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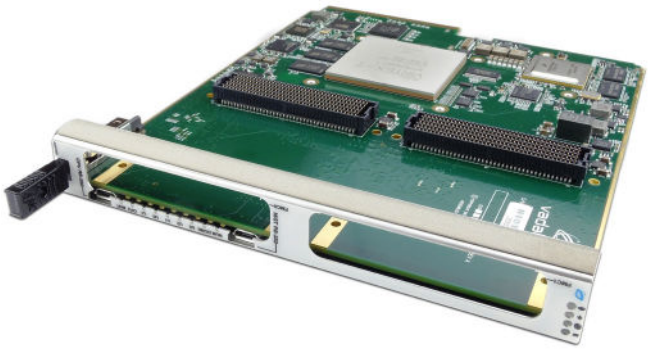
THE POWER OF VISION

AMC FPGA Carrier for Dual FMC with Virtex-7 – AMC525

AMC FPGA Carrier, Virtex-7



KEY FEATURES

- AMC FPGA carrier for Dual FPGA Mezzanine Card (FMC) per VITA-57
- Xilinx Virtex-7 690T FPGA in FFG-1761 package
- Double module, mid-size (full-size optional)
- AMC Ports 4-11 are routed to FPGA per AMC.1, AMC.2 and AMC.4 (protocols such as PCIe, SRIO, XAUI, etc. are FPGA programmable)
- AMC FCLKA, TCLKA, TCLKB, TCLKC and TCLKD are routed
- Clock jitter cleaner
- Option for on-board Freescale QorIQ PPC2040
- Serial over LAN (SOL) with hardware Random Number Generator (RNG)
- JTAG port
- IPMI 2.0 compliant

Benefits of Choosing VadaTech

- Dual FMC sites on a double module AMC
- Xilinx Virtex-7 690T FPGA in FFG-1761 package
- Bank of 64-bit DDR3 memory allows larger buffer sizes while processing and queuing data to the host
- Bank of 16-bit DDR3 memory (i.e. MicroBlaze memory option)
- 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 AMC525 is an AMC FPGA Carrier with dual FMC (VITA 57) interfaces. The AMC525 is compliant to the AMC.1, AMC.2 and/or AMC.4 specification. The unit has an on-board, re-configurable FPGA which interfaces directly to the AMC FCLKA, TCLKA-D, FMC DP0-9 and all FMC LA/HA/HB pairs. The FPGA has interface to DDR3 memory channels (64-bit wide and 16-bit wide). This allows for large buffer sizes to be stored during processing as well as for queuing the data to the host.

The AMC525 has Dual FMC sites per VITA-57 allowing the versatility of various FMC modules to be implemented.

The on-board quad core P2040 can run at 1.2 GHz with 1 GB of DDR3, 128 MB of Boot Flash, and a 32 GB SD Card. The PPC has 4x PCIe interface to the FPGA in addition to its local bus. The PPC has its dual GbE routed to ports 0 and 1 of the AMC via a mux to allow FPGA routing as well.

The AMC525 has Serial over LAN (SOL) per IPMI specification. It has a hardware RNG for secure session.

VadaTech can modify this product to meet special customer requirements. Contact us to discuss your application.

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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.

