

UPort 1200/1400/1600 Series Quick Installation Guide

USB-to-Serial Converter

Version 9.6, July 2024

Technical Support Contact Information
www.moxa.com/support

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P/N: 180201400001E





WARNING

1. This unit is not intended for consumer use. It will only be shipped to manufacturers or factories.
2. The DC source should come from a class external adapter or a 12 to 48 VDC safety extra-low voltage (SELV) limited power source (LPS), using a transfer device.
3. This unit should be installed or set up by a qualified service person.

Overview

Moxa's USB-to-serial product provides a wide range of easy-to-use solutions for adding Windows COM ports, macOS, and Linux tty ports through the USB port of a computer.

The UPort 1200/1400/1600 series are the following models:

- UPort 1250: 2-port RS-232/422/485 USB-to-serial converter
- UPort 1250I: 2-port RS-232/422/485 USB-to-serial converter w/ isolation protection
- UPort 1410: 4-port RS-232 USB-to-serial converter
- UPort 1450: 4-port RS-232/422/485 USB-to-serial converter
- UPort 1450I: 4-port RS-232/422/485 USB-to-serial converter w/ isolation protection
- UPort 1610-8: 8-port RS-232 USB-to-serial converter
- UPort 1650-8: 8-port RS-232/422/485 USB-to-serial converter
- UPort 1610-16: 16-port RS-232 USB-to-serial converter
- UPort 1650-16: 16-port RS-232/422/485 USB-to-serial converter

Before connecting UPort USB-to-serial converters to your computer's USB port, we recommend installing the UPort driver first. To do this, follow the installation procedure described in the "Installing the UPort 1200/1400/1600 Driver" section below. The installation procedure was done on a PC running a Windows platform. UPort converters can be connected to any upstream type A USB port that is on the PC host or on an upstream hub. UPort converters are hot pluggable, and therefore there is no need to power down your computer prior to installation.

After installing the driver, connect the UPort to an upstream host or hub. The **Found New Hardware** wizard will locate the appropriate drivers automatically. Once the drivers are found, various windows will pop up as the UPort's serial port is being installed. When the **Found New Hardware Wizard** finishes installing the UPort, use the operating system's **Device Manager** to check and/or modify the port settings. The new COM port will be listed under **Ports (COM & LPT)**.

Ordering Information

Package Checklist

Before installing the UPort, verify that the package contains the following items:

- 1 UPort 1200/1400/1600 USB-to-serial converter
- USB cable: CBL-USBA/B-100
- 100 to 240 VAC power adapter (excluding the UPort 1250/1410)
- 1 power cord suitable for your region (**UPort 1600-16 models only**)
- 1 serial adapter: mini DB9F-to-TB (excluding UPort 1410/1610 series)
- **WK-45-01:** 19-inch rackmount L brackets (2 L-shaped plates with 8 M3 x 8 mm screws for the **UPort 1600-16 models only**)
- Quick installation guide (printed)
- Warranty card

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

Optional Accessory

DIN-rail kits:

- **DK-UP1200:** DIN rail (25 x 48.3 mm) with 2 screws (FMS M3 X 6); for the **UPort 1200 models**.
- **DK-UP-14168:** DIN rail with 2 plates (89 x 19 mm) and 6 screws (FMS M3 x 5 mm); for the **UPort 1400 (V1.5.0) and 1600-8 (V1.4.0) models**.

Wall-mounting Kits:

- **WK-35-02:** Wall-mounting kit with 2 plates (35 x 24 mm) and 6 screws (FMS M3 x 4 mm); for the **UPort 1200 models**.
- **WK-UP-14168:** Wall-mounting kit with 2 plates (35 x 44 mm) and 6 screws (FMS M3 x 4 mm); for the **UPort 1400 and UPort 1600-8 models**.

Rack-mounting Kits:

- **WK-45-01:** Rack-mounting kit with 2 L-shaped plates (44 x 57.5 mm) and 8 screws (FMS M3 x 8 mm); for the **UPort 1600-16 models**.

