2-Port RS232/422/485 Combo Serial PCI Card
## Installation Guide

1. Introduction

Thank you for purchasing this 2-Port RS232/422/485 Combo Serial PCI Card. It is a universal add in card that connects to a PC or server via the PCI Bus, providing high-speed serial connectivity. The serial ports are fully compatible with RS232/422/485 standard by the bundled Serial COM port drivers. Each port can be set at any mode (RS232, RS485 2-wire, RS485 4-wire and RS422) and operate simultaneously.

There is an optional model supports Isolation and ESD protection feature. It provides an ideal solution for most critical applications.

2. Connector Layout

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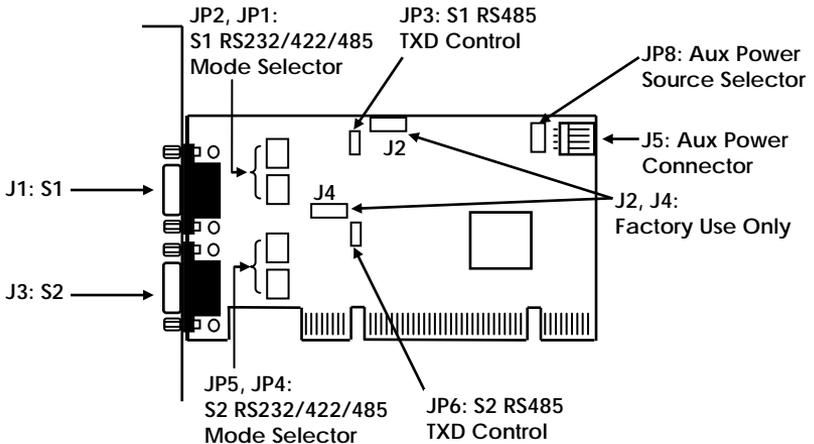
Features:

- ✓ Provides 2 RS232/422/485 Serial Ports over PCI Slot
- ✓ Provides 2 DSUB-9 Connectors
- ✓ Supports PCI Specification 3.0 and Power Management 1.1
- ✓ Baud Rate up to 921.6Kbps
- ✓ Supports 5, 6, 7, 8 and 9-bit Data Framing
- ✓ 128-byte Deep FIFO per Transmitter and Receiver
- ✓ Optional Model Supports 2,500Vrms Isolation and 15KV ESD Protection
- ✓ Supports Optional Power to Serial Connector (non-Isolation model only)
- ✓ Supports Win98, Me, XP, CE, Win2K, 2003, Vista and Win 7
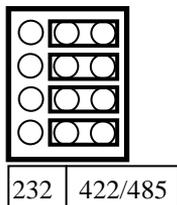
3. Mode Jumper Settings

There are two jumpers for each port to set its operation modes. JP2 and JP1 for port 1 (S1), JP5 and JP4 for port 2 (S2). The JP2 (JP5 for S2) is used to set Termination Resistor and modes, the JP2 (JP4 for S2) is used to re-route the signals relative to the modes:
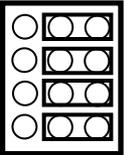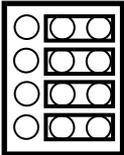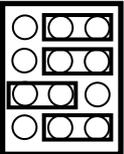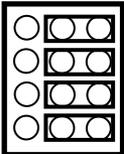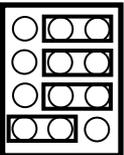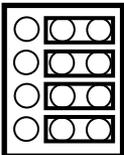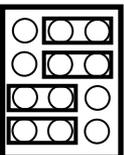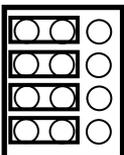
JP2 for S1(JP5 for S2): Set Modes
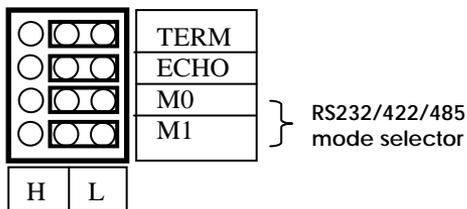
JP1 for S1 (JP4 for S2): To switch the signals between RS232 and RS422/485 modes. The RS422 and RS485 have the same settings.

