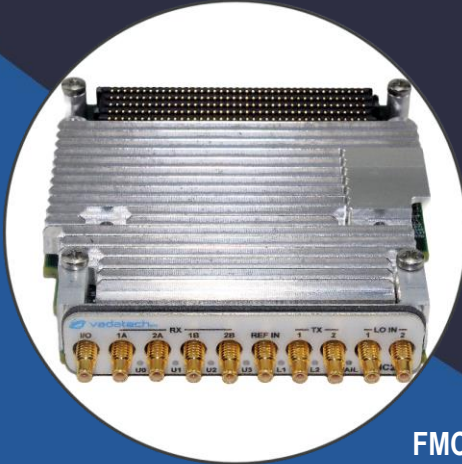


FMC248

30 MHz to 6 GHz Dual Narrow-Band and Wideband RF Transceiver, FMC



FMC248

Key Features

- FPGA Mezzanine Card (FMC) per VITA 57
- Complete transceiver signal chain solution using Single Analog Device (ADRV9002)
- 2 x 2 Highly Integrated Transceiver
- 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



vadatech
THE POWER OF VISION



FMC248

The FMC248 is a FPGA Mezzanine Card (FMC) per VITA 57.1 standard. This low powered unit boasts a small footprint and utilizes a single 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 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).

This makes the FMC248 an ideal choice for the development and/or deployment of advanced RF solutions.

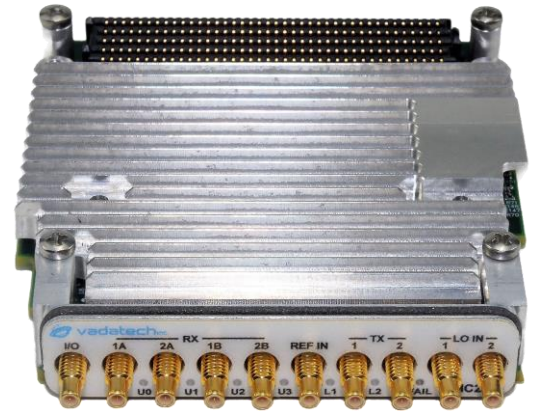


Figure 1: FMC248

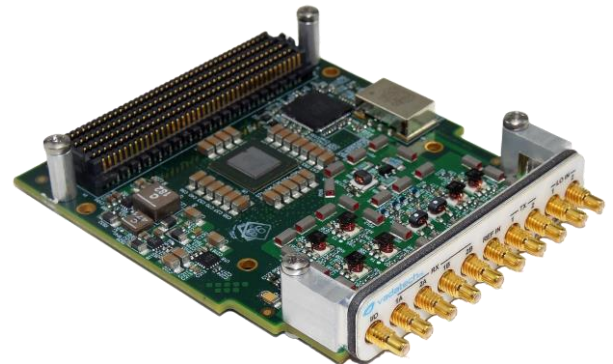


Figure 2: FMC248 without Heatsink

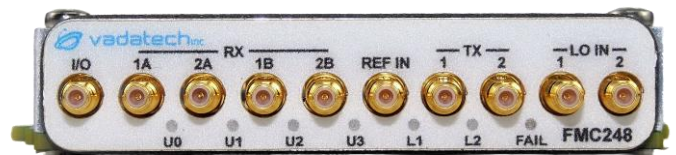


Figure 3: FMC248 Front Panel View

Block Diagram

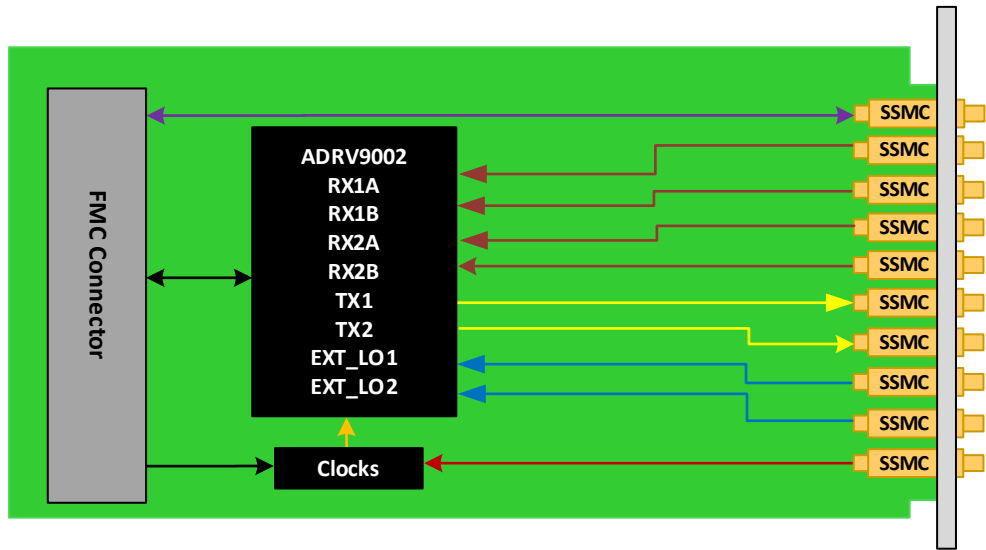


Figure 4: FMC248 Functional Block Diagram

Supported Software

The FMC248 is compatible with Analog Devices design tools for ADRV9002.