NOTE The operating temperature of the power adapter in the box is from 0 to 40°C. If your application is not in this range, please use UL-listed power adapter (the power output meets SELV and LPS and is rated 12 to 48 VDC, the minimum current is 580 mA or 5 VDC, the minimum current is 0.5 A, min. 55°C).

NOTE If you are using a Class I adapter, the power cord should be connected to a socket outlet with an earthing connection.

Refer to the table below to see whether external power is needed for your UPort. If applicable, connect the UPort to an external power source.

	UPort 1250	UPort 1250I	UPort 1400	UPort 1600-8	UPort 1600-16
Bus Power	✓	-	✓	-	-
External Power (adapter)	-	✓	✓	✓	-
External Power (cord)	-	-	-	-	✓

Power Input Specifications

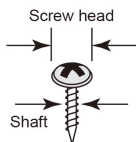
UPort 1250	5 VDC (bus power), 360 mA
UPort 1250I	12 to 48 VDC, 200 mA (max. in 12 VDC)
UPort 1410/1450	12 to 48 VDC, 260 mA (max. in 12 VDC); 5 VDC (bus power), 0.5 A
UPort 1450I	12 to 48 VDC, 360 mA (max. in 12 VDC)
UPort 1600-8	12 to 48 VDC, 580 mA (max. in 12 VDC)
UPort 1600-16	100 to 240 VAC, 220 mA, 47-63 Hz (max. in 100 VAC)

Hardware Installation Procedure

The UPort 1200/1400/1600 models come with two metal attachment plates to attach the UPort model to a wall or the inside of a cabinet. First, use two screws per bracket to attach the brackets at the rear of the UPort model. Next, use two screws per bracket to attach the UPort model to a wall or cabinet.

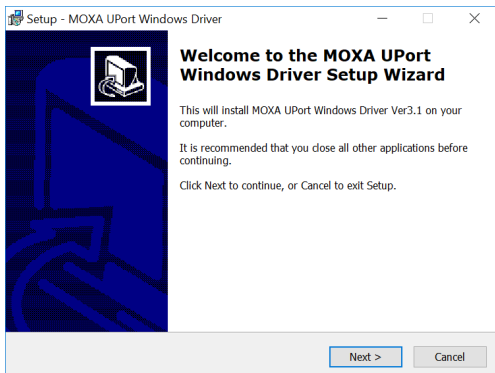
The heads of the screws and shaft size maximum size are defined as below:

	Screw head	Shaft
UPort 1200	4.0 mm	3.0 mm
UPort 1400	4.0 mm	3.0 mm
UPort 1600-8	4.0 mm	3.0 mm
UPort 1600-16	8.0 mm	3.0 mm

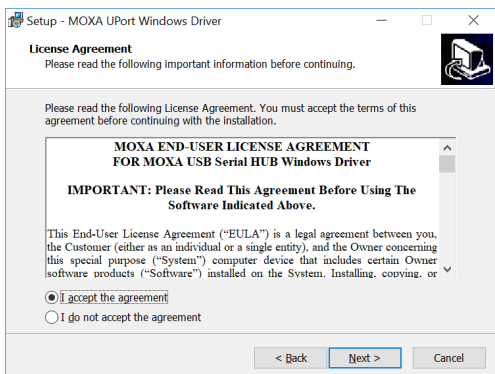


Installing the UPort 1200/1400/1600 Driver

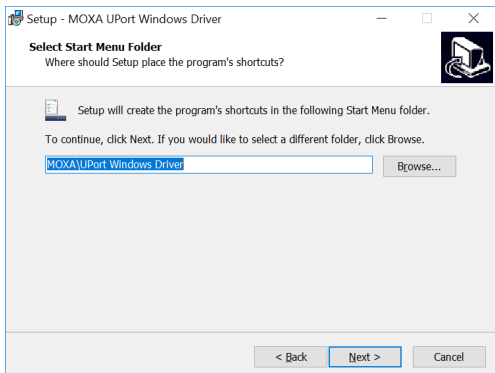
1. Connect the UPort to the PC using the USB cable.
2. After turning your PC's power on, Windows will automatically detect the UPort.
3. Run the Setup program that you may find on Moxa's support website <http://www.moxa.com/support/>. Click **Next** to start installing the driver.



