### Serial Communication Card Selection Guide

#### PCI & Universal Communication Cards

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>PCI-1602UP</td>
<td>2-port RS-422/485 Low-Profile Universal PCI Communication Card with Isolation Protection</td>
</tr>
<tr>
<td>PCI-1604UP</td>
<td>2-port RS-232 Low-Profile Universal PCI Communication Card with Isolation Protection</td>
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<tr>
<td>PCI-1601</td>
<td>2-port RS-422/485 Universal PCI Communication Card</td>
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<td>PCI-1602</td>
<td>2-port RS-422/485 Universal PCI Communication Card with Isolation Protection</td>
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<td>PCI-1603</td>
<td>2-port RS-232/Current-loop Universal PCI Communication Card with Isolation Protection</td>
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<tr>
<td>PCI-1610</td>
<td>4-port RS-232 Universal PCI Communication Card</td>
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<td>PCI-1612</td>
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<td>PCI-1622</td>
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#### PCI Express Communication Cards

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#### CAN Communication Cards

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<td>PCIE-1681</td>
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<td>PCM-3680/3680I</td>
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#### PC/104 & PCI-104 Communication Modules

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To view all of Advantech’s Serial Communication Cards, please visit [www.advantech.com/products](http://www.advantech.com/products).
## Serial Communication Cards

### Universal Low-Profile PCI

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## PC/104 Communication Modules

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## PCI-104 Communication Modules

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### Accessories

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Introduction

These RS-232/422/485 PCI communication cards are compatible with the PCI 2.2 bus specification for universal connectivity and low-profile PCI cards. The PCI-1604UP provides two independent RS-232 ports, while the PCI-1602UP has two RS-422/485 ports. To improve system performance, all cards allow transmission rates up to 921.6 kbps. To increase reliability, the cards offer EFT protection, protecting your system from abrupt high voltages up to 2,500 Vdc. High-performance OXuPC1952 and OXuPC1954 UARTs with 128-byte FIFO, reduces the CPU load, making the cards especially suitable for multitasking environments.

The cards follow the Low Profile PCI MD1 standard. This standard has the same protocol and electronic definition as standard PCI, but the low-profile PCI standard is smaller. Thus, the cards are suitable for embedded systems, and size-constrained environments. Moreover, all cards are equipped with an universal PCI connector, which allows support for traditional systems with 5 V signaling or newer systems with 3.3 V signaling.

Specifications

General
- **Bus Type**: Universal PCI V 2.2
- **Certification**: CE, FCC class A
- **Connectors**: 1 x Female DB25
- **Dimensions (L x W)**: 119.91 x 64.41 mm (4.7" x 2.5") (low-profile MD1)
- **Power Consumption**: 5 V @ 400 mA (Max.)

Communications
- **Communication Controller**: OXuPC1952
- **Data Bits**: 5, 6, 7, 8
- **Data Signals**:
  - RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
  - RS-422: TxA, TxB, RxA, RxB, RTS+, RTS-, CTS+, CTS-, GND
  - RS-485: Data+, Data-, GND
- **FIFO**: 128 bytes
- **Flow Control**: CTS/RTS, Xon/Xoff
- **IRQ**: Assigned by Plug & Play
- **Parity**: None, Even, Odd, Mark and Space
- **Speed**: 50 bps – 921.6 kbps
- **Stop Bits**: 1, 1.5, 2

Protection
- **EFT Protection**: 1 KV
- **Isolation Protection**: 2,500 Vdc
- **ESD Protection**: 8KV (air), 4KV (contact)

Software
- **Bundled Software**: ICOM Tools
- **OS Support**: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux, and QNX

Environment
- **Operating Humidity**: 5 – 95 % RH, non-condensing
- **Operating Temperature**: 0 – 65°C (32 – 149°F)
- **Storage Temperature**: -25 – 85°C (-13 – 185°F)

Ordering Information
- **PCI-1602UP**: 2-port RS-422/485 Low-Profile Uni PCI Comm Card w/iso
- **PCI-1604UP**: 2-port RS-232 Low-Profile Uni PCI Comm Card w/iso

Note: PCI-1602UP and PCI-1604UP include one DB25 to 2 x DB9 cable
2-port RS-422/485 Universal PCI Communication Card
2-port RS-422/485 Universal PCI Communication Card with Isolation Protection
2-port RS-232/Current-loop Universal PCI Communication Card with Isolation Protection

Introduction
The PCI-1601 and PCI-1602 are two RS-422/485 PCI communication cards that are compatible with the PCI 2.2 bus specification. Both cards provide EFT protected RS-422/485 ports, and come with features such as: high transmission speed of 921.6 kbps, optional isolation protection, windows utility software and more. The cards also come with high-performance OXuPCI952 UART with a 128-byte FIFO to reduce CPU load. This makes the PCI-1601 and PCI-1602 especially suitable for multitasking environments.

