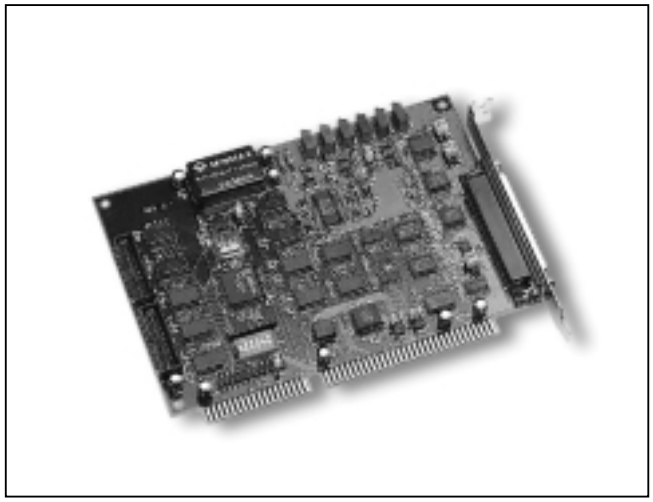
A-826PG

100KS/s 16-Channel 16-Bit Analog Input, 2-Channel 12- Bit Analog Output with 16 Digital Input/16 Digital Output



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 single-ended or 8 differential analog inputs, plus two channels of analog output with 12-bit resolution. In addition, the A-826PG has 16 digital input, 16 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 of 100 K samples/s, software-programmable gains of 1, 2, 4, 8. DMA operation is jumper selectable for levels 1 or 3. Interrupts are jumper selectable between 3 and 15.

Features

- 16-bit A/D converter
- 12-bit D/A converter
- 16 single-ended or 8 differential input channels
- 100 kS/s sampling rate
- Two 12-bit analog output channels
- Software programmable gain: 1, 2, 4, 8
- Interrupt handling
- A/D trigger modes: Software Trigger, Pacer Trigger, External Trigger, Event Trigger
- A/D data transfer modes: polling, interrupt, DMA
- 16 digital inputs & 16 digital outputs
- 37-pin D-Sub connector

Applications

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

Specifications

■ Analog Input
Channels: 16 single-ended/8 differential
Resolution: 16 bits
Conversion rate: 100KS/s max
Input Impedance: 10,000 MΩII6pF
Overvoltage Protection: +/-35V
A/D converter: +/-1.5LSB (max INL)
+/-3 LSB (Integral linearity error)

■ **A-826 PG Input Range**

Gain	Bipolar	Throughput
1	±10V	100K/s
2	±5V	100K/s
4	±2.5V	100K/s
8	±1.25V	100K/s

■ **D/A Outputs**
Channels: 2 independent
Type: 12-bit double buffered
Linearity: 0.006% FS
Output range: Internal reference 0~5V or 0~10V
External reference max +10V or -10V
Output Driving: +/- 5mA

■ **Digital I/O**
Inputs (LSTTL): 16
Input low VIL = 0.8Vmax; IIL =-0.4mA max
Input high VIH = 2.0Vmin; IIH = 20μA max
Outputs(LSTTL): 16
Output low VOL = 0.5Vmax; @IOL =8mA max
Output high VOH = 2.7Vmin; @IOH =-400μA max

■ **Programmable Interval Timer (0.0045Hz~0.5MHz)**
Type: 82c54
A/D pacer: 16 bit counter

■ **Interrupt Channel:** 3-15 jumper selectable

■ **Power Requirements:** +5V; 650mA max.

■ **General Environment**
Operating temp: 0-50°C
Storage temp: -20 to 70°C
Humidity: 0 to 90%
Dimensions: 170mm x 122 mm

A-826PG

100KS/s 16-Channel 16-Bit Analog Input, 2-Channel 12- Bit Analog Output with 16 Digital Input/16 Digital Output

Software

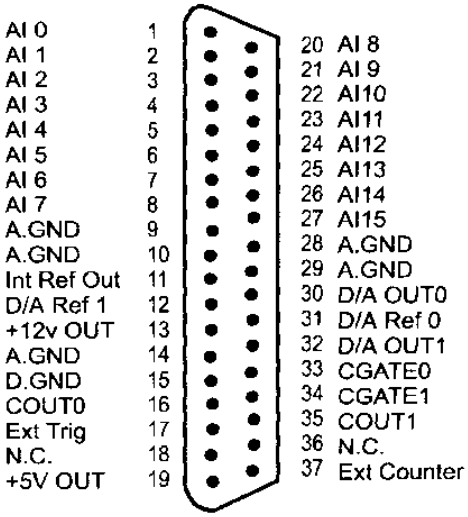
- A-826 Development Toolkit for DOS
- A-826 Development Toolkit for Win95
- A-826 Development Toolkit for WinNT

Order Description

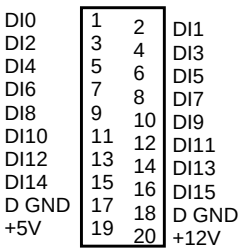
- A-826PG: 100KS/s 16-bit Analog and Digital I/O Board , User's manual, Utility diskette.

Options

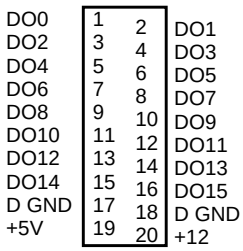
- DB-8225: Screw Terminal Board, Filter Circuitry can be added
- DB-889D: 16-Channel Multiplexer and Signal Conditioning Board
- DB-16P: 16 Channel isolated digital input Board
- DB-16R: 16 Channel SPDT Relay Board
- DB-37: Directly connect signals to the back of A-826
- DN-37: I/O Connector Block with DIN Rail Mounting and 37-PIN D-SUB Connector
- DN-20: I/O Connector Block with DIN Rail Mounting and 20-PIN Header
- ADP-20: 20-pin Extender
- A-826 LabVIEW Development Toolkit for Win95
- A-826 LabVIEW Development Toolkit for WinNT

