

AMC583

FPGA Carrier with Dual FMC+, Kintex UltraScale™ XCKU115 with P2040, AMC



AMC583

Key Features

- Xilinx UltraScale™ Kintex XCKU115 QorIQ PPC2040
- 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
- 8 GB of DDR4 (two banks)
- Double module, mid-size AMC (full-size optional)
- IPMI 2.0 compliant

Benefits

- Xilinx UltraScale™ XCKU115 FPGA provides strong connectivity and processing power
- Dual FMC+ sites with broad choice of compatible network, A/D, D/A and RF FMCs
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

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The AMC583 provides a very capable I/O processing engine, with a large UltraScale™ FPGA coupled to two FMC+ sites and supported by an onboard quad-core P2040 processor. The FPGA has over 5,500 DSP slices and is supported by 8 GB of DDR4 (32-bits wide over two banks) enabling larger buffer sizes while processing and queuing data to the host. The XCKU115 connects to all FMC+ LA/HA/HB pairs, DP00 to DP23 (HSPCe connection not supported), balancing high-speed I/O with impressive processing power.

The AMC583 is compliant to the AMC.1, AMC.2 and/or AMC.4 specification, and optionally supports direct AMC-to-AMC connections over Ports 12-15 and 17-20.

The quad core P2040 onboard host has x4 PCIe interface to the FPGA in addition to its local bus, and is supported by DDR3, Boot Flash and an SD Card. The user can route Ports 0 and 1 to either the PPC or the FPGA.

The dual FMC+ sites accept FMCs from VadaTech's extensive range of data acquisition, networking and RF units, and other 3rd party VITA 57.4 compliant modules.

The AMC583 has Serial Over LAN (SOL) per IPMI specification, with a hardware RNG for secure session.



