VT816

1U MTCA.4 Chassis with 2 AMC Slots, PCIe Gen 3

VT816

Key Features

- MicroTCA.4 low-profile chassis platform, 19" x 1U x 14.2" deep
- Integrated Intel Xeon E3-1125 v2 processor @ 2.5 GHz
- Supports two MTCA.4 mid-size or one full-size double module
- Optional mounting to convert slots to support two MTCA.0 mid-size or one full-size single module
- Integrated MCH and Power Module
- Front panel access to the SDHC socket, JTAG, and Telco Alarm
- Dual PCIe Gen 3 x4 or single x8 to each AMC
- Layer 2 managed GbE switch
- Removable Air Filter, Power Module, and Fan Tray

Benefits

- High performance density with integrated MCH and Xeon E3 V2 processor in a compact 1U size
- Ideal chassis development platform with 2 AMC slots
- Electrical, mechanical, software, and system-level expertise in house
- AS9100 and ISO9001 certified company
- Full system supply from industry leader

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The VT816 is ideal for applications requiring rear I/O in a lightweight, compact size. The unit offers two AMC slots (and corresponding RTMs), an integrated MCH, and an integrated Intel Xeon E3-1125 v2 processor.

The double module AMC slots conform to MTCA.4 specification for applications that require rear I/O and signal conditioning, including High Energy Physics, video processing, defense, and network security.

There are dual x4 or single x8 PCIe lanes from the processor to each AMC and point-to-point routing between the two AMCs on higher ports. The removable AC/DC power unit is located in the rear of the chassis.

Linux OS is standard on the VT816, consult VadaTech for other options.

This VadaTech Product can be incorporated into High Energy Physics architecture. Our compact 1U, low-cost chassis delivers acquisition and data processing within a small footprint.

Power Supplies

The VT816 has a removable 400W AC or 460W DC power supply located on the rear of the chassis.

Integrated MCH, Cooling Unit, Power Module and Processor

The unit has integrated MCH, Cooling Unit (CU), Power Module (PM) and Processor. The MCH is based on VadaTech UTC002 and the Processor is based on Intel Xeon E3-1125 v2 (4 core) which can clock at 2.5 GHz. The module provides PCIe Gen 3 x4 to each of the AMC slots.

The VT816 features the Intel Xeon E3-1125 v2 processor (4-core, 6 MB Cache) that comes with 16 GB of DDR3 memory with ECC and 32 GB of microSD Flash. The BIOS allows booting from the front panel SDHC socket, on board SATA, PXE boot and USB.

The VT816 has Quad USB ports on the front panel and also has an option for dual high-density SSD drivers.

Cooling and Temperature Sensors

The VT816 has an intelligent Cooling Unit. The cooling airflow is from right to left. The removable air filter has an optical switch to detect its presence and can be monitored for when it needs to be replaced. Temperature sensors in the chassis monitor the intake and the outtake air temperature throughout the unit.

In some platform configurations the total cooling capacity of the chassis can be affected by airflow restriction caused by certain AMCs. This is especially so when using multiple high-power AMCs, which typically have larger heatsinks. Please consult VadaTech sales regarding AMC placement for optimal cooling.

