



# C320Turbo/PCIEL Intelligent Serial Board

## Quick Installation Guide

First Edition, January 2012

### 1. Overview

C320Turbo/PCIEL provides an expandable and flexible COM/TTY solution for 8- to 128-port RS-232 applications. This serial board is ideal for connecting a wide range of serial devices—including terminals, modems, printers, scanners, cash registers, bar code readers, keypads, numeric displays, electronic scales, and data acquisition equipment—to a PC.

C320Turbo/PCIEL is a Moxa Green Product. Moxa's Green Products satisfy the RoHS directive of the European Parliament, and accordingly, do not contain cadmium and cadmium compounds, hexavalent chromium compounds, lead and lead compounds, mercury and mercury compounds, PBBs (polybrominated biphenyls), or PBDEs (polybrominated diphenyl ethers).

### 2. Package Checklists

Moxa's C320Turbo/PCIEL serial connectivity solution consists of the Control Board, a Connection Cable, and one or more Modules. Components are packaged separately. Please notify your sales representative if any items are missing or damaged:

#### Control Board (required)

##### C32010T/PCIEL package contents:

- C32010T/PCIEL Async Board
- Software CD
- C320Turbo/PCIEL Quick Installation Guide

#### Connection Cables (must choose one)

##### C32020T package contents:

- Male DB25 to female DB25 cable (25 wires, 2 meter length)

##### C32050T Long-range Extension Kit package contents:

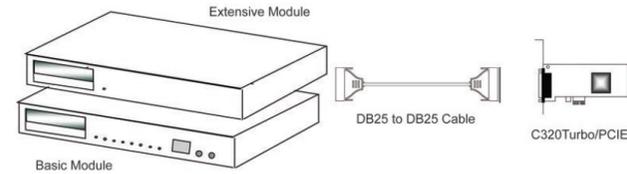
- Male DB25 to female DB25 cable (10 wires, 2 meter length)
- 90-240 VAC switch power adaptor



### WARNING

If using the C32065T as an external module, the C32050T power adaptor needs to be used to supply external power.

### Rackmount Connection Option



#### Basic Modules (must choose one)

- C32080T rackmount module (8 ports, RS-232, 10-pin RJ45)
- C32081T rackmount module (16 ports, RS-232, 10-pin RJ45)

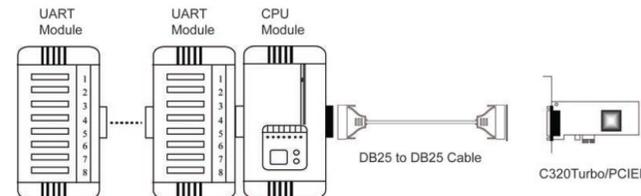
#### Extension Modules (optional—up to 32 ports per control board)

- C32082T rackmount module (8 ports, RS-232, 10-pin RJ45)
- C32083T rackmount module (16 ports, RS-232, 10-pin RJ45)

#### DB25 to DB25 Cable (not included)

- CBL-F37M37-1M connection cable (P/N: 1701000002300)

### Desktop Connection Option



#### CPU Module (required)

- C32030T CPU module

#### UART Modules (choose at least one—up to 32 ports per control board)

- C32045T (8 ports, RS-232, female DB25)
- C32047T (8 ports, RS-232, male DB25)
- C32061T (8 ports, RS-422, female DB25)
- C32065T (8 ports, RS-422, female DB25, w/ 2KV Isolation Protection)
- C32071T (8 ports, RS-232, female DB25, w/ ESD 25KV Surge Protection)

### 3. Hardware Installation Procedure

The C320Turbo/PCIEL board MUST be installed in the PC before installing the driver. The following directions explain how to install the board in the PC.

**STEP 1:** Power off the PC.

**STEP 2:** Remove the PC cover.

**STEP 3:** Remove the slot cover bracket.

**STEP 4:** Gently press the C32010T/PCIEL firmly into a free PCI Express x1 slot.

**STEP 5:** Fasten the holding screws to secure the Control Board.

**STEP 6:** External module installation:

Connect the Intellio C320Turbo/PCIEL Control Board to the Basic Module (or CPU Module) with DB25-to-DB25 cable. If range extension or external power is required, please use the 10-pin cable that is included with the long range extension kit (C32050T) instead.

Refer to the user's manual: Chapter 2 Hardware Installation for these two types of installations: without power adapter and with power adapter.

**STEP 7:** Replace the system cover.

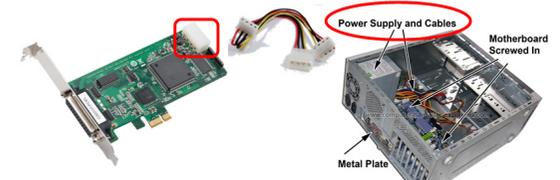
**STEP 8:** Connect the first Extension Module (or UART Module) to the Basic Module (or CPU Module). Connect the second module to the first one if necessary and so on.

