

# UPort 1100 Series User's Manual

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Fifth Edition, May 2009

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# UPort 1100 Series User's Manual

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The UPort 1100 Series of USB-to-serial converters provide an easy way to add COM ports to your computer. The UPort 1110 provides one RS-232 port, the UPort 1130 and UPort 1130I each provide one RS-422/RS-485 port, and the UPort 1150 and UPort 1150I each provide one RS-232/422/485 port. As a plug and play USB device, the converters are perfect for mobile, instrumentation, and point-of sale applications.

The UPort 1100 series include the following models:

**UPort 1110:** 1-port RS-232 USB-to-serial converter.

**UPort 1130:** 1-port RS-422/485 USB-to-serial converter.

**UPort 1130I:** 1-port RS-422/485 USB-to-serial converter with isolation protection.

**UPort 1150:** 1-port RS-232/422/485 USB-to-serial converter.

**UPort 1150I:** 1-port RS-232/422/485 USB-to-serial converter with isolation protection.

The following topics are covered in this chapter:

- ❑ **Overview**
  - ARDC (Automatic Recovery Data Communication)
- ❑ **Package Checklist**
- ❑ **Product Features**
- ❑ **Product Specifications**
- ❑ **LED Indicators**
  - Adjustable Pull High/low, Terminator Resistors for the RS-485 Port

## Overview

The UPort 1100 series is a part of Moxa's UPort line of USB-to-serial converters. The UPort line provides a range of easy-to-use solutions for adding COM ports through a PC's USB port. Simply install the drivers, connect the UPort to your computer, plug in your serial devices, and you're ready to go. Programming is not required, and you do not need to worry about IRQs, configuring a board, power requirements, or connection schemes.

The UPort 1100 series provides single COM port expansion. The UPort 1110 adds one RS-232 port to your computer, which is the same type of COM port that is built into most PC motherboards. The UPort 1130/1130I adds one port that is configurable for RS-422, 2-wire RS-485, and 4-wire RS-485 modes. The UPort 1150/1150I adds one RS-232, RS-422, 2 wire RS-485, or 4 wire RS-485 port to your computer. All of these models can operate at speeds of up to 12 Mbps, which is much faster than the current maximum serial transfer rate. The converter is bus-powered, so no external power supply is required.

## ARDC (Automatic Recovery Data Communication)

ARDC (Automatic Recovery Data Communication) makes it easier to recover data transmission, even if the cable is accidentally unplugged. This means that you do not need to worry about reconfiguring complex settings to ensure smooth data transmission. If the USB cable is accidentally unplugged, simply plug it back into the same port and the converter will automatically reconnect with the host and continue to transfer data. This feature not only eliminates the need for reconfiguration, but also reduces the probability of data loss.

## Package Checklist

The following items are included in your UPort package:

- UPort 1100 Series USB-to-serial converter
- UPort Documentation and Software CD
- UPort 1100 Series Quick Installation Guide
- 5-year Warranty Statement

The UPort 1130/1130I/1150/1150I also come with the following item:

- Mini DB9F-to-Terminal-Block Converter

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

## Product Features

The UPort converter has the following features:

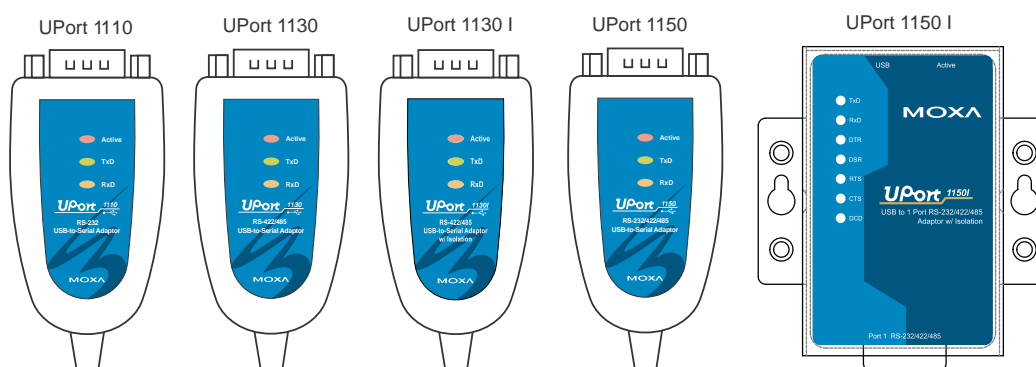
- Full-Speed USB operation at up to 12 Mbps
- Additional I/O or IRQ not required
- Serial transmission speed up to 921.6 Kbps
- 64-byte FIFO and built-in hardware and software flow control
- Built-in 15 KV ESD protection
- Support for RS-422, 2-wire RS-485, and 4-wire RS-485 (UPort 1130/1130I/1150/1150I)
- Terminal block adaptor (UPort 1130/ 1130I/1150/1150I)
- 2 KV Optical Isolation Protection (UPort 1130I/1150I only)

## Product Specifications

| USB                             |  |
|---------------------------------|--|
| Version                         | USB 1.1 (also compatible with USB 1.0 and 2.0)   |
| Connector                       | USB type B   |
| Speed                           | 12 Mbps  |
| Serial Interface                |  |
| No. of Ports                    | 1  |
| RS-232                          | TxD, Rx D, RTS, CTS, DTR, DSR, DCD, GND  |
| RS-422                          | TxD+(B), TxD-(A), Rx D+(B), Rx D-(A), GND  |
| RS-485                          | 4-wire: TxD+(B), TxD-(A), Rx D+(B), Rx D-(A), GND 2-wire: Data+(B), Data-(A), GND  |
| Connector                       | Male DB9   |
| FIFO                            | 64 bytes   |
| Serial line protection          | 15 KV ESD on chip for all signals  |
| Serial Communication Parameters |  |
| Parity                          | None, Even, Odd, Space, Mark   |
| Data bits                       | 5, 6, 7, 8   |
| Stop bits                       | 1, 1.5, 2  |
| Flow control                    | UPort 1130/1130I: XON/XOFF<br>UPort 1110/1150/1150I: RTS/CTS, XON/XOFF   |
| Speed                           | 50 bps to 921.6 Kbps   |
| Power Requirements              |  |
| Power Consumption               | UPort 1110: 30mA@5VDC<br>UPort 1130: 60mA@5VDC<br>UPort 1130I: 65mA@5VDC<br>UPort 1150: 77mA@5VDC<br>UPort 1150I: 260mA@5VDC |
| Mechanical                      |  |
| Dimensions                      | UPort 1110/1130/1130I/1150: 37.5 x 20.5 x 60 mm (L x W x H)<br>UPort 1150I: 52 x 80 x 22 mm (L x W x H)                      |
| Material                        | UPort 1110/1130/1130I/1150: ABS + PC   |

|                             |  |
|-----------------------------|--|
|                             | UPort 1150I: Metal   |
| Gross Weight                | UPort 1110/1130/1130I/1150: 60 g (0.13 lb)<br>UPort 1150I: 80 g (0.17 lb)  |
| <b>Environmental</b>        |  |
| Operating Temperature       | 0°C to 55°C (32°F to 131°F)  |
| Storage Temperature         | -20°C to 70°C (-4°F to 185°F)  |
| Operating Humidity          | 5% RH to 95% RH  |
| <b>Regulatory Approvals</b> |  |
|                             | EN55022 Class B, EN55024, EN61000-3-2, EN61000-3-3, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-8, IEC 61000-4-11, FCC Part 15 Class B |
| <b>Warranty</b>             |  |
|                             | 5 years  |

## LED Indicators



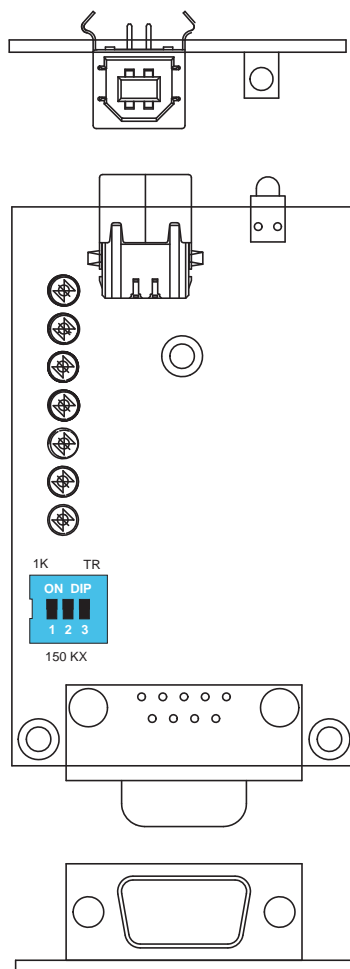
### UPort 1110/1130/1130I/1150 LED description:

| Name   | Color  | Description  |
|--------|--------|--|
| Active | Red    | This LED indicates normal operation.<br>Steady: The UPort is operational.<br>Off: Fault condition exists. There may be a problem with the converter, the driver installation, or PC configuration. |
| TxD    | Green  | Blinking: Serial device is transmitting data.  |
| RxD    | Yellow | Blinking: Serial device is receiving data.   |

### UPort 1150I LED description:

| Name                    | Color  | Description  |
|-------------------------|--------|--|
| Active                  | Red    | Steady: The UPort is operational.<br>Off: Fault condition exists. There may be a problem with the converter, the driver installation, or PC configuration. |
| TxD                     | Green  | Blinking: Serial device is transmitting data.  |
| RxD                     | Yellow | Blinking: Serial device is receiving data.   |
| DTR, DSR, RTS, CTS, DCD | Red    | Steady: Require these signals to operate.<br>Off: Disable these signals to operate.  |





## Adjustable Pull High/low, Terminator Resistors for the RS-485 Port

In some critical environments, you may need to add termination resistors to prevent the reflection of serial signals. When using termination resistors, it is important to set the pull high/low resistors correctly so that the electrical signal is not corrupted. The UPort uses DIP switches to set the pull high/low resistor values for each serial port.

**To set the pull high/low resistors to 150 K $\Omega$ ,** make sure both of the assigned DIP switches are in the OFF position.

**To set the pull high/low resistors to 1 K $\Omega$ ,** make sure both of the assigned DIP switches are in the ON position. This is the default setting.

| SW  | 1              | 2              | 3            |
|-----|----------------|----------------|--------------|
|     | Pull High      | Pull Low       | Terminator   |
| ON  | 1K $\Omega$    | 1K $\Omega$    | 120 $\Omega$ |
| OFF | 150 K $\Omega$ | 150 K $\Omega$ | Disable      |

## Installation and Configuration

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Installation of the converter is a simple process. First install the driver, then plug the converter into a USB port. When the converter is plugged in, Windows will load the correct drivers for the converter and the new COM port. In this chapter, basic installation and configuration procedures are explained. Although the installation screens will be for Windows 2000, the procedures are essentially the same for Windows 98 and later versions.

The following topics are covered in this chapter:

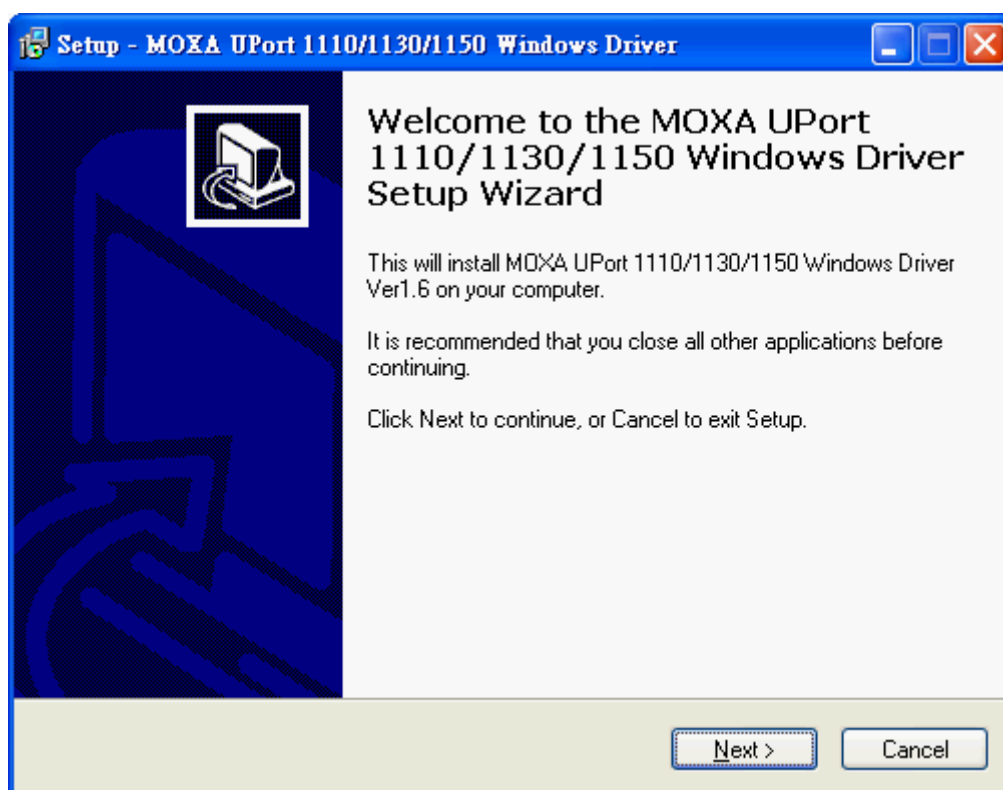
- ❑ **Initial Driver Installation**
  - Hardware Installation
  - Windows 98/ME and Windows 2000
  - Windows XP, Windows 2003/Vista, and Windows 2008 (32-bit and 64-bit)
  - Configuring the COM Port
  - Configuring the Converter
  - Removing the Converter
  - Uninstalling the Driver
- ❑ **Advanced UPort 1100 Driver Functions**
- ❑ **Enable Fixed-base COM Mode**
- ❑ **Install Linux Driver**
  - Linux Kernel 2.4.20 and above
  - Linux Kernel 2.6.x
- ❑ **Installing the Windows CE Driver**
  - Installation with an installation package for Win CE 6.0
  - Installation with an installation package for Win CE 5.0
  - Removing the Moxa WinCE 5.0 / CE 6.0 Driver
  - Installation with a CAB File
  - Removing the Moxa WinCE 5.0 / CE 6.0 Driver

