

A-826PG

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



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 μ s
- Maximum sampling rate: 100KS/s
- Input impedance: 10,000 M Ω || 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

Features

- 16-bit high resolution
- 100KS/s sampling rate
- 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

A-826PG Input Range

Gain	Bipolar(V)	Throughput
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 μ s to 0.01% for full scale step

Digital I/O

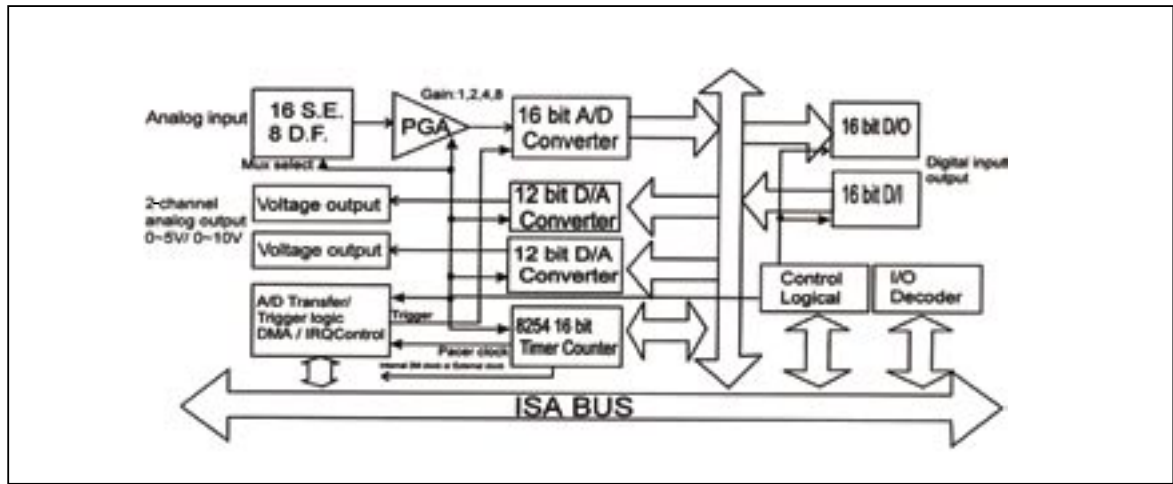
- 16 TTL-level input
- Input low V_{IL} = 0.8V max; I_{IL} = -0.4 mA max
- Input high V_{IH} = 2.0V min; I_{IH} = 20 μ A max
- 16 TTL-level output
- Output low V_{OL} = 0.5V max; @ I_{OL} = 8 mA max
- Output high V_{OH} = 2.7V min; @ I_{OH} = 0.4 mA max

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~0.5MHz

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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

CN2

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

CN3

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

Pin Assignment

CN1

Ext Counter	37	19	+5V OUT
N.C.	36	18	N.C.
COUT1	35	17	Ext Trig
CGATE1	34	16	COUT0
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