

# FMC164

## Local Oscillator (LO) with Input Reference, FMC



## Key Features

- Sync to front panel external clock
- Sync to carrier clock
- Input sync clock down to 1PPS
- Hitless failover
- OCXO and XO for low jitter and stability
- Programmable Local Oscillator up to 6.5GHz
- 10Mhz Sinewave output
- Dual single ended output clock
- FPGA Mezzanine Card (FMC) per VITA-57
- Status LED
- RoHS compliant

## Benefits

- FMC form factor programmable LO for commercial applications or radar and EW
- All FMC carriers provided with a reference design with VHDL source code and configuration binaries
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company



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# FMC164

The FMC164 is an FPGA Mezzanine Module per VITA 57 specification that can be mounted on air or conduction-cooled carriers.

The FMC164 can provide an LO output of up to 6.5 GHz via a wideband PLL, locked to either an external source or a reference from the FMC carrier. The sync clock can go down to 1PPS. The PLL RF clock output is via a user-programmable band-pass filter. The onboard OCXO and the XO assure excellent Jitter and stability.

The module also outputs a 10MHz sinewave sync in addition to the LO output.

Further the FMC164 PLL outputs dual clock as LVDS and outputs as single ended via SMCC which is synced with the LO. The clocks are programmable with fractional PLL.



Figure 1: FMC164

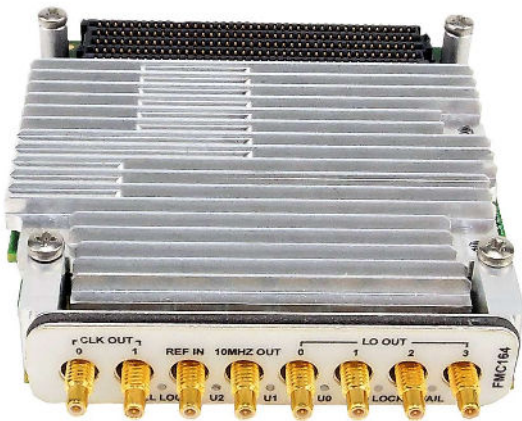


Figure 2: FMC164 with Heat Sink

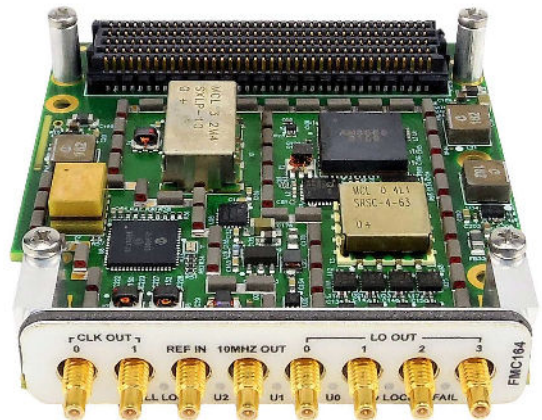


Figure 3: FMC164 without Heat Sink

## Block Diagram

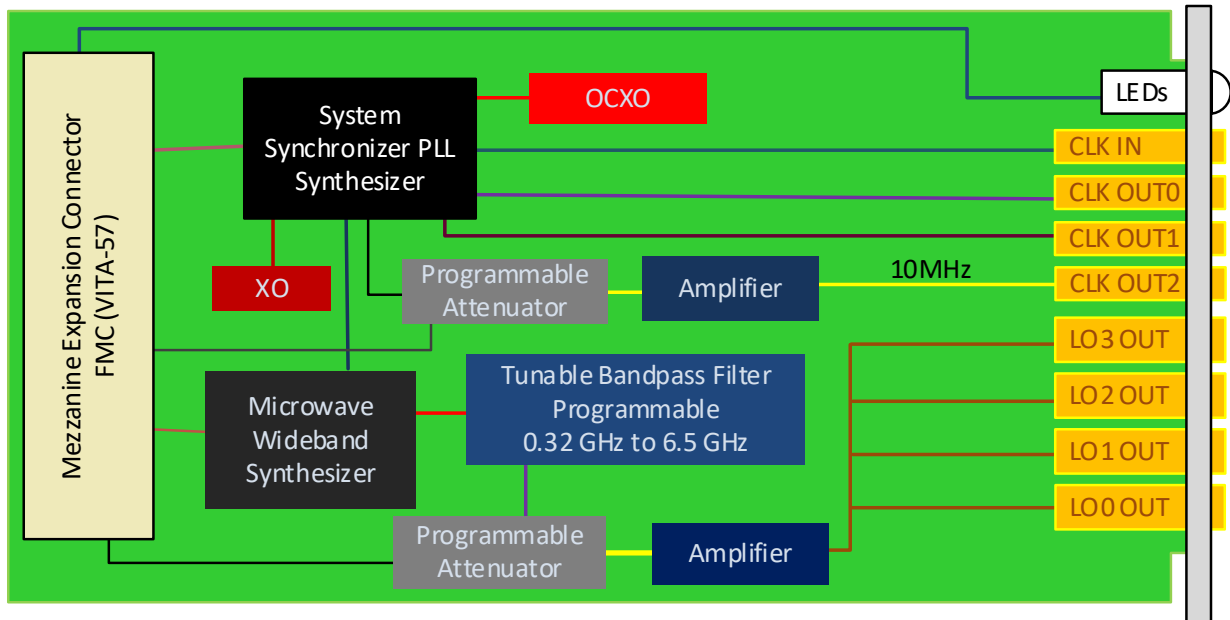


Figure 4: FMC164 Functional Block Diagram

## Front Panel



Figure 5: FMC164 Front Panel

# 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>	Clock Generation, Single FMC
<b>Standards</b>		
<b>FMC</b>	<b>VITA-57</b>	ANSI/VITA 57
<b>Configuration</b>		
<b>Power</b>	<b>FMC164</b>	5 W
<b>Environmental</b>	<b>Temperature</b>	Operating temperature: -5° to 55° C
		Storage Temperature: -40° to +85°C
	<b>Vibration</b>	1G, 5 to 500 Hz on each axis
	<b>Shock</b>	30Gs each axis
	<b>Relative Humidity</b>	5 to 95 per cent, non-condensing
<b>Front Panel</b>	<b>Interface Connectors</b>	8x SSMC
	<b>LEDs</b>	Status and User defined
<b>Software Support</b>	<b>Operating System</b>	Agnostic
<b>Conformal Coating</b>		Humiseal 1A33 Polyurethane (Optional)
		Humiseal 1B31 Acrylic (Optional)
<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 ISO9001:2000 and AS9100B:2004 standards
<b>Warranty</b>		Two (2) years

## INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA and  $\mu$ TCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTM), 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.

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# Ordering Options

FMC164 – 000 – 000 – 00J

		<b>J = Conformal 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 = Reserved 7 = Reserved

## Related Products



- FPGA Mezzanine Card (FMC) per VITA-57
- Single ADC EV10AS150B @2.5 GSPS
- 5 GHz Full Power Input Bandwidth (–3dB)



- FPGA Mezzanine Card (FMC) per VITA 57
- Wideband Digital Quadrature Modulator
- Quad DAC16-bit @ 2.8 GSPS



- AMC FPGA carrier for FMC per VITA-57
- Xilinx Virtex-7 690T FPGA in FFG-1761 package with optional P2040
- Supported by DAQ Series™ data acquisition software

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