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THE POWER OF VISION

AMC FPGA, Altera EP4S100Gx – AMC531

AMC FPGA, Altera EP4S100Gx

Photo Coming Soon

KEY FEATURES

- FPGA based on the Altera Stratix IV EP4S100Gx in 1517 package
- Single module, mid-size (full-size also available)
- AMC Ports 4-11 are routed to FPGA (protocols such as PCIe, SRIO, XAUI, etc. are FPGA programmable)
- On-board Freescale QorIQ PPC2040 (Quad Core Processor)
- Ports 2 and 3 as SATA to P2040
- Ports 0 and 1 are Muxed with P2040 GbE
- AMC FCLKA, TCLKA, TCLKB, TCLKC and TCLKD are routed
- 2 GB of DDR3 memory to the FPGA
- Option for three banks of QDR-II+ each 18-bit wide
- IPMI 2.0 compliant
- RoHS compliant

AdvancedMC™

Benefits of Choosing VadaTech

- Distributed processing with a local P2040 processor provides more reliability, performance and eliminates a potential single-point-of-failure in the system
- Three banks of QDR-II+ memory allows large buffer sizes and queuing during processing
- 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 AMC531 is an AMC FPGA module based on the Altera Stratix IV EP4S100Gx device, compliant to the AMC.1, AMC.2, AMC.3 and/or AMC.4 specification. The unit has an on-board, re-configurable FPGA which interfaces directly to the AMC Ports 4-11, FCLKA, TCLKA, TCLKB, TCLKC, and TCLKD. The FPGA has an interface to DDR3 memory (64-bit wide) with 2GB capacity and an optional three banks of QDR-II+ (18-bit wide). This allows for large buffer sizes to be stored during processing as well as for queuing the data to the host.

The AMC531 has dual 10GbE routed to the front and interfaces with dual SFP+ cages.

The on-board quad-core PPC runs at 1.2GHz with 2 GB of DDR3 and 128 MB of Boot 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 which is Muxed with the FPGA.

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

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REFERENCE DESIGN

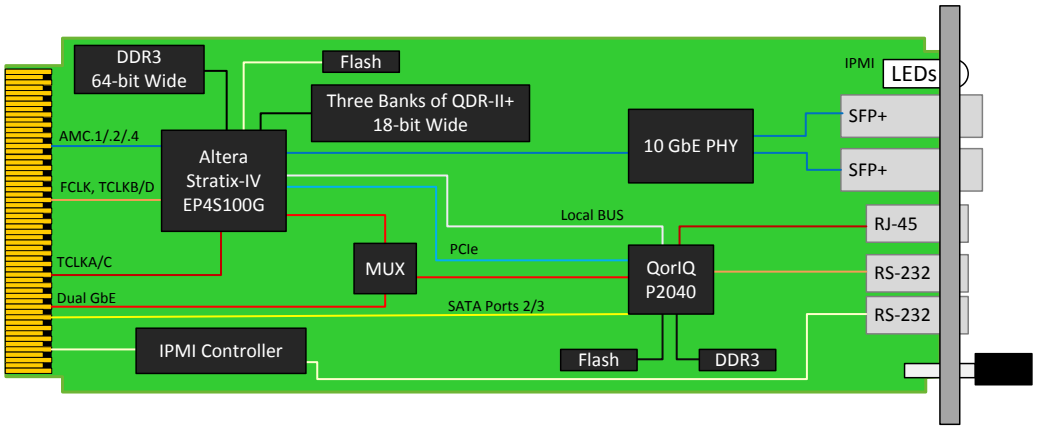
VadaTech provides a reference design implementation for our FPGAs complete with VHDL source code and configuration binaries. The reference design focuses on the I/O ring of the FPGA to demonstrate low-level operation of the interconnections between the FPGA and other circuits on the board and/or backplane. 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: AMC531 Functional Block Diagram



SPECIFICATIONS

Architecture		
Physical	Dimensions	Single module, mid-size (full-size also available)
		Width: 2.89" (73.5 mm)
		Depth 7.11" (180.6 mm)
Type	AMC FPGA Carrier	Altera EP4S100Gx Device
		On-board P2040 CPU
Standards		
AMC	Type	AMC.1, AMC.2, and AMC.4 (FPGA programmable) and AMC.3
Module Management	IPMI	IPMI version 2.0
PCIe	Lanes	x4 or x8
SRIO	Lanes	Dual x4
XAUI	Lanes	Dual port XAUI
Ethernet	GbE	Dual 1000-BaseBX from PPC or FPGA
Configuration		
Power	AMC531	35W (FPGA size and application dependent)
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 (1.0G), 5-500Hz
	Shock	Operating 30Gs each axis
	Relative Humidity	5 to 95 per cent, non-condensing
Front Panel	Interface Connectors	Dual SFP+, CPU RS-232, and RJ-45
	LEDs	IPMI management control
		3 user defined LEDs
	Mechanical	Hot swap ejector handle
Software Support	Operating System	Linux, VxWorks
Conformal Coating		Humiseal 1A33 Polyurethane (Optional)
		Humiseal 1B31 Acrylic (Optional)
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	
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

AMC531 – A0C – DEF – 0HJ

A = FPGA PCIe Option
0 = None
1 = PCIe on ports 4-7
2 = PCIe on ports 8-11
3 = PCIe on ports 4-11

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)

*Edge of module for conduction-cooled boards

D = FPGA
1= EP4S100G2
2= Reserved
3= Reserved
4= EP4S100G5

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

F = QDR-II+ (3 Banks)
0 = None
1 = 4M x 18

H = SFP+ Transceiver for Front Panel
0 = None
1 = 10GBASE-SR
2 = Reserved
3 = 10GBASE-LR
4 = 1Gb LC/SX (850nm)
5 = 1Gb LC/LX (1310nm)
6 = Copper 1000 Mbit
7 = Reserved

J = Temperature Range & 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

UTC020 1000W Power Module

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