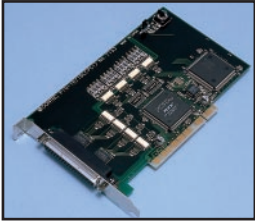


## PIO-16/16L(PCI)



### 32 Channel Opto-Isolated Digital I/O Board

#### FEATURES

- 32 opto-isolated inputs and outputs
- Signal level +12 to +24 VDC
- 1000Vrms voltage isolation
- High sink current: 100 mA max. per channel, 2A max. per group
- 4 interrupt inputs, 1 interrupt request signal
- Single bit set/reset
- Digital input filter
- Interrupt control

#### SPECIFICATIONS

##### Digital Inputs

- No. of channels: 16 (including 4 interrupt channels)
- Type: Opto-isolated current-source type inputs (negative logic), 16 channels share a positive common
- Input resistance: 3K $\Omega$
- Interrupts: Combines 4 interrupt events to 1 interrupt request signal as INTA#. Either a rising edge (off to on) or a falling edge (on to off) of input signal can generate interrupt.

##### Digital Outputs

- No. of channels: 16
- Type: Opto-isolated open collector current-sink type outputs (negative logic), 16 channels share a positive common and a negative common
- Output rating: +35VDC, 100mA max. per channel, 2A max. per common

##### General

- Response time: 1ms max.
- I/O address: Any 32-byte boundary
- Power consumption: +5VDC 250 mA max.
- External power supply: 12 to 24VDC ( $\pm 15\%$ ); 4mA/12V to 8mA/24V per input channel
- Isolation voltage: 1000Vrms

- Connector: 37-pin female D-type
- Maximum cable length: 50m (typical, depends on wiring)
- Operating conditions: 0 to 50°C, 20 to 90% R.H. (non-condensing)
- Dimensions: 176 x 107 x 19 mm

#### SOFTWARE & ACCESSORIES

##### Software

- API-TOOL for Windows95/98/NT
- ActiveX Component (ships Q4/99)

##### Accessories

- Please refer to our Product Guide, Volume 5 for a full range of cables, termination panels and other accessories.



## PIO-16/16T(PCI)



### 32 Channel TTL-Level Digital I/O Board

#### FEATURES

- 32 TTL compatible digital inputs and outputs
- High sink current: 40 mA max. per channel
- 4 interrupt inputs, 1 interrupt request signal
- Single bit set/reset
- Digital filter
- Interrupt control

#### SPECIFICATIONS

##### Digital Inputs

- No. of channels: 16 (including 4 interrupt channels)
- Type: TTL level (negative logic)
- Input resistance: 10K $\Omega$
- Interrupts: Combines 4 interrupt events to 1 interrupt request signal as INTA#. Either a rising edge (off to on) or a falling edge (on to off) of input signal can generate interrupt.

##### Digital Outputs

- No. of channels: 16
- Type: Open collector current-sink type outputs (negative logic), TTL
- Output rating: 40mA max. per channel

##### General

- Response time: 200ns max.
- I/O address: Any 32-byte boundary
- Power consumption: +5VDC 400 mA max.
- Connector: 37-pin female D-type
- Maximum cable length: 1.5m (typical, depends on wiring)
- Operating conditions: 0 to 50°C, 20 to 90% R.H. (non-condensing)
- Dimensions: 122 x 107 x 19 mm

#### SOFTWARE & ACCESSORIES

##### Software

- API-TOOL for Windows95/98/NT
- ActiveX Component (ships Q4/99)

##### Accessories

- Please refer to our Product Guide, Volume 5 for a full range of cables, termination panels and other accessories.



## PIO-16/16TB(PCI)



### 32 Channel Opto-Isolated TTL Digital I/O Board with On-Board 5V Power Supply

#### FEATURES

- 32 opto-isolated TTL digital inputs and outputs
- High speed response enables high throughput
- On-board isolated power supply
- Internal/external power supply - jumper selectable
- 4 interrupt inputs, 1 interrupt request signal
- Single bit set/reset or group set/reset
- Digital input filter
- Interrupt control

#### SPECIFICATIONS

##### Digital Inputs

- No. of channels: 16 (including 4 interrupt channels)
- Type: Opto-isolated TTL inputs (negative logic)
- Input resistance: 1,1K $\Omega$  (4,5mA per channel)
- Interrupts: Combines 4 interrupt events to 1 interrupt request signal as INTA#. Either a rising edge (off to on) or a falling edge (on to off) of input signal can generate interrupt.