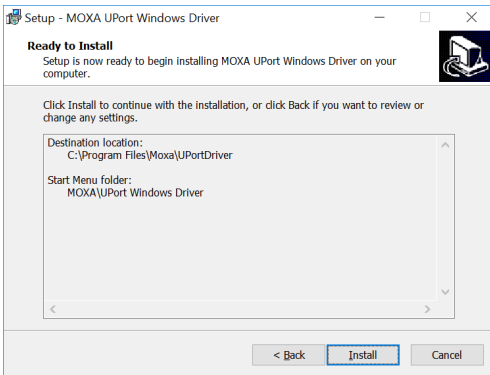
4. Read and accept the agreement. Click **Next** to set the indicated folder.



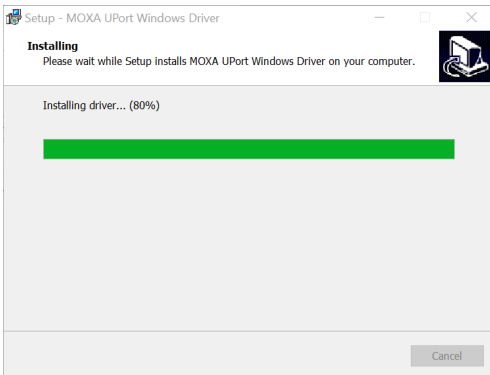
5. Set **Start Menu Folder** location



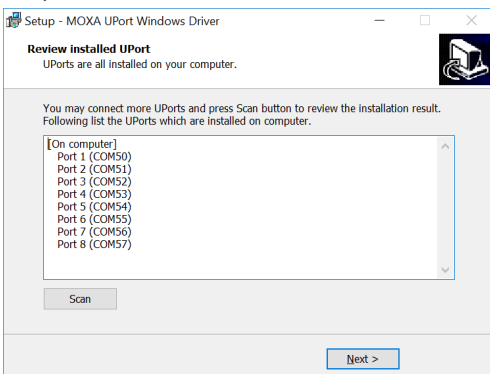
6. Click **Install** to proceed with the installation.



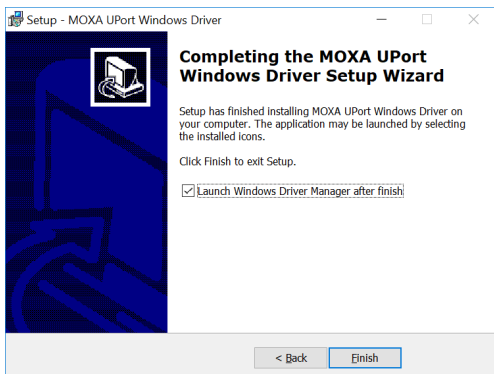
7. The installation will take a few minutes to complete.



8. After the driver has been installed successfully, you can click **Scan** to review the installation results if the UPort is connected to your computer.



9. Check **Launch Windows Driver Manager after finish** to configure the UPort after quitting the driver installer.



Installing the macOS Driver

For macOS 10.12 and later, follow the steps below to install the driver:

1. Enter recovery mode.
2. Disable System Integrity Protection (SIP) by typing 'csrutil disable' in the terminal.
3. Return to normal mode.
4. Launch the UPort driver installer and finish the installation procedure.
5. Enter recovery mode again.
6. Enable System Integrity Protection (SIP) by typing 'csrutil enable' in the terminal.
7. Return to normal mode.

For detailed instructions, please refer to the UPort 1200/1400/1600 User's Manual on the product webpage or the 'readme.txt' in the driver installation package.

