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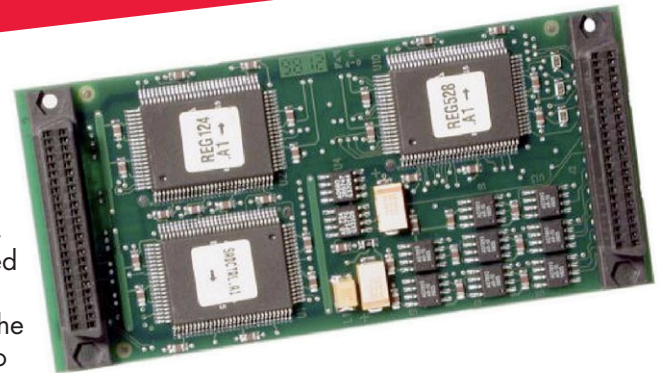


# ADC128F1

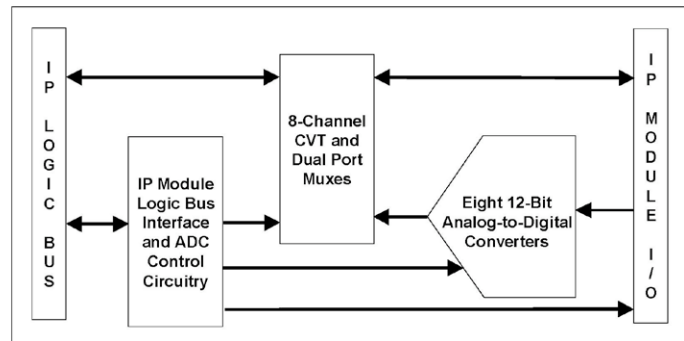
## 8-Channel, 12-Bit, $\pm 10V$ , Simul-Sampling A-D Converter

### Application Features

- ◆ Eight independent channels of 12-bit, switched capacitor SAR-based ADCs with all channels tightly-coupled for simultaneous sampling and conversion at a free-run rate of 11 5,942 samples/second/channel
- ◆ Automatic power-up of all eight ADC channels free running, updating the current value table
- ◆ The current value table is updated every 8.625 $\mu$ s, with no-wait read-on-the-fly IP Module accesses
- ◆ Hardware and software handshake interfaces for loosely and tightly coupling other ADC128F1 IP Module together for large, ganged simul-sampling applications
- ◆ Both the relative accuracy and differential nonlinearity are guaranteed to  $\pm 1$  LSB (max.)
- ◆ The single-ended inputs can accept voltage inputs to  $\pm 10V$ , with an input resistance of 16K $\Omega$ .



Eight, 12-bit, A-D channels, each equipped with its own A-D, enable the ADC128F1 to sample groups of analog signals simultaneously. It is designed to maintain the highest possible accuracy by minimizing accumulative analog errors. Its modular design provides up to 40 channels of high-performance ADCs in a single VME slot using the VMESC5 carrier or up to 48 channels in a single PC slot using the ISASC6 carrier. The ADC128F1 can also be mixed with other IP Modules for a more customized, modular I/O system solution.



Learn More

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# ADC128F1

Table 1: Specifications

General Specifications	
Physical Dimensions	1.800" x 3.900" x 0.303" (45.72 mm x 99.06 mm x 7.70 mm)
Weight	1.012 oz. (28.68 g)
Samples/Second/Channel	115,942
Hardware Compatibility	American National Standard for IP Modules (ANSI/VITA 4-1995)
Mechanical/Electrical Interface	Single-wide IP Module
IP Transfer Types (memory & interrupt not supported)	I/O: 8/16-bit writes of CSR, 16-bit reads of ADC data; No wait states, hold states supported
	ID: 8-bit read only; No wait states, hold states supported
Electrical Requirements	+5Vdc @ 327mA (typ., no I/O connections)
Environmental Specifications	
Temperature Range	Operating 0° to +70° C (+32° to +158° F)
	Storage -40° to +85° C (-40° to +185° F)
Humidity (non-condensing)	5% to 95%
Vibration	10G's RMS, 10-55Hz random
Shock	50G's max.
Altitude	10,000 ft
Mean Time Between Failure (MTBF)	2,923,977 hrs. per MIL-HDBK-217F
Single-ended Inputs	±10V full-scale
Relative and Differential Non-linearity	less than ±1 LSB
Input Impedance	33KΩ (typ.) 16KΩ (min.)
Effective Number of Bits	11.33
1 LSB	4.88mV
Bipolar Zero Error	± 2 LSB (typical)
	± 4 LSB (maximum)
Full-scale Error (±)	3 LSB (maximum)

Table 2: ADC128F1 PIN Assignment

50	N_CONVERT	25	CVT07
49	N_HUPDIS	24	CVT08
48	N_DATA0EG	23	CVT09
47	DATA0EG	22	CVT10
46	DATA0E1	21	CVT11
45	DATA0E2	20	GND
44	RUN	19	GND
43	CVT00	18	VREF
42	GND	17	GND
41	CVT01	16	AIN8
40	GND	15	GND
39	CVT01	14	AIN7
38	GND	13	GND
37	CVT03	12	AIN6
36	GND	11	GND
35	CVT04	10	AIN5
34	GND	09	GND
33	CVT05	08	AIN4
32	GND	07	GND
31	CVT06	06	AIN3
30	GND	05	GND
29	GND	04	AIN2
28	GND	03	GND
27	GND	02	AIN1
26	GND	01	GND

## Ordering Information

BHAS-ADC128F1: 8-Channel 12-bit Fixed ±10V ADC Simul-Sampling IP Board



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