



### Description

With four cards in the series, the PCI-ICOM422/4, PCI-ICOM422/2 support RS-422 communications, the PCI-ICOM485/4 and the PCI-ICOM485/2 support RS-485 communications, all the cards utilize differential balanced drivers for long range and noise immunity. The data lines are opto-isolated from the computer and from each other to ensure communication when large common mode noise is present.

Models PCI-ICOM422/4 and PCI-ICOM422/2 has the capability to add load resistors to terminate the communication lines. RS-422 communications requires that a transmitter supply a bias voltage to ensure a known "zero" state. Receiver inputs at each end of the network should be terminated to eliminate "ringing". All cards support biasing by default and support termination by jumpers on the card.

RS-485 operation, using the Models PCI-ICOM485/4 and PCI-ICOM485/2, involves switchable transceivers and the ability to support multiple devices on a single "part-line". The RS-485 specification defines a maximum of 32 devices on a single line. PCI-ICOM485/4 and PCI-ICOM485/2 only support half duplex, but has support for Auto-RTS in Windows 95/98/NT.

### Features

- Two and four optically isolated RS-422 and RS-485 ports
- Baud rates up to 460.8kbs
- Supports full-duplex & half-duplex communications
- Supports Auto-RTS in Windows on RS-485 models
- No base address or IRQ switches to set

### Support

- Superior pre- and post-sales technical support
- All products carry a two year warranty

### COMM Port Compatibility

Both cards utilize the 16550 UART as the Asynchronous Communication Element (ACE). This UART includes a 16-byte transmit/receive buffer to protect against lost data in multi-tasking operating systems, while maintaining 100% compatibility with the original PC serial port. The system assigns the addresses. A crystal oscillator permits precise selection of baud rates up to 115,200 or, by changing a jumper, up to 460,800. The driver/receiver used, the SN75176B, is capable of driving extremely long communication line at high baud rates. It can drive up to  $\pm 60\text{mA}$  on balanced lines and receive inputs as low as a 200mV differential signal superimposed on common mode noise of +12V to -7V. In case of communication conflict, the driver/receivers feature thermal shutdown.

### Communication Mode

The PCI-ICOM422/4 and PCI-ICOM422/2 supports Full-Duplex and Half-Duplex communications with a 4-wire cable connection. Half-Duplex allows traffic to travel in both directions, but only one way at a time. The PCI-ICOM485/4 and PCI-ICOM485/2 only supports Half-Duplex communications with a 2-wire cable connection. RS-485 communications commonly use the half-duplex mode since they share only a single pair of wires.



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**Card****Number of Ports**

Four RS-422 on PCI-COM422/4  
 Four RS-485 on PCI-COM485/4  
 Two RS-422 on PCI-COM422/2  
 Two RS-485 on PCI-COM 485/2

**Communication IC**

16550 UART

**Character Length**

5, 6, 7, or 8 bits

**Parity**

Even, odd, or none

**Stop Interval**

1, 1.5, or 2 bits

**Serial Data Rates**

Up to 460.8kbps

**Address**

Continuously mappable within 0000 to  
 FFFFh range of PCI bus addresses

**Receiver Input Sensitivity**

±200mV, differential

**Common Mode Rejection**

+12V to  $\pm$ 7V

**Transmitter Output Drive**

60mA, with thermal shutdown

**Power Requirements**

+5VDC @ 125mA

+12VDC @ 5mA

-12VDC @ 5mA

**Dimensions**

12.83 x 3.84-inches  
 (311.9 x 97.5mm)

**I/O Connection**

18" fanout cable with DB-9P connections  
 from single DB37. Connection on rear  
 of board

**Isolation**

500VDC

**Environment****Temperature Range Operating**

0 ° to +60 °C

**Storage**

-50 ° to +120 °C

**Humidity**

5 to 95% RHNC

**Ordering Guide****PCI-COM42 2/4**

4-port isolated 422 card, CD with  
 software and manual, cable

**PCI-COM485/4**

4-port isolated 485 card, CD with  
 software and manual, cable

**PCI-COM422/2**

2-port isolated 422 card, CD with  
 software and manual, cable

**PCI-COM485/2**

2-port isolated 485 card, CD with  
 software and manual, cable

**Auto-RTS Transceiver Control**

In RS-485 communications, the driver must be enabled and disabled as needed, allowing all cards to share a two wire cable. The PCI-COM485/4 and PCI-COM485/2 card controls the driver automatically. With automatic control, the driver is enabled when data is ready to be transmitted. The driver remains enabled for one additional character's transmission time after data transfer is complete and then is disabled. The receiver is also normally enabled, then disabled during RS-485 transmissions, and then re-enabled after transmission is completed (plus one character transmission time). The PCI-COM485/4 automatically adjusts its timing to the baud rate of the data. This feature makes the card ideal for Windows 95/98 operations.

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