



Operations Guide for the 4-Port PoweredUSB 2.0 Hub

with Serial Ports and External Power Supply

Part #010845

Document Part #930105F

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Operations Guide for the 4-Port PoweredUSB 2.0 Hub 930105F with External Power Supply 010845

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Company and product information is at www.cyberdata.net.



Revision Information

Revision 930105F was updated on May 29, 2020 and has the following changes:



- Updates [Table 2-1, "Jumpers"](#)
- Updates [Figure 2-4, "Jumpers"](#)

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
13. Prior to installation, consult local building and electrical code requirements.

 GENERAL ALERT	Warning <i>Electrical Hazard:</i> This product should be installed by a licensed electrician according to all local electrical and building codes.
 GENERAL ALERT	Warning <i>Electrical Hazard:</i> To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.

Pictorial Alert Icons

	<p>General Alert</p> <p><i>This pictorial alert indicates a potentially hazardous situation. This alert will be followed by a hazard level heading and more specific information about the hazard.</i></p>
	<p>Ground</p> <p><i>This pictorial alert indicates the Earth grounding connection point.</i></p>

Hazard Levels

Danger: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This is limited to the most extreme situations.

Warning: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution: Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also alert users against unsafe practices.

Notice: Indicates a statement of company policy (that is, a safety policy or protection of property).

The safety guidelines for the equipment in this manual do not purport to address all the safety issues of the equipment. It is the responsibility of the user to establish appropriate safety, ergonomic, and health practices and determine the applicability of regulatory limitations prior to use. Potential safety hazards are identified in this manual through the use of words Danger, Warning, and Caution, the specific hazard type, and pictorial alert icons.

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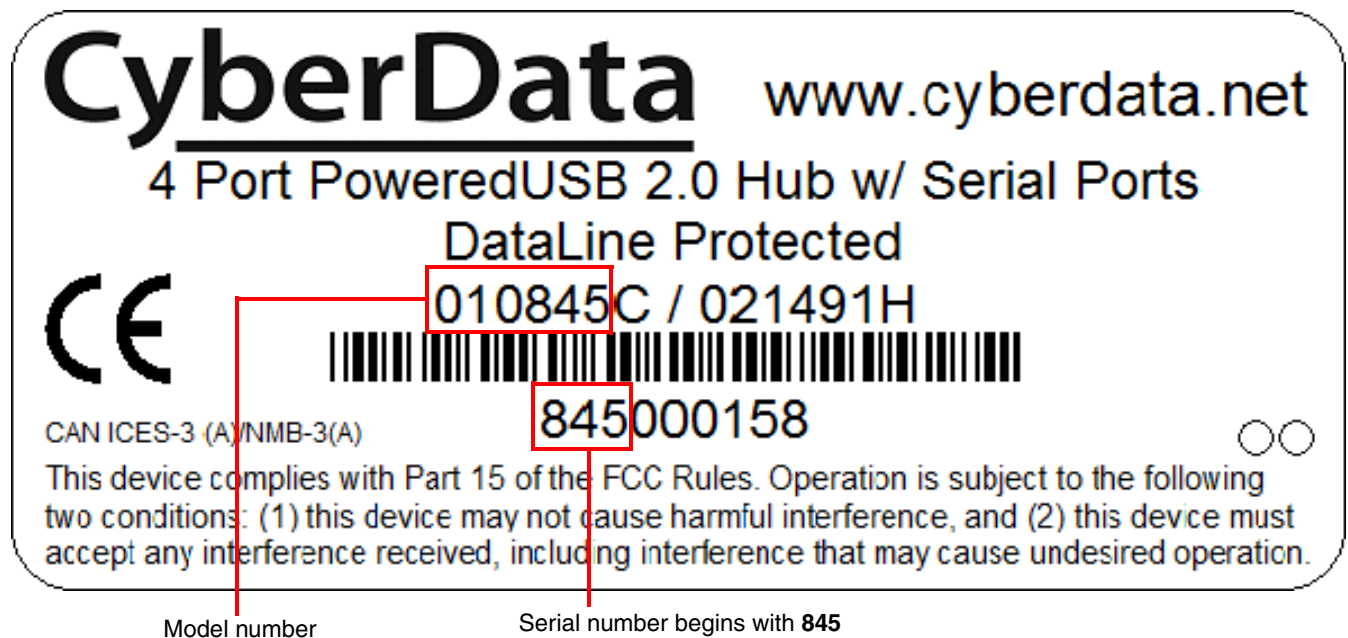
1 Product Overview

