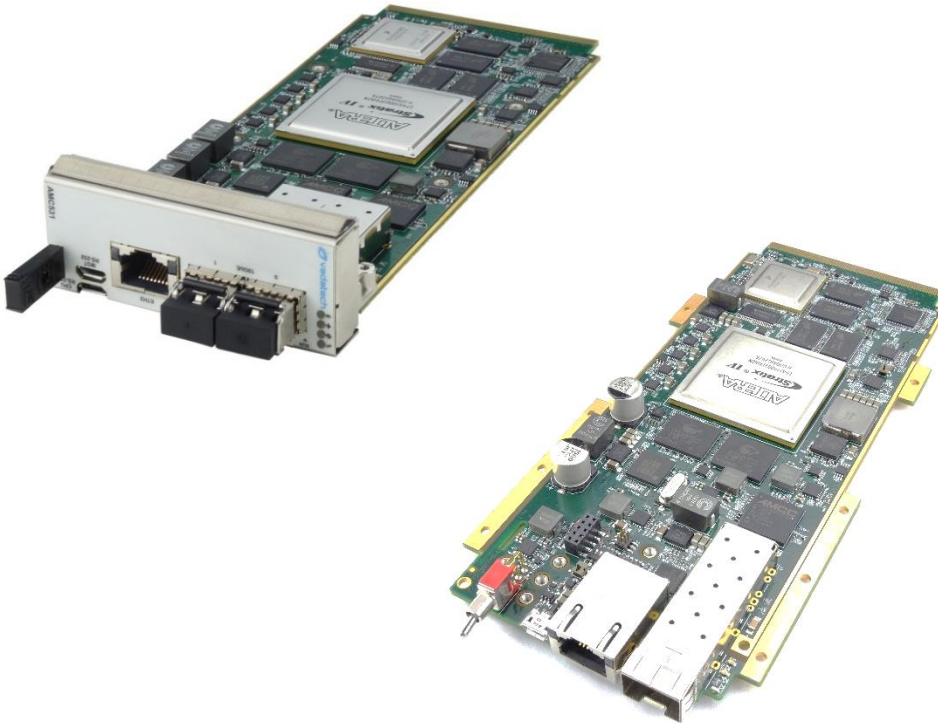


AMC531 / AMC531C – AMC FPGA, Altera EP4S100Gx

AMC FPGA, Altera EP4S100Gx



KEY FEATURES

- Single module, mid-size per AMC.0
- Conduction cooled version available
- Altera Stratix IV EP4S100Gx in 1517 package
- AMC Ports 4-11 are routed to FPGA per AMC.1, AMC.2 and AMC.4 (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
- FCLKA and TCLKA/D routed directly to FPGA
- 2 GB of DDR3 to the FPGA with optional three banks of QDR-II+

AdvancedMC™

Benefits of Choosing VadaTech

- Dual front-panel SFP+ and dual x4 XAUI/PCIe provides balanced architecture
- On-board P2040 host simplifies system bring-up
- Strong mil/aero support
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

The AMC531 provides a Stratix-IV FPGA with two ports of x4 XAUI/PCIe routing to the backplane and dual front-panel SFP+, making it ideal for wireless, wireline, military and broadcast markets.

Local DDR3 and optional QDR-II+ memory provide local buffering, while the on-board P2040 processor provides flexibility in board bring up. The backplane clocks are routed to the FPGA for communication applications, while the P2040 supports off-board storage via port 2/3 SATA connections.

The module is available as AMC531 for air-cooled (MTCA.0 and MTCA.1) and as AMC531C for rugged conduction-cooled (MTCA.2 or MTCA.3) applications.

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.

