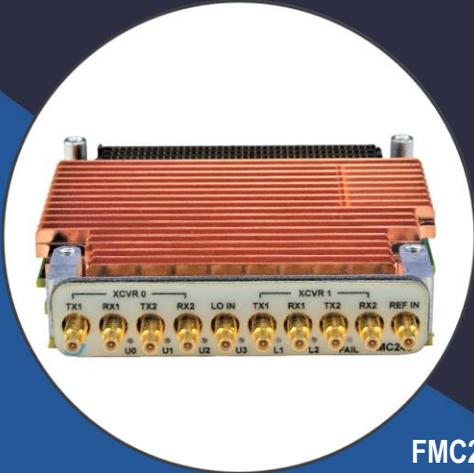


FMC249

30 MHz to 6 GHz Quad Narrow-Band and Wideband RF Transceiver



FMC249

Key Features

- FPGA Mezzanine Card (FMC) per VITA 57
- Complete transceiver signal chain solution using Dual Analog Device (ADRV9002)
- 2 x 2 Highly Integrated Transceiver per ADRV9002
- Frequency range 30 MHz to 6 GHz
- Transmitter and Receiver bandwidth from 12 KHz to 40 MHz
- Fast frequency hopping
- Compatible with Analog Devices design tools for ADRV9002
- Onboard clocking with multi-card synchronization capability

Benefits

- Ideal for Time Division Duplexing (TDD), VHF, UHF and cellular to 6 GHz
- 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



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FMC249

The FMC249 is a FPGA Mezzanine Card (FMC) per VITA 57.1 standard. This low powered unit boasts a small footprint and utilizes a dual ADRV9002 highly integrated, wideband RF transceiver.

The ADRV9002 features dual channel Transmitters (TX) and Receivers (RX) with integrated synthesizer and digital signal processing functions. The transceiver consists of direct conversion signal path with state-of-the-art noise figures and linearity. Each complete receiver and transmitter subsystem include dc offset correction, quadrature error correction (QEC), and programmable digital filters, which eliminate the need for these functions in the digital baseband. In addition, several auxiliary functions, such as auxiliary analog-to-digital converters (ADCs), auxiliary digital-to-analog converters (DACs).

The ADRV9002 operates from 30 MHz to 6000 MHz and covers the UHF, VHF, industrial, scientific, and medical (ISM) bands, and cellular frequency bands in narrow-band (kHz) and wideband operation up to 40 MHz. The ADRV9002 is capable of both TDD and FDD operation.

This makes the FMC249 an ideal choice for the development and/or deployment of advanced RF solutions.



Figure 1: FMC249



Figure 2: FMC249 Top View without Heatsink

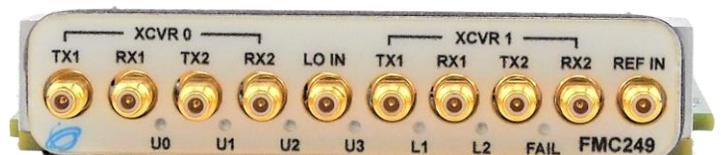


Figure 3: FMC249 Front Panel View

Block Diagram

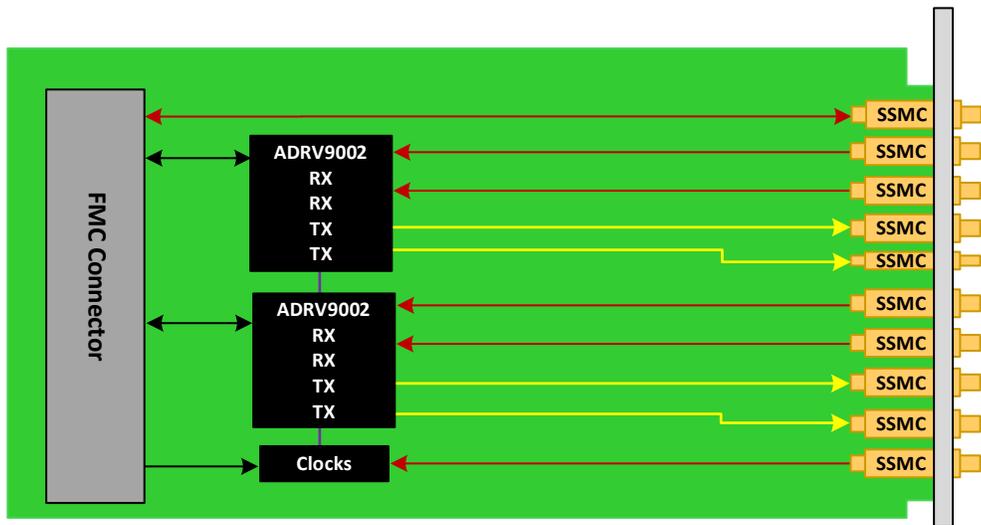


Figure 4: FMC249 Functional Block Diagram

Supported Software

The FMC249 is compatible with Analog Devices design tools for ADRV9002.