1.1 How to Identify This Product

To identify the PoweredUSB Hub, look for a model number label similar to the one shown in [Figure 1-1](#). Confirm the following:

- The model number on the label should be **010845**.
- The serial number on the label should begin with **845**.

Figure 1-1. Model Number Label¹



1. This figure is just an example. The information on the label may be different.

1.2 Product features

- Adds 2 Full-Featured RS232 ports
- Adds 4 PoweredUSB ports
- Advanced DataLine Protection
- Translation convertor on all USB ports
- One +24 volt at 2.3A
- Three +12 volt at 1.5A each
- Short circuit and overcurrent protected
- Designed to support multi-function printer power requirements
- Peripheral power control by stand-by/wake commands
- External LED to show USB port status
- Two year warranty

1.3 Specifications

Table 1-1. Specifications

Specifications	
PoweredUSB Ports	4
PoweredUSB Power Output (Standard) ^a	1 @ 24V 2.3A 3 @ 12V 1.5A each
Port Baud Rates	480Mbps, 12Mbps, 1.5Mbps
RS232 Ports	2 DB9M with power option
Power Input	24 VDC
External LEDs	Power, Link, Status
Dimensions ^b	3.75 inches [95.25 mm] Length
	4.25 inches [107.95 mm] Width
	1.75 inches [44.45 mm] Height
Weight	1.0 lbs. (0.45 kg)
Boxed Weight	2.6 lbs. (1.15 kg)
Compliance	CE; EMC Directive – Class A EN 55032 & EN 55024, LV Safety Directive – EN 60950-1, RoHS Compliant, FCC; Part 15 Class A, Industry Canada; ICES-3 Class A, IEEE 802.3 Compliant
Part Number	010845

a. All ports support standard "A" type +5V USB connection.

b. Dimensions are measured from the perspective of the product being upright with the front of the product facing you.

1.4 Compliance

1.4.1 CE Testing

CE testing has been performed according to EN ISO/IEC 17050 for Emissions, Immunity, and Safety. The Declaration of Conformity can be supplied upon request.

1.4.2 FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1.5 License note

The PoweredUSB controller board contains certain technology that is covered by an IBM® patent. CyberData Corporation is licensed with IBM to manufacture, and to sell or lease products that incorporate this technology. This license also permits other entities to resell or release these Cyberdata products after they have been purchased from CyberData.

1.6 Documentation note

The documentation for this product is released in an English language version only.

2 Installing and Using the 4-Port PoweredUSB Hub

This chapter provides the instructions, illustrations, and background information you need to install, and begin working with the CyberData 4-Port PoweredUSB 2.0 Hub with Serial Ports.



