# Industrial USB


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# USB-to-Serial Converters

| | UPort™ 1110 | UPort™ 1130 | UPort™ 1150 | UPort™ 1150I | UPort™ 1250 | UPort™ 1250I | UPort™ 1410 | UPort™ 1450 | UPort™ 1450I |
|---|---|---|---|---|---|---|---|---|---|
| **USB Interface** | | | | | | | | | |
| Compliance | USB 1.0/1.1 compliant, USB 2.0 compatible | | | | USB 1.1/2.0 compliant | | | | |
| Connector | USB type A | | | USB type B | | | | | |
| Speed | 12 Mbps (Full-Speed USB) | | | | 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB) | | | | |
| **Serial Interface** | | | | | | | | | |
| Number of Ports | 1 x RS-232 | 1 x RS-422/485 | 1 x RS-232/422/485 | 1 x RS-232/422/485 | 2 x RS-232/422/485 | 2 x RS-232/422/485 | 4 x RS-232 | 4 x RS-232/422/485 | 4 x RS-232/422/485 |
| Connector | DB9 male | DB9 male | DB9 male | DB9 male | DB9 male | DB9 male | DB9 male | DB9 male | DB9 male |
| Communication Parameters | Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark | | | | | | | | |
| Flow Control | Flow Control: RTS/CTS, XON/XOFF | | | | | | | | |
| FIFO | 64 bytes | 64 bytes | 64 bytes | 64 bytes | 128 bytes | 128 bytes | 128 bytes | 128 bytes | 128 bytes |
| Baudrate | 50 bps to 921.6 Kbps | | | | | | | | |
| Embedded ESD Protection | 15 KV | | | | | | | | |
| Optical Isolation | --- | --- | --- | 2 KV | --- | 2 KV | --- | --- | 2 KV |
| **Driver Support** | | | | | | | | | |
| Windows 98/ME | √ | √ | √ | √ | --- | --- | --- | --- | --- |
| Windows 2000 | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Windows XP/2003 x86/x64 | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Windows Vista x86/x64 | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Windows 2008 x86/x64 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| WinCE 5.0/6.0 | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Linux 2.4 | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Linux 2.6 x86/x64 | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| **Physical Characteristics** | | | | | | | | | |
| Housing | ABS + PC | | | SECC sheet metal (1 mm), IP30 protection | | | | | |
| Product Weight | 65 g | | | 75 g | 180 g | | 720 g | | |
| Packaged Weight | 200 g | | | 370 g | 370 g | 680 g | 1320 g | | |
| Dimensions (mm) | 38.4 x 60 x 20 | | | 52 x 80 x 22 | 77 x 26 x 111 | | 204 x 30 x 125 | | |
| **Environmental Limits** | | | | | | | | | |
| Operating Temperature | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C |
| Operating Humidity | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH |
| Storage Temperature | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C |
| **Regulatory Approvals** | | | | | | | | | |
| EMI | FCC Part 15 Class B, EN61000-6-4 | | | | FCC, Part 15 Class A, EN61000-6-4 | | | | |
| Safety | --- | --- | --- | --- | UL, CUL, TÜV | | | | |
| EMS | EN55022 Class B, EN55024, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61000-6-2 | | | | EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61000-6-2 | | | | |
| **Power Requirements** | | | | | | | | | |
| Power Consumption | 30 mA @ 5 VDC | 90 mA @ 5 VDC | 77 mA @ 5 VDC | 260 mA @ 5 VDC | 360 mA @ 5 VDC | 200 mA @ 12 VDC | 290 mA @ 5 VDC | 260 mA @ 12 VDC | 360 mA @ 12 VDC |
| **Reliabilty** | | | | | | | | | |
| Warranty | 5 years (see www.moxa.com/warranty) | | | | | | | | |

# USB-to-Serial Converters

| | UPort™ 1610-8 | UPort™ 1650-8 | UPort™ 1610-16 | UPort™ 1650-16 | UPort™ 2210 | UPort™ 2410 | UPort™ 2230 | UPort™ 2430 |
|---|---|---|---|---|---|---|---|---|
| **USB Interface** | | | | | | | | |
| Compliance | USB 1.0/1.1/2.0 compliant | | | | USB 1.1/2.0 compliant | | | |
| Connector | USB type B | | | | | | | |
| Speed | 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB) | | | | | | | |
| **Serial Interface** | | | | | | | | |
| Number of Ports | 8 x RS-232 | 8 x RS-232/422/485 | 16 x RS-232 | 16 x RS-232/422/485 | 2 x RS-232 | 4 x RS-232 | 2 x RS-422/485 | 4 x RS-422/485 |
| Connector | DB9 male | DB9 male | DB9 male | DB9 male | DB9 male | DB9 male | DB9 male | DB9 male |
| Communication Parameters | Data Bits: 5, 6, 7, 8; Stop Bits: 1, 1.5, 2; Parity: None, Even, Odd, Space, Mark | | | | | | | |
| Flow Control | RTS/CTS, XON/XOFF | | | | | | | |
| FIFO | 128 bytes | 128 bytes | 128 bytes | 128 bytes | 16 bytes | 16 bytes | 16 bytes | 16 bytes |
| Baudrate | 50 bps to 921.6 Kbps | | | | | | | |
| Embedded ESD Protection | 15 KV | 15 KV | 15 KV | 15 KV | 15 KV | 15 KV | 15 KV | 15 KV |
| Optical Isolation | --- | --- | --- | --- | --- | --- | --- | --- |
| **Driver Support** | | | | | | | | |
| Windows 98/ME | --- | --- | --- | --- | --- | --- | --- | --- |
| Windows 2000 | √ | √ | √ | √ | √ | √ | √ | √ |
| Windows XP/2003 x86/x64 | √ | √ | √ | √ | √ | √ | √ | √ |
| Windows Vista x86/x64 | √ | √ | √ | √ | √ | √ | √ | √ |
| Windows 2008 x86/x64 | --- | --- | --- | --- | √ | √ | √ | √ |
| WinCE 5.0/6.0 | √ | √ | √ | √ | --- | --- | --- | --- |
| Linux 2.4 | √ | √ | √ | √ | √ | √ | --- | --- |
| Linux 2.6 x86/x64 | √ | √ | √ | √ | √ | √ | √ | √ |
| **Physical Characteristics** | | | | | | | | |
| Housing | SECC sheet metal (1 mm), IP30 protection | | | | Polycarbonate (PC) | | | |
| Product Weight | 835 g | 835 g | 2475 g | 2475 g | 120 g | 210 g | --- | --- |
| Packaged Weight | 1440 g | 1440 g | 3440 g | 3440 g | 325 g | 455 g | --- | --- |
| Dimensions (mm) | 204 x 44 x 125 | 204 x 44 x 125 | 440 x 45.5 x 198.1 | 440 x 45.5 x 198.1 | 70 x 35 x 120 | 80 x 35 x 185 | 70 x 35 x 120 | 80 x 35 x 185 |
| **Environmental Limits** | | | | | | | | |
| Operating Temperature | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C | 0 to 55°C |
| Operating Humidity | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH |
| Storage Temperature | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C | -20 to 70°C |
| **Regulatory Approvals** | | | | | | | | |
| EMI | FCC Part 15 Class A, EN61000-6-4 | | | | FCC Part 15 Class B, EN61000-6-4 | | | |
| Safety | UL, CUL, TÜV | | | | --- | | | |
| EMS | EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61000-6-2 | | | | EN55022 Class B, EN55024, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61000-6-2 | | | |
| **Power Requirements** | | | | | | | | |
| Power Consumption | 230 mA @ 12 VDC | 340 mA @ 12 VDC | 130 mA @ 100 VAC | 150 mA @ 100 VAC | 140 mA @ 5 VDC | 240 mA @ 5 VDC | --- | --- |
| **Reliabilty** | | | | | | | | |
| Warranty | 5 years (see www.moxa.com/warranty) | | | | | | | |

# USB Hubs

| | UPort™ 404 | UPort™ 407 | UPort™ 404-T | UPort™ 407-T | UPort™ 204 | UPort™ 207 |
|---|---|---|---|---|---|---|
| **USB Interface** | | | | | | |
| Compliance | USB 1.1/2.0 compliant | | | | | |
| Upstream USB Ports | 1 (Type B) | | | | | |
| Downstream USB Ports | 4 (Type A) | 7 (Type A) | 4 (Type A) | 7 (Type A) | 4 (Type A) | 7 (Type A) |
| Speed | 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB) | | | | | |
| Supply Current | 500 mA max. per channel | | | | | |
| **Physical Characteristics** | | | | | | |
| Housing | Aluminum | | | | Polycarbonate (PC) | |
| Dimensions (mm) | 80 x 35 x 130 | 100 x 35 x 192 | 80 x 35 x 130 | 100 x 35 x 192 | 80 x 35 x 130 | 100 x 35 x 195 |
| **Environmental Limits** | | | | | | |
| Operating Temperature | 0 to 60°C | 0 to 60°C | -40 to 85°C | -40 to 85°C | 0 to 60°C | 0 to 60°C |
| Operating Humidity | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH | 5 to 95% RH |
| Storage Temperature | -20 to 75°C | -20 to 75°C | -40 to 85°C | -40 to 85°C | -20 to 75°C | -20 to 75°C |
| **Regulatory Approvals** | | | | | | |
| EMI | FCC, Part 15 Class A, EN61000-6-4 | | | | | |
| Safety | UL508, LVD | | | | | |
| EMS | EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61000-6-2 | | | | | |
| **Power Requirements** | | | | | | |
| Power Consumption | 1300 mA @ 12 VDC | 2300 mA @ 12 VDC | 1300 mA @ 12 VDC | 2300 mA @ 12 VDC | 1210 mA@ 12 VDC | 2170 mA @ 12 VDC |
| **Reliabilty** | | | | | | |
| Warranty | 5 years (see www.moxa.com/warranty) | | | | | |

CASE STUDY

# Video Surveillance System

## *Cost-effective USB-to-serial converter for COM port expansion*

The most basic video surveillance setup is a single camera connected directly to a monitor and recording device. However, many businesses require video surveillance on a larger scale, which requires a dedicated management system. These management systems cannot include every possible type of device port, so converters are needed to attach different devices.

USB connections have become a standard feature for computers and many networking devices. Video surveillance management systems generally run on host computers that are equipped with USB ports, but still need to be connected to monitoring devices through serial COM ports. The UPort™ 1150 offers cost-effective USB connectivity for serial devices, such as SpeedDome cameras, PTZ controllers, card readers, and POS boxes, over a large scale video surveillance network.



### Application Requirements

- Instant expand serial COM port via USB port
- Cost-effective solution for large scale deployment
- Support for RS-232, RS-422, and RS-485 serial interface devices
- Stable and reliable USB-to-serial connections

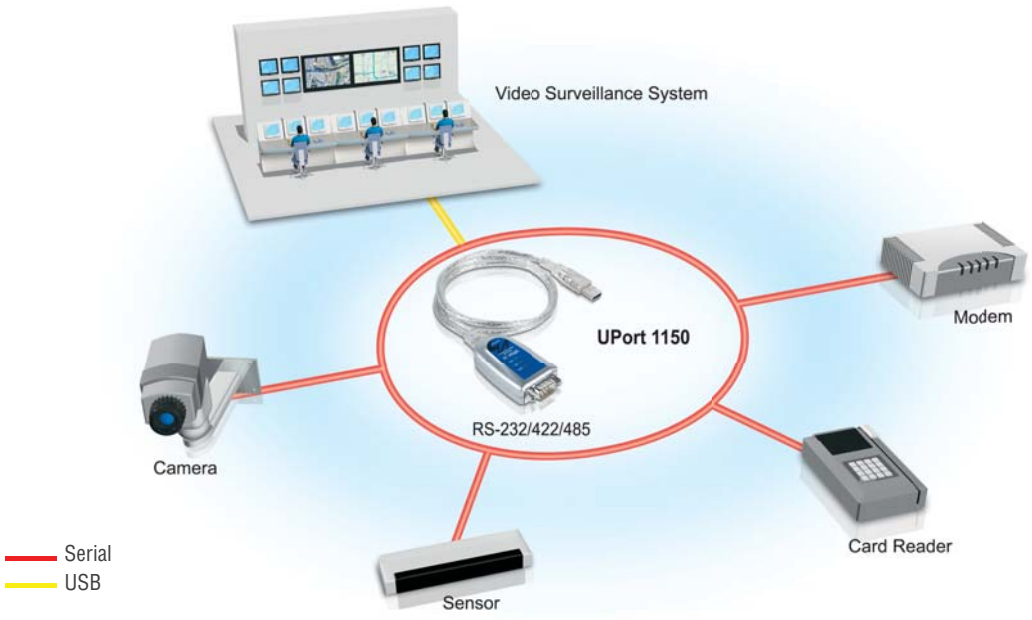
### Why Moxa?

