

## AMC540 –Xilinx Virtex-7 FPGA AMC with Dual DSP

Virtex-7 FPGA, Dual DSP

**Photo Coming Soon**

### KEY FEATURES

- Xilinx Virtex-7 XC7VX690T FPGA
- DDR-3 Memory (3 banks of 64-bit, 6GB Total)
- Dual DSP (optionally TMS320C6670 or TMS320C6678)
- 8GB of DDR-3 per CPU with ECC
- 24TX/RX Fibre via MTP/MPO Connector
- PCIe (AMC.1) and SRIO (AMC.4) on ports 4-7 and 8-11 per FPGA load
- GbE on ports 0,1 (AMC.2)
- Ports 12-15 and 17-20 routed to FPGA
- Layer two managed switch

### Benefits of Choosing VadaTech

- FPGA/DSP combination provides dense signal processing
- Hyperlink provides tight coupling between DSP processors
- Design utilizes proven VadaTech subcomponents and engineering techniques
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader

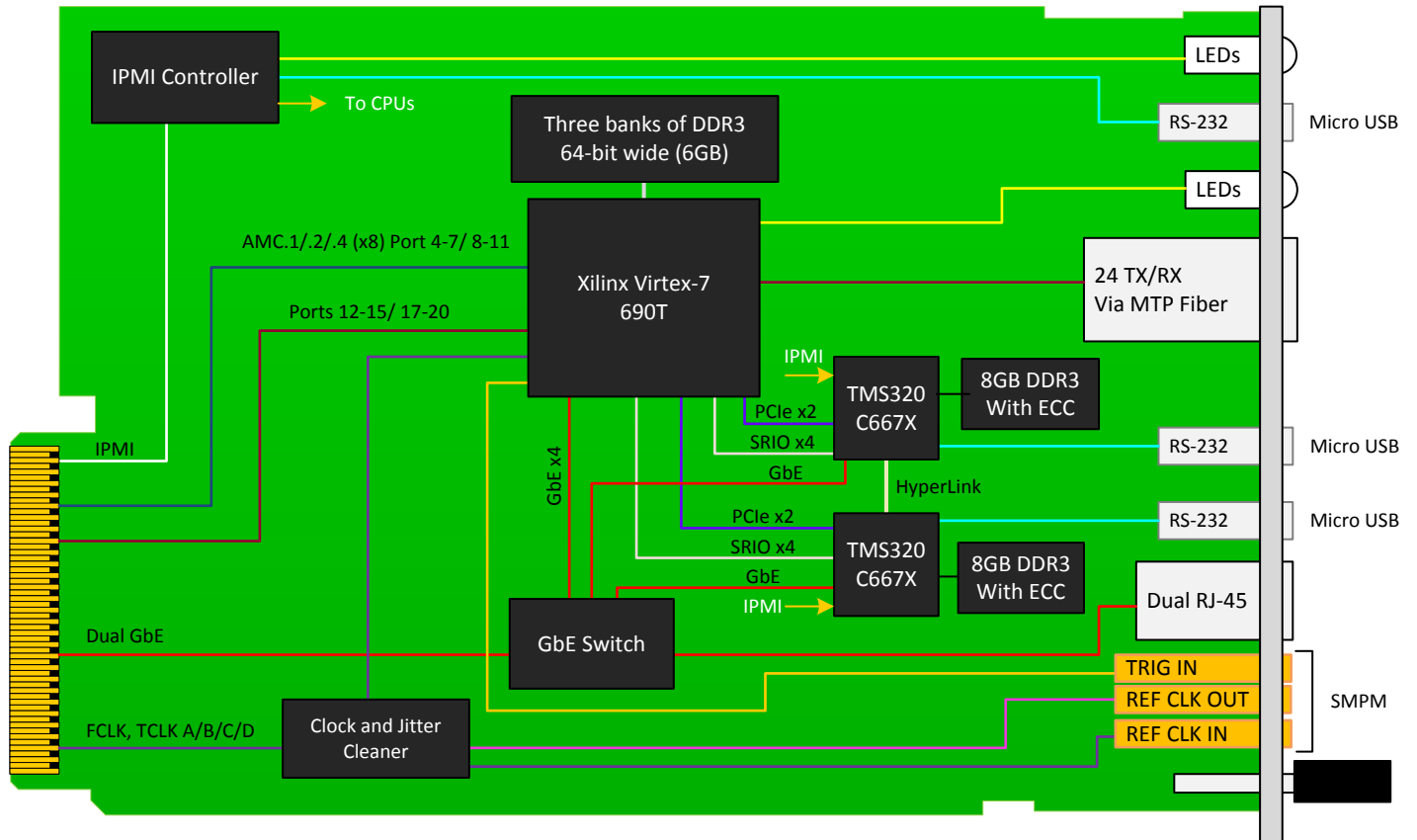
The AMC540 is based on Xilinx Virtex-7 XC7VX690T FPGA. The FPGA interfaces directly to the AMC connector, allowing the core to interface to the host with multiple protocols such as 10GbE, PCIe or SRIO. The FPGA has three external banks of 64-bit DDR3 memory.