## Initial Driver Installation

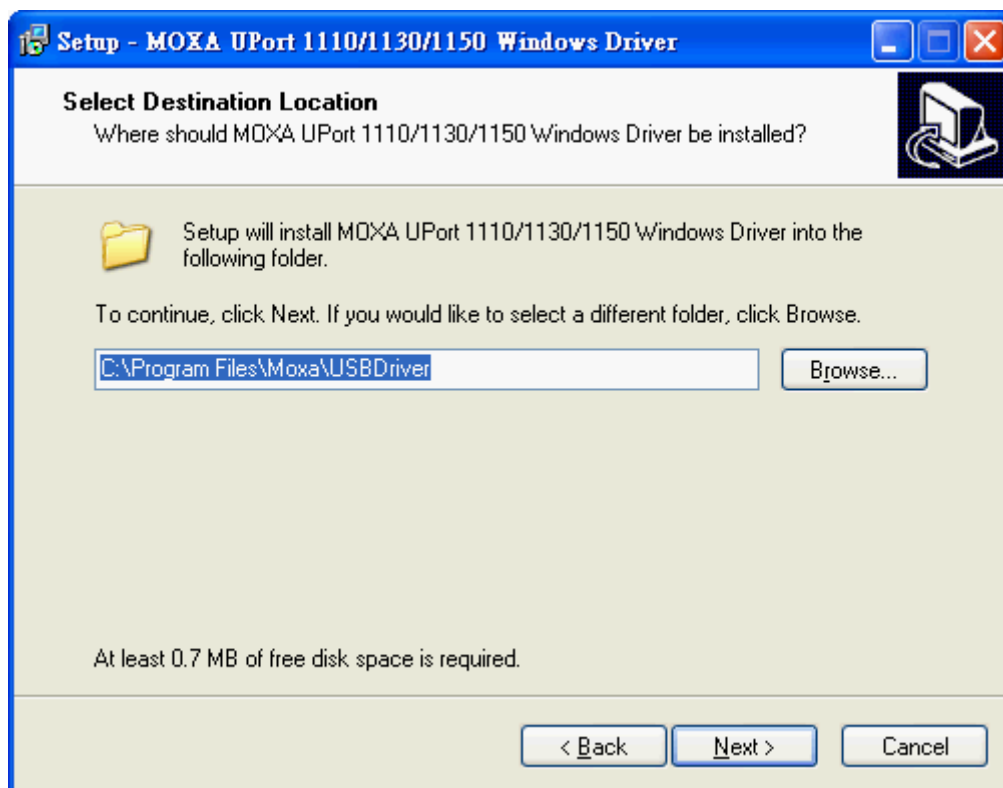
The Documentation and Software CD contain the drivers for the converter. You may also download the drivers at [www.moxa.com](http://www.moxa.com). The installation procedure is the same for all Windows operating systems.

Use Windows Explorer to locate the driver installation file, which will be **Setup** or **Install**. On the Documentation and Software CD, this file will be located in the **UPort 1100/Software** folder, filed by operating system. Double-click the **Setup** or **Install** file.

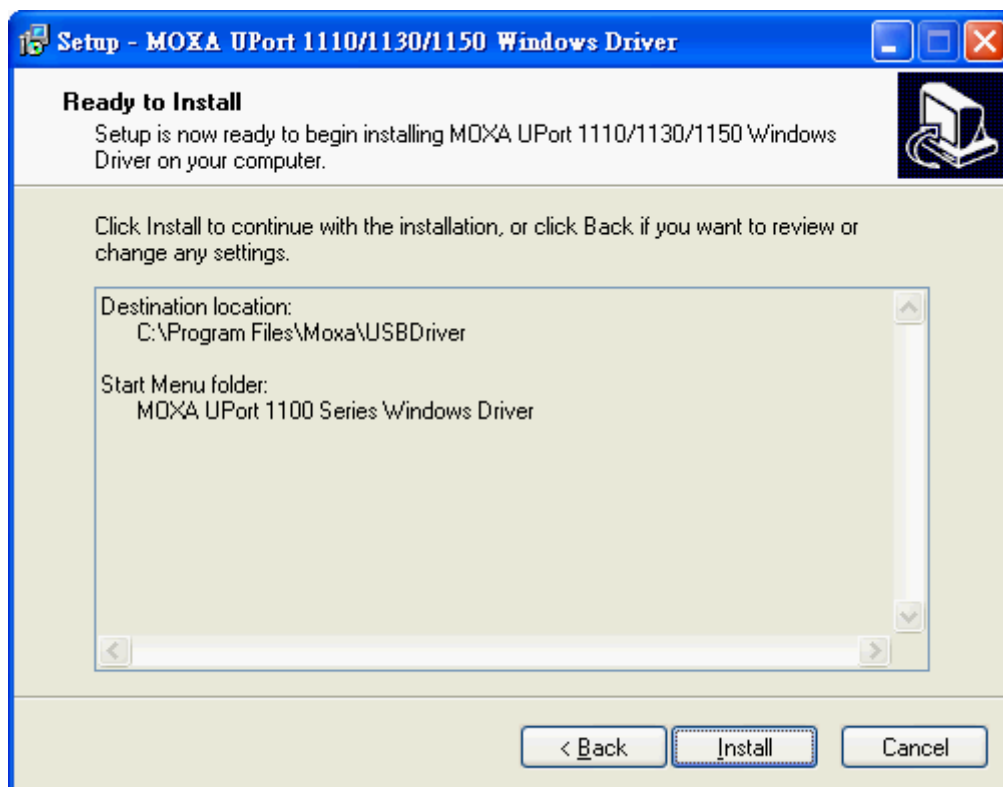
1. The Setup Wizard will open. Click **Next** to begin installing the driver.



2. Click **Next** to install the driver in the indicated folder, or use the drop-down folder list to locate a different folder.



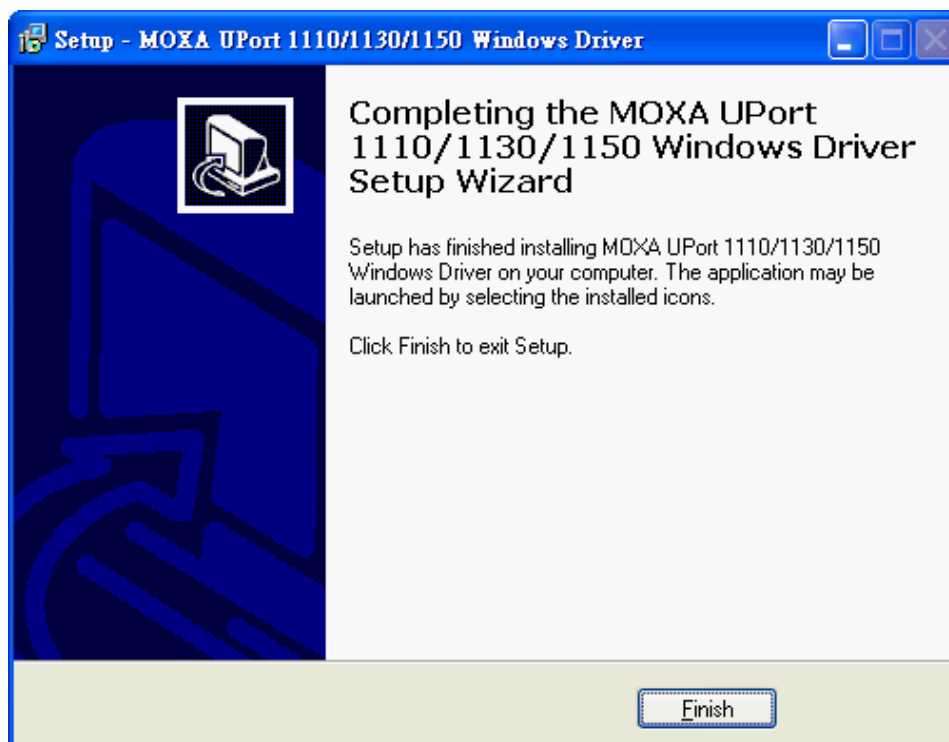
3. Click **Install** to proceed with the installation.



4. A window will pop up cautioning you that this software has not passed Windows logo testing. This is a standard warning, and Moxa has thoroughly tested the driver for safe Windows operation. Please click **STOP Installation** to proceed.



5. Click **Finish** to complete the installation of the driver.



## Hardware Installation

After installing the driver, plug the converter into any upstream USB port, such as a USB port on your computer. Windows will automatically detect the converter and begin installing the driver. When the Windows finishes installing the driver for the converter, it will then detect a new COM port, and will then install another driver for the new COM port.



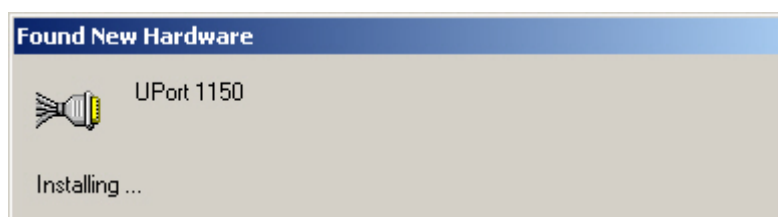
### ATTENTION

For best results, we recommend that you install the driver before plugging the converter into the USB port. Please refer to the previous section on Initial Driver Installation for instructions.

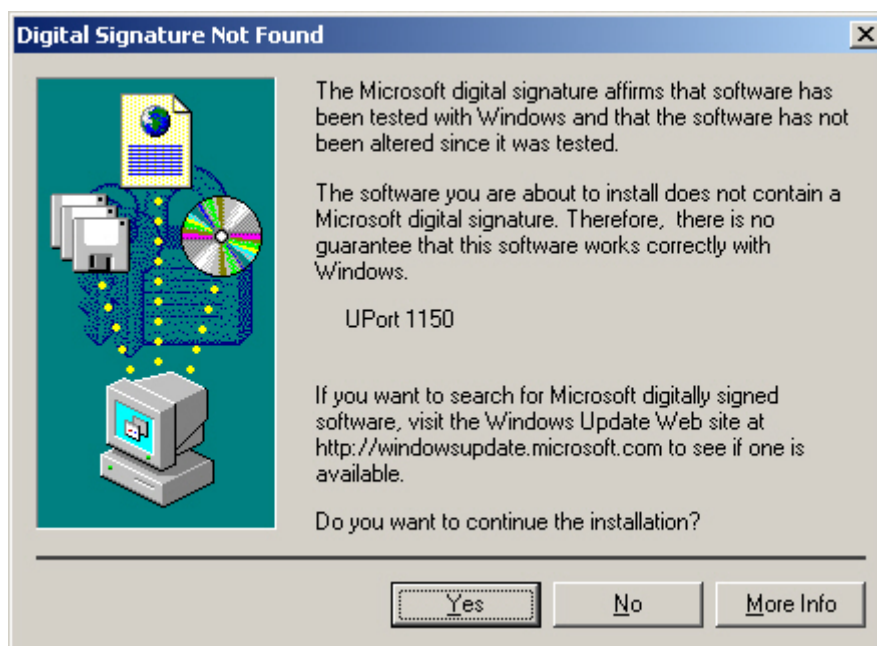
## Windows 98/ME and Windows 2000

The following instructions are for Windows 98 and Windows 2000 systems:

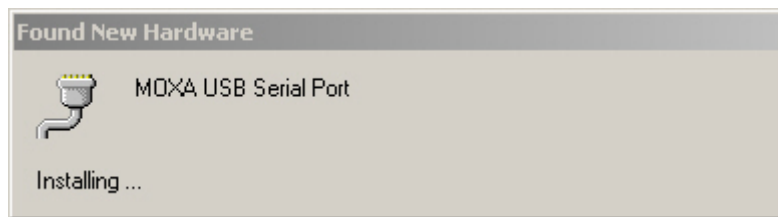
1. After plugging the converter into a USB port, the **Found New Hardware** window should open automatically. The USB icon indicates that the USB port is being installed. No action is required.



2. Windows 98 users may skip to the next step. On Windows 2000 systems, a window will pop up cautioning you that this software has not passed Windows logo testing. This is a standard warning, and Moxa has thoroughly tested the driver for safe Windows operation. Please click **Yes** to proceed.



- Windows will automatically detect and install the new serial port. No further action is required



## Windows XP, Windows 2003/Vista, and Windows 2008 (32-bit and 64-bit)

The following instructions are for Windows XP, Windows 2003/Vista, and Windows 2008 systems.

- After plugging the converter into a USB port, Windows will automatically detect the new device. The **Found New Hardware** balloon will appear in the bottom right corner of the Windows desktop. No action is required yet.

