



### KEY FEATURES

- $\mu$ TCA System Platform 19" x 2U x 12" deep
- Full redundancy with dual MicroTCA Carrier Hub (MCH), dual Cooling Units and dual Power Modules
- Up to twelve AMCs: four full-size and eight mid-size
- Dual star topology
- Radial I2C bus to each AMC
- High-speed routing on 26 layers
- High-speed  $\mu$ TCA connectors (12.5 GHz)
- Telco Alarm
- JTAG Switch Module (JSM) slot with front port access
- CLK1, CLK2 and CLK3
- Removable Air Filter, Power Module and Fan Tray
- Dual -36VDC to -75VDC input per Power Module
- No active components on the backplane
- ESD-Jack
- RoHS compliant

The VT881 is a 2U  $\mu$ TCA chassis that provides four AMC full-size and eight mid-size that can accept any AMC.1, AMC.2, AMC.3 and/or AMC.4. It provides CLK1, CLK2, and CLK3 to each slot in addition to the JTAG signals.

The VT881 has full redundancy. It's capable of having redundant MCH, Power Modules, as well as redundant Cooling Units for high availability.

Option for redundant/non-redundant clock per  $\mu$ TCA specification. The CLK3 option can be configured for the Fabric clock as well as Telcom clock.

The chassis has a JTAG Switch Module (JSM) slot per  $\mu$ TCA specification. This provides transparent communication between the front JTAG port and the selected AMC device. The VT881 has a Telco Alarm as well as Redundant FRU information devices and carrier locator.

VadaTech can modify this product to meet special customer requirements without NRE (minimum order placement is required).

**$\mu$ TCA™**

# 2U $\mu$ TCA Chassis with 12 AMC slots

## SPECIFICATIONS

| Architecture         |   |  |
|----------------------|---|--|
|                      |   | Height 2U  |
| Physical             | Dimensions  | Width: 19"   |
|                      |   | Depth 12"  |
| Type                 | $\mu$ TCA Chassis   | Twelve AMC.0 slots   |
| Standards            |   |  |
| AMC                  | Type  | AMC.0, AMC.1, AMC.2, AMC.3, and AMC.4  |
| $\mu$ TCA            | Type  | JSM, Telco Alarm, Dual MCH, Dual Power Module and Dual Intelligent Cooling units |
| Configuration        |   |  |
| Power                | VT881   | Dual Power Module (PM) Inserted from the rear (each PM has dual input)           |
|                      |   | 796W supply with 90% efficiency; providing over 700W to the system               |
| Environmental        | Temperature   | Operating Temperature: 0° to 55° C<br>Storage Temperature: -40° to +70° C        |
|                      | Altitude  | 10,000 ft. Operating   |
|                      |   | 40,000 ft. Non-Operating   |
| Relative Humidity    | 5 to 95 percent, non-condensing   |  |
| Conformal Coating    |   | Humiseal 1A33 Polyurethane   |
|                      |   | Humiseal 1B31 Acrylic  |
| 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 Logos | 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. |  |

## Chassis Mechanical

The VT881 has 12 slots which consists of 4 Full-height AMC and 8 mid-height. The Chassis has dual MCH as well as Telco and JSAM slot. The VT881 has redundant cooling units as well as dual AC input power supply.

|               |               |       |              |               |
|---------------|---------------|-------|--------------|---------------|
| AMC 1<br>F-S* | AMC 3<br>M-S* | MCH 1 | AMC 7<br>M-S | AMC 11<br>F-S |
|               | AMC 4<br>M-S  |       | JSM          |               |
| AMC 2<br>F-S  | AMC 5<br>M-S  | MCH 2 | AMC 9<br>M-S | AMC 12<br>F-S |
|               | AMC 6<br>M-S  |       | TELCO        |               |

\*F-S (Full-Size), \*M-S (Mid-Size),

**FIGURE 1.** VT881 Slot numbering (front view)



**FIGURE.** Rear View



## IPMB Bus

The I2C bus from each AMC is routed radially to each of the MCH.