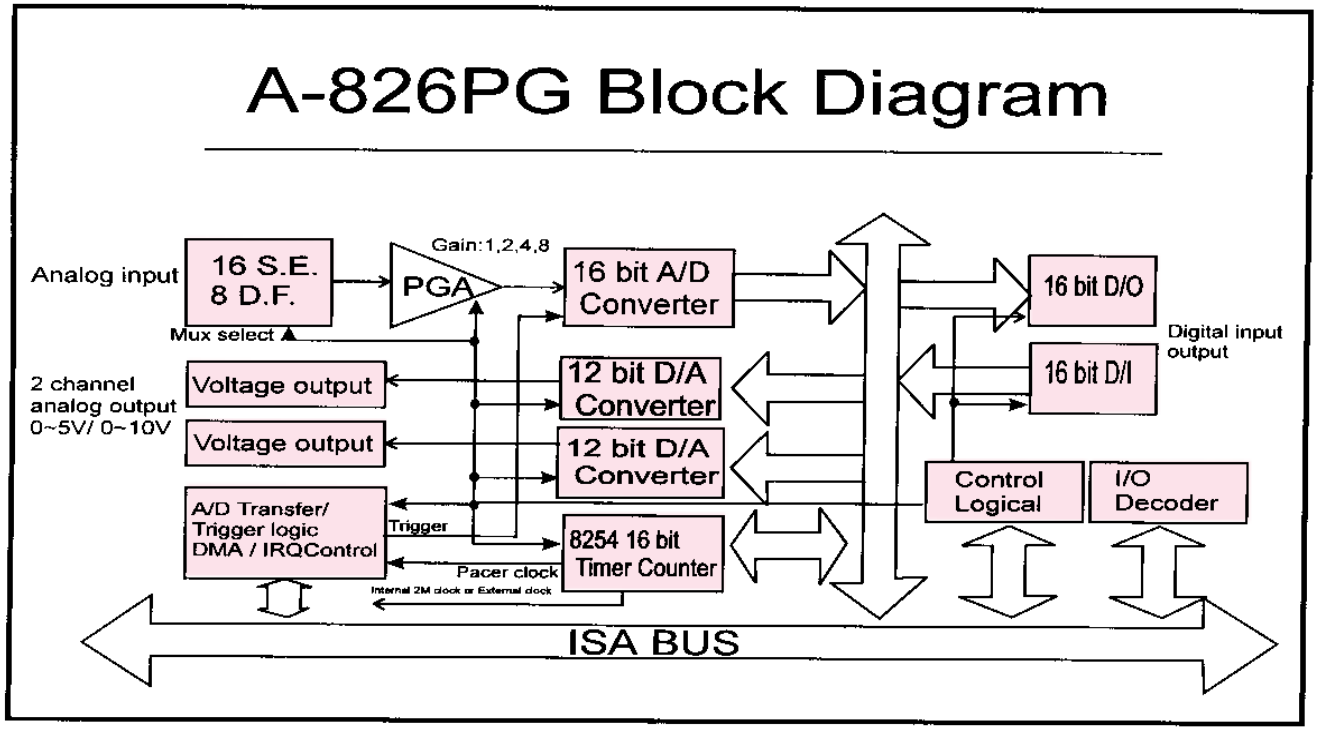


Digital Input



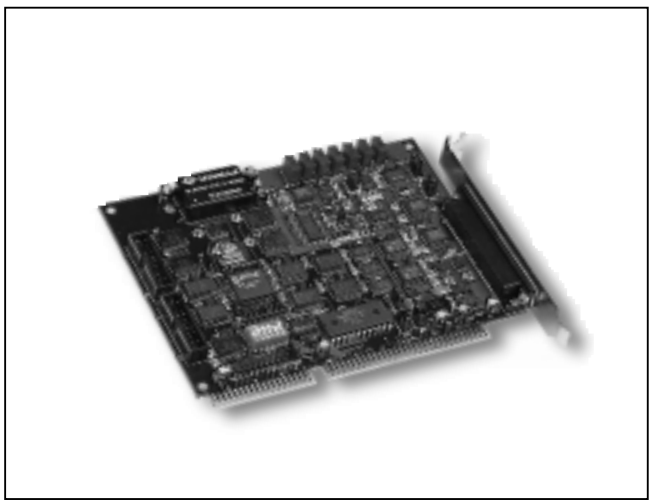
Digital Output





A-822PGH/A-822PGL, A-823PGH/A-823PGL

125 KS/s 16 Channel 12 Bit Analog Input, 2Channel 12 Bit Analog Output with 16 Digital Input/16 Digital Output



Functional Description

The A-822PGH/L, A-823PGH/L are 12 bit multi-function analog and digital I/O boards for the PC/AT compatible computer. The A-822PGH/L, A-823PGH/L offer 16 single-ended or 8 differential analog inputs, plus two channels of analog output with 12-bits resolution. In addition. The A-822PGH/PGL, A-823P GH/L has 16 digital input, 16 digital output, and one timer/counter channel. The A-822PGH Provides gain of 0.5, 1, 5, 10,50, 100, 500, 1000, while the A-822PGL provides gains of 0.5, 1, 2, 4, 8. It has a maximum sampling rate of 125 K samples /s, the DMA operation is jumper selectable for levels 1 or 3. Interrupts are jumper selectable between 3 and 15. The A-823PGH/L provide un-ipolar and bi-polar D/A output, while the A-822PGH/L provide only un-ipolar D/A output.

Features

- 12-bit A/D converter
- 12-bit D/A converter
- 16 single-ended or 8 differential input channels
- 125 k/s sampling rates
- Two 12-bit analog output channels
  A822PGH/PGL output range: 0~5V, 0~10V
  A823PGH/PGL output range: 0~5V, ±5V, 0~10V, ±10V
- Software programmable gain :
  PGH: 0.5, 1, 5, 10, 50, 100, 500, 1000
  PGL: 0.5, 1, 2, 4, 8
- Interrupt handling
- A/D Trigger modes: Software Trigger, Pacer Trigger, External Trigger, Event Trigger
- A/D data transfer modes: polling, interrupt, DMA
- 16 digital inputs & 16 digital outputs
- 37 pin D-Sub connector

Applications

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

Specifications

- **Analog Input Specifications**

  Channels: 16 single-ended/8 differential
  Resolution: 12 bits
  Conversion rate: 125KS/s max.
  Input Impedance: 10,000 MΩll6pF
  Overvoltage Protection: +/-35V
  A/D converter: +/-1LSB (max. INL)
  On chip sample & hold
  Zero drift: ±25ppm/°C of FS max.

- **PGH Input Range**

  Bipolar: ±10V, ±5V, ±1V, ±0.5V, ±0.1V, ±0.05V, ±0.01V, ±0.005V
  Unipolar: 0~10V, 0~1V, 0~0.1V, 0.01V

Gain	Bipolar(V)	Unipolar(V)	Throughput
1/0.5	±5/±10	0~10/X	125K/s
10/5	±0.5/±1	0~1/X	80K/s
100/50	±0.05/±0.1	0~0.1/X	10K/s
1000/500	±0.005/±0.01	0~0.01/X	1K/s

- **PGL Input Range**

  Bipolar: ±10V, ±5V, ±2.5V, ±1.25V, ±0.625V
  Unipolar: 0~10V, 0~5V, 0~2.5V, 0~1.25V

Gain	Bipolar(V)	Unipolar(V)	Throughput
0.5	±10	X	125K/s
1	±5	0~10	125K/s
2	±0.25	0~5	125K/s
4	±1.25	0~2.5	125K/s
8	±0.625	0~1.25	100K/s

A-822PGH/A-822PGL, A-823PGH/A-823PGL

125 KS/s 16 Channel 12 Bit Analog Input, 2Channel 12 Bit Analog Output with 16 Digital Input/16 Digital Output

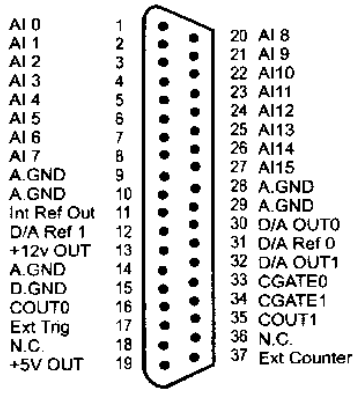
Bi-polar / Uni-polar Analog Output

- **D/A Outputs**
  - Channels: 2 independent
  - Type: 12-bit double buffered
  - Linearity: 0.006% FS
  - Output range: Internal reference
  - A-822 series: 0~5V or 0~10V
  - A-823 series 0~5V,0~10V,±5V,±10V
  - External reference max +10V or -10V
  - Output Driving: ±5mA
- **Digital I/O**
  - Inputs (LSTTL): 16
  - Input low: VIL = 0.8V max.; IIL =-0.4mA max.
  - Input high: VIH = 2.0V min.; IIH = 20μA max.
  - Outputs(LSTTL): 16
  - Output low VOL = 0.5V max. @IOL = 8mA max.
  - Output high VOH = 2.7V min; @IOH = -400μAmax.
- **Programmable Interval Timer (0.0045Hz~0.5MHz)**
  - Type: 82c54
  - A/D pacer: 32 bit counter (A-822PGH/L)
  - A/D pacer: 16 bit counter (A-823PGH/L)
- **Interrupt channel:** 3-15 jumper selectable
- **Power Requirements:** +5V @350mA max.
- **General Environment**
  - Operating temp: 0-50°C
  - Storage temp: -20 to 70°C
  - Humidity: 0 to 90%
  - Dimensions: 170mm x 122 mm

