VT865

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VT865 KEY FEATURES

- µTCA System Platform 19" x 5U x 10.5" deep (with handles 12" deep)
- Full redundancy with dual MicroTCA Carrier Hub (MCH), dual Cooling Units and dual Power Modules
- Up to 10 AMCs: 10 full-size
- Dual star topology
- Radial I2C bus to each AMC
- High-speed routing on 30 layers
- High-speed µTCA connectors (12.5 GHz)
- Redundant FRU information devices
- Redundant Carrier Locator
- 1000W AC Power supply option
- Telco Alarm
- FCLKA, TCLKA, TCLKB, TCLKC and TCLKD with advanced redundancy capability
- No active components on the backplane
- ESD-Jack at the top front
- RoHS compliant

The VT865 is a 5U µTCA chassis that provides 10 AMC full-size slots that can accept any AMC.1, AMC.2, AMC.3 and/or AMC.4. It provides FCLK, TCLKA, TCLKB, TCLKC and TCLKD to each slot with clock redundancy between the two MCH modules.

The VT865 is capable of having redundant MCH, Power Modules, and Cooling Units for high availability.

The CLK3 option can be configured for the Fabric clock, Telcom clock, or Fabric B.

There is an option for Port 2 and 3 to be directly connected among the adjacent AMCs or to the fabric B (AMC.3 SATA/SAS switch option on the MCH). The chassis also routes ports 12-15 to 17-20 of the adjacent slot.

The VT865 has a Telco Alarm as well as Redundant FRU information devices and carrier locators.

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

µTCA™

SPECIFICATIONS

Architecture		
Physical	Dimensions	Height 5U
		Width: 19"
		Depth 10.25" without the handles and 12" with the handles
Type	μTCA Chassis	10 AMC.0 full-size slots
Standards		
AMC	Type	AMC.0, AMC.1, AMC.2, AMC.3, and AMC.4
μTCA	Type	Telco Alarm, Dual MCH, Dual Power Module and Dual Intelligent Cooling units
Configuration		
Power	VT865	1000W supply
		110-240VAC with frequency from 47-63Hz
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
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^{TM} and the AdvancedMC^{TM} logo are trademarks of the PCI Industrial Computers Manufacturers Group. All rights reserved. Specification subject to change without notice.	

Table 1. Comparison chart between VadaTech 5U VT86x series

| Model	No. of MCH Slots	No. of Power Module Slots	JSM Slot	Telco Alarm	No. of AMC FH* Slots	No. of AMC MH* Slots	No. of AMC CH* Slots	Dual Redundant Fan Tray	1000W Power Supply	Advance Clock Redundancy
VT860	2	2	Yes	Yes	4	6	2	Yes	Yes	No
VT861	1	1	No	No	12	0	0	Yes	Yes	No
VT862	2	2	No	Yes	10	0	0	Yes	Yes	No
VT863	2	2	No	Yes	6	6	0	Yes	Yes	No
VT864†	2	2	No	Yes	10	0	0	Yes	Yes	Yes
VT865††	2	2	No	Yes	10	0	0	Yes	Yes	Yes

*FH (Full-Height), MH (Mid-Height), CH (Compact-Height)

†VT862 and VT864/VT865 are identical other than their clock routing architecture. The VT864/VT865 routes clocks to CLK1/TCLKA, CLK2/TCLKB, CLK3/FCLKA, TCLKC, and TCLKD of the AMC whilst the VT862 routes to CLK1/TCLKA, CLK2/TCLKB, and CLK3/FCLKA of the AMC.

