AMC705

Processor AMC, Layerscape LX2160A, SRIO/PCIe

AMC705

Key Features

- Processor AMC with Layerscape LX2160A
- Two banks of 64-bit DDR4 memory (16 GB total)
- Ports 4-7 selectable between SRIO and PCIe
- Ports 8-11 option for PCIe x4 (or single x8 ports 4-11)
- 100GbE/40GbE via QSFP28 or as Quad 10GbE
- GbE via RJ-45 and 10GbE/GbE ports 0 and 1
- 64Gb Flash
- SDHC socket
- 16 cores at up to 2.2 GHz
- Single-module, full-size per AMC.0
- RoHS Compliant

Benefits

- 16 ARM Cortex-A72 CPU cores, running up to 2.2 GHz
- 8 MB cache/on-chip memory
- Design utilizes proven VadaTech subcomponents and engineering techniques
- 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 AMC705 is a Processor AMC (PrAMC) based on the NXP Layerscape LX2160A in a single-module, full-size AMC form factor based on the AMC.1, AMC.2 and the AMC.4 specifications. The LX2160A provides 16 Cortex-A72 cores with 8 MB platform cache and dual 64-bit memory controllers.

The front panel provides GbE via RJ-45 connector and 100GbE/40GbE/Quad-10GbE via QSFP28 connector.

The AMC705 provides dual 10/1GbE to the rear per AMC.2 specification on Ports 0 and 1. Ports 0 and 1 will support 10G operation but this is outside the AMC standard (MCH with 10G on ports 0/1 or point to point on backplane is required). The 10GbE support on ports 0 and 1 allows only 40GbE on the front panel. If 100GbE is desired ports 0 and 1 must run at 1GbE.

Ports 4-7 can be configured as SRIO or PCIe. The module has option for PCIe on port 8-11. When ports 8-11 are routed, the module could be configured as dual PCIe x4 or single x8.

Two 64-bit wide memory banks provide up to 16 GB of DDR4 with ECC.

