

ACQ480FMC Advance Product Specification



High Performance Simultaneous Data Acquisition

*Preliminary Product Information
Subject to Change*

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1 Product Description

1. *ACQ480FMC* is an 8 channel simultaneous analog input module.
2. Standard configuration: 8 channels, 50MSPS/channel.
3. Complies with *VITA57 FMC* standard, *LPC* version.
4. Single-ended input on MMCX connector
5. Compliant with D-TACQ *ELF* sites.

1.1 Product Variants

- *ACQ480FMC-8-50* : 8 channels, 14 bit resolution, 50MSPS/channel
- *ACQ480FMC-4-80* : 4 channels, 14 bit resolution, 80MSPS/channel

1.2 Applications

- Radar, Radio Reflectometry, high speed ultrasound and diagnostics..

1.3 Overview

The FMC module standard adds user IO to carrier modules fitted with FPGA resource. D-TACQ recommends modules based on the Xilinx ZYNQ system on chip, combining FPGA resource with a dual-core ARM Cortex A9 and gigabit Ethernet.

Compatible carriers include:

- D-TACQ **ACQ1001** : D-TACQ single slot FMC carrier, Z7020
- D-TACQ **ACQ1002** : D-TACQ dual slot FMC carrier, Z7020
- D-TACQ **ACQ2106** : D-TACQ 6 slot FMC carrier, Z7030

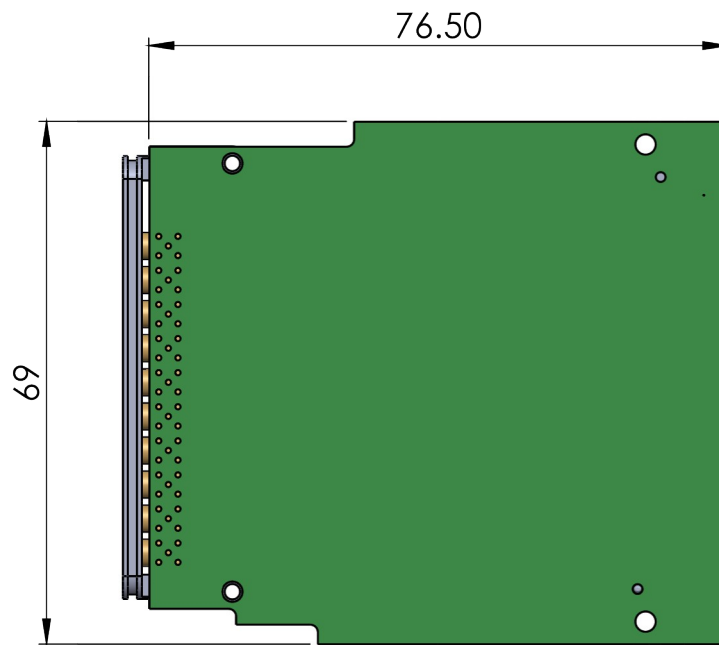
D-TACQ supplies a complete working Intelligent Digitizer appliance including programmable logic and microprocessor system running Linux. Evaluation boards are useful for evaluation, but for production use D-TACQ recommends use of a production-quality carrier such as ACQ1001.

1.4 Glossary

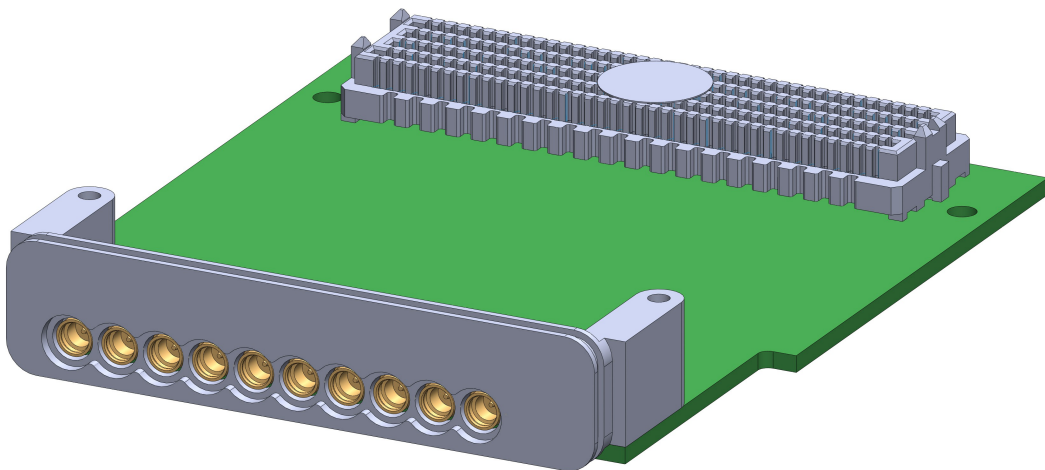
- *FMC*: [VITA57 FPGA Mezzanine Card](#).
- [Xilinx ZYNQ Soc](#)
- *FPGA* : Field Programmable Gate Array.
- *LPC* : *FMC* Low pin count wiring standard.
- *ULPC*: *FMC* Ultra low pin count (D-TACQ).
- *ULPC+* D-TACQ Ultra low pin count with LVDS
- *Extended, E* : *FMC* Extended size module (D-TACQ).

2 Physical

2.1 Dimensions



2.2 Appearance



3 Interface Specification.

3.1 Front Panel Connectors

- 10 x MMCX connectors
- 8 channel input
- External CLK, TRG

4 ACQ480FMC Electrical Specification.

#	Parameter	Value
1	Number of Channels	4/8
2	Sample Rate	80 MSPS/50 MSPS, per channel simultaneous
3	Resolution	14 bits
4	Coupling	DC, Single-Ended Input
5	Input Impedance	1M, [50 Ω option]
6	Input Voltage Range	$\pm 2.5V$ (default, other factory options)
7	Input Voltage Withstand	$\pm 30V$
8	Offset Error	± 3 mV
9	Gain Error	± 2 mV
10	INL	± 1 LSB
11	DNL	± 0.5 LSB
12	CMRR	TBD
13	THD	TBD
14	SINAD	71 dB typical
15	SFDR	85 dBc typical
16	SNR	72 dB typical
17	Full Power BW	40 MHz @ 2Vpp
18	Small Signal BW	80 MHz
	Crosstalk	<90 dB @ 1 kHz FS Input
	Temperature Stability	<25 ppm/C

5 ACQ480FMC Specification

#	Parameter	Value
1	Form Factor	Standard FMC
2	Power source	External DC 12V (0V output), 100mA External DC 3.3V, 500 mA
3	Environmental	0°C-50°C Operational -10°C-85°C Non-Operational
4	FMC Socket	Standard FMC, Low Pin Count LPC
5	Digital Signal IO	CLK, TRG inputs 5V TTL