FMC116 high pin count FMC ADC

16-channel 14-bit ADC - 125 Msps

The FMC116 is a sixteen-channel ADC FMC Daughter Card which is fully compliant with the VITA 57.1-2008 standard. The FMC116 provides sixteen A/D 14-bit 125Msps channels which can be sampled by an internal clock source (optionally locked to an external reference) or an externally supplied sample clock. A trigger input for customized sampling control is also available. The HPC (high-pin count)-compatible FMC116 has front panel I/O and can be conduction cooled. The design is based on Linear Technology's quad channel 14-bit 125Msps ADC with high speed serial DDR LVDS outputs (2-lanes per channel). The analog signal input is DC coupled with offset correction circuitry, connecting from a connector on the front panel.

The FMC116 allows flexible control on sampling frequency 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 or protect the card from overheating.

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 = 0.04g2/Hz 100 Hz to 1000 Hz PSD = 0.04 gs^2/Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave	5Hz to 100H PSD = 0.04g2/Hz 100 Hz to 1000 Hz PSD = 0.04 gs^2/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 g2/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 g2/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:

- 16 channel 14-bit 125 Msps A/D conversion
- Conduction cooled compatible
- ANSI/VITA 57.1-2010 compliant
- Based on LTC2175-14
- 1.5V to 3.3V VADJ operation
- Single ended DC coupled inputs
- Programmable DC offset correction
- Flexible clock tree enables
  - External or Internal clock
  - External clock output
  - External or internal reference
- HPC (high-pin count) compatible
- Samtec QSE front panel connector mates with QTE series and EQCD and EQRF cable assemblies
- Optional SSMC/MMCX clock and trigger IO on the back of the FMC (consult factory)
- MIL-I-46058c conformal coating (optional)

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SYSTEMS

FMC116 high pin count FMC ADC *16-channel 14-bit ADC - 125 Msps*

Specifications

Application
- High channel count applications
- Software defined radio (SDR)
- RADAR/SONAR
- Wireless communication receivers
- Medical equipment
- Aerospace and test measurement Instruments
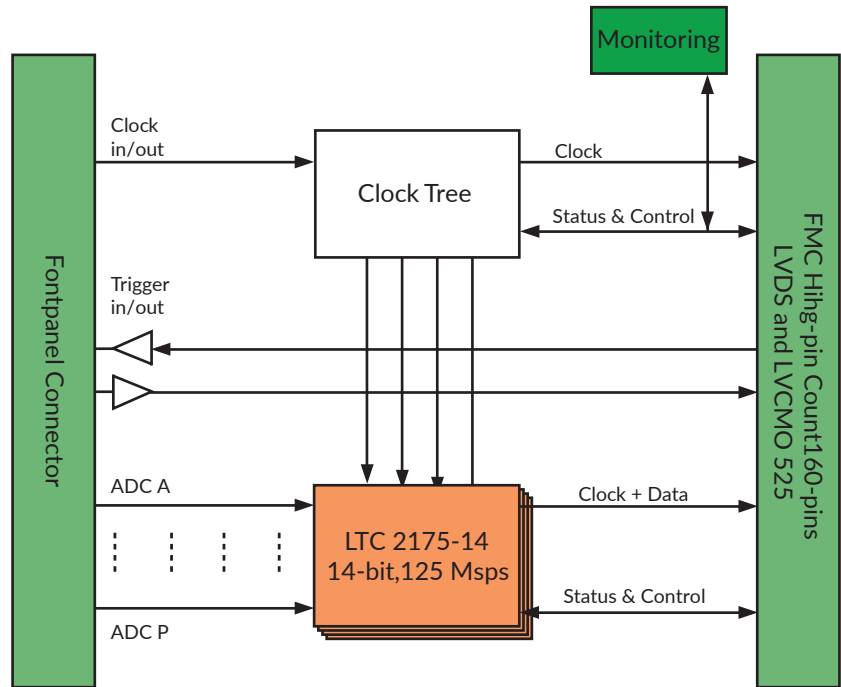
Support
- User manual
- Performance guide
- Reference Firmware design (VHDL) with Stellar IP framework
- Reference ISE project for Virtex 6 (ML605)
- Reference ISE project for Kintex 7
- Portable to the Virtex, Spartan and Stratix FPGA series
- Dedicated support forum with private boards

Performance
- 62.5MHz Bandwidth (DC)
- 2Vpp input range (1Vpp build option)
- (LV)TTL compatible trigger input, LVTTL trigger output
- 0dBm clock input (typ.)
- +/- 1.25V Offset correction (40µV steps)

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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