



Models: 3PCIOSD2A 3PCIOSD2B

Optically Isolated Serial PCI Cards CE

Description

The 3PCIOSD2x cards provide two optically isolated serial ports using one PCI slot. Plug and Play design lets the Operating System and driver select the IRQ and addresses used by the card. Each port can easily and independently be configured for RS-232, RS-422, or RS-485 (2-wire half duplex or 4-wire full duplex) operation. RS-485 mode configuration provides Automatic Send Data Control, which transparently enables or disables the RS-485 transmitter as needed. The RS-485 receiver can be enabled for full duplex or set for half duplex control. The 3PCIOSD2x can be set to quadruple clock speed, permitting baud rates up to 460.8K baud on both ports in any mode.

The 3PCIOSD2A card uses the 16550 UART that has a high-speed 16-byte input and output buffer to handle fast baud rates. Model 3PCIOSD2B uses the 16850 UART with a 128-byte input/output buffer. Standard DB9 male connectors and pinouts are used for RS-232 compatibility, RS-422 or RS-485 connections provide TD(A), TD(B), RD(A), RD(B) and Signal Common. Both models require a full-length PCI slot.

Features

- Works with PCI Bus Version 2.1
- Provides 2000 VDC minimum isolation on all supported signals
- Easily and separately configurable for RS-232, RS-422, or RS-485 operation
- Supports baud rates up to 460.8K in all modes
- Supports TD, RD, RTS, CTS, DTR, DSR, & DCD in RS-232 mode
- Supports TD and RD in RS-422 and RS-485 modes
- Automatic Send Data Control or RTS control in RS-485 mode
- Can be connected for 2 or 4-wire RS-485 communications
- Has drivers for Windows 95, 98, ME, 2000 and NT 4.0
- Available with high speed FIFO 16850 UART as Model 3PCIOSD2B

RS-232 Mode

When a port is in RS-232 mode, it functions as a standard PC compatible serial port. 3PCIOSD2x serial cards support the following RS-232 signals: transmit data (TD), receive data (RD), request to send (RTS), clear to send (CTS), DTE ready (DTR), DCE ready (DSR), and data carrier detect (DCD). The RS-232 standard is commonly used for modems, serial printers, and computer controlled devices such as bar code scanners and point-of-sale equipment.

RS-422 Mode

The RS-422 standard uses balanced differential drivers and receivers. A balanced differential system offers greater distances than an unbalanced RS-232 system. In RS-422 mode, the 3PCIOSD2x card supports two channels, TD and RD. The transmitter and receiver are constantly enabled, since only one device is connected at each end, although one device can transmit to multiple listeners. For more information on RS-422 and RS-485, contact B&B Electronics for a free RS-422/RS-485 Application Note, available by mail or on our websites, www.bb-elec.com or www.bb-europe.com.

RS-485 Mode

The RS-485 standard allows for multiple devices to share the same communication link. This requires that the transmitter be enabled only while sending data. 3PCIOSD2x cards offer two ways of enabling/disabling the transmitter: RTS control and Automatic Send Data Control. When using RTS control your software must raise RTS to enable the transmitter and lower RTS to disable the transmitter. With Automatic Send Data Control, simply transmit data out the port. The 3PCIOSD2x cards automatically sense the data and enable the transmitter. When the data transmission is complete, the transmitter is automatically disabled after 10 data bits (1 character). The receiver can be always enabled (data echo on) for 4-wire full duplex, or it can be disabled when the transmitter is enabled (data echo off) for 2-wire half duplex operation.

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Connectors

Both 3PCIOSD2x cards use DB9 male connectors. The port is configured as a standard DTE device in the RS-232 mode. Pinouts are shown below for RS-232 or RS-422/RS-485 modes.

Pin Number	RS-232 Signal Name	Description	Direction (DTE)	RS-422/485 Signal Name	Description	Direction
1	DCD	Data Carrier Detect	Input	RD (A) –	Receive Data A	Input
2	RD	Receive Data	Input	TD (B) +	Transmit Data B	Output
3	TD	Transmit Data	Output	TD (A) –	Transmit Data A	Output
4	DTR	Data Terminal Ready	Output	---	---	---
5	GND	Signal Ground	Common	GND	Signal Ground	Common
6	DSR	Data Set Ready	Input	---	---	---
7	RTS	Request to Send	Output	---	---	---
8	CTS	Clear to Send	Input	---	---	---
9	----	Not Connected	---	RD (B) +	Receive Data B	Input

In 2-wire RS-485 mode, the cabling must interconnect TD(A) & RD(A) for Data A, and interconnect TD(B) & RD(B) for Data B.

Specification Summary

Bus Type: PCI Bus Version 2.1
Baud Rates: Up to 460.8K baud in all modes

RS-232 Mode: Supports TD, RD, RTS, CTS, DTR, DSR, and DCD signals (configured as DTE)
RS-422 Mode: Supports TD & RD signals (2 channels). Separate enable/disable on transmitter and receiver.
RS-485 Mode: Supports TD & RD signals in full duplex 4-wire mode or half duplex 2-wire mode. With automatic RS-485 driver control, the driver is enabled at beginning of data transmission. The driver is disabled within one character after completion of data transmission. With RTS control, software determines timing. The receiver can be driver controlled or constantly enabled.

Termination: A jumper selectable 120 ohm termination resistor is provided on the board for the RS-422/RS-485 receiver. Through-hole solder pads are provided for installation of a different value resistor.

Isolation: 2000 VDC minimum on all supported signals

OS: Runs under Windows 95, 98, ME, 2000 and NT 4.0



Connectors: (2) DB9 male (DB9M)

Dimensions: 12.3 x 4.2 inches (31.2 x 10.7 cm)

Accessories: (1) Driver Disk (3.5) & (1) Utilities Disk (3.5)

Max Power: All ports loaded

Consumption: +5 V @ 454 mA or 2.27 W

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:	3PCIOSD2a/b
Description:	Optically Isolated Serial PCI Card
Type:	Light industrial equipment
Application of Council Directive:	89/336/EEC
Standards:	EN 55022 EN 61000-6-1 EN 61000 (-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11)
 	
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