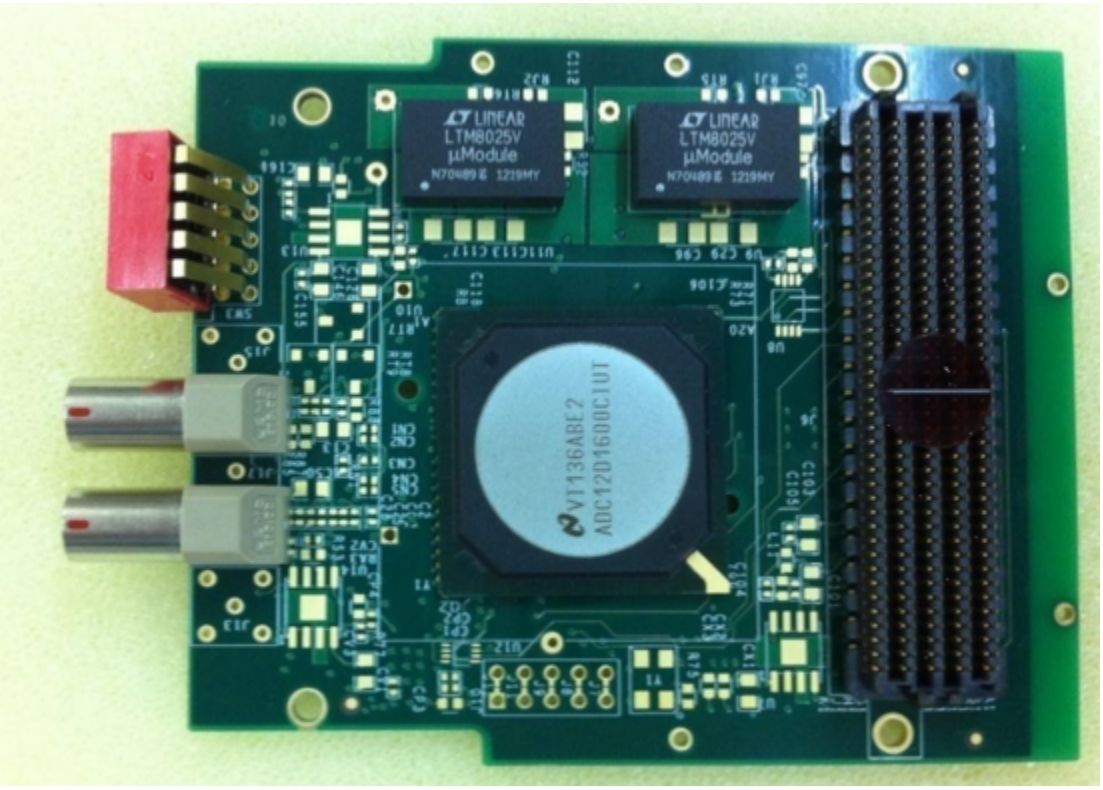
TOC

Development and production:

