



# C320Turbo Intelligent Serial Board Quick Installation Guide

Third Edition, June 2008

## 1. Overview

C320Turbo provides an expandable and flexible COM/TTY solution for 8- to 128-port RS-232 applications. This ISA 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. The on-board RISC processor helps to create data transmission speeds of up to 460.8 Kbps.

C320Turbo 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 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* package contents:

- C32010T ISA board
- Software CD
- C320Turbo Quick Installation Guide

### Connection Cables (must choose one)

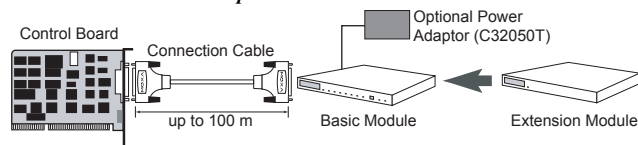
*C32020T* package contents:

- 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

### Rackmount Connection Option



### Basic Modules (must choose one)

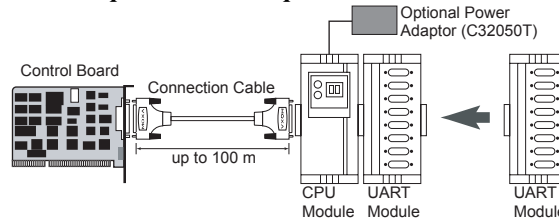
- C32080T rackmount module (8 ports, RS-232, 10-pin RJ45)
- C32081T rackmount module (16 ports, RS-232, 10-pin RJ45)

### 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)

P/N: 1802003201600

## 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)
- C32071T (8 ports, RS-232, female DB25, w/ Surge Protection)
- C32061T (8 ports, RS-422, female DB25)
- C32065T (8 ports, RS-422, female DB25, w/ Isolation Protection)

## 3. Hardware Installation Procedure

The C320Turbo 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:** Configure C320Turbo to use a proper IRQ and memory bank.

**STEP 3:** Insert the C320Turbo control board firmly into an ISA slot.

**STEP 4:** Fasten the holding screw to fix the control board in place.

**STEP 5:** Use the cable to connect C320Turbo to the CPU module.

**STEP 6:** Power on the PC.

**STEP 7:** Enter the PC's BIOS to reserve a specific IRQ for C320Turbo.

**STEP 8:** Restart the PC.

## 4. Software Installation Information

The board **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 User's Manual for detailed instructions on installing the drivers for this board.

### Windows 2003/XP Driver Installation

1. After powering on your PC, log into Win 2003/XP as Administrator.
2. Insert the C320Turbo software CD in your CD-ROM drive.
3. Select **Add/Remove Hardware** from Control Panel.
4. Select **Add a device**.
5. Select **Add new device**.
6. Select **No, I want to select the hardware from a list**.
7. Select **Multi-port serial adapters**.
8. Select **Have Disk**, and then use the browse button to navigate to the CD's **C320\Software\Win2K-XP-2003** folder.
9. Select the C320Turbo driver.
10. Start the installation.

11. Click **Yes** in response to any admonitions that the software doesn't contain a Microsoft digital signature.
12. Click **Finish** to complete the driver installation.
13. If your ISA board configuration is not set as the default, you will need to change the driver settings to match the hardware configuration. Use the **Device Manager** to check if I/O, IRQ, INT vector, etc. are correct.

### Windows 2000 Driver Installation

1. After powering on your PC, log into Win 2000 as Administrator.
2. Insert the C320Turbo software CD in your CD-ROM drive.
3. Select **Add/Remove Hardware** from the Control Panel.
4. Select **Add a device**.
5. Select **Add new device**.
6. Select **No, I want to select the hardware from a list**.
7. Select **Multi-port serial adapters**.
8. Select **Have Disk**, and then use the browse button to navigate to the CD's **C320\Software\Win2K-XP-2003** folder.
9. Select C320Turbo driver.
10. Start the installation.
11. Click **Yes** in response to any admonitions that the software doesn't contain a Microsoft digital signature.
12. Click **Finish** to complete the driver installation.
13. If your ISA board configuration is not set as the default, you will need to change the driver settings to match the hardware configuration. Use the **Device Manager** to check if I/O, IRQ, INT vector, etc. are correct.