Figure 1: AMC583

Block Diagram

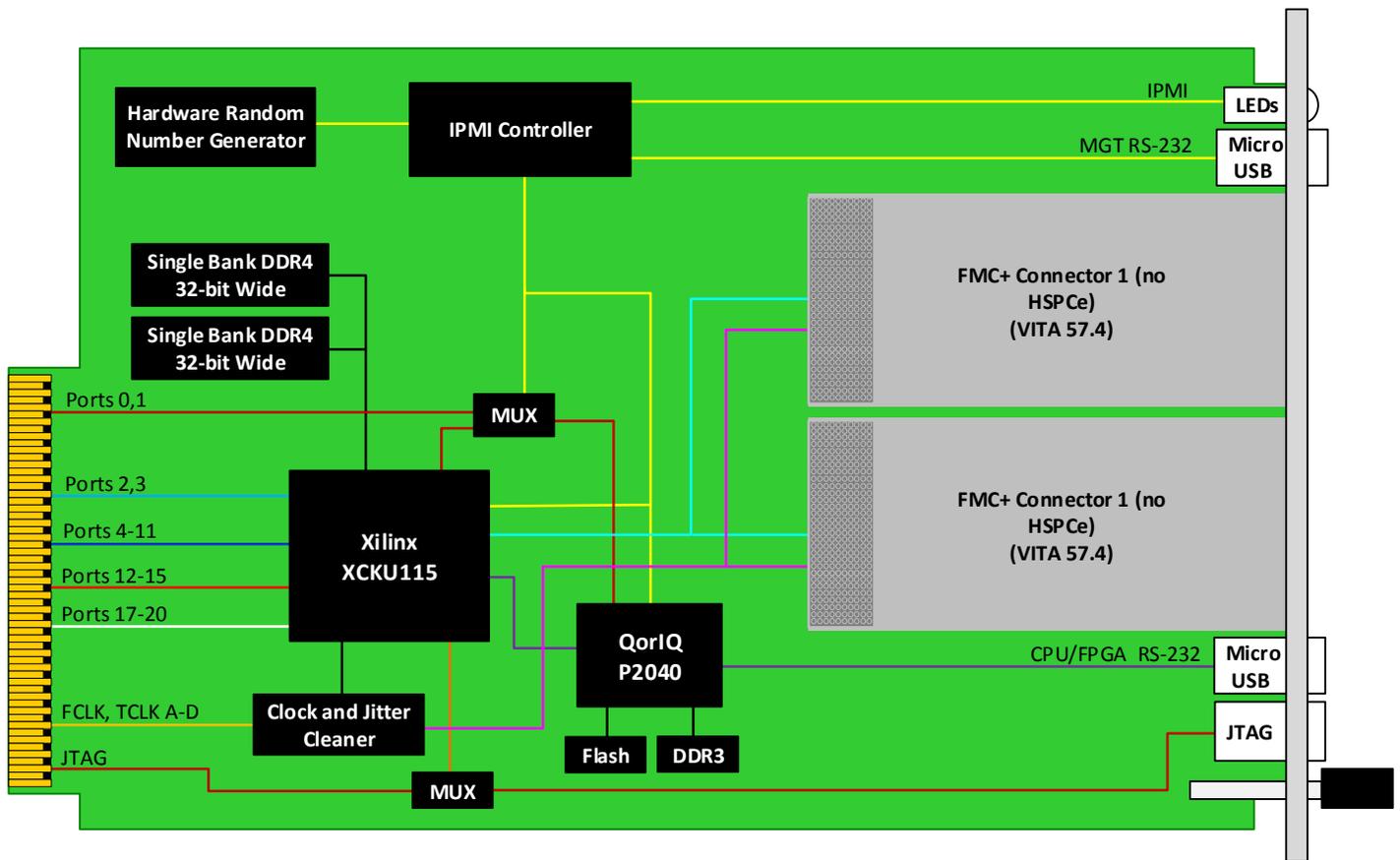


Figure 2: AMC583 Functional Block Diagram

Front panel

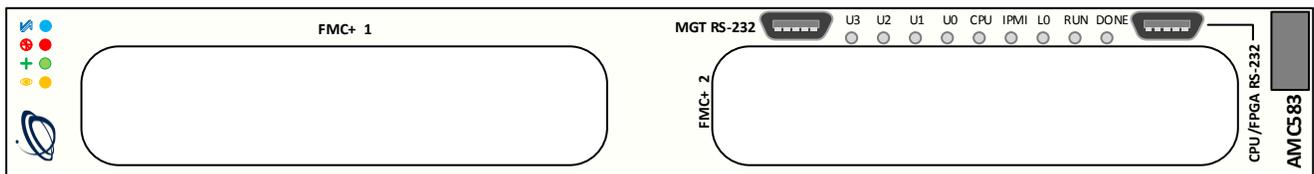


Figure 3: AMC583 Front Panel

Specifications

Architecture		
Physical	Dimensions	Double module, mid-size (full-size optional) Width: 5.85" (148.5 mm) Depth 7.11" (180.6 mm)
Type	AMC FPGA	Xilinx UltraScale™ XCKU115 FPGA with PPC2040 Dual bank of DDR4
Standards		
AMC	Type	AMC.0, AMC.1, AMC.2 and AMC.4 (FPGA programmable)
Module Management	IPMI	IPMI v2.0
PCIe	Lanes	Dual x4 via FPGA to AMC
SRIO/Aurora	Lanes	Dual x4 via FPGA to AMC
Ethernet	10/40GbE and GbE	Dual 10/40GbE via FPGA and Dual 1000-BaseBX from PPC
Configuration		
Power	AMC583	~50W (without mezzanine) application specific
Environmental	Temperature	See Ordering Options and Environmental Spec Sheet Storage Temperature: -40° to +85°C
	Vibration	Operating 9.8 m/s ² (1G), 5 to 500Hz on each axis
	Shock	Operating 30Gs on each axis
	Relative Humidity	5 to 95% non-condensing
Front Panel	Interface Connectors	Dual FMC+ VITA 57.4 Micro USB for 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
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, see VadaTech Terms and Conditions

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of OpenVPX, ATCA and MTCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTMs), 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

AMC583 – A0C-DEF-G0J

A = FPGA DDR4 Memory	D = Ports 12-15 and 17-20	G = Clock Holdover Stability
0 = Reserved 1 = 8 GB 2 = Reserved	0 = Not routed to FPGA 1 = Routed to FPGA	0 = Standard (XO) 1 = Stratum-3 (TCXO)
	E = FPGA Speed	
	1 = Reserved 2 = High 3 = Highest	
C = Front Panel	F = PCIe Option	J = Temperature Range and Coating
1 = Reserved 2 = Mid-size 3 = Full-size 4 = Reserved 5 = Mid-size, MTCA.1 (captive screw) 6 = Full-size, MTCA.1 (captive screw)	0 = No PCIe 1 = PCIe on Ports 4-7 2 = PCIe on Ports 8-11 3 = PCIe on Ports 4-11	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*

Notes: *Edge of module for conduction cooled boards

For operational reasons VadaTech reserves the right to supply a higher speed FPGA device than specified on any particular order/delivery at no additional cost, unless the customer has entered into a Revision Lock agreement with respect to this product.

Related Products

UTC004



- Single module, full size per AMC.0
- Unified 1 GHz quad-core CPU for MCMC (MicroTCA Carrier Management Controller), Shelf Manager, Clocking, and Fabric management
- Automatic fail-over with redundant UTC004s

VT892



- 7U MTCA System Platform
- 19" x 7U x 10.5" deep (with handles 12" deep)
- Full redundancy with dual MicroTCA Carrier Hub (MCH), dual Cooling Units and dual Power Modules

AMC725



- Xeon E3-1125 V2 Processor AMC, with Graphics Interface
- Intel® Xeon E3 (Gladden) 4C, 2 GHz
- 8 MB LLC processor and Cave Creek PCH

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DOC NO. 4FM737-12 REV 01 | VERSION 1.3 – OCT/19



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