µTCA Conduction Cooled Chassis with 8 AMC slots

VT870

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KEY FEATURES

- µTCA System Platform 3/4 Air Transport Rack (ATR) Short Tall, with NO internal fan (with handle 15" deep)
- Customized Front Panel Input and Output Connectors per MIL-M38999
- Single MCH and Power Module slot
- Up to 8 AMCs: Four mid-size and four compact-size (MCH and Power Module are not included)
- Radial I2C bus to each AMC
- High-speed routing on 20 layers
- High-speed µTCA connectors (12.5 GHz)
- FRU information devices with chassis locator
- Telco Alarm
- CLK3
- No active components on the backplane
- RoHS compliant

The VT870 is a 3/4 ATR µTCA Short Tall chassis that provides four AMC mid-size and four compact slots that can accept any AMC.1, AMC.2, AMC.3 and/or AMC.4. It provides Fabric clock (CLK3) to each slot.

The VT870 is designed for avionics, space and ground vehicles applications. The VT870 is designed to withstand extreme environmental conditions such as temperature, shock, vibration, chemical, EMI and altitude.

The VT870 is made from lightweight aluminium 6061-T6. The top is removable and utilized stainless steel captive hardware and self-locking helicoils to withstand maximum shock and vibration.

Conduction cooling is through precision-machine card guides in the sidewalls. The front panel accommodates MIL style M38999 connectors. The front panel can be customized to meet each customer's unique requirements.

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

µTCA™

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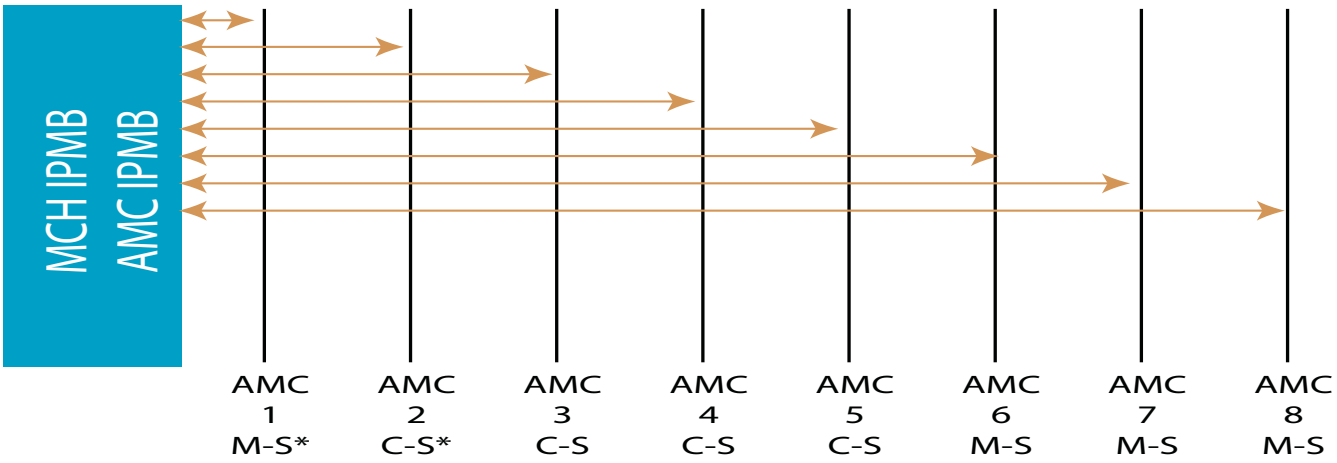
SPECIFICATIONS

Architecture		
		Height 277nn
Physical	**Dimensions**	Width:190.5mm
		Depth 320.5mm
Type	**µTCA Chassis**	8 AMC.0 slots
Standards		
AMC	**Type**	AMC.0, AMC.1, AMC.2, AMC.3, and AMC.4
µTCA	**Type**	Telco Alarm, Single MCH, Power Module and SFM (System Management Module)
Configuration		
Power	**VT870**	Single PM (consult UTC011 data sheet for the power module)
Environmental	**Temperature**	Operating Temperature: -40° to 80° C
		Storage Temperature: -45° to +95° C
	Vibration	MIL-STD-810E Method 514.4 Procedure 1, Cat. 4 propeller, Cat. 5 Jet aircraft Cat. 6 helicopter (to be tested and verified, by August 2009)
	Shock	MIL-STD-810 Method 516.4 Procedure 1 20g, 1/2 sine, 11 msec. (to be tested and verified by August 2009)
	Altitude	15,000 ft. Operating with no external Fan with 105W dissipation
		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.	