- Easy installation and plug-and-play capability
- Complete selection of USB-to-serial solutions that fulfill all serial demands
- 3-in-1 RS-232/422/485 support for connecting any serial interface device
- Driver support for various management systems (Windows, Windows CE, and Linux)

### Key Products

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

### Application Diagram



CASE STUDY

# Military Satellite Truck

## *Seamless and reliable data transmission*

Before the arrival of mobile satellite technology, military applications relied on terrestrial communication systems to collect data in remote locations and broadcast the signals to a geostationary communications satellite. Satellite trucks, which are commonly used in modern Satellite News Gathering (SNG), allow military command centers to gather intelligence and other data with greater mobility and flexibility than before.

Due to the mobile nature of SNG technology, onboard data acquisition equipment needs to be highly portable yet provide seamless and reliable communication. In addition, satellite trucks are outfitted with various degrees of video production and editing gear that need to be readily available and connected at all times. One of our military clients uses Moxa's USB-to-serial converter as their solution of choice for reliable device connectivity in their fleet of satellite trucks.



### Application Requirements

- Reliable and seamless in-motion serial data transmission
- Industrial-grade design for critical environments
- Small form factor for limited space aboard satellite trucks
- Easy installation and plug & play capability

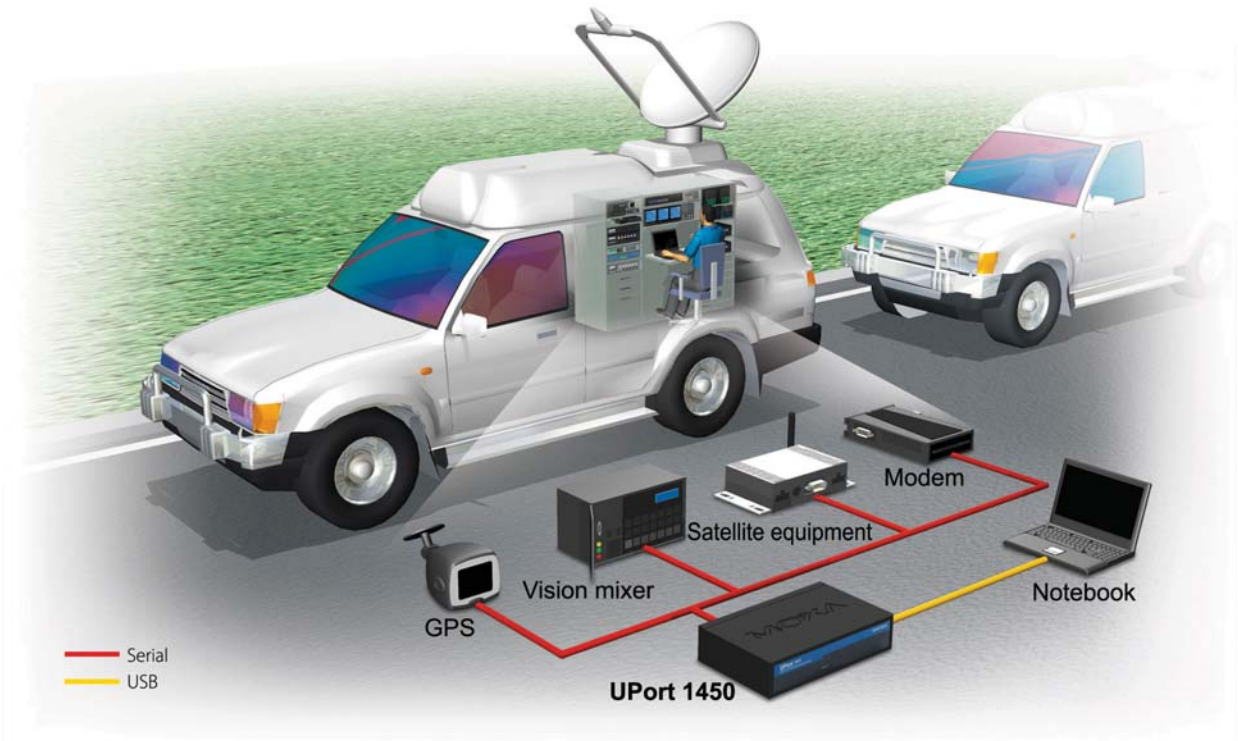
### Why Moxa?

- No data loss with 128-byte FIFO and on-chip flow control for hardware and software
- Electrostatic protection and LED indicators designed for critical environments
- Small form factor and wall-mountable to save space
- Easy COM port configuration and plug & play capability
- 3-in-1 RS-232/422/485 support for connecting any serial interface device

### Key Products

**UPort™ 1450:** 4-port RS-232/422/485 USB-to-serial converter

### Application Diagram



CASE STUDY

# TFT-LCD Manufacturing

## *Reliable connections for multiple quality inspection devices*

### Background

Manufacturing TFT-LCD (thin film transistor liquid crystal display) panels is a complicated and highly technical process. The three major stages in TFT-LCD panel production are the array, LC cell, and module assembly processes. In addition, each finished panel must also pass a series of quality inspection tests which include defect inspection and lighting tests.

The most challenging part of the TFT-LCD manufacturing process is achieving zero fault tolerance for high quality and productivity. One of our customers needed a USB-to-serial solution to transmit data between a host and quality inspection equipment in the TFT-LCD manufacturing process. In such a demanding manufacturing environment, adopting multiple ports and a ruggedly designed USB-to-serial product proved to be the best option.

### Application Requirements

- Industrial-grade design for the TFT-LCD manufacturing process
- High quality solution for complicated high-speed data transmission to improve operational efficiency
- Support for multiple USB-to-serial expansion ports

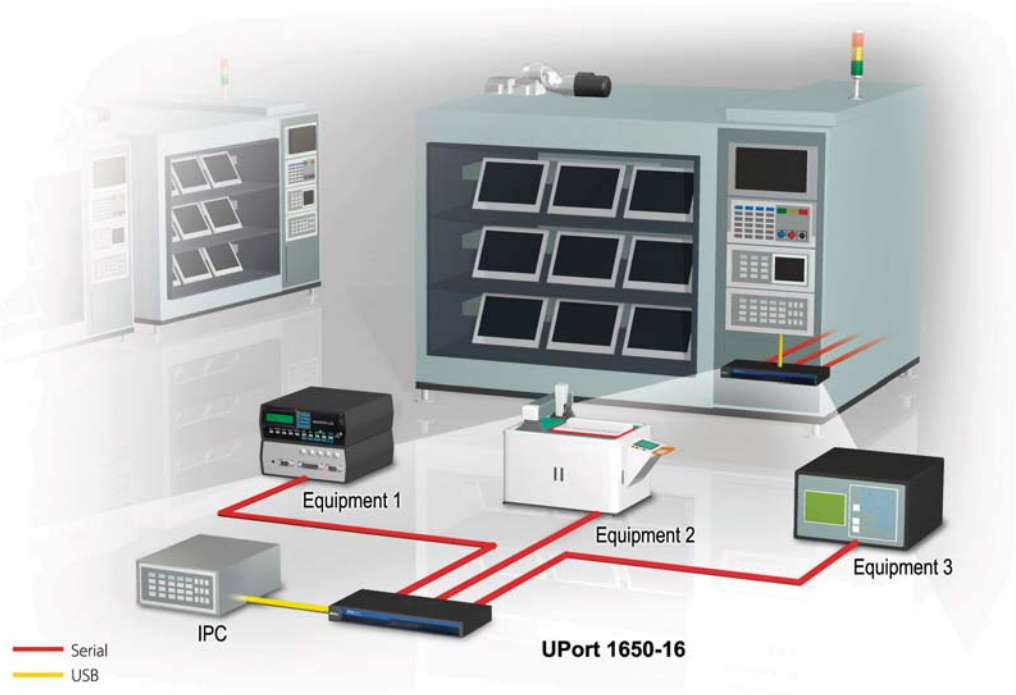
### Why Moxa?

- Standard 19-inch rack-mount size and metal housing design for industrial-grade requirements
- Up to 16 ports for easy USB-to-serial expansion
- 3-in-1 serial ports for a cost efficient solution
- True USB 2.0 Hi-Speed transmission for greater productivity
- 128-byte FIFO and on-chip hardware and software flow control ensure stable data transmission during inspection
- Each serial port has its own LED indicator for easy troubleshooting

### Key Products

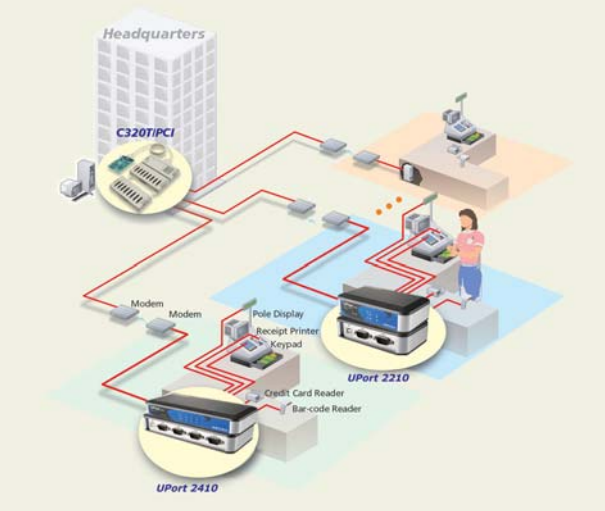
**UPort™ 1650:** 16-port RS-232/422/485 USB-to-serial converter

### Application Diagram



# Introduction to USB Connectivity

Moxa's UPort™ line of USB connectivity products include a wide range of solutions for connecting COM ports or USB ports to a PC through the PC's USB port. Moxa's UPort™ products are designed to provide true USB 2.0 Hi-Speed 480 Mbps data transmission through each port, come with LED indicators for easy monitoring, and are even suitable for heavy-load applications. The UPort™ product line includes USB-to-serial converters with 1, 2, 4, 8, or 16 independent RS-232, RS-422/485, and RS-232/422/485 serial ports for connecting data acquisition equipment and many other types of serial devices to notebooks and desktop PCs, and USB hubs with 4 or 7 USB ports for expanding the number of built-in USB ports on a host PC.




### Available Products

USB-to-serial converters: UPort™ 1000 and UPort™ 2000 series
USB hubs: UPort™ 200 and UPort™ 400 series

## USB-IF Certified

Moxa's UPort™ 200 and UPort™ 400 series of USB 2.0 hubs have passed USB-IF (USB Implementers Forum) certification, which verifies that products meet a number of strict electrical requirements for Hi-Speed USB operation designed to the USB 2.0 specifications. This means that the UPort™ 200/400 series support Hi-Speed USB 2.0 for up to 480 Mbps USB transmission, are fully compliant with the requirements for interoperability, provide enough power to attached devices, and can transition back to high-speed operation from the suspend state.