Figure 1: VT816 Front View

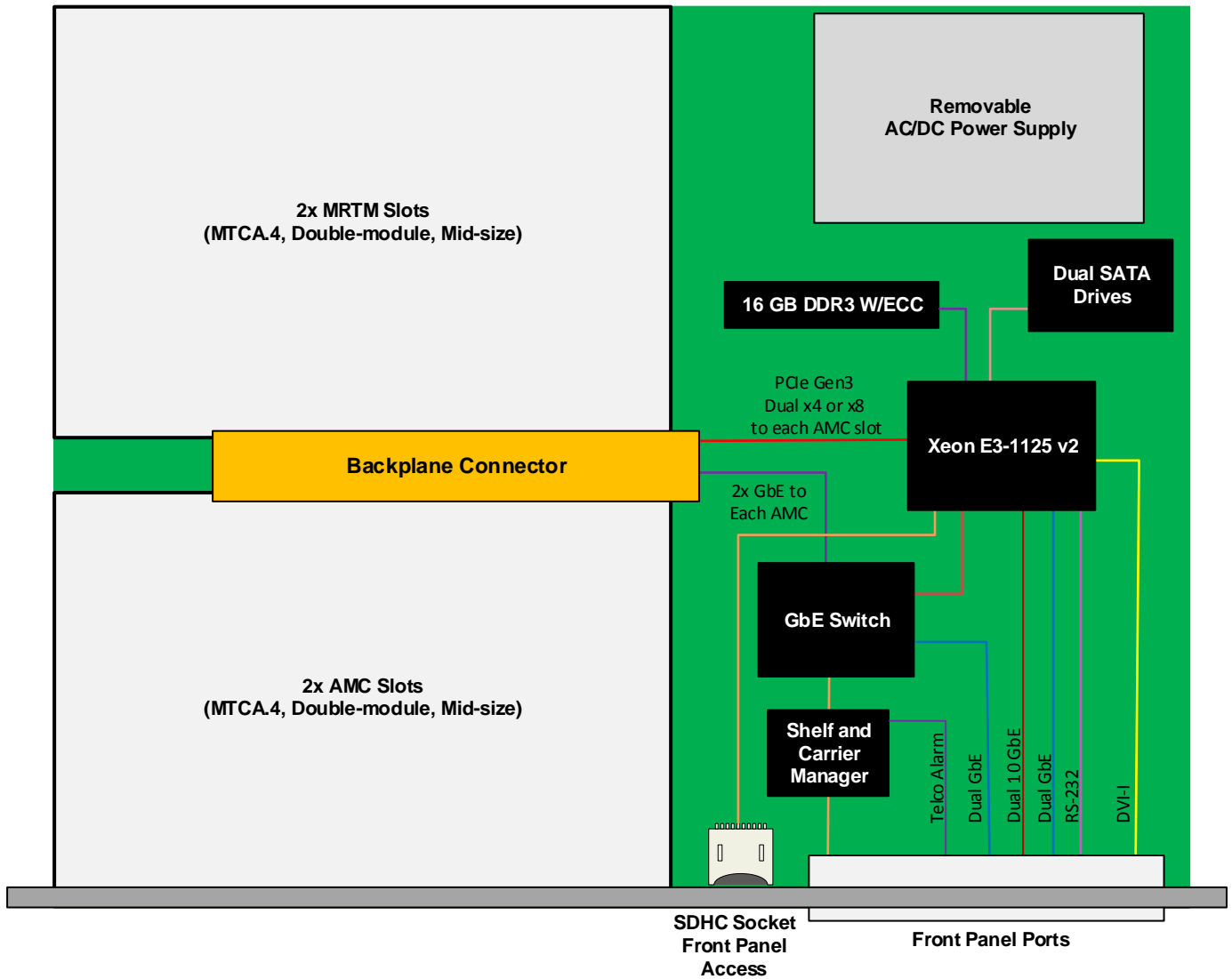*Figure 2: VT816 Rear View*
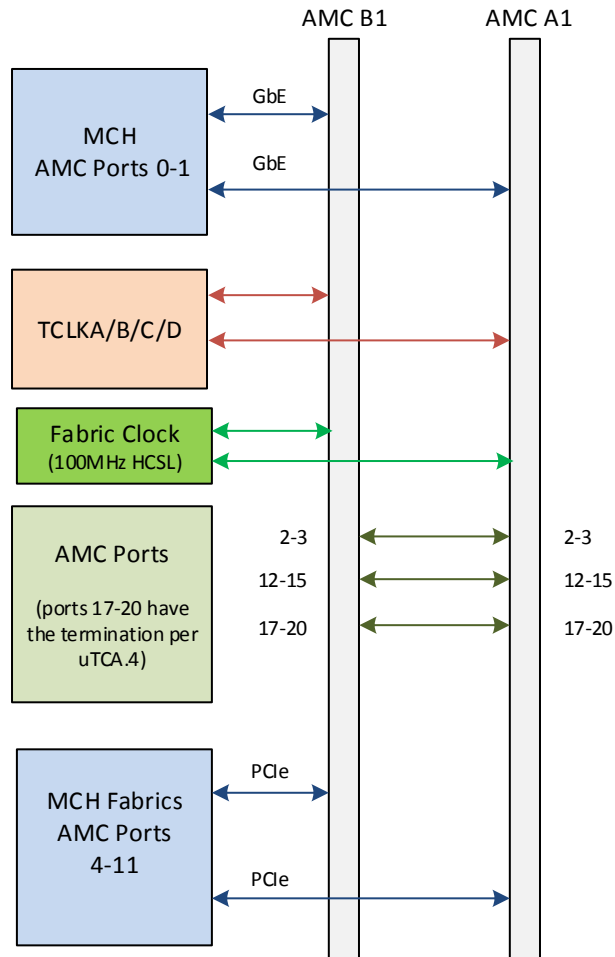
Block Diagram

