

PCI Multi-Function Board

PIO-821

16-channel 12-bit 45KS/s low cost multi-function board



Features

- 32-bit +5V PCI Bus, Plug & Play
- 12-bit resolution
- The maximum sample rate is 45K samples/second
- 16 single-ended or 8 differential analog inputs
- A/D trigger mode: software trigger, pacer trigger
- Programmable high gain: 1,10,100,1000 (PIO-821PGH)
- Programmable low gain: 1,2,4,8 (PIO-821PGL)
- 1-channel 12-bit D/A voltage output
- 16 digital input / 16 digital output channels
- Software calibrated

Functional Description

The PIO-821 is a low cost multi-function card for PC with PCI bus. The PIO-821 contains 16-channel single-ended or 8-channel differential analog input, 1-channel 12-bit DAC voltage output, 16-channel digital input and 16-channel digital output. The maximum sampling rate of A/D converter is about 45K sample/second.

Applications

- Process monitor and control
- Vibration Analysis
- Digital pattern generator from digital I/O port

Specifications

Analog Input

- Number of channels: 16 signal-ended or 8 differential
- Resolution: 12-bit
- Conversion time: 8 microseconds
- Input current: 250 nA max (125 nA typical) at 25°C
- On chip sample & hold
- Overvoltage protection: $\pm 35V$
- Input impedance: $10^{10} \Omega$
- Accuracy: 0.01% of reading ± 1 bit
- Linearity: ± 1 bit

Gain	Bipolar	Sampling Rate(Max.)
1	$\pm 5V$	45KS/s
2	$\pm 2.5V$	45KS/s
4	$\pm 1.25V$	45KS/s
8	$\pm 0.625V$	45KS/s

Gain	Bipolar	Sampling Rate(Max.)
1	$\pm 5V$	45KS/s
10	$\pm 0.5V$	45KS/s
100	$\pm 0.05V$	10KS/s
1000	$\pm 0.005V$	1KS/s

Analog Output

- Number of channels: 1 independent
- Type: 12-bit double-buffered
- Linearity: 0.006% FS
- Output range: 0~5V, 0~10V or 0~Ext Ref
- External reference: +10V or -10V max
- Output driving: ± 5 mA
- Settling time: 0.6 μ s to 0.01% for full scale step

Digital I/O

- Inputs: 16-channel; TTL Levels
- Outputs: 16-channel; TTL levels

Timer

- Three 16-bit independent timer, 8MHz input clock
- Timer 0: Internal pacer trigger timer
- Timer 1: External pacer trigger
- Timer 2: Machine independent timer for settling time delay

General Specifications

- I/O connector: one 37-pin D-Sub female
two 20-pin ribbon male
- Power requirements: +5V @ 960 mA
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Dimensions: 165 mm x 105 mm

Ordering Information

Standard

- PIO-821L:** 16-channel 12-bit 45KS/s low gain multi-function board
- PIO-821H:** 16-channel 12-bit 45KS/s high gain multi-function board
- PIO-821H/S:** PIO-821H with DB-8225
- PIO-821H/NDA:** PIO-821H without D/A
- PIO-821L/NDA:** PIO-821L without D/A