## Reduce Short and Long Term Costs

For many applications, system integrators are moving towards using either serial-to-Ethernet or USB-to-serial products to connect serial devices to a PC. The overall costs of setting up an application is reduced, not only from a short term hardware investment perspective, but also by reducing costs associated with long term management and integration. Another big plus to using Moxa's USB-to-serial solutions is that each product supports a broad range of operating systems. Drivers are available for Windows 98/ME/2000, Windows XP/2003/ Vista /2008 (x86 and x64), WinCE 5.0/6.0, and Linux 2.4/2.6 (x86 and x64).

## RS-232/422/485 Support

Moxa's UPort™ 1000/2000 series of USB-to-serial products include models that support some or all of the RS-232/422/485 serial interfaces. The full slate of RS-232 signals (TxD, RxD, DTR, DSR, RTS, CTS, DCD) are supported, and both 2-wire and 4-wire RS-485 can be used. Many of Moxa's USB-to-serial products use DB9 male connectors for the serial ports, and for industrial applications, the DB9 female to terminal block accessory can be used. In addition, users can select baudrates up to 921.6 Kbps, and makefff use of the 128-byte FIFO.

## Always Enough Power

Some UPort™ models support both bus power and external power through the power adaptor. Bus power can be used with laptop and workstation connections that support a 500 mA output for USB devices. An external power adaptor can be used if your computer's USB port does not provide enough amperage to run the UPort™.

## Top Serial Performance

Moxa's 20-plus years of experience in serial board design is now built into a new top performance CPU called MOXA ART. This chip equips the UPort™ converters with USB 2.0 (Hi-Speed 480 Mbps), a 128-byte FIFO, on-chip hardware and software flow control, and burst data mode, making Moxa's UPort™ converters perform far better than the competition.

## COM Preserver™ *

Serial transmission applications use names such as COM3 and COM4 to identify COM ports. Unfortunately, most USB-to-serial products are unable to use fixed COM names on the host PC. This means that the names of the COM ports change when the USB-to-serial device is plugged into a different USB port, either on the same or a different PC, forcing the user to reconfigure the COM names manually from within the application.

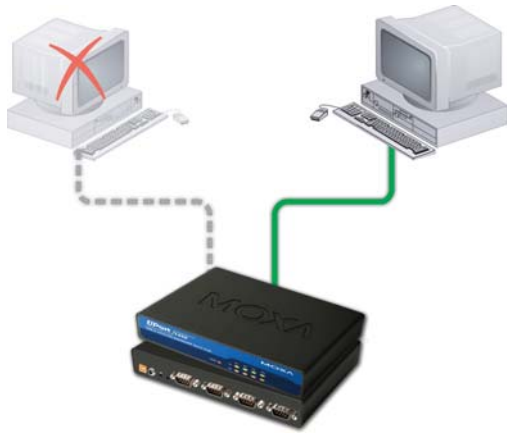
Moxa's UPort™ 1200/1400/1600 USB-to-serial hubs have an advanced feature that allows them to use fixed COM names. When the user enables the "COM Preserver™" function, the COM names "go with" the UPort™ device. In fact, Moxa's drivers can even create the same COM port names on a different host PC. With this feature, you do not need to modify application programs, or rebuild the entire project every time you install a new operating system or upgrade the computer. Don't worry about moving the UPort™ from one USB hub to another, or even from one computer to another. Once the COM Preserver™ function is enabled, the names of the USB-to-serial COM ports will go with the UPort™ wherever it is used.

Note that the COM Preserver™ function is disabled by default. Users can use the traditional method of enumerating COM ports, or enable the COM Preserver™ function to make use of this great new feature.

* Patent Pending

### Scenario 1

**COM port assignment is maintained across different PCs**



### Scenario 2

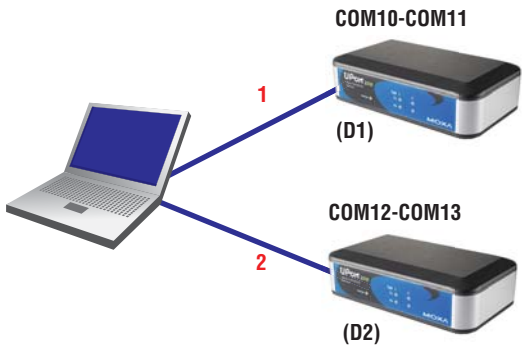
**COM port assignment is maintained across different USB ports**

## Fixed-base COM Mode

Moxa's UPort™ 1200/1400/1600 series, and UPort™ 2000 series of products provide a unique fixed-base COM function that allows users to set a specific initial 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.

For example, assume that you have set COM10 as the first COM number that will be assigned. If UPort™ D1 is plugged into your computer first, your computer will assign COM10 and COM11 to the UPort's serial ports. When UPort™ D2 is plugged in, the computer will assign COM numbers COM12 and COM13.

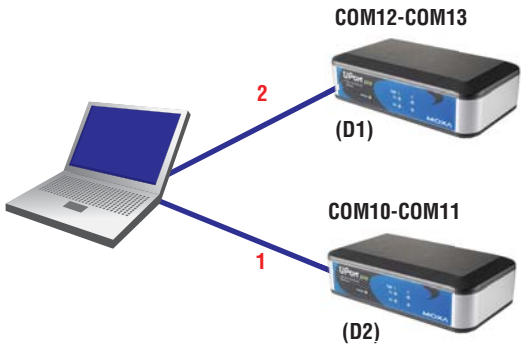
### Scenario 3



If both UPorts are unplugged from the computer, and then UPort™ D2 is plugged back in, the computer will now assign COM10 and COM11 to the UPort's serial ports. When UPort™ D1 is plugged back in, COM numbers COM12 and COM13 will be assigned the UPort's serial ports.

When "Fixed-base COM Mode" is enabled for the first time, all COM port numbers and serial port parameters will be reset to their default values. You can then set the COM numbers and configuration parameters to the values needed for your application.

### Scenario 4






## Magnet Accessory for Attaching to PC Housing

The typical way to use a device such as the UPort™ 1400/1610-8/1650-8 is to place the UPort™ on the desk near the laptop or desktop PC. However, placing the UPort™ in this way wastes space, and due to the nature of USB, makes it more likely that the connection between the PC and UPort™ will get disconnected. The "magnet" solution introduced by Moxa is simple, but innovative. The solution uses magnet accessories that come with the product to attach the UPort™ to the host PC's housing. Not only do you save space, but you can also fix the position of the USB cable that attaches the UPort™ to the PC.

## COM Port Numbers Displayed in Windows System Tray

When using a UPort™ to connect a serial device to your PC, it may be necessary to determine the COM port number assigned to the serial device. A new tool provided by Moxa gives engineers a handy means of monitoring the COM port number of the device. When the UPort™ is plugged into your computer's USB port, a UPort™ icon will be placed in the Windows System Tray located in the lower right corner of the desktop. Simply position the cursor over the UPort™ icon, and an information window showing the COM port number will pop up. When two or more UPorts are connected to the same computer, the pop-up window will show the COM numbers for all of the UPorts.

## UPort™ Models Listed by Interface and Number of Ports

### USB-to-Serial Converters

| Interface | No. of Ports | Model Name |
|---|---|---|
| RS-232 | 1 | UPort™ 1110 |
| | 2 | UPort™ 2210 |
| | 4 | UPort™ 1410 |
| | | UPort™ 2410 |
| | 8 | UPort™ 1610-8 |
| | 16 | UPort™ 1610-16 |
| RS-422/485 | 1 | UPort™ 1130 |
| | 2 | UPort™ 2230 |
| | 4 | UPort™ 2430 |
| RS-232/422/485 | 1 | UPort™ 1150/1150I |
| | 2 | UPort™ 1250/1250I |
| | 4 | UPort™ 1450/1450I |
| | 8 | UPort™ 1650-8 |
| | 16 | UPort™ 1650-16 |

### USB Hubs

| Interface | No. of Ports | Model Name |
|---|---|---|
| USB | 4 | UPort™ 204 |
| | 4 | UPort™ 404 |
| | 7 | UPort™ 207 |
| | 7 | UPort™ 407 |
| | 4 | UPort™ 404-T |
| | 7 | UPort™ 407-T |

# UPort™ 1110/1130/1150

## 1-port RS-232, RS-422/485, and RS-232/422/485 USB-to-serial converters

Terminal Block Adaptor for UPort™ 1130/1150

- Compatible with USB 2.0
- 12 Mbps USB data rate
- 921.6 Kbps maximum baudrate for super fast data transmission
- Drivers provided for Windows, WinCE, and Linux
- Mini DB9 female to terminal block adaptor for easy wiring
- LEDs for indicating USB and TxD/RxD activity
- 15 KV ESD protection for all serial ports

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.



## Instant Plug & Play

The UPort™ 1110/1130/1150 USB-to-serial converters are the perfect accessory for laptop computers that don't have a serial port. The UPort™ 1110 converts from USB to RS-232, the UPort™ 1130 from USB to RS-422/485, and the UPort™ 1150 from USB to RS-232/422/485. All three products are compatible with new and legacy serial devices, and can be used with mobile, instrumentation, and point-of-sale applications.

## Specifications

### USB Interface

**Compliance:** USB 1.0/1.1 compliant, USB 2.0 compatible
**Connector:** USB type A
**Speed:** 12 Mbps (Full-Speed USB)

### Serial Interface

**Number of Ports:** 1
**Serial Standards:**
UPort™ 1110: RS-232
UPort™ 1130: RS-422/485
UPort™ 1150: RS-232/422/485
**Connector:** DB9 male

### Serial Line Protection

**ESD Protection:** 15 KV embedded

### Performance

**Baudrate:** 50 bps to 921.6 Kbps

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8
**Stop Bits:** 1, 1.5, 2
**Parity:** None, Even, Odd, Space, Mark
**Flow Control:** RTS/CTS, XON/XOFF
**I/O Address:** Assigned by BIOS
**IRQ:** Assigned by BIOS
**FIFO:** 64 bytes

### Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
**RS-422:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-4w:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-2w:** Data+(B), Data-(A), GND

### Driver Support

**Operating Systems:** Windows (98/ME/2000, XP/2003/Vista x86/x64), WinCE 5.0/6.0, Linux 2.4, Linux 2.6 x86/x64

### Physical Characteristics

**Housing:** ABS + PC
**Weight:**
Product only: 65 g (0.14 lb)
Packaged: 200 g (0.44 lb)
**Dimensions:** 38.4 x 60 x 20 mm (1.51 x 2.36 x 0.79 in)

### Environmental Limits

**Operating Temperature:** 0 to 55°C (32 to 131°F)
**Operating Humidity:** 5 to 95% RH
**Storage Temperature:** -20 to 70°C (-4 to 158°F)
**Regulatory Approvals:** 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-61000-4-6, IEC 61000-4-8, IEC-61000-4-11, FCC Part 15 Class B

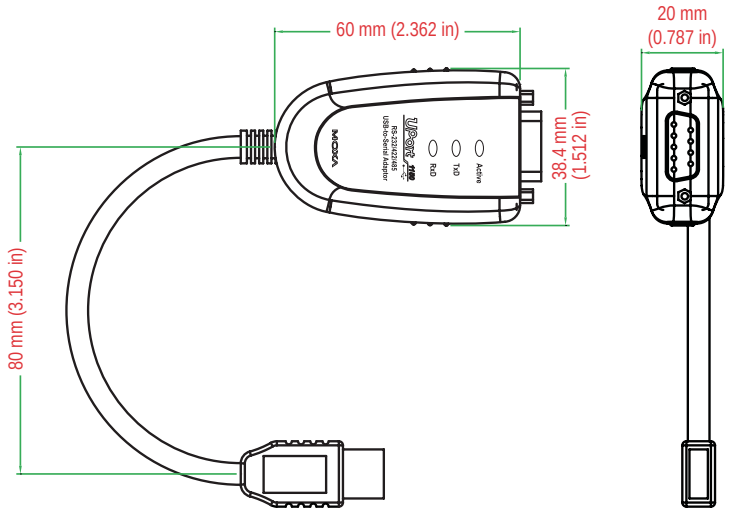
### Power Requirements

**Power Consumption:**
UPort™ 1110: 30 mA @ 5 VDC
UPort™ 1130: 90 mA @ 5 VDC
UPort™ 1150: 77 mA @ 5 VDC

### Warranty

**Warranty Period:** 5 years
**Details:** See www.moxa.com/warranty

## Dimensions




## Ordering Information

### Available 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

### Package Checklist

- UPort™ 1110 or 1130 or 1150 USB-to-serial converter
- 1 mini DB9 female to terminal block adaptor (UPort™ 1130 and 1150 only)
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

# UPort™ 1150I

## 1-port RS-232/422/485 USB-to-serial converter with 2 KV isolation

- Compatible with USB 2.0
- 12 Mbps USB data rate
- 15N high retention USB type B connector
- Software selectable RS-232, RS-422, 4-wire RS-485, and 2-wire RS-485
- Drivers provided for Windows, WinCE, and Linux
- 15 KV ESD protection for all serial ports
- 2 KV optical isolation protection
- Full modem status LEDs for UPort™ 1150I

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.

