**VT843 – 1U µTCA Chassis, 12 AMC, PCIe Gen 3**

**KEY FEATURES**

- Twelve mid-size single module AMC slots or six mid-size double module AMC slots
- 96 port switch for x8 PCIe Gen 3 routing to all slots (ports 4 to 11)
- Management can run as Shelf/MCMC (MicroTCA Carrier Management Controller) or MCMC
- AMC.1, AMC.2, and AMC.3 compliant
- 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 and Cooling Units (CUs)
- Removable Power supply, Air Filter, and Fan Trays
- ESD jack at the top front

**Benefits of Choosing VadaTech**

- Vast performance density with x8 PCIe Gen 3 signals across 12 slots 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 VT843 is a 1U µTCA chassis that provides twelve mid-size AMC slots that can accept any AMC.1 (ports 4 to 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 VT843 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 µTCA specification. This provides transparent communication between the front JTAG port and the selected AMC device. It can operate up to 50MHz.

The VT843 runs VadaTech proven second generation management software. The shelf manager implements IPMI management, FRU management, and shelf environment management for power, thermal, E-keying, etc. It can run as the Shelf/MCMC or MCMC.
COOLING AND TEMPERATURE SENSORS
The VT843 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. 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.

TELCOM, GPS AND FABRIC CLOCKS
The μTCA specification defines a set of clocks for Telecom and non-Telecom applications. The VadaTech VT843 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 VT843 has three types of clocks defined:

- Telecom clock
- GPS clock
- Fabric clock

TELCO ALARM
The VT843 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 VT843 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.

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.
VT843 – 1U µTCA Chassis, 12 AMC, PCIe Gen 3

CHASSIS CONFIGURATION

Front View

<table>
<thead>
<tr>
<th>AMC B4</th>
<th>AMC B3</th>
<th>AMC B2</th>
<th>AMC B1</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMC A4</td>
<td>AMC A3</td>
<td>AMC A2</td>
<td>AMC A1</td>
</tr>
</tbody>
</table>

Rear View

<table>
<thead>
<tr>
<th>AMC B5</th>
<th>AMC B6</th>
<th>Hot-swap Power Supply 2</th>
<th>Hot-swap Power Supply 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMC A5</td>
<td>AMC A6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VT843 – 1U µTCA Chassis, 12 AMC, PCIe Gen 3

**BLOCK DIAGRAM**

- **Shelf Manager/MCMC**, RS-232, 10/100 Ethernet, GbE (10/100/1000), GPS, Telco Clock, Health monitoring LED and HSW Handle
- **Power Module Serial** (RS-232), Telco Alarm, JTAG Header, Health Monitoring LED and HSW Handle

**AMC Slots A/B**

- A4/B4 (Front, Mid-size)
- A3/B3 (Front, Mid-size)
- A2/B2 (Front, Mid-size)
- A1/B1 (Front, Mid-size)

**AMC Slots A/B**

- A6/B6 (Rear, Mid-size)
- A5/B5 (Rear, Mid-size)

**Each AMC Slot has:**
- Dual GbE on Ports 0 and 1
- Direct connections between Ports 2 and 3, see Backplane connections diagram
- PCIe Gen-3 (x8 lanes) to all AMC slots
- Fabric Clock (FCLK) to all AMC slots
- Telco clocks TCLKA, TCLKB, TCLKC and TCLKD to all AMC slots

- **Dual Intelligent Fan Controller**
- **MCMC and Shelf Manager**
- **PCIe Gen-3 Switch (x8 lanes)**
- **Layer 2 Managed Switch**

**Hot-swappable Power Supply 650/850 W**
# SPECIFICATIONS

## Architecture

<table>
<thead>
<tr>
<th>Physical</th>
<th>Dimensions</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1U</td>
<td>19&quot;</td>
<td>23.6&quot; (600 mm)</td>
</tr>
</tbody>
</table>

| Type |   | µTCA Chassis | 12 AMC.0 mid-size slots |

## Standards

<table>
<thead>
<tr>
<th>AMC</th>
<th>Type</th>
<th>AMC.0, AMC.1, AMC.2, AMC.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>µTCA</td>
<td>Type</td>
<td>PICMG 3.0 Rev 3.0</td>
</tr>
</tbody>
</table>

## Module Management

| IPMI     | V2.0 |

## Configuration

<table>
<thead>
<tr>
<th>PCIe</th>
<th>Lanes</th>
<th>x8</th>
</tr>
</thead>
<tbody>
<tr>
<td>GbE</td>
<td>1000-BX</td>
<td>Two GbE SerDes per AMC</td>
</tr>
<tr>
<td>Telco Clock</td>
<td>MLVDS</td>
<td>Per AMC.0 specifications for TCLKA, TCLKB, TCLKC and TCLKD</td>
</tr>
<tr>
<td>Fabric Clock</td>
<td>HCSL</td>
<td>Per AMC.1 100 MHz HCSL</td>
</tr>
<tr>
<td>Power</td>
<td>VT843</td>
<td>650/850W per supply AC or DC 396/796W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>110-240VAC with frequency from 47-63Hz or DC -36V to -75V</td>
</tr>
</tbody>
</table>

## 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 |

## Trademarks and Disclaimer

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.
VT843 – 1U µTCA Chassis, 12 AMC, PCIe Gen 3

ORDERING OPTIONS

VT843 – AB0 – 0E0 – GHJ

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

B = JSM
0 = None
1 = Included

E = 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

G = Power Supply***
0 = 650W
1 = 1300W (2x 650W)
2 = 850W
3 = 1700 (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)
8 = Reserved
9 = Reserved

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
*** 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

CONTACT US

VadaTech Corporate Office
198 N. Gibson Rd.
Henderson, NV 89014
Email: info@vadatech.com
Telephone: +1 702 896-3337
Fax: +1 702 896-0332

Asia Pacific Sales Office
7 Floor, No. 2, Wenhu Street, Neihu District,
Taipei 114,Taiwan
Email: info@vadatech.com
Telephone: +886-2-2627-7655
Fax: +886-2-2627-7792

VadaTech European Sales Office
Ocean Village Innovation Centre, Ocean Way,
Ocean Village, Southampton, SO14 3JZ
Email: info@vadatech.com
Telephone: +44 2380 381982
Fax: +44 2380 381983