



**Models: 3PXCC1a 3PXCC1b  
3PXCC2a 3PXCC2b**

**2-Port, Any Address, Any IRQ**

**RS-232/422/485 Serial Cards**

**With Automatic RS-485 Driver Control CE**

### **Description**

The 3PXCC serial communication cards offer numerous features that allow you to easily match your system requirements. Available in one and two-port versions, each port can be independently configured for any address and any interrupt to eliminate the four serial port barrier. Two port cards include special circuitry allowing both ports to simultaneously share a single interrupt. Windows 9x, 2000, and NT operating systems both support this feature. Each port can be configured for RS-232, RS-422 or RS-485 Standards. Automatic RS-485 driver control circuitry provides hassle-free communications. Since this feature is handled in hardware, it works regardless of the operating system or the application.

3PXCC cards come standard with buffered, high speed 16550A UARTs. Also available are 16850 UARTs, completely compatible with 16450 and 16550A UARTs, the 16850 has a larger, 128 byte transmit and receive FIFO. Note that software must support the 16850 to take advantage of its extended features. Refer to Table 2 to determine the model number required for your system.

### **Features**

- PC, XT and AT compatible, ISA or EISA bus
- Each port independently configurable for RS-232/422/485
- Available with 128-byte FIFO 16850 UARTs
- Supports baud rates to 460,800 in RS-422 or RS-485 mode, 115,200 in RS-232 mode
- Each port independently configurable for any hex address, 0 - 3F8h
- Full 16-bit address decoding helps prevent address conflicts
- Each port independently configurable for any interrupt (2-7, 10-12, 14 and 15)
- Two port cards have interrupt sharing capability
- RS-232 mode supports TD, RD, RTS, CTS, DSR, DCD, DTR & RI
- RS-422 and RS-485 modes support TD and RD

### **RS-232 Mode**

When a port is in RS-232 mode, the port functions as a standard IBM serial port. 3PXCC 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), data carrier detect (DCD) and ring indicator (RI). The RS-232 Standard is commonly used for modems and serial printers.

### **RS-422 Mode**

The RS-422 uses balanced differential drivers and receivers. A balanced differential system offers higher speed and greater distances than an unbalanced system, such as RS-232. In RS-422 mode, 3PXCC cards support two channels, TD and RD. The receiver is always enabled in RS-422 mode. The transmitter has the ability to be disabled (see next section). For more information on RS-422 (and RS-485) contact B&B Electronics for our free RS-422/RS-485 Application Note.

### **RS-485 Mode**

The RS-485 Standard allows for multiple drivers to share the same communication link. This requires that the transmitter be enabled only while sending data. 3PXCC cards offer two ways of enabling/disabling the transmitter: RTS control and automatic control. Using RTS control your software must raise RTS to enable the transmitter and lower RTS to disable the transmitter. With automatic control, simply transmit data out the port. 3PXCC cards automatically sense the data and enable the transmitter. When the data transmission is complete, the transmitter is automatically disabled. The receiver can always be enabled (data echo on) or it can be disabled when the transmitter is enabled (data echo off).

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## Connectors

Each port of the 3PXCC cards uses a male DB-9P connector. Pinouts of the DB-9P are shown in Table 1.

Table 1

DB-9P Pin Number	RS-232 Mode	RS-422/485 Mode
1	DCD	RD(A)
2	RD	TD(B)
3	TD	TD(A)
4	DTR	
5	GND	GND
6	DSR	
7	RTS	
8	CTS	
9	RI	RD(B)

Table 2

Model Number	Number of Ports	UART Type
3PXCC1A	1	16550A
3PXCC1B	1	16850
3PXCC2A	2	16550A
3PXCC2B	2	16850

## Specification Summary

Bus Type: PC, XT and AT compatible (ISA or EISA bus)  
 Baud Rates: Up to 460,800 baud in RS-422 or RS-485 mode, 115,200 baud in RS-232 mode  
 Addresses: Each port can be independently configured to any hex address 0 - 3F8h  
 Interrupts: Each port can be set to any interrupt 2-7, 10-12, 14 and 15, shared interrupts supported  
 Connectors: Two male DB-9P connectors  
 Dimensions: 4.2 x 6.25 in (16.0 X 8.4cm)  
 RS-232 Mode: Supports TD, RD, RTS, CTS, DTR, DSR, DCD, and RI.  
 RS-422 Mode: Supports TD, RD. Separate enable/disable on transmitter and receiver.  
 RS-485 Mode: Supports TD, RD. With automatic RS-485 driver control the driver is enabled at beginning of data transmission. Driver is disabled within one character after completion of data transmission. With RTS control software determines timing.  
 Termination: An AC termination is provided on the board for the RS-422/RS-485 receiver. A jumper is used to enable/disable the termination.

### 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: 3PXCC1A, 3PXCC1B, 3PXCC2A, 3PXCC2B  
 Description: RS-232 Serial Card  
 Type: Light industrial ITE 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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