## Instant Plug & Play

The UPort™ 1150I USB-to-serial converter allows you to connect 1 RS-232/422/485 device to your laptop or workstation through the USB (Universal Serial Bus) port. This plug & play USB solution is compatible with both new and legacy RS-232/422/485 devices, and is perfect for mobile, instrumentation, and point-of sale applications.

## Simplified, Hassle-free Serial Port Expansion

USB plug & play makes serial port expansion easy, and does not require IRQ, DMA, or I/O address resources. Users no longer need to open the chassis or power down the system to add COM ports, saving on setup time and cost.

## Specifications

### USB Interface

**Compliance:** USB 1.0/1.1 compliant, USB 2.0 compatible
**Connector:** USB type B
**Speed:** 12 Mbps (Full-Speed USB)

### Serial Interface

**Number of Ports:** 1
**Serial Standards:** RS-232/422/485
**Connector:** DB9 male

### Serial Line Protection

**ESD Protection:** 15 KV embedded
**Optical Isolation:** 2 KV

### Performance

**Baudrate:** 50 bps to 921.6 Kbps

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8
**Stop Bits:** 1, 1.5, 2
**Parity:** None, Even, Odd, Space, Mark
**Flow Control:** RTS/CTS, XON/XOFF
**I/O Address:** Assigned by BIOS
**IRQ:** Assigned by BIOS
**FIFO:** 64 bytes

### Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
**RS-422:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-4w:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-2w:** Data+(B), Data-(A), GND

### Driver Support

**Operating Systems:** Windows (98/ME/2000, XP/2003/Vista x86/x64), WinCE 5.0/6.0, Linux 2.4, Linux 2.6 x86/x64

### Physical Characteristics

**Housing:** SECC sheet metal (1 mm), IP30 protection
**Weight:**
Product only: 75 g (0.65 lb)
Packaged: 320 g (0.72 lb)
**Dimensions:** 52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)

### Environmental Limits

**Operating Temperature:** 0 to 55°C (32 to 131°F)
**Operating Humidity:** 5 to 95% RH
**Storage Temperature:** -20 to 70°C (-4 to 158°F)
**Regulatory Approvals:** 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-61000-4-6, IEC 61000-4-8, IEC-61000-4-11, FCC Part 15 Class B

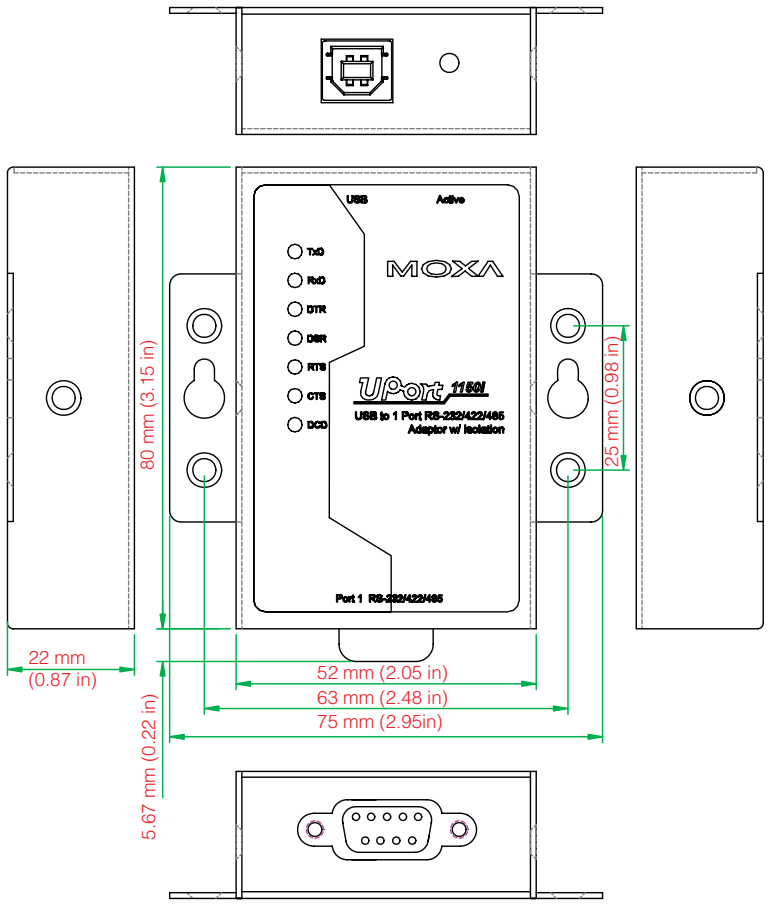
### Power Requirements

**Power Consumption:** 260 mA @ 5 VDC

### Warranty

**Warranty Period:** 5 years
**Details:** See www.moxa.com/warranty

## Dimensions




## Ordering Information

### Available Models

**UPort™ 1150I:** 1-port RS-232/422/485 USB-to-serial converter with 2 KV optical isolation

### Optional Accessories (can be purchased separately)

**DK35A:** Mounting kit for 35-mm DIN-Rail

### Package Checklist

- UPort™ 1150I USB-to-serial converter
- USB-IF certified cable
- 1 mini DB9 female to terminal block adaptor
- Velcro lock-down strap for the USB cable
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

# UPort™ 1250/1250I

## *2-port RS-232/422/485 USB-to-serial converters with optional 2 KV isolation*

UPort™ 1250

UPort™ 1250I

- Hi-Speed USB 2.0 for up to 480 Mbps USB transmission
- 921.6 Kbps maximum baudrate for super fast data transmission
- 128-byte FIFO and on-chip H/W, S/W flow control
- 15N high retention type B connector
- Drivers provided for Windows, WinCE, and Linux
- LEDs for easy monitoring
- 15 KV ESD protection for all serial ports
- Locking power cord for the UPort™ 1250I

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.

## Instant Plug & Play

The UPort™ 1250/1250I USB-to-serial converters allow you to connect 2 RS-232/422/485 devices to your laptop or workstation through the USB (Universal Serial Bus) port. These plug & play USB solutions are perfect for mobile, instrumentation, and point-of sale applications.

## Simplified, Hassle-free Serial Port Expansion

USB plug & play makes serial port expansion easy, and does not require IRQ, DMA, or I/O address resources. Users no longer need to open the chassis or power down the system to add COM ports, saving on setup time and cost.

## Top Serial Performance

Moxa's 20-plus years of experience in serial board design is now built into a new top performance CPU called MOXA ART. This chip equips the UPort™ 1250/1250I converters with USB 2.0 (Hi-Speed 480 Mbps), a 128-byte FIFO, on-chip hardware and software flow control, and burst data mode, making Moxa's UPort™ converters the top performing USB-to-serial converters in the world.

## Specifications

### USB Interface

**Compliance:** USB 1.1/2.0 compliant
**Connector:** USB type B
**Speed:** 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)

### Serial Interface

**Number of Ports:** 2
**Serial Standards:** RS-232/422/485
**Connector:** DB9 male

### Serial Line Protection

**ESD Protection:** 15 KV embedded
**Optical Isolation:** 2 KV (UPort™ 1250I only)

### Performance

**Baudrate:** 50 bps to 921.6 Kbps

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8
**Stop Bits:** 1, 1.5, 2
**Parity:** None, Even, Odd, Space, Mark
**Flow Control:** RTS/CTS, XON/XOFF
**I/O Address:** Assigned by BIOS
**IRQ:** Assigned by BIOS
**FIFO:** 128 bytes

### Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
**RS-422:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-4w:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-2w:** Data+(B), Data-(A), GND
**RS-485 Data Direction:** ADDC® (Automatic Data Direction Control)

### Driver Support

**Operating Systems:** Windows (2000, XP/2003/Vista x86/x64), Win CE 5.0/6.0, Linux 2.4, Linux 2.6 x86/x64

### Physical Characteristics

**Housing:** SECC sheet metal (1 mm), IP30 protection

**Weight:**
Product only: 180 g (0.40 lb)
Packaged:
UPort™ 1250: 370 g (0.82 lb)
UPort™ 1250I: 680 g (1.5 lb)

**Dimensions:** 77 x 26 x 111 mm (3.03 x 1.02 x 4.37 in)

## Environmental Limits

**Operating Temperature:** 0 to 55°C (32 to 131°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:** -20 to 75°C (-4 to 167°F)

**Regulatory Approvals:** EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, IEC 61000-4-8, IEC 61000-4-11, FCC Part 15 Class A, UL, CUL, TÜV

## Power Requirements

**Power Consumption:**
UPort™ 1250 (bus power): 360 mA @ 5 VDC
UPort™ 1250I (12 to 48 VDC external power): 200 mA @ 12 VDC

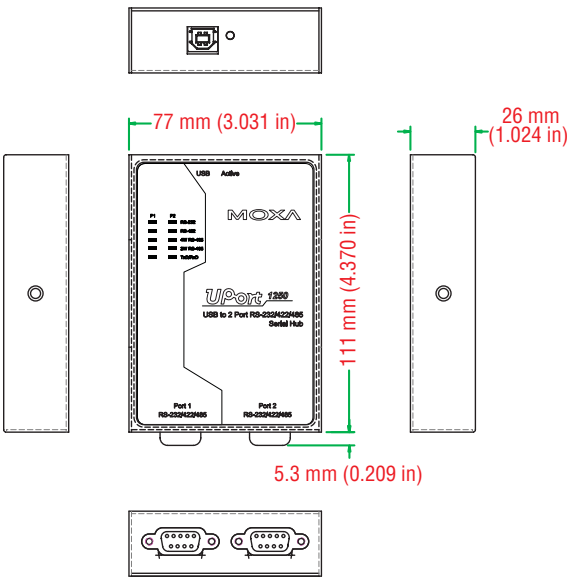
## Warranty

**Warranty Period:** 5 years

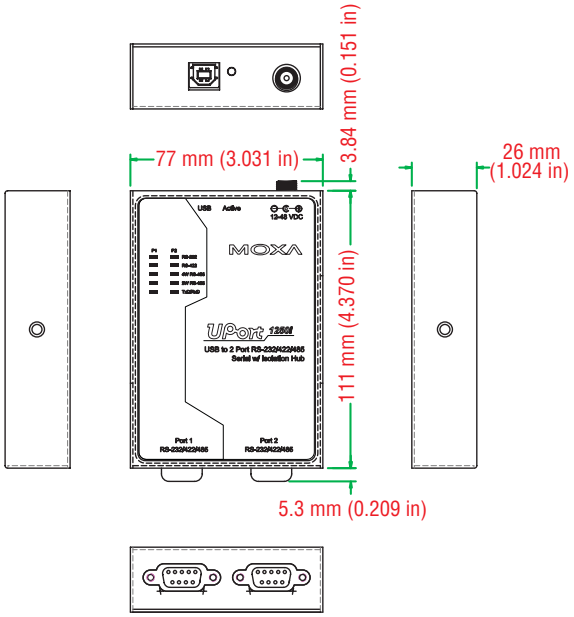
**Details:** See www.moxa.com/warranty

## Dimensions

### UPort™ 1250




### UPort™ 1250I




# Ordering Information

## Available 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 with 2 KV optical isolation, adaptor included

## Optional Accessories (can be purchased separately)

**Mini DB9F-to-TB Adaptor:** DB9 female to terminal block adaptor for RS-422/485 applications

**Wall Mount Kit:** Metal plates and screws

**DK35A:** Mounting kit for 35-mm DIN-Rail

## Package Checklist

- UPort™ 1250 or 1250I USB-to-serial converter
- USB-IF certified cable
- 1 mini DB9 female to terminal block adaptor
- Power adaptor (UPort™ 1250I)
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

# UPort™ 1400 Series

## *4-port RS-232 and RS-232/422/485 USB-to-serial converters with optional 2 KV isolation*

- Hi-Speed USB 2.0 for up to 480 Mbps USB transmission
- 921.6 Kbps maximum baudrate for super fast data transmission
- 15N high retention USB type B connector
- 128-byte FIFO and on-chip H/W, S/W flow control
- Built-in 15 KV ESD protection for all serial ports
- 2 KV optical isolation protection (UPort™ 1450I only)
- IP30-rated, rugged metal housing
- COM port assignments maintained across different PCs
- Drivers provided for Windows, WinCE, and Linux
- Choose bus power or external power (UPort™ 1410/1450 only)
- Locking power cord

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.

