FMC113

FMC Dual 10GbE Copper with IEEE1588/SyncE Support and Dual CoaXPress

FMC113

Key Features

- Single module FPGA Mezzanine Card (FMC) per VITA 57
- Dual 10GBASE-T, 5GBASE-T, 2.5GBASE-T, 1000BASE-T, 100BASE-TX
- A wide variety of interfaces to MAC XFI/10BASE-KR, USXGMII, 5G/2.5G over XFI, 5000BASE-X, 2500BASE-X and 1000BASE-X (SGMII)
- Support for IEEE1558-2008 Version 2-compliant
- Support for Synchronous Ethernet (SyncE)
- Dual CoaXPress per CXP-6 specification

Benefits

- Design utilizes proven VadaTech subcomponents and engineering techniques
- Full ecosystem of front and rear boards, enclosures, specialty modules, and test/dev products from one source
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

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The FMC113 is an FPGA Mezzanine Card per VITA 57 specification. It has dual RJ-45 connectors that can support 10GBASE-T over copper with Category 6, 6A and 7 twisted-pair cable.

The unit also supports 5GBASE-T, 2.5GBASE-T, 1000BASE-T and 100BASE-TX on standard Category 5e Unshielded Twisted Pair (UTP) cable.

The module interfaces to the Media Access Control (MAC) address with multiple protocols such as XFI/10GBASE-KR, USXGMII, 5G/2.5G rate over XI, 5000BASE-X, 2500BASE-X and 1000BASE-X (SGMII).

The Module further supports transceiver-MAC to magnetics:

- 10GBASE-T IEEE802.3an
- 5GBASE-T IEEE802.3bz
- 2.5GBASE-T IEEE8023.bz
- 1000BASE-T IEEE802.ab
- 100BASE-TX IEEE 802.3u

Figure 1: FMC113

The module supports both the IEEE1588 as well as SyncE and has a very high-end performance PLL which meets the G.8262 EEC Opt 1, 2 (SyncE).

In addition, the module has dual CoaXPress receivers per CXP-6 specification and can receive data at 6.25 Gbps with 68 meters of cable, and transmit at 21 Mbps. It can also Support up to 212 meters of cable at 1.25 Gbps.
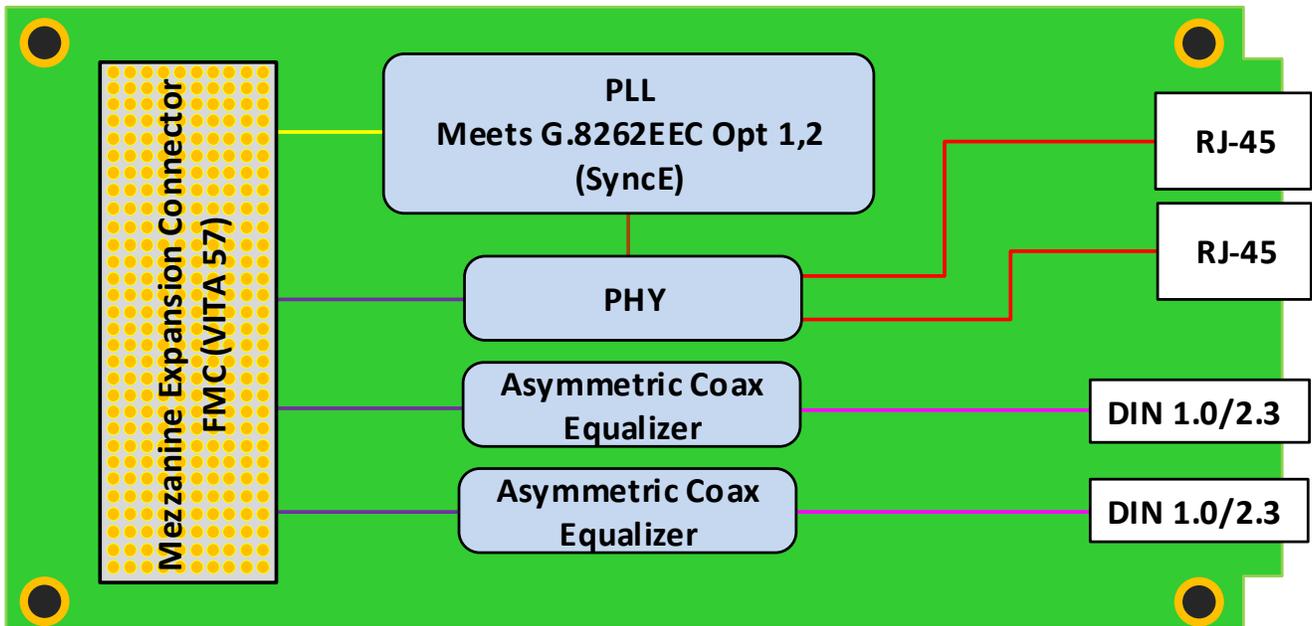
Block Diagram

Figure 2: FMC113 Functional Block Diagram

FMC113 – FMC Dual 10GbE Copper with support for IEEE1588 with Dual CoaXPress

Specifications

Architecture		
Physical	**Dimensions**	Single Module
		Width: 2.71" (69 mm)
		Depth: 3.011" (76.5 mm)
Type	**FMC**	Dual Port 10GbE Copper
		Single FMC slot
Standards		
FMC	**Type**	ANSI/VITA 57.1 – 2008
Configuration		
Power	**FMC113**	3W
Environmental	**Temperature**	Air flow requirements >400 LFM, See Ordering Options
		Storage Temperature: –40° to +85°C
	Vibration	Operating 9.8 m/s^2 (1G), 5 to 500 Hz
	Shock	30Gs each axis
	Relative Humidity	5 to 95% non-condensing
Front Panel	**Interface Connectors**	Dual RJ-45 connectors and dual DIN 1.0/2.3
	LEDs	None
Other		
MTBF		MIL Handbook 217-F@TBD Hrs.
Certifications		Designed to meet FCC, CE and UL certifications, where applicable
Standards		VadaTech is certified to both the ISO9001:2015 and AS9100D 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

FMC113 – 000-000-G0J

		G = FMC Board Spacing
		0 = 10 mm (per VITA 57 specification) 1 = 17.5 mm* 2 = 13 mm
		J = Temperature Range and Coating
		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 = Extended Industrial (–40° to +70°C), No coating 4 = Extended Industrial (–40° to +70°C), Humiseal 1A33 Polyurethane 5 = Extended Industrial (–40° 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:

*For use with carriers that require higher mating clearance, such as VadaTech AMC595. Requires full size AMC.

Related Products

AMC517

- AMC FPGA carrier for FMC per VITA 57
- Xilinx Virtex-7 410T FPGA in FFG-900 package with optional P2040
- Supported by DAQ Series™ data acquisition software

AMC532

- AMC FPGA based on Altera Stratix-V (5SGXEA) in F1932 package
- VITA 57.1 FMC HPC Connector (compatible with LPC)
- All FMC LA, HA, HB pairs routed bi-directionally

FMC210

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

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