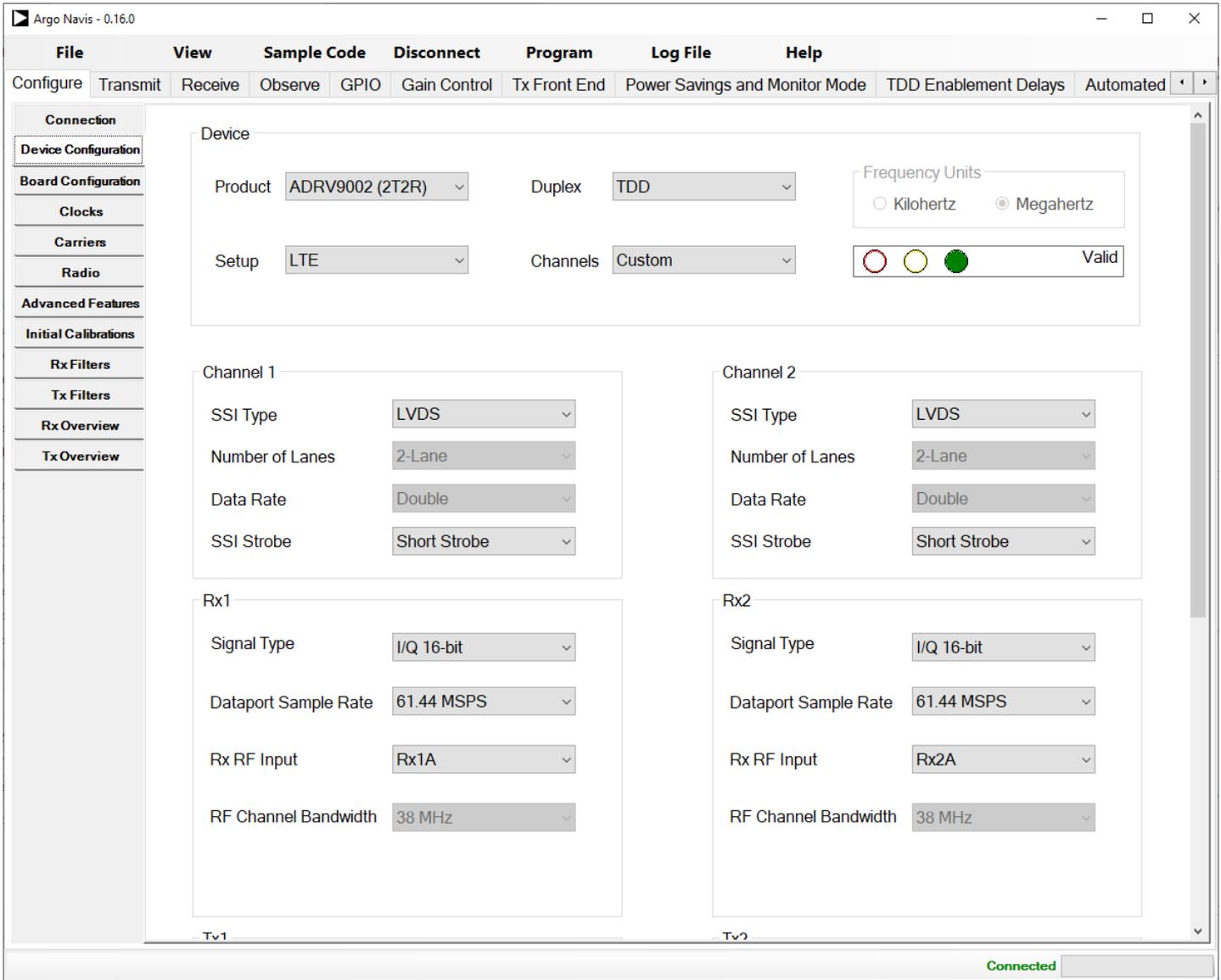


Figure 3: FMC249 Compatible Design Tools for ADRV9002

Specifications

Architecture		
Physical	Dimensions	Single Module
		Width 2.71" (69 mm)
		Depth 3.01" (76.5 mm)
Type	FMC	Dual wideband transceiver, single ADRV9002 FMC connector
Standards		
FMC	VITA 57	ANSI/VITA 57.1
Configuration		
Power	FMC249	10W
Performance	Broadband transmitter	Tuneable range from 30 MHz to 6 GHz
		Transmitter bandwidth from 12 KHz to 40 MHz
	Broadband receiver	Tuneable range from 30 MHz to 6 GHz
		Receiver bandwidth from 12 KHz to 40 MHz
	RF Synthesizer	Two fully integrated, fractional-N
	Integrated synthesizers	LO Frequency Step 4.5Hz
Environmental	Temperature	See Ordering Options (air flow requirements >400 LFM)
		Storage Temperature: -40° to +85°C
		Vibration
	Shock	30Gs each axis
	Relative Humidity	5 to 95% non-condensing
Front Panel	Interface Connectors	10x SSMC Front Panel Connector
		LEDs
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

FMC249 – AB0-000-0HJ

A = Input/Out Freq		
0 = Up to 3GHz 1 = 2.8GHz to 6GHz		
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

* Default configuration

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

VadaTech Corporate Office

198 N. Gibson Road, Henderson, NV 89014

Phone: +1 702 896-3337 | Fax: +1 702 896-0332

Asia Pacific Sales Office

7 Floor, No. 2, Wenhui Street, Neihu District, Taipei 114, Taiwan

Phone: +886-2-2627-7655 | Fax: +886-2-2627-7792

VadaTech European Sales Office

VadaTech House, Bulls Copse Road, Southampton, SO40 9LR

Phone: +44 2380 016403

info@vadatech.com | www.vadatech.com

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- Mutual success

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