The PCI-1603 offers a versatile range of high-speed interfacing options. You can switch its ports between the popular RS-232 or noise-resistant current-loop. The card utilizes OXuPCI952 UART that buffers data into packets before sending it to the bus. This drastically reduces CPU load and avoids data loss when the system is busy and cannot process an interrupt quickly. These FIFO buffers make the PCI-1603 especially suitable for high speed serial I/O under Windows.

Specifications

General
- Bus Type: Universal PCI v2.2
- Certification: CE, FCC class A
- Connectors: 2 x Male DB9
- Dimensions (L x W): 123 x 92 mm (4.8" x 3.6")
- Power Consumption: 300 mA @ +5V

Current-loop Interface (PCI-1603)
- Baud-rate: 50 – 57600 bps
- Current Value: 20 mA (Standard)
- Mode: Asynchronous, full duplex
- Signal Driver/Receiver: 6N136
- Signals: TxD+, TxD-, RxD+, RxD-
- Transmission Distance: 1,000 m (RS-422/485 mode only)

Communications
- Controller: OXuPCI952
- Data Bits: 5, 6, 7, 8
- Data Signals: RS-422: TxA, TxB, RxA, RxB, RTS+, RTS-, CTS+, CTS-, GND
RS-485: Data+, Data-, GND
RS-232: TxD+, TxD-, RxD+, RxD-

FIFO
128 bytes

Flow Control
RTSCTS, Xon/Xoff

IRQ
Assigned by Plug & Play

Parity
None, Even, Odd, Mark and Space

Speed
50 bps – 921.6 kbps, any baud rate setting
230.4 kbps (PCI-1601B, PCI-1602 and PCI-1603 in
Current-loop mode only)

Stop Bits
1, 1.5, 2

Protection
- ESD Protection: 8 kV (air), 4 kV (contact)
- EFT Protection: 1 kV

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<td>PCI-1602</td>
<td>1000 V&lt;sub&gt;s&lt;/sub&gt;</td>
<td>2500 V&lt;sub&gt;s&lt;/sub&gt;</td>
</tr>
<tr>
<td>PCI-1603</td>
<td>1000 V&lt;sub&gt;s&lt;/sub&gt;</td>
<td>2500 V&lt;sub&gt;s&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

Software
- Bundled Software: ICOM Tools
- OS Support: 32-bit/64-bit Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux, and QNX

Environment
- Humidity (Operating): 5 – 95 % RH, non-condensing
- Operating Temperature: -10 – 60°C (14 – 144°F)
- Storage Temperature: -25 – 85°C (-13 – 185°F)

Regulatory Approvals
- EMC
  EN 55011: 2009 + A1:2010, Group 1, Class A
  EN 55022: 2010, Class A
  EN 61000-6-4: 2007
  EN 55024: 2010
  EN 61000-6-2: 2005
  EN 55022: 2010
  IEC 61000-4-2: 2008
  IEC 61000-4-4: 2010
  IEC 61000-4-6: 2008
  IEC 61000-4-8: 2009

Ordering Information
- PCI-1601A
  2-port RS-422/485 PCI Comm. Card
- PCI-1601B
  2-port RS-422/485 PCI Comm. Card w/Surge
- PCI-1602
  2-port RS-422/485 PCI Comm. Card w/Surge+Iso
- PCI-1603
  2-port RS-232/Current Loop PCI Comm. Card w/Surge+Iso
**Introduction**

The PCI-1610 is a four port RS-232, and PCI-1612 is a four port RS-232/422/485 PCI communication card that are compatible with the PCI 2.2 bus specification, and offer transmission speeds up to 921.6 kbps. They also support any baud rate setting, for example 500 kbps is acceptable. The PCI-1610 and PCI-1612 also come with high-performance OXuPCI954 UART with 128-byte FIFO to reduce CPU load. These components make your system more stable and reliable. Thus, the PCI-1610 and PCI-1612 are especially suitable for multitasking environments.