##### Digital Outputs

- No. of channels: 16
- Type: Opto-isolated TTL outputs (negative logic)
- Output rating: +5VDC, 6,4mA max. per channel

##### General

- Response time: 1 $\mu$ s max.
- I/O address: Any 32-byte boundary
- Power consumption: +5VDC 1150 mA max. (using internal power supply)  
+5VDC 500 mA max. (using external power supply)
- External power: +5VDC ( $\pm 10\%$ )
- Isolation voltage: 1000Vrms
- Connector: 37-pin female D-type
- Maximum cable length: 5m typical (depends on wiring)

- Connector: 37-pin female D-type
- Operating conditions: 0 to 50°C, 20 to 90% R.H. (non-condensing)
- Dimensions: 179 x 107 x 19 mm

#### SOFTWARE & ACCESSORIES

##### Software

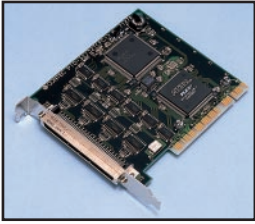
- API-TOOL for Windows95/98/NT
- ActiveX Component (ships Q4/99)

##### Accessories

- Please refer to our Product Guide, Volume 5 for a full range of cables, termination panels and other accessories.



## PIO-32/32T(PCI)



**64 Channel TTL-Level Digital I/O Board**

### FEATURES

- 64 TTL compatible digital inputs and outputs
- High sink current: 40 mA max. per channel
- 4 interrupt inputs, 1 interrupt request signal
- Single bit set/reset
- Digital filter
- Handshake protocol (Trailing edge)
- Interrupt control

### SPECIFICATIONS

#### Digital Inputs

- No. of channels: 32 (including 4 interrupt channels)
- Type: TTL level (negative logic)
- Input resistance: 10K $\Omega$
- Interrupts: Combines 4 interrupt events to 1 interrupt request signal as INTA#. Either a rising edge (off to on) or a falling edge (on to off) of input signal can generate interrupt.

#### Digital Outputs

- No. of channels: 32
- Type: Open collector current-sink type outputs (negative logic), TTL
- Output rating: 40mA max. per channel

#### General

- Response time: 200ns max.
- I/O address: Any 32-byte boundary
- Power consumption: +5VDC 500 mA max.
- Connector: 96-pin half pitch
- Maximum cable length: 1.5m (typical, depends on wiring)
- Operating conditions: 0 to 50°C, 20 to 90% R.H. (non-condensing)
- Dimensions: 122 x 107 x 19 mm

### SOFTWARE & ACCESSORIES

#### Software

- API-TOOL for Windows95/98/NT
- ActiveX Component (ships Q4/99)

#### Accessories

- Please refer to our Product Guide, Volume 5 for a full range of cables, termination panels and other accessories.



## ADI12-16(PCI)



**16 Channel Opto-isolated Analog to Digital Board**

### FEATURES

- 16 single-ended or 8 differential inputs
- 12-bit resolution
- 20 $\mu$ sec(50KHz) A/D conversion speed
- Programmable gain (x1, x2, x4, x8)
- 4 digital input and 4 digital output channels
- PC bus signals isolated from external analog signals
- 256K-word on-board memory to maximize A/D sampling speed and enable background processing.

- Various A/D sampling control functions
- Various interrupt events (e.g. end of sampling, change in external signal, error detection, etc.)

### SPECIFICATIONS

#### Analog Inputs

- 16 single-ended channels or 8 differential channels
- Input range: Isolated  $\pm 10V$  or 0 to 10V
- Max. input voltage:  $\pm 20V$
- Input impedance: 1M $\Omega$  minimal
- Resolution: 12-bit
- Sampling rate: 20 $\mu$ sec / channel (max.)
- Non-linearity error:  $\pm 2LSB$  (Gain = x1 and x2)  
 $\pm 4LSB$  (Gain = x4 and x8)
- Buffer memory: 256K words FIFO or 256K words Ring (programmable)
- Conversion start trigger: software command, analog input signal value or ext. TTL signal; conversion stop trigger, software command, storage data number, analog input signal value, or ext. TTL signal
- Isolated voltage: 500Vrms 1min.

#### Digital Inputs/Outputs

- Number of input channels: 4 channels
- Input type: Opto-Isolated current-source (neg. logic)

- Input resistance: 3K $\Omega$
- Number of output channels: 4 channels
- Output Type: Opto-Isolated open collector current-sink (Negative logic)
- Output ability: +5VDC 200mA max. per channel
- Response time: 1ms (Max)
- Isolated Voltage: 500Vrms 1min.

#### General

- Power consumption: +5VDC 1200 mA max.
- Connector: 37-pin female D-type + 16-pin header
- Operating conditions: 0 to 50°C, 20 to 90% R.H. (non-condensing)
- Dimensions: 176 x 107 x 19 mm

### SOFTWARE & ACCESSORIES

#### Software

- API-TOOL for Windows95/98/NT
- ActiveX Component

#### Accessories

- Please refer to our Product Guide, Volume 5 for a full range of cables, termination panels and other accessories.