## Instant Plug & Play

The UPort™ 1400 USB-to-serial converters allow you to connect 4 RS-232 or RS-232/422/485 devices to your laptop or workstation through the USB (Universal Serial Bus) port. The UPort™ 1400 converters are compatible with new and legacy serial devices, and are perfect for mobile, instrumentation, and point-of-sale applications.

## Simplified, Hassle-free Serial Port Expansion

USB plug & play makes serial port expansion easy, and does not require IRQ, DMA, or I/O address resources. Users no longer need to open the chassis or power down the system to add COM ports, saving on setup time and cost.

## Top Serial Performance

Moxa's 20-plus years of experience in serial board design is now built into a new top performance CPU called MOXA ART. This chip equips the UPort™ 1400 converters with USB 2.0 (Hi-Speed 480 Mbps), a 128-byte FIFO, on-chip hardware and software flow control, and burst data mode, making Moxa's UPort™ converters perform far better than the competition.

## Specifications

### USB Interface

**Compliance:** USB 1.1/2.0 compliant
**Connector:** USB type B
**Speed:** 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)

### Serial Interface

**Number of Ports:** 4
**Serial Standards:**
UPort™ 1410: RS-232
UPort™ 1450/1450I: RS-232/422/485
**Connector:** DB9 male

### Serial Line Protection

**ESD Protection:** 15 KV embedded
**Optical Isolation:** 2 KV (UPort™ 1450I only)

### Performance

**Baudrate:** 50 bps to 921.6 Kbps

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8
**Stop Bits:** 1, 1.5, 2
**Parity:** None, Even, Odd, Space, Mark
**Flow Control:** RTS/CTS, XON/XOFF
**I/O Address:** Assigned by BIOS
**IRQ:** Assigned by BIOS
**FIFO:** 128 bytes

### Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
**RS-422:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-4w:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-2w:** Data+(B), Data-(A), GND
**RS-485 Data Direction:** ADDC® (Automatic Data Direction Control)

### Driver Support

**Operating Systems:** Windows (2000, XP/2003/Vista x86/x64), WinCE 5.0/6.0, Linux 2.4, Linux 2.6 x86/x64

### Physical Characteristics

**Housing:** SECC sheet metal (1 mm), IP30 protection

**Weight:**
Product only: 720 g (1.59 lb)
Packaged: 1320 g (2.91 lb)

**Dimensions:** 204 x 30 x 125 mm (8.03 x 1.18 x 4.92 in)

## Environmental Limits

**Operating Temperature:** 0 to 55°C (32 to 131°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:** -20 to 75°C (-4 to 167°F)

**Regulatory Approvals:** EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, FCC Part 15 Class A, UL, CUL, TÜV

## Power Requirements

**Power Consumption:**

- Bus power:
  UPort™ 1410: 180 mA @ 5 VDC
- 12 to 48 VDC external power:
  UPort™ 1410: 180 mA @ 12 VDC
  UPort™ 1450: 260 mA @ 12 VDC
  UPort™ 1450I: 360 mA @ 12 VDC

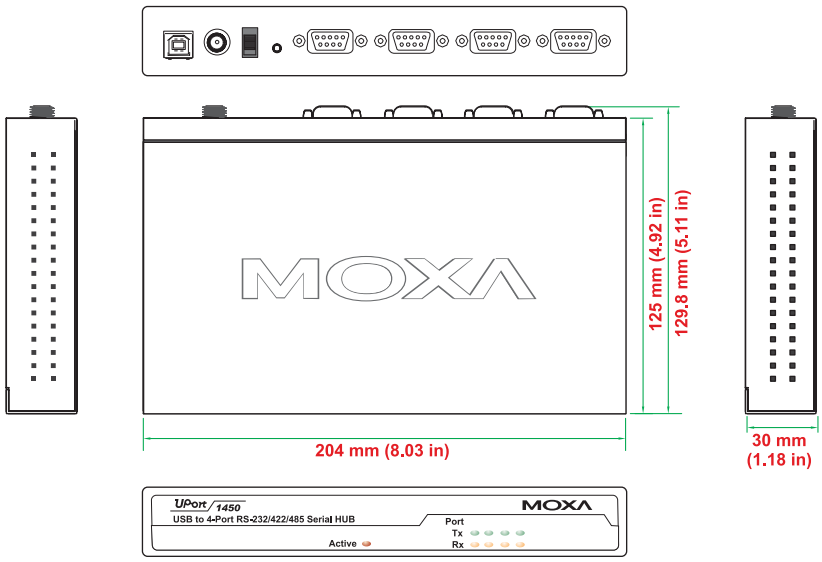
## Warranty

**Warranty Period:** 5 years

**Details:** See www.moxa.com/warranty



## Dimensions




# Ordering Information

## Available Models

**UPort™ 1410:** 4-port RS-232 USB-to-serial converter

**UPort™ 1450:** 4-port RS-232/422/485 USB-to-serial converter, adaptor included

**UPort™ 1450I:** 4-port RS-232/422/485 USB-to-serial converter with 2 KV optical isolation, adaptor included

## Optional Accessories (can be purchased separately)

**Mini DB9F-to-TB adaptor:** DB9 female to terminal block adaptor for RS-422/485 applications

**Magnet Accessory:** Magnets for attaching the UPort™ 1400 to the PC's housing

**Wall Mount Kit:** Metal plates and screws

**DIN-Rail Kit:** DIN-Rail kit for the UPort™ 1400 series

**DK35A:** Mounting kit for 35-mm DIN-Rail

## Package Checklist

- UPort™ 1400 USB-to-serial converter
- USB-IF certified cable
- 1 mini DB9 female to terminal block adaptor (UPort™ 1450 and 1450I only)
- Power adaptor (UPort™ 1450 and 1450I only)
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

## Power Adaptor (can be purchased separately)

Note: Available for the UPort™ 1410 if the USB port does not provide enough power. You must purchase the adaptor plus one power cord.

**PWR-12120-DT-S2:** 240 VAC to 12 VDC @ 1.2 A power adaptor

**PWC-C7US-2B-183:** US plug, 2-pin power cord

**PWC-C7UK-2B-183:** UK plug, 2-pin power cord

**PWC-C7EU-2B-183:** EU plug, 2-pin power cord

**PWC-C7JP-2B-183:** JP plug, 2-pin power cord

**PWC-C7AU-2B-183:** SAA plug, 2-pin power cord

# UPort™ 1600-8 Series

## 8-port RS-232 and RS-232/422/485 USB-to-serial converters

- Hi-Speed USB 2.0 for up to 480 Mbps USB transmission
- 921.6 Kbps maximum baudrate for super fast data transmission
- 15N high retention USB type B connector
- 128-byte FIFO and on-chip H/W, S/W flow control
- Built-in 15 KV ESD protection for all serial ports
- IP30-rated, rugged metal housing
- COM port assignments maintained across different PCs
- Mini DB9 female to terminal block adaptor for easy wiring
- Drivers provided for Windows, WinCE, and Linux
- Locking power cord

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.



## Instant Plug & Play

The UPort™ 1600-8 USB-to-serial converters allow you to connect 8 RS-232 or RS-232/422/485 devices to your laptop or workstation through the USB (Universal Serial Bus) port. The UPort™ 1600-8 converters are compatible with new and legacy serial devices, and are perfect for mobile, instrumentation, and point-of-sale applications.

## Simplified, Hassle-free Serial Port Expansion

USB plug & play makes serial port expansion easy, and does not require IRQ, DMA, or I/O address resources. Users no longer need to open the chassis or power down the system to add COM ports, saving on setup time and cost.

## Top Serial Performance

Moxa's 20-plus years of experience in serial board design is now built into a new top performance CPU called MOXA ART. This chip equips the UPort™ 1600-8 converters with USB 2.0 (Hi-Speed 480 Mbps), a 128-byte FIFO, on-chip hardware and software flow control, and burst data mode, making Moxa's UPort™ converters perform far better than the competition.

## Specifications

### USB Interface

**Compliance:** USB 1.1/2.0 compliant
**Connector:** USB type B
**Speed:** 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)

### Serial Interface

**Number of Ports:** 8
**Serial Standards:**
UPort™ 1610-8: RS-232
UPort™ 1650-8: RS-232/422/485
**Connector:** DB9 male

### Serial Line Protection

**ESD Protection:** 15 KV embedded

### Performance

**Baudrate:** 50 bps to 921.6 Kbps

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8
**Stop Bits:** 1, 1.5, 2
**Parity:** None, Even, Odd, Space, Mark
**Flow Control:** RTS/CTS, XON/XOFF
**I/O Address:** Assigned by BIOS
**IRQ:** Assigned by BIOS
**FIFO:** 128 bytes

### Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
**RS-422:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-4w:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-2w:** Data+(B), Data-(A), GND
**RS-485 Data Direction:** ADDC® (Automatic Data Direction Control)

### Driver Support

**Operating Systems:** Windows (2000, XP/2003/Vista x86/x64), WinCE 5.0/6.0, Linux 2.4, Linux 2.6 x86/x64

### Physical Characteristics

**Housing:** SECC sheet metal (1 mm), IP30 protection

**Weight:**
Product only: 835 g (1.84 lb)
Packaged: 1440 g (3.17 lb)

**Dimensions:** 204 x 44 x 125 mm (8.03 x 1.73 x 4.92 in)

## Environmental Limits

**Operating Temperature:** 0 to 55°C (32 to 131°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:** -20 to 75°C (-4 to 167°F)