Both the PCI-1610 and PCI-1612 have an universal PCI connector that is compatible with both the latest 3.3 V signaling systems and the traditional 5V signaling system. This gives high compatibility and allows usage in diverse systems. To further increase reliability, the cards can protect your system from abrupt high voltages up to 2,000 voltages thanks to EFT protection technology. PCI-1610C and PCI-1612C provide 2,500 voltage optical isolation to protect your PC and equipment against damages from ground loops in harsh environments.

**Specifications**

**General**
- Bus Type: Universal PCI v2.2
- Certification: CE, FCC class A
- Connectors: 1 x Female DB37
- Dimensions (L x W): 185 x 100 mm (7.3” x 3.9”)
- Power Consumption: 180 mA @ +5 V

**Communications**
- Communication Controller: OXuPCI954
- Data Bits: 5, 6, 7, 8
- Data Signals: RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND (PCI-1610, PCI-1612)
  - RS-422, Tx+, Rx+, RTS+, CTS+, DTR, DSR, DCD, RI
  - RS-485: Data+, Data- (PCI-1612)
- FIFO: 128 bytes
- Flow Control: RTS/CTS, Xon/Xoff
- IRQ: Assigned by Plug & Play
- Parity: None, Even, Odd, Mark and Space
- Stop Bits: 1, 1.5, 2
- Speed: 50 bps ~ 921.6 kbps, any baud rate setting
  - 230.4 kbps (PCI-1610B/C and PCI-1612B/C only)

**Protection**
- ESD Protection: 8KV (air), 4KV (contact)
- EFT Protection: 1 KV

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Surge Protection</th>
<th>Isolation Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI-1610A</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PCI-1610B</td>
<td>1000 Vdc</td>
<td>-</td>
</tr>
<tr>
<td>PCI-1610C</td>
<td>1000 Vdc to 2500 Vdc</td>
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</tr>
<tr>
<td>PCI-1612A</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PCI-1612B</td>
<td>1000 Vdc to 2500 Vdc</td>
<td></td>
</tr>
<tr>
<td>PCI-1612C</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Software**
- Bundled Software: ICOM Tools
- OS Support: 32-bit/64-bit Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux, and QNX

**Environment**
- Operating Humidity: 5 – 95% RH, non-condensing
- Operating Temperature: -10 – 60°C (14 – 140°F)
- Storage Temperature: -25 – 85°C (-13 – 185°F)

**Ordering Information**
- PCI-1610A: 4-port RS-232 PCI Comm. Card
- PCI-1610B: 4-port RS-232/422/485 PCI Comm. Card
- PCI-1610C: 4-port RS-232/422/485 PCI Comm. Card w/ Surge
- PCI-1612B: 4-port RS-232/422/485 PCI Comm. Card w/Surge+Iso
- PCI-1612C: 4-port RS-232/422/485 PCI Comm. Card w/Surge+Iso

**Accessories**
- OPT4A: DB37 x1 to DB9 x4 Cable, 30cm
- 1700018791: DB37 x1 to DB25 x4 Cable, 30cm
**Introduction**

The PCI-1620 is an eight port RS-232, and PCI-1622 is an eight port RS-422/485 PCI communication card that are compatible with the PCI 2.2 bus specification, and offer transmission speeds up to 921.6 kbps. They also support any baud rate setting, for example 500 kbps is acceptable. PCI-1620 and PCI-1622 also come with high-performance OXPCIe954 UART with 128-byte FIFO to reduce CPU load. These components make your system more stable and reliable. Thus, the PCI-1620 and PCI-1622 are especially suitable for multitasking environments.

The PCI-1620 and PCI-1622 have an universal PCI connector that is compatible with both the latest 3.3 V signaling systems and the traditional 5V signaling system. This gives high compatibility and allows usage in diverse systems. To further increase reliability, the PCI-1620 and PCI-1622 offer EFT protection technology, protecting your system from electrical surges up to 2,500 volts. The PCI-1622C also provides 2,500 voltage optical isolation to protect your PC and equipment against damages from ground loops in harsh environments.