Software

- A-822 Development Toolkit for DOS
- A-822 Development Toolkit for Win95
- A-822 Development Toolkit for WinNT
- A-823 Development Toolkit for DOS
- A-823 Development Toolkit for Win95
- A-823 Development Toolkit for WinNT

Pin Assignment of A-822 and A-823



Order Description

- A-822PGH: 125KS/s High Gain 12-bit A/D, two 12-bit uni-polar analog output and Digital I/O Board
- A-822PGL: 125KS/s Low Gain 12-bit A/D, two 12-bit uni-polar analog output and Digital I/O Board
- A-823PGH: 125KS/s High Gain 12-bit A/D, two 12-bit bi-polar/un-ipolar analog output and Digital I/O Board
- A-823PGL: 125KS/s Low Gain 12-bit A/D, two 12-bit bi-polar/un-ipolar analog output and Digital I/O Board

Options

- DB-8225: Screw Terminal Board, Filter Circuitry can be added
- DB-889D: 16-Channel Multiplexer and Signal Conditioning Board
- DB-16P: 16 Channel isolated digital input Board
- DB-16R: 16 Channel SPDT Relay Board
- DB-37: Directly connect signals to the back of A-822, A-823
- DN-37: I/O Connector Block with DIN Rail Mounting and 37-PIN D-SUB Connector
- DN-20: I/O Connector Block with DIN Rail Mounting and 20-PIN Header
- ADP-20: 20-pin Extender
- A-822 LabVIEW Development Toolkit for Win95
- A-822 LabVIEW Development Toolkit for WinNT
- A-823 LabVIEW Development Toolkit for Win95
- A-823 LabVIEW Development Toolkit for WinNT

Digital input connector

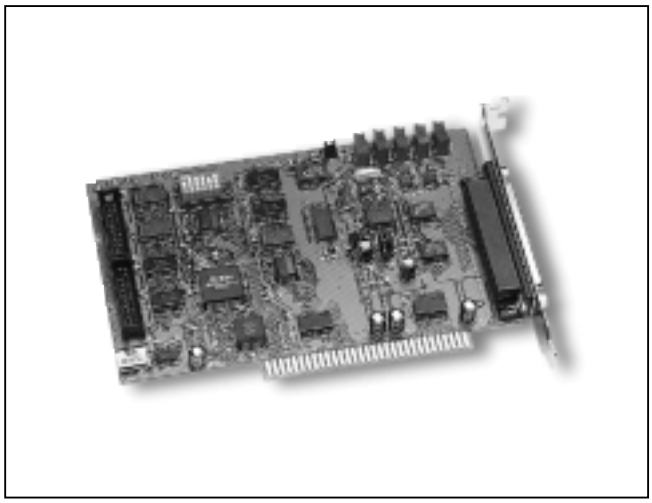
DI0	1	2	DI1
DI2	3	4	DI3
DI4	5	6	DI5
DI6	7	8	DI7
DI8	9	10	DI9
DI10	11	12	DI11
DI12	13	14	DI13
DI14	15	16	DI15
D GND	17	18	D GND
+5V	19	20	+12V

Digital output connector

DO0	1	2	DO1
DO2	3	4	DO3
DO4	5	6	DO5
DO6	7	8	DO7
DO8	9	10	DO9
DO10	11	12	DO11
DO12	13	14	DO13
DO14	15	16	DO15
D GND	17	18	D GND
+5V	19	20	+12V

A-821PGH/A-821PGL

45 KS/s 12-bit Analog & Digital I/O Board



Functional Description

The A-821PGH, A-821PGL are 12 bit multifunction analog and digital I/O boards for the PC/AT compatible computer. The A-821PGH, A-821PGL offer 16 single-ended or 8 differential analog inputs, plus one channel analog output with 12-bits resolution. In addition. TheA-821PGH, A-821PGL has 16 digital input, 16 digital output, and one timer/counter channel. The A-821PGH provides gain of 1, 10, 100, 1000, while the A-821PGL provides gains of 1, 2, 4, 8. It has a maximum sampling rate of 45 K samples/s.

Features

- 12-bit A/D converter
- 12-bit D/A converter
- 16 single-ended or 8 differential input channels
- 45KS/s sampling rate
- Bipolar analog input
- One 12-bit analog output channel
- Software programmable gain :
  1, 10, 100, 1000 (A-821PGH)
  1, 2, 4, 8 (A-821PGL)
- Interrupt handling
- A/D Trigger modes: Software Trigger, Pacer Trigger
- A/D data transfer modes: polling, interrupt
- 16 digital inputs & 16 digital outputs
- 37-pin D-Sub connector

Applications

- Laboratory automation
- Sensor interface
- Production test

Specifications

Analog Input Specifications

Channels: 16 single-ended/ 8 differential
Resolution: 12 bits
Conversion rate: 45KS/s max
Input Impedance: 10,000 MΩII6pF
Over voltage Protection: +/-35V
Accuracy: 0.01% of reading +/- 1 bit
Linearity: +/- 1 bit
On chip sample & hold
Zero drift: +/-25ppm/°C of FS max

A-821 PGL Input Range

Bipolar: +/-5V, +/-2.5V, +/-1.25V, +/-0.625

821PGL	Bipolar	Throughput
1	±5V	45K/s
2	±2.5V	45K/s
4	±1.25V	45K/s
8	±0.625V	45K/s

A-821 PGH Input Range

Bipolar: +/-5V, +/-0.5V, +/-0.05V, +/-0.005V

821PGH	Bipolar	Throughput
1	±5V	45K/s
10	±0.5V	45K/s
100	±0.05V	10K/s
1000	±0.005V	1K/s

D/A Outputs

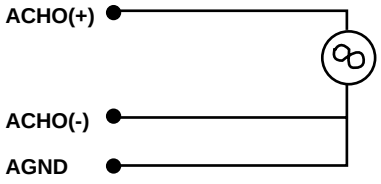
Channels: 1 independent
Type: 12-bit double buffered (AD-7948)
Linearity: ± 1/2 bit
Output range: 0~5V or 0~10V jumper selected
External reference max +10V or -10V
Output Driving: ± 5mA

Digital I/O

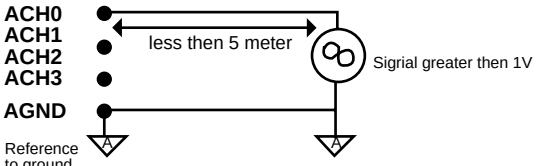
Inputs (LSTTL): 16
Input low VIL = 0.8Vmax; IIL =-0.4mAmax
Input high VIH = 2.0Vmin; IIH = 20μAmax
Outputs (LSTTL): 16
Output low VOL = 0.5Vmax; @IOL =8mAmax
Output high VOH = 2.7Vmin; @IOH = -400μAmax

A-821PGH/A-821PGL

45 KS/s 12-bit Analog & Digital I/O Board



Differential Input



Single-ended Input

Single-ended & Differential Input

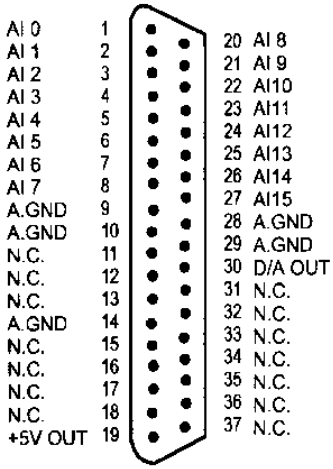
The A82X series provides 16 channel single-ended or 8 channel differential analog input, Single-ended input are all referenced to a common ground point, These inputs are typically used when the input signal are greater than 1 volt, the leads from the signal source to the analog input hardware are short(less then 5 meter), and all input signals share a common ground reference, If the signals do not meet these criteria, you should use differential inputs.
The common-mode noise can be canceled, when the input is configured in differential mode.