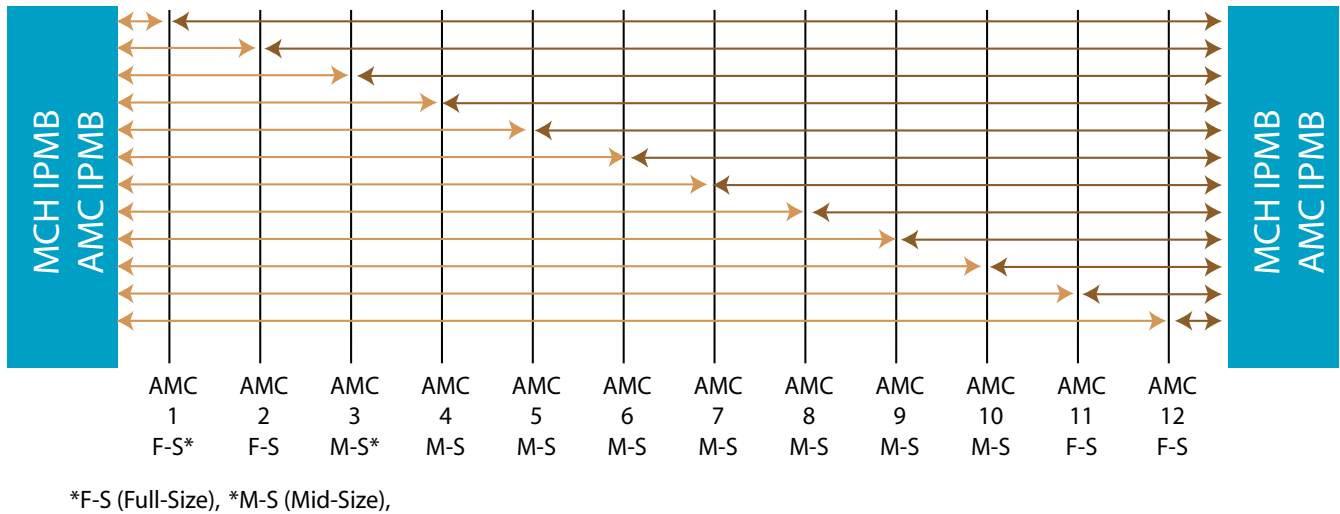


FIGURE 2. VT881 Topology for AMC I2C Bus

## Ports 0 and 1

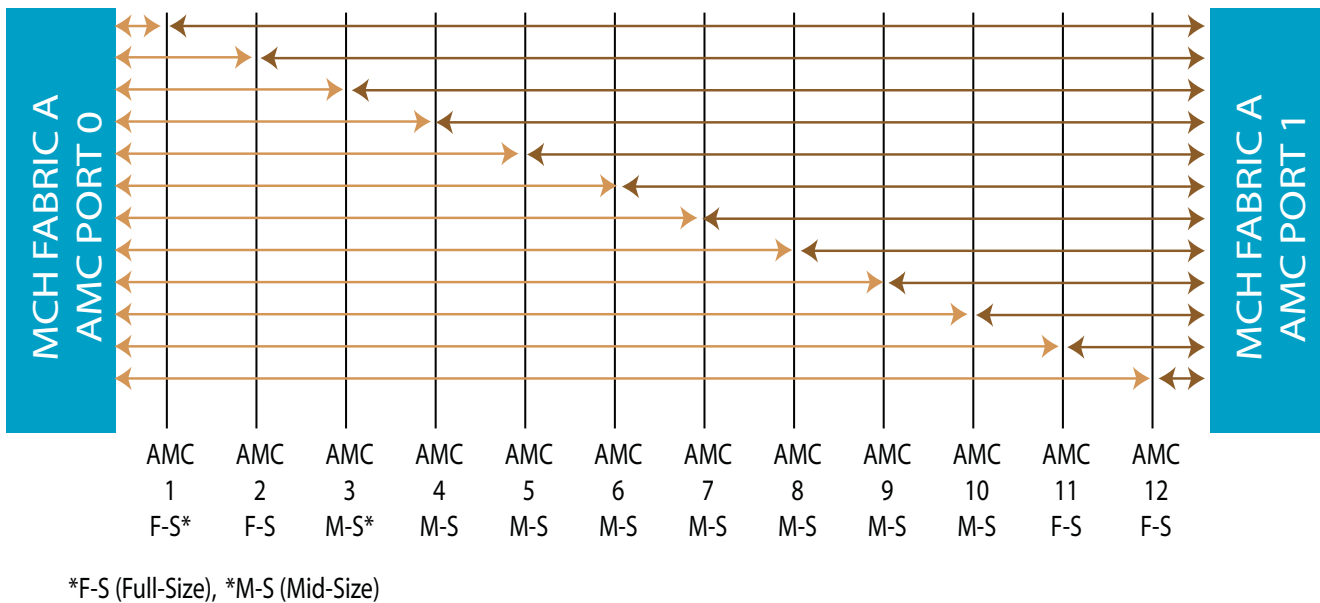
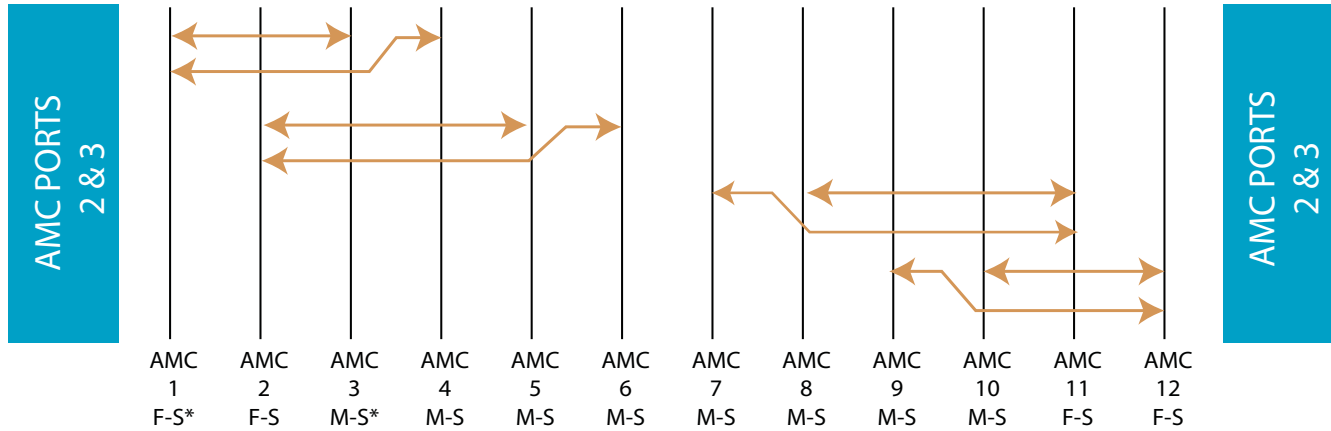


FIGURE 3. VT881 Topology for AMC Ports 0 and 1

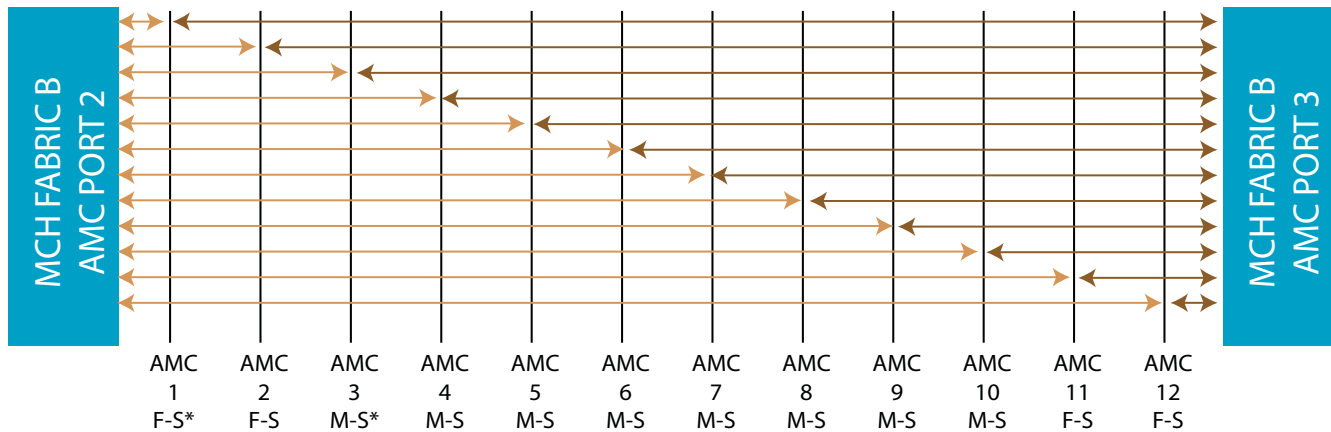
## Ports 2 and 3

Topology for Ports 2 and 3 with direct connections among the slots (ordering option)



\*F-S (Full-Size), \*M-S (Mid-Size)

Topology for Ports 2 and 3 to MCH (ordering option with redundant CLK)



\*F-S (Full-Size), \*M-S (Mid-Size)

**FIGURE 4.** VT881 Topology for AMC Ports 2 and 3

When CLK3 is non-redundant, Fabric B will be partially provided only on ports 1 to 6. CLK3 is routed on Fabric B on ports 7 to 12.

