FMC234

FMC ADC 12-bit @ 6.4 GSPS and DAC 16-bit @ 12 GSPS

FMC234

Key Features

- ADC 12-bit @ up to 6.4 GSPS (ADC12DJ3200)
- The ADC has front end attenuators and amplifiers
- DAC 16-bit @ up to 12 GSPS (AD9164/AD9162)
- FPGA Mezzanine Card (FMC) per VITA 57
- Excellent dynamic performance
- Front panel interface includes CLK In, Trig In and Trig Out

Benefits

- High dynamic range for versatility in video/broadcast requirements
- Ideal for Broadband communications systems, Wireless infrastructure, LTE, ATE, RADAR/Jamming
- Compatible with a broad range of Xilinx- and Altera-based FMC carriers from VadaTech and others
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

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FMC234

The FMC234 is an FMC per VITA 57 specification. The board has a dual channel ADC and single channel DAC.

TI ADC12DJ3200 ADC provides:

- Option for ADC12DJ2700
- 8 JESD204B lanes from the ADC is routed to the FMC
- 12-bit @ 6.4 GSPS
- Wide full power bandwidth supports IF sampling of signals up to 4 GHz (limited by input balun)

The ADC in non-interleaving mode can have two separate inputs each at 3.2 GSPS.

DAC AD9164 provides:

- Option for AD9162
- 16-bit @ 12 GSPS

The analog input/output, clock and trigger interfaces of the FMC234 are routed via SSMC connectors. The internal clock frequency is programmable and the clock is capable of locking to an external reference.

The module allows one of the inputs to be configured as Trigger Input or Output. Further the ADC TMSTP signal input source could be configured to come from the FPGA or the Trigger In.

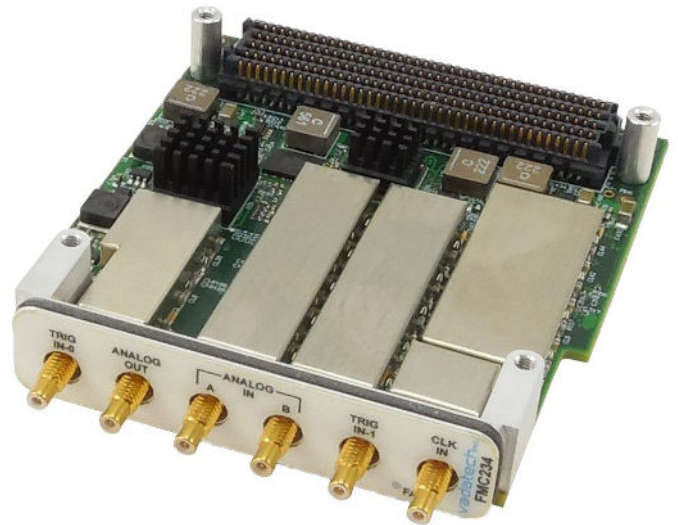See VadaTech ADI Offerings for the advantages of using our products during application development.

Figure 1: FMC234

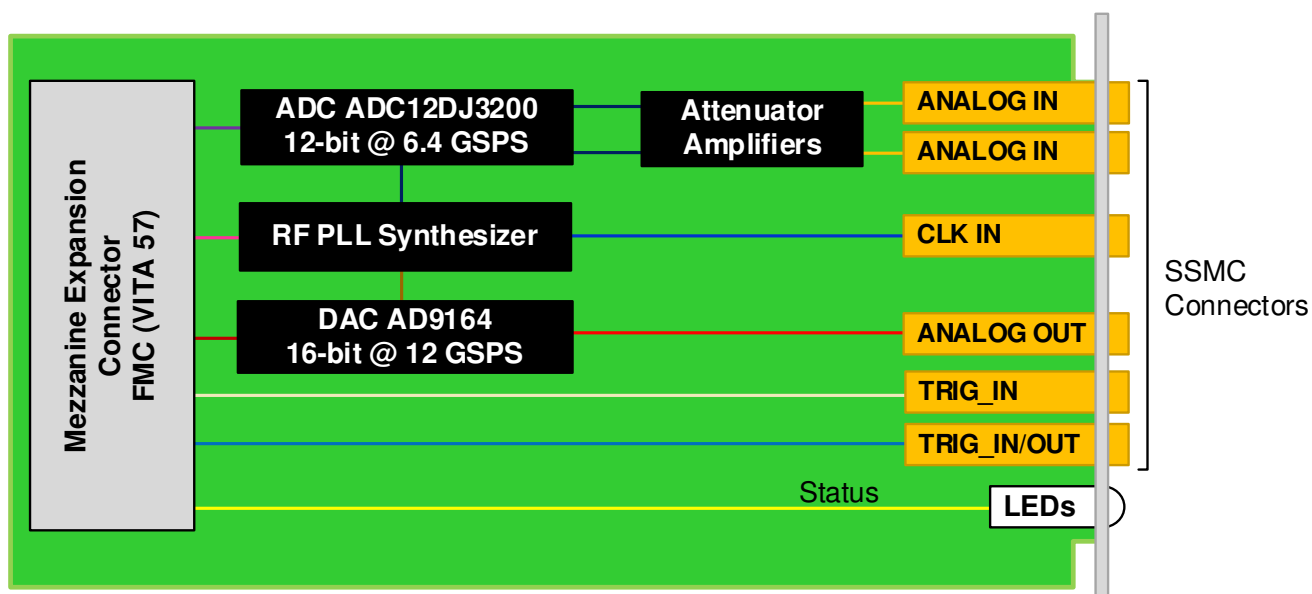FMC234 – FMC ADC 12-bit @ 6.4 GSPS and DAC 16-bit @ 12 GSPS