ISA-Bus

- **Programmable Pacer Timer (0.00046Hz~0.5MHz)**
  Type: 82c54
  A/D pacer: 32 bit (cascaded pacer timer)
- **Interrupt channel:** 2, 3, 4, 5, 6, 7 software selectable
- **Power Requirements:** +5V; 320mA max
- General Environment
  Operating temp: 0-50°C
  Storage temp: -20°C to 70°C
  Humidity: 0 to 90%
  Dimensions: 107mm x 143mm

Pin Assigument

CN1: 37 pin D-sul connector



Software

- A-821 Development Toolkit for DOS
- A-821 Development Toolkit for Win95
- A-821 Development Toolkit for WinNT

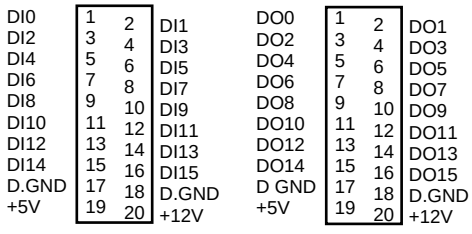
Order Description

- A-821PGH: 45KS/s High Gain 12-bit Analog and Digital I/O Board
- A-821PGL: 45KS/s Low Gain 12-bit Analog and Digital I/O Board

Options

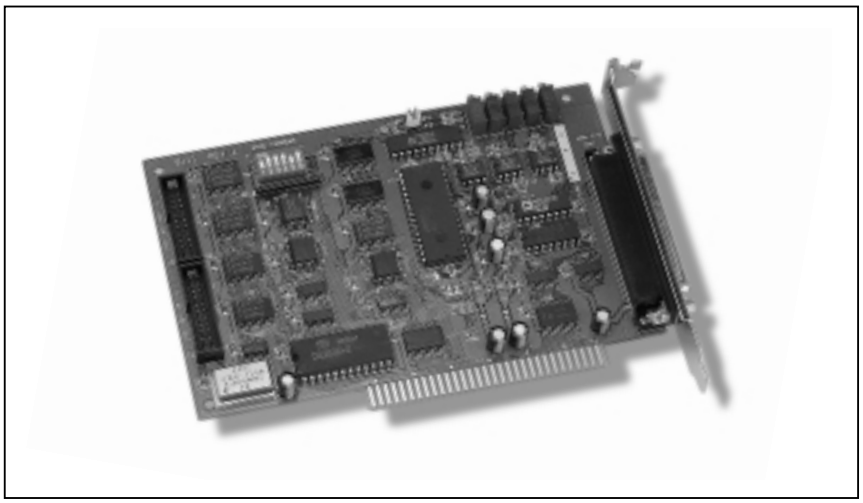
- DB-8225: Screw Terminal Board, Filter Circuitry can be added
- DB-889D: 16-Channel Multiplexer and Signal Conditioning Board
- DB-16P: 16 Channel isolated digital input Board
- DB-16R: 16 Channel SPDT Relay Board
- DB-37: Directly connect signals to the back of A-821
- DN-37: I/O Connector Block with DIN-Rail Mounting and 37-PIN D-SUB Connector
- DN-20: I/O Connector Block with DIN-Rail mounting and 20-PIN Header
- ADP-20: 20-pin Extender
- A-821 LabVIEW Development Toolkit for Win95
- A-821 LabVIEW Development Toolkit for WinNT

CN2, CN3 20-Pin Connector



A-8111

30 KS/s 12-bit Analog and Digital I/O Board



Functional Description

The A-8111 is 12-bit multifunction analog and digital I/O board for the PC/AT compatible computer. The A-8111 provides 8 single-ended input , plus one channel analog output with 12-bits resolution. In addition, the A-8111 has 16 digital input, 16 digital output, and one timer/counter channel. The sampling rate of A-8111 is 30K samples/s.

Features

- 12-bit A/D converter
- 12-bit D/A converter
- 8 single-ended
- 30 KS/s sampling rate
- Bipolar analog input
- One 12-bit analog output channel
- Software programmable input range:
  +/-5V, +/-2.5V, +/-1.25V, +/-0.625V and +/-0,3125V
- Interrupt handling
- A/D Trigger modes:
  Software Trigger, Pacer Trigger
- A/D data transfer modes:
  polling, interrupt.
- 16 digital inputs & 16 digital outputs
- register compatible to PCL-711B
- 37-pin D-Sub connector

Applications

- Laboratory automation
- Sensor interface
- Production test

Specifications

- **Analog Input Specifications**
  Channels: 8 single-ended
  Resolution: 12 bits
  Conversion rate: 30KS/s max
  Input Impedance: 10 MΩ 6pF
  Over voltage Protection: +/-35V
  Accuracy: 0.01% of reading
  Linearity: +/- 1 bit
  On chip sample & hold
  Zero drift : +/-25ppm/°C of FS max
- **Input Range**
  Bipolar: +/-5V, +/-2.5V, +/-1.25V, +/-0.625V, +/-0.3125V
- **D/A Outputs**
  Channels: 1 independent
  Type: 12-bit double buffered (AD-7948)
  Linearity: ±1/2 bit
  Output range: 0~5V or 0~10V jumper selected
  External reference max. +10V or -10V
  Output Driving: ± 5mA
- **Digital I/O**
  Inputs (LSTTL): 16
  Input low VIL = 0.8 Vmax;
  IIL =-0.4mAmax
  Input high VIH = 2.0 Vmin;
  IIH = 20μAmax.
  Outputs (LSTTL): 16
  Output low VOL = 0.5 Vmax;
  @IOL = 8 mA max.
  Output high VOH = 2.7 Vmin
  @IOH= -400μA max.
- Programmable Pacer Timer (0.00046Hz~0.5MHz)
  Type: 82c54
  A/D pacer: 32 bit (cascaded pacer timer)
- Interrupt channel: 2,3,4,5,6,7 software selectable
- Power Requirements:
  +5V; 200mA max.
- General Environmental
  Operating temp.: 0-50°C
  Storage temp.: -20°C to 70°C
  Humidity: 0 to 90%; non-condensing
  Dimensions: 157mm X 106mm

Software

- A-8111 Development Toolkit for DOS
- A-8111 Development Toolkit for Win95
- A-8111 Development Toolkit for WinNT

Order Description

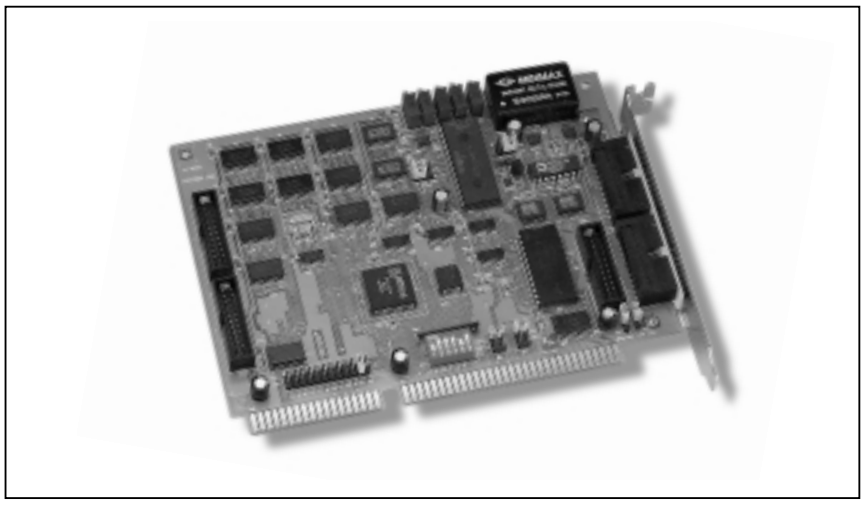
- A-8111: 30KS/s 12-bit Analog and Digital I/O Board