## Ports 4-7 and 8-11

Ports 4-7 from each AMC is routed to first MCH and ports 8-11 are routed to the second MCH.

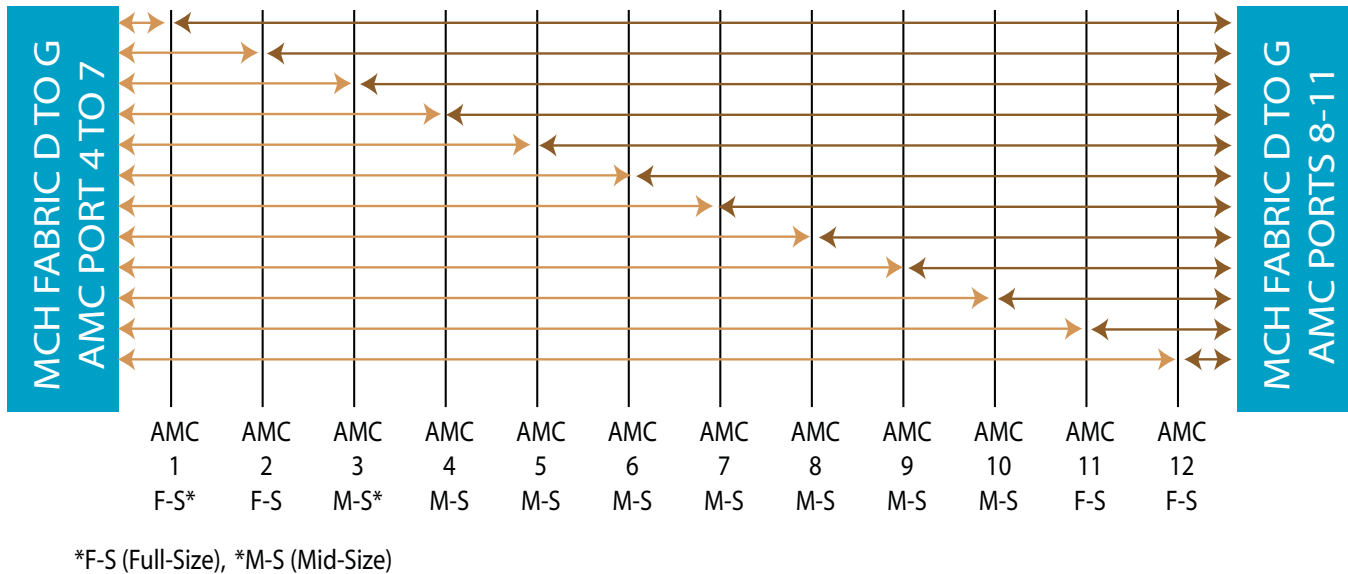


FIGURE 5. VT881 Topology for AMC Ports 4-7 and 8-11

## AMC JTAG Signals

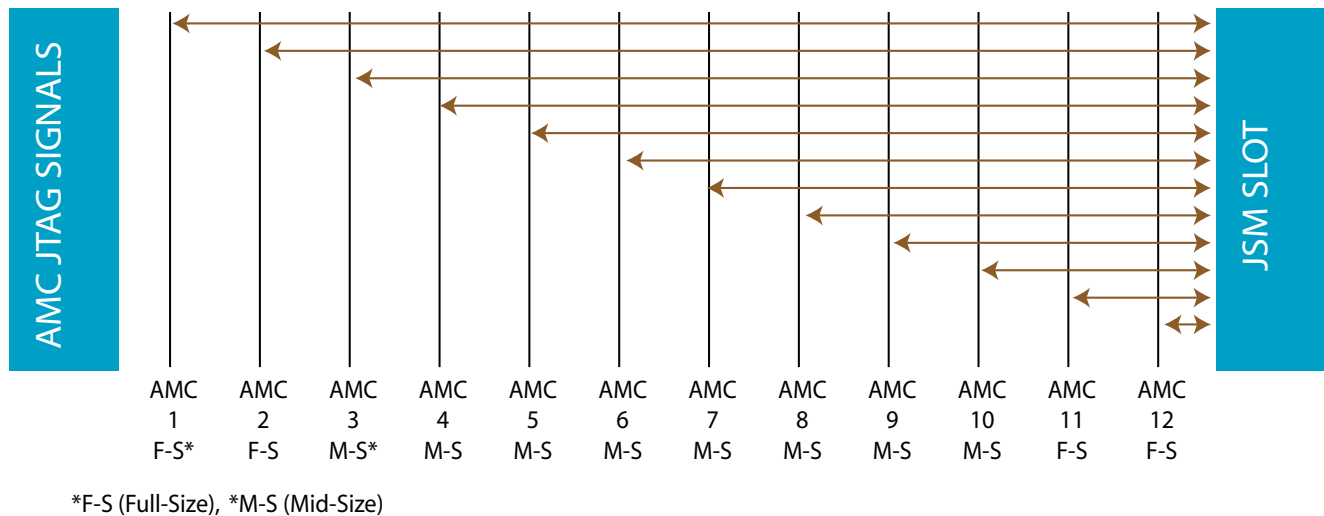


