

## AMC FPGA Carrier for FMC, Virtex-6 – AMC514

AMC FPGA Carrier, Virtex-6



**AdvancedMC™**

### KEY FEATURES

- AMC FPGA carrier for FPGA Mezzanine Card (FMC) per VITA 57
- AMC Ports 2-3 and 4-11 are routed to FPGA (protocols such as PCIe, SRIO, XAUI, etc. are FPGA programmable)
- Xilinx Virtex-6 FPGA in FF1759 package
- AMC FCLKA, TCLKA, TCLKB, TCLKC and TCLKD are routed
- Onboard PLL for buffering/multiplying and jitter cleaner
- Option for up to 4 GB of DDR3 memory
- Option for onboard Freescale QorIQ PPC1020 with DDR3
- RoHS compliant

### Benefits of Choosing VadaTech

- Xilinx Virtex-6 in FF1759 package
- Distributed processing with local P1020 processor provides more reliability, performance and eliminates a potential single-point-of-failure in the system
- 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 AMC514 is an AMC FPGA Carrier with an FMC (VITA 57) interface. The AMC514 is compliant to AMC.1, AMC.2 and/or AMC.4 specifications. The unit has an on-board re-configurable FPGA which interfaces directly with AMC Ports 2-3, 4-11, FCLKA, TCLKA, TCLKB, TCLKC, and TCLKD. The FPGA has interface to four banks of DDR3 memory (32-bit wide). This allows for large buffer sizes to be stored during processing as well as for queuing the data to the host.

The AMC514 has a single FMC connector per VITA 57. This allows having a single Carrier with multiple-different FMC modules in the system.

The onboard PPC can run at 800 MHz with 512 MB of DDR3, 8 MB of boot Flash and 128 MB of user Flash. The PPC has an x4 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.

This VadaTech product has featured in a compact [SIG-INT](#) platform solution designed for wideband signal interception, monitoring and direction finding.

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

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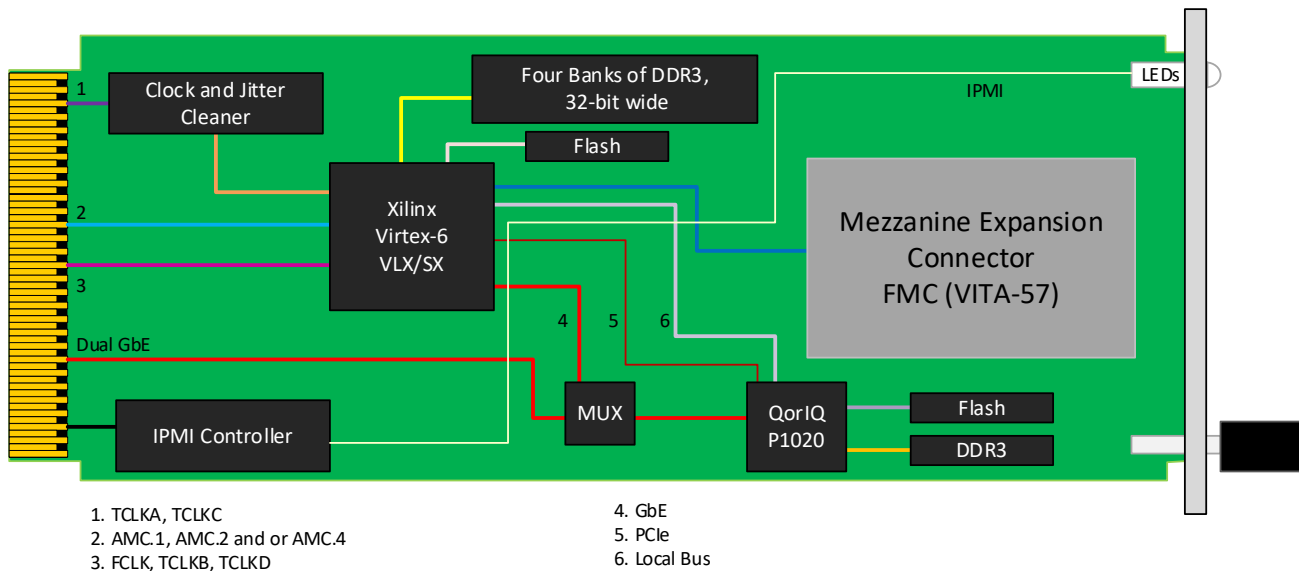
## REFERENCE DESIGN

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.

