FMC238

75 MHz to 6 GHz Dual Versatile Wideband Transceiver (MIMO), FMC

FMC238

Key Features

- FPGA Mezzanine Card (FMC) per VITA 57
- Complete transceiver signal chain solution using Single Analog Device (ADRV9009)
- Frequency range 75 MHz to 6 GHz with receiver bandwidth up to 200 MHz and transmitter synthesis bandwidth up to 450 MHz
- MIMO transceiver is Time Domain Duplex (TDD) for 3G/4G/5G
- Compatible with Analog Devices design tools for ADRV9009
- Onboard clocking with multi-card synchronization capability

Benefits

- Ideal for 3G/4G/5G SDR applications with wideband range versatility
- High modulation accuracy with ultralow noise
- Array of FMC's and FMC carriers available from VadaTech
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

FMC™

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FMC238

The FMC238 is a FPGA Mezzanine Card (FMC) per VITA 57.1 standard. This low powered unit boasts a small footprint and utilizes a single ADRV9009 highly integrated, wideband RF transceiver.

The ADRV9009 features dual channel Transmitters (TX) and Receivers (RX) with integrated synthesizer and digital signal processing functions. Each complete RX and TX subsystem includes DC offset correction, Quadrature Error Correction (QEC), and programmable digital filters. The transceivers also provide Automatic Gain Control (AGC) and flexible external gain control modes, allowing significant flexibility in setting system level gain dynamically.

The FMC238 operates within the 75 MHz to 6.0 GHz frequency range, covering most licensed and unlicensed bands. The clocking is via the front panel or an internal clock. This makes the FMC238 an ideal choice for the development and/or deployment of advanced RF solutions.

The VadaTech family of Multiple Input Multiple Output (MIMO) modules are the most versatile FMCs of this type on the market.

Figure 1: FMC238

Block Diagram

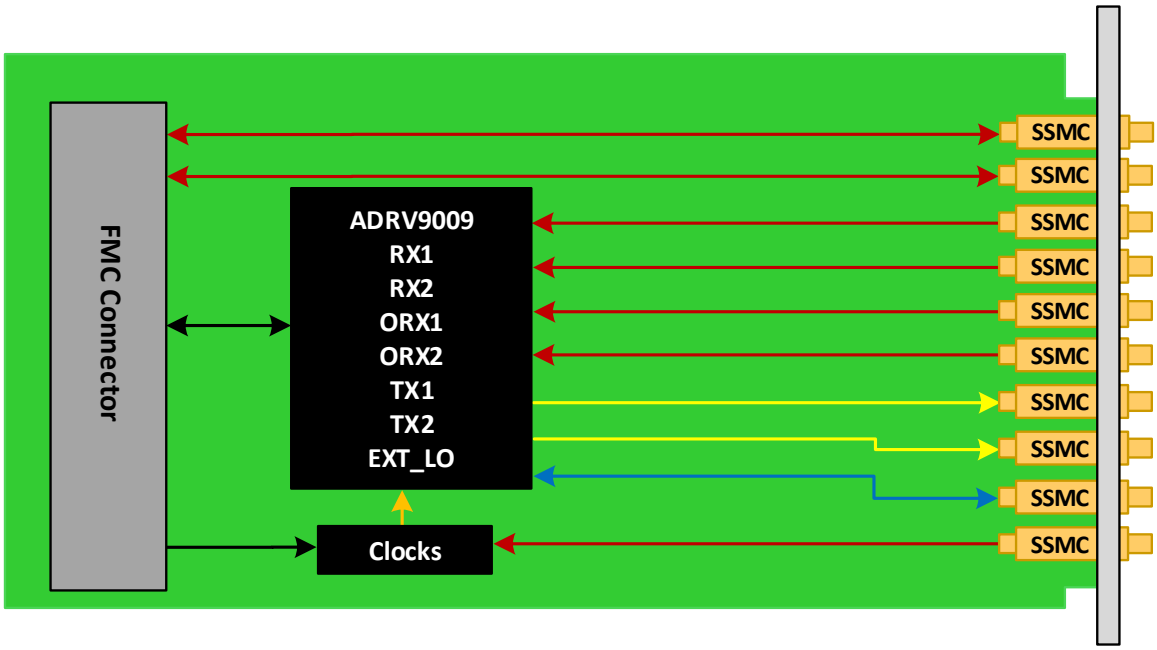

Figure 2: FMC238 Functional Block Diagram

Front Panel

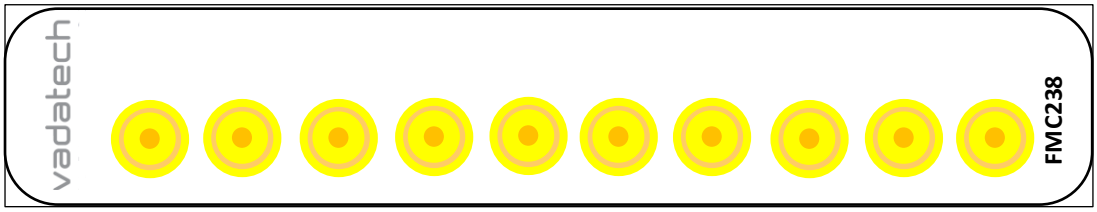

Figure 3: FMC238 Front Panel

Supported Software

The FMC238 is compatible with Analog Devices design tools for ADRV9009.