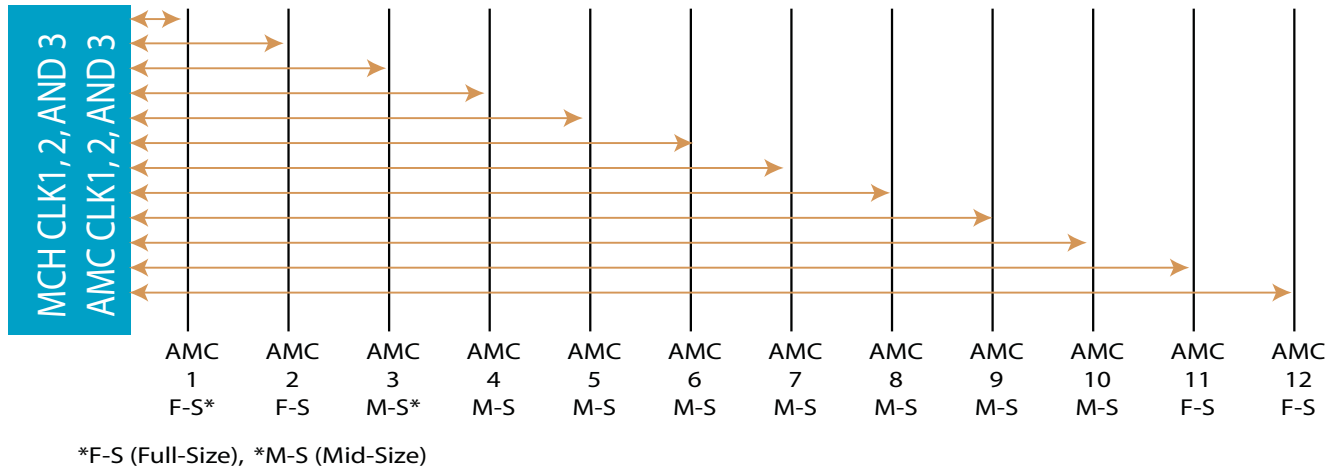
FIGURE 6. VT881 Topology for AMC JTAG Signals

The VT881 has a JSM slot. The JSM module is removable and allows the insertion of the VadaTech JSM module. The JSM module can be ordered with the Chassis.