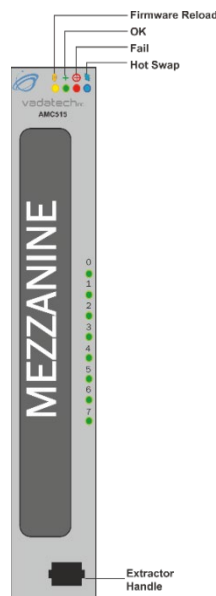
## INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA and MTCA 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



## FRONT PANEL



## SPECIFICATIONS

Architecture		
Physical	Dimensions	Single module, full-size
		Width: 2.89" (73.5 mm)
		Depth 7.11" (180.6 mm)
Type	AMC FPGA Carrier	Xilinx Virtex-6 device with optional onboard CPU
		Four banks of DDR3
		Single FMC slot
		PLL multiplier/divider with jitter cleaner
Standards		
AMC	Type	AMC.1, AMC.2, and AMC.4 (FPGA programmable)
Module Management	IPMI	IPMI v2.0
PCIe	Lanes	x4 or x8
SRIO/Aurora	Lanes	Dual x4
XAUI	Lanes	Dual Port XAUI
Ethernet	GbE	Dual 1000-BaseBX from PPC or FPGA
Configuration		
Power	AMC514	Carrier is ~40W (without mezzanine) application specific
Environmental	Temperature	Operating Temperature: -5° to 55°C (air flow > 400LFM) industrial and military versions also available (See <a href="#">environmental spec sheet</a> )
		Storage Temperature: -40° to +85°C
	Vibration	Operating 9.8 m/s <sup>2</sup> (1.0 G), 5 to 500 Hz
	Shock	30Gs on each axis
Front Panel	Relative Humidity	5 to 95% non-condensing
	Interface Connectors	Front panel FMC
	LEDs	IPMI management control 8 user defined LEDs
	Mechanical	Hot-swap ejector handle
Software Support	Operating System	Linux, VxWorks and Windows
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 ISO9001:2015 and AS9100D standards	
Warranty	Two (2) years, see <a href="#">VadaTech Terms and Conditions</a>	
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	

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## ORDERING OPTIONS

### AMC514 – ABC – DEF – OHJ

#### A = DDR3 Memory

- 0 = No Memory
- 1 = 512 MB per bank (2 GB total)
- 2 = 1 GB per bank (4 GB total)

#### B = QorIQ CPU

- 0 = None (FPGA loaded via flash)
- 1 = Reserved
- 2 = Reserved
- 3 = Reserved
- 4 = 1020 @ 800 MHz (FPGA loaded by CPU)

#### C = Front Panel Size

- 1 = Reserved
- 2 = Mid-size
- 3 = Full-size

#### D = FPGA

- 1 = Reserved
- 2 = Reserved
- 3 = Reserved
- 4 = XC6VLX240T
- 5 = XC6VLX365T
- 6 = XC6VLX550T
- 7 = XC6VSX475T
- 8 = Reserved

#### E = FPGA Speed

- 1 = Low
- 2 = High

#### F = FPGA PCIe Option

- 0 = No PCIe (Ports 4-11)
- 1 = PCIe on Ports 4-7
- 2 = PCIe on Ports 8-11
- 3 = Reserved

## COMMON CONFIGURATIONS

AMC514-xxx-410-000 AMC514-xxx-420-000 AMC514-xxx-721-000  
AMC514-xxx-411-000 AMC514-xxx-620-000 AMC514-xxx-723-000

#### H = Temperature Range

- 0 = Commercial (–5° to +55°C)
- 1 = Industrial (–20° to +70°C)

#### J = Conformal Coating

- 0 = No coating
- 1 = Humiseal 1A33 Polyurethane
- 2 = Humiseal 1B31 Acrylic

## RELATED PRODUCTS



VT899 Cube Chassis



FMC223 High Speed  
FMC for DAC



UTC020 1000W  
Power Module

## 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