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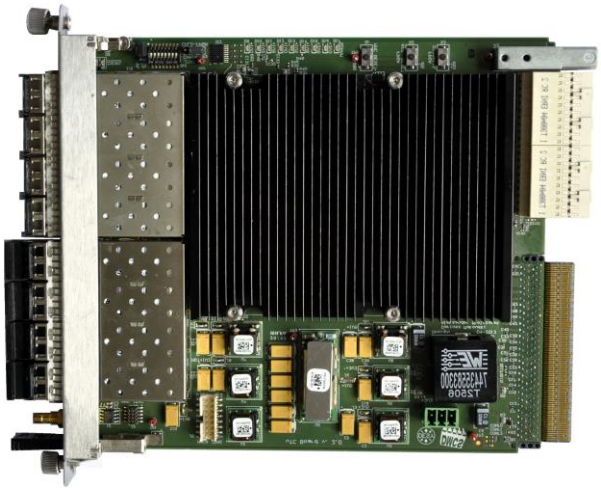
THE POWER OF VISION

µTCA.4 Kintex-7 Data Processing AMC (TCK7) – CM045

µTCA.4 Data Processor, Kintex-7



KEY FEATURES

- Data Processing AMC in double module, mid-size (full-size optional)
- Compliant to MicroTCA.4
- Class D1.2 compatible
- High-speed Kintex-7 FPGA
- 16 GB DDR3 SDRAM
- Octal SFP+ via the front panel
- PCIe x4 Gen 3
- Two channels of GbE
- Ten direct low latency connections to backplane
- Four low latency connections to RTM
- LVDS parallel bus to RTM
- Partial reconfiguration and firmware upgrade support
- Advanced diagnostic, monitoring and debugging

µTCA®

Benefits of Choosing VadaTech

- High performance Kintex-7 FPGA
- High end stabilizing control with powerful digital signal processing capability
- Compatible with application-specific Class D1.2 RTMs
- Low latency, with multiple front and RTM connections
- 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 CM045 (TCK7) AMC-based Controller board is a general purpose high-performance low-latency data processing unit designed according to the PICMG MTCA.4 specifications. The module provides processing power, data memory, communication links and reference clock signals. The CM045 is ideal for LLRF (Low Level Radio Frequency) cavity field stabilizing control for standing-wave linear accelerators, as well as other applications requiring low latency and high speed digital signal processing.

The FPGA on the CM045 supports eight SFP+ ports (up to 10 GbE) on the front panel. It also routes 4 low latency MGT Links and 38 LVDS I/O signals to the Rear Transition Module (RTM) Zone 3 connector. Since the control algorithms could be improved with time, the device supports in-system firmware upgrade, using IPMI and a fast serial link.

