

## ISA Multi-Function Board

# A-826PG

16-channel 16-bit 100KS/s multi-function board



### Features

- 16-bit high resolution
- 100KS/s sampling rate(Max.)
- 16 single-ended or 8 differential analog inputs
- A/D trigger mode: software trigger, pacer trigger, external trigger and event trigger
- A/D data transfer modes: polling, interrupt, DMA
- Software programmable gain: 1,2,4,8
- Bipolar analog input
- 2-channel of 12-bit D/A voltage output
- 16 digital inputs & 16 digital outputs
- General purpose programmable 16-bit counter/timer

### Functional Description

The A-826PG is a multi-function, 16-bit high resolution Analog and Digital I/O board for the PC/AT compatible computers. The A-826PG offers 16-channel single-ended or 8-channel differential analog input, plus two channels of analog output with 12-bit resolution. In addition, the A-826PG has 16-channel digital input, 16-channel digital output and one timer/counter channel. The A-826PG uses a B.B. ADS 7805 high performance 16-bit A/D converter. It provides maximum sampling rate up to 100 K samples/s and software programmable gains. DMA operation is jumper-selectable for levels 1 or 3. Interrupts are jumper-selectable between 3 and 15.

### Applications

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

### Specifications

#### Analog Input

- Number of channels: 16 single-ended or 8 differential
- Resolution: 16-bit
- Conversion time: 8  $\mu$ s
- Maximum ADC conversion rate: 100KS/s
- Input impedance: 10,000 M $\Omega$  || 6pF
- Over voltage protection:  $\pm$ 35V
- Integral linearity error:  $\pm$ 3 LSB max
- On chip sample & hold
- Accuracy: 0.01% of reading  $\pm$ 1 bit
- Zero drift:  $\pm$ 15ppm/  $^{\circ}$ C of F.S. max

#### A-826PG Input Range

Gain	Bipolar(V)	Sampling Rate(Max.)
1	$\pm$ 10V	100KS/s
2	$\pm$ 5V	100KS/s
4	$\pm$ 2.5V	100KS/s
8	$\pm$ 1.25V	100KS/s

#### Analog Output

- Number of channels: 2 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:  $\pm$ 5 mA
- Settling time: 0.6  $\mu$ s to 0.01% for full scale step

#### Digital I/O

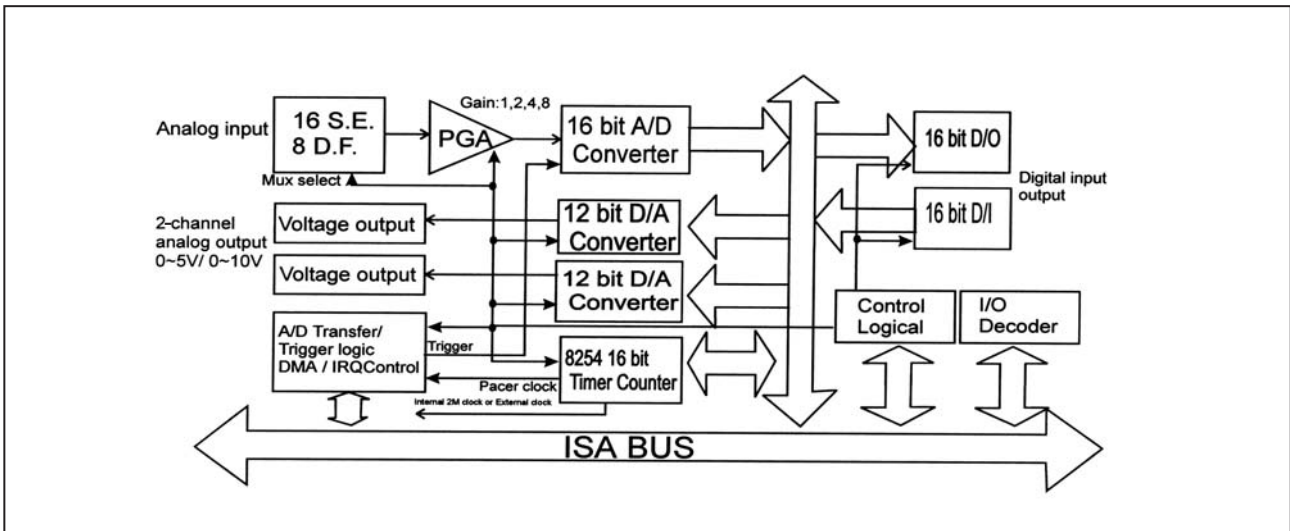
- 16 TTL-level input
- Input low  $V_{IL}$  = 0.8V max;  $I_{IL}$  = -0.4 mA max
- Input high  $V_{IH}$  = 2.0V min;  $I_{IH}$  = 20  $\mu$ A max
- 16 TTL-level output
- Output low  $V_{OL}$  = 0.5V max; @ $I_{OL}$  = 8 mA max
- Output high  $V_{OH}$  = 2.7V min; @ $I_{OH}$  = 0.4 mA max

