

# FMC256

QSFP28, Dual ADC, dual DAC plus  
Digital I/O, FMC



FMC256

## Key Features

- Four SERDES to QSFP28 to allow for high-speed multi-protocol communicate via Fiber or Copper
- On board PLL to lock to input clock for synchronization
- Two channels SAR ADC based on LTC2378, 20-bit at one MSPS
- Two channels DAC based on AD5791, 20-bit
- Four digital Output (could be used for Trig In/Out)
- Standard VITA 57.1 FMC

## Benefits

- High density, multi-function board
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company



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# FMC256

The FMC256 is an FPGA Mezzanine Card (FMC) per VITA 57.1 standard, offering a small footprint and providing high speed serial communication, ADC, DAC and digital I/O.

Two LTC2378-20 each provide an input channel ADC of 20-bits at 1 MSPS, and two AD5791 each provide an output channel DAC of 20-bits.

Discrete digital I/O comprises 4 outputs.

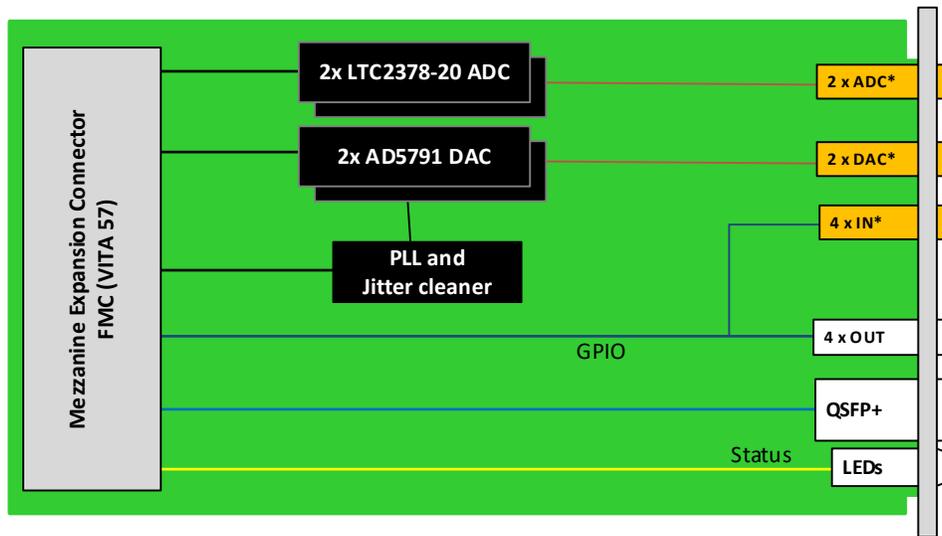
A QSFP28 connector provides four SERDES organised as two pairs. Each pair is supported by an onboard clock and could run at different speed rate. The modules allow synchronization from clocks coming from the Carrier.

***The Module does not follow the VITA57 height constrain.*** It has an additional Daughter card that mates to the FMC module to allow it to accommodate the ADC/DAC channels. For example, on the AMC FPGA FMC Carriers, it requires a full-height AMC panel to accommodate all the I/Os. The Carrier must have a monolithic panel (the FMC256 does not come with an FMC panel) to cover the FMC256 I/O envelope



Figure 1: FMC256

# Block Diagram



\*I/O is via high density RF connector

Figure 2: FMC256 Functional Block Diagram

# Specifications

<b>Architecture</b>		
<b>Physical</b>	<b>Dimensions</b>	Single Module Width: 2.71" (69 mm) Depth: 3.01" (76.5 mm)
<b>Type</b>	<b>FMC</b>	ADC/DAC and High-speed serial (SERDES)
<b>Standards</b>		
<b>FMC</b>	<b>Type</b>	ANSI/VITA 57.1
<b>Configuration</b>		
<b>Power</b>	<b>FMC256</b>	TBD
<b>Environmental</b>	<b>Temperature</b>	See <a href="#">Ordering Options</a> Storage Temperature: -40° to +85°C
	<b>Altitude</b>	TBD
	<b>Vibration</b>	Operating 9.8 m/s <sup>2</sup> (1G), 5 to 500 Hz on each axis
	<b>Shock</b>	Operating 30Gs each axis
	<b>Relative Humidity</b>	5 to 95% non-condensing
<b>Front Panel</b>	<b>Interface Connectors</b>	High Density RF I/O Connector, QSFP28, SSMC and Twinax
	<b>LEDs</b>	Status
<b>Software Support</b>	<b>Operating System</b>	Agnostic
<b>Other</b>		
<b>MTBF</b>		MIL Hand book 217-F@ TBD hrs
<b>Certifications</b>		Designed to meet FCC, CE and UL certifications, where applicable
<b>Standards</b>		VadaTech is certified to both the ISO9001:2015 and AS9100D standards
<b>Warranty</b>		Two (2) years, see <a href="#">VadaTech Terms and Conditions</a>

## 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

## FMC256 – A00-000-00J

<b>A = QSFP+ Transceiver</b>		
0 = None 1 = QSFP+ SR-4 150M 2 = QSFP+ SR-4 300M 3 = QSFP+ SR SWDM4 100m 4 = QSFP+ SR SWDM4 300m 5 = QSFP+ LR4 CWDM 1KM 6 = QSFP+ LR4 CWDM 10KM 7 = Reserved		
		<b>J = Temperature Range and Coating</b>
		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:

## Related Products

AMC592



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

FMC155



- Multiple I/O in single FMC from-factor
- LVDS, RS-422, and singled-ended +3.3V
- 16x LVDS input/outputs with speed up to 350 MHz and programmable crossbar circuit routing

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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