

MOXA

CP-132UL V2 Smart Serial Board

Quick Installation Guide

Second Edition, December 2004

1. Overview

Moxa's CP-132UL V2 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.

Each of CP-132UL V2's 2 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-132UL-I V2, which provides isolation protection against voltage mismatches of up to 2 KV.

2. Package Checklist

Before installing the CP-132UL V2 board, verify that the package contains the following items:

- 1 CP-132UL V2 2-port serial board
- Documentation and Software CD, which contains drivers for Windows 2000/XP/2003, Windows NT, Windows 95/98, DOS, FreeBSD, SCO, and Linux.
- CP-132UL V2 Quick Installation Guide

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

3. Hardware Installation Procedure

The CP-132UL V2 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-132UL V2 control board firmly into an open PCI or PCI-X slot.

STEP 3: Use the on-board DIP switches to set the serial ports for 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 2 DIP switches to set ports 1 and 2 to RS-422, 4-wire RS-485, or 2-wire RS-485. DIP switch settings are given in the following table.

Ports 1 and 2: DIP Switch Settings

Serial Interface	DIP Switch Settings		Illustration (Pin 1)
	S1	S2	
RS-422	N/A	OFF	
RS-485 (2-wire)	ON	ON	
RS-485 (4-wire)	OFF	ON	

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-132UL 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-132UL V2 board.
2. Insert the CP-132UL V2 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-132UL 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-132UL V2 board.
2. Insert the CP-132UL V2 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-132UL V2\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-132UL V2 board.
2. Insert the CP-132UL V2 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-132UL 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-132UL 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.

Windows NT Driver Installation

1. After powering on your PC, log into NT as **Administrator**.
2. Copy the folder CP-132UL v2\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.
6. Select **MOXA Smartio/Industio Family multiport board** in the **Select OEM Option** window, and then click on **OK** to start installing the driver.
5. 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:

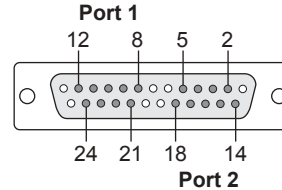

```
#cd /moxa/mxser/utility/diag
#./msdiag
```
6. Use the Moxa terminal utility to test the tty ports:


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

5. Pin Assignments

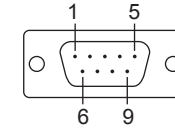
The CP-132UL V2 board has a female DB25 connector on the board. In this section, we give the on-board connector's pin assignments to facilitate making your own connection cable, and the male DB9 device-side pin assignments for the optional CBL-M25M9x2-50 cable.

Female DB25: Board-side Pin Assignments



Pin Number	Transmission Signals		
	RS-422	4-wire RS-485	2-wire RS-485
2	P2: TxD-(A)	P2: TxD-(A)	---
3	P2: SGND	---	---
4	P2: CTS+(B)	---	---
5	P2: TxD+(B)	P2: TxD+(B)	---
8	P1: CTS-(A)	---	---
9	P1: RxD-(A)	P1: RxD-(A)	P1: Data-(A)
10	P1: RTS-(A)	---	---
11	P1: RTS+(B)	---	---
12	P1: RxD+(B)	P1: RxD+(B)	P1: Data+(B)
14	P2: CTS-(A)	---	---
15	P2: RxD-(A)	P2: RxD-(A)	P2: Data-(A)
16	P2: RTS-(A)	---	---
17	P2: RTS+(B)	---	---
18	P2: RxD+(B)	P2: RxD+(B)	P2: Data+(B)
21	P1: TxD-(A)	P1: TxD-(A)	---
22	P1: SGND	---	---
23	P1: CTS+(B)	---	---
24	P1: TxD+(B)	P1: TxD+(B)	---

Male DB9 Connector: Device-side Pin Assignments



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

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