††The VT864 and VT865 are identical except the VT865 has direct connects between ports 12-15 to 17-20 of the adjacent slot
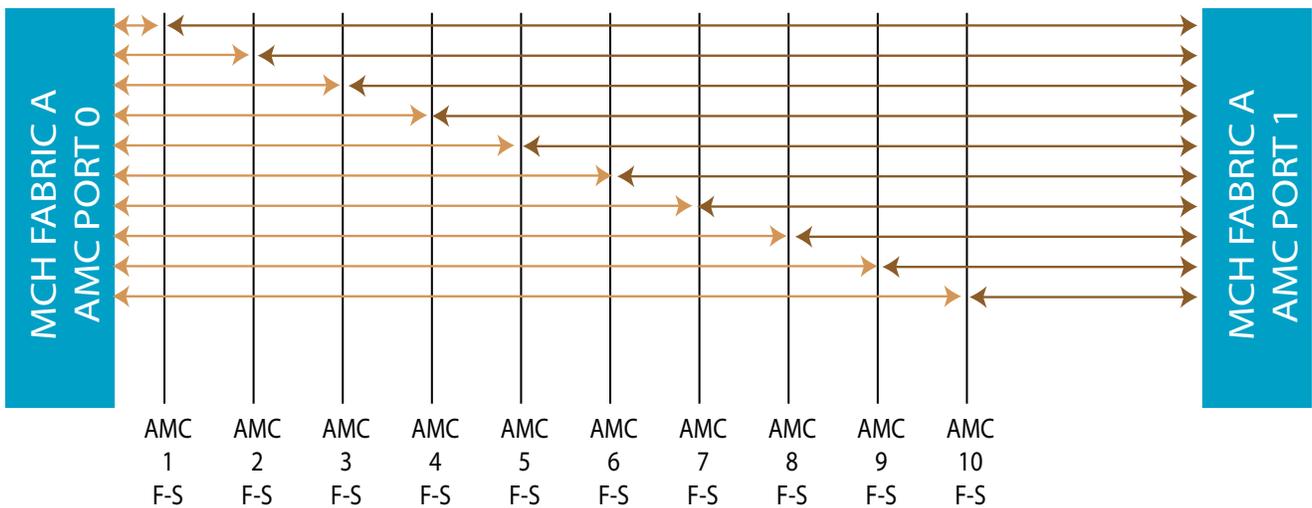
IPMB Bus

The I2C bus from each AMC is routed radially to each of the MCH.
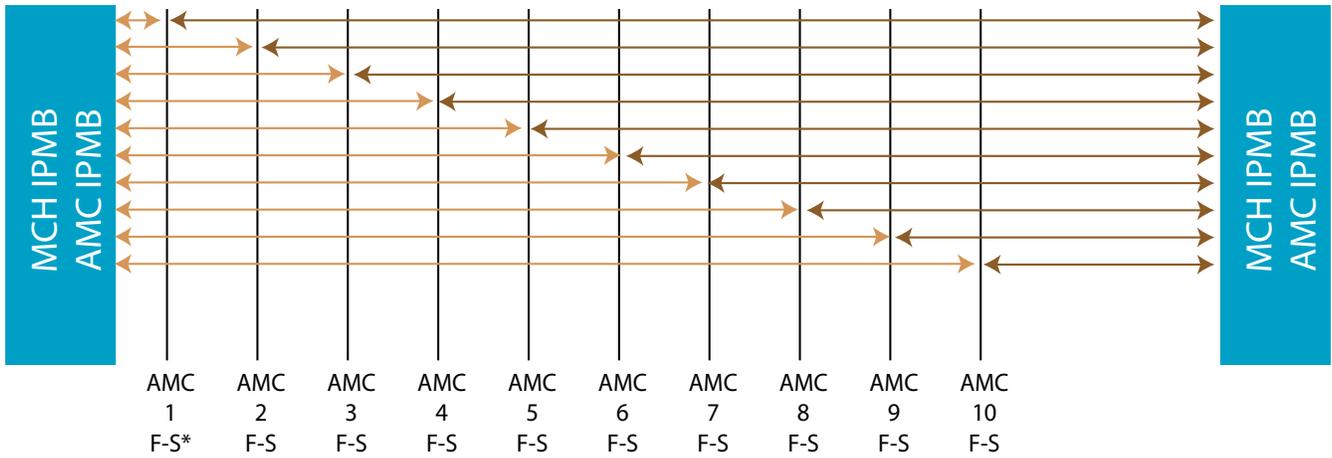
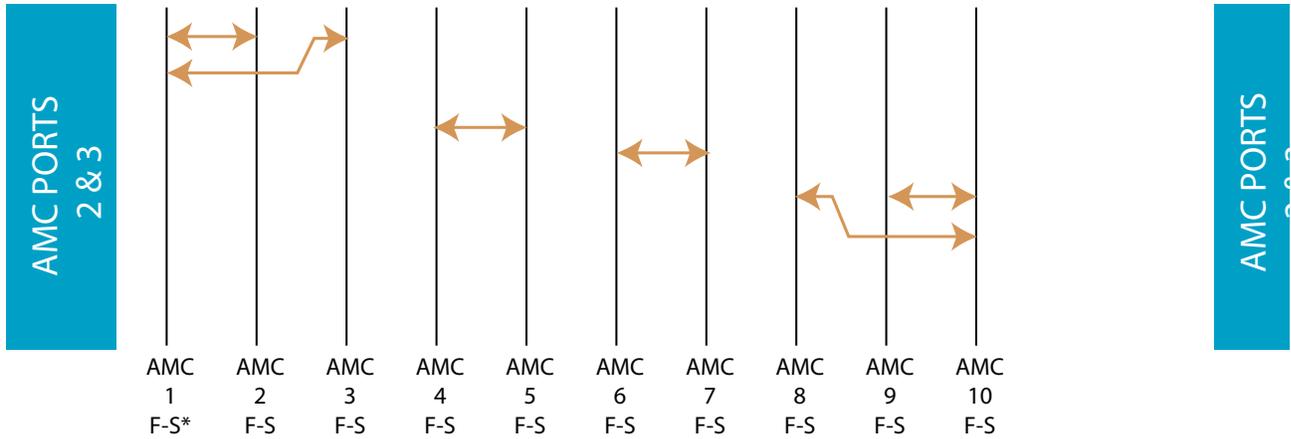
FIGURE 1. VT865 Topology for AMC I2C Bus

