

AMC594

56 GSPS 8-bit ADC, 2 or 4 channel
with XCVU190 UltraScale™



AMC594

Key Features

- 8-bit ADC at up to dual 56 GSPS
- 2 x 56 or 4 x 28 GSPS channels
- Xilinx UltraScale™ XCVU190 FPGA
- 16 GB of DDR-4 Memory (2 banks of 64-bit)
- ADC is 65 nm CMOS process technology)
- Double module, full-size
- Calibration warning and over-range flags
- -3 dB analog input bandwidth nominally 15 GHz
- Internal 14 GHz VCO/PLL per I/Q ADC pair
- Differential analog input: 1 VPP

Benefits

- Highest sampling rate for the module size in the industry, uses MB8AC2070 ADC
- Flexible selection of sample rate and channel count
- Zone 3 connector board-to-board interconnect for multi-module configurations
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

AdvancedMC™



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AMC594

The AMC594 used the Fujitsu MB8AC2070 ADC (Analog to Digital Converter) to provide dual 56 GSPS or quad 28 GSPS from four channels ADC (user selectable).

The AMC594 makes use of extremely fast ADCs in CMOS process technology. The ADC is ideal for applications that require ultra-high-performance analog and digital processing such as 100G applications. Achieved input bandwidth depends on system configuration and operating conditions, contact VadaTech for details.

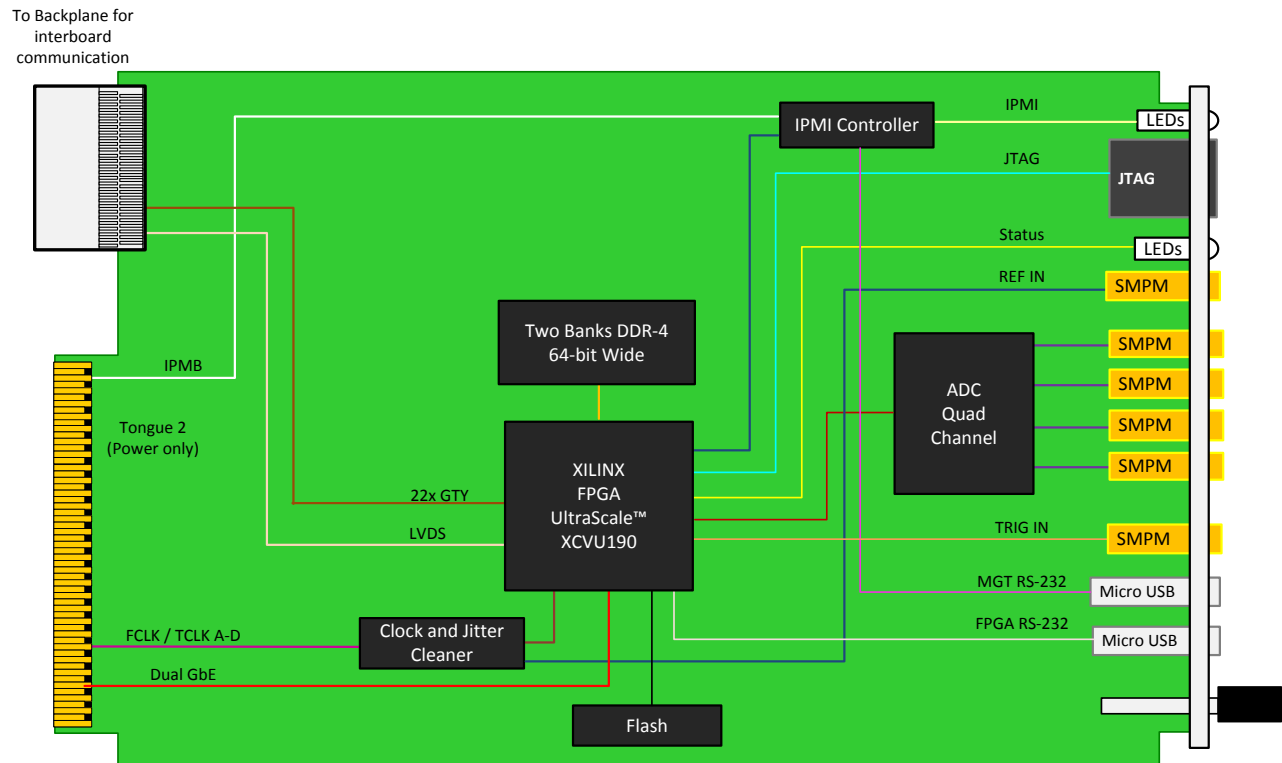
The AMC594 has a Xilinx UltraScale™ XCVU190 FPGA which has 1800 DSP Slices. The FPGA interfaces directly to a secondary backplane through a Zone 3 connector, allowing the core to interface to other such modules through 22 GTY lanes and LVDS for board-to-board connectivity. The FPGA has 2 banks of 64-bit DDR4 memory (16 GB total).