Options

- DB-8125: Screw Terminal Board, Filter Circuitry can be added
- DB-16P: 16 Channel isolated digital input Board
- DB-16R: 16 Channel SPDT Relay Board
- DB-37: Directly connect signals to the back of A-8111
- DN-37: I/O Connector Block with DIN Rail Mounting and 37-PIN D-SUB Connector
- DN-20: I/O Connector Block with DIN Rail mounting and 20-PIN Header
- ADP-20: 20-pin Extender
- A-8111 LabVIEW Development Toolkit for Win95
- A-8111 LabVIEW Development Toolkit for WinNT

A-812PG

70 KS/s 12 bit Analog and Digital I/O Board



Functional Description

The A-812PG is a 12-bit multifunction analog and digital I/O board for the PC/AT compatible computer. The A-812PG offer 16 single-ended, plus two channel analog output with 12-bit resolution. In addition, the A-812PG has 16 digital input, 16 digital output, and one timer/counter channel. The sampling rate of A-812PG is 70K samples/s. It is fully compatible to PCL-812PG

Features

- 12-bit A/D converter
- 12-bit D/A converter
- 16 single-ended or 8 differential input channels
- 70KS/s sampling rate
- Bipolar analog input
- Two 12-bit analog output channels
- Interrupt handling
- A/D Trigger modes : Software trigger, Pacer trigger , or external trigger
- A/D data transfer modes : polling, interrupt.
- 16 digital inputs & 16 digital outputs
- register compatible to PCL-812PG

Applications

- Laboratory automation
- Sensor interface

Specifications

- **Analog Input Specifications**
  Channels: 16 single-ended
  Resolution: 12 bits
  Conversion rate: 70KS/s max
  Input Impedance: 10 MΙΙ6pF
  Over voltage Protection: +/-35V
  Accuracy: 0.01% of reading
  Linearity: +/- 1 bit
  On chip sample & hold
  Zero drift: +/-25ppm/°C of FS max
- **Input Range**
  Bipolar: +/- 10V, +/-5V, +/-2.5V, +/-1.25V, +/-0.625V, +/-0.3125V
- **D/A Outputs**
  Channels: 2 independent
  Type: 12-bit double buffered (AD-7541)
  Linearity:± 1/2 bit
  Output range: 0~5V or 0~10V jumper selected
  +/-10V max. with external AC or DC reference
  Output Driving: ± 5mA
- **Digital I/O**
  Inputs (LSTTL): 16
  Input low VIL = 0.8 Vmax;
  IIL = -0.4mAmax
  Input high VIH = 2.0 Vmin;
  IIH = 20μAmax
  Outputs (LSTTL): 16
  Output low VOL = 0.5 Vmax;
  @IOL = 8 mA max.
  Output high VOH = 2.7 Vmin;
  @IOH = -400μA max.
- **Programmable Pacer Timer**
  (0.00046Hz~0.5MHz)
  Type: 82c54
  A/D pacer: 32 bit (cascaded pacer timer)
- **Power Requirements:** +5V; @ 500 mA typical, 1.0A max
- **General Environmental**
  Operating temp.: 0-50°C
  Storage temp.: -20°C to 70°C
  Humidity: 0 to 90%; non-condensing
  Dimensions: 163mm X 124mm

Software

- A-812 Development Toolkit for DOS
- A-812 Development Toolkit for Win95
- A-812 Development Toolkit for WinNT

Order Description

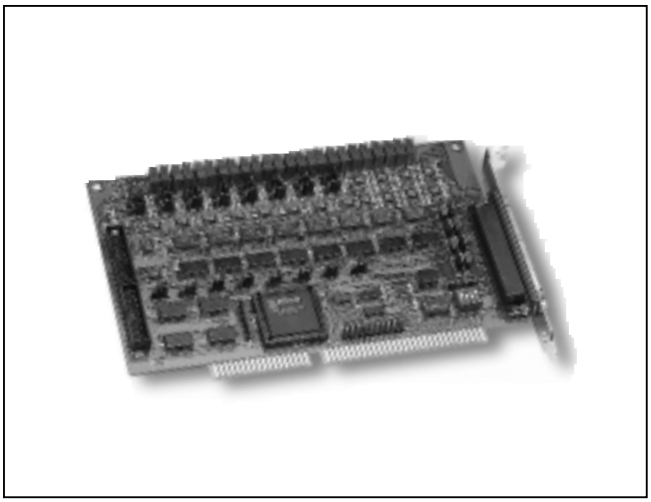
- A-812PG: 70KS/s 12-bit Analog and Digital I/O Board

Options

- DB-8025: Screw Terminal Board, two 1-m 20-pin flat cables
- DB-8125: Industrial Wiring Terminal Board, two 1-m 20-pin flat cables
- DB-889D: 16-Channel Multiplexer and Signal Conditioning Board
- DB-16P: 16 Channel isolated digital input Board
- DB-16R: 16 Channel SPDT Relay Board
- DN-20: I/O Connector Block with DIN Rail mounting and 20-PIN Header
- ADP-20: 20-pin Extender
- A-812 LabVIEW Development Toolkit for Win95
- A-812 LabVIEW Development Toolkit for WinNT

A-626/A-628

6 & 8 Channel 12 Bit Analog Output Board



Functional Description

The A-626, A-628 are 12-bit analog output boards with 16 digital input channel and 16 output digital output. The A-626, A-628 boards support both current and voltage output. The output channels can be jumper selectable for different voltage range;+/-10V, +/-5V, 0-5V, 0-10V and can sink 4-20mA current when connected to an external voltage source. On board reference chip BB Ref-01 is used for solving the thermo-drifting problem of the reference voltage. A-626 is much better than other products on the market for long period operation. Lattice FPGA on board can increase the stability.

Features

- 6 or 8 analog output channels
- 12-bit resolution
- 0~5V, 0~10V, ±5V, ±10V output ranges
- 4-20mA current loop capability, sink to ground
- On board reference -5V, -10V
- External reference ±10V (max.) AC or DC
- External Interrupt request signals, IRQ level from IRQ 3-IRQ 15
- 16 channel digital input and 16 channel digital output
- Connects directly to DB-16P, DB-16R, DN-20, DN-37, 782, and 785 families

Applications

- Servo control
- Programmable voltage source
- Programmable current sink
- Product testing

Specifications

■ Analog Outputs

Number of analog output channels:
A-626: 6 Channel; A-628: 8 Channel
Resolution: 12-bits
Type: AD 7541 or equivalent
Differential linearity: ±1/2 LSB max. over temperature
Settling time: less than 65 μS
Temperature drift: 5ppm /°C max.
Relative Accuracy: +/- 1 LSB max.
Output Driving Capability: 5mA max.
Current Loop Exciting Voltage: 8V ~ 35V
Reference Voltage: Internal -5V or -10V
External +10V or -10V max.