1. Mode Settings:

JP2 (for S1) JP5 (for S2)	JP1 (for S1) JP4 (for S2)	Description
TERM / ECHO / M0 / M1 — H L	232 422/485	**RS485 2-wire mode (Default)**
TERM / ECHO / M0 / M1 — H L	232 422/485	**RS485 4-wire mode**
TERM / ECHO / M0 / M1 — H L	232 422/485	**RS422 mode**
TERM / ECHO / M0 / M1 — H L	232 422/485	**RS232 mode** **Note:** Keep the "**TERM**" jumper at "**L**" side (disabled) in RS232 Mode

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2. **Termination Resistor Enable/Disable:** This jumper enables/disables the 120 Ohm termination resistor between DATA+ and DATA- of the RS485 transceiver:
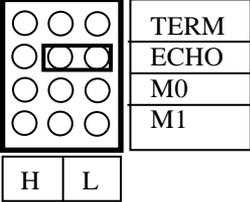
JP2 (for S1) JP5(for S2)	Description
TERM ECHO M0 M1 H L	No echo data **(Default)**
TERM ECHO M0 M1 H L	**Transmission data will be echoed**
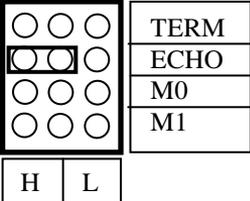
3. **Echo or No Echo Settings:** This jumper is to set the transmission data will be echoed back or not. The Echo mode is useful for the application program to detect if the RS485 bus has collision. If the echoed data was not equal to the transmitted data, then the bus was in a collision. This setting only affects the RS485 2-wire mode. It doesn't affect RS485 4-wire, RS422, and RS232 modes.

JP2 (for S1) JP5(for S2)	Description

○ **▭○○** TERM ○ ○ ○ ECHO ○ ○ ○ M0 ○ ○ ○ M1 H L	**Termination Resistor Disabled (Default)**
▭○ ○ TERM ○ ○ ○ ECHO ○ ○ ○ M0 ○ ○ ○ M1 H L	Termination Resistor Enabled
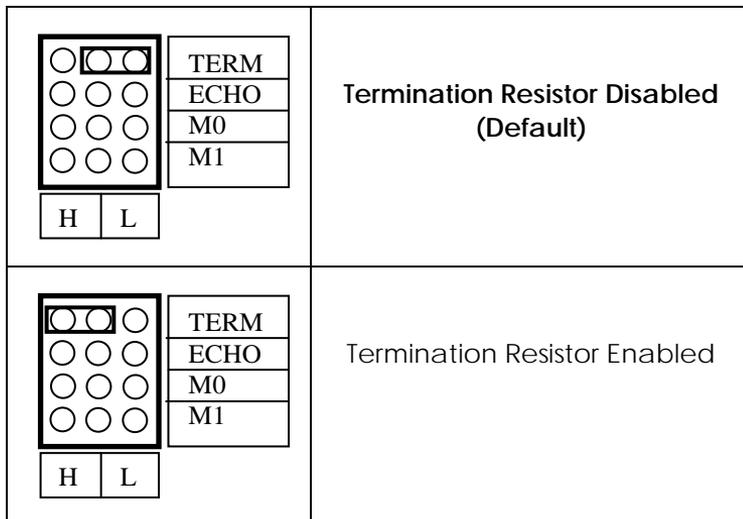
4. TXD Control Selector: JP3 (for S1) and JP6 (for S2):

This jumper is used to select the control signal for the transmitter buffer in RS485 2-wire mode. There are 2 settings are selectable, one is "MAN" (manually) the other one is "**AUT**" (automatically, factor default), please keep it at "AUT" in all cases.

5. Factory Use Only Connectors (J2 and J4):

These 2 connectors are only used for factory production purpose, please don't connect any jumper or cable on it!

# 4. Installing the RS232/422/485 PCI Card

1. Turn the system power OFF before installation!

2. Use static electricity discharge precautions.

3. Remove the chassis cover from your computer

4. Locate an unused PCI slot (typically white or ivory) and remove the corresponding slot cover from computer chassis.

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5. Plug the RS232/422/485 PCI card to the unused PCI expansion slot and attached the I/O card bracket to the computer chassis screw.

6. Put the chassis cover back on the computer.

7. Turn ON the power of your computer and peripherals.

8. Proceed with Software Driver Installation.

5. Software Installation

☞ NOTE:

PLEASE DO NOT LET WINDOWS AUTO SEARCH THE DRIVERS ON THE CD, it will cause problems because the INF files will be conflict in this case. Instead, please browse to the correct location (folder) manually to make sure the correct drivers are chosen and installed correctly.

