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THE POWER OF VISION

AMC Kintex-7 FPGA Carrier for FMC – AMC517

AMC Kintex-7 FPGA Carrier

KEY FEATURES

- AMC FPGA carrier for FMC per VITA-57
- Xilinx Kintex-7 410T FPGA in FFG-900 package
- AMC Ports 4-7 and 8-11 are routed to FPGA per AMC.1, AMC.2 and AMC.4 (protocols such as PCIe, SRIO, XAUI, etc. are FPGA programmable)
- Option for on-board Freescale QorIQ PPC2040 (Quad Core Processor)
- FPGA can load via Flash or via the P2040
- Clock jitter cleaner
- IPMI 2.0 compliant

AdvancedMC™

Benefits of Choosing VadaTech

- Distributed processing with local P2040 processor provides more reliability, performance and eliminates a potential single-point-of-failure in the system
- The cross-bar switch LVDS provides superior clocking results
- Design utilizes proven VadaTech subcomponents and engineering techniques
- 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 AMC517 is an AMC FPGA Carrier for FMC per VITA 57. The AMC517 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 DP0-7 and all FMC LA/HA/HB pairs. The FPGA has interfaces to two 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. With a FMC site per VITA 57, each AMC517 in the system has a whole array of mezzanine options available in the marketplace.

The on-board quad-core PPC can runs at 1.2 GHz with 2GB of DDR3, 128MB of Boot Flash, and a 32GB SD Card. The PPC has dual 1000Base-X Ethernet interfaces to the FPGA in addition to its local bus. The PPC and FPGA route GbE to the port 0 and 1 via a mux selection.

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

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REFERENCE DESIGN

VadaTech provides a reference design implementation for our FPGAs complete with VHDL source code and configuration binaries. The reference design focuses on the I/O ring of the FPGA to demonstrate low-level operation of the interconnections between the FPGA and other circuits on the board and/or backplane. It is geared to prove out the hardware for engineering/factory diagnostics and customer acceptance of the hardware, but it does not strive to implement a particular end application.

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

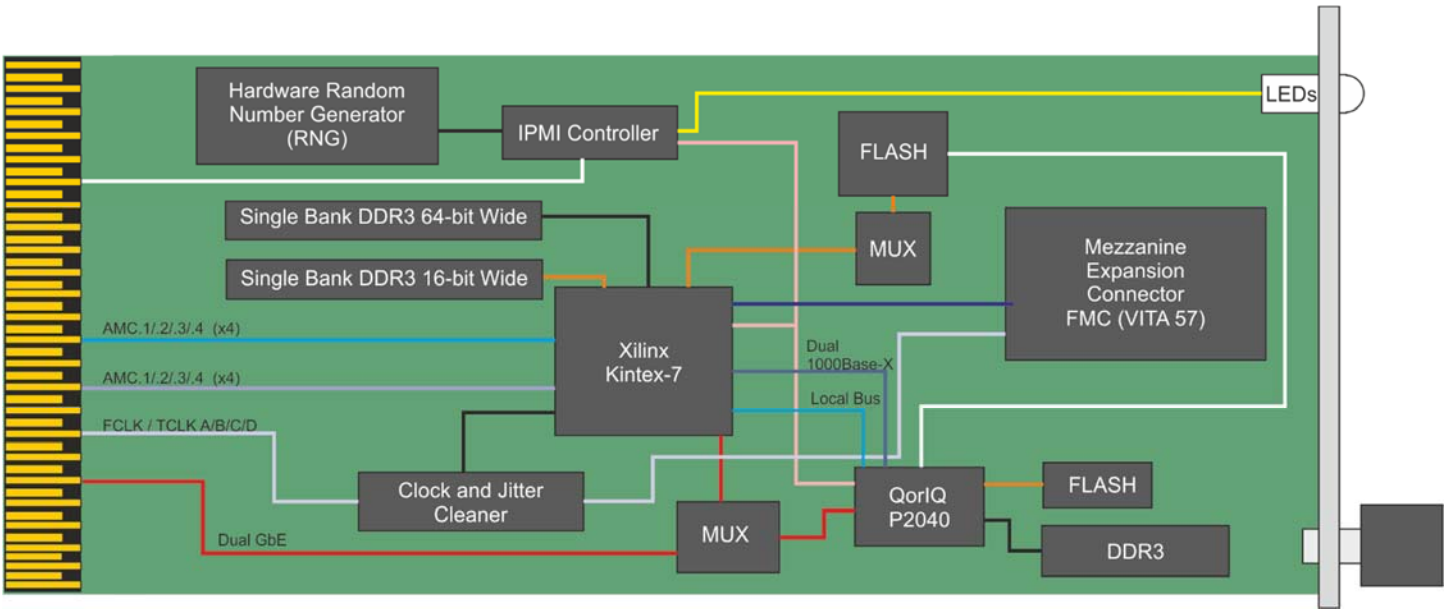

Figure 1: AMC517 Functional Block Diagram

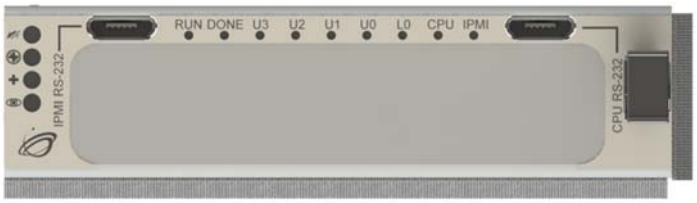

Figure 2: Front Panel

SPECIFICATIONS

Architecture		
Physical	Dimensions	Single module, mid-size
		Width: 2.89" (73.5 mm)
		Depth 7.11" (180.6 mm)
Type	AMC FPGA Carrier	Xilinx FPGA Kintex-7 Device
		Optional on-board CPU
		Single FMC slot
		Two banks of DDR3 (64-bit and 16-bit)
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	Lanes	Dual x4 via FPGA to AMC
Ethernet	10 GbE and GbE	Dual 10GbE via FPGA and Dual 1000-BaseBX from PPC
Configuration		
Power	AMC517	Carrier is ~16W (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	Front panel FMC
	LEDs	IPMI management control
		4 user defined 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

AMC517 – ABC – DEF – GHJ

A = FPGA DDR3 Memory
0 = None
1 = Reserved
2 = 2GB + 512MB

B = QorIQ CPU Subsystem
0 = None (FPGA loaded via Flash)
1 = P2040

C = Front Panel Size
1 = Reserved
2 = Mid-size
3 = Full-size

D = FPGA
0 = Reserved
1 = Reserved
2 = XC7K410T

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

F = PCIe Option
0 = None
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)

H = Temperature Range
0 = Commercial (–5° to +55° C)
1 = Industrial (–20° to +70° C)
2 = Military (–40° to +85° C)*

J = Conformal Coating
0 = None
1 = Humiseal 1A33 Polyurethane
2 = Humiseal 1B31 Acrylic

*Edge of module for conduction-cooled boards
** Minimum number of unit buy is required for this option

COMMON CONFIGURATIONS

AMC517-212-220-000

RELATED PRODUCTS

VT899 Cube Chassis

FMC223 High Speed FMC for DAC

UTC020 1000W Power Module

CONTACT US

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