Product Design (TCK7) Licensed from DESY

DESY

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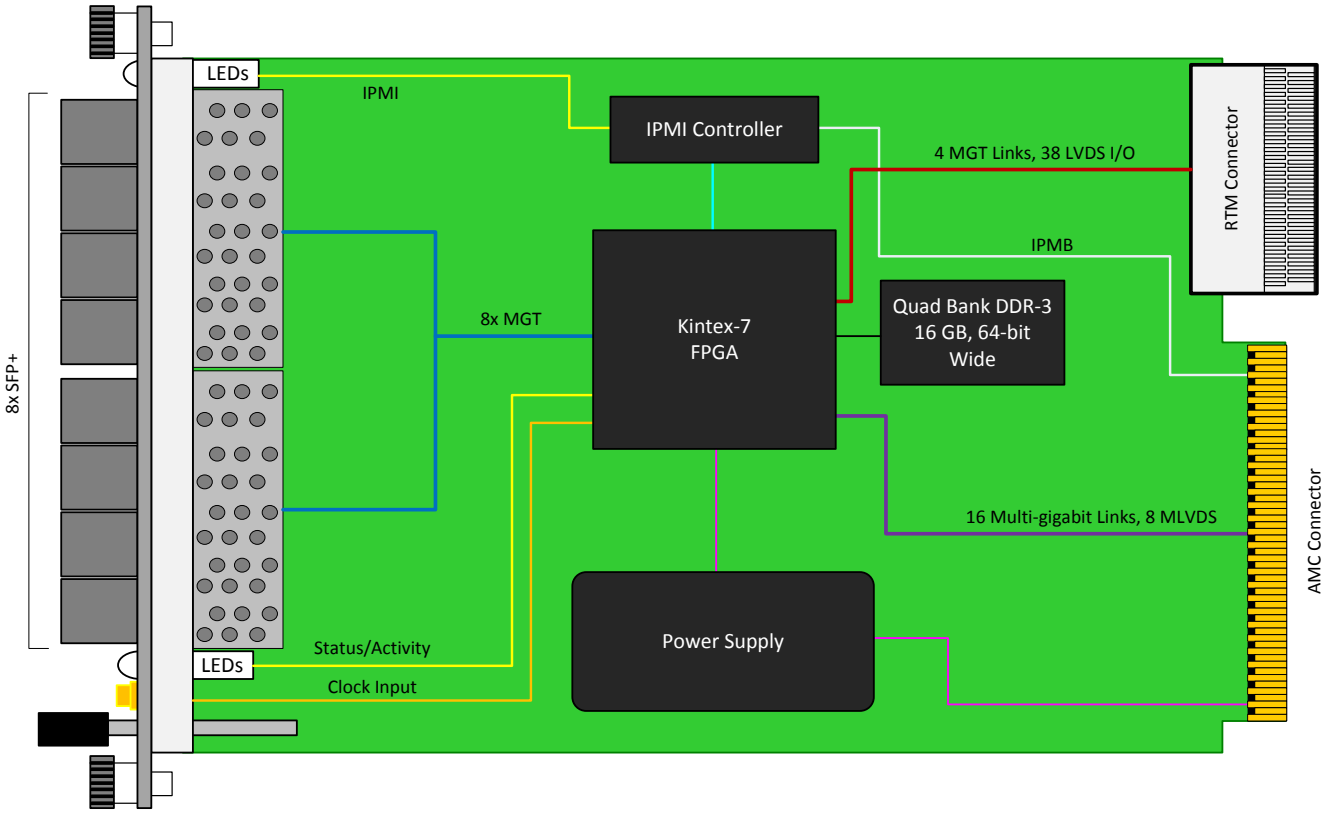
BLOCK DIAGRAM



FRONT PANEL

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SPECIFICATIONS

Architecture		
Physical	Dimensions	Double module, mid-size (full-size optional)
		Width: 5.486" (148.5 mm)
		Depth 7.11" (180.6 mm)
Type	AMC Data Processing Module	Xilinx Kintex-7 Device
		DDR3 memory
Standards		
AMC	Type	AMC.1, AMC.2, and AMC.4 (FPGA programmable)
Module Management	IPMI	IPMI version 2.0
PCIe	Lanes	4x Gen3
Ethernet	GbE	1000-BaseT
Configuration		
Power	CM045	<50 W
Environmental	Temperature	Operating Temperature: -5° to 50°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 90 per cent, non-condensing
Front Panel	Interface Connectors	Front panel 8 channel SFP+
		Clock Input
	LEDs	IPMI management control
		Status/Activity
	Mechanical	Hot swap ejector handle
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.

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ORDERING OPTIONS

CM045 – 00C – DE0 – 00J

C = Front Panel
0 = Mid-size, MTCA.4
1 = Full-size, MTCA.4

D = FPGA Type
0 = Reserved
1 = XC7K355T
2 = XC7K420T

E = FPGA Speed
0 = Reserved
1 = Low
2 = High

J = Temperature Range and Coating
0 = Commercial (–5° to +55° C), No coating
1 = Reserved
2 = Reserved
3 = Industrial (–20° to +70° C), No coating
4 = Reserved
5 = Reserved
6 = Reserved
7 = Reserved

RELATED PRODUCTS

VT813 4400W MTCA.4 Chassis

AMC520 ADC MTCA.4 Module

VT812 2U MTCA.4 Chassis

CONTACT US

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