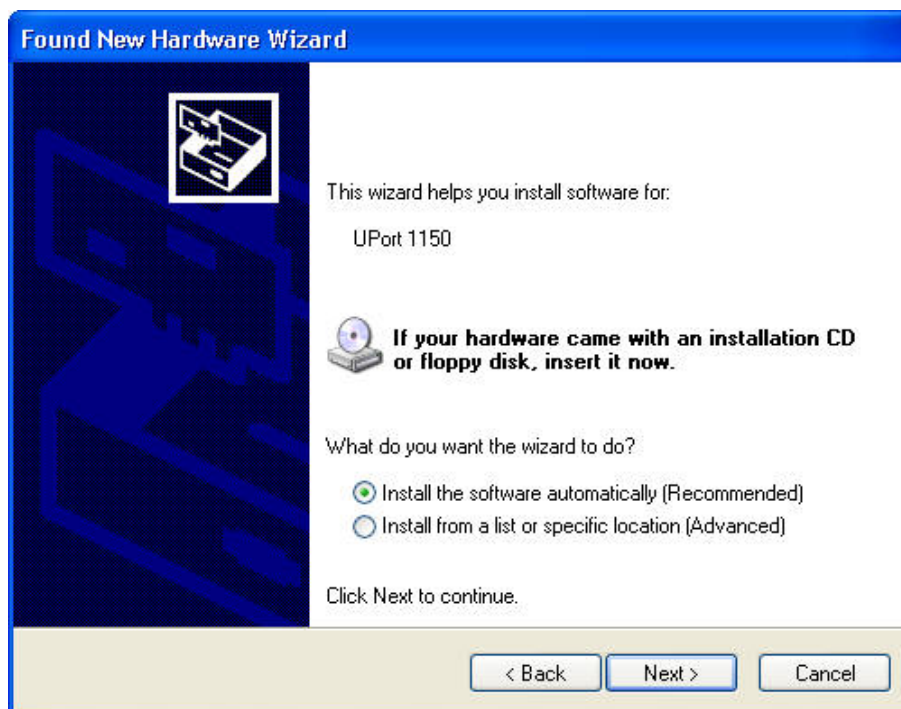


- After a moment, the Found New Hardware Wizard will open. If you see the following screen, select **No, not this time**, then click **Next**.

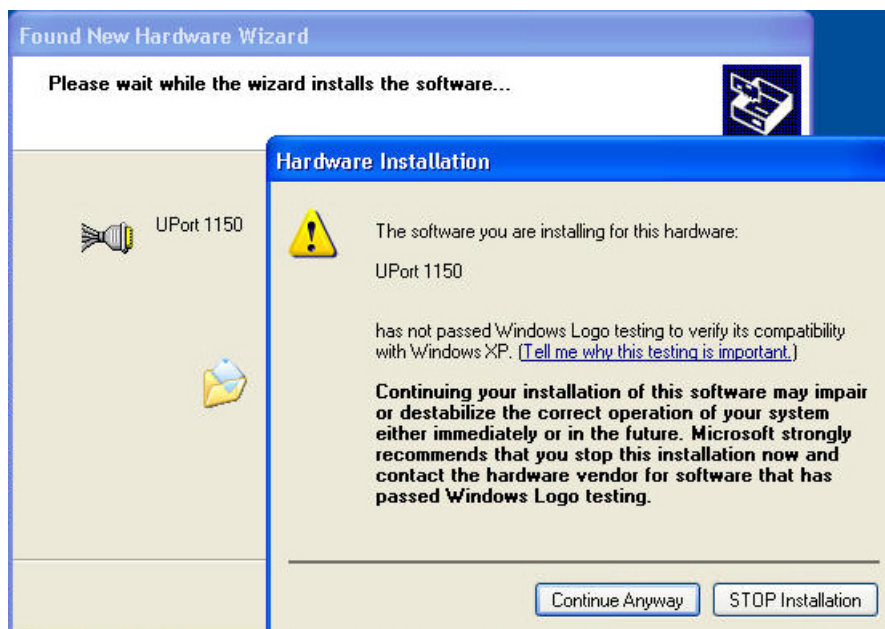




- On the next window that appears, select **Install the software automatically (Recommended)**, then click **Next**.



- The installation wizard will search for the correct drivers. After a moment, a window will pop up cautioning you that this software has not passed Windows logo testing. This is a standard warning, and Moxa has thoroughly tested the driver for safe Windows operation. Please click **Continue Anyway** to proceed.



5. Windows will spend a few moments installing the UPort driver.
6. The next window indicates that Windows has completed the installation. Click **Finish** to continue with installation procedure.



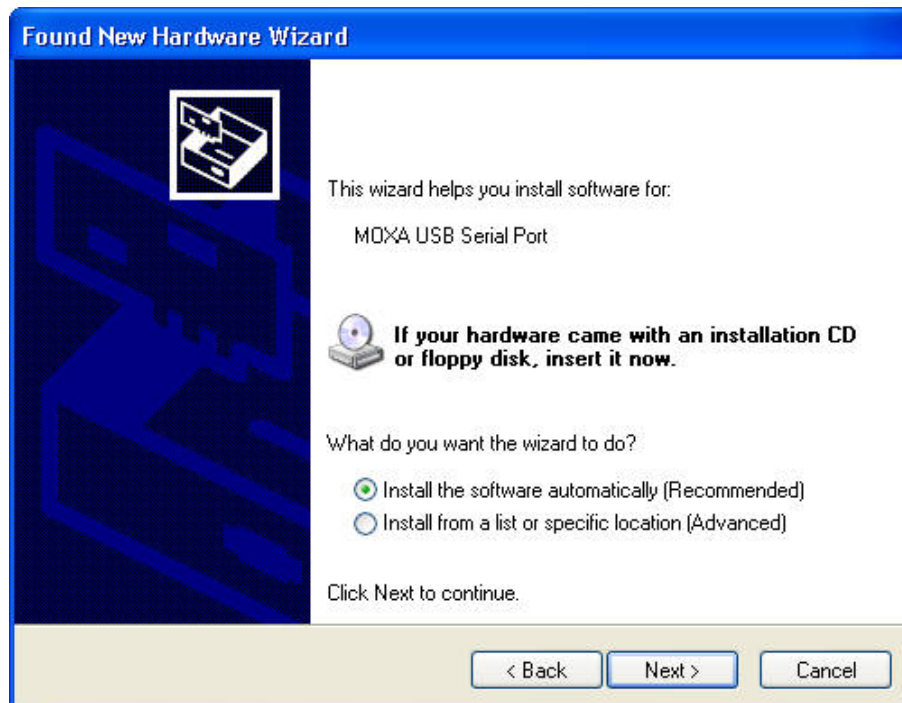
7. After Windows has completed installing the converter, it will automatically detect the new COM port. The **Found New Hardware** balloon will appear in the bottom right corner of the Windows desktop.



8. The Found New Hardware Wizard will open. If you see the following screen, select **No, not this time**, then click **Next**.



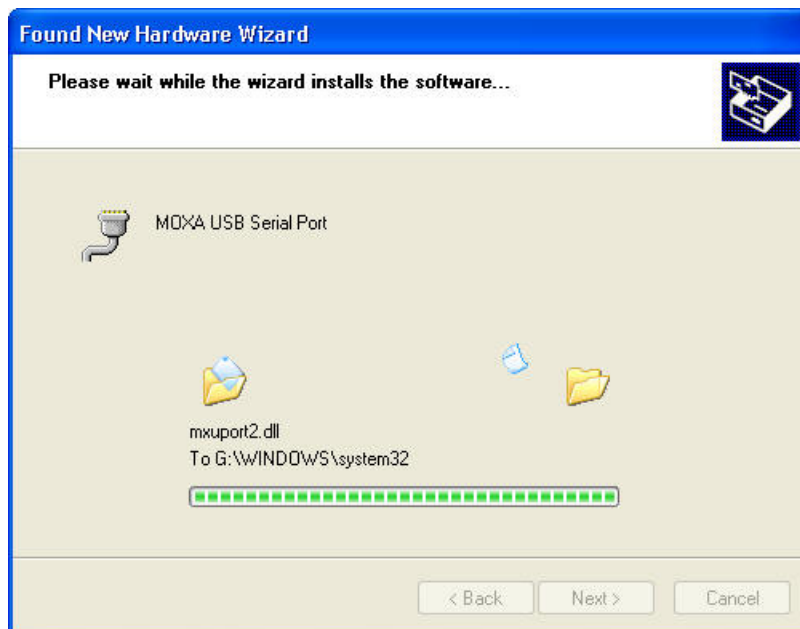
9. After a moment, the Found New Hardware Wizard will open. Select **Install the software automatically (Recommended)**, then click **Next**.



10. The installation wizard will search for the correct drivers. After a moment, a window will pop up cautioning you that this software has not passed Windows logo testing. This is a standard warning, and Moxa has thoroughly tested the driver for safe Windows operation. Please click **Continue Anyway** to proceed.



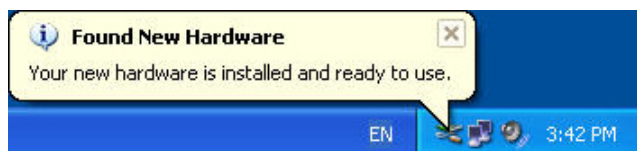
11. Windows will spend a few moments installing the driver.



12. The next window indicates that Windows has completed the installation. Click **Finish** to proceed with installation procedure.



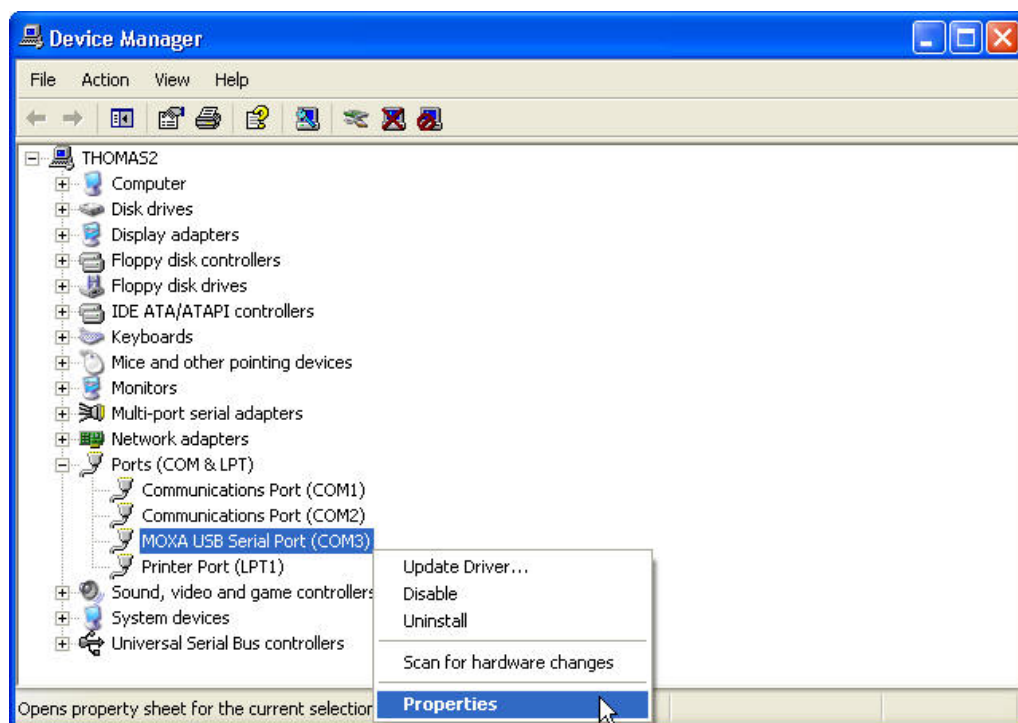
13. The **Found New Hardware** balloon will reappear, indicating that the installation was successful.





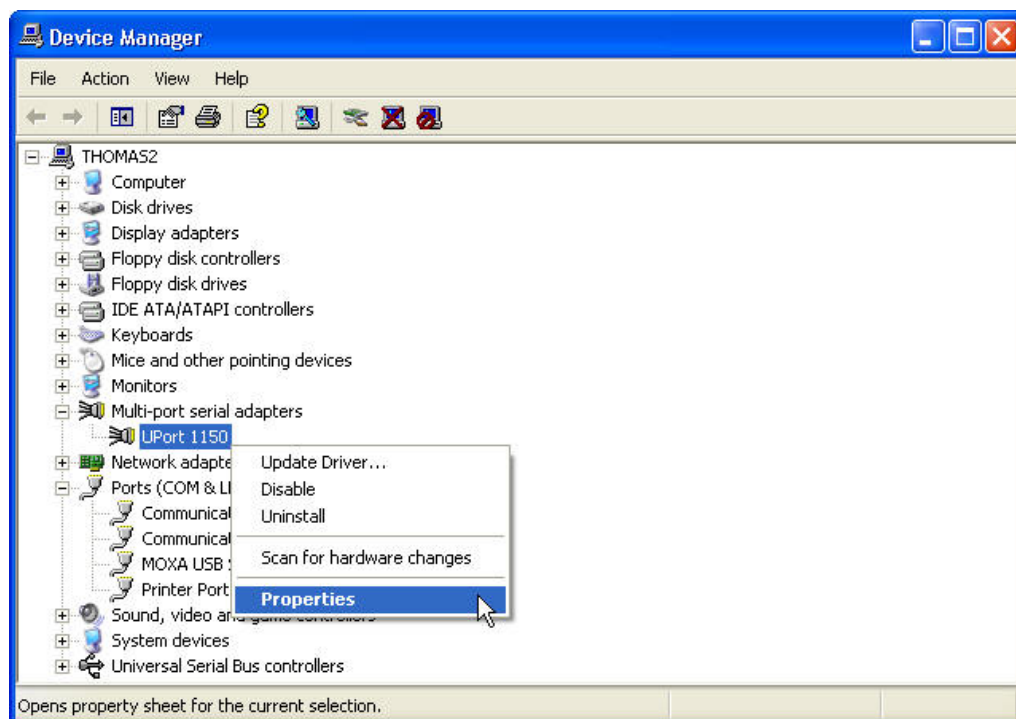
## Configuring the COM Port

After the driver and hardware have been successfully installed, the new COM port will have a COM number and can be accessed and controlled just like your PC's built-in COM ports. If you need to change the baud rate, parity, or other COM port settings, you may use your serial communication application to make those changes. You may also go to Device Manager and right-click the **MOXA USB Serial Port**, which will be listed under **Ports** along with your PC's built-in COM ports. In the context menu that pops up, you may select **Properties** in order to modify the COM port settings.