A tongue 2 connector provides additional power to the board.

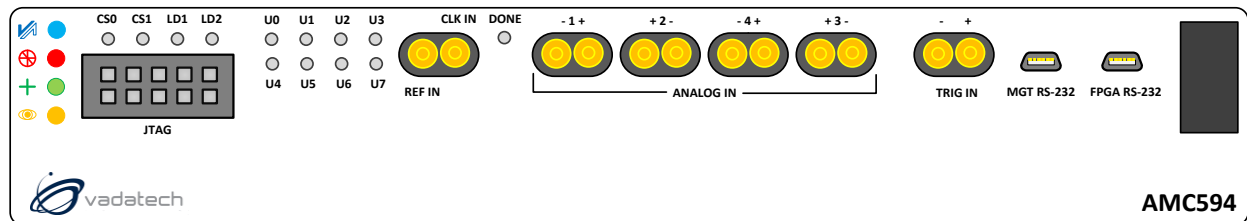
The module has a high-speed Zone 3 connector that provides the primary digital I/O routing. Multiple AMC594 can be connected together (e.g. for sampling I/Q or multi-polarizations), or this I/O can be routed to further FPGA AMCs for additional processing. Contact sales for further information.



Block Diagram



Front Panel



Specifications

Architecture		
Physical	Dimensions	Double module, full-size
		Width: 5.85" (148.5 mm)
		Depth 7.11" (180.6 mm)
Type	AMC ADC	ADC, up to 4 input channels, quad 28 GSPS or dual 56 GSPS
Standards		
AMC	Type	AMC.0, AMC.1, AMC.2 and AMC.3
Module Management	IPMI	IPMI version 2.0
PinoutPlus	Lanes	Tongue 2 for power only
Configuration		
Power	AMC594	~100 W (application specific)
Environmental	Temperature	Operating temperature: -5° to 45° C (55°C for limited time, performance restrictions may apply), industrial and extended versions also available (See 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 per cent, non-condensing
Electrical	DNL/INL	+/- 0.5 LSB, +/-1.0 LSB
	SNDR	40 dBFS @ Fin = 1 GHz, 36 dBFS @ Fin = 17 GHz
	Output Rate	128 samples x 8 bit @ 437.5 MHz
	Signals	<100 fs RMS jitter, <500 fs I/Q sample time error
Front Panel	Interface Connectors	SMPP: Differential input for each channel, Trig IN/OUT, Clock In, Reference IN
		Micro USB for MGT RS-232 and FPGA RS-232
	LEDs	IPMI management control LEDs
		8 User defined LEDs
		5 Activity/status LEDs
	Mechanical	Hot swap ejector handle
Software Support	Operating System	Independent
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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AMC594 – A0C-D00-00J

*Note this module can mate two AMC594 together via high speed SERDES

VT815

A circular inset image showing the front of a VT815 rackmount server. The server has a black handle on the right side and a front panel with multiple drive bays. The text "VT815" is printed on the top of the front panel.

- ## AMC104
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- A photograph of the AMC104 module, a white printed circuit board (PCB) with a black heat sink on top. It features various connectors, including a D-sub connector and a multi-pin connector. The module is shown within a circular frame.

- ## AMC750
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- A photograph of the AMC750 module, a white industrial-grade I/O card. It features a blue USB port, two RJ45 Ethernet ports, and a D-sub connector. A green printed circuit board (PCB) is visible inside the white casing.

- Xeon E5 Processor AMC, PCIe Gen 3, with PinoutPlus™
- Intel® Xeon E5-2648L v4 (Haswell-EP)
- PCIe Gen 3 on ports 4-7 and 8-11(AMC.1)

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DOC NO. 4FM737-12 REV 01 | VERSION 1.3 – JUL/17



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