Block Diagram

Figure 2: FMC234 Functional Block Diagram

Front Panel
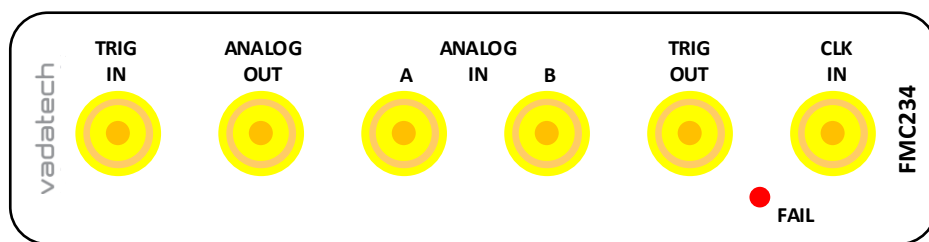
Figure 3: FMC234 Front Panel
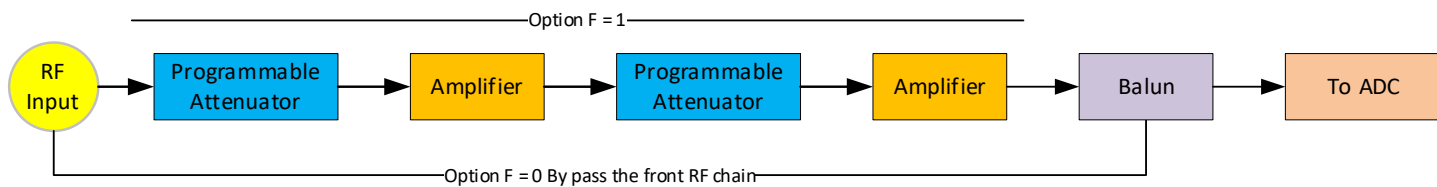
Figure 4: FMC234 Front RF Chain l

FMC234 – FMC ADC 12-bit @ 6.4 GSPS and DAC 16-bit @ 12 GSPS

Specifications

Architecture		
Physical	**Dimensions**	Single module
		Width: 2.71" (69 mm)
		Depth 3.01" (76.5 mm)
Type	**FMC**	Dual-channel ADC with DAC, Single FMC
Standards		
FMC	**VITA 57**	ANSI/VITA 57.1-2008
Configuration		
Power	**FMC234**	~8W
Environmental	**Temperature**	See Ordering Options (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% non-condensing
Front Panel	**Interface Connectors**	6x SSMC
	LEDs	Status
Software Support	**Operating System**	Agnostic
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

FMC234 – ABC-DEF-G0J

A = TRIG***	D = ADC Time Stamp Source	G = FMC Board Spacing
0 = Output 1 = Input	0 = FPGA 1 = Trig In via front panel	0 = 10 mm (per VITA 57 specification) 1 = 17.5 mm*

B = ADC	E = ADC Input	
0 = ADC12DJ3200 (6.4 GSPS) 1 = ADC12DJ2700 (5.4 GSPS) 2 = Reserved	0 = Standard ADC input 1 = Reserved	

C = DAC	F = Front RF Chain	J = Temperature Range and Conformal Coating
0 = AD9164 1 = AD9162	0 = Bypass the front RF Chain 1 = Front RF Chain included	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:

*For use with carriers that require higher mating clearance, such as VadaTech AMC595. Requires full size AMC.

**Conduction cooled; temperature is at edge of module. Consult factory for availability.

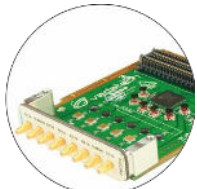***One of the Triggers could be configured as input or output.

Related Products

AMC592

- AMC FPGA carrier for FMC per VITA 57
- Xilinx UltraScale™ XCKU115 FPGA
- Supported by DAQ Series™ data acquisition software

FMC214

- Dual complete transceiver signal chain solution using Analog Devices AD9361 transceiver
- Frequency range 70 MHz to 6 GHz with instantaneous bandwidth from 200 kHz to 56 MHz
- MIMO transceiver is Time Domain Duplex (TDD) and Frequency Domain Duplex (FDD) compatible

VPX592

- 3U FPGA carrier for FPGA Mezzanine Card (FMC) per VITA 46 and VITA 57
- Xilinx Kintex UltraScale™ XCKU115 FPGA
- High-performance clock jitter cleaner

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