The FMC150 is a dual channel A/D and dual channel D/A FMC daughter card. The card provides two 14-bit A/D channels and two 16-bit D/A channels which can be clocked by an internal clock source (optionally locked to an external reference) or an externally supplied sample clock. In addition there is one trigger input for customized sampling control. The FMC150 daughter card is mechanically and electrically compliant with FMC standard (ANSI/VITA 57.1).

The LPC (low-pin count)-compatible FMC150 has front panel I/O and can be used in conduction-cooled environment. The design is based on TI’s ADS62P49 dual channel 14-bit 250Msps ADC and TI’s DAC3283 dual channel 16-bit 800Msps DAC. The analog signals are AC coupled connecting to MMCX or SSMC coax connectors on the front panel.

The FMC150 allows flexible control on clock source, analog input gain, and offset correction through serial communication busses. Furthermore, the card is equipped with power supply and temperature monitoring and offers several power-down modes to switch off unused functions, reducing system level power and heat and is well suited for Software Defined Radio (SDR), battery or other low power source applications. This is ideal for applications such as airborne where power demand effects mission range and on-station mission time.

### FEATURES:
- **Quad Channel Operation**  
  - 2-channels 14-bit A/D up to 250 Msps  
  - 2-channels 16-bit D/A up to 800 Msps  
- **VITA 57.1-2010 compliant**  
- **Conduction Cooled - Standard Option**  
- **Single ended AC-coupled analog signals**  
- **6 MMCX/SSMC connectors available from the front panel**  
- **Clock Source, Sampling Frequency, and Calibration settings through SPI communication busses**  
- **Flexible clock tree enables:**  
  - internal clock source (VCXO)  
  - external sampling or reference clock  
- **Power-down modes to switch off unused functions for system power savings**  
- **Mil-I-46058c Conformal Coating Compliant (optional)**  
- **LPC (low-pin count) compatible**  
- **LVDS and 1.65V to 3.3V IO signalling**

<table>
<thead>
<tr>
<th>ANSI/VITA 47</th>
<th>Air-cooled</th>
<th>Conduction-cooled</th>
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<tbody>
<tr>
<td></td>
<td>EAC4</td>
<td>EAC6</td>
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<tr>
<td>Operating temperature</td>
<td>0°C to +55°C</td>
<td>-40°C to +70°C</td>
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<tr>
<td>Storage temperature</td>
<td>-40°C to +85°C</td>
<td>-50°C to +100°C</td>
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<tr>
<td>Humidity</td>
<td>95%</td>
<td>95%</td>
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<tr>
<td>Operating vibration</td>
<td>5Hz to 100Hz PSD = 0.04g²/Hz</td>
<td>5Hz to 100Hz PSD = 0.04g²/Hz</td>
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<tr>
<td></td>
<td>100 Hz to 1000 Hz PSD = 0.04 g/s²/Hz</td>
<td>100 Hz to 1000 Hz PSD = 0.04 g/s²/Hz</td>
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<tr>
<td></td>
<td>1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave</td>
<td>1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave</td>
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<tr>
<td>Operating shock</td>
<td>20g, 11 millisecond, half-sine or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes</td>
<td>20g, 11 millisecond, half-sine or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes</td>
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<tr>
<td>Operating altitude</td>
<td>-1500 ft to 60,000 ft (with airflow)</td>
<td>-1500 ft to 60,000 ft (with airflow)</td>
</tr>
<tr>
<td>Conformal coating</td>
<td>Optional</td>
<td>Optional</td>
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</tbody>
</table>
FMC150 Dual 14-bit A/D & Dual 16-bit D/A  Dual 14-bit A/D & Dual 16-bit D/A

Specifications

Application
- Direct RF Down Conversion
- Software defined radio (SDR)
- RADAR/SONAR
- Ultra Wideband Satellite Digital Receiver
- Medical equipment
- Aerospace and test instrumentation

Support
- Stellar IP available for this product. A simple way to design FPGA firmware with automated code and bitstream generation.
- Reference firmware design (VHDL)
- Reference designs available for multiple FPGA carriers
- User Manual

A59100 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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