Ports 0 and 1

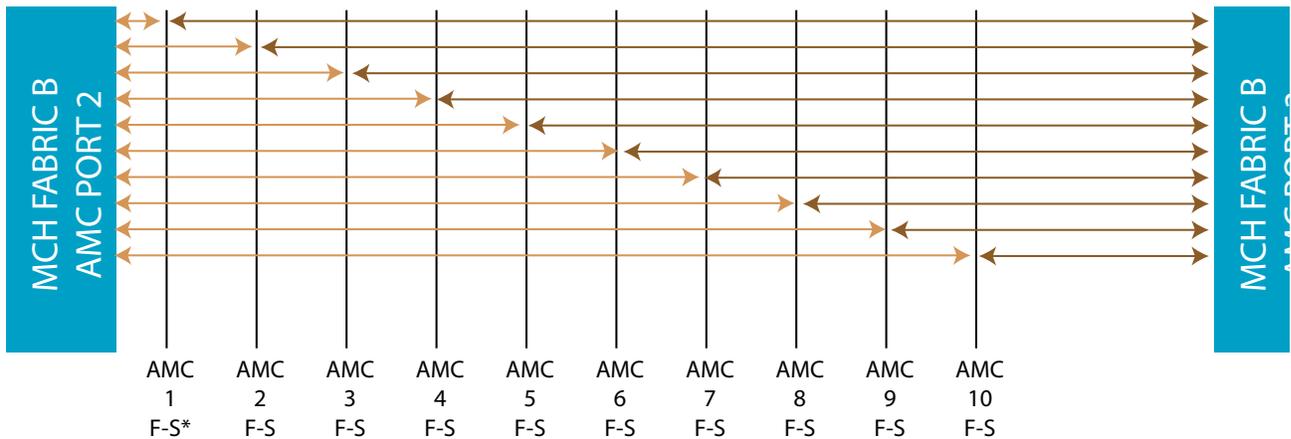**FIGURE 2.** VT865 Topology for AMC Ports 0 and 1

Ports 2 and 3

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

*F-S (Full-Size)

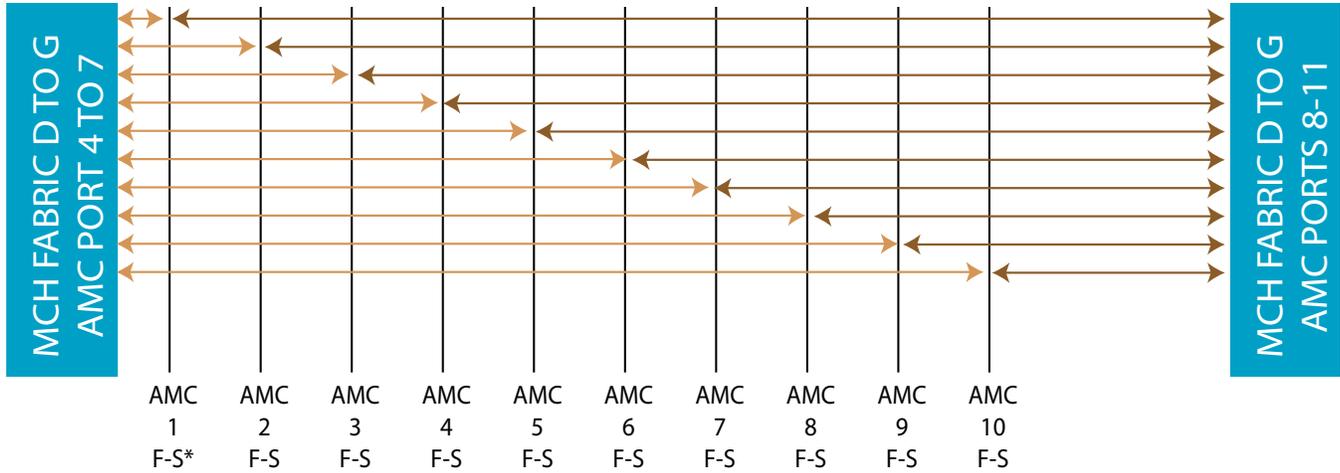Topology for Ports 2 and 3 to MCH (ordering option with redundant CLK)