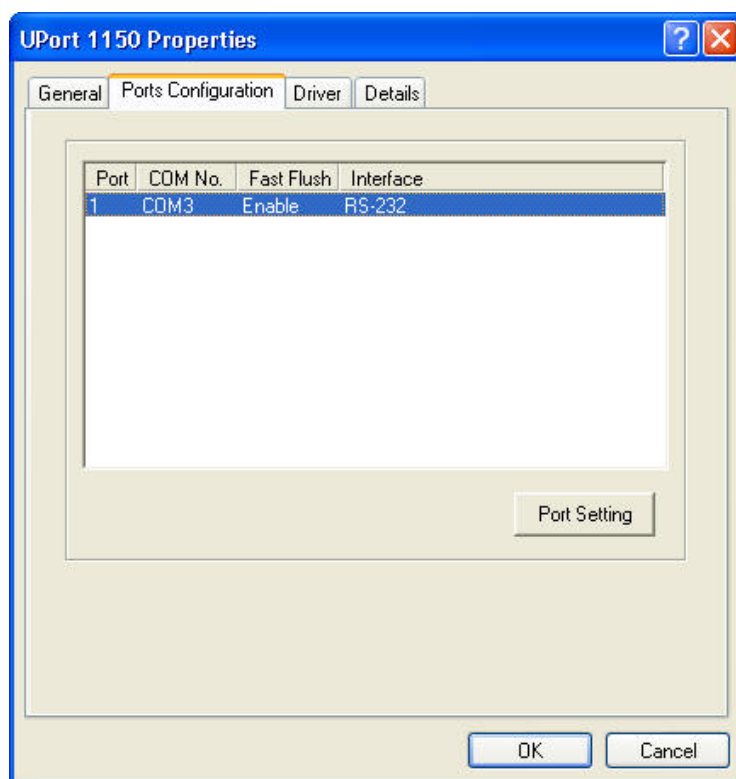


## Configuring the Converter

If you need to change the COM number that the converter assigns to the COM port, or adjust other advanced settings, you may go to Device Manager and right-click the UPort converter, which will be listed under **Multi-port serial adaptors**. In the context menu that pops up, you may select **Properties** in order to modify the COM port settings.



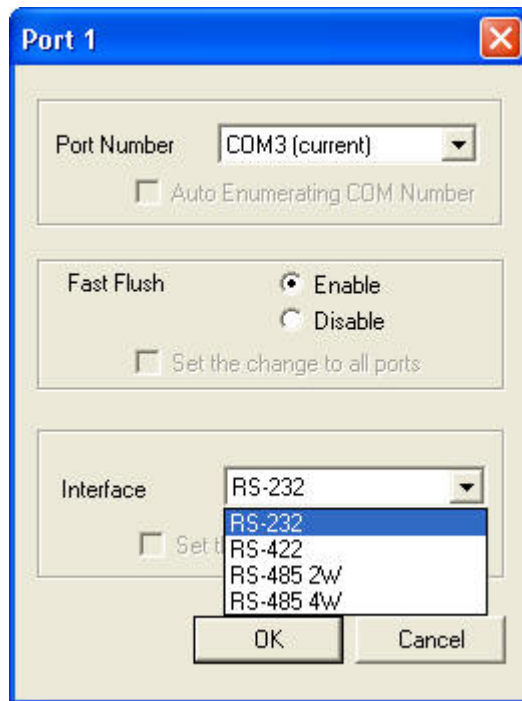
In the **Port Configuration** tab, you will see the new COM port listed. Click **Port Setting** to modify the COM number and other parameters.

**ATTENTION**

Before modifying these settings, make sure that you have closed any applications that may be accessing the COM port, such as HyperTerminal.



You may change the Port Number and enable or disable the Fast Flush function. For the UPort 1130/1130I, you may also select between RS-422, 2-wire RS-485, and 4-wire RS-485 modes. Please note that **Auto Enumerating COM Number** and **Set the change to all ports** are not available for this model of UPort.



\* The UPort 1100 only supports RS-232. For this reason, when using the UPort 1100, the Interface drop-down box will be inactive.

\*The UPort 1150/1150I support RS-232, RS-422, 2-wire RS-485, and 4-wire RS-485. The default setting is RS-232.

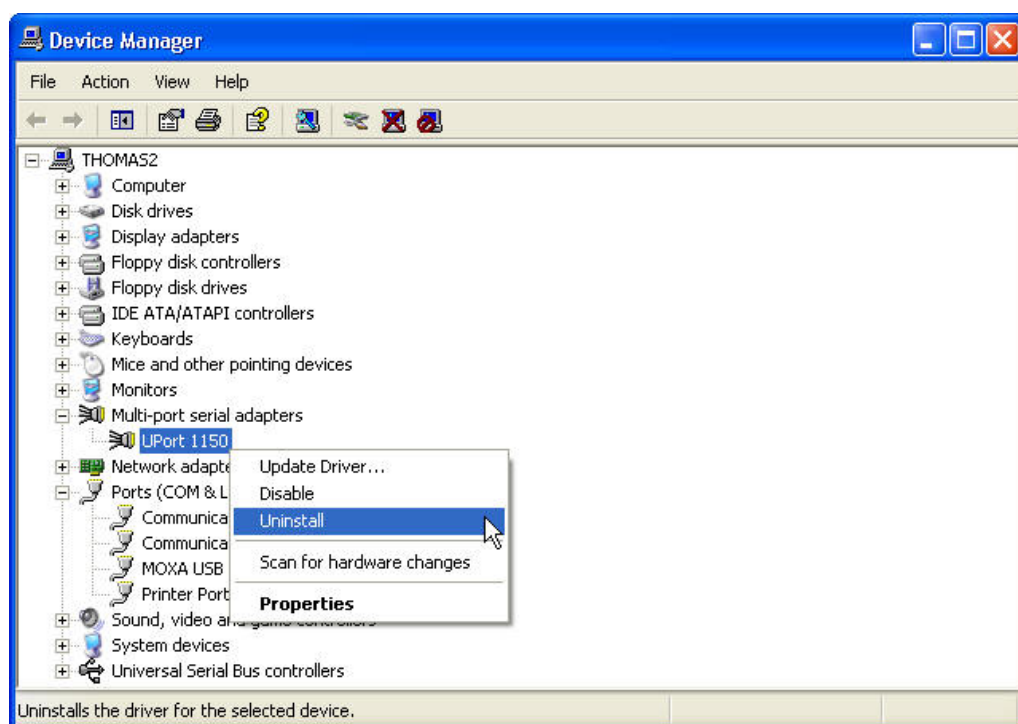
The Fast Flush function is specifically designed to handle Win32 PurgeComm() function calls and is enabled by default. When Fast Flush is enabled, the driver will automatically clear the local buffer when it receives a PurgeComm() command. When Fast Flush is disabled, the driver will repeatedly query the converter until it verifies that there is no more data in the buffer. Disabling this function can cause lower throughput for applications that use PurgeComm() heavily.

## Removing the Converter

The converter is a plug and play device. No special procedures are required to remove the converter; you may simply pull the converter out of the USB port. You should verify that no data is being transmitted before removing the converter.

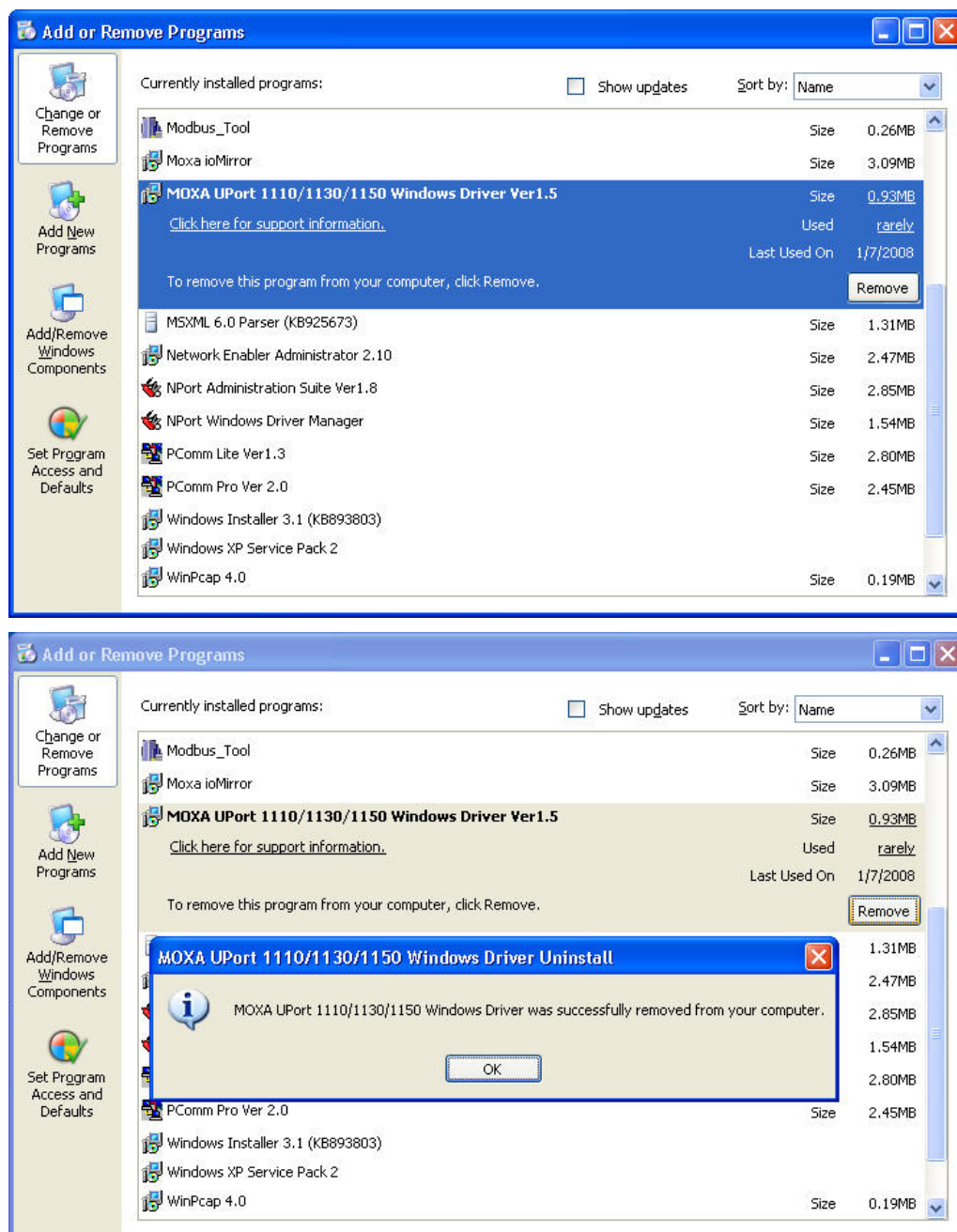
Removing the converter does not remove the drivers. The drivers remain in place so that the converter can be automatically detected and installed if it is plugged back into the USB port.

The converter can also be uninstalled through the Device Manager, the same as other Windows devices. Right-click the converter, which will be found under **Multi-port serial adaptors**, then select **Uninstall** from the context menu.



## Uninstalling the Driver

The UPort driver may be removed through Add/Remove Programs in the Windows Control Panel. Click **Remove** next to **MOXA UPort 1110/1130/1150 Windows Driver Verx.x**.



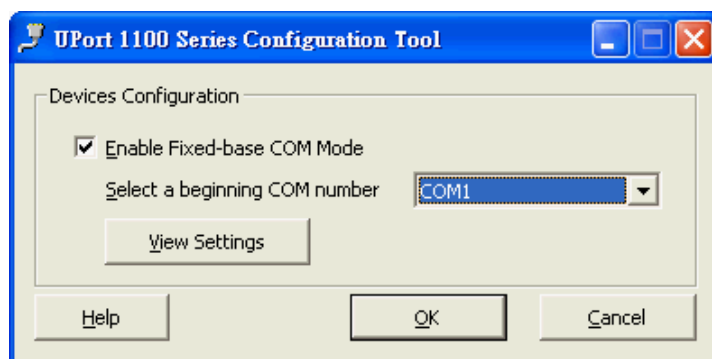
## Advanced UPort 1100 Driver Functions

The utilities of Moxa's UPort 1100 Series give users a convenient tool for configuring and maintaining UPort series products. In this section, we introduce the "Fixed-base COM Mode" function that enables users to set COM names on the host PC.