#### Timer/Counter

- Number of channels: 1
- Resolution: 16-bit
- Compatibility: 5V/TTL
- Internal clock: 2MHz
- External clock: up to 10 MHz
- A/D pacer: cascaded 32-bit counter
- Programmable internal timer: 0.0047Hz~0.5MNz

# A-826PG

16-channel 16-bit 100KS/s multi-function board



## General Specifications

- I/O connector: one 37-pin D-Sub female  
two 20-pin ribbon male
- Power requirements: +5V @ 650 mA max
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90 % non-condensing
- Storage temperature: -20 ~ 70°C
- Dimensions: 170 mm x 122 mm

### CN1

DI 0	1	○	○	2
DI 2	3	○	○	4
DI 4	5	○	○	6
DI 6	7	○	○	8
DI 8	9	○	○	10
DI 10	11	○	○	12
DI 12	13	○	○	14
DI 14	15	○	○	16
D.GND	17	○	○	18
+5V	19	○	○	20

### CN2

DI 1	DO 0	1	○	○	2
DI 3	DO 2	3	○	○	4
DI 5	DO 4	5	○	○	6
DI 7	DO 6	7	○	○	8
DI 9	DO 8	9	○	○	10
DI 11	DO 10	11	○	○	12
DI 13	DO 12	13	○	○	14
DI 15	DO 14	15	○	○	16
D.GND	D.GND	17	○	○	18
+12V	+5V	19	○	○	20

ISA Bus I/O Boards

## Pin Assignment

### CN3

Ext Counter	37	○	19	+5V OUT
N.C.	36	○	18	N.C.
COU1	35	○	17	Ext Trig
CGATE1	34	○	16	COU0
CGATE0	33	○	15	D.GND
D/A OUT1	32	○	14	A.GND
D/A Ref 0	31	○	13	+12V OUT
D/A OUT0	30	○	12	D/A Ref 1
A.GND	29	○	11	int Ref Out
A.GND	28	○	10	A.GND
AI15	27	○	09	A.GND
AI14	26	○	08	AI 7
AI13	25	○	07	AI 6
AI12	24	○	06	AI 5
AI11	23	○	05	AI 4
AI10	22	○	04	AI 3
AI 9	21	○	03	AI 2
AI 8	20	○	02	AI 1
		○	01	AI 0

## Ordering Information

### Standard

**A-826PG:** 16-channel 16-bit 100KS/s multi-function board

**A-826PG/S:** A-826PG with DB-8225

### Optional

**DB-8225:** Screw terminal board with CJC

**DB-889D:** 16-channel multiplexer and signal conditioning board

**DB-16P:** 16-channel isolated digital input board

**DB-16R:** 16-channel relay 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

**ADP-20:** 120-pin extender