IPMB Bus

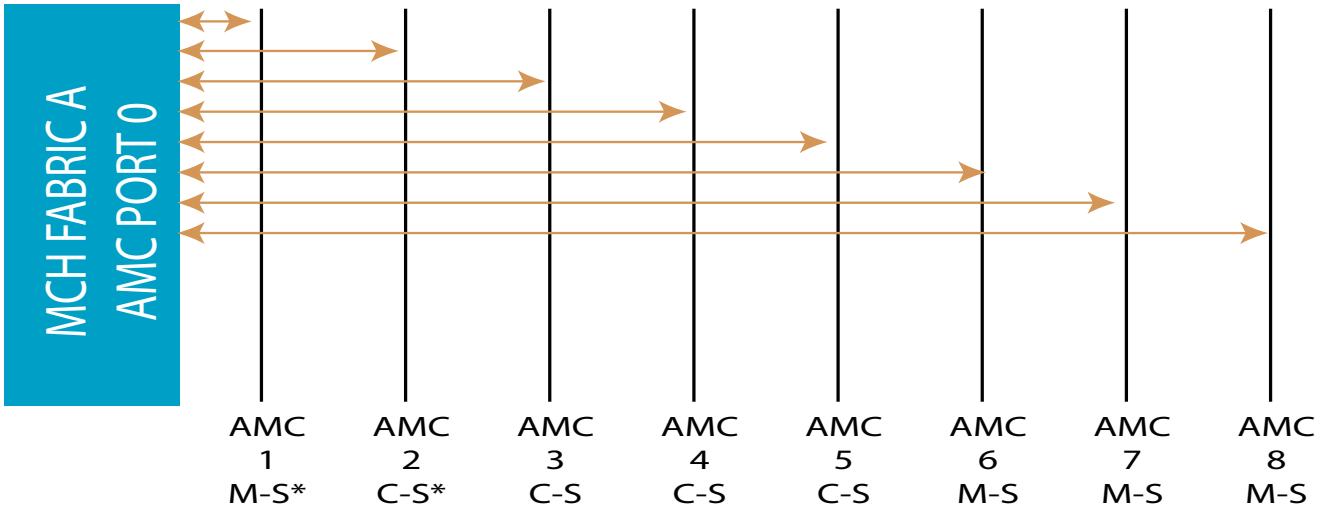
The I2C bus from each AMC is routed radially to the MCH.



*M-S (Mid-Size), C-S (Compact-Size)

