

AMC522 – μ TCA.4 AMC Dual DAC, 16-bit @ 500 MSPS

MicroTCA.4 A/D Converter



AdvancedMC™

KEY FEATURES

- Dual channel MAX5878 DAC with 500 MSPS @16-bit resolution
- Compliant to μ TCA.4, double module, mid-size (full-size optional) with rear I/O
- Xilinx Kintex-7 FPGA
- Clock input, Trigger Out via SMB
- Dual PCIe x4 or PCIe x8
- JTAG interface port
- TCLKA-D, FCLK routed to FPGA via CBS and Jitter Cleaner
- AMC.1, AMC.2, and AMC.4 compliant (FPGA programmable)
- IPMI version 2.0 compliant

Benefits of Choosing VadaTech

- Double the sampling rate of previous VadaTech MTCA.4 DAC at 500 MSPS
- On-board PLL for buffering/multiplying and jitter cleaner
- Design utilizes proven VadaTech subcomponents and engineering techniques
- 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 AMC522 is dual DAC module compliant to MicroTCA.4. The sampling rate is 500 MSPS at a 16-bit resolution. Compliant to the AMC.1, AMC.2, and AMC.4 specifications the unit has an on-board, re-configurable Kintex-7 FPGA which interface directly to ports 4-11. Port 17 is also routed directly to the FPGA for Trigger I/O.

The AMC522 has front panel ports including JTAG and SMB for Clock input and Trigger Out. There is also an RS-232 port via micro USB for management. The output from the dual DAC to the RTM is $\pm 1V$.

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

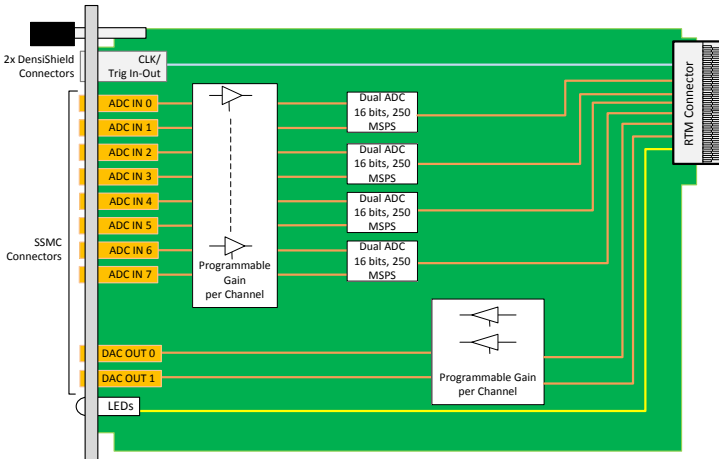


Figure 1: MRT522 (Sold Separately)

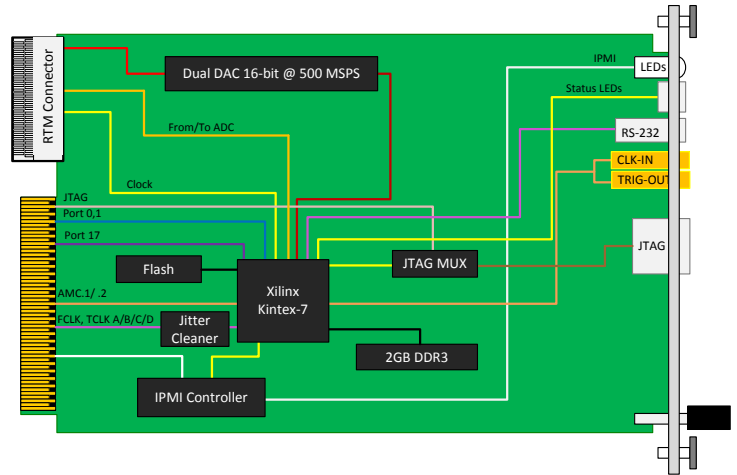


Figure 2: AMC522

SPECIFICATIONS

Architecture		
Physical	Dimensions	Double module, mid-size with full-size option
		Width 5.85" (148.5 mm) Depth 7.11" (180.6 mm)
Type	AMC DAC	Dual DAC
		16-bit resolution per port on DAC
Standards		
μ TCA	Type	μ TCA.4 with RTM with two differential bi-directional LVDS lines from FPGA to RTM
AMC	Type	AMC.0, AMC.1, AMC.2 and AMC.4
Module Management	IPMI	IPMI Version 2.0
PCIe	Lanes	x4 or x8
Aurora/SRIO/10GbE	Lanes	x4 (if the x8 PCIe is not utilized)
Ethernet	GbE	1000-BaseBX
Configuration		
Power	AMC522	~25W, application specific (up to 40 W)
Environmental	Temperature	Operating Temperature: -5° to 55° C (air flow requirements >400 LFM))
		Storage Temperature: -40° to +85° C
	Vibration	1G, 5 to 500 Hz on each axis
	Shock	30Gs each axis
	Relative Humidity	5 to 95 percent, non-condensing
	Front Panel	Interface Connectors
LEDs		IPMI Management Control (Blue, Red, Amber, and Green LEDs) Quad user defined LEDs
	Mechanical	Hot Swap Ejector Handle
Software Support	Operating Systems	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 ISO9001:2000 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

AMC522 – 00C – DEF – 00J

C = Front Panel

- 1 = Reserved
- 2 = Reserved
- 3 = Reserved
- 4 = Reserved
- 5 = Mid-size, MTCA.4 (captive screws)
- 6 = Full-size, MTCA.4 (captive screws)

D = FPGA

- 0 = Reserved
- 1 = Reserved
- 2 = XC7K420T

E = FPGA Speed

- 0 = Reserved
- 1 = High
- 2 = Highest

F = PCIe Option

- 0 = None
- 1 = PCIe on Ports 4-7
- 2 = PCIe on Ports 8-11
- 3 = PCIe on Ports 4-11

J = Temperature Range and Coating

- 0 = Commercial (-5° to $+55^{\circ}$ C), No coating
- 1 = Commercial (-5° to $+55^{\circ}$ C), Humiseal 1A33 Polyurethane
- 2 = Commercial (-5° to $+55^{\circ}$ C), Humiseal 1B31 Acrylic
- 3 = Industrial (-20° to $+70^{\circ}$ C), No coating
- 4 = Industrial (-20° to $+70^{\circ}$ C), Humiseal 1A33 Polyurethane
- 5 = Industrial (-20° to $+70^{\circ}$ C), Humiseal 1B31 Acrylic
- 6 = Military (-40° to $+85^{\circ}$ C), Humiseal 1A33 Polyurethane*
- 7 = Military (-40° to $+85^{\circ}$ C), Humiseal 1B31 Acrylic*

*Edge of module for conduction-cooled boards

RELATED PRODUCTS



VT814 2U
MTCA.4 Chassis



VT811 MTCA.4
Chassis



AMC725 MTCA.4
Processor

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