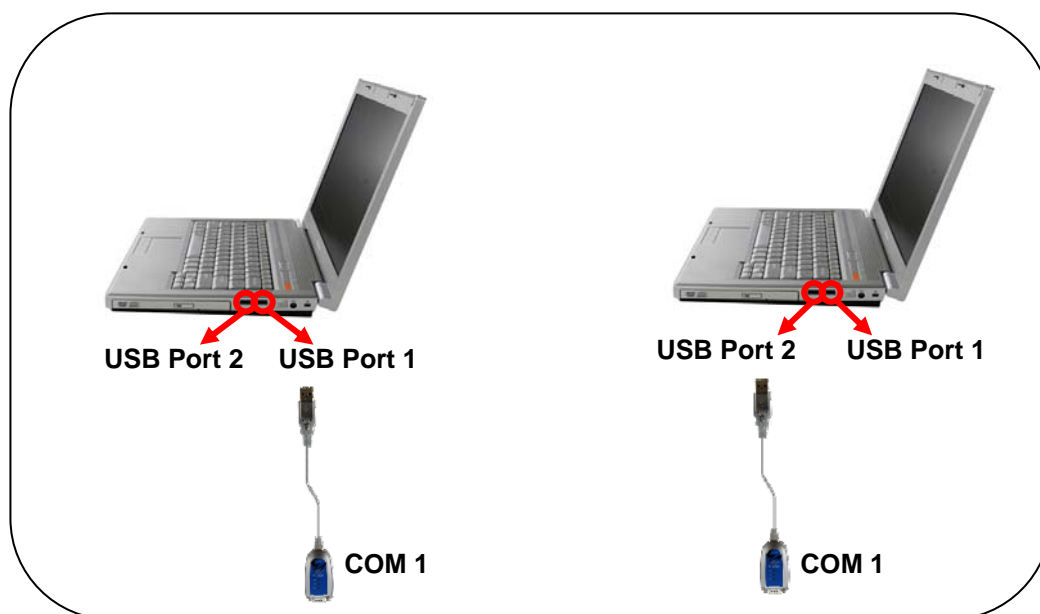
### Enable Fixed-base COM Mode

Moxa's UPort 1100 series provides the unique Fixed-base COM function that allows users to set a specific beginning COM port number. Regardless of which UPort is plugged into the host, the COM port numbers for the UPort's serial ports will be numbered sequentially—starting with the initial COM port number.

To use "Fixed-base COM Mode," be sure to check the "Enable Fixed-base COM Mode" check box. Note the default setting for "Fixed-base COM Mode" is set at disable.



The COM numbers are assigned sequentially, and are not tied to a specific UPort device or USB port number. For example, let's assume that you've set COM1 as the first COM number that will be assigned. If a UPort 1150 is plugged into your computer's USB port 1, your computer assigns COM1 to the UPort's serial port. When the UPort 1150 is plugged into USB port 2, the computer still assigns COM1 to the UPort's serial port.



When "Fixed-base COM Mode" is enabled for the first time, all the COM port numbers and serial port parameters will reset to their default values. You can then set the COM numbers and configuration parameters to the values needed for your application(s). Note: If you subsequently disable "Fixed-base COM Mode," all the parameters will be restored to their original settings.

## Install Linux Driver

### Linux Kernel 2.4.20 and above

The Linux driver for the Moxa UPort 1000 Series converters will map Linux host ttyUSBxx ports to UPort device ports. Once the mapping has been set up, Linux users and applications can connect to a device port as if it were a ttyUSBxx port. These drivers have been designed and tested for the majority of Linux distributions, including Linux kernel version 2.4.20 and above. Please check Moxa's website (<http://www.moxa.com>) for the latest Linux kernel support.

The Linux drivers support the following models:

- **UPort 1110:** 1-port RS-232 USB-to-Serial Converter.
- **UPort 1130:** 1-port RS-422/485 USB-to-Serial Converter.
- **UPort 1150:** 1-port RS-232/422/485 USB-to-Serial Converter.
- **UPort 1150I:** 1-port RS-232/422/485 USB-to-Serial Converter with isolation protection.

In this section, we provide four procedures to introduce the Moxa Linux Driver.

1. Installing the Linux Driver File
2. Loading/Unloading the Moxa Driver
3. Setting the Serial Parameters
4. Removing the Moxa Linux Driver

### Installing the Linux Driver Files

Obtain the driver file from the Document and Software CD, or from the Moxa website at <http://www.moxa.com>.

To install and load the Linux drivers, enter the following commands from the Linux prompt:

```
# mount /dev/cdrom/ mnt
# cd /
# mkdir moxa
# cd /moxa
# cp /mnt/<driver directory>/driv_linux2.4_uport1p_vx.x_build_yymmddhh.tgz/moxa
# tar -xvfz driv_linux2.4_uport1p_vx.x_build_yymmddhh.tgz
# cd /mxu1100_24/driver
# make clean
# make install
```

\*Note: yy = year, mm = month, dd = day, hh = hour

## Loading the Moxa Driver

After installing the driver you can load the Moxa driver. The driver will be loaded automatically when the UPort 1100 is plugged into your PC, or you can load the driver manually.

```
# modprobe mxuport1100_24
```

You can verify that the driver has loaded by entering the following command:

```
# lsmod
```

For additional information, please refer to readme.txt in the mxuport1100\_24 directory.

## Unloading the Moxa Driver

The driver will not be unloaded when you remove the MOXA UPort 1100 from the PC. The Moxa driver must be unloaded manually.

```
#rmmod mxuport1100_24
```

You can verify that the driver has loaded by entering the following command:

```
# lsmod
```

For additional information, please refer to readme.txt in the mxuport1100\_24 directory.

## Setting the Serial Parameters

The UPort 1130 supports three interfaces (RS-485 2W, RS-485 4W, RS-422) and the UPort 1150/1150I support four interfaces (RS-232, RS-485 2W, RS-485 4W, RS-422). You can execute the **setserial** command to set the port's interface. The supported parameter are listed below.

| Parameter | Value | Interface |
|-----------|-------|-----------|
| port      | 0     | RS-232    |
| port      | 1     | RS-485 2W |
| port      | 2     | RS-422    |
| port      | 3     | RS-485 4W |

Example:

To set the port's information, type:

```
# setserial /dev/ttyUSB0 port 1
```

To retrieve the port's information, type:

```
# setserial -G /dev/ttyUSB0
```

## Removing the Moxa Driver and Utility Files

To remove the Moxa files, navigate to /moxa/mxuport1100\_24, and then type:

```
#make clean;
```

Both the driver and utility files will be removed.

## Linux Kernel 2.6.x

The Linux driver provided with the UPort 1100 maps Linux host ttyUSBxx ports to UPort device ports. Once the mapping has been set up, Linux users and applications can connect to a device port as if it were a ttyUSBxx port. These drivers have been designed and tested for the majority of Linux distributions, including Linux kernel version 2.6.x and follow. Please check Moxa's website (<http://www.moxa.com>) for the latest Linux kernel support.

The Linux drivers support the following models:

- **UPort 1110:** 1-port RS-232 USB-to-Serial Converter.
- **UPort 1130:** 1-port RS-422/485 USB-to-Serial Converter.
- **UPort 1130I:** 1-port RS-422/485 USB-to-Serial Converter with isolation Protection.
- **UPort 1150:** 1-port RS-232/422/485 USB-to-Serial Converter.
- **UPort 1150I:** 1-port RS-232/422/485 USB-to-Serial Converter with isolation protection.

In this section, we provide four procedures to introduce the Moxa Linux Driver.

1. Installing Linux Driver File
2. Loading/Unloading the Moxa Driver
3. Setting the Serial Parameters
4. Removing the Moxa Linux Driver

### Installing Linux Driver Files

Obtain the driver file from the Document and Software CD, or from the Moxa website at <http://www.moxa.com>.

To install and load the Linux drivers, enter the following commands from the Linux prompt:

```
# mount /dev/cdrom/ mnt
# cd /
# mkdir moxa
# cd /moxa
# cp /mnt/<driver directory>/driv_linux2.6_uport1p_v1.1_build_xx.tgz/moxa
# tar -xvfz driv_linux2.6_uport1p_v1.1_build_xx.tgz
# tar -xvfz driv_linux2.6_uport1p_v1.1_build_xx.tgz
# cd / mxu11x0/driver
# make clean
# make install
```

### Loading the Moxa Driver

After installing the driver, you will be able to load the Moxa driver. The driver will be loaded automatically when the UPort 1100 is plugged into your PC, or you can load the driver manually by typing the following command:

```
# modprobe mxu11x0
```

You can verify that the driver has loaded by entering the following command:

```
# lsmod
```

For additional information, please refer to readme.txt in the mxu11x0 directory.

## Unloading the Moxa Driver

The driver will not be unloaded when you remove the UPort 1100 from the PC. The Moxa driver must be unloaded manually.

**#rmmod mxu11x0**

You can verify that the driver has loaded by entering the following command:

**# lsmod**

For additional information, please refer to readme.txt in the mxu11x0 directory.

## Setting the Serial Parameters

The UPort 1130/1130I supports three interfaces (RS-485 2W, RS-485 4W, RS-422) and the UPort 1150/1150I supports four interfaces (RS-232, RS-485 2W, RS-485 4W, RS-422). If you want to switch to a different interface, execute the **setserial** command to set the port's interface. The supported parameters are listed below.

| Parameter | Value | Interface |
|-----------|-------|-----------|
| port      | 0     | RS-232    |
| port      | 1     | RS-485 2W |
| port      | 2     | RS-422    |
| port      | 3     | RS-485 4W |

For example:

To set the port's information type:

**# setserial /dev/ttyUSB0 port 1**

To retrieve the port's information type:

**# setserial -G /dev/ttyUSB0**

## Removing the Moxa Driver and Utility Files

To remove the Moxa files, navigate to /moxa/mxu11x0 and then execute:

**#make clean;**

Both the driver and utility files will be removed.



## Installing the Windows CE Driver

In this section, the driver installation procedure for installing Windows CE 5.0 and Windows CE 6.0 driver is described. Both WinCE 5.0 and WinCE 6.0 require the installation of WinCE 6.0 platform builder. In addition, you will also need to install Visual Studio 2005 if you are using WinCE 6.0. WinCE 6.0 platform builder has all the necessary tools to help you to design, create, build, test, and debug a Windows CE. WinCE 6.0 platform Builder together with Visual Studio 2005 provides a workspace where you can work on OS designs and projects to build your own embedded system.

With WinCE 6.0, you need to install Visual Studio 2005 & WinCE 6.0 Builder first. When installing Visual Studio 2005, you can select the language with .NET Framework SDK or use the "default."

After you've installed VS 2005; run WinCE 6.0 Builder "setup.exe" to install and download the files. You need to select "x86" for the WinCE 6.0 operating system. Note that this process will take a couple of hours and the folder size is around 3GB.

The Win CE drivers support the following models:

**UPort 1110:** 1-port RS-232 USB-to-Serial Converter.

**UPort 1130:** 1-port RS-422/485 USB-to-Serial Converter.

**UPort 1150:** 1-port RS-232/422/485 USB-to-Serial Converter.

**UPort 1150I:** 1-port RS-232/422/485 USB-to-Serial Converter with isolation protection.

Follow "Installing Visual Studio 2005" to install the UPort 1100 Series WinCE 6.0 driver.

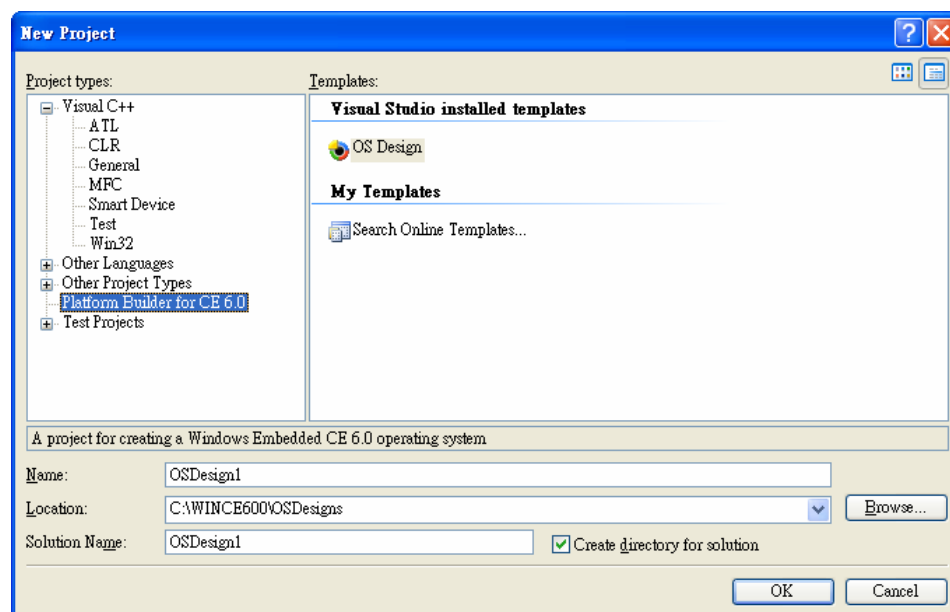
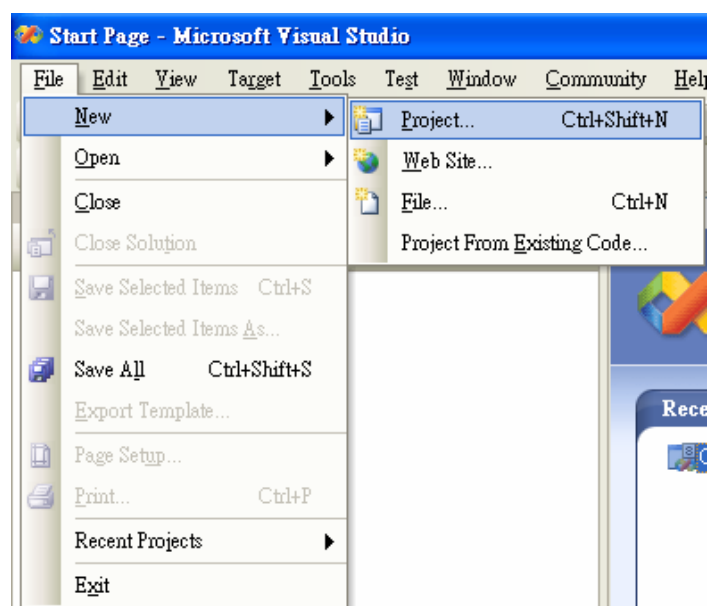
## Installation with an installation package for Win CE 6.0

