

# FMC120

## Four Channel 16-Bit A/D up to 1.0 Gsps. Four Channel 16-Bit D/A up to 1.25 Gsps

The FMC120 provides four 16-bit A/D channels up to 1Gsps and four 16-bit D/A channels up to 1.25 Gsps data rate with a 2.8 GSPS update rate. The design is based on Texas Instruments' ADS54J60 Analog-to-Digital converter and Texas Instruments' DAC39J84 Digital-to-Analog converter. The sample clock can be supplied externally through a coax connection or supplied by an internal clock source (optionally locked to an external reference) for multi-channel synchronization. An external trigger input is available for timing synchronization. The FMC120 is mechanically

and electrically compliant to the FMC standard (ANSI/VITA 57.1). The card connects to an FPGA carrier card through a standard high-pin count (HPC) connector. Front panel I/O can optionally be populated with MMCX or SSMC coaxial connectors. Analog I/O is DC coupled. The FMC120 is designed to be used in convection or conduction cooled environments. When paired with the latest FPGA carrier cards such as the Abaco Systems PC821 with Xilinx Ultrascale technology, customers can innovate high performance algorithms on an industry standard platforms.

ANSI/VITA 47	Air-cooled		Conduction-cooled	
	EAC4	EAC6	ECC1	ECC4
Operating temperature	0C to +55C	-40C to +70C	0C to +55C	-40C to +85C
Storage temperature	-40C to +85C	-50C to +100C	-40C to +85C	-55C to +105C
Humidity	95%	95%	95%	95%
Operating vibration	5Hz to 100Hz PSD = 0.04g <sup>2</sup> /Hz 100 Hz to 1000 Hz PSD = 0.04 gs <sup>2</sup> /Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave	5Hz to 100H PSD = 0.04g <sup>2</sup> /Hz 100 Hz to 1000 Hz PSD = 0.04 gs <sup>2</sup> /Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave	5 Hz to 100 Hz PSD increasing at 3 dB/octave 100 Hz to 1000 Hz PSD = 0.1 g <sup>2</sup> /Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave	5 Hz to 100 Hz PSD increasing at 3 dB/octave 100 Hz to 1000 Hz PSD = 0.1 g <sup>2</sup> /Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave
Operating shock	20g, 11 millisecond, half-sine or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes	20g, 11 millisecond, half-sine or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes	40g, 11 millisecond shock half-sine or 40g, 11 millisecond, terminal sawtooth shock pulses in all three axes	40g, 11 millisecond shock half-sine or 40g, 11 millisecond, terminal sawtooth shock pulses in all three axes
Operating altitude	-1500 ft to 60,000 ft (with airflow)	-1500 ft to 60,000 ft (with airflow)	-1500 ft to 60,000 ft	-1500 ft to 60,000 ft
Conformal coating	Optional	Optional	Optional	Optional

### FEATURES:

- 4-Channels 16-bit 1.00 Gsps A/D
  - 1.5 GHz Analog Bandwidth
  - Usable in the 3rd Nyquist Zone
- 4-Channels 16-bit up to 1.25 Gsps D/A
  - 2.8 GSPS Update Rate
  - Onboard 48-Bit NCO for Flexible Signal Placement
- VITA 57.1 HPC compliant
- Conduction Cooled – Standard Option
- DC coupled analog input.
- Internal clock or external clock
- Mil-I-46058c Conformal Coating Compliant (optional)
- HPC – High Pin Count Connector
- 10 front panel SSMC or MMCX connectors
- 2Kbit EEPROM (M24C02-WDW) accessible from the Host via I2C bus

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## Specifications

### Application

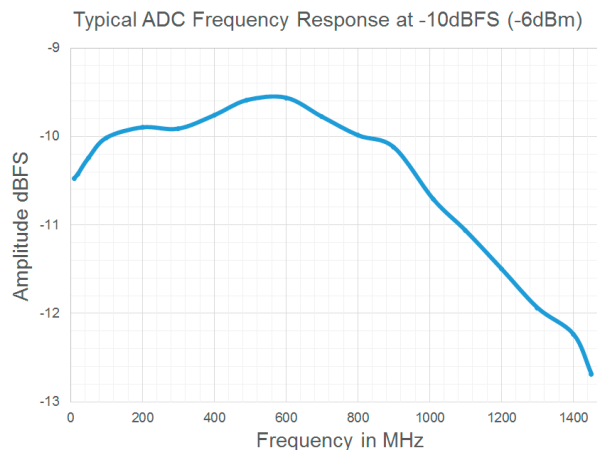
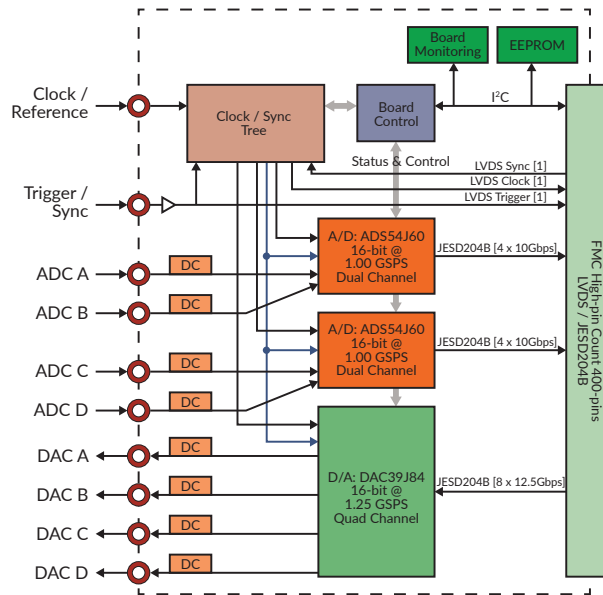
- Software defined radio (SDR)
- MIMO Applications
- Digital Beam Forming
- (Radar/Sonar) Electronic Warfare
- Experimental Physics
- Analog record and playback systems
- Aerospace and test instrumentation

### Board Support Package

- Open Source VHDL Reference Design
- Open Source C/C++ Reference Examples
  - Windows & Linux Support
- JESD204B Core Included with BSP
- Simplified IP Integration with Stellar IP
- Windows Diagnostic Tools with 4FM

AS9100 Certified

## Block diagram



## Ordering information

Talk to us about your algorithmic requirements, Abaco Systems is a full-service firmware and software development house. We are a specialist at high performance FFT and Video Processing. Check with us, we may have IP Cores that meet requirements for your application, right off the shelf.



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