2.1 Product Components List

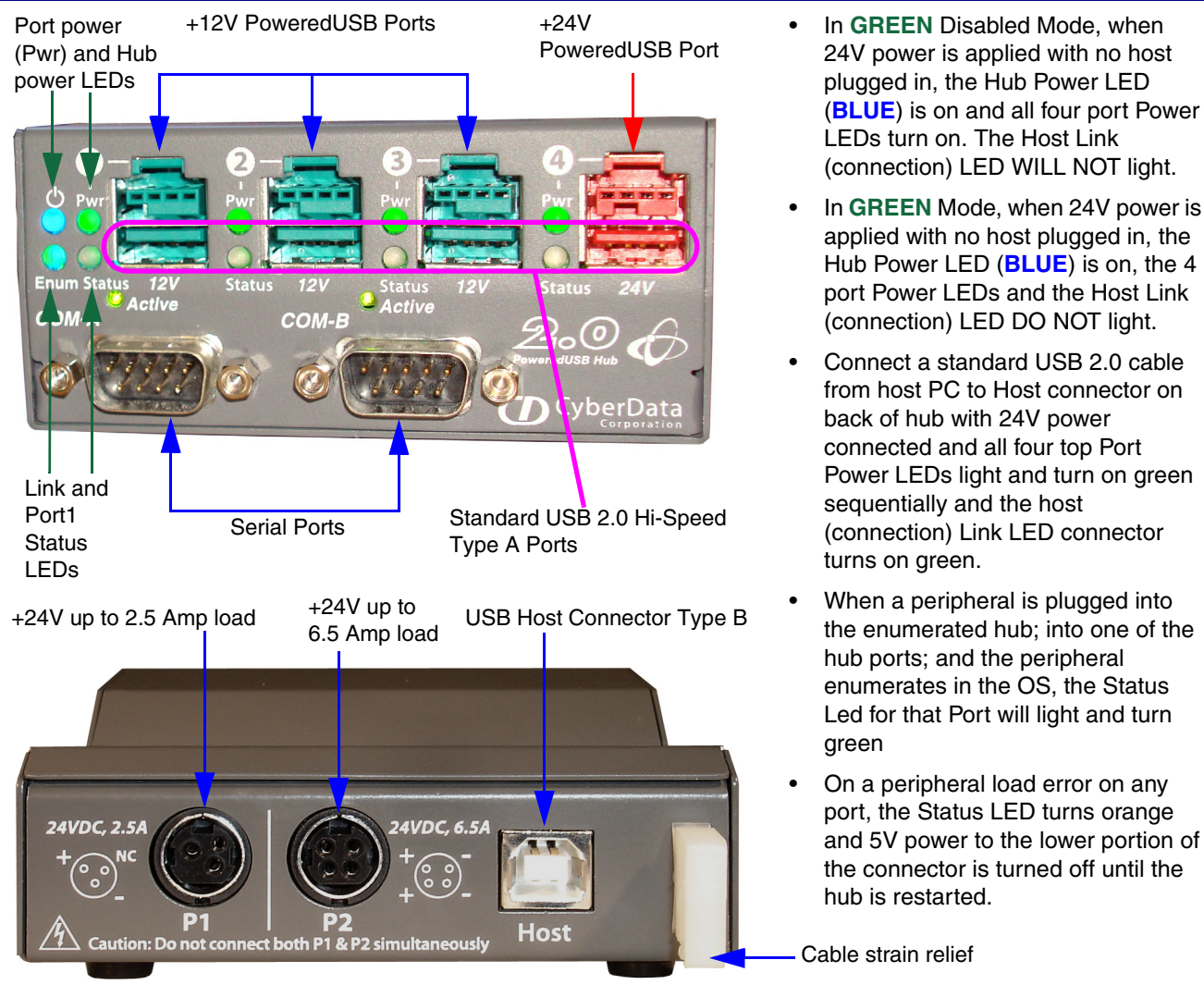
The PoweredUSB Hub package includes these parts:

- (1) CyberData 4-Port PoweredUSB 2.0 Hub with Serial Ports
- (1) Hub External Power supply
- (1) Quick Reference for the PoweredUSB 2.0 Hub with External Power Supply and Serial Ports
- (1) Accessory Kit:
 - (1) Short USB 2.0 Hi-Speed host cable
 - (1) Host USB cable strain relief clamp

2.1.1 Component Identification

See [Figure 2-1](#) to identify the components for the 4-Port PoweredUSB Hub.

Figure 2-1. Component Identification—External Front and Back Views



2.1.2 Product Compatibility

The CyberData 4-Port PoweredUSB 2.0 Hub is compatible with the following operating systems and USB standards.