Figure 3: VT816 Block Diagram

VT816 – 1U MTCA.4 Chassis with 2 AMC Slots, PCIe Gen 3

Backplane Connections

Figure 4: VT816 Backplane Connections

VT816 – 1U MTCA.4 Chassis with 2 AMC Slots, PCIe Gen 3

Specifications

Architecture		
Physical	**Dimensions**	Width: 19"
		Depth: 14.2"
		Height: 1U
Type	**MTCA Chassis**	2 MTCA.4 Slots with RTMs (double module mid-size slots)
Standards		
AMC	**Type**	AMC.0, AMC.1, AMC.2, AMC.3 and AMC.4
MTCA	**Type**	Single MCH, Single Power Module and Intelligent Cooling Unit
Configuration		
Power	**VT816**	400W AC or 460W DC -36 to -75V
		90-264V AC with frequency from 47-63 Hz or -36 to -75V DC
Environmental	**Temperature**	See Ordering Options
		Storage Temperature: –40° to +70°C
	Altitude	10,000 ft operating
		40,000 ft non-operating
	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 ISO9001:2015 and AS9100D 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

VT816 – ABC-DEF-GHJ

A = Power Supply	D = CPU Type	G = SFP+ TXCVRs
0 = AC (400W) 1 = DC -36 to -75V (460W)	0 = Xeon E3-1125 v2 with 16GB of ECC 1 = Reserved	0 = No TXCVRs 1 = Dual 10GBASE-SR TXCVRs 2 = Dual 10GBASE-LR TXCVRs
B = SATA Drive Capacity Disk 1	**E = Telecom/GPS Clock**	**H = SDHC Memory Size**
0 = No SATA Drive 1 = Single 480 GB SSD 2 = Dual 480 GB SSD 3 = Single 800 GB SSD (min order required) 4 = Dual 800 GB SSD (min order required) 5 = Reserved	0 = No Telecom/GPS Clock 1 = Telecom TCXO* 2 = GPS VCTCXO* (30.72 MHz)** 3 = GPS VCTCXO* (10.00 MHz)** 4 = Clock distribution only 5 = GPS VCTCXO* (50.00 MHz)** 6 = Reserved	0 = 32 GB 1 = Reserved 2 = Reserved
C = Module Slot Size	**F = JTAG Switch Module (JSM)**	**J = Temperature Range and Coating**
0 = Dual double module mid-size slots 1 = One full-size double module slot (slot A1 not used) 3 = Dual single module mid-size slots 4 = One full-size single module slot (slot A1 not used)	0 = No JTAG 1 = JTAG	0 = Commercial, No coating 1 = Commercial, Humiseal 1A33 Polyurethane 2 = Commercial, Humiseal 1B31 Acrylic 3 = Industrial, No coating 4 = Industrial, Humiseal 1A33 Polyurethane 5 = Industrial, Humiseal 1B31 Acrylic

Notes:

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

**Frequencies from 8 MHz to 52 MHz are available.

Related Products

AMC520

- Ten Channel ADC 16-bit @ 125 MSPS (AD9268)
- Dual DAC 16-bit @ 250 MSPS (MAX 5878, user programmable for lower sampling rate)
- Internal clock or precision external clock from RTM/backplane/front panel clocks

CM045

- Data Processing AMC in double module, mid-size (full-size optional)
- High-speed Kintex-7 FPGA
- 16 GB DDR3 SDRAM

MRT520

- MicroTCA.4 RTM for the AMC520
- Two analog outputs from AMC520's DACs via SSMC connectors
- Ten analog inputs (AC or DC coupled) interfacing directly with AMC520's ADC ICs via SSMC connectors

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