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THE POWER OF VISION

VT852 – µTCA 1U Chassis Platform with Dual QSFP, 6 AMC Slots

1U Chassis, Dual QSFP, 6 AMCs

µTCA™

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
- Cascade any number of 1U Carriers for Fabric expansion and management
- Management can run as Shelf/MCMC (MicroTCA Carrier Management Controller) 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)
- Telco Alarm and Carrier Locator
- Telecom/GPS Clock on TCLKA, TCLKB, TCLKC and TCLKD and Fabric Clock on FCLK
- Redundant Cooling Units (CU)
- Removable Power Supply, Air Filter and Fan Trays
- IPMI 2.0 compliant
- RoHS compliant

Benefits of Choosing VadaTech

- 1U chassis in 19" rackmount
- Scorpionware Shelf Management Software included at no additional cost
- 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 VT852 is a 1U µTCA 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 to 11, AMC.2 (ports 0 and 1) and AMC.3 (ports 2 and 3 are routed to adjacent slots). The chassis also routes ports 12-15 to 17-20 of the adjacent slot. It provides FLCK, TCLKA, TCLKB, TCLKC and TCLKD to each AMC.

The VT852 has redundant Cooling Units. The Air Filter and Fan Trays are all hot swappable. The Power Entry Module (PEM) is removable for ease of serviceability.

The VT852 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.

The input power is from DC (-36V to -75V) or Universal AC.

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COOLING AND TEMPERATURE SENSORS

The VT852 has intelligent Cooling Units that are removable. The cooling airflow is from right to left. There are Temperature sensors throughout the chassis that monitors the intake and the outtake air temperature.

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.

FRONT PANEL

The VT852 front panel provides six AMC slots. The front I/O interface provides out of band 10/100 Ethernet (it interfaces to the Shelf Manager/MCMC directly), Serial interface (RS-232) to the Shelf Manger/MCMC, Dual GbE 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 panel also has dual hot swappable Fan Tray.

MANAGED LAYER2 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 µTCA specification defines a set of clocks for Telecom and non-Telecom applications. The VadaTech VT852 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 VT852 has three types of clocks defined:

- Telecom clock
- GPS clock
- Fabric clock

The VT852 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.

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. 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 VT852 supports the following fabrics:

