



CP-102UF Serial-over-Fiber Board Quick Installation Guide

First Edition, March 2008

1. Overview

The CP-102UF Universal PCI boards are designed for industrial automation applications that require a long distance, multi-point, PC-based data acquisition solution. The boards are compatible with all popular operating systems, and each of the 2 serial ports support data rates up to 921.6 Kbps. In addition, the CP-102UF boards work with both 3.3V and 5V PCI buses, allowing them to be installed in virtually any available PC server. The single-mode model (CP-102UF-S) can transmit up to 40 km, and the multi-mode model (CP-102UF-M) can transmit up to 5 km. For many industrial applications, an even bigger benefit is that optical fiber isolates the data from dangerous increases in ground potential, ground loops, and electrical EMI/RFI electromagnetic radiation.

2. Package Checklist

Before installing the CP-102UF board, verify that the package contains the following items:

- 1 CP-102UF 2-port serial over fiber board
- Standard bracket
- Document and Software CD, which contains drivers for Windows 2000/XP/2003/Vista, DOS, and Linux.
- CP-102UF Quick Installation Guide
- Warranty Statement

NOTE: Please notify your sales representative if any of the above items are missing or damaged.

3. Hardware Installation Procedure

The CP-102UF 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: Use the DIP switch on the board to select “Ring” or “Point-to-Point” transmission modes.

STEP 3: Plug the CP-102UF board firmly into an open PCI or PCI-X slot.

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

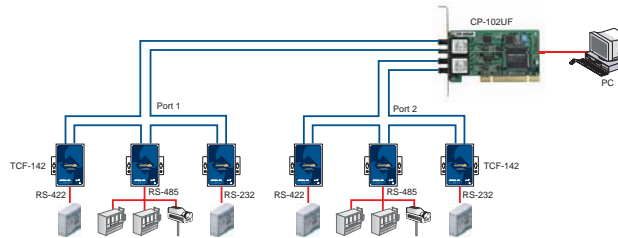
STEP 5: Connect the ST connector to the CP-102UF.

STEP 6: Power on the PC; the BIOS will automatically set the IRQ and I/O address.

P/N: 1802001023220

ATTENTION

With the CP-102UF board installed, your PC can be included as one node of a fiber ring formed using Moxa’s own TCF-142 serial-to-fiber converter. Since each TCF-142 has two fiber ports and one serial port, PCs that are part of the ring will be able to communicate with serial devices connected to the ring. Note that the Tx port of the CP-102UF connects to a neighboring converter’s Rx port to form the ring. Once the ring has been set up, simply use the DIP switch to configure the CP-102UF to “Ring mode.” When one node transmits a signal, the signal travels around the ring until it returns back to the transmitting unit, which then blocks the signals.



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-102UF User’s Manual for detailed instructions on installing the drivers for this board.

Windows Vista Driver Installation

1. After the board is physically installed and the PC boots up, Windows will automatically detect the new board. The Found New Hardware Wizard window will open automatically. Select **Locate and install driver software (recommended)**.
2. Select **I don’t have the disc. Show me other options**.
3. Select **Browse my computer for driver software (advanced)**.
4. Click **Browse** and select the appropriate directory on the Document & Software CD for the driver. Drivers for all operating systems are located under the product folder in the \Software directory (e.g., under \CP-102UF\Software). For 32-bit (x86) platforms, select the \Windows Vista\x86 folder. For 64-bit (x64) platforms, select the \Windows Vista\x64 folder. After selecting the folder, click **Next** to continue.
5. If you receive a warning message stating that Windows can’t verify the publisher of the software, select **Install this driver software anyway**.
6. After the drivers have been installed, click **Close** to exit the wizard.

Windows 2003/XP Driver Installation

1. After powering on your PC, Windows 2003/XP will automatically detect the CP-102UF board.
2. Insert the CP-102UF 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 **CP-102UF\Software\Windows XP_2003** folder on the CD. For 32-bit (x86) platforms, select the \Windows XP_2003\x86 folder. For 64-bit (x64) platforms, select the \Windows XP_2003\x64 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. Use **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 warnings, 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-102UF board.
2. Insert the CP-102UF software CD into 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-102UF\Software\Windows 2K folder on the software CD.
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. NOTE: Be sure to install the software from the CD’s \CP-102UF\Software\Windows 2K folder.
7. 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 warnings, 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.