FIGURE 1. VT870 Topology for AMC I2C Bus

Ports 0 and 1

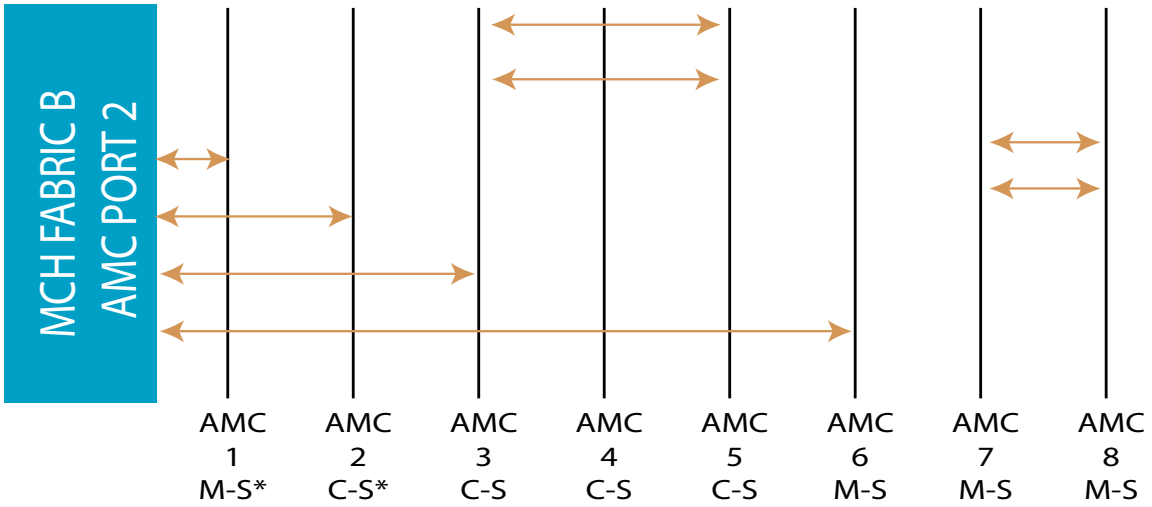


*M-S (Mid-Size), C-S (Compact-Size)

FIGURE 2. VT870 Topology for AMC Ports 0

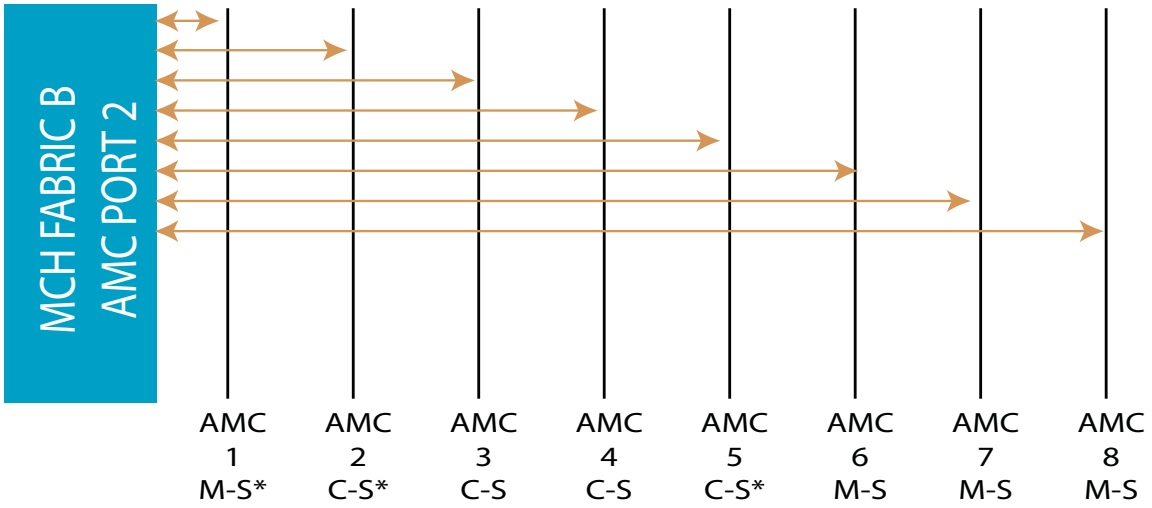
Ports 2 and 3

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



*M-S (Mid-Size), C-S (Compact-Size)

Topology for Ports 2 to MCH (ordering option)



*M-S (Mid-Size), C-S (Compact-Size)