Figure 1: AMC705

Block Diagram

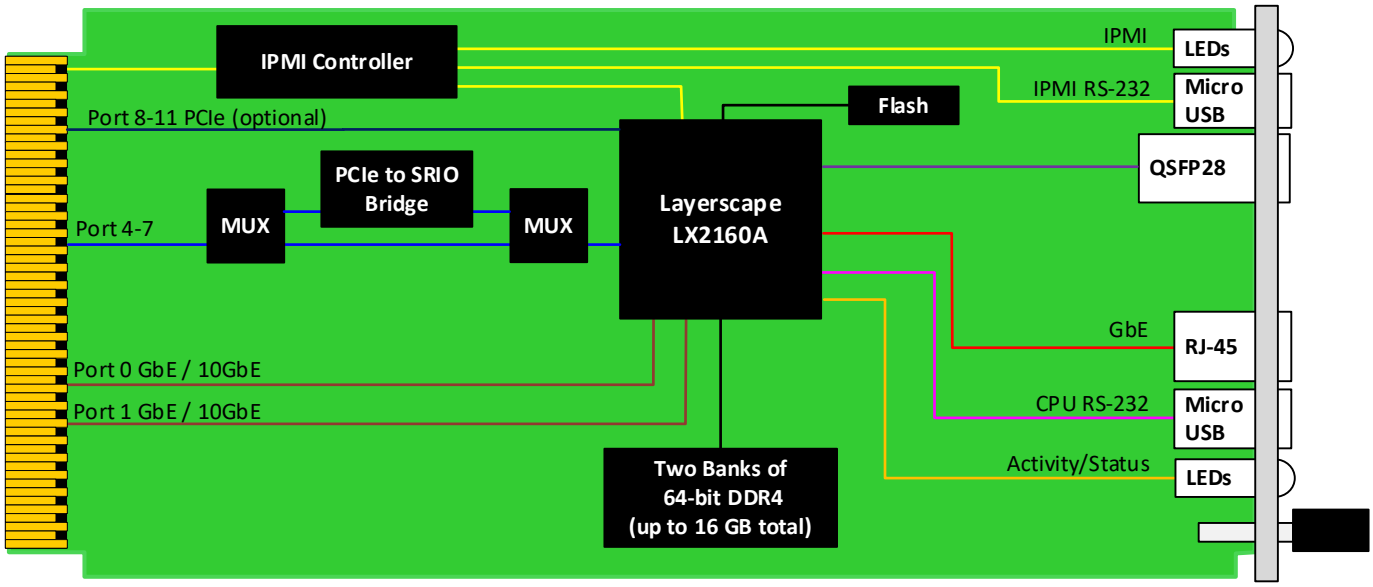

Figure 2: AMC705 Functional Block Diagram

Front Panel

Figure 3: AMC705 Front Panel

Specifications

Architecture		
Physical	**Dimensions**	Single module, full-size
		Width: 2.89” (73.5 mm)
		Depth 7.11” (180.6 mm)
Type	**PrAMC**	NXP Layerscape LX2160A
Standards		
AMC	**Type**	AMC.0, AMC.1, AMC.2 and AMC.4
Module Management	**IPMI**	IPMI v2.0
SRIO 2.0 / PCIe	**Lanes**	x4 SRIO also option for dual PCIe x4 or single x8 PCIe
40GbE	**Lanes**	100G/40GbE via front panel
Ethernet	**GbE**	GbE/10GbE on Ports 0-1, single GbE via front panel
Configuration		
Power	**AMC705**	~35W
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 500 Hz on each axis
	Shock	Operating 325 G/2 ms, 160G/1 ms
	Relative Humidity	5 to 95% non-condensing
Front Panel	**Interface Connectors**	100G/40GbE via QSFP28 or as Quad 10GbE
		GbE via RJ-45
		Dual RS-232 management ports via micro USB
	LEDs	IPMI Management Control
		Link/Activity
	Mechanical	Hot-swap ejector handle
Software Support	**Operating System**	Linux (consult Sales for other OS options)
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 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

AMC705 – ABC-DEF-00J

A = Processor Option	D = PORTS 8-11	
0 = Reserved 1 = Reserved 2 = LX2160A, 2.2 GHz with SE	0 = No connect 1 = PCIe	
B = Ports 0/1 and QSFP28 Configuration	**E = QSFP28 TXCVR****	
0 = GbE/40GbE 1 = 10GbE/40GbE 2 = GbE/Quad 10GbE 3 = 10GbE/Quad 10GbE 4 = GbE/100GbE 5 = Reserved	0 = None 1 = SR 2 = LR 3 = Reserved	
C = Front Panel		**J = Temperature Range and Coating**
1 = Reserved 2 = Reserved 3 = Full-size 4 = Reserved 5 = Reserved 6 = Full-size, MTCA.1 (captive screws)		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: *Conduction cooled; temperature is at edge of module. Consult factory for availability.
** Option B drives the TXCVR speed at 40GbE or 100GbE (if configured as quad 10GbE, B=2 or B=3, the TXCVR is 40GbE)

Related Products

AMC725

- Intel® Xeon E3 processor options with PCH
- DVI graphics (SM750 w/16 MB DDR), up to 1920x1440 resolution
- Optional up to 256 GB SSD with RAID option

VT811

- MTCA System Platform 19” x 8U x 14.9” deep (with handles 16.23” deep)
- Full redundancy with dual MicroTCA Carrier Hub (MCH), dual Cooling Units and quad Power Modules
- Up to twelve AMCs: 12 front mid-size double module slots and RTM slots

VT814

- MicroTCA rack mount or desktop chassis platform, 19” x 2U x 14.2” deep
- Compliant to MTCA.4 specifications with rear IO for High-Energy Physics and other applications
- Supports up to six MTCA.4 mid-size, double module AMCs and RTMs

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