**Specifications**

**General**
- **Bus Type**: Universal PCI v2.2
- **Certification**: CE, FCC class A
- **Connectors**: PCI-1620: 1 x Female DB62
  - PCI-1622: 1 x Female DB78
- **Dimensions (L x W)**: 185 x 100 mm (7.3” x 3.9”)
- **Power Consumption**: 600 mA @ +5 V

**Communications**
- **Controller**: OXPCIe958
- **Data Bits**: 5, 6, 7, 8
- **Data Signals**: RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND (PCI-1620)
  - RS-422: T+, T-, R+, R-, RTS+, RTS-, CTS+, CTS- (PCI-1622)
  - RS-485: Data+, Data- (PCI-1622)
- **FIFO**: 128 bytes
- **Flow Control**: RTS/CTS, Xon/Xoff
- **Parity**: None, Even, Odd
- **Speed**: 50 bps – 921.6 kbps, any baud rate setting
  - 230.4 kbps (PCI-1622C only)
- **Stop Bits**: 1, 1.5, 2

**Protection**
- **ESD Protection**: 8KV (air), 4KV (contact)
- **EFT Protection**: 1 KV

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Surge Protection</th>
<th>Isolation Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI-1620A</td>
<td>1000 VDC</td>
<td>-</td>
</tr>
<tr>
<td>PCI-1620B</td>
<td>1000 VDC</td>
<td>-</td>
</tr>
<tr>
<td>PCI-1622B</td>
<td>1000 VDC</td>
<td>-</td>
</tr>
<tr>
<td>PCI-1622C</td>
<td>1000 VDC</td>
<td>2500 VDC</td>
</tr>
</tbody>
</table>

**Features**
- PCI bus 2.2 compliant
- Supports serial speed up to 921.6 kbps, and any baud rate setting
- 8-port RS-232, or 8-port RS-422/485
- OXPCIe954 UARTs with 128-byte FIFOs standard
- I/O address automatically assigned by PCI Plug & Play
- OS supported: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux, and QNX
- Interrupt status register for increased performance
- Space reserved for termination resistors
- Automatic RS-422 data flow control
- Powerful and easy to use utility (ICOM Tools)
- Universal PCI, supports 3.3 V or 5 V PCI bus signal
- 1,000 VDC surge protection and 2,500 VDC isolation protection (PCI-1622C only)

**Software**
- **Bundled Software**: ICOM Tools
- **OS Support**: Windows 2000/XP/Vista/7, Windows CE 5.0/6.0, Linux and QNX

**Environment**
- **Operating Humidity**: 5 – 95% RH, non-condensing
- **Operating Temperature**: -10 – 60°C (14 – 144°F)
- **Storage Temperature**: -25 – 85°C (-13 – 185°F)

**Regulatory Approvals**
- **EMC**: EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55044 including (IEC 61000-4-2/3/4/5/6/8/11), FCC Part 15 Subpart B

**Ordering Information**
- **PCI-1620A**: 8-port RS-232 PCI Comm. Card w/Surge
- **PCI-1620B**: 8-port RS-232 PCI Comm. Card w/Surge
- **PCI-1622B**: 8-port RS-422/485 PCI Comm. Card w/Surge
- **PCI-1622C**: 8-port RS-422/485 PCI Comm. Card w/Surge+Iso

**Accessories**
- **OPT8C**: DB62 x1 to DB25 x8 Cable, 1m
- **OPT8H**: DB62 x1 to DB9 x8 Cable, 1m
- **OPT8J**: DB78 x1 to DB9 x8 Cable, 1m
Features
- PCI Express bus 2.0 compliant
- Speeds up to 921.6 kbps for extremely fast data transmission
- Supports any baud rate setting
- 2 x RS-232 or RS-232/422/485 ports
- Operating systems supported: Windows 2000/XP/Vista/7, and Linux 2.4/2.6
- XR17V352 with 256-byte FIFOs standard

Specifications

General
- Bus Type: PCI Express bus 2.0 compliant
- Bus Interface: PCI Express x1
- Certification: CE, FCC class A
- Connectors: 1x Female DB37
- Dimensions (L x W): 185 x 100 mm (7.3" x 3.9")
- Power Consumption: 260 mA @ +3.3 V

Communications
- Comm. Controller: XR17V354
- Data Bits: 5, 6, 7, 8
- FIFO: 256 bytes
- Parity: None, Odd, Even, Mark and Space
- Speed: 50 bps ~ 921.6 kbps and any other baud rate setting 230.4 kbps
- Stop Bits: 1, 1.5, 2