## GP-IB(PCI)



**High Speed IEEE488 Interface and Analyzer Board**

### FEATURES

- Maximum transfer rate 1,2Mbyte/s using IEEE488 protocol
- 1Mbyte on-board memory
- Monitoring and controlling of all GP-IB lines
- GP-IB library software supports IEEE488.1 and 2 talker listener and control functions
- Include GP-IB analyzer software
- Up to 4 boards can be used in a system

### SPECIFICATIONS

- Protocol: IEEE488.1, IEEE488.2
- Transfer rate: 1,2Mbyte/s
- Memory: 1Mbyte FIFO memory
- No. of devices served: 15 max.
- Maximum distance between devices: 4m
- Total cable length: 20m max.
- Interrupt: 1 interrupt request signal as INTA#
- I/O address: Any 16-byte boundary
- Power consumption: +5VDC 970mA max.
- Operating condition: 0 to 50°C, 20 to 90% (non-condensing)
- Dimensions: 122 x 107 x 19 mm

### SOFTWARE & ACCESSORIES

#### Software

- API-TOOL for Windows95/98/NT
- ActiveX Component (ships Q4/99)

#### Accessories

- Please refer to our Product Guide, Volume 5 for a full range of cables, termination panels and other accessories.



## COM-2(PCI)



*2 Port RS-232C Interface Board*

### FEATURES

- 2 channels serial communication
- RS-232C protocol
- Programmable baud rate from 50 to 230.400BPS

### SPECIFICATIONS

- No. of channels: 2 channels
- Protocol: RS-232C
- Baud rate: 50 to 230.400BPS
- Data length: 5 to 8-bit, 1/1,5/2 stop bit

- Parity check: Even, Odd, Non-parity
- Controller: ST16C552A (FIFO 16byte)
- Interrupt: Combine for 2 interrupt signals to 1 interrupt request signal as INTA#
- Connector: DB9 x 2
- Maximum cable length: 15m (depends on wiring)
- I/O address: Any 32-byte boundary
- Power consumption: +5VDC 250mA max.
- Operating condition: 0 to 50°C, 20 to 90% (non-condensing)
- Dimensions: 122 x 107 x 19 mm

### SOFTWARE & ACCESSORIES

#### Software

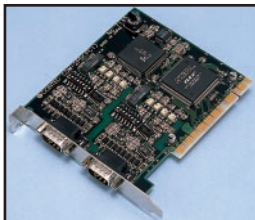
- COM-DRV(W32) (Included)
- API-TOOL for Windows95/98/NT (Optional)

#### Accessories

- Please refer to our Product Guide, Volume 5 for a full range of cables and other accessories.



## COM-2PD(PCI)



*High Speed 2 Port Isolated RS-422/485 Interface Board*

### FEATURES

- 2 channels serial communication
- RS-422A or RS-485 protocol
- Programmable baud rate from 50 to 921.600BPS

### SPECIFICATIONS

- No. of channels: 2 channels
- Protocol: RS-422A or RS-485
- Baud rate: 50 to 921.600BPS

- Data length: 5 to 8-bit, 1/1,5/2 stop bit
- Parity check: Even, Odd, Non-parity
- Isolated voltage: 1000Vrms
- Controller: ST16C552A (FIFO 16byte)
- Interrupt: Combine for 2 interrupt signals to 1 interrupt request signal as INTA#
- Connector: DB9 x 2
- Maximum cable length: 1200m (depends on wiring)
- I/O address: Any 32-byte boundary
- Power consumption: +5VDC 670mA max.
- Operating condition: 0 to 50°C, 20 to 90% (non-condensing)
- Dimensions: 122 x 107 x 19 mm

### SOFTWARE & ACCESSORIES

#### Software

- COM-DRV(W32) (Included)
- API-TOOL for Windows95/98/NT (Optional)

#### Accessories

- Please refer to our Product Guide, Volume 5 for a full range of cables and other accessories.



## COM-8(PCI)



*8 Port RS-232C Interface Board*

### FEATURES

- 8 channels serial communication
- RS-232C protocol
- Programmable baud rate from 50 to 230.400BPS
- Uses only +5VDC (no +12VDC and -12VDC)
- Up to 16 boards can be used in the same system providing up to 128 channels

### SPECIFICATIONS

- No. of channels: 8 channels

- Protocol: RS-232C
- Baud rate: 50 to 230.400BPS
- Data length: 5 to 8-bit, 1/1,5/2 stop bit
- Parity check: Even, Odd, Non-parity
- Controller: 16654 (FIFO 64 byte per channel)
- Interrupt: Combine for 8 interrupt signals to 1 interrupt request signal as INTA#
- Connector: DB78 x 1
- Maximum cable length: 15m (depends on wiring)
- I/O address: Any 64-byte boundary
- Power consumption: +5VDC 600mA max.
- Operating condition: 0 to 50°C, 20 to 90% (non-condensing)
- Dimensions: 122 x 107 x 19 mm

### SOFTWARE & ACCESSORIES

#### Software

- COM-DRV(W32) (Included)
- API-TOOL for Windows95/98/NT (Optional)

#### Accessories

- PCE78/9PS cable with DB78 and 9 x DB9