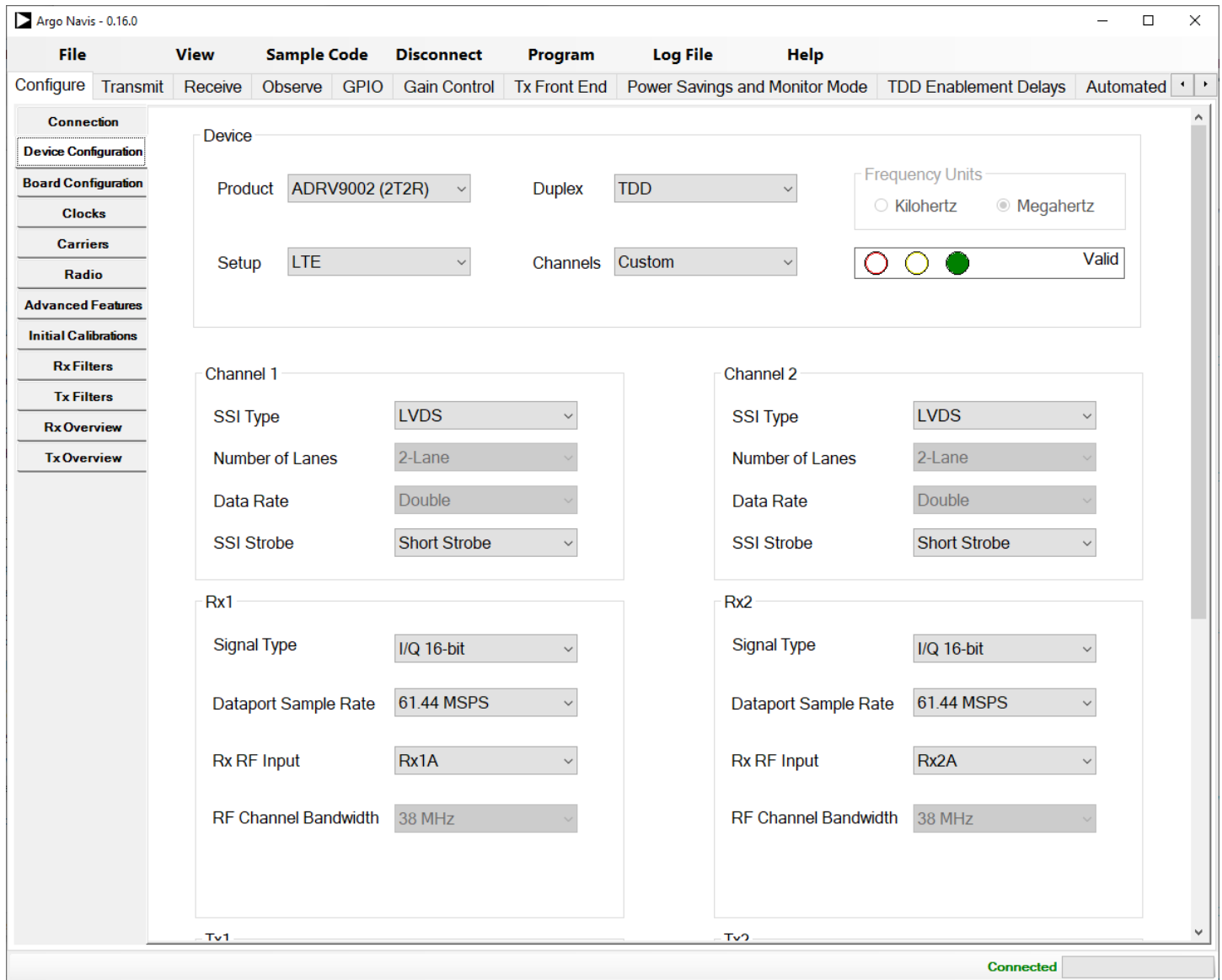


Figure 3: FMC248 Compatible Design Tools for ADRV9002

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	FMC248	5W
Performance	Broadband transmitter	Tuneable range from 30 MHz to 6 GHz Transmitter bandwidth from 12 KHz to 40 MHz
		Broadband receiver
	RF Synthesizer	
	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	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

FMC248 – 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 GS/SPS
- 2 V_{pp} 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, Wenhua 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

Choose VadaTech

We are technology leaders

- First-to-market silicon
- Constant innovation
- Open systems expertise

We commit to our customers

- Partnerships power innovation
- Collaborative approach
- Mutual success

We deliver complexity

- Complete signal chain
- System management
- Configurable solutions

We manufacture in-house

- Agile production
- Accelerated deployment
- AS9100 accredited



vadatech
THE POWER OF VISION

Trademarks and Disclaimer

The VadaTech logo is a registered trademark of VadaTech, Inc. Other registered trademarks are the property of their respective owners. AdvancedTCA™ and the AdvancedMC™ logo are trademarks of the PCI Industrial Computers Manufacturers Group. All rights reserved. Specification subject to change without notice.

© 2019 VadaTech Incorporated. All rights reserved.
DOC NO. 4FM737-12 REV 01 | VERSION 1.2 – MAR/23