

ICS-110A 32-CHANNEL SIGMA-DELTA ADC BOARD



- up to 32 differential inputs;
- sigma-delta ADCs which virtually eliminate complex and expensive anti-alias filtering;
- simultaneous sampling on all channels at rates from 390 Hz/channel to 200kHz/ channel;
- 16-bit and 12-bit resolution output options;
- 90dB dynamic range;
- -90dB interchannel crosstalk.
- front panel synchronizing signals for synchronizing up to 32 ICS-110A boards;
- external or internal clock. Latter is programmable for output rates of 6.4kHz to 200kHz with very high precision;
- 64 KWord on-board storage;
- 32-bit VMEbus and VSB interfaces which support block transfers;
- a 16-bit Front Panel Data Port (FPDP) for direct input to Mercury, CSPI, Sky, Ixthos and other DSP/Array Processors, as well as other ICS products;
- the facility to bus the FPDP outputs from multiple ICS-110A boards into one composite data stream.

Analog Front End	Number Of Analog Input Channels :	32 maximum
	Input Impedance :	10 KOhm
	Full Scale Input :	2.0 Vpp differential*
	Input Signal Bandwidth :	44 kHz max.: 16-bit/100 kHz max.: 12-bit
	Maximum Sampling Rate per Channel :	6.4 MHz
	Maximum Channel Output Rate :	100 kHz: 16-bit/200 kHz: 12-bit
	Maximum Output Data Rate :	3.2 MSamples/s: 16-bit (32- channels) 6.4 MSamples/s: 12-bit (32-channels)
	Programmable Decimation Factor :	1 to 16
	Minimum CLOCK Frequency :	2.0 MHz
	Maximum CLOCK Frequency :	25.6 MHz
16-Bit Mode Performance	Dynamic Range :	> 90 dB @ -1.2dB FS**
	Harmonic Distortion :	< -90 dB @ -1.2dB FS**
12-bit Mode Performance	Dynamic Range :	> 70 dB @ -1.2dB FS**
	Harmonic Distortion :	< -70 dB @ -1.2dB FS**
Data Transfer Capabilities	Output Wordlength :	VMEbus 32 bits (1-2 channels) VSBbus 32 bits (1-2 channels) FPDP 16 bits (1 channel)
	VMEbus Interface :	A32/24/16 D32 BLT Slave Vectored Interrupts 32 Mbytes/sec
	VSBbus Interface :	A32 D32 BLT Slave Polled Interrupts 40 Mbytes/sec
	FPDP Support :	20 Mwords/sec burst
	On-board storage :	64 Kwords
Other	Power :	+5 volts 3.0 amps maximum +12 volts 0.3 amps maximum -12 volts 0.3 amps maximum
	Environmental :	Operating Temperature: 0 - 50°C Humidity: 0 - 95% Rel. Hum., Non-condensi
	Storage Temperature:	0 - 70°C Humidity: 0 - 95% Rel. Hum., Non-condensing
	Board Size :	233 x 160 mm VMEbus 6U standard

*2.0 Vpp in each differential input leg. * 4.0 Vpp for a single-ended input.

**Optimum performance is achieved when the maximum input signal is 1.75 Vpp differential. In this case the output is defined by: 0x9000 < ADC Output Code < 0x7000