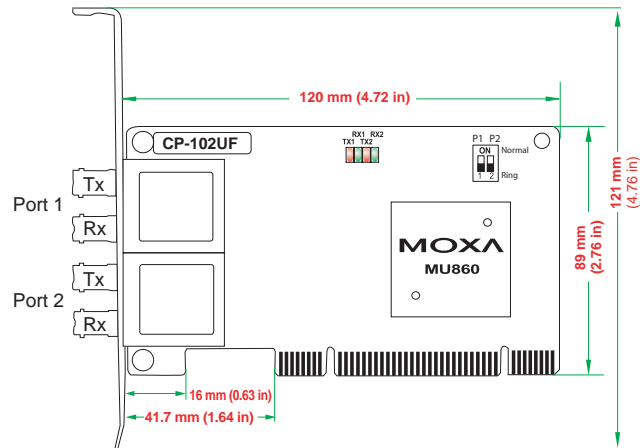
Linux Driver Installation

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
```
- #cd mxser  
#make clean; make install
  - #cd /moxa/mxser/driver  
#./msmknod
  - #modprobe mxser
  - Use the Moxa diagnostic utility to verify the driver status:  
#cd /moxa/mxser/utility/diag  
#./msdiag
  - Use the Moxa terminal utility to test the tty ports:  
#cd /moxa/mxser/utility/term  
#./msterm

## 5. Dimensions



## 6. Specifications

|                            |                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------|
| CP-102UF-M:                | 2-port Universal PCI serial over fiber board with multi-mode fiber for 5 km transmission   |
| CP-102UF-S                 | 2-port Universal PCI serial over fiber board with single-mode fiber for 40 km transmission |
| Fiber Connectors           | ST type                                                                                    |
| <b>Cable Requirements:</b> |                                                                                            |
| CP-102UF-M:                | 50/125, 62.5/125, or 100/140 $\mu\text{m}$                                                 |
| CP-102UF-S:                | 8.3/125, 8.75/125, 9/125 or 10/125 $\mu\text{m}$                                           |
| <b>Wavelength:</b>         |                                                                                            |
| CP-102UF-M:                | 820 nm                                                                                     |

|                              |                           |
|------------------------------|---------------------------|
| CP-102UF-S:                  | 1310 nm                   |
| Tx Output:                   | -5 dBm                    |
| <b>Rx Sensitivity:</b>       |                           |
| CP-102UF-M:                  | -20 dBm                   |
| CP-102UF-S:                  | -24 dBm                   |
| Point-to-Point Transmission: | Half or full duplex       |
| Baudrate:                    | 50 bps to 921.6 Kbps      |
| Flow Control:                | XON/XOFF                  |
| I/O Address:                 | Assigned by BIOS          |
| IRQ:                         | Assigned by BIOS          |
| Operating Temperature:       | 0 to 55°C (32 to 131°F)   |
| Storage Temperature:         | -20 to 85°C (-4 to 185°F) |
| FCC:                         | Part 15 Class B           |
| EMI:                         | EN55022 Class B           |
| EMS:                         | EN55024                   |
|                              | EN 61000-3-2              |
|                              | EN 61000-3-3              |
|                              | IEC 61000-4-2(ESD)        |
|                              | IEC 61000-4-3(RS)         |
|                              | IEC 61000-4-4(EFT)        |
|                              | IEC 61000-4-5(Surge)      |
|                              | IEC 61000-4-6(CS)         |
|                              | IEC 61000-4-8             |
|                              | IEC 61000-4-11(DIPS)      |

### Power Consumption:

|             |              |
|-------------|--------------|
| CP-102UF-M: | 429 mA @ +5V |
| CP-102UF-S: | 424 mA @ +5V |

### Warranty

5 years

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