■ Digital I/O

Inputs (LSTTL): 16
Input low VIL = 0.8 V max.; IIL =-0.4mA max.
Input high VIH = 2.0V min; IIH = 20μA max.
Outputs (LSTTL): 16
Output low VOL = 0.5 V max.; @IOL =8mA max.
Output high VOH = 2.7V min; @IOH = -400μA max.
Interrupt channel: 3~15

■ Power Requirements :

Power	Typical A-626/A-628	Maximal A-626/A-628
+5V	450/500mA	0.9/1.1A
+12V	50/60mA	110/130mA
-12V	14/15mA	90/105mA

■ General Environment

Operating temp: 0-50°C
Storage temp: -20°C to 70°C
Humidity: 0 to 90%
Dimensions: A-626: 184mm x 123mm
A-628: 198mm x 123mm

Software

- A-626 Development Toolkit for DOS
- A-626 Development Toolkit for Win95
- A-626 Development Toolkit for WinNT

A-626/A-628

6 & 8 Channel 12 Bit Analog Output Board

Order Description

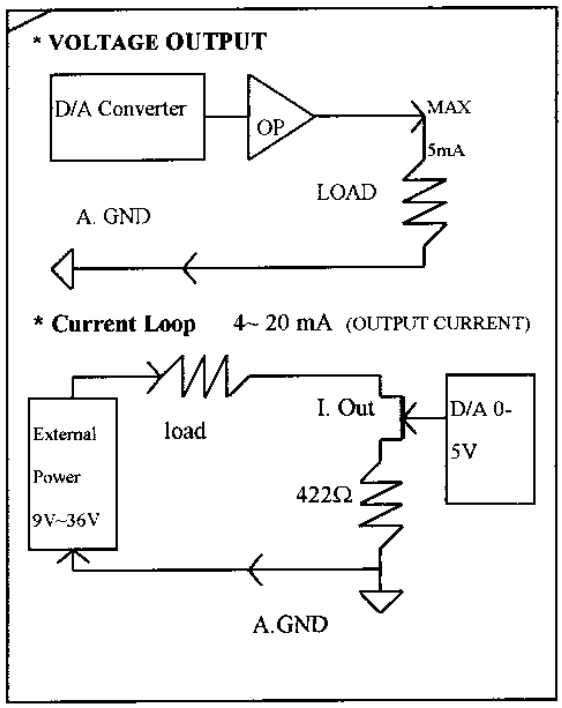
- A-626: 6 CHANNEL 12-BIT Analog Output and Digital I/O Board
- A-628: 8 CHANNEL 12-BIT Analog Output and Digital I/O Board

Options

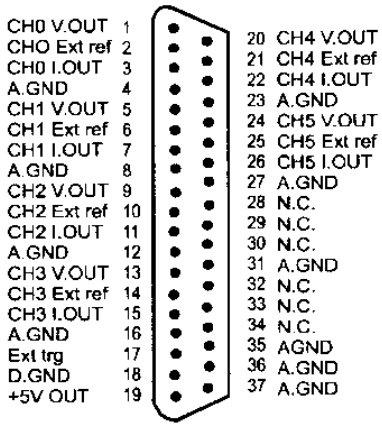
- DB-16P: 16 Channel isolated digital input Board
- DB-16R: 16 Channel SPDT Relay Board
- DB-37: Directly connect signals to the back of A-626 / A628
- DN-37: I/O Connector Block with DIN Rail Mounting and 37-PIN D-SUB Connector
- DN-20: I/O Connector Block with DIN Rail Mounting and 20-PIN Header
- ADP-20: 20-pin Extender
- A-626 LabVIEW Development Toolkit for Win95
- A-626 LabVIEW Development Toolkit for WinNT

NOTE:
The A-626 & A-628 provide current loop. The user should need a external power supply to provide a bias voltage for FET.
Please refer to the right hand side figure.

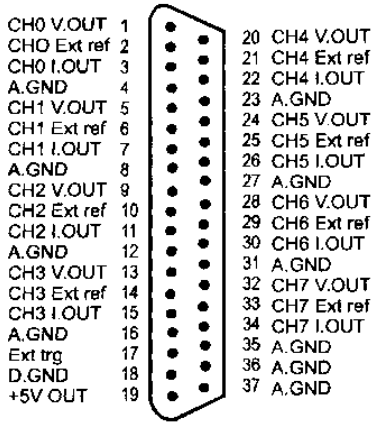
TYPICAL OUTPUT CONFIGURATION



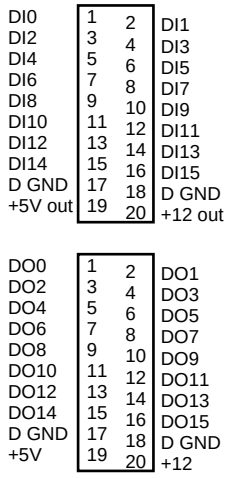
A-626 6 channel analog output
37pin connector pin assignment



A-628 8 channel analog output
37pin connector pin assignment



A-626/A-628 DIO
Pin assignment

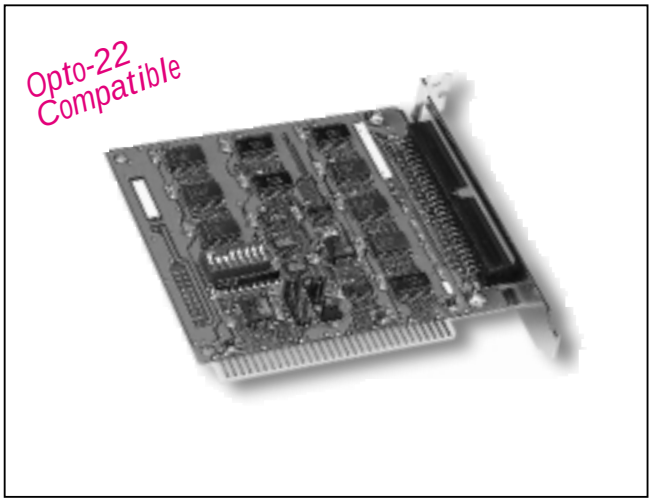


Note :

V.OUT Voltage output
Ext ref: External reference input
A.GND :analog ground
DI :digital input
I.OUT: Current output
Ext trg : External trigger
D.GND :digital ground
DO:digital output

DIO-24

24-BIT OPTO-22 DIO Board



Functional Description

The DIO-24 Provides 24 TTL digital I/O lines. The DIO-24 emulates 8255 mode 0 and provides output current of 15mA (source) and 64mA (sink), this allows it to control LED, relay, and others. The DIO-24 consists of three 8 bit bi-directional ports and 3 input lines for interrupt enable. The three 8 bit port are named port A(PA), port B(PB), port C(PC). The port C can be split into two four bit. All port are configured as inputs as inputs upon power-up or resetting.

The base address is selectable from 200 to 3FF hex. The interrupt signal can be connected to any of the interrupt levels 2 through 7 .

Features

- Connects directly to DB-24P, DB-24R, DB-24PR, DB-24C, DB-24POR, DB-24SSR, DB-16P8R or any OPTO-22 compatible daughter board
- 24 digital I/O lines
- IRQ LEVEL: IRQ2.IRQ7
- Interrupt Trigger by: Event/Timer/Port C3, C7
- Emulate industrial-standard 8255 mode 0
- One 50-pin flat cable connector
- Output status read back

Applications

- Test automation
- Digital I/O control
- Alarm monitoring
- Factory Automation
- Product Test

Specifications

- Logic inputs and output
  Input logic high voltage: 2.0V(Min)/5.0V(Max)
  Input logic low voltage: -0.5V(Min)/0.8V(Max)
- Input load current: -0.45mA(Min)/+70μA
- Output sink current: +64mA(Max)
- Output source current: -15mA
- All outputs and inputs are TTL Compatible
- Power consumption: +5V @ 500mA
- Environment:
  Operating Temperature: 0 to 50°C
  Storage Temperature: -20°C to 70°C
  Humidity: 0 to 90%
  Dimensions: 107mm x 106mm

Software

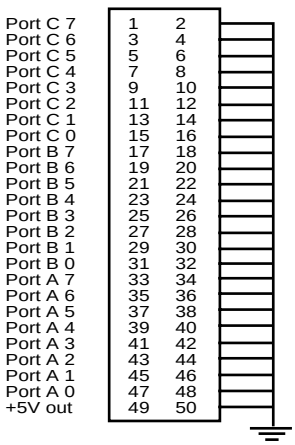
- DIO Development Toolkit for DOS
- DIO Development Toolkit for Win95
- DIO Development Toolkit for WinNT