Installing the Linux Driver Linux Kernel

Execute the following commands from the Linux prompt:

```
# CD /moxa
# tar xvfz driv_linux_uport_[VERSION]_[BUILD].tgz
Find "Makefile" in /moxa/mxuport, then run
# make install
# modprobe mxuport
```

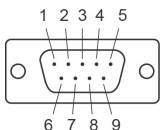
For further information, please refer to readme.txt that comes with the driver.

Serial Port Pin Assignments

The serial ports on the UPort 1200/1400/1600 have DB9 male connectors. Refer to the following table below for the RS-232 and RS-422/485 pin assignments.

NOTE For UPort with DB Male Serial Ports, you may refer to DB9 Male Ports pin assignment section to loop back pin 2 and pin 3 for the RS-232 interface to carry out a self-test on the device.

Male DB9



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

Mini DB9F-to-TB



DB9F	TB
1	2
2	1
3	3
4	4
5	5

LED Indicators

UPort 1250/1250I

There are five LEDs per port for indicating the status of the ports. The LEDs are listed under P1 and P2.

LED Name	LED Color	LED Function
Active	Red	Power is on
	Off	Power is off, or power error condition exists
RS-232	Red	Port is configured for RS-232 operation
RS-422	Red	Port is configured for RS-422 operation
4W RS-485	Red	Port is configured for 4-wire RS-485 operation
2W RS-485	Red	Port is configured for 2-wire RS-485 operation
TxD/RxD	Orange	Port is receiving data from attached device
	Green	Port is transmitting data to attached device
	Off	No data is being transmitted or received

UPort 1400/1600

There are five LEDs per port for indicating the status of the ports. The LEDs are listed under P1, P2, P3, etc.

LED Name	LED Color	LED Function
Active	Red	Power is on; when the firmware is ready, the LED will turn green If the device's LED remains red, it means the firmware is not ready, and the device cannot work properly
	Green	The device is ready
	Flashing green	The device is located by the Locate function on the host
	Off	Power is off, or power error condition exists
Tx/Rx	Orange	Port is receiving data from attached device
	Green	Port is transmitting data to attached device
	Off	No data is being transmitted or received

Adjustable Pull High/low Resistors for the RS-485

Port

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 Ω , make sure both assigned DIP switches are in the OFF position.

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

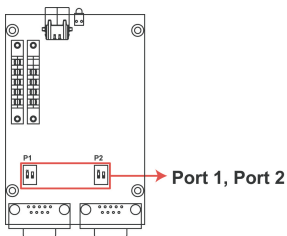
SW	1	2
	Pull High	Pull Low
ON	1 K Ω	1 K Ω
OFF	150 K Ω	150 K Ω



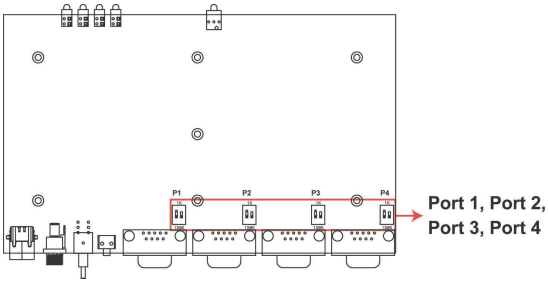
ATTENTION

Do not use the 1-k Ω setting on the NPorts when using an RS-232 interface. Doing so will degrade the RS-232 signals and shorten the maximum allowed communication distance.

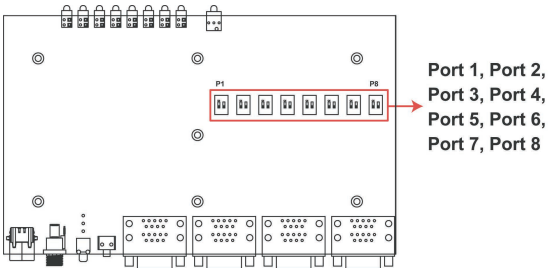
UPort 1200 DIP Switches



UPort 1400 DIP Switches



UPort 1600-8 DIP Switches



UPort 1600-16 DIP Switches

