

# MOXA®

## CP-134U Smart Serial Board

### Quick Installation Guide

Fifth Edition, June 2008

#### 1. Overview

Moxa's CP-134U Series of Smart Multiport Serial Boards provides Industrial Automation system integrators with long transmission distance, multi-point, PC-based data acquisition solutions. Powered by Moxa's Turbo Serial Engine™ chip that comes with on-chip ADDC™ (Automatic Data Direction Control), sending RS-485 packets is as easy as using RS-232. The on-chip ADDC™ feature delivers precise timing control for enabling and disabling the line drivers used for 2-wire RS-485 communication.

When configured for RS-422/485, each of CP-134U's 4 serial ports can transmit at up to 921.6 Kbps, and each RS-485 port can support up to 31 daisy-chained serial devices in a 1.2 km multi-drop environment. To help prevent equipment damage when using long distance RS-485 communication, choose CP-134U-I, which provides isolation protection against voltage mismatches of up to 2 KV.

CP-134U 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 Checklist

Before installing the CP-134U board, verify that the package contains the following items:

- 1 CP-134U 4-port serial board
- Documentation and Software CD, which contains drivers for Windows 2000/XP/2003, Windows NT, Windows 95/98, DOS, FreeBSD, and Linux.
- CP-134U Quick Installation Guide

Notify your sales representative if any of the above items is missing or damaged.

#### 3. Hardware Installation Procedure

The CP-134U board MUST be plugged into the PC before the driver is installed. Follow these steps to install the board in the PC.

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

**STEP 2:** Plug the CP-134U control board firmly into an open 32-bit or 64-bit PCI slot.

**STEP 3:** Use the on-board jumpers and DIP switches to set the serial ports for RS-232, RS-422, or 2-/4-wire RS-485.\*

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

**STEP 5:** Power on the PC; the BIOS will automatically set the IRQ and I/O address.

\* Use the 30-pin jumper arrays and 2 DIP switches to set ports 1 and 2 to RS-232, RS-422, or RS-485, and use the 2 DIP switches to set ports 3 and 4 to RS-422 or RS-485. Jumper and DIP switch settings are given in the following table.

#### Jumper and DIP Switch Settings

Serial Interface	Jumper Placement	Ports 1 and 2		Ports 3 and 4	
		S1	S2	S1	S2
RS-232	on right	N/A	N/A	---	---
RS-422	on left	N/A	OFF	N/A	OFF
2w RS-485	on left	ON	ON	ON	ON
4w RS-485	on left	OFF	ON	OFF	ON

NOTE: N/A = Not Active. Ports 3 and 4 do not support RS-232.

The following figures illustrate the DIP switch settings for Port 1.

	Port 1 set for RS-422 transmission.
	Port 1 set for 2-wire RS-485 transmission.
	Port 1 set for 4-wire RS-485 transmission.

#### 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 CP-134U User's Manual for detailed instructions on installing the drivers for this board.

##### Windows 2003/XP Driver Installation

1. After powering on your PC, Windows 2003/XP will automatically detect the CP-134U board.
2. Insert the CP-134U 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**, check the **Include this location in the search** checkbox, and then use the browse button to navigate to the CD's **CP-134U v2\Software\Win2K-XP-2003** folder.
5. Click on **Continue Anyway** in response to any warnings that the software hasn't passed Windows Logo testing.
6. After the board has been installed, the installation wizard will guide you through the port installation procedure, starting with port 0.
7. If the board appears to be installed incorrectly, use the **Device Manager** to check the installation of the board and ports. Click on the + sign next to **Hardware**, and then check under **Multi-port serial adapters** and **Ports (COM & LPT)**. If there are no warning marks, such as a question mark or exclamation point in front of the board or port icons, examine the **Event Log** to determine what the problem is.

##### Windows 2000 Driver Installation

1. After powering on your PC, Windows 2000 will automatically detect the CP-134U board.
2. Insert the CP-134U software CD in your CD-ROM drive.
3. Select **Search for a suitable driver for my device (recommended)**.
4. In **Optional search location**, checkmark **specify a location**. Navigate to the **\CP-134U \Software\Win2K-XP-2003** folder on the software CD, and then click on **OK** to continue.
5. Click on **Continue Anyway** in response to any warnings that the software hasn't passed Windows Logo testing.
6. After the board has been installed, the installation wizard will guide you through the port installation procedure, starting with port 0.
7. If the board appears to be installed incorrectly, use the **Device Manager** to check the installation of the board and ports. Click on the + sign next to **Hardware**, and then check under **Multi-port serial adapters** and **Ports (COM & LPT)**. If there are no warning marks, such as a question mark or exclamation point in front of the board or port icons, examine the **Event Log** to determine what the problem is.

##### Windows 95/98 Driver Installation

1. After powering on your PC, Windows 95/98 will automatically detect the CP-134U board.
2. Insert the CP-134U software CD in your CD-ROM drive.
3. There are some differences between the installation procedures for Windows 95 and Windows 98. However, in both cases, be sure to install the driver from the CD's **CP-134U v2\Software\Win9x\Windows.95** folder.
4. After the board has been installed, the installation wizard will open the port configuration window.  
NOTE: If an error message similar to "CP-134U board (BusNo=x, DevNo=x, Port1=COMx) interrupt number is invalid!" pops up, refer to the "Troubleshooting" chapter of the User's Manual for information on how to handle this error.