Software
- Bundled Software: ICOM Tools
- OS Support: Windows XP, win7, win8, win8.1, win10, server 2008, server2012, Linux 2.6.x, 3.x.x, Qnx 6.3, 6.5, Vxworks 6.9

Environment
- Operating Humidity: 5 ~ 95 % RH, non-condensing
- Operating Temperature: -10 ~ 60°C (14 ~ 140°F)
- Storage Temperature: -25 ~ 85°C (-13 ~ 185°F)

Protection

<table>
<thead>
<tr>
<th>Model Name</th>
<th>ESD Protection</th>
<th>EFT Protection</th>
<th>Surge Protection</th>
<th>Isolation Protection</th>
</tr>
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<tr>
<td>PCIE-1610B</td>
<td>15KV (air), 8KV (contact)</td>
<td>2500 V</td>
<td>1000 Vdc</td>
<td></td>
</tr>
<tr>
<td>PCIE-1612B</td>
<td>15KV (air), 8KV (contact)</td>
<td>2500 V</td>
<td>1000 Vdc</td>
<td>3000 Vdc</td>
</tr>
<tr>
<td>PCIE-1610C</td>
<td>15KV (air), 8KV (contact)</td>
<td>2500 V</td>
<td>1000 Vdc</td>
<td></td>
</tr>
<tr>
<td>PCIE-1612C</td>
<td>15KV (air), 8KV (contact)</td>
<td>2500 V</td>
<td>1000 Vdc</td>
<td>3000 Vdc</td>
</tr>
</tbody>
</table>

Ordering Information

- PCIE-1610B: 2-port RS-232 PCI Express Comm. Card w/Surge
- PCIE-1612B: 2-port RS-232/422/485 PCI Express Comm. Card w/Surge & Isolation
- PCIE-1612C: 2-port RS-232/422/485 PCI Express Comm. Card w/Surge & Isolation

Note: this series includes cable OPT4A.
**PCIE-1620**
**PCIE-1622**

### Introduction
PCIE-1620 is an 8-port RS-232, and PCIE-1622 is an 8-port RS-232/422/485 PCI Express communication cards that are compatible with the PCI Express x1 specification. The cards provide eight EFT protected ports up to 2,500 V, and have many functions such as high transmission speed of 921.6 kbps. The cards utilizes high-performance XR17V358 UARTs with 256-byte FIFOs to reduce CPU load. Thus, the PCIE-1620 and PCIE-1622 are especially suitable for making reliable systems in multitasking environments.

### Specifications

#### General
- **Bus Type**: PCI Express bus 2.0 compliant
- **Bus Interface**: PCI Express x1
- **Certification**: CE, FCC class A
- **Connectors**:
  - 1x Female DB62 (PCIE-1620A/22A/22B)
  - 1x Female DB78 (PCIE-1622C)
- **Dimensions (L x W)**: 168 x 111 mm (6.6” x 4.4”)
- **Power Consumption**: 260 mA @ +3.3 V

#### Communications
- **Comm. Controller**: XR17V358
- **Data Bits**: 5, 6, 7, 8
- **Data Signals**:
  - RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI
  - RS-422: TxA, TxB, RxA, RxB (PCIE-1622)
  - RS-485: Data+, Data- (PCIE-1622)
- **FIFO**: 256 bytes
- **Flow Control**: RTS/CTS, Xon/Xoff
- **Parity**: None, Odd, Even, Mark, or Space
- **Speed**: 50 bps – 921.6 kbps and any other baud rate setting 230.4 kbps (PCIE-1622B only)
- **Stop Bits**: 1, 1.5, 2

#### Protection

<table>
<thead>
<tr>
<th>Model Name</th>
<th>ESD Protection</th>
<th>EFT Protection</th>
<th>Surge Protection</th>
<th>Isolation Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIE-1620A</td>
<td>15KV (air), 8KV (contact)</td>
<td>2500 V</td>
<td>2500 V</td>
<td>1000 V</td>
</tr>
<tr>
<td>PCIE-1622A</td>
<td>15KV (air), 8KV (contact)</td>
<td>2500 V</td>
<td>1000 V</td>
<td></td>
</tr>
<tr>
<td>PCIE-1622B</td>
<td>15KV (air), 8KV (contact)</td>
<td>2500 V</td>
<td>1000 V</td>
<td></td>
</tr>
<tr>
<td>PCIE-1622C</td>
<td>15KV (air), 8KV (contact)</td>
<td>2500 V</td>
<td>1000 V</td>
<td></td>
</tr>
</tbody>
</table>