FIGURE 3. VT870 Topology for AMC Ports 2 and 3

Ports 4-7

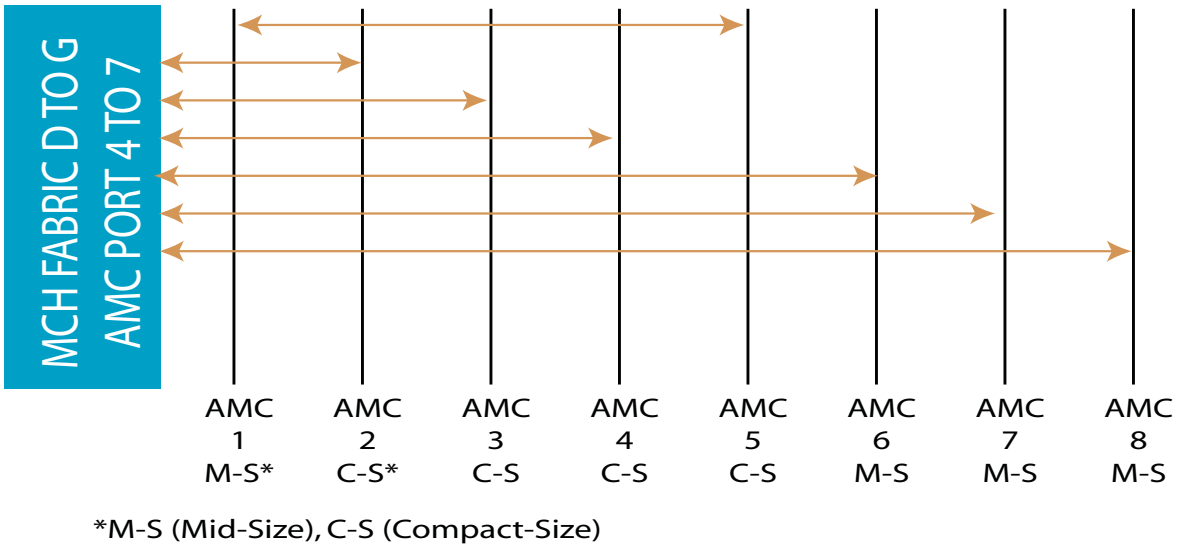


FIGURE 4. VT870 Topology for AMC Ports 4-7 with direct connect across two slots

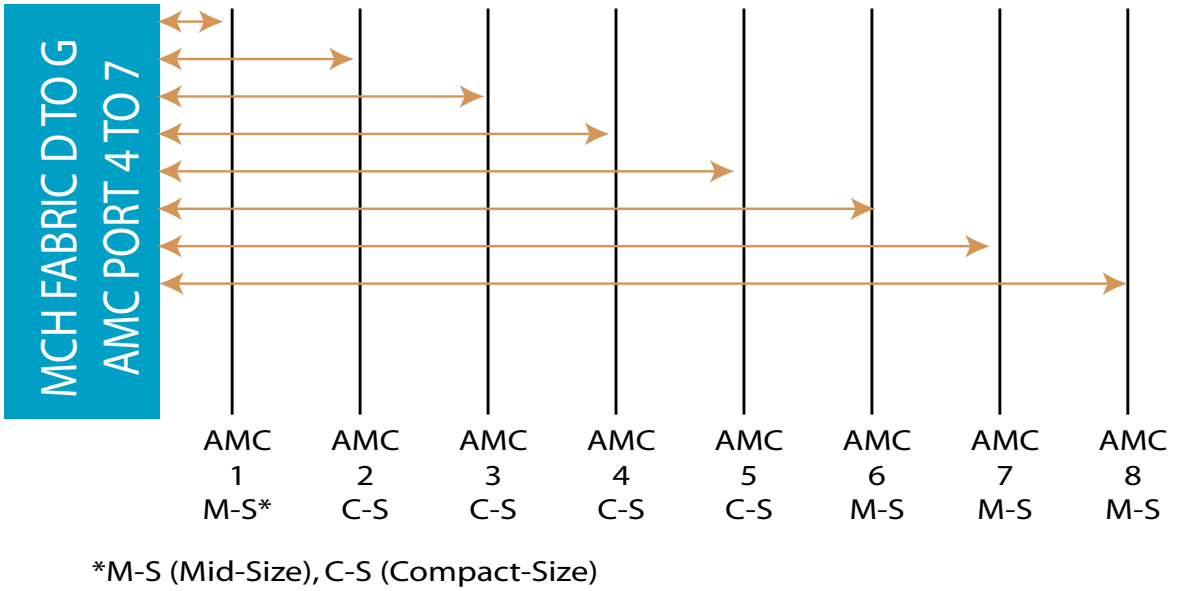


FIGURE 5. VT870 Topology for AMC Ports 4-7

Clock Options

The µTCA specifies CLK3 for possible use as Fabric clock. VT870 routes CLK3 to each of the AMC slots as Fabric clock.