Operating systems	USB
Windows 2000 and XP	2.0 Standard
LINUX	PoweredUSB 0.8g
Mac OS-X	

2.2 Installation

The CyberData 4-Port PoweredUSB 2.0 Hub is a tabletop unit with mounting feet that sit on a flat surface.

2.3 Connections

The following topics provide illustrations and information on connecting the CyberData 4-Port PoweredUSB 2.0 Hub to power supplies, the host, and peripheral devices.

2.3.1 Power supply

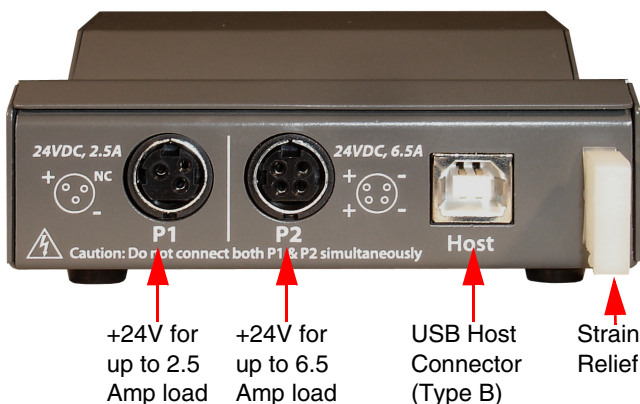
The PoweredUSB specification requires supplying +24V at 2.3A and +12V at 1.5A to each voltage designated port. These requirements are met only if the power supply has sufficient wattage for this amount of power.

The Epson PS180 brick and Dell printer power supply are examples of lower-cost alternate power supplies that can be used with this Hub and peripherals requiring less power. Two power plug receptacles are provided on the back of the CyberData 4-Port PoweredUSB 2.0 Hub to facilitate the use of alternate power supplies.

The three-pin connector is normally used for the Dell and Epson Bricks. The four-pin connector is used for a high-current power supply. See [Figure 2-7](#) for an illustration of cable routing from the CyberData 4-Port PoweredUSB 2.0 Hub.

CAUTION The **P1** and **P2** DC input jacks on the back of this Hub are for *input only*. Do *not* plug power supplies into both input jacks simultaneously as equipment damage that might void the product warranty could occur.

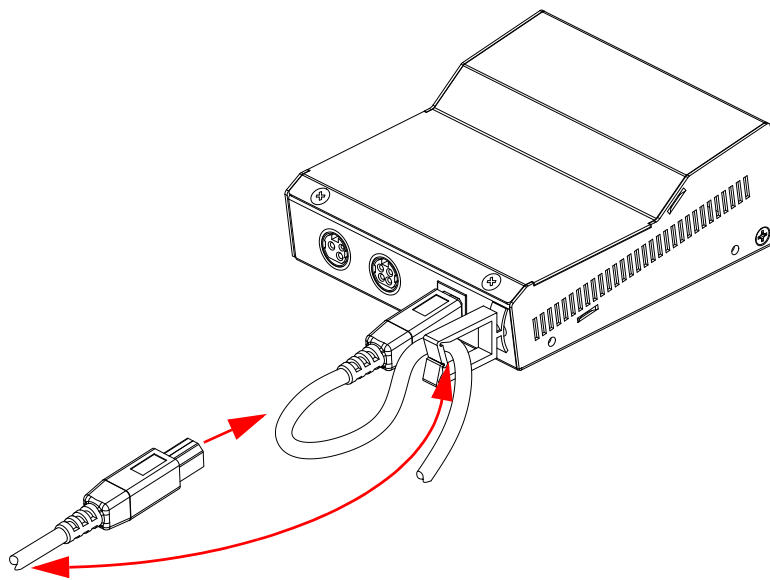
Figure 2-2. Power Connectors—Back View



2.3.2 Host connector

The connection to the host computer is achieved via a standard USB 2.0 certified Hi-Speed “A” to “B” cable that is included in the Accessory Kit, or with any equivalent USB 2.0 certified Hi-Speed cable. Refer to [Section 2.1, "Product Components List"](#) for information about the Accessory Kit.