Drivers are in each corresponding folder
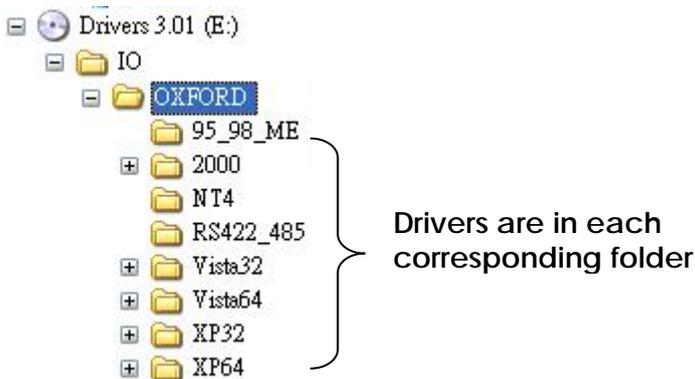
☞ Note: Windows NT driver Installations

To install the Windows NT driver, please go into WinNT4 sub-directory and run (double click) **Install_Serial.exe** to install all Serial Port Drivers.

Installing Windows Drivers:

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1. When the system is powered, Windows will invoke Windows' New Hardware Wizard. Click " **Next** " to continue, select ﹀ **Install from a list or specific location（Advanced）** ﹀ and click ﹀ **Next** ﹀ .

2. Select ﹀ **Include this location in the search** ﹀ then click ﹀ **Browse** ﹀ to specify the driver's location for your OS (for example, XP is **E:\IO\OXFORD\XP32**) and click ﹀ **Next** ﹀ to continue.

3. Click ﹀ **Next** ﹀ to continue, and click ﹀ **Finish** ﹀ to complete the installation.

4. To check the Installation, right click on ﹀**My Computer**﹀ and choose﹀**Manage**﹀. Choose﹀ **Device Manager** ﹀and double click ﹀ **Ports** ﹀ .

6. RS232 Pin Assignments and Cable Wiring
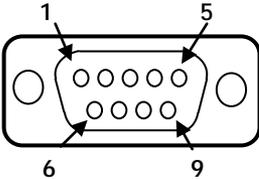
9 Pins	Signal
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

DB9(Male) to DB9(Male) Wiring:

DB9(USB Adapter) DB9(Serial Device)
1 DCD ← 1 DCD
2 RXD ← → 2 RXD
3 TXD → 3 TXD
4 DTR 4 DTR
5 GND 5 GND
6 DSR 6 DSR
7 RTS 7 RTS
8 CTS → 8 CTS

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7. RS422/485 Pin Assignments and Cable Wiring

DB9-Male Pin Assignment:

```
1        5



6        9
```
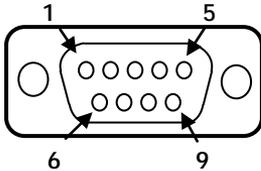
```
9 Pins    Signal
  1       TXD- (DATA-)
  2       TXD+ (DATA+)
  3       RXD+
  4       RXD-
  5       GND
  6       NC
  7       NC
  8       NC
  9       NC
```
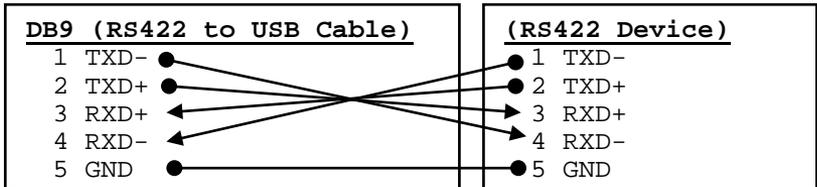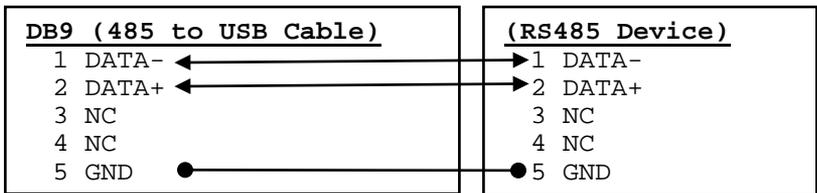
NC = No connection

RS422 Cable Wiring:

```
DB9 (RS422 to USB Cable)      (RS422 Device)
 1 TXD-                        1 TXD-
 2 TXD+                        2 TXD+
 3 RXD+                        3 RXD+
 4 RXD-                        4 RXD-
 5 GND                         5 GND
```

RS485 (2-wire) Cable Wiring:

```
DB9 (485 to USB Cable)        (RS485 Device)
 1 DATA-                       1 DATA-
 2 DATA+                       2 DATA+
 3 NC                          3 NC
 4 NC                          4 NC
 5 GND                         5 GND
```

8. Environmental Specifications

Power requirements: 5V DC, 450mA (max)

Operating temp.:   0 to 55°C (32 to 131°F)

Operating humidity: 5 to 95% RH

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