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

CHASSIS CONFIGURATION

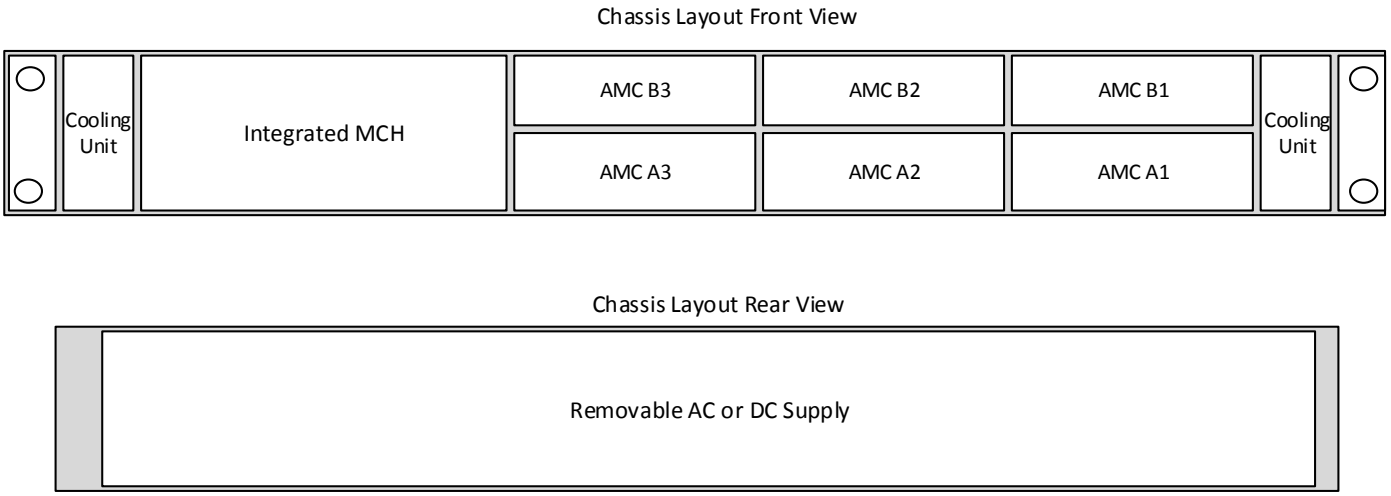
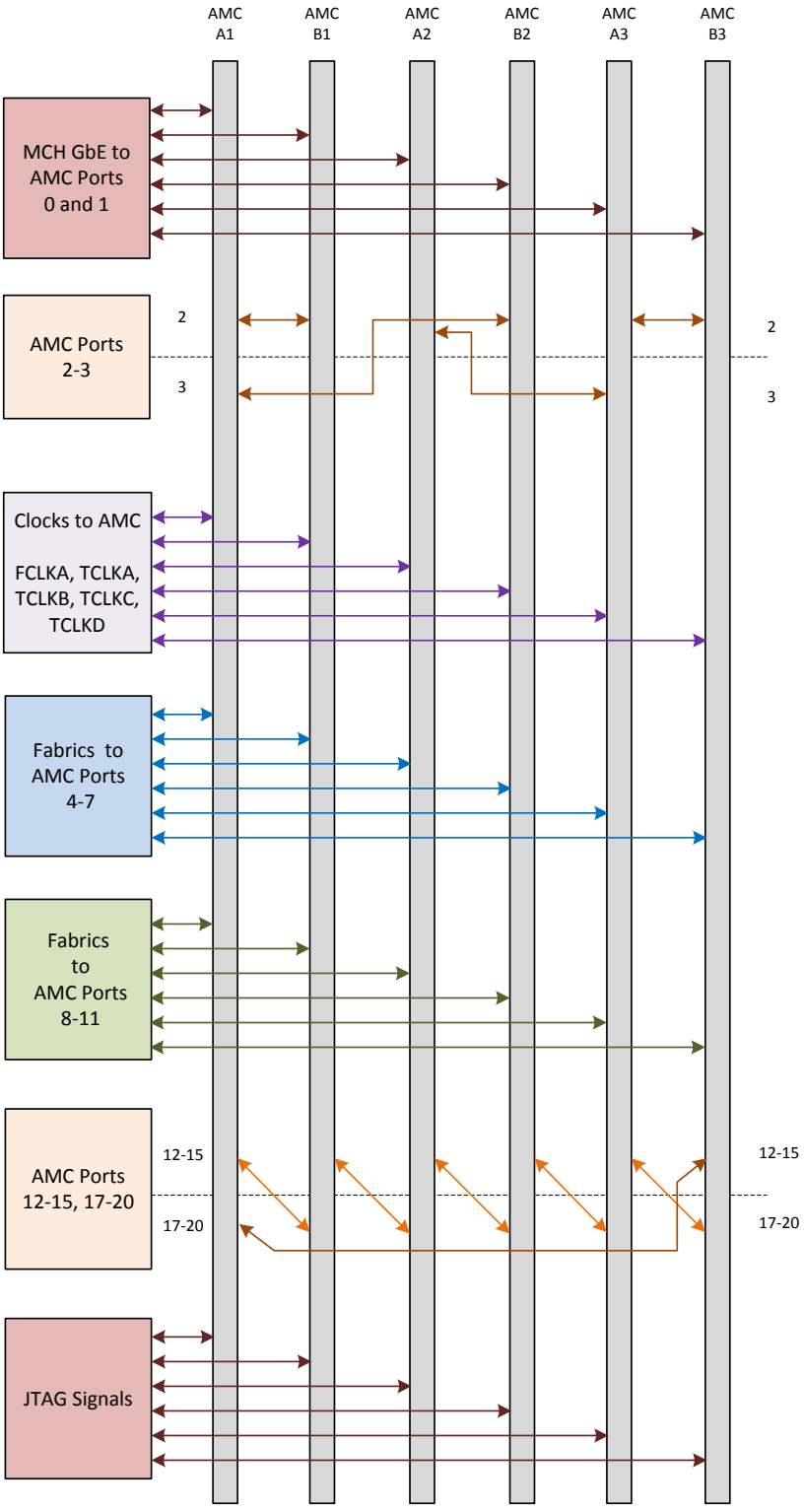


