

# FMC224

Quad DAC 16-bit @ 2.8 GSPS, FMC



FMC224

## Key Features

- FPGA Mezzanine Card (FMC) per VITA 57
- Quad Port DAC 16-bit at 2.8 GSPS (TI DAC39J84)
- Independent 1x16x Interpolation
- Independent Complex Mixers with 48-bit NCO/ or +/-xfs/8
- Sinx/x Correction Filters
- Digital Summation of Independent Complex Signals
- Onboard Wideband PLL
- Trig In/Out

## Benefits

- Excellent dynamic and direct RF synthesis performance with minimal loss in output power
- Ideal for Broadband communications systems, Wireless infrastructure, LTE, ATE, RADAR/Jamming
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company



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# FMC224

The FMC224 is an FPGA Mezzanine Card (FMC) per the VITA 57 specification. The module has a quad Port DAC 16-bit @ 2.8 GSPS.

The DAC converter utilizes the TI DAC39J84 which is JESD204B compliant. The device includes features that streamline the design of complex transmit architecture. It includes fully by-passable 2x to 16x digital interpolation filters with over 90 dB of stop-band attenuation to simplify the data interface.

An on-chip 48-bit Numerically Controlled Oscillator (NCO) and independent complex mixer allow flexible and accurate carrier placement.

The module has a wide-band PLL which can take its reference clock via the front panel, FMC Carrier or the onboard reference. The unit also allows the RF Clock syntheses to be generated by the onboard wide-band PLL or the front panel.



Figure 1: FMC224

# Block Diagram

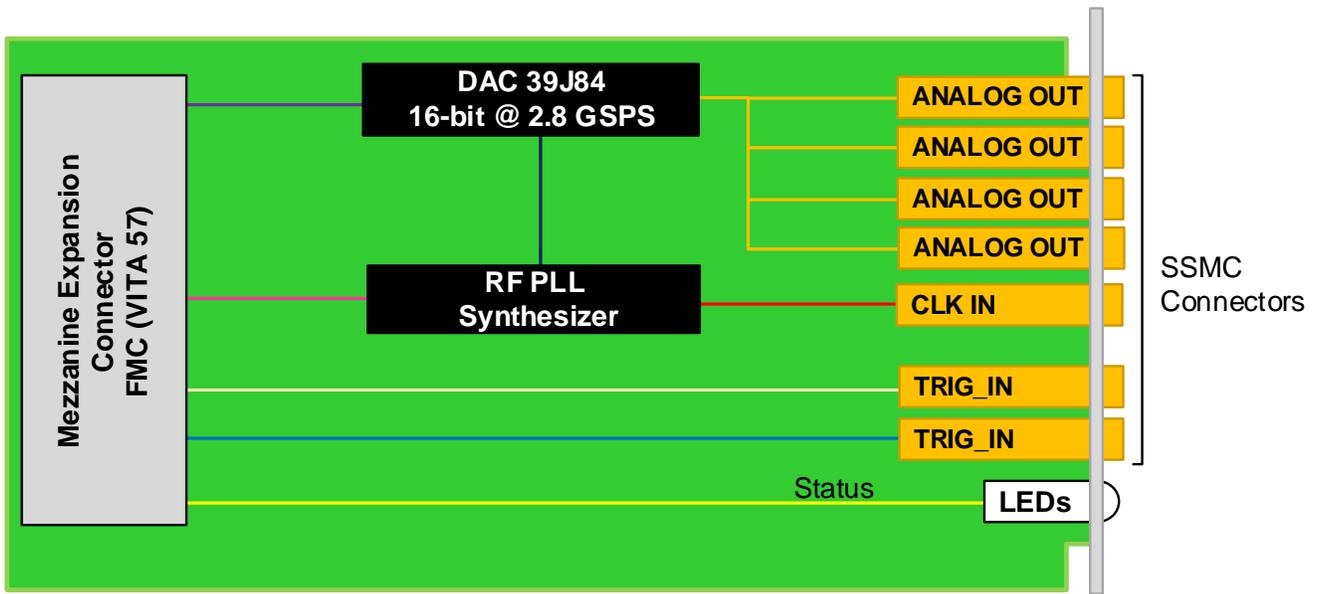


Figure 2: FMC224 Functional Block Diagram

# Specifications

Architecture	
<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> Quad Port DAC Single FMC slot
Standards	
<b>FMC</b>	<b>Type</b> ANSI/VITA 57.1 - 2008
Configuration	
<b>Power</b>	<b>FMC224</b> ~4W
<b>Environmental</b>	<b>Temperature</b> See <a href="#">Ordering Options</a> Storage Temperature: -40° to +85°C
	<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> 7x SSMC
	<b>LEDs</b> Status
Other	
<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 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

## FMC224 – AB0-000-G0J

<b>A = RF Clock Synthesis</b> 0 = Via on board PLL 1 = Direct via front panel		<b>G = FMC Board Spacing</b> 0 = 10 mm (per VITA-57 specification) 1 = 17.5 mm*
<b>B = DAC Output Bandwidth</b> 0 = 250 MHz to ~1.4 GHz 1 = 4.5 MHz to ~350 MHz		
		<b>J = Temperature Range and Coating</b> 0 = Commercial (–5° to +45°C), No coating 1 = Commercial (–5° to +45°C), Humiseal 1A33 Polyurethane 2 = Commercial (–5° to +45°C), Humiseal 1B31 Acrylic 3 = Industrial, No Coating 4 = Industrial, Humiseal 1A33 Polyurethane 5 = Industrial, Humiseal 1B31 Acrylic 6 = Extended, Humiseal 1A33 Polyurethane** 7 = Extended, 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

AMC515



- AMC FPGA carrier for FPGA Mezzanine Card (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

AMC517



- Xilinx Kintex-7 410T FPGA in FFG-900 package with optional P2040
- Supported by DAQ Series™ data acquisition software
- AMC Ports 4-11 are routed to FPGA per AMC.1, AMC.2 and AMC.4 (protocols such as PCIe, SRIO, XAUI, etc. are FPGA programmable)

FMC210



- FPGA Mezzanine Card (FMC) per VITA 57
- Single ADC EV10AS150B @ 2.6 GSPS
- 5 GHz Full Power Input Bandwidth (–3dB)

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