### Installation procedure

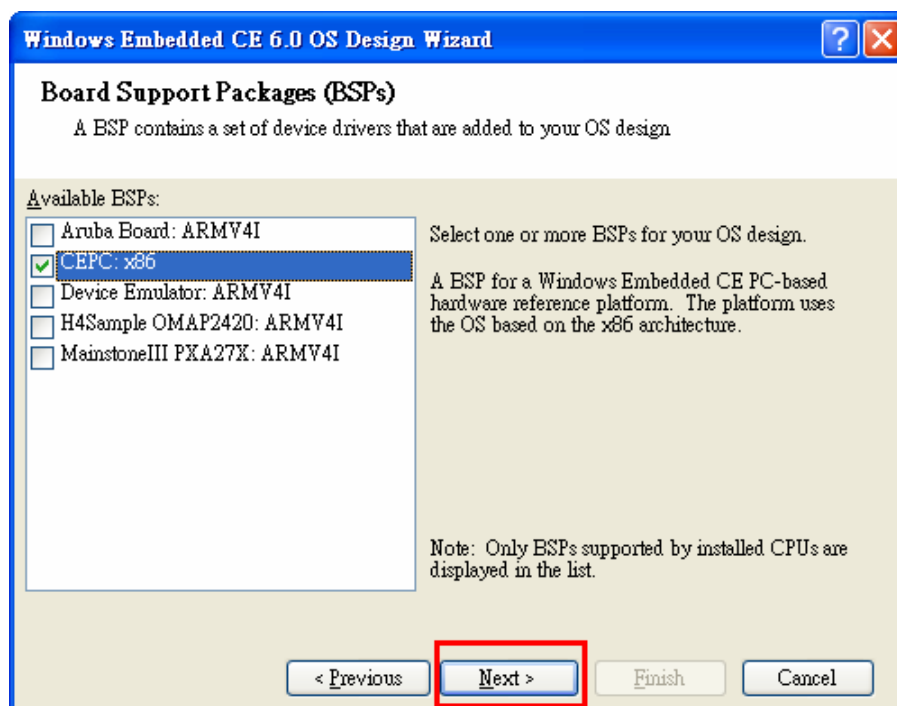
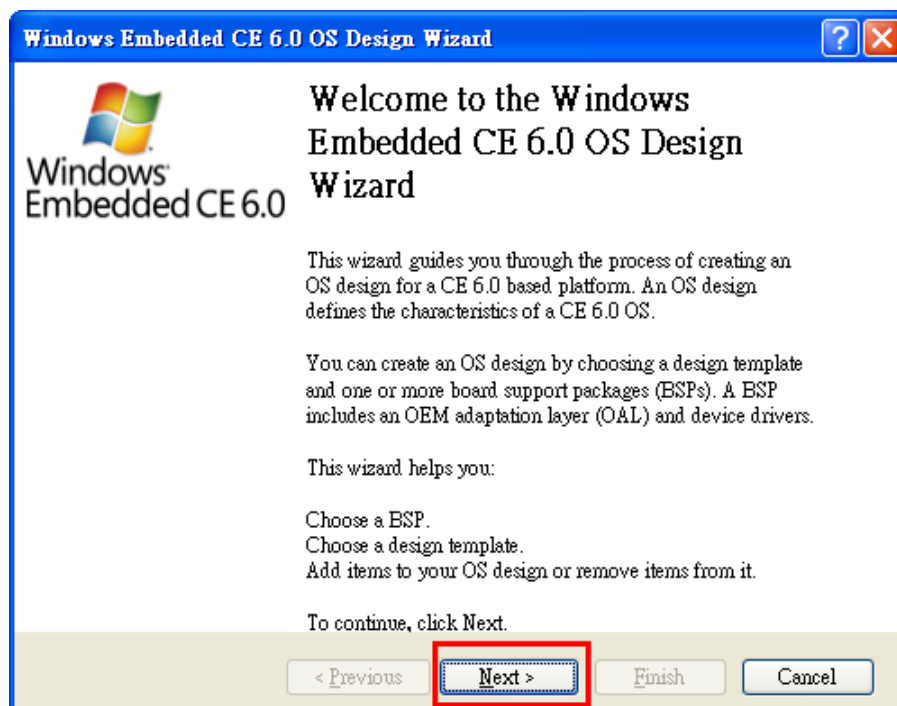
Copy the UPort 1100 WinCE 6.0 driver package onto your computer and extract. Double click on the installation package and it will automatically copy the **Mxser** folder to C:\MOXAUP1100\wince600\U1100.

**Step 1:** Launch Visual Studio 2005 with Platform Builder WinCE6.0. Open the OSDesign that you want to install.

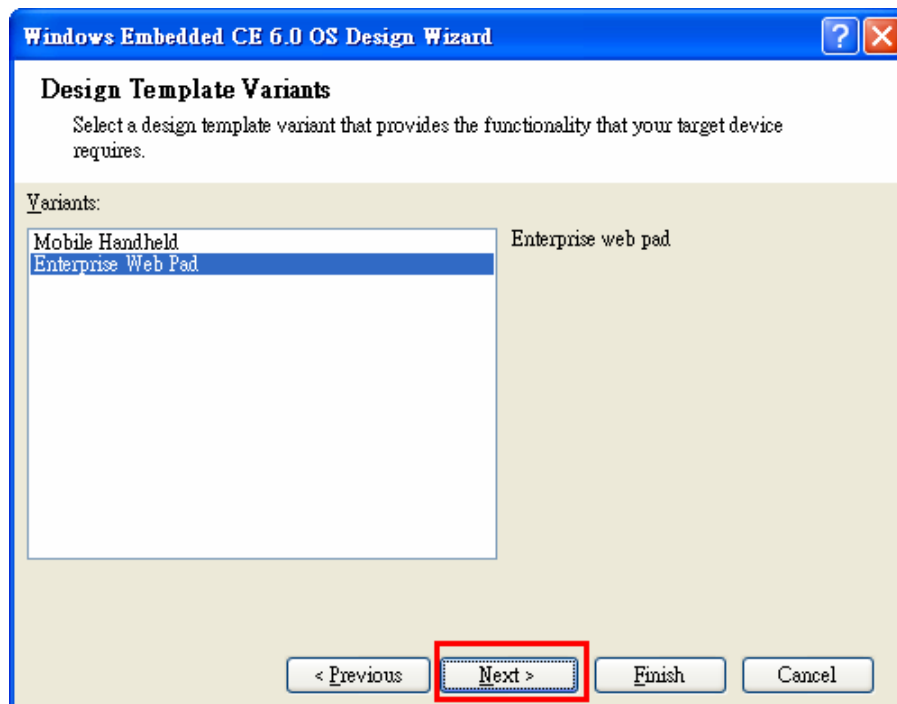
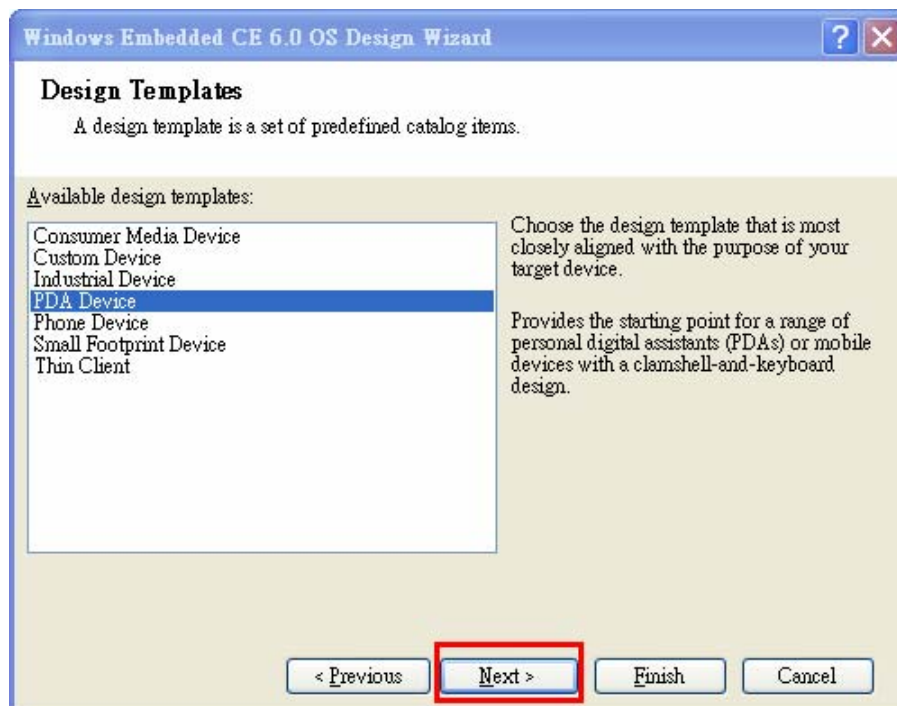
In Visual Studio 2005, click **File** → **New** → **Project**, and select “Platform Builder for CE 6.0”. Select “OS Design” for the template then click **OK**.

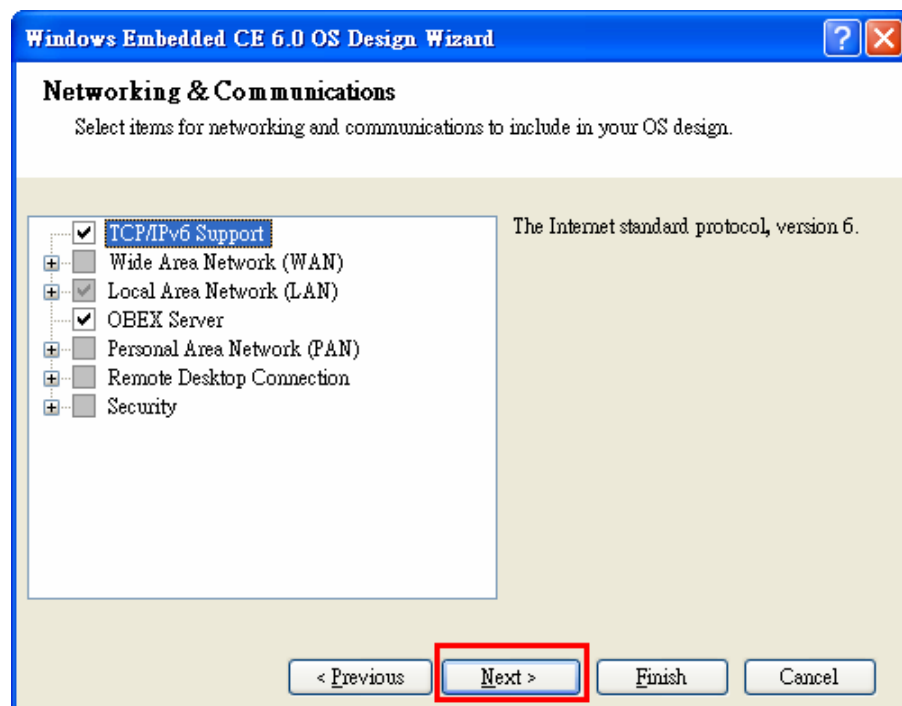
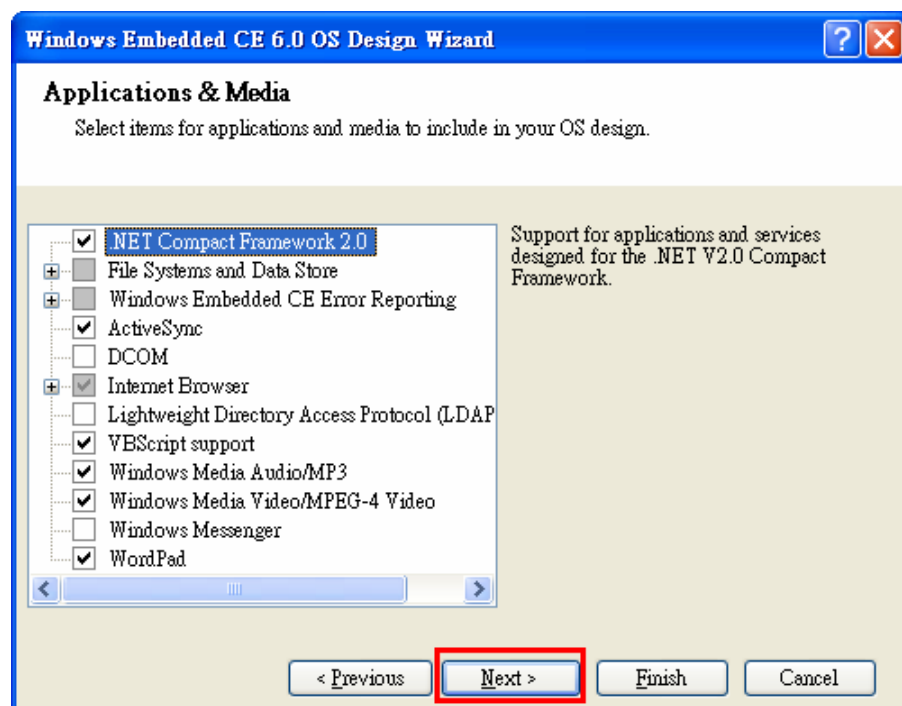


**Step 2:** The WinCE 6.0 OS Design Wizard will start, click “Next” to continue. In the “Board Support Packages” page, select the “CEPC: x86.” Click “Next.”

