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THE POWER OF VISION

AMC536 – FPGA Altera Carrier for FMC, Arria-10™ GX1150

FPGA Arria-10™

AdvancedMC™

KEY FEATURES

- Single module, mid-size AMC (full-size optional)
- Altera Arria-10 GX1150 in F1517 package
- AMC Ports 4-11 are routed to FPGA per AMC.1, AMC.2 and AMC.4 (protocols such as PCIe, SRIO, 10GbE/40GbE, etc. are FPGA programmable)
- AMC Ports 12-15 and 17-20 are routed to the FPGA
- AMC FCLKA, TCLKA, TCLKB, TCLKC and TCLKD are routed
- Clock jitter cleaner
- 16 GB of DDR-4 (2 bank of 64-bits)
- IPMI 2.0 compliant

Benefits of Choosing VadaTech

- Arria-10 FPGA in F1517 package
- Two Bank of 64-bit wide DDR4 memory allows larger buffer sizes while processing and queuing data to the host
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

The AMC536 is based on the Altera Arria-10™ GX1150 FPGA in F1517 package. The AMC536 is compliant to the AMC.1, AMC.2, AMC.3 and/or AMC.4 specification.

The module routes all LA/HA/HB and 10 DP SERDES to the FMC slot.

The on-board, re-configurable FPGA which interfaces directly to the AMC FCLKA and TCLKA-D via a Cross Bar (CBS) MLVDS. The FPGA has interface to two DDR4, 64-bit wide, with 16 GB total memory. This allows for large buffer sizes to be stored during processing as well as for queuing the data to the host.

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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.

BLOCK DIAGRAM

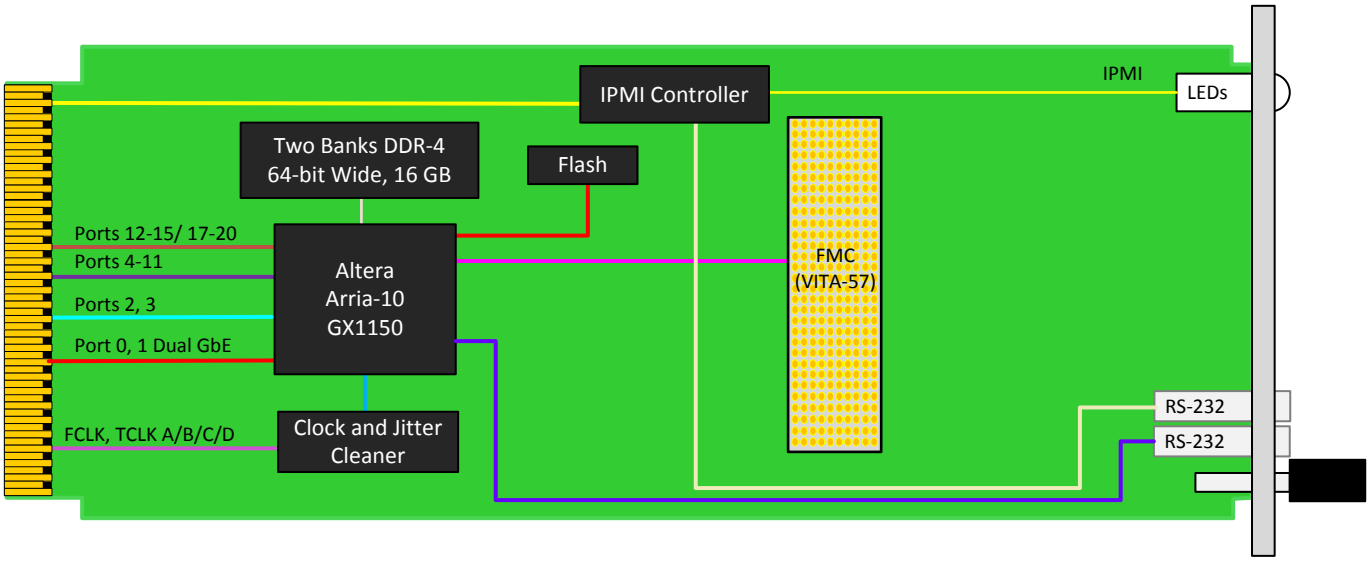

Figure 1: AMC536 Block Diagram

SPECIFICATIONS

Architecture		
Physical	Dimensions	Single module, mid-size (full-size optional)
		Width: 2.89" (73.5 mm)
		Depth 7.11" (180.6 mm)
Type	AMC FPGA	Arria-10™ GX1150 FPGA
		Three bank of DDR4 (64-bit wide)
Standards		
AMC	Type	AMC.1, AMC.2, and AMC.4 (FPGA programmable)
Module Management	IPMI	IPMI version 2.0
PCIe	Lanes	Dual x4 or x8 via FPGA to AMC
SRIO/Aurora	Lanes	Dual x4 via FPGA to AMC
Ethernet	1/10/40GbE	Dual 1/10/40 GbE via FPGA (ports 0-1 and 4-11)
Configuration		
Power	AMC536	~30W (application specific)
Environmental	Temperature	Operating Temperature: -5° to 45°C (55°C for limited time, performance restrictions may apply), 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	MGT RS-232 and CPU RS-232
	LEDs	IPMI management control
		4 user defined LEDs
	Mechanical	Hot swap ejector handle
Software Support	Operating System	Linux
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	

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.

ORDERING OPTIONS

AMC536 – A0C – 0EF – G0J

A = Ports 12-15/17-20
0 = Not routed to FPGA
1 = Routed

C = Front Panel Size
1 = Reserved
2 = Mid-size (4HP)
3 = Full-size (6HP)
5 = Mid-size, MTCA.1 (captive screw)
6 = Full-size, MTCA.1 (captive screw)

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

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

*Edge of module for conduction-cooled boards

RELATED PRODUCTS

VT899 Cube Chassis

FMC223 High Speed FMC for DAC

UTC020 1000W Power Module

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