Figure 2-3. Host Connector with Strain Relief



2.3.3 Jumpers

Figure 2-4. Jumpers

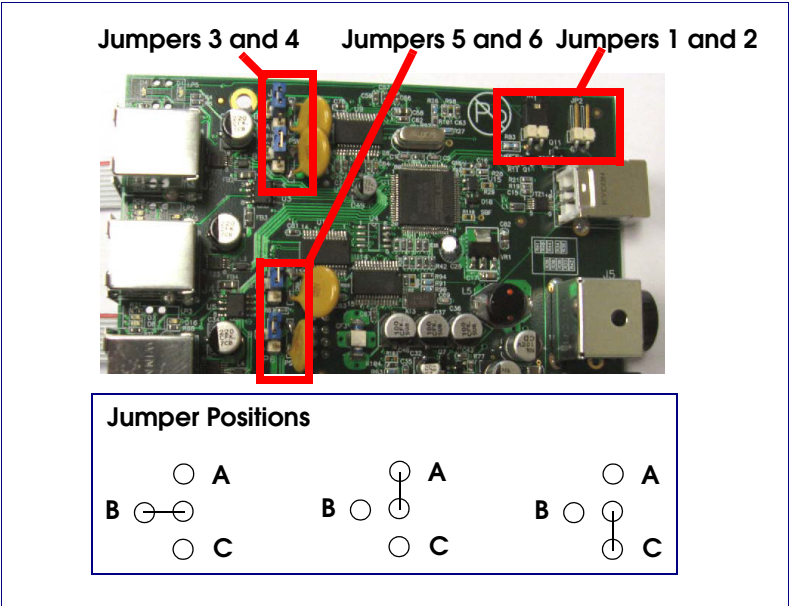


Table 2-1. Jumpers

Jumper Table		A	B	C
Com Port A, Pin 1	JP3	CD	5V	12V
Com Port A, Pin 9	JP4	RI	5V	12V
Com Port B, Pin 1	JP5	CD	5V	12V
Com Port B, Pin 9	JP6	RI	5V	12V

2.3.4 PoweredUSB Connections

The PoweredUSB connections are standard USB “A” connectors with four extra pins to supply higher voltages. See [Figure 2-6](#) for an illustration. The lower portion of the “A” connector side on this product can be used alone, without the locking PoweredUSB connector.

2.3.5 Connector Color Keys

The PoweredUSB connectors are color keyed so that *only* the correct voltage cables can be installed.

Figure 2-5. Color-coding for Connectors

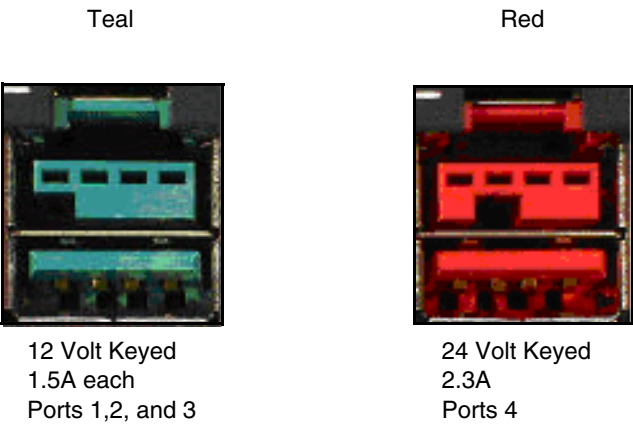
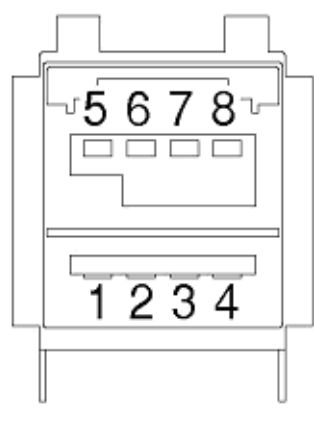