### Features
- PCI Express bus 2.0 compliant
- Speeds up to 921.6 kbps for extremely fast data transmission
- Supports any baud rate setting
- 8 x RS-232 or RS-232/422/485 ports
- XR17V358 UART with 256-byte FIFOs

### Software
- **Bundled Software**: ICOM Tools
- **OS Support**:
  - Windows Xp, win7, win8, win8.1, win10, server 2008, server 2012
  - Linux 2.6.x, 3.x.x
  - Qnx 6.3, 6.5
  - Vxworks 6.9

### Environment
- **Operating Humidity**: 5 – 95 % RH, non-condensing
- **Operating Temperature**: -10 – 60°C (14 ~ 140°F)
- **Storage Temperature**: -25 – 85°C (-13 ~ 185°F)

### Ordering Information
- **PCIE-1620A**: 8-port RS-232 PCI-express Comm. Card
- **PCIE-1622A**: 8-port RS-232/422/485 PCI-express Comm. Card
- **PCIE-1622B**: 8-port RS-232/422/485 PCI-express Comm. Card w/ Surge Protection
- **PCIE-1622C**: 8-port RS-232/422/485 PCI-express Comm. Card w/ Surge & Isolation Protection

### Accessories
- **OPT8C**: DB62 x1 to DB25 x8 Cable, 1m
- **OPT8H**: DB62 x1 to DB9 x8 Cable, 1m
- **OPT8J**: DB78 x1 to DB9 x8 Cable, 1m
### Introduction

The PCIE-1680 is a special purpose communication card that offers connectivity to Controller Area Networks (CAN) on your PC. With its built-in CAN controllers, the PCIE-1680 provides bus arbitration and error detection with an automatic transmission repetition. This drastically reduces the chance of data loss and ensures system reliability. Both CAN controllers operate independently. The PCIE-1680 operates at baud rates up to 1 Mbps.

### Specifications

**General**
- **Bus Type**: PCI Express 1.1
- **Certification**: CE, FCC, CUL
- **Connectors**: 2 x DB9 male connectors, 2 x 10 pin box wafer (optional)
- **Ports**: 2
- **Power Consumption**: 3.3 V @ 600 mA (Typical)

**Communication**
- **CAN Controller**: NXP SJA-1000
- **CAN Transceiver**: NXP TJA1051T
- **Signal Support**: CAN_H, CAN_L
- **Protocol**: CAN 2.0 A/B
- **Data Transfer Rate(bps)**: Programmable up to 1 Mbps
- **CAN Frequency**: 16MHz

### Protection
- **Isolation Protection**: 2,500 V

### Mechanical and Environmental
- **Operating Temperature**: 0 – 70°C (32 – 158°F) (refer to IEC 60068-2-1, 2)
- **Storage Temperature**: -40 – 85°C (-40 – 185°F)
- **Operating Humidity**: 5 – 95% Relative Humidity, non-condensing
- **Dimensions (L x W)**: 168 x 111 mm (6.6” x 4.4”)

### Ordering Information
- **PCIE-1680-AE**: 2-Port CAN-Bus PCIE card with Isolation Protection
<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
<th>Feature</th>
<th>Specifications</th>
<th>Feature</th>
<th>Specifications</th>
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</thead>
<tbody>
<tr>
<td>2-port CAN-bus ISA Card with</td>
<td></td>
<td>2-port CAN-bus ISA Card with</td>
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<td>2-port CAN-bus Universal PCI Card</td>
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<tr>
<td>Isolation Protection</td>
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<td>Isolation Protection</td>
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<td>with Isolation Protection</td>
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<td>2-port CAN-bus Universal PCI</td>
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<td></td>
<td>2-port CAN-bus PC/104 / PCI-104 Module with Isolation Protection</td>
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<tr>
<td>2-port CAN-bus ISA Card with Isolation Protection</td>
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</tbody>
</table>
### Specifications

**General**
- **Card Interface**: PC/104
- **Certification**: CE, FCC
- **Connectors**: 2 x DB9-M
- **Ports**: 2
- **Power Consumption**: +5V @ 400mA (Typical)