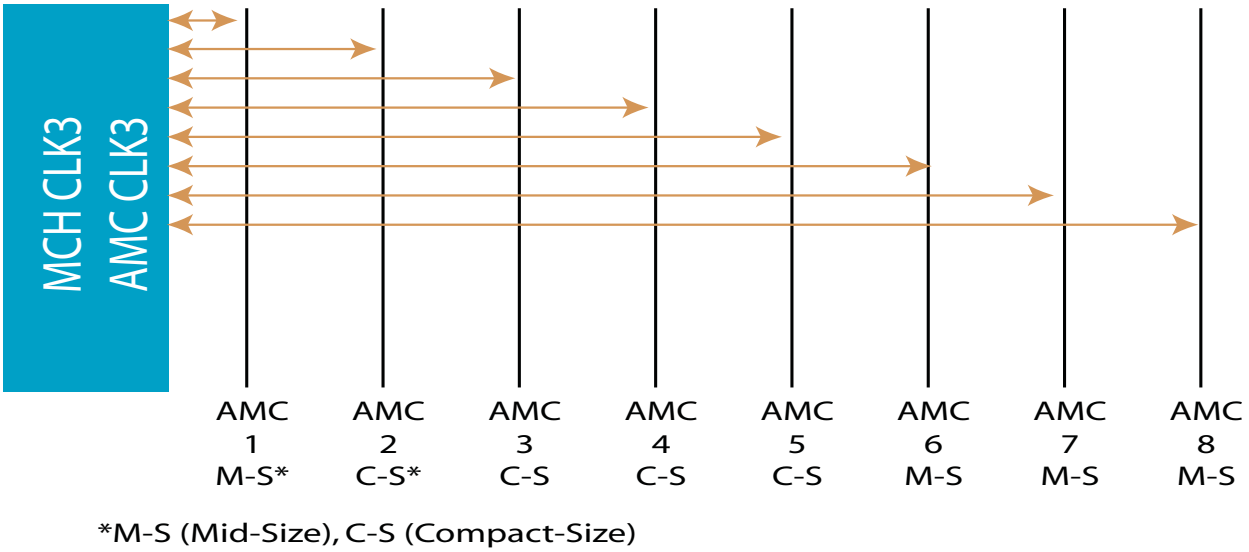


FIGURE 6. VT870 CLK3 can run as Fabric Clock (i.e. PCIe clock)

Power supply

The VT870 has an option for a conduction cool Power Module (PM). The input voltage depends on the PM. If utilizing VadaTech UTC011 power module the input voltage is from 10V to 36V.

Cooling and Temp Sensors

The VT870 has a System Management Module (SFM). The SFM allows, if desired for high altitude, to have external Fan to cool the Chassis. The SFM monitors the external FAN by reading it's TACH input. It has temp sensor on board to monitor the internal temp of the chassis.

Telco Alarm

The VT870 provides Telco Alarm functionality to alert about any anomaly within the chassis. Only the Minor, Major and Critical Alarm LED are routed to the front of the chassis for notification.

FRU Information and Carrier Locator

The VT870 has FRU information and Carrier Locator. 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 µTCA chassis in the market, the VT870 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 UTC003), Power Module (UTC011), etc. Please consult the appropriate data sheet to obtain more information.

VadaTech can integrate any of its over 70 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

VT870 - AB0 - 000 - 00J*

A = Ports 4-7

1 = All ports to MCH
2 = Direct connection per Fig. 4

B = Ports 2 and 3

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

J = Conformal Coating

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

*VadaTech has an MCH (UTC003 and, Power Module (UTC011) as well as over 70 AMC modules. Contact your sales representative for an end-to-end integrated solution.

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