*F-S (Full-Size)

FIGURE 3. VT865 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.
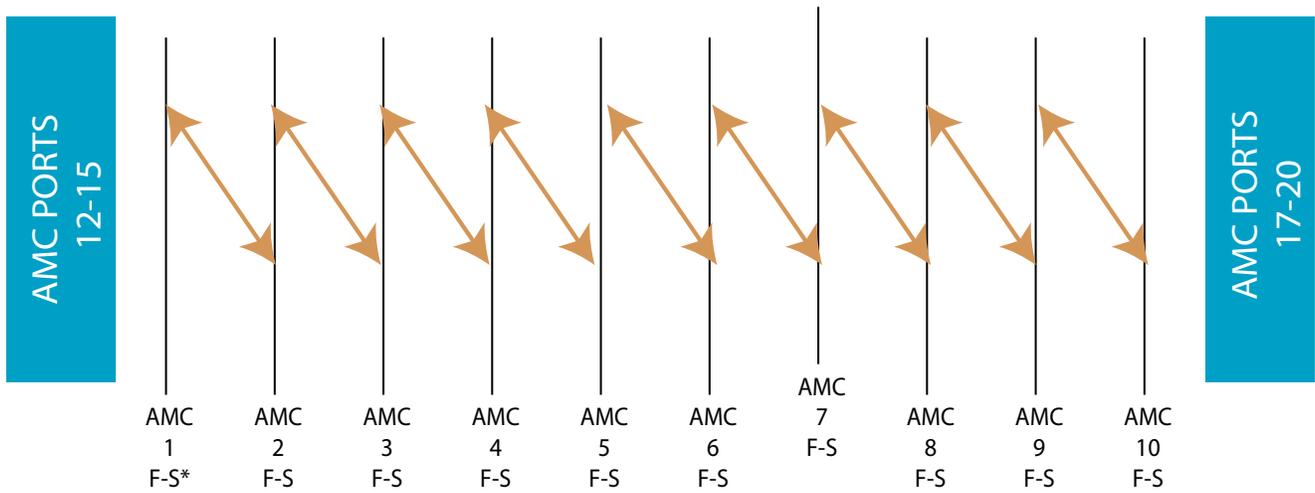
Ports 4-7 and 8-11

MCH FABRIC D TO G AMC PORT 4 TO 7

MCH FABRIC D TO G AMC PORTS 8-11

AMC 1 F-S* AMC 2 F-S AMC 3 F-S AMC 4 F-S AMC 5 F-S AMC 6 F-S AMC 7 F-S AMC 8 F-S AMC 9 F-S AMC 10 F-S

*F-S (Full-Size),

FIGURE 4. VT865 Topology for AMC Ports 4-7 and 8-11

Ports 12-15 and 17-20

Topology for ports 12-15 with direct connection to ports 17-20 among the slots

AMC PORTS 12-15

AMC PORTS 17-20

AMC 1 F-S* AMC 2 F-S AMC 3 F-S AMC 4 F-S AMC 5 F-S AMC 6 F-S AMC 7 F-S AMC 8 F-S AMC 9 F-S AMC 10 F-S

*F-S (Full-Size)

**FIGURE 5.** VT865 Topology for AMC Ports 12-15 and 17-20

Clock Options

The μTCA specification provides for three AMC 1.0 clocks: CLK1, CLK2, and CLK3. It defines non-redundant and redundant clock networks for these three clocks as either CLK1, CLK2, CLK3 or CLK1A, CLK2, CLK1B respectively. However, this may not be enough to support all of the clocking needs of telco customers needing full redundancy across two pairs of clocks such as a framing clock plus a bit clock or a GPS 1PPS signal plus bit clock. The AMC 2.0 specification provides for four telco clocks (TCLKA through D) and a fabric clock (FCLKA) which the VT865 chassis leverages to do enhanced clock redundancy to solve these advanced clocking requirements.