**Regulatory Approvals:** EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, FCC Part 15 Class A, UL, CUL, TÜV

## Power Requirements

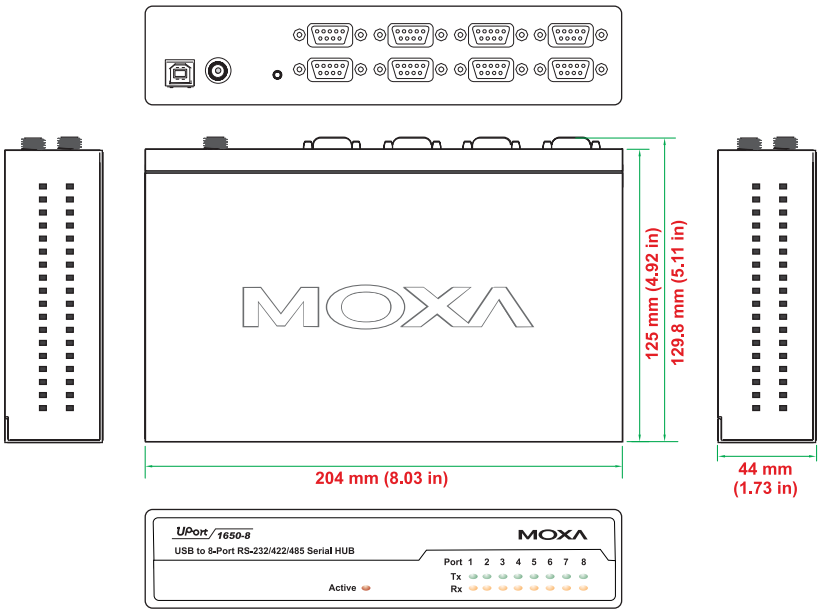
**Power Consumption:**
UPort™ 1610-8 (12 to 48 VDC external power): 230 mA @ 12 VDC
UPort™ 1650-8 (12 to 48 VDC external power): 340 mA @ 12 VDC

## Warranty

**Warranty Period:** 5 years

**Details:** See www.moxa.com/warranty

## Dimensions




# Ordering Information

## Available Models

**UPort™ 1610-8:** 8-port RS-232 USB-to-serial converter, adaptor included

**UPort™ 1650-8:** 8-port RS-232/422/485 USB-to-serial converter, adaptor included

## Optional Accessories (can be purchased separately)

**Mini DB9F-to-TB Adaptor:** DB9 female to terminal block adaptor for RS-422/485 applications

**Magnet Accessory:** Magnets for attaching the UPort™ 1600-8 to the PC's housing

**Wall Mount Kit:** Metal plates and screws

**DIN-Rail Kit:** DIN-Rail kit for the UPort™ 1600-8 series

**DK35A:** Mounting kit for 35-mm DIN-Rail

## Package Checklist

- UPort™ 1600-8 USB-to-serial converter
- USB-IF certified cable
- Power adaptor
- 1 mini DB9 female to terminal block adaptor (UPort™ 1650-8 only)
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

# UPort™ 1600-16 Series

## 16-port RS-232 and RS-232/422/485 USB-to-serial converters

- Hi-Speed USB 2.0 for up to 480 Mbps USB transmission
- 921.6 Kbps maximum baudrate for super fast data transmission
- 15N high retention USB type B connector
- 128-byte FIFO and on-chip H/W, S/W flow control
- Standard 19-inch rack-mountable
- Built-in 15 KV ESD protection on all serial ports
- IP30-rated, rugged metal housing
- COM port assignments maintained across different PCs
- Mini DB9 female to terminal block adaptor for easy wiring
- Drivers provided for Windows, WinCE, and Linux

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.

## Instant Plug & Play

The UPort™ 1600-16 USB-to-serial converters allow you to connect 16 RS-232 or RS-232/422/485 devices to your laptop or workstation through the USB (Universal Serial Bus) port. The UPort™ 1600-16 converters are compatible with new and legacy serial devices, and are perfect for mobile, instrumentation, and point-of-sale applications.

## Simplified, Hassle-free Serial Port Expansion

USB plug & play makes serial port expansion easy, and does not require IRQ, DMA, or I/O address resources. Users no longer need to open the chassis or power down the system to add COM ports, saving on setup time and cost.

## Top Serial Performance

Moxa's 20-plus years of experience in serial board design is now built into a new top performance CPU called MOXA ART. This chip equips the UPort™ 1600-16 converters with USB 2.0 (Hi-Speed 480 Mbps), a 128-byte FIFO, on-chip hardware and software flow control, and burst data mode, making Moxa's UPort™ converters perform far better than the competition.

## Specifications

### USB Interface

**Compliance:** USB 1.1/2.0 compliant
**Connector:** USB type B
**Speed:** 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)

### Serial Interface

**Number of Ports:** 16
**Serial Standards:**
UPort™ 1610-16: RS-232
UPort™ 1650-16: RS-232/422/485
**Connector:** DB9 male

### Serial Line Protection

**ESD Protection:** 15 KV embedded

### Performance

**Baudrate:** 50 bps to 921.6 Kbps

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8
**Stop Bits:** 1, 1.5, 2
**Parity:** None, Even, Odd, Space, Mark
**Flow Control:** RTS/CTS, XON/XOFF
**I/O Address:** Assigned by BIOS
**IRQ:** Assigned by BIOS
**FIFO:** 128 bytes

### Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
**RS-422:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-4w:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND
**RS-485-2w:** Data+(B), Data-(A), GND
**RS-485 Data Direction:** ADDC® (Automatic Data Direction Control)

### Driver Support

**Operating Systems:** Windows (2000, XP/2003/Vista x86/x64), Win CE 5.0/6.0, Linux 2.4, Linux 2.6 x86/x64

## Physical Characteristics

**Housing:** SECC sheet metal (1 mm), IP30 protection

**Weight:**
Product only: 2475 g (5.45 lb)
Packaged: 3440 g (7.58 lb)

**Dimensions:** 440 x 45.5 x 198.1 mm (17.32 x 1.79 x 7.80 in)

## Environmental Limits

**Operating Temperature:** 0 to 55°C (32 to 131°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:** -20 to 75°C (-4 to 167°F)

**Regulatory Approvals:** EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, FCC Part 15 Class A, UL, CUL, TÜV

## Power Requirements

**Input Voltage:** 100 to 240 VAC external power

**Power Consumption:**
UPort™ 1610-16: 130 mA @ 100 VAC
UPort™ 1650-16: 150 mA @ 100 VAC

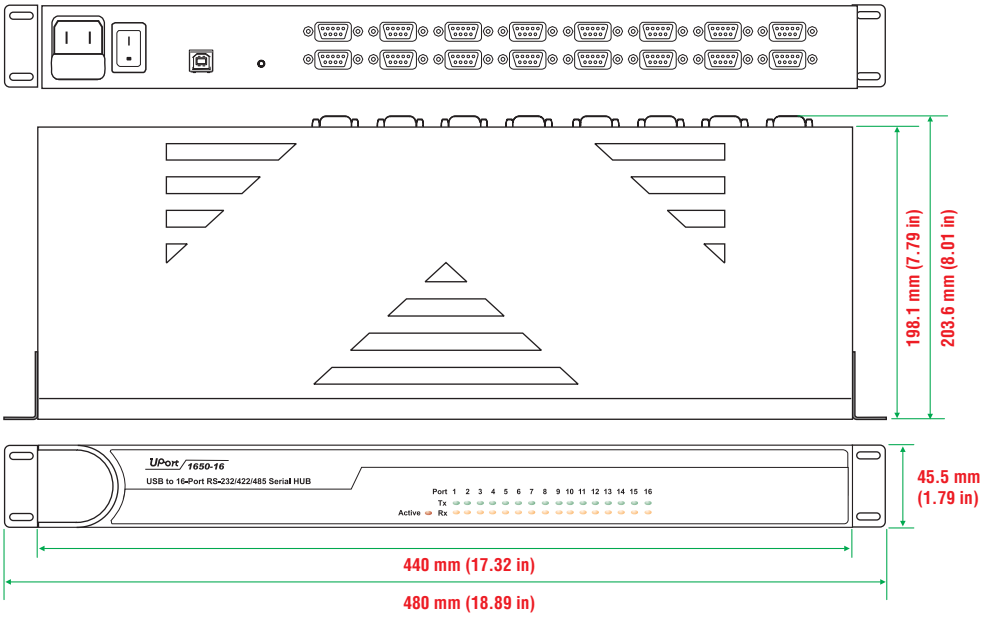
## Warranty

**Warranty Period:** 5 years

**Details:** See www.moxa.com/warranty



## Dimensions




# Ordering Information

## Available Models

**UPort™ 1610-16:** 16-port RS-232 USB-to-serial converter

**UPort™ 1650-16:** 16-port RS-232/422/485 USB-to-serial converter

## Optional Accessories (can be purchased separately)

**Mini DB9F-to-TB Adaptor:** DB9 female to terminal block adaptor for RS-422/485 applications

**Rackmount Kit:** Metal plates and screws

## Package Checklist

- UPort™ 1600-16 USB-to-serial converter
- USB-IF certified cable
- Power cord
- 1 mini DB9 female to terminal block adaptor (UPort™ 1650-16 only)
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

# UPort™ 2210/2410

## 2 and 4-port RS-232 USB-to-serial converters

UPort™ 2210

UPort™ 2410

- Hi-Speed USB 2.0 for up to 480 Mbps USB transmission
- 921.6 Kbps maximum baudrate for super fast data transmission
- Additional I/O and IRQ not needed
- Built-in 15 KV ESD protection for all serial ports
- Drivers provided for Windows and Linux
- Supports Fixed-Base COM Utility for setting the initial extended COM port number
- LEDs for easy monitoring

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.

## Instant Plug & Play

The UPort™ 2210/2410 USB-to-serial converters allow you to connect 2 or 4 RS-232 devices to your laptop or workstation through the USB (Universal Serial Bus) port. The UPort™ 2210 and UPort™ 2410 are cost-effective solutions for both new and legacy RS-232 devices, and are perfect for mobile, instrumentation, and point-of sale applications.

## Simplified, Hassle-free Serial Port Expansion

USB plug & play makes serial port expansion easy, and does not require IRQ, DMA, or I/O address resources. Users no longer need to open the chassis or power down the system to add COM ports, saving on setup time and cost.

## Easy-to-Use Windows Utility

The UPort™ 2210/2410 Windows utility supports the fixed-base COM function, which assigns COM port numbers sequentially, starting from a specific initial COM port number. The fixed-base COM function not only saves setup time and cost, but also provides users with a solution suitable for a variety of applications.

## Specifications

### USB Interface

**Compliance:** USB 1.1/2.0 compliant

**Connector:** USB type B

**Speed:** 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)

### Serial Interface

**Number of Ports:**
UPort™ 2210: 2
UPort™ 2410: 4

**Serial Standards:** RS-232

**Connector:** DB9 male

### Serial Line Protection

**ESD Protection:** 15 KV embedded

### Performance

**Baudrate:** 50 bps to 921.6 Kbps

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8

**Stop Bits:** 1, 1.5, 2

**Parity:** None, Even, Odd

**Flow Control:** RTS/CTS, XON/XOFF

**I/O Address:** Assigned by BIOS

**IRQ:** Assigned by BIOS

**FIFO:** 16 bytes

### Serial Signals

**RS-232:** TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

### Driver Support

**Operating Systems:** Windows (2000, XP/2003/Vista/2008 x86/x64), Linux 2.6 x86/x64

### Physical Characteristics

**Housing:** Polycarbonate (PC)

**Weight:**
Product only:
UPort™ 2210: 120 g (0.26 lb)
UPort™ 2410: 210 g (0.46 lb)
Packaged:
UPort™ 2210: 325 g (0.72 lb)
UPort™ 2410: 455 g (1 lb)

**Dimensions:**
UPort™ 2210: 70 x 35 x 120 mm (2.76 x 1.38 x 4.72 in)
UPort™ 2410: 80 x 35 x 185 mm (3.15 x 1.38 x 7.28 in)

## Environmental Limits

**Operating Temperature:** 0 to 55°C (32 to 131°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:** -20 to 75°C (-4 to 167°F)

**Regulatory Approvals:** 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 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, FCC Part 15 Class B

