FMC253

FMC DAC 12 GSPS, Dual ADC 2.6 GSPS and ADC 250 MSPS

FMC253

Key Features

- ADC dual channel 14-bit @ 2.6 GSPS (AD9689)
- DAC 16-bit @ 12 GSPS (AD9164/AD9162)
- ADC 16-bit @ 250 MSPS (AD9467)
- FPGA Mezzanine Card (FMC) per VITA 57
- Front panel interface includes Trig In/Out
- Clock input for synchronization via front or rear

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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FMC253

The FMC253 is an FMC per VITA 57 specification. The unit utilizes the following components to provide dual channel high-speed ADC, single channel high-speed DAC and single channel low-speed ADC:

- AD9689 for dual channel ADC providing 14-bit conversion rates of up to 2.6 GSPS

- AD9164 (option for AD9162) for DAC 16-bit conversion rates of up to 12 GSPS

- AD9467 to offer an additional ADC channel providing 16-bit conversion at up to 250 MSPS

The FMC253 is identical to the FMC251 except with respect to clocking. The FMC253 clocks the high-speed DAC/ADC with the same PLL clock. Although the high-speed DAC is capable of running at a faster clock rate, the FMC253 allows the highest clock rate dictated by the ADC9689. The FMC253 also has a jitter cleaner on the clock input of the low speed AD9467 to provide a much lower jitter clock.

The unit provides a Trigger Input/Output, clock and all analog Input/Output via SSMC connectors.
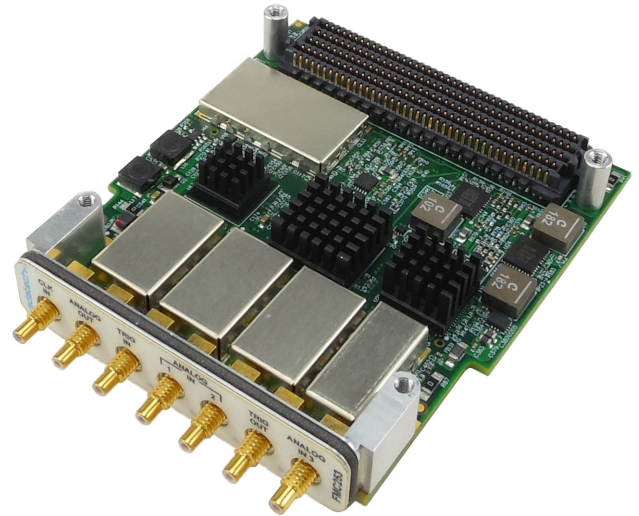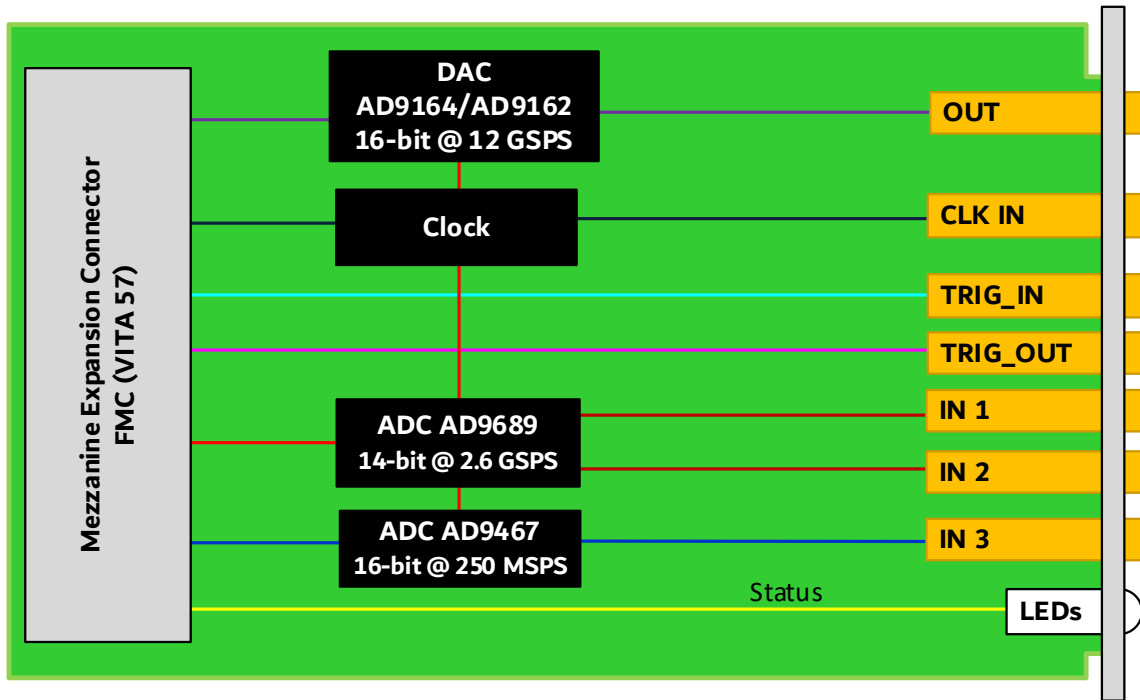

Figure 1: FMC253

FMC253 – FMC DAC 12 GSPS, Dual ADC 2.6 GSPS and ADC 250 MSPS

Block Diagram

Figure 2: FMC253 Functional Block Diagram

Specifications

Architecture		
Physical	**Dimensions**	Single Module
		Width: 2.71" (69 mm)
		Depth: 3.01" (76.5 mm)
Type	**FMC**	Analog I/O
Standards		
FMC	**Type**	ANSI/VITA 57.1 - 2008
Configuration		
Power	**FMC253**	8W
Environmental	**Temperature**	See Ordering Options
		Storage Temperature: –40° to +85°C
	Altitude	40,000 ft non-operating
	Vibration	Operating 9.8 m/s2 (1G), 5-500 Hz
	Shock	Operating 30Gs each axis
	Relative Humidity	5 to 95% non-condensing
Front Panel	**Interface Connectors**	Six of 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

FMC253 – ABC-000-G0J

A = ADC		G = FMC Board Spacing
0 = AD9689 @ 2 GSPS 1 = AD9689 @ 2.6 GSPS		0 = 10 mm (per VITA 57 specification) 1 = 17.5 mm*****

B = RF Input Signal		
0 = < 5 GHz 1 = > 5 GHz		

C = DAC		J = Temperature Range and Conformal Coating
0 = AD9164 1 = AD9162		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.
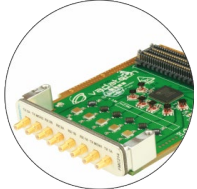
Related Products

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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