Order Description

- DIO-24: 24-bit Opto-22 DIO Board

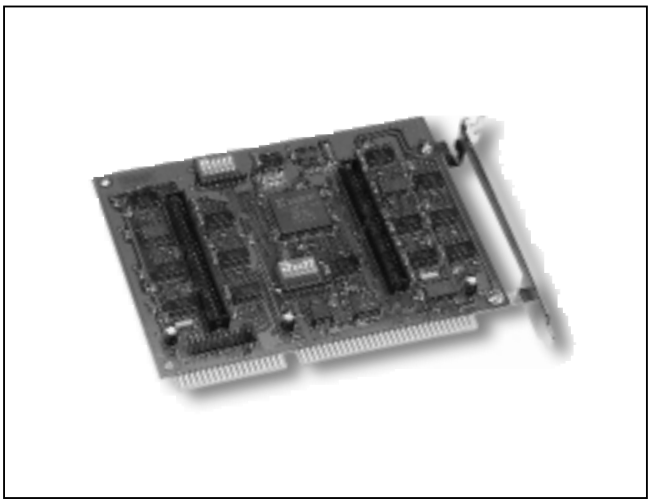
Options

- DB-24P: 24-channel opto-isolated input terminal board
- DB-24R: 24-channel relay terminal board
- DB-24PR: 24-channel power relay terminal board
- DB-24C: 24-channel Open Collector Output board
- DB-24POR: 24-channel Photo Mos Relay Output board
- DB-16P8R: 16-channel Photo isolated digital input & 8-channel relay output board
- DB-24SSR: 24-channel Solid State Relay Output board
- DB-16P8R: 16-channel opto-isolated digital input & 8-channel relay output board
- DN-50: I/O connector block with DIN-Rail mounting and 50-PIN Header
- DIO LabVIEW Development Toolkit for Win95
- DIO LabVIEW Development Toolkit for WinNT



DIO-48

48-BIT OPTO-22 DIO Board



Functional Description

The DIO-48 Provides 48 TTL digital I/O lines, and one 16 bit counter. The DIO-48 emulates 8255 mode 0 and provides output current of 15mA (source) and 64mA (sink), this allows it to control LED, relay, and others. The DIO-48 consists of six 8 bit bi-directional ports and three input lines for interrupt enable and counter. The three 8 bit port are named port A(PA), port B(PB), port C(PC). The port C can be split into two four bit. All port are configured as inputs as inputs upon power-up or resetting.

The base address is selectable from 200 to 3FF hex. The interrupt signal can be connected to any of the interrupt levels 2 through 7 .

Features

- Connects directly to DB-24P, DB-24R, DB-24PR, DB-24C, DB-24POR, DB-24SSR, DB-16P8R or any OPTO-22 compatible daughter board
- 48 digital I/O lines
- One 16 bit counter
- IRQ LEVEL: IRQ3.IRQ15
- Interrupt Trigger by: Event/Timer/Port C3, C7
- Clock source can be switching setting: RTC/2M/4M/8M
- Emulate two industrial-standard 8255 mode 0
- Two 50-pin flat cable connector
- Output status read back

Applications

- Test automation
- Digital I/O control
- Alarm monitoring
- Factory Automation
- Product Test

Specifications

- Logic inputs and output
  Input logic high voltage: 2.0V(Min)/5.0V(Max)
  Input logic low voltage: -0.5V(Min)/0.8V(Max)
- Input load current: -0.45mA(Min)/+70μA
- Output sink current: +64mA(Max)
- Output source current: -15mA
- All outputs and inputs are TTL Compatible
- Power consumption: +5V @ 500mA
- Environment:
  Operating Temperature: 0 to 50°C
  Storage Temperature: -20°C to 70°C
  Humidity: 0 to 90%
  Dimension: 158mm x 120mm

Software

- DIO Development Toolkit for DOS
- DIO Development Toolkit for Win95
- DIO Development Toolkit for WinNT

Order Description

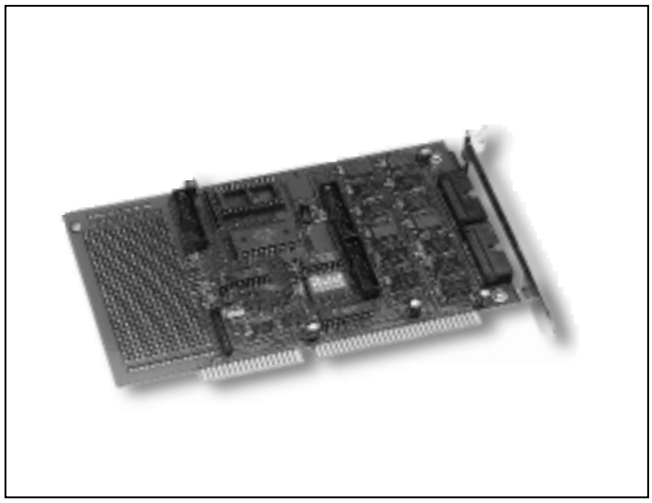
- DIO-48: 48-bit OPTO-22 DIO Board

Options

- DB-24P: 24-channel opto-isolated input terminal board
- DB-24R: 24-channel relay terminal board
- DB-24PR: 24-channel power relay terminal board
- DB-24C: 24-channel Open-Collector Output board
- DB-24POR: 24-channel Photo Mos Relay Output board
- DB-24SSR: 24-channel Solid State Relay Output board
- DB-16P8R: 16-channel opto-isolated digital input & 8-channel relay output board
- DN-50: I/O connector block with DIN-Rail mounting and 50-PIN Header
- ADP-37: 37-pin Extender
- ADP-50: 50-pin Extender
- DIO LabVIEW Development Toolkit for Win95
- DIO LabVIEW Development Toolkit for WinNT

DIO-64

32 Digital Input & 32 Digital Output with Timer/Counter Board



Functional Description

The DIO-64 provides 32 digital input channels, 32 output channels and 6 counter/timer channels. The DIO-64 consists of two 16-bit input ports and two 16-bit output ports. The user can use the DB-16P to connect the input ports (CN2, CN4) for isolation purpose, or use DB-16R to interface to the output ports (CN1, CN3) for relay control. There are four clock sources, 2M, 1M, 500K, and 250K on the board. The user can choose one of them through jumper setting. The user can use the frequency from the soldering pad. On board Timer/Counter provides 3 channels for frequency measure, event counting and pulse generation. The optional 8254 provides 3 channel for interrupt features.

Features

- 32 digital input lines
- 32 digital output lines
- Buffer output for higher driving capability
- 3 independent programmable 16 bit down counter
- One 16-bit counter, one 32 bit counter with a 4MHz time base
- Breadboard area for add-on circuit

Applications

- Digital I/O control
- Factory Automation
- Product Test
- Relay control
- Timer /Counter

Specifications

- Logic inputs and output
  Input logic high voltage: 2.0V(Min)/5.0V(Max)
  Input logic low voltage: -0.5V(Min)/0.8V(Max)
- Input load current: -0.45mA(Min)/+70μA
- Output sink current: +64mA(Max)
- Output source current: -15mA
- All outputs and inputs are TTL Compatible
- Programmable counter/timer
- Clock frequency: 250KHz, 500KHz, 1MHz, 2MHz (jumper selectable)
- Frequency divider: can be divided by100, 10,1
- Power consumption: +5V @ 500 mA Typical
- Environment
  Operating Temperature: 0 to 50°C
  Storage Temperature: -20°C to 70°C
  Humidity: 0 to 90 %
  Dimensions: 93 mm x 135 mm

Software

- DIO Development Toolkit for DOS
- DIO Development Toolkit for Win95
- DIO Development Toolkit for WinNT

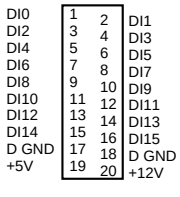
Order Description

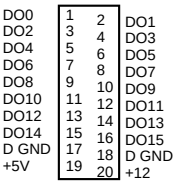
- DIO-64 /3: 32 Digital I/O with 3 timer/Counter Board
- DIO-64 /6: 32 Digital I/O with 6 timer/Counter Board