## Power Requirements

**Power Consumption:**
UPort™ 2210: 140 mA @ 5 VDC
UPort™ 2410: 240 mA @ 5 VDC

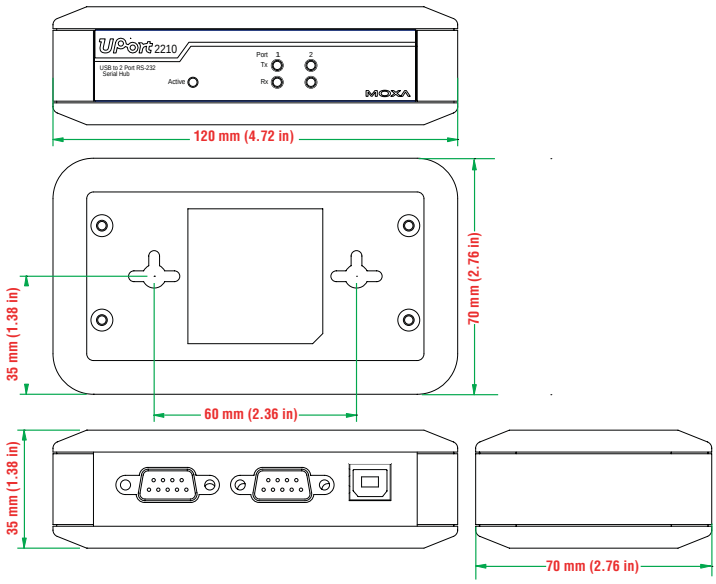
## Warranty

**Warranty Period:** 5 years

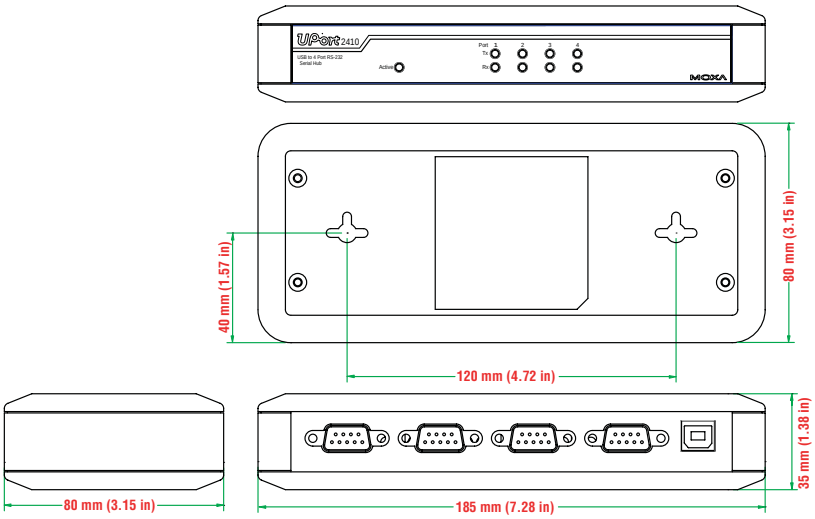
**Details:** See www.moxa.com/warranty

## Dimensions

### UPort™ 2210




### UPort™ 2410




# Ordering Information

## Available Models

**UPort™ 2210:** 2-port RS-232 USB-to-serial converter

**UPort™ 2410:** 4-port RS-232 USB-to-serial converter

## Package Checklist

- UPort™ 2210 or UPort™ 2410
- USB-IF certified cable
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

Coming Soon

# UPort™ 2230/2430

## 2 and 4-port RS-422/485 USB-to-serial converters

- Hi-Speed USB 2.0 for up to 480 Mbps USB transmission
- Additional I/O and IRQ not needed
- Built-in 15 KV ESD protection for all serial ports
- Drivers provided for Windows and Linux
- Supports Fixed-Base COM Utility for setting the initial COM number
- LEDs for easy monitoring
- 921.6 Kbps maximum baudrate for super fast data transmission
- Wall mountable

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.

## Instant Plug & Play

The UPort™ 2230/2430 USB-to-serial converters allow you to connect 2 or 4 RS-422/485 devices to your laptop or workstation through the USB (Universal Serial Bus) port. The UPort™ 2230/2430 are cost-effective solutions for both new and legacy RS-422/485 devices, and are perfect for mobile, instrumentation, and point-of sale applications.

## Simplified, Hassle-free Serial Port Expansion

USB plug & play makes serial port expansion easy, and does not require IRQ, DMA, or I/O address resources. Users no longer need to open the housing or power down the system to add COM ports, saving on setup time and cost.

## Specifications

### USB Interface

**Compliance:** USB 1.1/2.0 compliant

**Connector:** USB type B

**Speed:** 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)

### Serial Interface

**Number of Ports:**
UPort™ 2230: 2
UPort™ 2430: 4

**Serial Standards:** RS-422/485

**Connector:** DB9 male

### Serial Line Protection

**ESD Protection:** 15 KV embedded

### Performance

**Baudrate:** 50 bps to 921.6 Kbps

### Serial Communication Parameters

**Data Bits:** 5, 6, 7, 8

**Stop Bits:** 1, 1.5, 2

**Parity:** None, Even, Odd

**Flow Control:** RTS/CTS, XON/XOFF

**I/O Address:** Assigned by BIOS

**IRQ:** Assigned by BIOS

**FIFO:** 16 bytes

### Serial Signals

**RS-422:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND

**RS-485-4W:** TxD+(B), TxD-(A), RxD+(B), RxD-(A), GND

**RS-485-2W:** Data+(B), Data-(A), GND

### Driver Support

**Operating Systems:** Windows (2000, XP/2003/Vista/2008 x86/x64), Linux 2.6 x86/x64

### Physical Characteristics

**Housing:** Polycarbonate (PC)

**Dimensions:**
UPort™ 2230: 70 x 35 x 120 mm (2.76 x 1.38 x 4.72 in)
UPort™ 2430: 80 x 35 x 185 mm (3.15 x 1.38 x 7.28 in)

### Environmental Limits

**Operating Temperature:** 0 to 55°C (32 to 131°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:** -20 to 75°C (-4 to 167°F)

**Regulatory Approvals:** 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 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, FCC Part 15 Class B

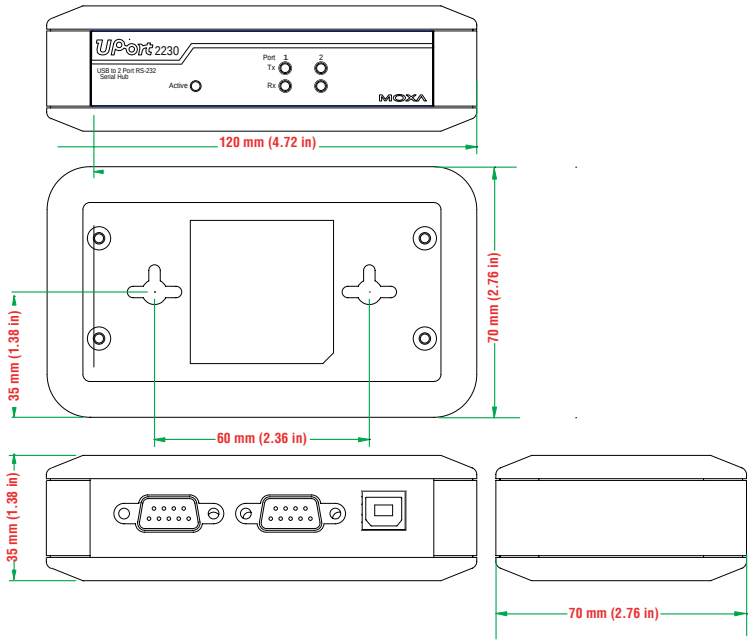
### Warranty

**Warranty Period:** 5 years

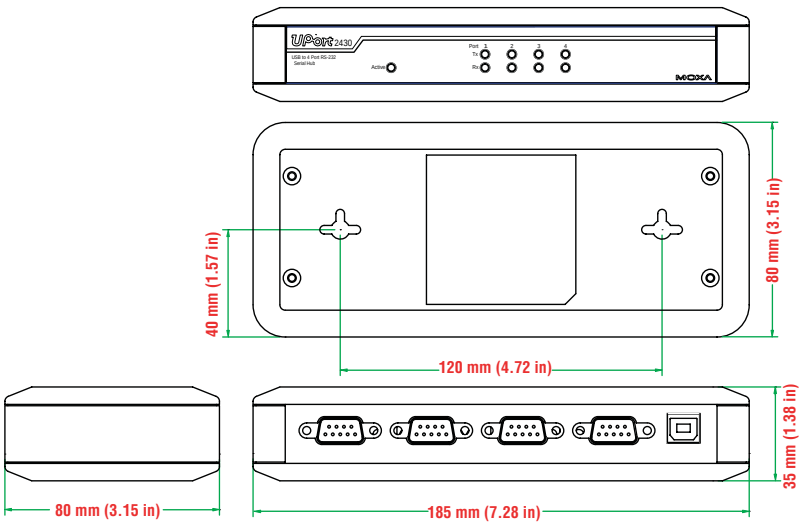
**Details:** See www.moxa.com/warranty

## Dimensions

### UPort™ 2230




### UPort™ 2430




## Ordering Information

### Available Models

**UPort™ 2230:** 2-port RS-422/485 USB-to-serial converter
**UPort™ 2430:** 4-port RS-422/485 USB-to-serial converter

### Package Checklist

- UPort™ 2230 or UPort™ 2430
- USB-IF certified cable
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card

# UPort™ 404/407

## 4 and 7-port industrial-grade USB hubs

- Hi-Speed USB 2.0 for up to 480 Mbps USB transmission
- USB-IF certification
- Dual power inputs (power jack and terminal block)
- 15 KV ESD Level 4 protection for all USB ports
- Rugged metal housing
- DIN-Rail and wall mountable
- Comprehensive diagnostic LEDs
- Choose bus power or external power (UPort™ 404)

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.



## Introduction

The UPort™ 404 and UPort™ 407 are industrial-grade USB 2.0 hubs that expand 1 USB port into 4 and 7 USB ports, respectively. The hubs are designed to provide true USB 2.0 Hi-Speed 480 Mbps data transmission through each port, even for heavy-load applications. The UPort™ 404/407 have received USB-IF Hi-Speed certification, which is an indication that both products are reliable, high quality USB 2.0 hubs.In addition, the hubs are fully compliant with the USB Plug & Play spec and provide a full 500 mA of power per port, ensuring that your USB devices will function properly. The UPort™ 404/407 hubs' support of 12-40 VDC power makes them ideal for mobile applications. Externally powered USB hubs are the only way to guarantee the broadest compatibility with USB devices.

## USB-IF Certification

The UPort™ 404 and UPort™ 407 USB 2.0 industrial-grade USB hubs have passed USB-IF (USB Implementers Forum) certification. USB-IF verifies a number of strict electrical requirements for the high-speed USB operation of USB hubs designed to the USB 2.0 specification. This means that the UPort™ 404/407 support Hi-Speed USB 2.0 for up to 480 Mbps USB transmission, which is fully compliant with interoperability requirements, is enough power for devices to function, and provides for a successful transition back to high-speed operation from the suspend state.

## ESD Level 4 Protection

Electrostatic discharge (ESD) could be as severe as having more than one thousand volts of ESD with a high rise time (dv/dt) break through the junction layer of protective devices. In order to avoid serious damage, Moxa's UPort™ 404/407 USB hubs provide ESD level 4 (contact 8 KV, air 15 KV) protection, which increases the quality and value of the user's end-product.