BLOCK DIAGRAM

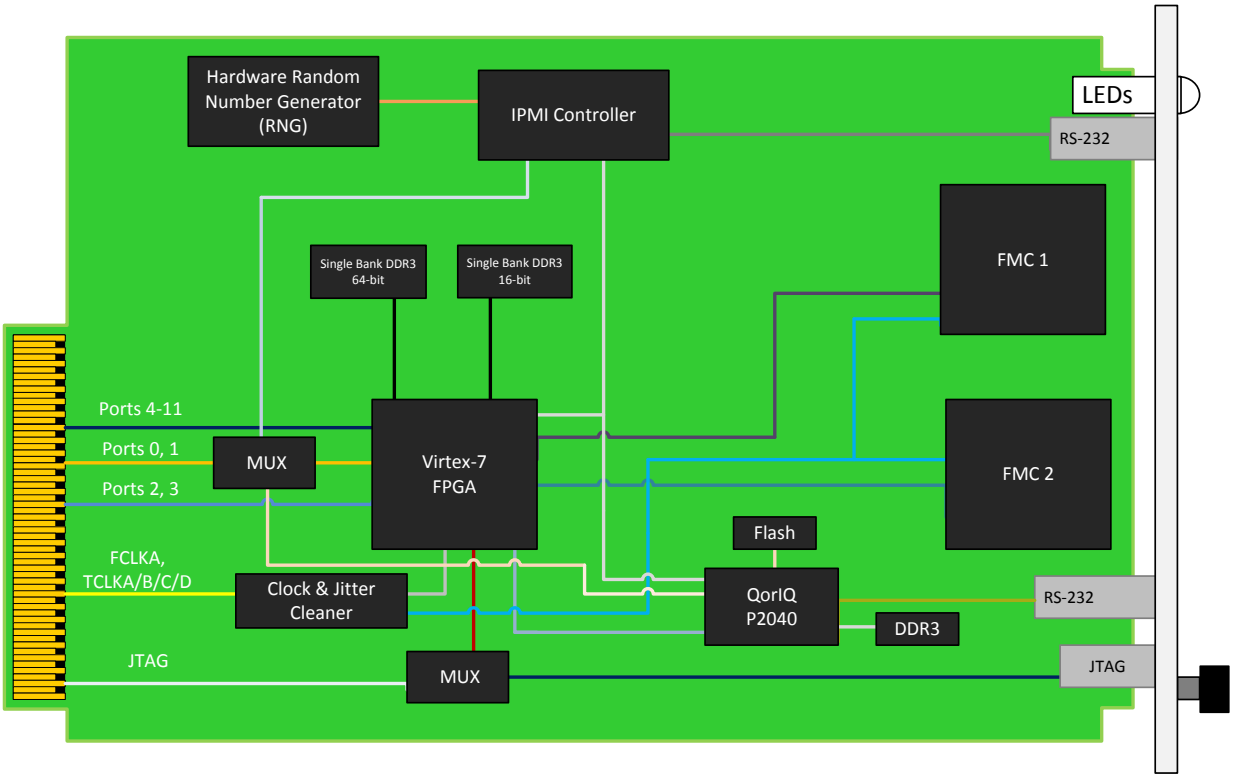

Figure 1: AMC525 Block Diagram

SPECIFICATIONS

Architecture		
Physical	Dimensions	Double module, mid or full-size
		Width: 5.85" (148.5 mm)
		Depth 7.11" (180.6 mm)
Type	AMC FPGA Carrier	Xilinx Virtex-7 device, optional on-board CPU
		One bank of DDR3 (64-bit)
		Dual FMC slots
Standards		
AMC	Type	AMC.1, AMC.2, and AMC.4 (FPGA programmable)
Module Management	IPMI	IPMI version 2.0
PCIe	Lanes	Dual x4 via FPGA to AMC
SRIO/Aurora	Lanes	Dual x4 via FPGA to AMC
Ethernet	10 GbE and GbE	Dual 10 GbE via FPGA and Dual 1000-BaseBX from PPC
Configuration		
Power	AMC525	Carrier is ~20W (without mezzanine) application specific
Environmental	Temperature	Operating Temperature: -5° to 55°C (air flow > 400LFM) industrial and military versions also available (See environmental spec sheet))
		Storage Temperature: –40° to +85°C
	Vibration	Operating 9.8 m/s^2 (1.0 G), 5 to 500Hz
	Shock	30Gs on each axis
	Relative Humidity	5 to 95 per cent, non-condensing
Front Panel	Interface Connectors	Dual front panel FMC, MGT RS-232, CPU RS-232, JTAG
	LEDs	IPMI management control
		4 user defined LEDs, 5 general status LEDs
	Mechanical	Hot swap ejector handle
Software Support	Operating System	Linux, VxWorks and Windows
Conformal Coating		Humiseal 1A33 Polyurethane (Optional)
		Humiseal 1B31 Acrylic (Optional)
Other		
MTFB	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	
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

AMC525 – ABC – 0EF – G0J

A = FPGA DDR3 Memory
0 = 2 GB
1 = Reserved

B = QorIQ CPU Sub-system
0 = None (FPGA loaded via flash)
1 = P2040

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)

*Common configuration
**Edge of module for conduction-cooled boards

E = FPGA Speed
1 = Reserved
2 = High*
3 = Highest

F = PCIe Option
0 = No PCIe
1 = PCIe on ports 4 – 7
2 = PCIe on ports 8 – 11
3 = PCIe on ports 4 – 11

G = Clock Holdover Stability
0 = Standard (XO)
1 = Stratum-3 (TCXO)

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 = Military (–40° to +85° C), Humiseal 1A33 Polyurethane*
7 = Military (–40° to +85° C), Humiseal 1B31 Acrylic*

RELATED PRODUCTS

VT899 Cube Chassis

FMC223 High Speed FMC for DAC

FMC108 Dual QSFP+ FMC

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