BlueChip Technology

KEY FEATURES

► 8 differential inputs or 16 single-ended inputs. 12 bit resolution

► 4 x 12 bit analogue outputs

► 24 programmable digital I/O channels at TTL levels

► 3 on board 16 bit Counter Timers (8254 compatible)

► Suitable for monitoring input voltages with a full scale reading as low as ±5mV

► Sample and hold amplifier provides accurate readings at varying input signals

► Analogue voltage and current outputs are bi-polar

► Digital inputs can be either voltage or volt free contacts

► Software configurable

► Auto calibration

► Supplied with demonstration software examples

PCI-ADC DATA AQUISITION CARD

The PCI-ADC is a PCI-compatible halfcard which provides analogue and digital input/outputs and counter/timers. Eight differential or sixteen single ended analogue inputs are available with 12-bit resolution and programmable gain to allow full scale input ranges of between ± 5mV and ± 5 volts. The maximum sample rate of these is 230 KS/s.

A FIFO input buffer is available such that 1024 analogue samples may be taken before processor intervention is required. Four bipolar analogue outputs are provided to 12 bits resolution. Each may be individually configured as voltage or current outputs with full scale range of ±10 volts or ±20mA.

There are 24 TTL-compatible programmable digital input/outputs available from the board and there are also three programmable counter/timers, the outputs of which may be used to generate interrupts, to initiate analogue input conversion, analogue output sample update, or digital I/O. A 4 MHz crystal oscillator is available on board to allow the counter/timers to provide accurate timebases.

OPTIONS

► 1 metre cable with IDC and D type connector (P/N 1371 0071)

► 50 way screw terminal adapter (P/N 1981-0004)

► Windows® 98/2000, NT® and XP® drivers

Microsoft® Windows® Embedded Partner

AMD Solution Provider MEMBER

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Analogue Inputs

► 6 single ended inputs or 8 differential input

► Range of ± 5 Volts maximum operating

► 12 bits resolution

► 1, 10, 100 or 1000, software selectable gain settings

► Gain accuracy - all gains without auto-cal. = ± 0.3%. All gains with auto-cal. = ± 0.05 %

► Input offset accuracy:

Gain = 1 or 10 without auto-cal. = ± 0.1 %

Gain = 1 or 10 with auto-cal. = ± 0.05 %

Gain = 100 without auto-cal. = ± 0.2 %

Gain = 100 with auto-cal. = ± 0.05 %

Gain = 1000 without auto-cal. = ± 1.2 %

► Maximum sample rate Gain = 1000 with auto-cal. = ± 0.05 %

► Input settling time - 230Ks/s burst, 4.3µs conversion time

Gain = 1 23 µs all typical to 0.1%

Gain = 10 24 µs

Gain = 100 100 µs

► Data buffer gain = 1000 1000 µs, FIFO 16 bits wide x 1024 samples, with channel number identification on each sample

Analogue Outputs

► 4 outputs

► 12 bits output resolution

► Constant voltage or constant current formats, individually software selectable

► Output levels -
Voltage mode = ± 10 volts
Current mode = ± 20 mA

► Drive capability
Voltage mode = ± 20 mA (FS into 500R min.)
Current mode = ± 12 volts (FS into 600R max.)

► Accuracy
Voltage mode = ± 0.15 %
Current mode = ± 3.5 %

Interrupts

► Interrupt sources:
Register selectable to 3 Counter/timer outputs,
2 PIO handshake control lines,
ADC busy and FIFO Not Empty/Half full.

► All PCI interrupt levels supported

► Address overhead of 26 I/O addresses in 3 PCI address spaces

Digital Input/Output

► 24 I/O channels arranged as 3 x 8 I/O bits

► Signal levels at 5 Volt TTL Logic

► Output
Logic Low Level: 0 V (min) - 0.4V (max) @ IOL= 2.5mA
Logic High Level: 3.5V (min) - 5V (max) @ IOH = -400 mA

► Drive Current
2.5 mA (Logic Low) Vout = 0.4 Volts
-400 mA (Logic High) Vout = 3.5 Volts

► ±10 mA Input Loading

► Terminator resistor packs are fitted to each I/O port to pull the lines to + 5 volts. Optionally they may pull the lines down to 0 volts.

Counter/Timers

► 3 x 16 Bit Counter/timers. may be cascaded.

► Onboard oscillator - 4 MHz frequency, stability ± 100ppm 0 - 70°C

Mechanicals

► Signal Connections - 1 x 50 way male 'D-type' plug

► Dimensions - 165 (L) x 100 (H) board only, 180 (L) x 122 (H) x 22 (W) including bracket

Power

► +3.3 Volts, 0.5 W max and +5 Volts, 1.2 W max

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