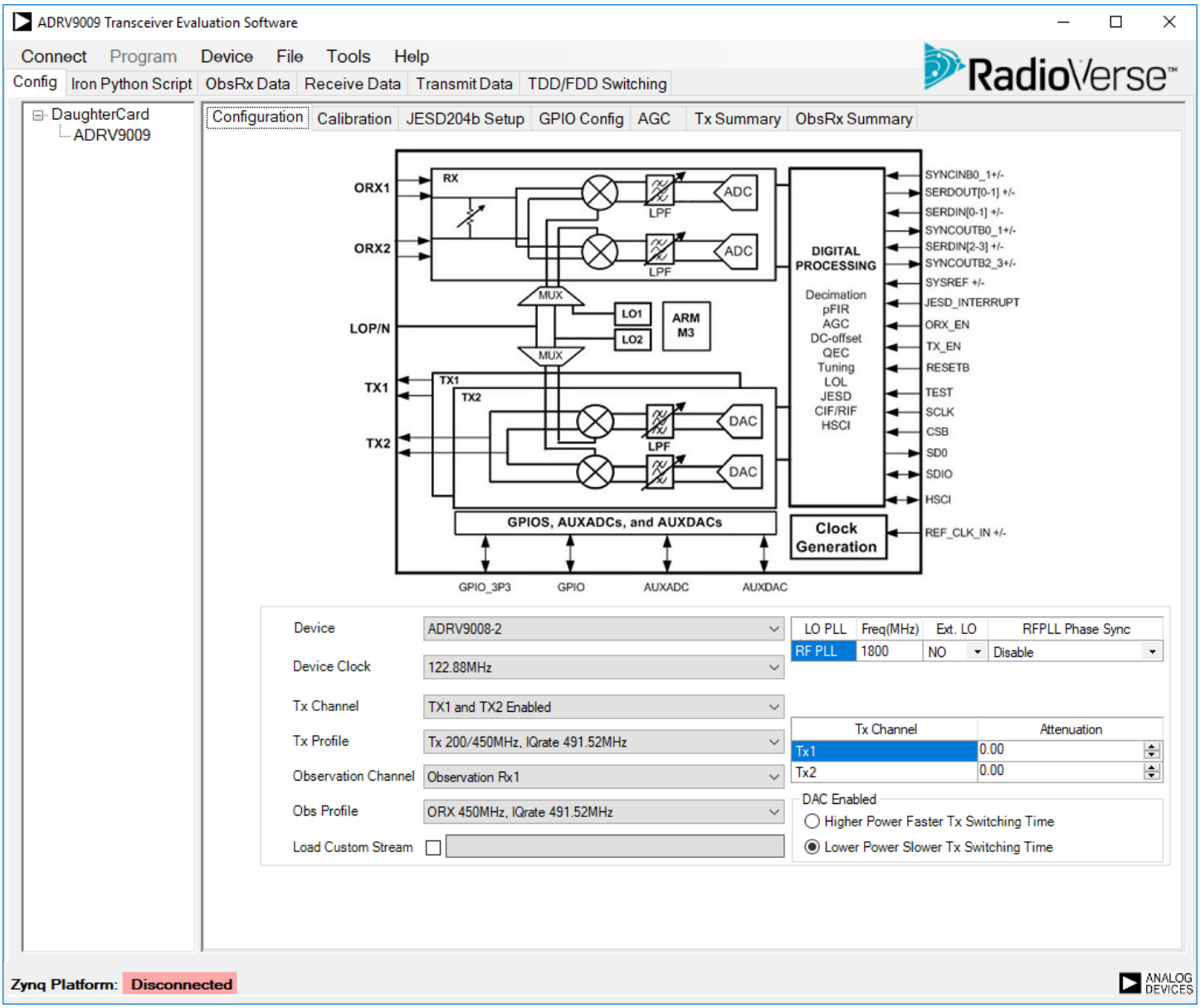

Figure 4: FMC238 Compatible Design Tools for ADRV9009

Specifications

Architecture		
Physical	**Dimensions**	Single Module
		Width 2.71” (69 mm)
		Depth 3.01” (76.5 mm)
Type	**FMC**	Dual wideband transceiver, single ADRV9009
		FMC connector
Standards		
FMC	**VITA 57**	ANSI/VITA 57.1-2008
Configuration		
Power	**FMC238**	5W
Performance	**Broadband transmitter**	Tuneable range from 75 MHz to 6 GHz, maximum synthesis bandwidth 450 MHz
		Transmitter attenuation power control range: 0 to 32 dB
	Broadband receiver	Tuneable range from 75 MHz to 6 GHz, maximum receiver bandwidth 200 MHz
		Receiver gain range: 30 dB
	Observation receiver	Tuneable range from 75 MHz to 6 GHz, maximum receiver bandwidth 450 MHz
	Integrated synthesizers	2.3 Hz typical LO step size
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**	10x SSMC Front Panel Connector
	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 ISO9001:2000 and AS9100B:2004 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

FMC238 – 0B0-000-0HJ

B = VCXO		**H = Operating Temperature**
0 = 100 MHz 1 = 122.88 MHz 2 = 153.6 MHz 3 = Reserved 4 = Reserved		0 = Commercial (–5° to +55°C) 1 = Industrial (–20° to +70°C) 2 = Extended (-40° to +80°C)
		J = Conformal Coating
		0 = No coating 1 = Humiseal 1A33 Polyurethane 2 = Humiseal 1B31 Acrylic

Related Products

AMC515

- AMC FPGA carrier for FMC per VITA 57
- AMC Ports 4-11 are routed to FPGA (protocols such as PCIe, SRIO, XAUI, etc. are FPGA programmable)
- Xilinx Virtex-7 XC7V2000T in 1925 package

FMC108

- Single width FMC per VITA 57
- Two QSPF+ cages for 10GbE/SRIO/PCIe and Aurora
- Re-driver on both ports for a better signal quality

FMC223

- Single module AD9739 DAC 14-bit @ 2.5 GSPS
- 2 Vpp differential Analog output swing
- Programmable DSP clock

Contact

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