

## FMC126 high pin count FMC ADC

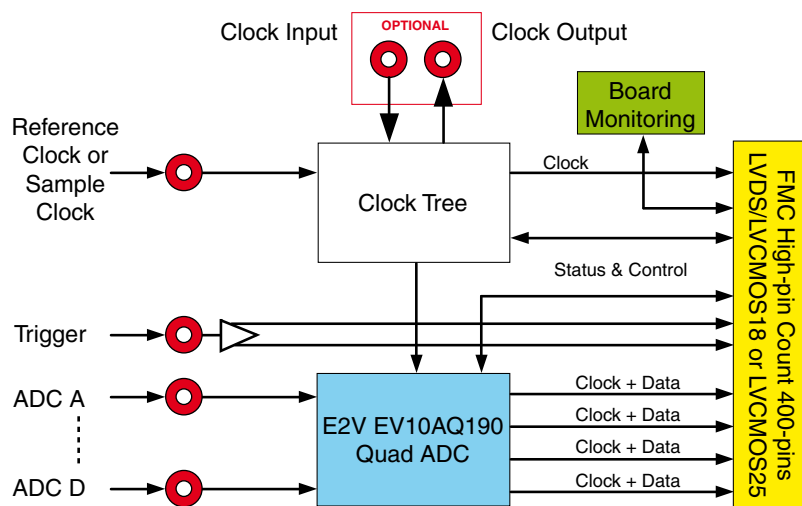
# 4-channel 10-bit ADC - 5 Gsps

The FMC126 is a Quad-Channel Multi-Mode ADC FMC daughter card, fully compliant with VITA 57.1 Standards. The card provides four 10-bit ADC channels that enable simultaneous sampling of 4, 2, or 1 channel with a maximum sample rate of 1.25 GSPS (4-channel mode), 2.5 GSPS (2-channel mode), or 5.0 GSPS (1-channel mode).

The sample clock can be supplied externally through a coax connection or supplied by an internal clock source (optionally locked to an external reference). The clock tree enables cascading of multiple boards for synchronous sampling. Additionally a trigger input for customized sampling control is available.

The FMC126 daughter card is mechanically and electrically compliant to the FMC standard as established by ANSI/VITA 57.1. The FMC126 has a HPC (high-pin count) 400-pin connector, front panel I/O, and can be used in a conduction cooled environment.

The design is based on the E2V Quad ADC EV10AQ190 chip-set having DDR LVDS outputs. The analog signal inputs are available on the front panel on coax connections and have individual calibration circuits for fine-tuning of gain, offset, and phase. The FMC126 allows flexible control on clock source, sampling frequency, and calibration 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.



### Features

- Quad - Dual - Single 10-Bit Channel Operation
  - 4-Channel 1.25 Gsps A/D conversion Mode
  - 2-Channel 2.50 Gsps A/D conversion Mode
  - 1-Channel 5.00 Gsps A/D conversion Mode
- VITA 57.1-2008 compliant
- Conduction Cooled
- 1.25Gsps DDR LVDS outputs
- Coax front panel inputs on SSMC connectors
- Single ended AC-coupled analog inputs
- Flexible clock tree enables
  - internal clock
  - external clock
  - cascading multiple boards (optional)
- Mil-I-46058c Conformal Coating Compliant (optional)
- HPC - High Pin Count Connector (400-pins)

### Applications

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

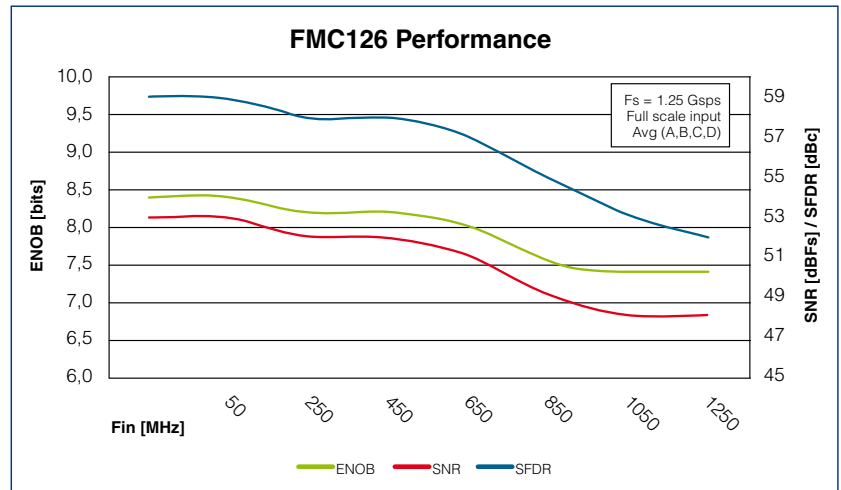
### Support

- User Manual
- Performance Guide
- Reference firmware design (VHDL)
- Reference ISE project for Virtex-5, Virtex-6 and Spartan-6
- Email support (support@4dsp.com)

www.4dsp.com/FMC126

## Performance

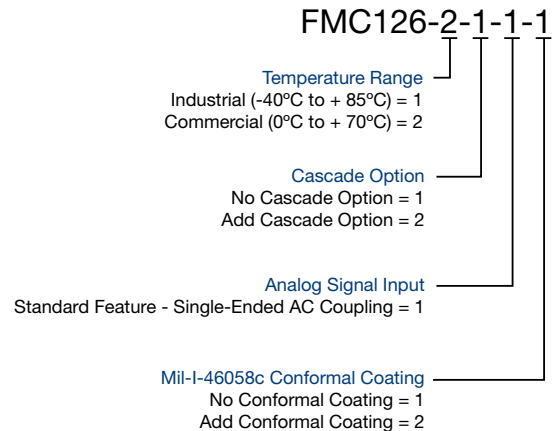
- 500mVpp analog input range
- Selectable input bandwidth (1.0GHz / 3.0GHz)
- Individual Gain control ( $\pm 10\%$ )
- Individual Offset control ( $\pm 40\text{mV}$ )
- Individual Phase control ( $\pm 15\text{ps}$ )
- > 60dB channel isolation (crosstalk)



The FMC126 comes with an integrated Cross Point Switch allowing flexible mapping of analog inputs to the converters. Unused converters can be placed in standby mode or a full standby mode can place all channels in power saving mode. The digital output interface of the FMC126 comprises four 10-bit DDR LVDS busses at 1.25Gbps (full speed sampling). The build in pattern generation feature on the FMC126 enables training on the carrier hardware.

Environmental	Level A	Level B
Operating Temperature	0°C to 70°C	-40°C to 85°C
Storage Temperature	-50°C to 125°C	-50°C to 125°C
Humidity-Operating	0 to 100% non condensing	0 to 100% non condensing
Storage Humidity	0 to 100%	0 to 100%
Vibration Random	0.1 g <sup>2</sup> /Hz 10 - 3kHz	0.1 g <sup>2</sup> /Hz 10 - 3kHz
Shock	30g peak	30g peak
Coating	none	Conformal

## Ordering information



Talk to us about your algorithmic requirements, 4DSP is a full-service firmware and software development house. We are 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.