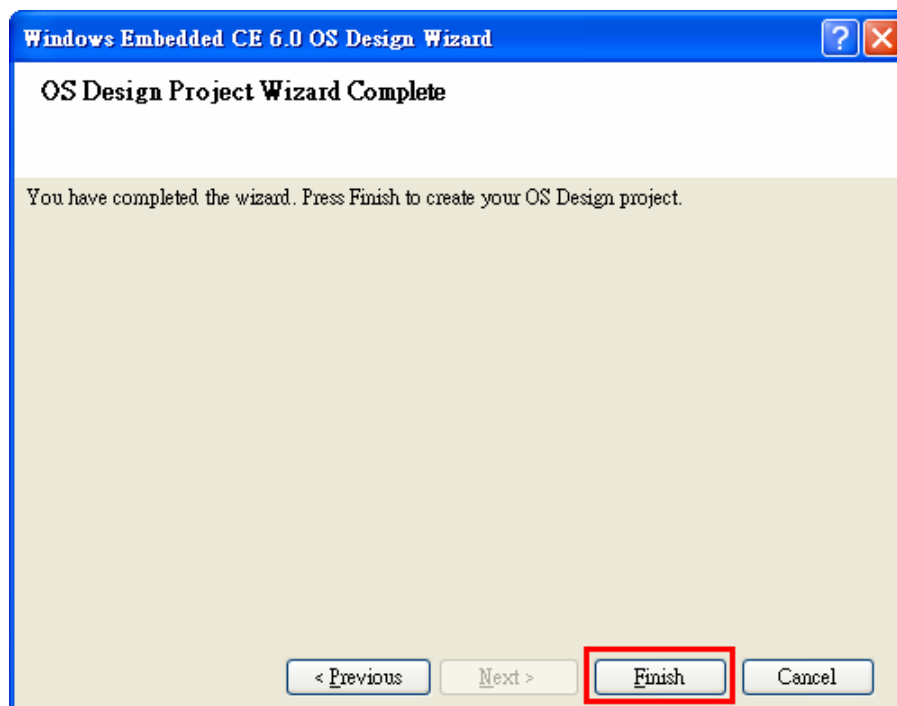


- Step 3:** Under Design Templates and Design Template Variants, select your environment, such as PDA Device or Mobile Handheld, and then click **Next**. In Application & Media and Networking & Communication, also select your environment, such as .NET Compact Framework 2.0, ActiveSync, Quarter VGA Resources-Portrait Mode, or TCP/IPv6 Support.

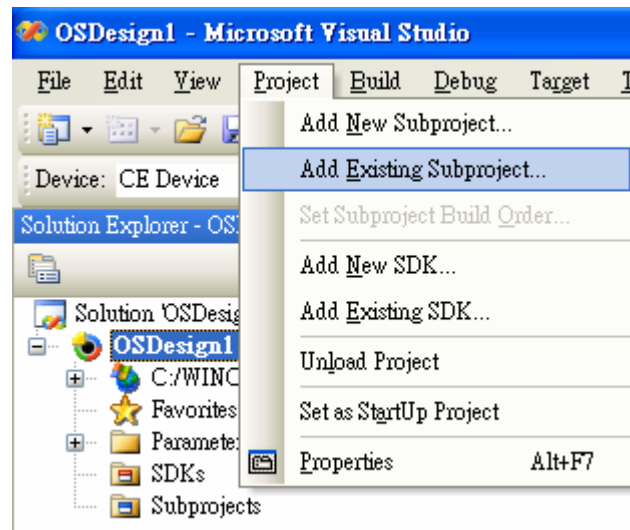




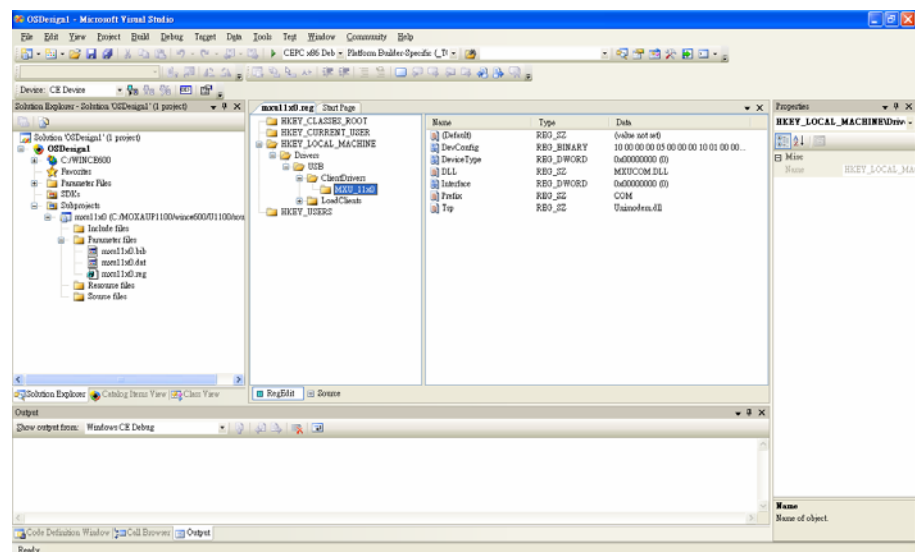
**Step 4:** When the **OS Design Project Wizard Complete** screen appears, click **Finish**. The notification will pop up. Click "**Acknowledge**" to finish the project.



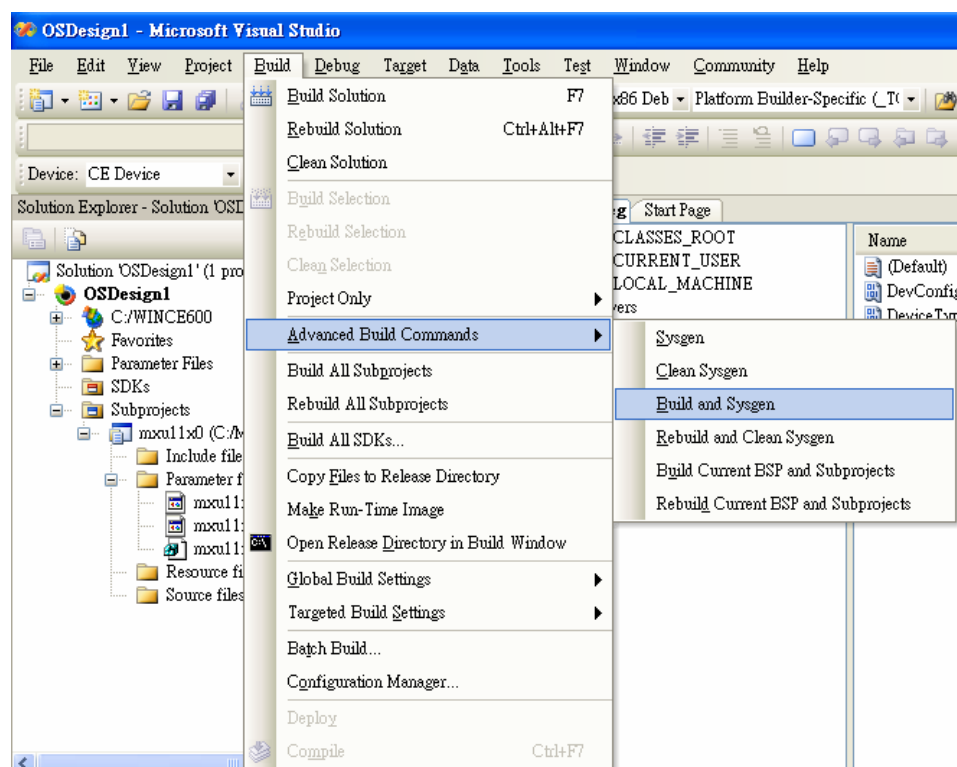
- Step 5:** Open the project you created. Click **Project** on top of the screen, and then select **Add Existing Subproject**. Switch the folder to “C:\MOXAUP1100\wince600\U1100” and add subprojects into your OS Design. Assign the pbpxml file to a different folder (i.e. mxu11x0.pbpxml).



- Step 6:** After the subproject is added, you may configure the “mxupce6.reg” registry file with the location [HKEY\_LOCAL\_MACHINE\Drivers\USB\ClientDrivers\MXU\_11x0].

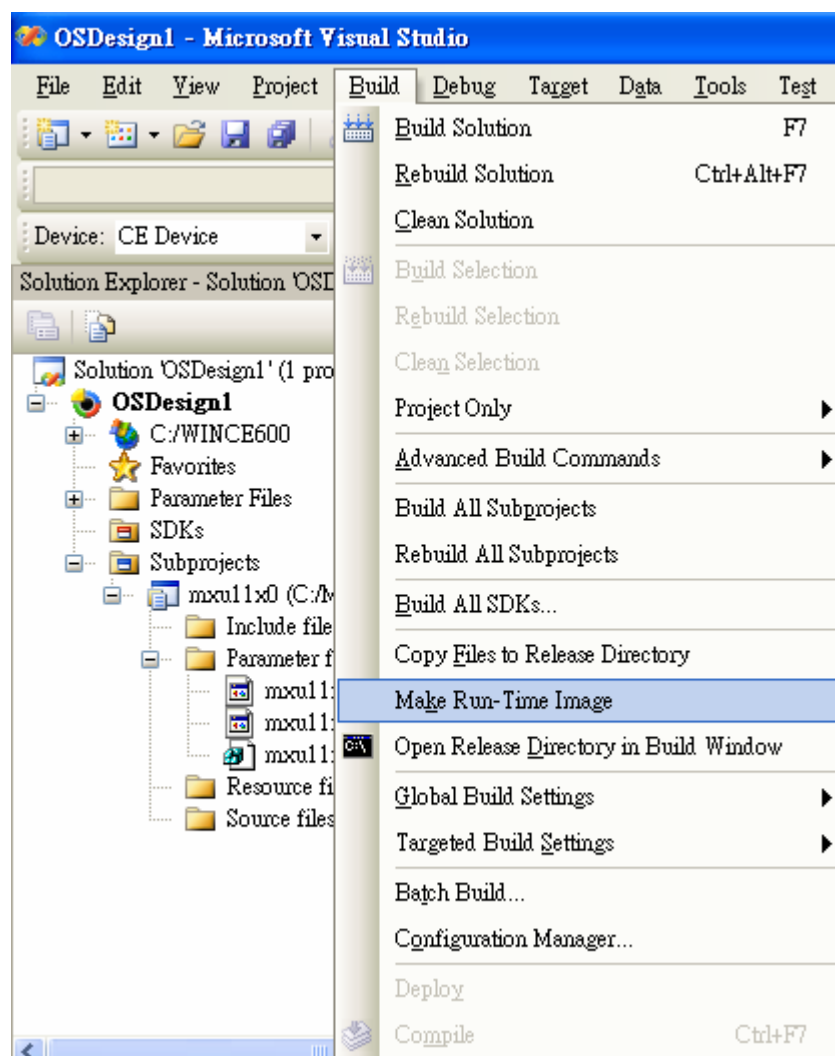


**Step 7:** Open “**Build**”, select “**Advanced Build Commands**” and “**Build Sysgen**”. This operation will take you a few minutes.





**Step 8:** After building sysgen, select **“Build”** and **“Make Run-Time Image”** to create the WinCE OS image. Finally, copy your image file to the target Host.

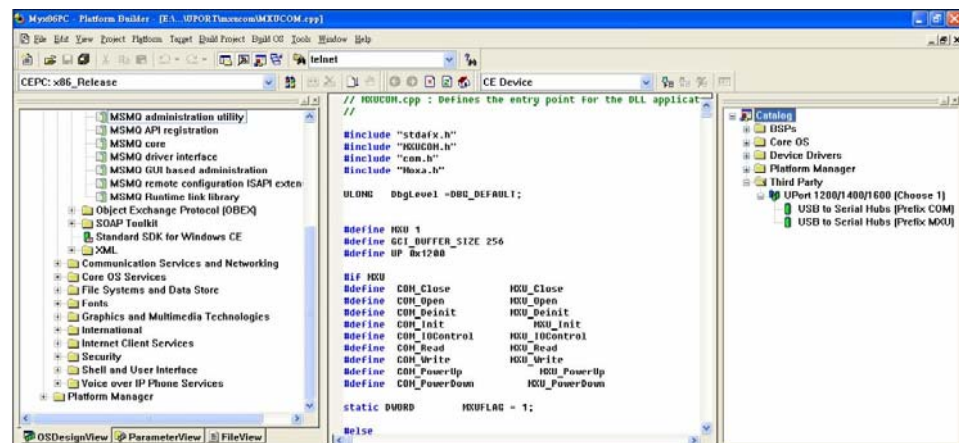


**Step 9:** Configure the interface on the target device using the configuration tool found in **“Start → Programs → MOXA UP Configuration Panel\UPort Configuration Utility”**.