Figure 1: Chassis Layout

BACKPLANE CONNECTIONS



NOTE: Since the PCIe Fabric has 12 ports of x4 (48 lanes total) there is option to run all the ports as x8 (on ports 4 to 11) or single dual x4. With the SRIO there are two options, SRIO x4 on all the ports 8-11 or on slots B2 and B3 only.

Figure 2: Backplane Connections

BLOCK DIAGRAM

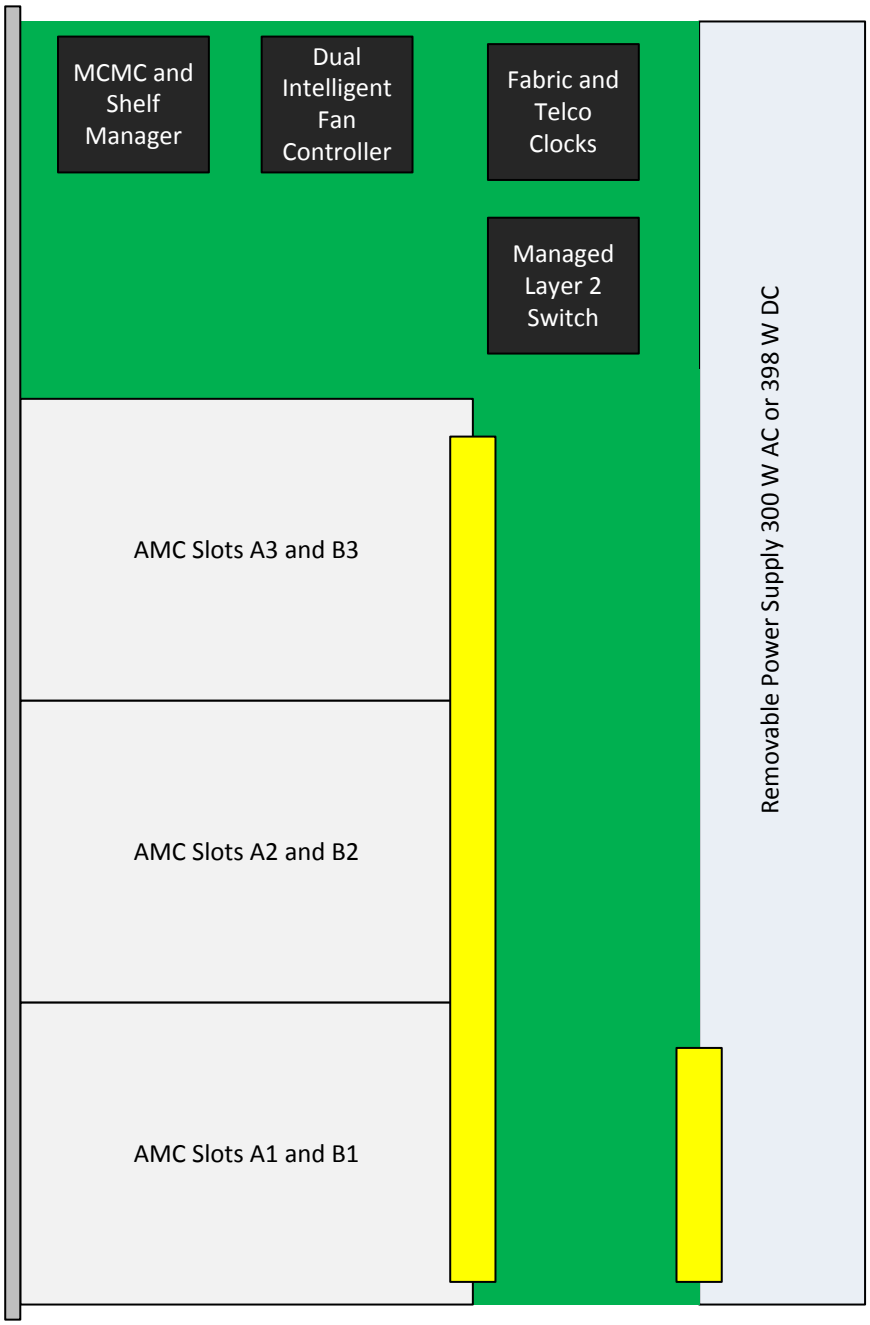


Figure 3: Top Level Block Diagram

SPECIFICATIONS

Architecture		
Physical	Dimensions	Height 1U
		Width 19”
		Depth 13” (300 mm)
Type	µTCA Chassis	Six AMC.0 single module, mid-size slots
Standards		
AMC	Type	AMC.0, AMC.1, AMC.2, AMC.3 and AMC.4
µTCA	Type	MicroTCA.0
Module Management	IPMI	IPMI version 2.0
PCIe	Lanes	PCIe x1, x2, x4 or x8 lanes on each AMC slot
SRIO	Lanes	Each AMC slot has two x4 (ports 4-7 and 8-11)
10 GbE	Lanes	Each AMC slot has a dual XAUI interface (ports 4-7 and 8-11)
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	VT852	300W AC supply, 110 to 240 VAC with frequency from 47 to 63 Hz or
		398W DC: -36V to -75V
Environmental	Temperature	Operating Temperature: 0° to 55° C
		Storage Temperature: –40° to +70° C
	Altitude	10,000 ft operating
		40,000 ft non-operating
	Relative Humidity	5 to 95 percent, non-condensing
Front Panel	LEDs	IPMI management LEDs, Activity, Link and PCIe Good Lane