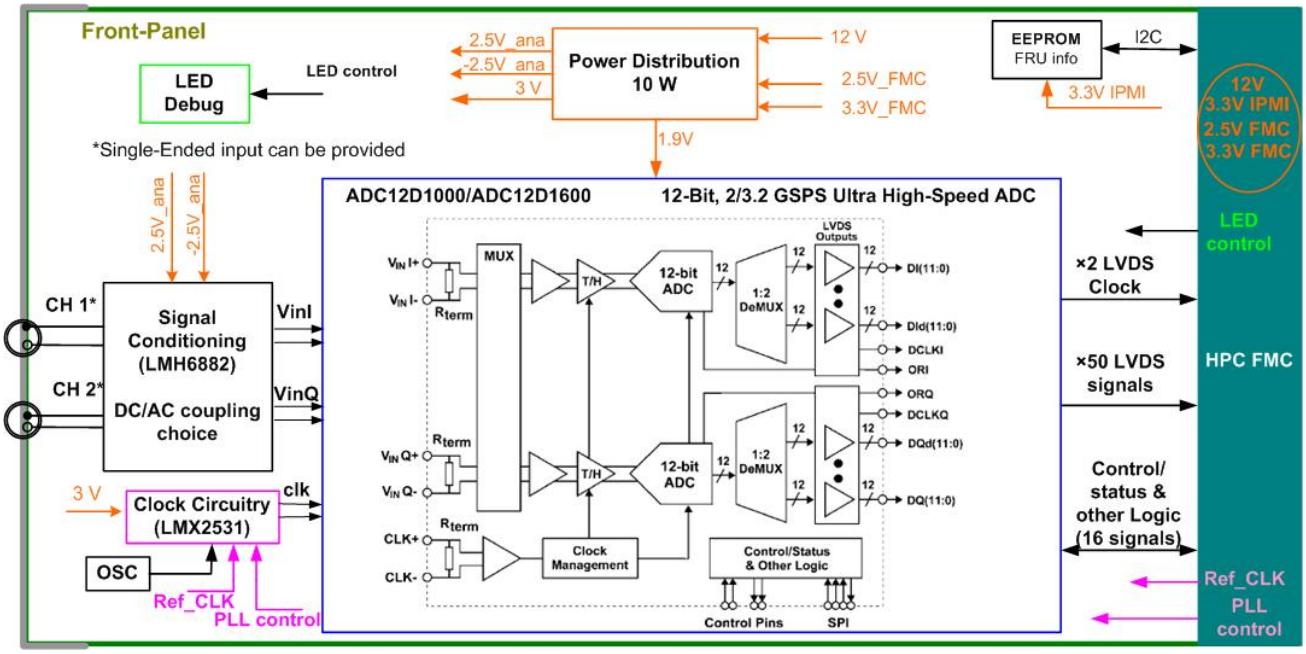
Datasheet

- Dual channel 12-bit 1/1.6 GSPS A/D or Single channel 12-bit 2/3.2 GSPS A/D
- FMC VITA 57.1 Compliant
- AC or DC Coupling
- Single-Ended or Differential input



The FMC-AD-1Gx is a configurable mezzanine card compliant to the High-Pin-Count (HPC) VITA 57.1 standard, that provides either one 2.0/3.2 GSPS interleaved ADC or two 1.0/1.6 GSPS ADCs. The card was designed to meet the processing needs of high-performance data acquisition applications in the nuclear fusion and is compliant to the AMC-MKX1 FMC carrier. The FMC-AD-1Gx analogue input channels can be configured as AC or DC coupled and single-ended or differential, as required by the specific application. The ADC sampling clock is provided by an in-board PLL, which is synchronized to a reference clock supplied by the local oscillator or by the carrier card through the HPC connector.

FMC-AD-1Gx Functional Block Diagram



Specifications

Channel Operation	• Dual Channel 12-bit A/D up to 1.6 GSPS	• Single channel 12-bit A/D up to 3.2 GSPS
Memory	• EEPROM for FRU hardware information	
Front Panel	• 2 Single-Ended Lemo EPL.00.250.DTN	• 2 Diferencial Lemo EPG.00.302.HLN
Input Coupling	• DC	• AC ◦ high-pass first order passive filter, f_C= 3 kHz
Input impedance	• 50 ohm Single-Ended	• 100 ohm Differential
Input dynamic range (Full Scale)	DC • ±200 mV	AC • 400 mV_{pk-pk}

Input gain	• Hardware configurable gain from 0 to 20 dB (PGA)	• An additional -2.5 dB gain can be digitally configured (ADC)
FMC HPC connector	• High-pin-count VITA 57. 1 FMC site ◦ 78 differential user defined pairs: 34 LA pair; 24 HA pair; HB pairs ◦ 2 differential clocks	
Mechanical	• VITA 57.1 FMC High-Pin-Count (HPC) connector	
Clock Reference Source	• Internal clock source 50 MHz oscillator	• External reference clock from HPC
Electrical	• +12 V mains source • +3.3V IPMI	• +2.5 V • +3.3V
Testing and development interfaces	• LEDs • Test points	• Jumpers • ADC test patterns
ADC compatibility	• ADC10D1000 (10-bit @ 1GHz) • ADC12D1000(12-bit @ 1GHz)	• ADC10D1600 (10-bit @ 1.6GHz) • ADC12D1600(12-bit @ 1.6GHz)
VITA 57.1 compliant carrier card	• **AMC-MKX1** ◦ Xilinx® Kintex™-7 FPGA; ◦ 2048 + 256 MB DDR3 SDRAM ◦ AMC.1 PCI Express: One 4x PCIe Gen2 link	
Applications	• Data Acquisition Systems • LIDAR • RF Reflectrometry	