



**Model 3PCIO1**  
**Optically Isolated**  
**Single-Port Multi-Interface**  
**(RS-232/422/485)**  
**PCI Bus Serial Card**  
*Automatic Send Data Control for RS-485*

The 3PCIO1 Optically Isolated Multi-Interface PCI Bus Serial Card is Plug and Play compatible permitting the Windows Operating System to set the addresses and IRQ used by the card. Optical isolators provide isolation for data and handshaking signals while a built-in isolated power supply isolates power and ground.

### Features

- Optically isolated multi-interface PCI bus serial card
- Windows compatible drivers for 95/98/2000 and XP
- Buffered high speed 16C950A UART (16C550 compatible) 128 byte FIFO
- Adjustable FIFO trigger thresholds for Input and output
- Supports baud rates to 460.8K baud
- Provides 2000 VDC minimum isolation on all lines from the DB9 male connector to the host computer
- Selectable RS-232/RS-422/RS-485 operation
- RS-232 Mode - Supports all eight signals including DCD & RI for modem compatibility
- RS-422 Mode - Supports Transmit & Receive signal pairs
- RS-485 Mode - Supports Transmit & Receive signal pairs for half or full duplex connections.
- 2-wire or 4-wire RS-485 operation (half or full-duplex)
- Automatic Send Data Control for RS-485 operation
- Advanced Driver Function for Com port rename (Com1 to Com256)
- Standard DB9 Male connector

### RS-232 Mode

In the RS-232 mode, the port works as an isolated standard (DTE) PC serial port. The RS-232 Standard is commonly used for modems, serial printers, and computer controlled devices such as security equipment, bar code scanners and point-of-sale devices.

### RS-422 Mode

The RS-422 Standard uses balanced differential drivers and receivers for each signal. This provides greater communication distances than an unbalanced system, such as RS-232. The card supports two channels, TD and RD in RS-422 mode, and Transmitter and Receiver are constantly enabled (TX ENABLE, RX ENABLE). RS-422 operation is suitable for interconnecting a computer and one device for full duplex bi-directional communication, or a computer and several devices for unidirectional communication. Commonly used for video editing/control, camera control, electronic signage, television studio/satellite dish control, performance lighting and audio equipment control.

### RS-485 Mode

The RS-485 Standard allows multiple devices to share the same communication link using either half duplex (2-Wire) or full duplex (4-Wire) connections. This requires that the transmitter be enabled only while sending data, and tri-stated otherwise so another device can use the wire pair. The 3PCIO1 card automatically controls the Transmitter (Automatic Send Data Control) based on the contents of the output buffer. When the buffer has data to send, the transmitter is enabled (TX SD). When all data in the buffer has been sent, the transmitter is disabled and tri-stated to a high impedance state. In half duplex operation, the Receiver is disabled during transmit (TX SD), and enabled when not transmitting. In full duplex operation, the receiver is set constantly enabled (RX ENABLE). Since RS-485 transmitters are tri-stated when not transmitting, the Receive inputs must be biased to establish the Mark state so that the first Space state is detected correctly at the start of the next transmission. This card includes biasing for 32 standard (12K) nodes. Provisions are made for custom biasing and/or termination.

International Headquarters:

**B&B Electronics Mfg. Co.** 707 Dayton Road P.O. Box 1040 Ottawa, IL 61350 USA  
 815-433-5100 Fax 433-5104 [www.bb-elec.com](http://www.bb-elec.com) [orders@bb-elec.com](mailto:orders@bb-elec.com) [support@bb-elec.com](mailto:support@bb-elec.com)

**B&B Electronics Ltd** Westlink Commercial Park Oranmore Co. Galway Ireland  
 +353 91 792444 Fax +353 91 792445 [www.bb-europe.com](http://www.bb-europe.com) [orders@bb-elec.com](mailto:orders@bb-elec.com) [support@bb-europe.com](mailto:support@bb-europe.com)

**Specifications**

Bus: PCI bus (33MHz/32-bit) +5V bus power  
 Slot: Requires one PCI slot  
 Baud rates: 460.8K baud maximum - RS-232/422/485  
 Any baud rate that is a common divisor of 460.8K  
 can be used if the application software supports it.  
 Compatibility mode for X4 clock speed

UART: 16C950 (128-byte FIFO TX and RX buffers) (16C550 compatible)  
 Character length: 5, 6, 7 or 8 bits  
 Parity: Even, odd or none  
 Stop bits: 1, 1.5, or 2  
 Isolation: 2000 VDC minimum isolation on all lines  
 Connector: One 9-pin male D-sub (DB9M) connector  
 Dimensions: 4.79 x 3.77 in (12.16 x 9.57 cm) card edge  
 (Mounting bracket, 1.23 x 12.06 x 0.85 cm)

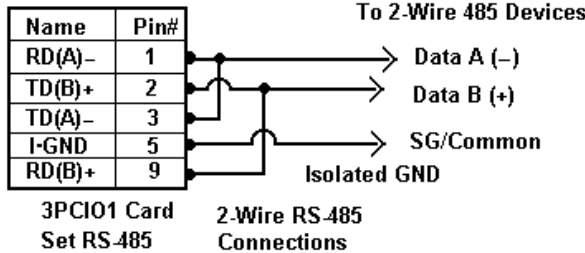
Environmental: Operating temperature range: 0° to 50° C  
 Operating humidity: 0 to 95%, Non-condensing

O/S Supported: Compatible with Windows 95/98/2000/XP (32-bit XP)  
 Application software must be Windows driver compatible

Supplied Accessories: Driver CD-ROM Disc for Windows 95/98/2000/XP  
 Instruction manual

**Connections**

RS-232 Signal Description	RS-232 (DTE) Signal Name	DB9M Pin	RS-422 RS-485 Signal Name	2-wire RS-485 Signal Name
Data Carrier Detect	DCD	1	RD(A)-	Bridge to Pin #3
Receive Data	RD	2	TD(B)+	Data(B)+
Transmit Data	TD	3	TD(A)-	Data(A)-
Data Terminal Ready	DTR	4	--	-
Isolated Signal Ground	I-GND	5	I-GND	I-GND
Data Set Ready	DSR	6	--	--
Request to Send	RTS	7	--	--
Clear to Send	CTS	8	--	--
Ring Indicator	RI	9	RD(B)+	Bridge to Pin #2



**DECLARATION OF CONFORMITY**

Manufacturer's Name: B&B Electronics Manufacturing Company  
 Manufacturer's Address: P.O. Box 1040  
 707 Dayton Road  
 Ottawa, IL 61350 USA

Model Numbers: 3PCIO1  
 Description: 1-port RS232/422/485 PCI Serial Card  
 Type: Light industrial ITE equipment  
 Application of Council Directive: 89/336/EEC  
 Standards: EN 55022  
 EN 50082-1  
 EN 61000 (-4-2, -4-3, -4-4, -4-6)

  
 William H. Franklin III, Director of Engineering

**CE**

*This product is Designed and Manufactured in the USA  
 of domestic and imported components.*

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 815-433-5100 Fax 433-5104 [www.bb-elec.com](http://www.bb-elec.com) [orders@bb-elec.com](mailto:orders@bb-elec.com) [support@bb-elec.com](mailto:support@bb-elec.com)

**B&B Electronics Ltd** Westlink Commercial Park Oranmore Co. Galway Ireland  
 +353 91 792444 Fax +353 91 792445 [www.bb-europe.com](http://www.bb-europe.com) [orders@bb-elec.com](mailto:orders@bb-elec.com) [support@bb-europe.com](mailto:support@bb-europe.com)