The AMC540 has dual multicore Digital Signal Processors (DSP) optional TMS320C6670 or TMS320C6678. The DSPs are routed to the FPGA via PCIe x2, and SRIO x4. The DSP's are also connected via dual GbE to the on board managed switch, allowing for flexible signal processing applications.

The module routes GbE on ports 0 and 1 per AMC.2, PCIe Gen3/SRIO/10GbE dual x4 or single x8 on ports 4-11 per AMC.1/ AMC.2/ AMC.4 specifications. Ports 12-15 and 17-20 are also routed to the FPGA.

AMC540 has on board managed Layer two switch which interconnect the GbE via the front, DSP, FPGA and rear (ports 0/1). The on-board, re-configurable FPGA interfaces to the AMC FCLKA and TCLKA-D via a clock and jitter cleaner. The module also has Ref CLK IN/OUT and Trig IN to the front.

## BLOCK DIAGRAM



## SPECIFICATIONS

Architecture		
Physical	Dimensions	Double module, mid-size with full-size option
		Width 5.85" (148.5 mm)
		Depth 7.11" (180.6 mm)
Type	FPGA AMC	Xilinx Virtex-7 XC7VX690T with three banks of DDR3 (64-bit)
Standards		
AMC	Type	AMC.0, AMC.1, AMC.2 and AMC.4
Module Management	IPMI	IPMI Version 2.0
PCIe	Lanes	x4 or x8 (ports 4-11), additional ports on 12-15 / 17-20
XAUI/SRIO	Lanes	Dual x4 (ports 4-11), additional ports on 12-15 / 17-20
40GbE	Lanes	Dual x4 (ports 4-11), additional ports on 12-15 / 17-20
Configuration		
Power	AMC540	55 W (application specific)
Environmental	Temperature	Operating Temperature: -5° to 55° C
		Storage Temperature: -40° to +85° C
	Vibration	1G, 5 to 500 Hz on each axis
	Shock	30Gs each axis
	Relative Humidity	5 to 95 percent, non-condensing
Front Panel	Interface Connectors	Dual GbE via RJ-45
		24TX/RX High speed SERDES via MTP/MPO style fiber
		Trig In via SMPM
		Ref Clock in/out via SMPM
		IPMI via micro USB
	LEDs	IPMI Management Control
		Activity/Status LEDs
	Mechanical	Hot Swap Ejector Handle
Software Support	Operating Systems	Independent
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	
Warranty	Two (2) years	

### INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA and  $\mu$ TCA 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.

### 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.

## ORDERING OPTIONS

### AMC540 – A0C – DE0 – G0J

**A = DDR3 Memory**

0 = Per CPU 8GB, FPGA 6GB

**B = DSP option**

0 = TMS320C6670

1 = TMS320C6678

**C = Front Panel**

1 = Reserved

2 = Mid-size

3 = Full-size

4 = Reserved

5 = Mid-size, MTCA.1 (captive screw)

6 = Full-size, MTCA.1 (captive screw)

**D = PCIe Option**

0 = None

1 = PCIe on ports 4-7

2 = PCIe on ports 8-11

3 = PCIe on ports 4-11

**E = Ports 12-15/17-20 to FPGA**

0 = No

1 = Yes

**G = Fiber Optic MTP/MPO**

0 = None

1 = 12TX/RX

2 = 24TX/RX

**J = Temperature Range and Coating**

0 = Commercial (-5° to +55° C), No coating

1 = Commercial (-5° to +55° C), Humiseal 1A33

Polyurethane

2 = Commercial (-5° to +55° C), Humiseal 1B31 Acrylic

3 = Industrial (-20° to +70° C), No coating

4 = Industrial (-20° to +70° C), Humiseal 1A33

Polyurethane

5 = Industrial (-20° to +70° C), Humiseal 1B31 Acrylic

6 = Extended (-40° to +85° C), Humiseal 1A33

Polyurethane

7 = Extended (-40° to +85° C), Humiseal 1B31 Acrylic

## RELATED PRODUCTS



**VT815**  
9U MTCA.4 Chassis



**UTC004**  
3<sup>rd</sup> Gen MCH



**AMC725**  
Xeon E3-1125 V2 Processor AMC

## CONTACT US

**VadaTech Corporate Office**

198 N. Gibson Rd.  
Henderson, NV 89014  
Email: [info@vadatech.com](mailto:info@vadatech.com)  
Telephone: +1 702 896-3337  
Fax: +1 702 896-0332

**Asia Pacific Sales Office**

7 Floor, No. 2, Wenhui Street, Neihu District,  
Taipei 114, Taiwan  
Email: [info@vadatech.com](mailto:info@vadatech.com)  
Telephone: +886-2-2627-7655  
Fax: +886-2-2627-7792

**VadaTech European Sales Office**

VadaTech House, Bulls Copse Road,  
Southampton, SO40 9LR  
Email: [info@vadatech.com](mailto:info@vadatech.com)  
Telephone: +44 2380 016403