AMC531

BLOCK DIAGRAM

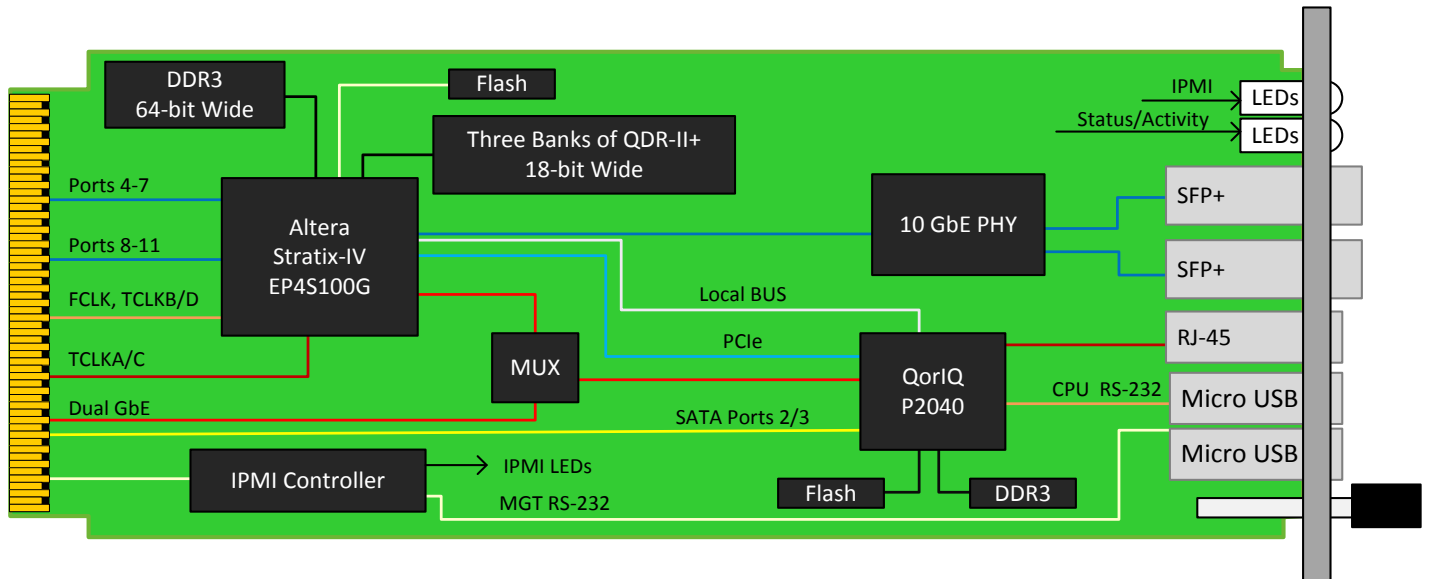


Figure 1: AMC531 Functional Block Diagram

FRONT PANEL

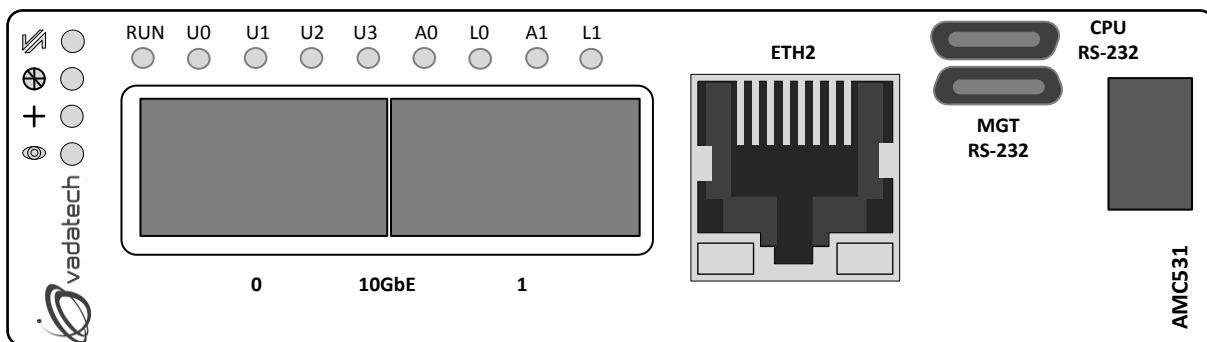
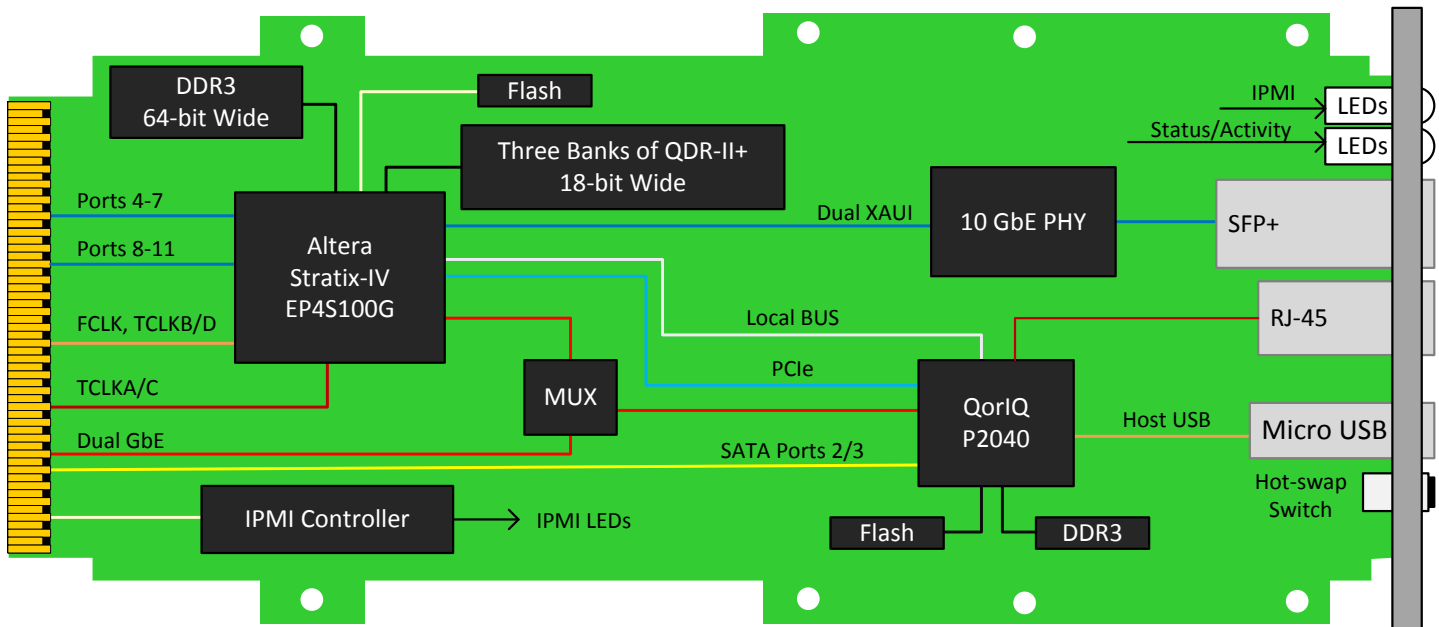