**Communications**
- **Channel 1**: RS-232, 422, or 485
- **Channel 2**: RS-422, or RS-485
- **Character Length**: 5, 6, 7, or 8 bits
- **IRQ**: 3, 4, 5, 6, 7, 9
- **Parity**: Even, Odd, or None
- **Speed**: 50 bps – 115.2 kbps
- **Stop Bit**: 1, 1.5, or 2

**Protection**
- **Isolation Protection**: 2,500 Vdc

**Environment**
- **Operating Humidity**: 0 – 90 % RH
- **Temperature**: -40 – 85°C (-40 – 185°F)
- **Storage Temperature**: -40 – 85°C (-40 – 185°F)

**Ordering Information**
- **PCM-3610**: Isolated RS-232/422/485 Module

---

### Features

- High speed transmission rate
- Automatic RS-485 data flow control
- Jumper selectable interrupt level
- Supports Windows 2000/XP/Vista/7
- Supports WinCE 4.2, 5.0
- Powerful and easy-to-use utility (ICOM Tools)

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### PCM-3610

2-port RS-232/422/485 PC/104 Module with Isolation Protection

### PCM-3612

2-port RS-422/485 PC/104 Module

### PCM-3614

4-port RS-422/485 High-speed PC/104 Module

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### Specifications

**General**
- **Card Interface**: PC/104
- **Certification**: CE, FCC
- **Connectors**: 4 x DB9-M
- **Ports**: 4
- **Power Consumption**: +5V @ 450mA (Typical)

**Communications**
- **Data Bits**: 5, 6, 7, 8
- **I/O Address Range**: 0x000 – 0x3F8
- **IRQ**: 3, 4, 5, 6, 7, 9, 10, 11, 12, or 15
- **Parity**: Even, Odd, or None
- **Data Signals**: RS-422: TxD+, TxD-, RxD+, RxD-, CTS+, CTS-, RTS+, and RTS-
- **RS-485: DATA+, DATA-**
- **Speed**: 50 bps – 921.6 kbps
- **Stop Bits**: 1, 1.5, 2
- **Termination Resistor**: 120 Ω

**Environment**
- **Operating Humidity**: 0 – 90 % RH
- **Temperature**: 0~65°C (32~149°C)
- **Storage Temperature**: -40 ~ 85°C (-40 ~ 185°F)

**Ordering Information**
- **PCM-3610**: Isolated RS-232/422/485 Module
- **PCM-3612**: Dual Port RS-422/485 Module

---

### Features

- Long distance communication
- Automatic RS-485 data flow control
- Jumper selectable interrupt level
- Supports Windows 2000/XP/Vista/7
- Supports WinCE 4.2, 5.0
- Powerful and easy-to-use utility (ICOM Tools)
- Automatic RS-485 data flow control
- Shared IRQ settings for each ports
- LED indicators: TX, RX
- Standard PC ports: COM1, COM2, COM3, COM4 compatible
- Supports Windows 2000/XP/Vista/7
- Supports WinCE 4.2, 5.0
- Powerful and easy-to-use utility (ICOM Tools)

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### PCM-3614

4-port RS-422/485 High-speed Module

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### PCM-3610

RoHS COMPLIANT 2002/95/EC

### PCM-3612

RoHS COMPLIANT 2002/95/EC

### PCM-3614

RoHS COMPLIANT 2002/95/EC

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11-12
PCM-3618
PCM-3640/3641
PCM-3660

8-port RS-422/485 High-speed PC/104 Module
4-port RS-232 High-speed PC/104 Module
Jumperless Ethernet PC/104 Module

Features
- Automatic RS-485 data flow control
- Shared IRQ settings for each port
- LED indicators: TX, RX
- Supports Windows 2000/XP/Vista/7
- Supports WinCE 5.0/6.0
- Powerful and easy-to-use utility (ICOM Tools)

Specifications

General
- Card Interface: PC/104
- Certification: CE, FCC
- Connectors: 8 x DB9-M
- Ports: 8
- Power Consumption: +5V @ 650 mA

Communications
- Data Bits: 5, 6, 7, 8
- I/O Address Range: 0 x 000 – 0 x 3F8
- IRQ: 3, 4, 5, 6, 7, 9, 10, 11, 12, 15
- Parity: None, Even, or Odd
- Data Signals: RS-422: TX+, TX-, RX+, RX-, RTS+, RTS-, CTS+, CTS-, DTR, DCD, RI