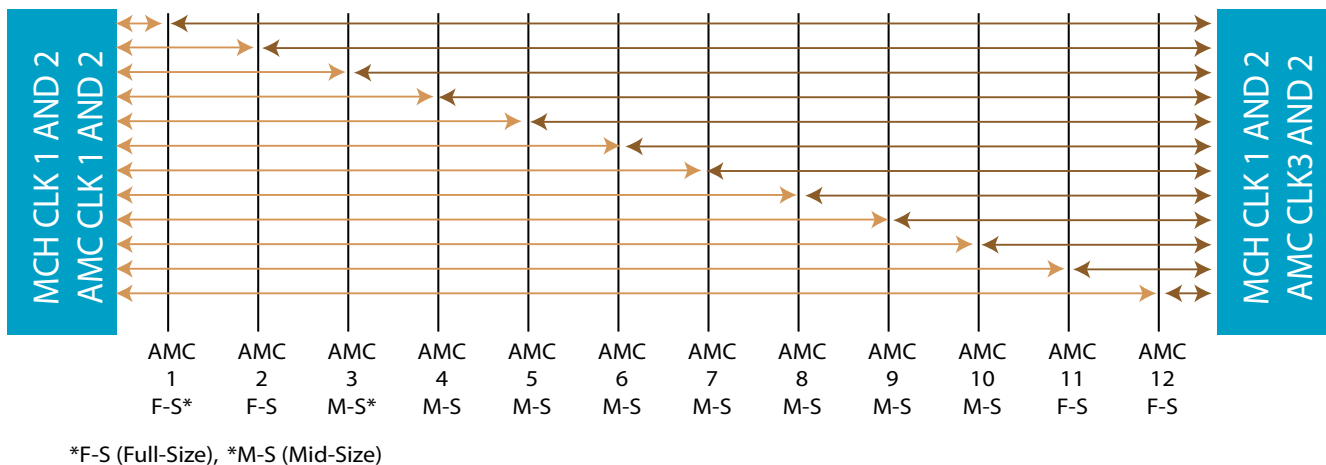
## Clock Options

The  $\mu$ TCA specifies three clocks: CLK1, CLK2, and CLK3. It defines non-redundant and redundant clock networks. The non-redundant clock network connects CLK1, CLK2 and CLK3 of one MCH point-to-point to CLK1, CLK2 and CLK3 of the AMCs. CLK3 can follow the Telco clock or become the Fabric clock per AMC.1 specification. Fabric B will be partially provided only on ports 1 to 6 CLK3 is routed on Fabric B on ports 7 to 12.

The redundant clock network option connects the CLK1 of MCH1 and CLK1 of MCH2 point-to-point to each of the CLK1 and CLK3 respectively of each AMC.



**FIGURE 7.** VT881 non-redundant clock Topology, CLK3 can run as Fabric Clock (i.e. PCIe clock)



**FIGURE 8.** VT881 redundant clock Topology

## Power Module

The VT881 has an option for Dual Power Module (PM). The PM slots are in the rear with DC input from -36V to -75V input. Each PM has dual input for optimal redundancy.

## Cooling and Temp Sensors

The VT881 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.

## Telco Alarm

The VT881 provides Telco Alarm functionality to alert about any anomaly within the chassis. The Telco Alarm is provide via a Micro DB-9 as well as LED's in the front to show any anomaly. The Telco Alarm has its own dedicated slot.

## FRU Information and Carrier Locator

The VT881 has dual redundant FRU information and Carrier Locators. The Carrier Locator is assigned by mechanical dip switches which are easily accessible. The MCH reads the Locator via it's private I2C bus.

## No active components

With respect to other  $\mu$ TCA chassis in the market, the VT881 has no active components on its back plane. This allows ease of serviceability.

## End to End Integrated Solution

VadaTech has the entire  $\mu$ TCA infrastructure: MicroTCA Carrier Hub (product UTC001, UTC002 or UTC004), Power Module (UTC010, ~800W), JSM, etc.. Please consult the appropriate data sheet to obtain more information.

VadaTech can integrate any of its over 130 AMC modules, customer AMCs, as well as other third party AMCs into the chassis and deliver a complete system for deployment. Please contact VadaTech Sales for more information.



## ORDERING OPTIONS

VT881 - ABC - 00F - 00J\*

**A = Power Module**

- 1 = Single DC supply (396W)
- 2 = Dual DC supply (396W/each)
- 3 = Single DC supply (792W)
- 4 = Dual DC supply (792W/each)

**B = Ports 2 and 3**

- 0 = All slots to MCH
- 1 = Per Fig. 4

**C = CLK3**

- 1 = Non-redundant (Telco)
- 2 = Non-redundant (Fabric CLK)
- 3 = Redundant

**F = JSM**

- 0 = Not installed
- 1 = Installed

**J = Conformal Coating**

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

\*VadaTech has MCH (UTC001, UTC002 and UTC004) and well over 150 AMC modules. Contact your sales representative for an end-to-end integrated solution.



**FIGURE 8.** VT881 (rear view)