## Specifications

### USB Interface

**Compliance:** USB 1.1/2.0 compliant

**Upstream:** 1 USB port, Type B connector

**Downstream:**
UPort™ 404: 4 USB ports, Type A connectors
UPort™ 407: 7 USB ports, Type A connectors

**Speed:** 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)

**Supply Current:** 500 mA max. per channel

### Physical Characteristics

**Housing:** Aluminum

**Dimensions:**
UPort™ 404: 80 x 35 x 130 mm (3.15 x 1.38 x 5.12 in)
UPort™ 407: 100 x 35 x 192 mm (3.94 x 1.38 x 7.55 in)

### Environmental Limits

**Operating Temperature:**
Standard Models: 0 to 60°C (32 to 140°F)
Wide Temperature Models: -40 to 85°C (-40 to 185°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:**
Standard Models: -20 to 75°C (-4 to 167°F)
Wide Temperature Models: -40 to 85°C (-40 to 185°F)

**Regulatory Approvals:** EN61000-3-2, EN61000-3-3, EN61000-4-2,EN61000-4-3,EN61000-4-4,EN61000-4-5,EN61000-4-6,EN61000-4-8, EN61000-4-11,EN61000-6-2, EN61000-6-4, FCC Part 15 Class A, UL508 (Maximum Surrounding Air Temperature: 60°C), LVD

### Power Requirements

**Input Voltage:** 12 to 40 VDC external power

**Power Consumption:**
UPort™ 404: 1300 mA @ 12 VDC, 690 mA @ 24 VDC, 470 mA @ 36 VDC
UPort™ 407: 2300 mA @ 12 VDC, 1130 mA @ 24 VDC, 790 mA @ 36 VDC

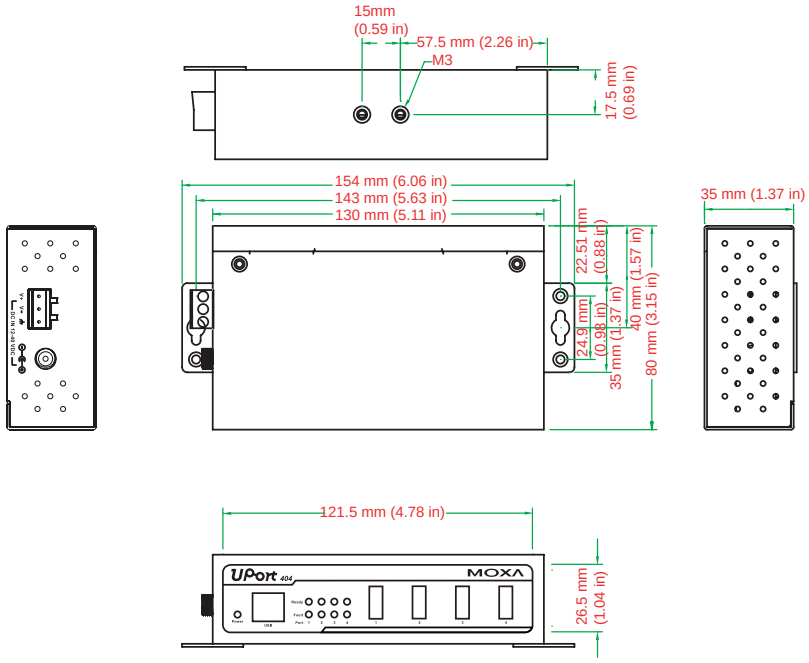
### Warranty

**Warranty Period:** 5 years

**Details:** See www.moxa.com/warranty

## Dimensions

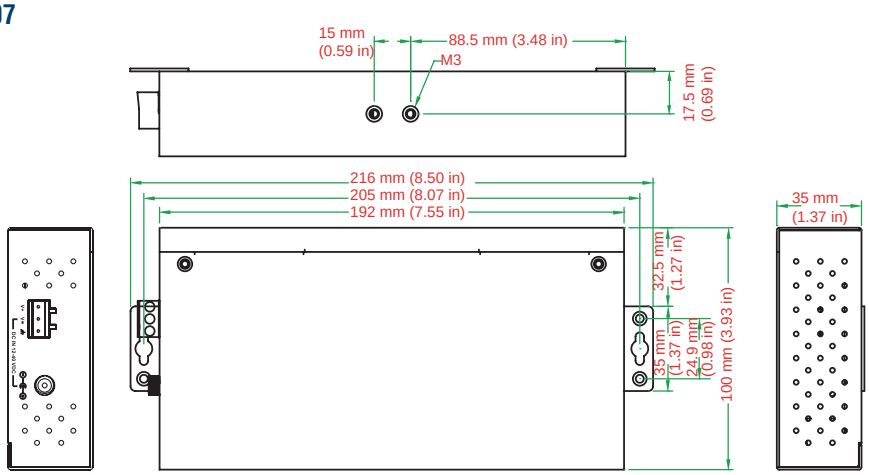
### UPort™ 404

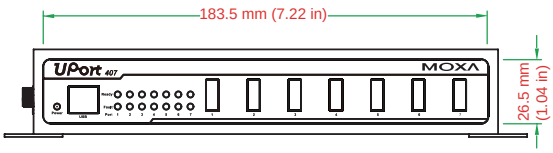






### UPort™ 407




## Ordering Information

### Available Models

**UPort™ 404:** 4-port industrial USB hub, adaptor included, 0 to 60°C operating temperature
**UPort™ 407:** 7-port industrial USB hub, adaptor included, 0 to 60°C operating temperature
**UPort™ 404-T:** 4-port industrial USB hub, adaptor included, -40 to 85°C operating temperature
**UPort™ 407-T:** 7-port industrial USB hub, adaptor included, -40 to 85°C operating temperature

### Optional Accessories (can be purchased separately)

**Wall Mount Kit:** Metal plates and screws
**DK-35A:** Mounting Kit for 35-mm DIN-Rail
**Din-Rail Kit:** Din-Rail kit for the UPort™ 400 Series

### Package Checklist

- UPort™ 404 or UPort™ 407 industrial-grade USB hub
- USB-IF certified cable
- Power adaptor
- Quick Installation Guide (printed)
- Warranty Card

# UPort™ 204/207

## 4 and 7-port entry-level USB hubs

- Hi-Speed USB 2.0 for up to 480 Mbps USB transmission
- USB-IF Certification
- Compatible with USB 1.1 devices
- 15 KV ESD Level 4 protection for all USB ports
- Wall mountable
- Comprehensive diagnostic LEDs
- Full 500 mA of power per port
- Choose bus power or external power (UPort™ 204 only)

The certification logos shown here apply to some or all of the products in this section. For details, see "Regulatory Approvals" under "Specifications" below.



## Introduction

The UPort™ 204 and UPort™ 207 are entry-level USB 2.0 hubs that expand 1 USB port into 4 and 7 USB ports, respectively. The hubs are designed to provide true USB 2.0 Hi-Speed 480 Mbps data transmission through each port, even for heavy-load applications. The UPort™ 204/207 have received USB-IF Hi-Speed certification, which is an indication that both products are reliable, high quality USB 2.0 hubs. In addition, the hubs are fully compliant with the USB Plug & Play spec and provide a full 500 mA of power per port, ensuring that your USB devices will function properly. The UPort™ 204/207 hubs' support of 12-40 VDC power makes them ideal for mobile applications. Externally powered USB hubs are the only way to guarantee the broadest compatibility with USB devices.

## USB-IF Certification

The UPort™ 204/207 USB 2.0 entry-level USB hubs have passed USB-IF (USB Implementers Forum) certification. USB-IF verifies a number of strict electrical requirements for the Hi-Speed USB operation of USB hubs designed to the USB 2.0 specification. This means that the UPort™ 204/207 support Hi-Speed USB 2.0 for up to 480 Mbps USB transmission, which is fully compliant with interoperability requirements, is enough power for devices to function, and provides for a successful transition back to high-speed operation from the suspend state.

## ESD Level 4 Protection

Electrostatic discharge (ESD) could be as severe as having more than one thousand volts of ESD with a high rise time (dv/dt) break through the junction layer of protective devices. In order to avoid serious damage, Moxa's UPort™ 204/207 USB hubs provide ESD level 4 (contact 8 KV, air 15 KV) protection, which increases the quality and value of the user's end-product.

## Specifications

### USB Interface

**Compliance:** USB 1.1/2.0 compliant

**Upstream:** 1 USB port, Type B connector

**Downstream:**
UPort™ 204: 4 USB ports, Type A connectors
UPort™ 207: 7 USB ports, Type A connectors

**Speed:** 480 Mbps (Hi-Speed USB) and 12 Mbps (Full-Speed USB)

**Supply Current:** 500 mA max. per channel

### Physical Characteristics

**Housing:** Polycarbonate (PC)

**Dimensions:**
UPort™ 204: 70 x 35 x 120 mm (2.76 x 1.38 x 4.72 in)
UPort™ 207: 80 x 35 x 185 mm (3.15 x 1.38 x 4.72 in)

### Environmental Limits

**Operating Temperature:** 0 to 60°C (32 to 140°F)

**Operating Humidity:** 5 to 95% RH

**Storage Temperature:** -20 to 75°C (-4 to 167°F)

**Regulatory Approvals:** EN61000-3-2, EN61000-3-3, EN61000-4-2,EN61000-4-3,EN61000-4-4,EN61000-4-5,EN61000-4-6,EN61000-4-8, EN61000-4-11,EN61000-6-2, EN61000-6-4, FCC Part 15 Class A, UL508, LVD

**Input Voltage:** 12 to 40 VDC external power

**Power Consumption:**
UPort™ 204: 1210 mA @ 12 VDC, 610 mA @ 24 VDC, 430 mA @ 36 VDC
UPort™ 207: 2170 mA @ 12 VDC, 1070 mA @ 24 VDC, 730 mA @ 36 VDC

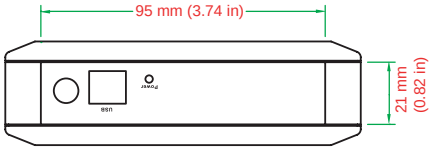
### Warranty

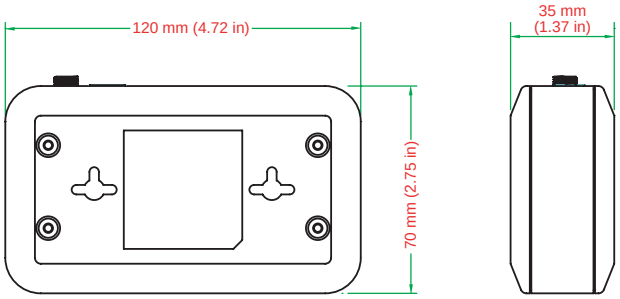
**Warranty Period:** 5 years

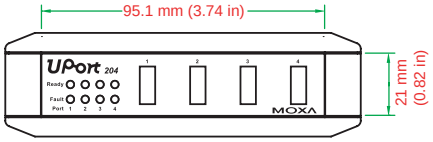
**Details:** See www.moxa.com/warranty

## Dimensions

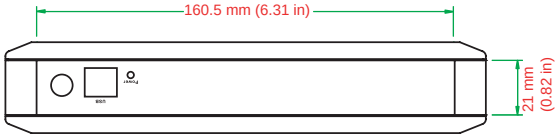
### UPort™ 204

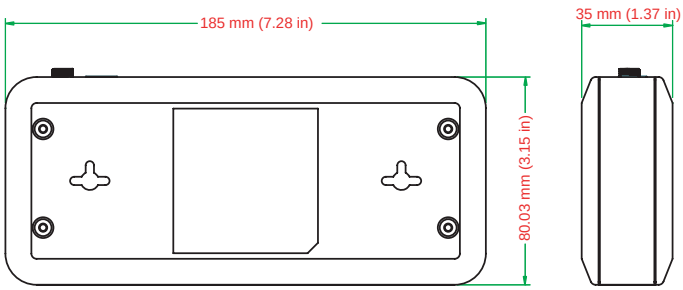


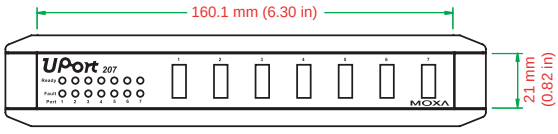




### UPort™ 207




## Ordering Information

### Available Models

**UPort™ 204:** 4-port entry-level USB hub, adaptor included
**UPort™ 207:** 7-port entry-level USB hub, adaptor included

### Package Checklist

- UPort™ 204 or UPort ™ 207 entry-level USB hub
- USB-IF certified cable
- Power adaptor
- Quick Installation Guide (printed)
- Warranty Card