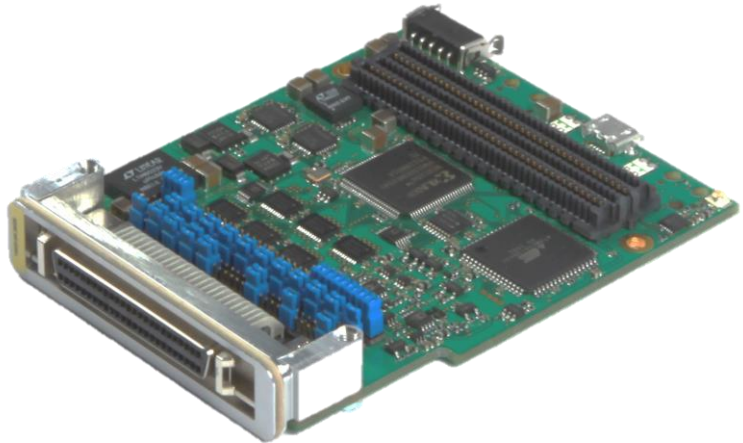


FMC Multi-Purpose I/O Board

DFMC-UNI-IO



HIGHLIGHTS

Universal I/O Board

3.3 V or 5 V output level

FEATURES

Low-Pin-Count FMC Module

Up to 48 general-purpose digital I/O pins

2 pins useable as 12-Bit DAC (0-5 V, 50 mA drive)

2 pins useable as 12-Bit ADC

2 x 2 pins useable as two independent power channels

Hardware current limit: 2 x 1A with soft-start

4 pins useable as standard UART (12V levels)

The DFMC-UNI-IO is a cost-efficient FMC board designed according to ANSI/VITA 75.1. The card can be used in all applications where standard I/O channels with 3.3V or 5V levels are required. Additionally it offers analog functions needed for measurement and control tasks such as two programmable power supplies, two DACs and two ADCs and a true RS232 UART. All I/Os and all functions are routed to a CPLD where special supervision functions can be implemented and where special waveforms can be generated on the analog channels.

One use scenario of the card is the control of a laser system. The I/Os are used to for communication with a laser controller. The power source is used to drive a shutter with CPLD-generated pulse shapes. The DAC and ADC are used to drive and monitor the optocouplers in the shutter.

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A HELMHOLTZ INNOVATION LAB



FMC Multi-Purpose I/O Board DFMC-UNI-IO

TECHNICAL SPECIFICATIONS

ARCHITECTURE

Physical	Single-width 10mm stacking height	
	Size: 76.6 x 69 mm	
Standards	VITA 57 Standard (LPC)	FPGA Mezzanine Card (FMC)
	module management	IPMI Version 2.0
Compatibility	FMC classification	Low Pin Count (LPC) FMC connector
	Compatible products	DAMC-FMC20, DAMC-FMC25, DAMC-FMC2ZUP etc.

CONFIGURATION

Type	DAC	Resolution	12-bit
		Interface	SPI
		Conversion rate	160 kSPS typical
		Output voltage range	0-5V
	ADC	Resolution	12-bit
		Sampling rate	250 kSPS
		Input voltage range	0-5 V
		Interface	SPI
	UART	Data rate	up to 120 kbps
		Output levels	True RS-232
		Channels	2 receivers and 2 drivers
	High-Power channel	Out channels	2 x 9 V
		Hardware current limit	1 A
			Soft-start

OTHER FEATURES

General Purpose I/O	Jumper can select IO/GND/special function for every pin
	Up to 48 general purpose I/Os (no special function used)
	Selectable voltage level (3.3V or 5V per pin)
	Voltage setting stored in EEPROM (fail-safe)
Front panel interface	Amplimite .050 III Series, 50-pin male

OTHER

Compliance	RoHS
Standards	ANSI/VITA 57.1
Licensing to industry	Yes / Deutsches Elektronen-Synchrotron - Notkestr. 85, 22607 Hamburg - Germany - Email: mtca-techlab@desy.de

FMC Multi-Purpose I/O Board DFMC-UNI-IO

FUNCTIONAL BLOCK DIAGRAM

