 = 10GbE Light Managed 5 = Point to Point on (A1 to B1, A2 to B2 and A3 to B3 on Ports 4-11) 6 = PCIe Gen2 on Ports 4-7 and Point to Point on A1 to B1, A2 to A3 and B2 to B3 on Ports 8-11 7 = SRIO (Ports 8-11 not available on B1, A1, A3 and B3)		J = Conformal Coating 0 = No coating 1 = Humiseal 1A33 polyurethane 2 = Humiseal 1B31 acrylic

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

**Frequencies from 8 MHz to 52 MHz are available

Related Products

AMC343



- Based on ATI graphics processor chipset
- Provides six separate high-performance Channels
- Connection for 480p, 720p, and 1080i and 1080p

AMC516



- AMC FPGA carrier for FMC per VITA 57
- Xilinx Virtex-7 690T FPGA in FFG-1761 package with optional P2040
- Supported by DAQ Series™ data acquisition software

UTC008



- JTAG Switch Module (JSM) per MTCA specification
- Provides transparent communications between the arbitrated master and a selected secondary port
- Mates directly to the chassis that have a JSM connector (standard compact-size AMC panel)

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