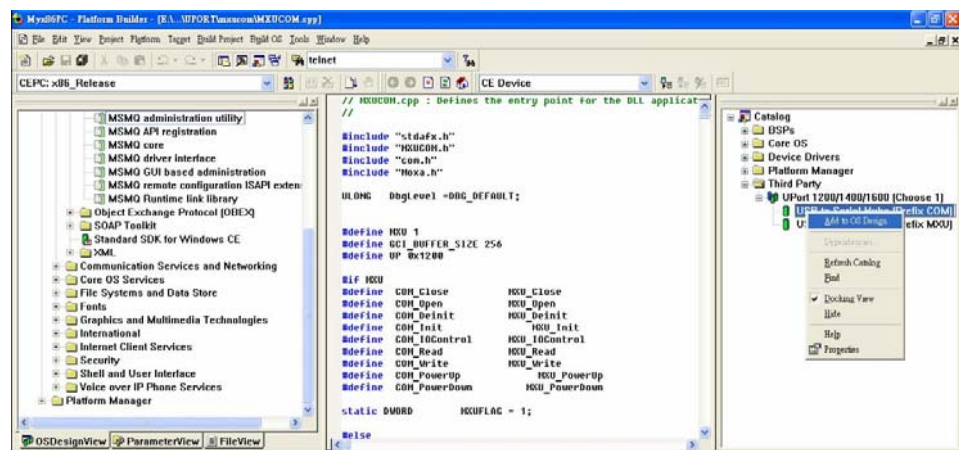
## Installation with an installation package for Win CE 5.0

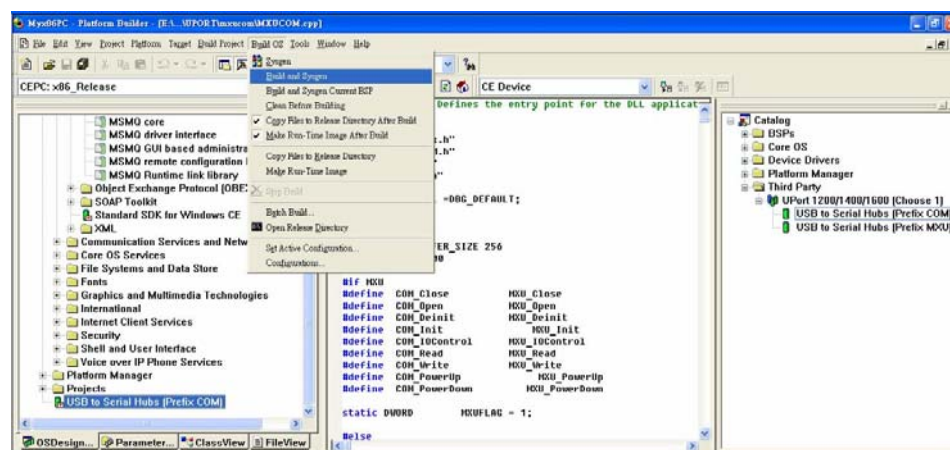
In this section, we show how to install the Moxa WinCE 5.0 driver on a Windows CE 5.0 operating system directly.

- Step 1:** Obtain a copy of the UPort 1110/1130/1150 WinCE 5.0 driver package and extract it to your computer. Double click the installation package to copy the files automatically to the UPort folder `\WINCE500\PLATFORM\` (e.g., `C:\WINCE500\PLATFORM\U11x0`) and import the UPort 1110/1130/1150 WinCE 5.0 driver into the Catalog.
- Step 2:** Open your workspace in Platform Builder and then open “Manage Catalog Items” under **View → Catalog**. The UPort 1110/1130/1150 WinCE 5.0 driver is located in the “Third Party” folder.



- Step 3:** Right-click on the driver “USB to Serial Adaptors (Prefix COM)” or “USB to Serial Adaptors (Prefix MXU)” and then choose “Add to OS Design.” After adding the driver, you should be able to find it in your workspace. At this point, you can start building your operating system and download it to a target.

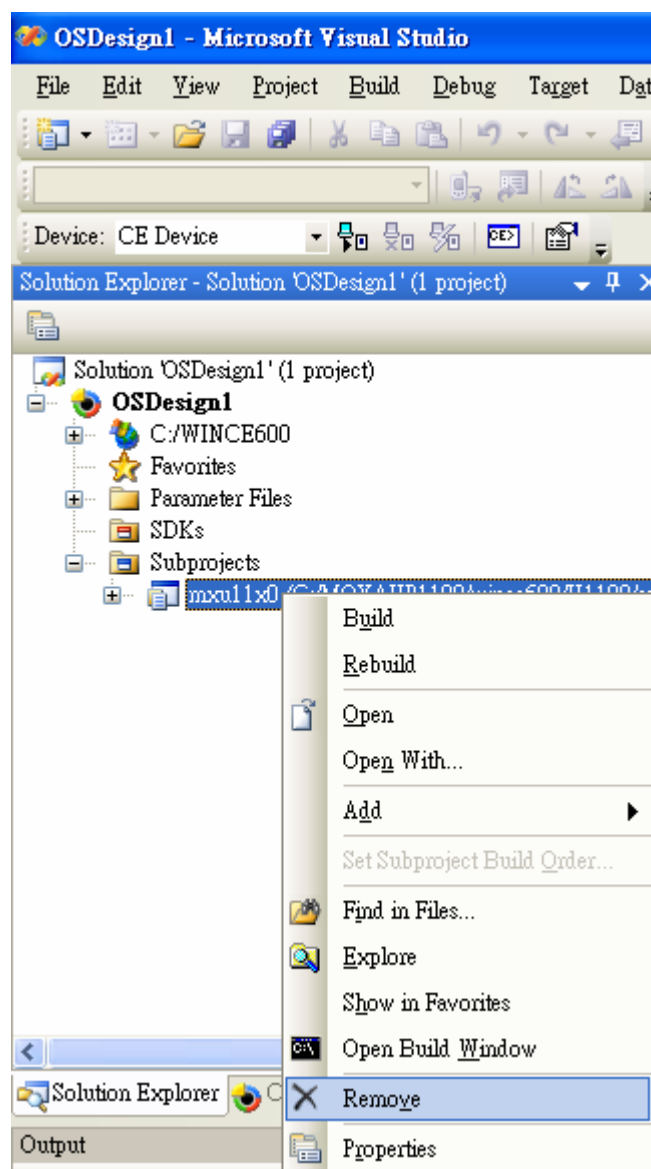




## Removing the Moxa WinCE 5.0 / CE 6.0 Driver

### For WinCE 6.0 Driver:

**Step 1:** Select driver to **Remove**.



**Step 2:** Switch the folder to C:\MOXAUP1100\ and double click “unins000.exe” to remove installation folder.

**For WinCE 5.0 Driver:**

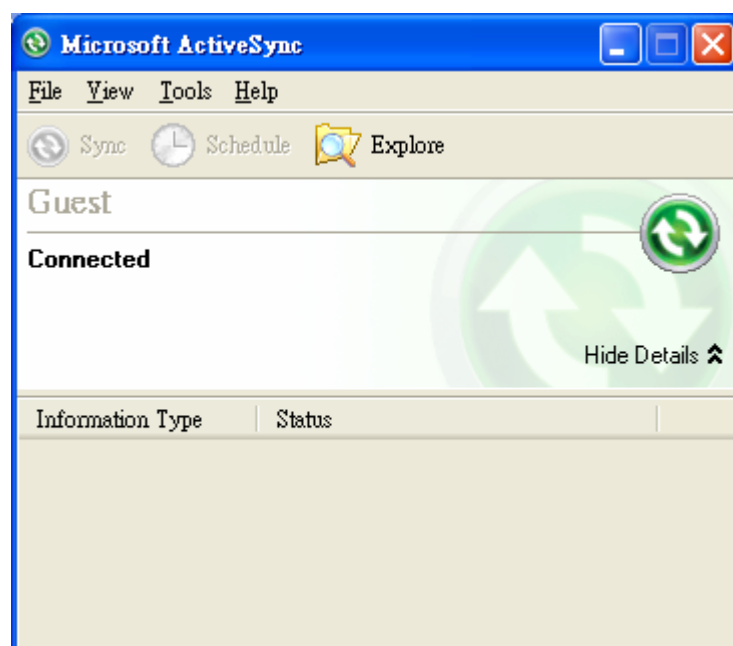
- Step 1:** In the “OSDesign\_View”, delete “USB to Serial Adaptors (Prefix XXX)”.
- Step 2:** Remove driver from control panel.
- Step 3:** Check “clean before building”
- Step 4:** Use “build and sysgen” to rebuild the image.

**Installation with a CAB File**

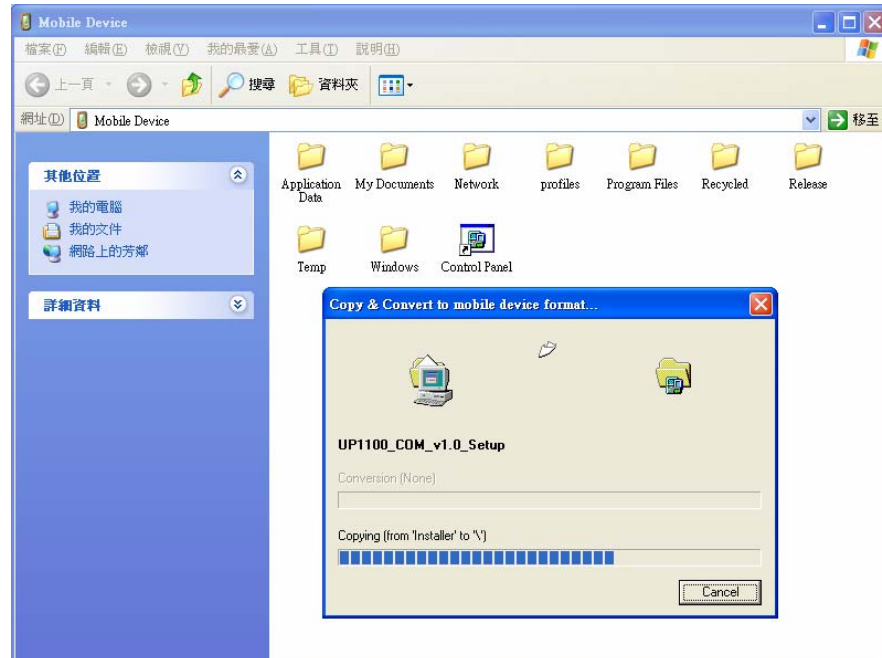
Install the UPort 1100 series WinCE driver to target host.

- Step 1:** First install Microsoft ActiveSync on the source PC. Before running ActiveSync on the source PC, use an RS-232 null modem cable to connect the WinCE device (CEPC) to the PC.
- Step 2:** Go to the “Command Prompt” on the WinCE device and execute the **repllog** command. A new partnership window will appear. Select “No” and then click on “Next.” You will see “**Connected**” in ActiveSync.





- Step 3:** Click on the “Explore” button in the ActiveSync window, and then copy the UP1100\_COM\_v1.0\_Setup.CAB (For WinCE 6.0) or UP1100\_COM\_v1.1\_Setup.CAB (For WinCE 5.0) file to the Mobile/Target Device.



- Step 4:** Double click on the CAB file to start installing the UPort 1100 series WinCE driver. After installing the driver, plug the UPort 1100 series device into the USB port of the WinCE Device. The driver will be loaded automatically. At this point, the UPort 1100 series is ready to use.

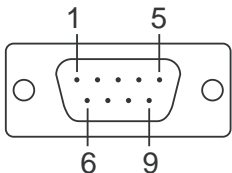
## Removing the Moxa WinCE 5.0 / CE 6.0 Driver

- Step 1:** Enter **Control Panel → Remove Programs**.
- Step 2:** Select **MOXA UPort 1110/1130/1150 Windows CE6 Driver Ver1.0 (For WinCE 6.0)**
- or**
- MOXA UPort 1110/1130/1150 Windows CE5 Driver Ver1.1 (For WinCE 5.0)**
- Step 3:** Click **Remove**.
- Step 4:** Interface configuration
- On the target device, go to **Start → Programs → MOXA UP Configuration Panel\UPort Configuration Utility** to find the configuration tool.

## Pin Assignment

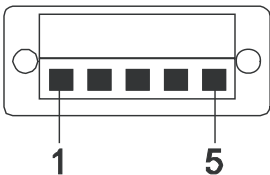
### UPort DB9 Pin Assignments

The UPort 1100 series uses male DB9 connectors. Pin assignments are shown in the following diagram:

| DB9 (male)   | Pin | RS-232    | RS-422 4-wire<br>RS-485 | 2-wire RS-485 |
|--|-----|-----------|-------------------------|---------------|
|  | 1   | DCD (in)  | TxD-(A)                 | -             |
|  | 2   | RxD (in)  | TxD+(B)                 | -             |
|  | 3   | TxD (out) | RxD+(B)                 | Data+(B)      |
|  | 4   | DTR (out) | RxD-(A)                 | Data-(A)      |
|  | 5   | GND       | GND                     | GND           |
|  | 6   | DSR (in)  | -                       | -             |
|  | 7   | RTS (out) | -                       | -             |
|  | 8   | CTS (in)  | -                       | -             |

### Terminal Block Pin Assignments

The UPort 1130/1130I/1150/1150I comes with a DB9 to terminal block converter, with pin assignments as shown below:

| Terminal Block  | Pin | RS-422 4-wire<br>RS-485 | 2-wire RS-485 |
|---|-----|-------------------------|---------------|
|  | 1   | TxD+(B)                 | -             |
|   | 2   | TxD-(A)                 | -             |
|   | 3   | RxD+(B)                 | Data+(B)      |
|   | 4   | RxD-(A)                 | Data-(A)      |
|   | 5   | GND                     | GND           |

Note that the converter maps pin 1 on the DB9 connector to pin 2 on the terminal block, and pin 2 on the DB9 connector to pin 1 on the terminal block.



**EMI Notices (Class B)****Electromagnetic Compatibility Notices**

**FCC**  
**(U.S. Only)**

**This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:**

- (1) This device may not cause harmful interference, and**
- (2) This device must accept any interference received, including interference that may cause undesired operation.**

**IC**  
**(Canada Only)**

**The Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulation. Cet appareil numerique de la class [\*] respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.**

**GREEN Notices****WEEE Directive - 2002/96/EC**

**The symbol of the crossed-out wheeled bin indicates that at end-of-life of the equipment separate collection is required in the EU Member States. The black bar specifies that the appliance is put on the market after August 13, 2005.**

**Reference: Directive 2002/96/EC.**