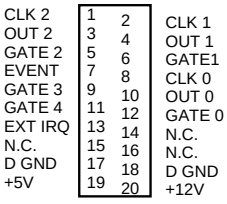
Options

- DB-16P: 16 channel opto-isolated input terminal board
- DB-16R: 16 channel relay terminal board
- DB-24PR: 24 channel Power Relay Output board
- DB-24C: 24 channel Open-Collector Output board
- DB-24POR: 24 channel Photo Mos Relay Output board
- DN-20: I/O connector block with DIN-Rail mounting and two 20-PIN Header
- ADP-20: 20-pin Extender
- DIO LabVIEW Development Toolkit for Win95
- DIO LabVIEW Development Toolkit for WinNT

Pin Assignment



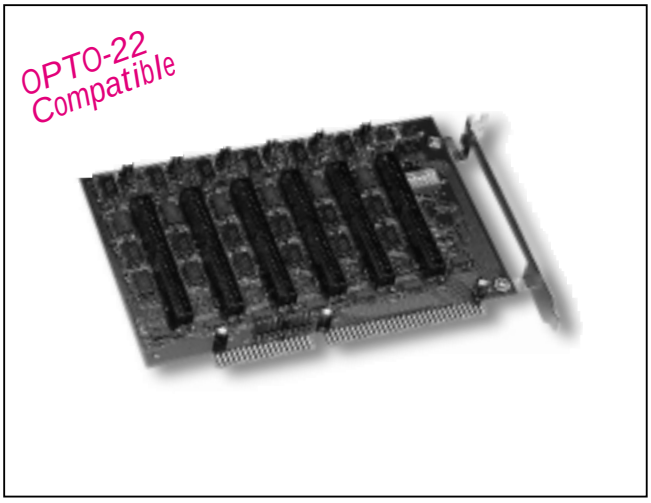




DI : Digital Input
DO: Digital Output
CLK: Counter Clock Input
OUT: Counter Output
GATE: Counter Gate
EXT IRQ: External Interrupt
N.C.: No Connect

DIO-144

144-BIT OPTO-22 DIO Board



Functional Description

The DIO-144 Provides 144 TTL digital I/O lines. The DIO-144 emulates 8255 mode 0 and has a increased output current of 15 mA (source) and 64 mA (sink), this allows it to control LED, relay and others. The DIO-144 consists of eighteen 8 bit bi-directional ports and 2 input lines for interrupt enable and interrupt. The three 8 bit port are named port A(PA), port B(PB), port C(PC). The port C can be split into two four bit. All port are configured as inputs upon power-up or resetting. The DIO-144 use 4 I/O address. The base address is selectable from 200 to 3FF hex. The interrupt signal can be connected to any of the interrupt levels 2 through 7 .

Features

- Double side SMT, half card, power saving
- 144 digital I/O lines
- Emulate six industrial-standard 8255 mode 0
- Buffer output for higher driving capability than 8255
- Programmable interrupt handling
- Six 50-pin flat cable connector
- Output status readback
- Connects directly to DB-24P, DB-24R, DB-24PR, DB-24C, DB-24POR, DB-24SSR, DB-16P8R or any OPTO-22 compatible daughter board
- IRQ LEVEL: IRQ3~IRQ15
- Interrupt Trigger by: Event/Timer/Port C3

Applications

- Factory automation
- Product test
- Test automation
- Digital I/O control
- Alarm monitoring

Specifications

- Logic inputs and outputs
  Input logic high voltage: 2.0V(Min)/5.0V(Max)
  Input logic low voltage: -0.5V(Min)/0.8V(Max)
- Input load current: -0.45mA(Min)/+70μA
- Output sink current: +64mA(Max)
- Output source current: -15mA
- All outputs and inputs are TTL Compatible
- Power consumption: +5V @ 900 mA typical
- Environment:
  Operating Temperature: 0 to 50°C
  Storage Temperature: -20°C to 70°C
  Humidity: 0 to 90 %
  Dimensions:182mm x 110 mm

Software

- DIO Development Toolkit for DOS
- DIO Development Toolkit for Win95
- DIO Development Toolkit for WinNT

Ordering Description

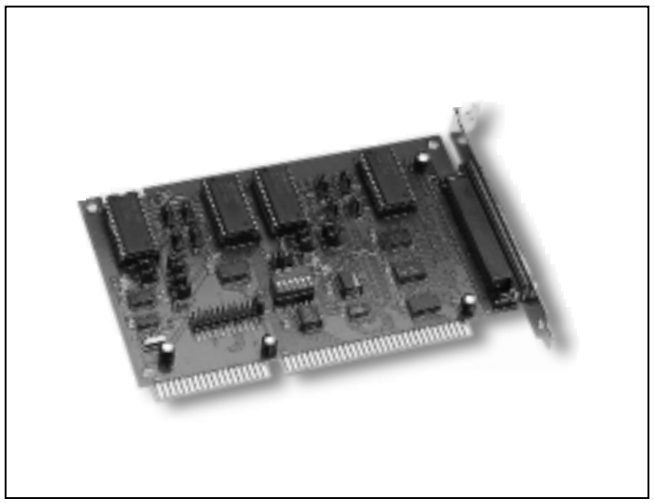
- DIO-144: 144-bit OPTO-22 DIO Board

Options

- DB-24P: 24-channel OPTO-isolated input terminal board
- DB-24R: 24-channel relay terminal board
- DB-24PR: 24-channel power relay terminal board
- DB-24C: 24-channel Open-Collector Output board
- DB-24POR: 24-channel Photo Mos relay Output board
- DB-24SSR: 24-channel Solid State relay Output board
- DB-16P8R: 16-channel opto-isolated digital input & 8-channel relay output board
- DN-50: I/O connector block with DIN-Rail mounting and 50-PIN Header
- ADP-37: 37-pin Extender
- ADP-50: 50-pin Extender
- DIO LabVIEW Development Toolkit for Win95
- DIO LabVIEW Development Toolkit for WinNT

TMC-10

10 Channel Timer/Counter Board



Functional Description

The TMC-10 is a general purpose timer/ counter and digital I/O Board. It provides eight 16-bit Timer /Counter channels, two cascaded 32-bit Timer/ Counter channels, 8 bit digital output and two internal clock sources (8 M/1.6M; 0.8M/80K) which are jumper selectable. Four 8254 chips provides variety of powerful timer/counter function modes to match your industrial and laboratory applications.

Features

- On board four 8254 timer/counter chips
- Eight independent 16-bit timer/counter and two cascaded 32 bit time /counter
- 11 interrupt levels, jumper selectable
- Two internal clock source
- Eight channel external clock source.
- 8-lines digital output

Specifications

- Logic inputs and output
  Input logic high voltage: 2.0V(Min)/5.0V(Max)
  Input logic low voltage: -0.5V(Min)/0.8V(Max)
- Input load current: -0.45mA(Min)/+70μA
- Output sink current: +64mA(Max)
- Output source current: -15mA
- All outputs and inputs are TTL Compatible
- Power consumption: +5V @ 500mA
- Environment:
  Operating Temperature: 0 to 50°C
  Storage Temperature: -20°C to 70°C
  Humidity: 0 to 90%
  Dimensions: 121mm x 106mm

Applications

- Event Counting
- Programmable frequency synthesis
- Frequency Counter
- Time-delay generation
- Industrial Automation

Software

- TMC-10 Development Toolkit for DOS
- TMC-10 Development Toolkit for Win95
- TMC-10 Development Toolkit for WinNT

Order Description

- TMC-10: 10 Channel Timer/Counter Board

Options

- DB-37: Directly connect signal to the back of TMC-10
- DN-37: I/O connector block with DIN Rail Mounting and 37 Pin D-Sub Connector
- TMC-10 LabVIEW Development Toolkit for Win95
- TMC-10 LabVIEW Development Toolkit for WinNT