Figure 2: AMC531 Front Panel

AMC531C

BLOCK DIAGRAM



FRONT PANEL

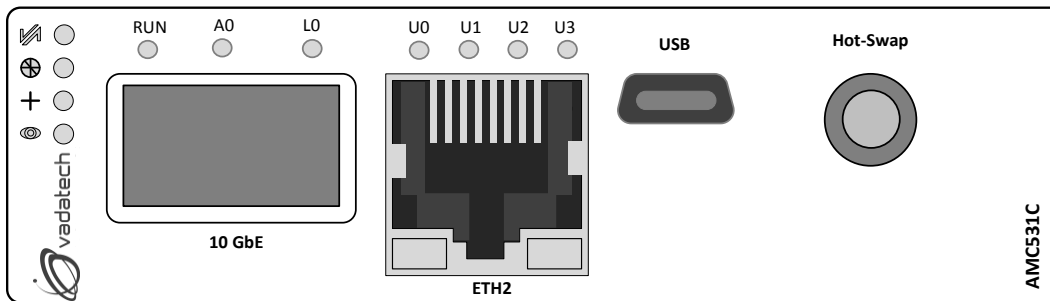


Figure 3: AMC531C Front Panel with Captive Clamshell (Option G = 0)

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	35 W (FPGA size and application dependent)
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
Front Panel	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
	Interface Connectors	Dual SFP+, Host USB, and RJ-45
	LEDs	IPMI management control 3 user defined LEDs
Software Support	Mechanical	Hot swap ejector handle
	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

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA and μ TCA 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.

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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)

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 = 2M x 18

H = SFP+ Transceiver for Front Panel

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

J = Temperature Range & Coating

- 0 = Commercial (–5° to +45° C), no coating
- 1 = Commercial (–5° to +45° C), Humiseal 1A33 Polyurethane
- 2 = Commercial (–5° to +45° 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**

*PCIe Hard IP option is not compatible with the G2 density FPGA

**Chassis platform review required, contact VadaTech sales for details

AMC531C – A0C – DEF – GHJ

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

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 = Reserved
- 1 = 2M x 18

G = Clamshell

- 0 = Captive
- 1 = MTCA.2 (MOQ required)
- 2 = MTCA.3 (MOQ required)

H = SFP+ Transceiver for Front Panel

- 0 = None
- 1 = 10GBASE-SR
- 2 = Reserved
- 3 = 10GBASE-LR
- 4 = 1Gb LC/SX (850 nm)
- 5 = 1Gb LC/LX (1310 nm)
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- 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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