To securely connect the modules, a connector kit or rack mount kit is included.

**STEP 9:** Once each component has been correctly installed, you are recommended to power on the Basic Module (CPU Module) first and then power on the PC system.



### WARNING



The PCI express slot supplies only 3.3VDC and 5VDC and is not enough to power the C320Turbo/PCIEL module. Users can use the power connector on the C320Turbo/PCIEL to connect directly to the power supply. If the host device does not have an IDE power cable, please use the C32050T power adaptor for external power supply.

#### 4. Software Installation Information

The board and modules MUST be plugged in before installing the driver. See the previous section for instructions on how to install the board in your PC. Refer to the C320Turbo/PCIEL User's Manual for detail instructions on installing the drivers for this board.

##### Windows XP/2003 Driver Installation

1. After powering on PC, Windows 2003/XP will automatically detect the PCIe board.
2. Insert the PCIe software CD in your CD-ROM drive.
3. Select **Install from a list or specific location (Advanced)**.
4. After selecting **Search for the best driver in these locations**, select **Include this location in the search**, and then click **Browse**. If the system is a 32-bit (x86) platform, navigate to the `\C320Turbo_PCIEL\Software\Windows XP_2003\x86` folder on the CD, if the system is 64-bit (x64) platform, navigate to the `\C320Turbo_PCIEL\Software\Windows XP_2003\x64` folder on the CD, and then click **Next** to continue.
5. After the board has been installed, the installation wizard will install the MOXA communication ports automatically, starting with port 0.
6. The installation is finished. Use the **Device Manager** to check the installation of the board and ports. Click the + sign next to **Hardware**, and then check **Multi-port serial adapters** and **Ports (COM & LPT)**.

##### Linux Driver Installation

1. Execute the following commands from the Linux prompt:
 

```
#mount /dev/cdrom /mnt/cdrom
#cd /
#mkdir moxa
#cd moxa
#cp /mnt/cdrom/<driver
directory>/driv_linux_intellio_xx.tgz
#tar xvfz driv_linux_intellio_xx.tgz
```
2. 

```
#cd mxdrv
#make clean; make install
```
3. 

```
#cd /moxa/mxdrv/driver
#./mxmknod
```
4. Load the Moxa Driver
 

```
#insmod moxa
```
5. Download the firmware
 

```
# cd /moxa/mxdrv/driver
#./moxaload -y
```
6. You can use the Moxa diagnostic utility to verify the driver status:
 

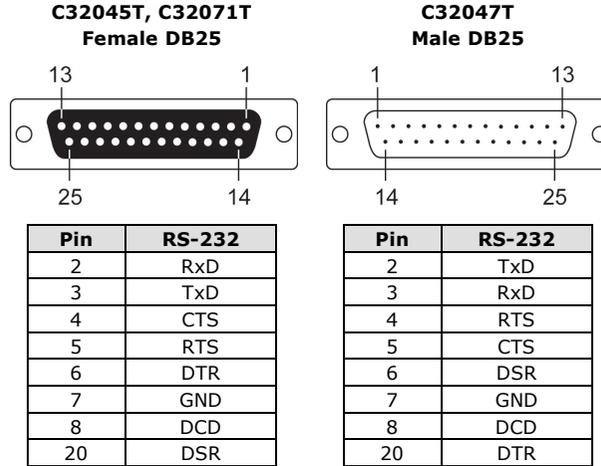
```
#cd /moxa/mxdrv/utility/diag
#./mxdiag
```

7. You can use the Moxa terminal utility to test the tty ports:
 

```
#cd /moxa/mxdrv/utility/term
#./mxterm
```

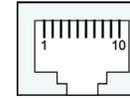
#### 5. Pin Assignments and Cable Wiring

##### RS-232 Cable Wiring for UART Modules



##### RS-232 Cable Wiring for Rackmount Solution

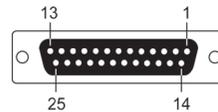
**C32080T, C32081T,  
C32082T, C32083T**  
10-pin RJ45



Pin	RS-232
1	DCD
2	DSR
3	RTS
4	GND
5	TxD
6	RxD
7	GND
8	CTS
9	DTR

##### RS-422 Cable Wiring for UART Modules

**C32061T, C32065T**  
Female DB25



Pin	RS-422
2	RxD+(B)
3	TxD+(B)
14	RxD-(A)
16	TxD-(A)
7	GND
4	CTS+(B)
5	RTS+(B)
13	RTS-(A)
19	CTS-(A)

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