ISA Multi-Function Boards

A-823PG/822PG

16-channel 12-bit 125KS/s multi-function boards

A-823PG

A-822PG

Features

- 12-bit A/D converter
- 125 KS/s sampling rates(Max.)
- 16 single-ended or 8 differential analog inputs
- A/D Trigger modes: Software Trigger, Pacer Trigger, External Trigger and Event Trigger
- A/D data transfer modes: polling, interrupt, DMA
- Software programmable gain:
  PGH: 0.5, 1, 5, 10, 50, 100, 500,1000
  PGL: 0.5, 1, 2, 4, 8
- Bipolar and unipolar analog input
- Two 12-bit D/A Voltage output channels
- 16 digital inputs & 16 digital outputs
- 1-channel general purpose programmable 16-bit counter/timer

Functional Description

The A-823PGH/L and A-822PGH/L (H for high gain; L for low gain) are 12-bit multifunction analog and digital I/O boards for the PC/AT compatible computer. The A-823PG/A-822PG offers 16-channel single-ended or 8-channel differential analog inputs, plus two channels of analog output with 12-bit resolution. In addition, The A-823PG/A-822PG has 16-channel digital input, 16-channel digital output, and one channel timer/counter. Its sampling rate can reach 125K samples/second. The DMA operation is jumper-selectable for levels 1 or 3. Interrupts are jumper-selectable between 3 and 15. The A-823PG provides unipolar and bipolar D/A output, while the A-822PG provides only unipolar D/A output.

Applications

- Signal analysis
- Industrial automation
- Laboratory automation
- FFT & frequency analysis
- Transient analysis
- Production test
- Process control

Specifications

Analog Input

- Number of channels: 16 single-ended or 8 differential
- Resolution: 12-bit
- Conversion time: 8 μs
- Maximum ADC conversion rate: 125KS/s
- Input impedance: 10,000 MΩ II 6pF
- Over voltage protection: ±35V
- A/D converter: ±1LSB max INL
- On chip sample & hold
- Accuracy: 0.01% of reading ±1 bit
- Zero drift: ±25ppm/ °C of FS max

PGH Input Range

Gain	Bipolar(V)	Unipolar(V)	Sampling Rate(Max.)
0.5	±10	X	125KS/s
1	±5	0~10	125KS/s
5	±1	X	80KS/s
10	±0.5	0~1	80KS/s
50	±0.1	X	10KS/s
100	±0.05	0~0.1	10KS/s
500	±0.01	X	1KS/s
1000	±0.005	0~0.01	1KS/s

PGL Input Range

Gain	Bipolar(V)	Unipolar(V)	Sampling Rate(Max.)
0.5	±10	X	125KS/s
1	±5	0~10	125KS/s
2	±2.5	0~5	125KS/s
4	±1.25	0~2.5	125KS/s
8	±0.625	0~1.25	125KS/s

Digital I/O

- 16 TTL-level input
- Input low V_{IL} = 0.8V max; I_{IL} =-0.4 mA max
- Input high V_{IH} = 2.0V min; I_{IH} = 20 μ A max
- 16 TTL-level output
- Output low V_{OL} = 0.5V max; @I_{OL} =8 mA max
- Output high V_{OH} = 2.7V min; @I_{OH} =0.4 mA max

A-823PG/822PG

16-channel 12-bit 125KS/s multi-function boards

Analog Output

- Number of channels: 2 independent
- Type: 12-bit double buffered
- Linearity: 0.006% FS
- Output range:
  Unipolar: 0~5V, 0~10V, 0~Ext Ref (A-822PG/823PG)
  Bipolar: ±5V, ±10V, ±Ext Ref (A-823PG)
- External reference: +10V or -10V max
- Output Driving: ±5 mA
- Settling time: 0.6 μ s to 0.01% for full scale step

Counter/Timer

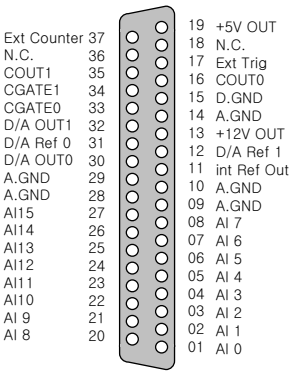
- Number of channels: 1
- Resolution: 16-bit
- Compatibility: 5V/TTL
- Internal clock: 2MHz
- External clock: up to 10 MHz
- A/D Pacer: 16-bit counter (A-823PG)
  cascaded 32-bit counter (A-822PG)
- Programmable internal timer:
- 61Hz~1MHz (A-823PG)
- 0.0047Hz~0.5MHz (A-822PG)

General Specifications

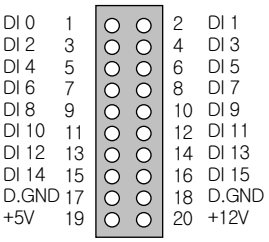
- I/O connector: one 37-pin D-Sub female
  two 20-pin ribbon male
- Power requirements: +5V @ 960 mA max
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Dimensions: 170 mm x 122 mm

Pin Assignment

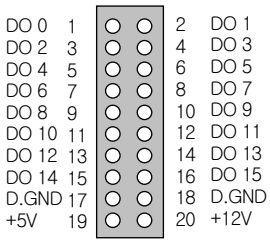
CN1



CN2



CN3



Ordering Information

Standard

A-823PGH: 16-channel 12-bit 125KS/s high gain multi-function board with 2x12-bit bipolar/unipolar analog output
A-823PGH/S: A-823PGH with DB-8225
A-823PGL: 16-channel 12-bit 125KS/s low gain multi-function board with 2x12-bit bipolar/unipolar analog output
A-823PGL/S: A-823PGL with DB-8225
A-822PGH: 16-channel 12-bit 125KS/s high gain multi-function board with 2x12-bit unipolar analog output
A-822PGH/S: A-822PGH with DB-8225
A-822PGL: 16-channel 12-bit 125KS/s low gain multi-function board with 2x12-bit unipolar analog output
A-822PGL/S: A-822PGL with DB-8225

Optional

DB-8225: Screw terminal board with CJC
DB-889D: 16-channel multiplexer and signal conditioning board
DN-37: 2x37-pin connector DIN-rail mounting terminal board
DB-37: 37-pin D-sub directly connector terminal board
DN-20: 2x20-pin header DIN-rail terminal board
DB-16P: 16-channel isolated D/I board
DB-16R: 16-channel relay board
ADP-20/PCI: 20-pin extender