P/N: 1802001340300

### Windows NT Driver Installation

1. After powering on your PC, log into NT as **Administrator**.
2. Copy the folder **CP-134U v2\Software\WinNT\Windows.nt** to your hard drive.
3. Open the **Control Panel**, click on the **Network** icon, and select the **Adaptors** 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.
6. Select **MOXA Smartio/Industio Family multiport board** in the **Select OEM Option** window, and then click on **OK** to start installing the driver.
7. When the Moxa Smartio/Industio 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.

### 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>/mxser.tgz .
#tar xvfz mxser.tgz
```
2. #cd mxser
 

```
#make clean; make install
```
3. #cd /moxa/mxser/driver
 

```
#./msmknod
```
4. #modprobe mxser
5. Use the Moxa diagnostic utility to verify the driver status:
 

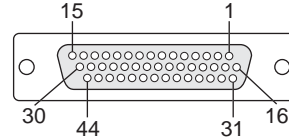
```
#cd /moxa/mxser/utility/diag
#./msdiag
```
6. Use the Moxa terminal utility to test the tty ports:
 

```
#cd /moxa/mxser/utility/term
#./msterm
```

### 5. Pin Assignments

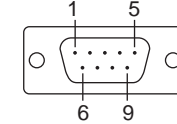
The CP-134U boards have a female DB44 connector on the board. In this section, we give the on-board connector's pin assignments to facilitate making your own connection cable, and the male DB9 and male DB25 device-side pin assignments for the optional CBL-M44M9x4-50 and CBL-M44M25x4-50 cables.

### Female DB44 Connector: Board-side Pin Assignments



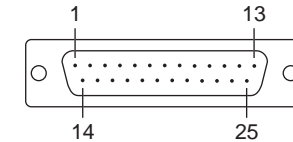
Pin Number	Transmission Signals			
	RS-232	RS-422	4-wire RS-485	2-wire RS-485
1		P4: RxD+(B)	P4: RxD+(B)	P4: Data+(B)
2		P4: TxD+(B)	P4: TxD+(B)	
3		P4: RTS+(B)		
5		P3: RxD+(B)	P3: RxD+(B)	P3: Data+(B)
6		P3: TxD+(B)	P3: TxD+(B)	
7		P3: RTS+(B)		
9	P2: TxD	P2: RxD+(B)	P2: RxD+(B)	P2: Data+(B)
10	P2: RxD	P2: TxD+(B)	P2: TxD+(B)	
11	P2: RTS	P2: RTS+(B)		
13	P1: TxD	P1: RxD+(B)	P1: RxD+(B)	P1: Data+(B)
14	P1: RxD	P1: TxD+(B)	P1: TxD+(B)	
15	P1: RTS	P1: RTS+(B)		
16		P4: CTS+(B)		
17		P4: RxD-(A)	P4: RxD-(A)	P4: Data-(A)
18		P4: RTS-(A)		
20		P3: CTS+(B)		
21		P3: RxD-(A)	P3: RxD-(A)	P4: Data-(A)
22		P3: RTS-(A)		
24	P2: CTS	P2: CTS+(B)		
25	P2: DTR	P2: RxD-(A)	P2: RxD-(A)	P4: Data-(A)
26	P2: DSR	P2: RTS-(A)		
28	P1: CTS	P1: CTS+(B)		
29	P1: DTR	P1: RxD-(A)	P1: RxD-(A)	P4: Data-(A)
30	P1: DSR	P1: RTS-(A)		
31		P4: TxD-(A)	P4: TxD-(A)	
32		P4: CTS-(A)		
33		P4: GND	P4: GND	
35		P3: TxD-(A)	P3: TxD-(A)	
36		P3: CTS-(A)		
37		P3: GND	P3: GND	
39	P2: DCD	P2: TxD-(A)	P2: TxD-(A)	
40		P2: CTS-(A)		
41	P2: GND	P2: GND	P2: GND	
42	P1: DCD	P1: TxD-(A)	P1: TxD-(A)	
43		P1: CTS-(A)		
44	P1: GND	P1: GND	P1: GND	

### Male DB9 Connector: Device-side Pin Assignments



Pin Number	Transmission Signals			
	RS-232	RS-422	4-wire RS-485	2-wire RS-485
1	DCD	TxD-(A)	TxD-(A)	---
2	RxD	TxD+(B)	TxD+(B)	---
3	TxD	RxD+(B)	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	RxD-(A)	Data-(A)
5	GND	GND	GND	GND
6	DSR	RTS-(A)	---	---
7	RTS	RTS+(B)	---	---
8	CTS	CTS+(B)	---	---
9	---	CTS-(A)	---	---

### Male DB25 Connector: Device-side Pin Assignments



Pin Number	Transmission Signals			
	RS-232	RS-422	4-wire RS-485	2-wire RS-485
2	TxD	RxD+(B)	RxD+(B)	Data+(B)
3	RxD	TxD+(B)	TxD+(B)	---
4	RTS	RTS+(B)	---	---
5	CTS	CTS+(B)	---	---
6	DSR	RTS-(A)	---	---
7	GND	GND	GND	GND
8	DCD	TxD-(A)	TxD-(A)	---
20	DTR	RxD-(A)	RxD-(A)	Data-(A)
22	---	CTS-(A)	---	---

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