- Speed: 50 bps – 460 kbps
- Stop Bits: 1, 1.5, 2
- Termination Resistor: 120 Ohm

Environment
- Operating Humidity: 0 – 90 % RH
- Operating Temperature: 0 – 65°C (32 – 149°F)
- Storage Temperature: -25 – 80°C (-13 – 176°F)

Ordering Information
- PCM-3618: 8-port RS-422/485 High-Speed Module

 PCM-3618  CE FCC

Features
- Transmission speeds up to 460 kbps (PCM-3641)
- Shared IRQ settings for each of 4 RS-232 ports (PCM-3641)
- Standard PC ports: COM1, COM2, COM3, COM4 compatible
- Supports Windows 2000/XP/Vista/7
- Supports WinCE 5.0/6.0
- Powerful and easy-to-use utility (ICOM Tools)

Specifications

General
- Card Interface: PC/104
- Certification: CE, FCC
- Connectors: 4 x DB9-M
- Ports: 4
- Power Consumption: +5V @ 200 mA (Typical)

Communications
- Data Bits: 5, 6, 7, 8
- Data Signals: RS-232: TxD, RxD, RTS, CTS, DTR, DCD, RI

- I/O Address Range: 0 x 0200 – 0 x 03F8
- IRQ: 3, 4, 5, 6, 7, 9, 10, 11, 12, 15
- Parity: None, Even, or Odd
- Speed: 50 bps – 460.3 kbps
- Stop Bits: 1, 1.5, 2

Environment
- Operating Humidity: 0 – 90 % RH
- Operating Temperature: 0 – 65°C (32 – 149°F)
- Storage Temperature: -25 – 80°C (-13 – 176°F)

Ordering Information
- PCM-3640: 4-port RS-232 Module
- PCM-3641: 4-port RS-232 High-speed Module

 PCM-3641  CE FCC

Features
- Automatically detects 8-bit or 16-bit
- AUI connector supports external MAUs
- Onboard 32 KB buffer for multi-packages
- Jumperless Ethernet PC/104 Module

Specifications

General
- Boot ROM Address: C0000, C8000, D0000, or D8000H
- Card Interface: PC/104
- Certification: CE, FCC
- Connectors: 1 x PC/104 stackthrough

- Power Consumption: +5V @ 400 mA max

Communications
- Data Bus: 8-bit, 16-bit, or auto-sending
- I/O Address: 200, 220, 240, 260, 280, 300, 320, 340, 360, 380, 3A0
- IRQ: 3, 4, 5, 9, 10, 11, 12 or 15
- Standard: IEEE 802.3 10 Mbps CSMA/CD 10Base-T Transceiver

Environment
- Operating Humidity: 10 – 90% RH
- Operating Temperature: 0 – 70°C (32 – 158°F)
- Storage Temperature: -15 – 80°C (5 – 176°F)

Ordering Information
- PCM-3660: Jumperless Ethernet Module

 PCM-3660  CE FCC
### Specifications

**General**
- Card Interface: PCI-104
- Connectors: 1 x 40-pin header
- Ports: 4
- Power Consumption: +5V @ 250 mA (max.)

**Communications**
- Data Bits: 5, 6, 7, 8
- Data Signals: RS-22: TxD+, TxD-, RxD+, RxD-
  - RS-485: DATA+, DATA-
  - RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI
- IRQ: 3, 4, 5, 6, 7, 9, 10, 11, 12, 15
- Parity: None, Even, or Odd
- Speed: 50 bps – 921.6 kbps
- Stop Bits: 1, 1.5, 2
- Termination Resistor: 120 Ω

**Environment**
- Operating Humidity: 0 – 90 % RH
- Operating Temperature: -40 – 85°C (-40 – 185°F)
- Storage Temperature: -40 – 85°C (-40 – 185°F)

### Ordering Information
- PCM-3614I: 4-port RS-232/422/485 PCI-104 Module
- PCM-3618I: 8-port RS-232/422/485 PCI-104 Module

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### Features

- Automatic RS-485 data flow control
- Shared IRQ settings for each port
- LED indicators: TX, RX
- Standard PC ports: COM1, COM2, COM3, COM4 compatible
- Supports Windows 2000/XP/Vista/7 and Linux
- Supports WinCE 5.0/6.0
- Powerful and easy-to-use utility (ICOM Tools)