With the VT865 topology it is possible to source/sink two AMC telco clocks, TCLKA/B, from/to the primary MCH (plus the FCLKA) and in addition source/sink two AMC telco clocks, TCLKC/D, from/to the secondary MCH for a total of all five AMC clocks being handled by the μTCA system. Two additional clock update channels between the MCH modules are also provided which can be used for forwarding clocks as needed between them. This enhanced backplane is fully compatible with standard μTCA MCH modules and AMC 2.0 cards. An additional benefit of this enhanced clock architecture is the ability to run PCIe with the fabric clock on FCLKA at the same time as the redundant telco clocking; which is something that is not possible with the original μTCA redundant clocking architecture.

If your application requires the original μTCA redundant clocking architecture using AMC 1.0 modules please refer to our other available VadaTech chassis.

NOTE: CLK3/FCLKA can be devoted to the telco clocking (for AMC 1.0), become the FCLKA per AMC.1 specification, or be used for Fabric B based on the ordering option of the chassis and MCH 0. Fabric B will be partially provided only on ports 1 to 6 when CLK3/FCLKA is ordered (which occupies the Fabric B ports 7 to 12).
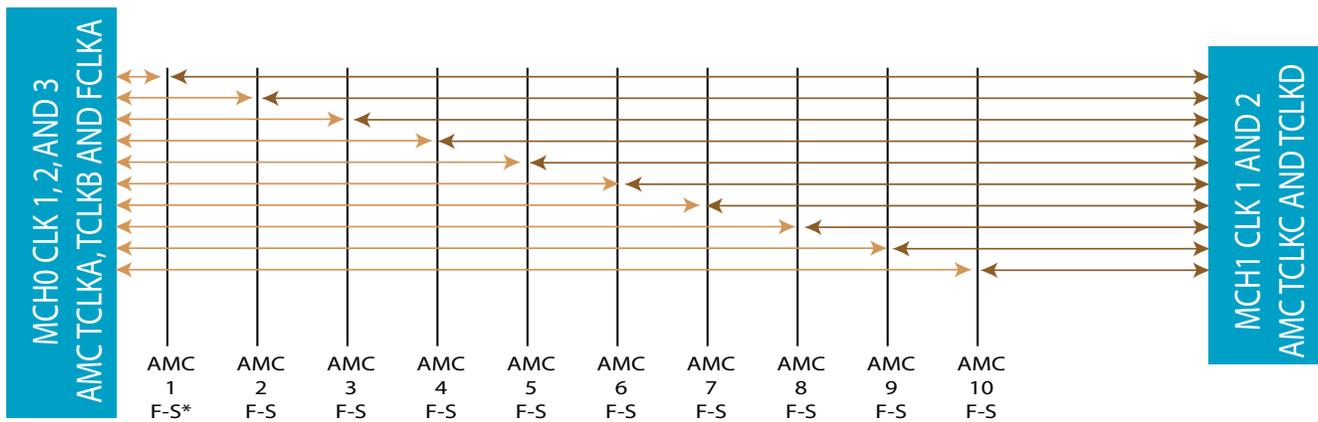
FIGURE 6. VT865 AMC 2.0 Enhanced Clock Redundancy Topology

Power supply

The VT865 has an option for a 1000W power supply. The input voltage is from 110-240 VAC (frequency from 47-63 Hz). The VT865 provides -48Vconnectors to the front of the chassis to power the Dual Power Modules. The AC input is from the back of the chassis. The AC supply has an on/off switch on front top center of the chassis.

Cooling and Temp Sensors

The VT865 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 front to back. 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 VT865 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 VT865 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

Unlike other µTCA chassis in the market, the VT865VT865 has no active components on its back plane. This allows ease of serviceability.

End to End Integrated Solution

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

VadaTech can integrate any of its over 120 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

<div align="center">

VT865 - ABC - 000 - 00J*

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A = AC Power supply

    0 = None
    1 = 1000W

B = Ports 2 and 3

    1 = Direct connection per Fig. 3
    2 = To MCH

C = MCH CLK3 Channels

    1 = Telco
    2 = FCLKA
    3 = Fabric B

J = Conformal Coating

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

*VadaTech has an MCH (UTC001, UTC002, etc.), Power Module (UTC010, UTC012, etc.) as well as over 120 AMC modules. Contact your sales representative for an end-to-end integrated solution.

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