	Interface	MGT 10/100, MGT RS-232, PM RS-232, JTAG, Telco Alarm, Clocks, Dual GbE via RJ-45, Chassis Locator switch and 10 GbE via dual QSFP
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	
Warranty	Two (2) years	

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA and µTCA 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.

ORDERING OPTIONS

VT852 – ABC – 0E0 – GHJ

A = Management Software
1 = MCMC
2 = MCMC and Shelf Manager

B = JTAG Switch Module
0 = Without JSM
1 = With JSM

C = Fabric on Ports 4-7 and 8-11
1 = None
2 = SRIO (8-11 not available on B1, A1, A3 and B3)
3 = SRIO
4 = PCIe Gen 2 (8-11 not available on A2 and A3 slot)
5 = PCIe Gen 2 (no front panel via QSFP)
6 = 10GbE Full Managed Layer 2/3
7 = 10GbE Light Managed
8 = 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
9 = PCIe Gen2 on ports 4-7 and 10GbE on ports 8-11

E = Telecom/GPS Clock
0 = None
1 = Clock Distribution only
2 = Telecom TCXO**
3 = GPS TCVCXO** 30.72MHz†
4 = GPS TCVCXO** 10.00MHz†
5 = Reserved

G = Power Module
0 = AC Universal
1 = DC -36 to -75V

H = Temperature Range
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 8 MHz to 52 MHz are available.

RELATED PRODUCTS

AMC516
AMC FPGA Carrier for FMC, Virtex-7

AMC526
MC Dual ADC, Virtex-7, 12-Bit @ 2.6 GSPS

AMC720
Xeon E3-1125 Processor AMC

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