### Windows 95/98 Driver Installation

1. After powering on your PC, log into 95/98 as Administrator.
2. Insert the C320Turbo software CD in your CD-ROM drive.
3. Run **Setup95.exe** for both Windows 95 and Windows 98. In both cases, be sure to install the driver from the CD's **C320\Software\Win9x\Windows.95** folder.
4. After the board has been installed, the installation wizard will open the port configuration window.
5. Configure the I/O, IRQ, INT vector, etc.
6. Restart the OS

### Windows NT Driver Installation

1. After powering on your PC, log into NT as Administrator.
2. Copy the folder **C320\Software\WinNT\Windows.nt** to your hard drive.
3. Open the **Control Panel**, click on the **Network** icon, and select the **Adapters** tab.
4. Click the **Add** button, and then **Have Disk...** in the **Select Network Adapter** window.
5. Specify the exact path to the folder created in Step 2 above.

- Select **MOXA Intellio C320Turbo series multiport board** in the Select OEM Option window, and then click on **OK** to start installing the driver.
- When the Moxa Configuration Panel dialog box appears, click on **Add** to open the **Property** window to modify port settings and advanced FIFO configuration done automatically by the system.
- Configure the I/O, IRQ, INT vector, etc.
- Restart the OS.

#### Linux Driver Installation

- Execute the following commands from the Linux prompt:
 

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

- ```
#cd mxdrv
#make clean; make install
```
- ```
#cd /moxa/mxdrv/driver
#./moxmknod
```
- Load the Moxa Driver
 

```
#insmod moxa type=x,x,x,x
baseaddr=0x?????,0x?????,0x?????,0x?????
numports=y,y,y,y
| | | |
| | | +- 4th ISA board
| | +----- 3rd ISA board
| +----- 2nd ISA board
+----- 1st ISA board
```

Where x=0 None y=0,8,16,24,32 ports  
 x=2 C218Turbo/ISA  
 x=4 C320Turbo/ISA

- Download the firmware
 

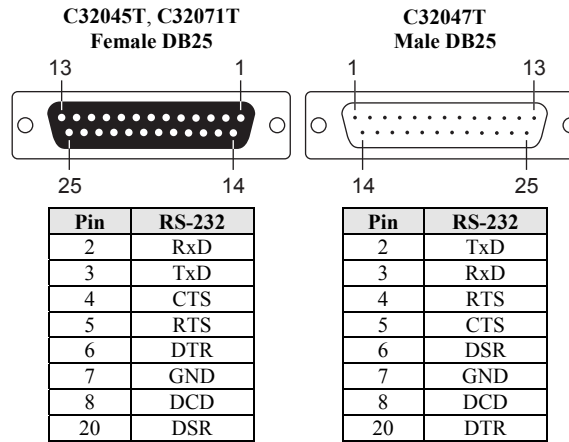
```
# cd /moxa/mxdrv/driver
#./moxaload -y
```
- You can use the Moxa diagnostic utility to verify the driver status:
 

```
#cd /moxa/mxdrv/utility/diag
#./mxdiag
```
- You can use the Moxa terminal utility to test the tty ports:
 

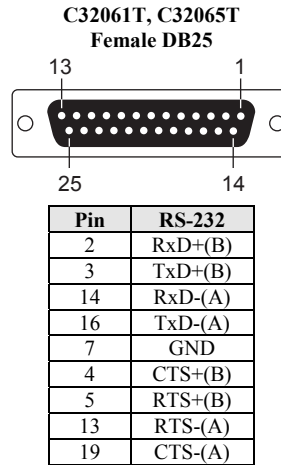
```
#cd /moxa/mxdrv/utility/term
#./mxterm
```

## 5. Pin Assignments and Cable Wiring

### RS-232 Cable Wiring for UART Modules

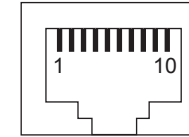


### RS-422 Cable Wiring for UART Modules



### 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

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