FMC155

Multi I/O FMC Module

(LVDS, RS-485/422, Single-ended +3.3V)

FMC155

Key Features

- Multiple I/O in single FMC from-factor
- LVDS, RS-422, and singled-ended +3.3 V
- 16x LVDS input/outputs with speed up to 350 MHz and programmable crossbar circuit routing
- 8x RS-485/RS-422 TX with speed up to 20 Mbps
- 8x RS-485/RS-422 RX with speed up to 52 Mbps
- 16x Singled-ended +3.3 V input/outputs

Benefits

- Single module to provide multiple I/O
- Utilizing commercially-available, standard high-density connector for ease of cabling
- All I/O types utilize differential signaling between the transceivers on the FMC and the FPGA on the carrier for optimal signal integrity across the FMC connector
- Programmable LVDS termination and routing

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The FMC155 is an FPGA Mezzanine Card (FMC) per VITA 57.1 standard, offering a small footprint and allowing for general-purpose I/O expansion.

The FMC155 provides sixteen LVDS input/outputs, eight RS-485/422 RX plus eight RS-485/422 TX, and sixteen single-ended +3.3 V input/outputs.

The LVDS signals go through a Cross Bar Switch (CBS), which allows input/output routing within each group of eight LVDS signals. Each CBS port can be individually software-configured for routing, termination, and direction.

Each of the single-ended port can be configured as input or output. The RS-485/422 configuration can be selected as full-duplex RS-422 (independent RX/TX pairs with RX termination) or half-duplex RS-485 (RX/TX pairs tied together, no termination on board) based on the ordering option. The FMC155 can provide power of up to 12 W to an external module.

Block Diagram

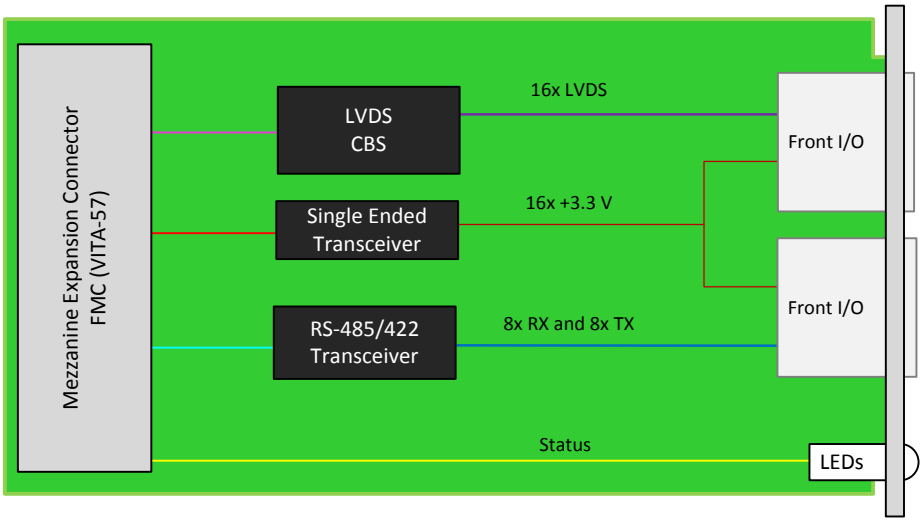

Figure 1: FMC155 Functional Block Diagram

Specifications

Architecture		
Physical	**Dimensions**	Single module
		Width: 2.71” (69 mm)
		Depth 3.01” (76.5 mm)
Type	**FMC**	Digital I/O
Standards		
FMC	**Type**	ANSI/VITA 57.1-2008
Configuration		
Power	**FMC155**	3W (without the external module taking any power, the external module can take up to 12W in addition)
Environmental	**Temperature**	Operating temperature: -5° to 55° C, industrial and extended versions also available (See environmental spec sheet)
		Storage Temperature: –40° to +85°C
	Vibration	Operating 9.8 m/s^2 (1G), 5 to 500Hz on each axis
	Shock	Operating 30G on each axis
	Relative Humidity	5 to 95 per cent, non-condensing
Front Panel	**Interface Connectors**	Dual high density connector (lathing style)
	LEDs	Status
Software Support	**Operating System**	Agnostic
Conformal Coating		Humiseal 1A33 Polyurethane (Optional)
		Humiseal 1B31 Acrylic (Optional)
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	

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of ATCA, µTCA and VPX 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.

Ordering Options

FMC155 – A00-000-G0J

A = I/O Configuration for RS-485/422		G = FMC Board Spacing
0 = Full-duplex - 8 RS-422 RX w/ termination and 8 RS-422 TX 1 = Half-duplex - 8 RS-485 Transceivers (RX & TX pairs tied) 2 = Reserved 3 = Reserved 4 = Reserved		0 = 10 mm (per VITA-57 specification) 1 = 17.5 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 = 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 **

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

** Conduction cooled, temperature is at edge of module. Consult factory for availability.

Related Products

VT951

- MicroTCA rugged 1U 19” rackmount chassis platform
- Designed to meet MIL-STD-810F, MIL-STD-901D for shock/vibration
- Designed to meet MIL-STD-461E for EMI

FMC214

- Dual complete transceiver signal chain solution using Analog Devices AD9361 transceiver
- Frequency range 70 MHz to 6 GHz with instantaneous bandwidth from 200 kHz to 56 MHz
- MIMO transceiver is Time Domain Duplex (TDD) and Frequency Domain Duplex (FDD) compatible

AMC599

- Xilinx UltraScale™ XCKU115 FPGA
- Dual ADC @ 6.4 GSPS 12-bits or quad ADC at 3.2 GSPS
- Dual DAC (AD9162 or AD9164) @ 12 GSPS, 16-bits

Contact

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