Figure 2-6. USB PoweredUSB Socket Connector Pin Assignments

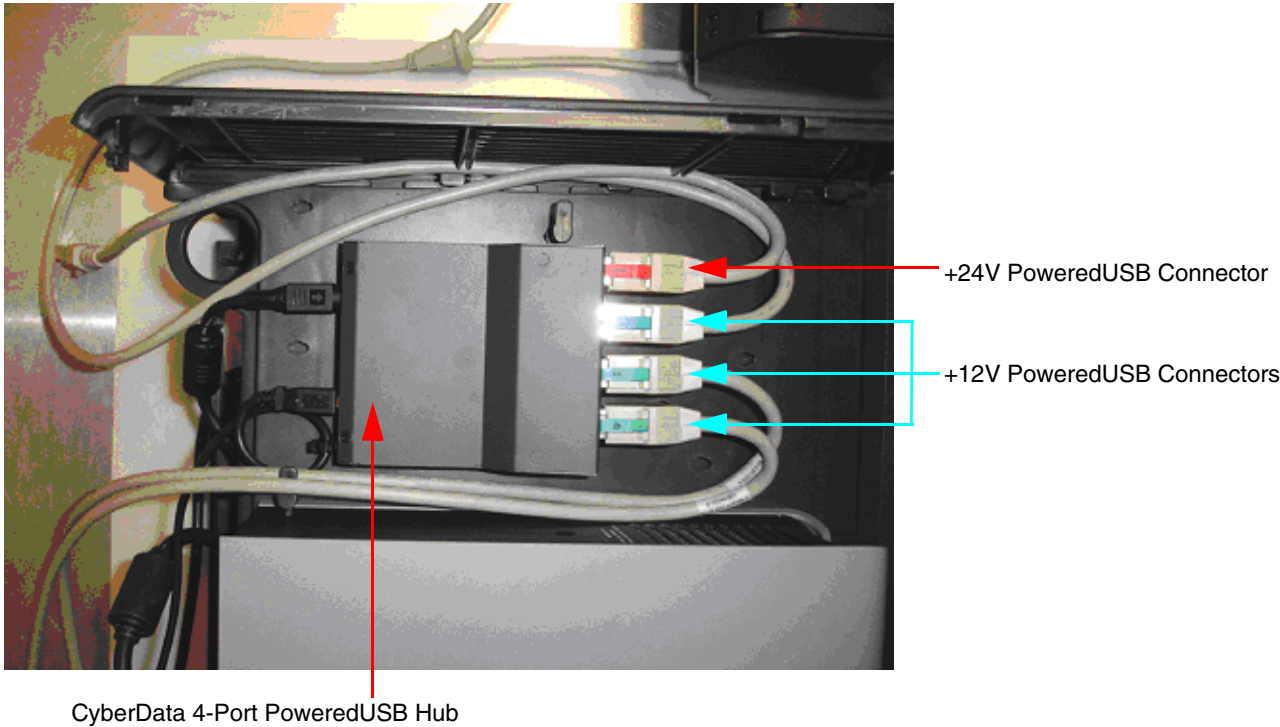


PIN OUT		
Pin	Signal Description	
1	Vbus	USB standard "A"
2	D-	USB standard "A"
3	D+	USB standard "A"
4	Ground	USB standard "A"
5	Ground	USB PlusPower
6	Vplus	USB PlusPower
7	Vplus	USB PlusPower
8	Ground	USB PlusPower
Shell	Shield	

2.3.6 Peripherals connections to the CyberData 4-Port PoweredUSB 2.0 Hub

This figure illustrates the cable routing from the CyberData 4-Port PoweredUSB 2.0 Hub to the Dell Retail Integrator.

Figure 2-7. Top view of Hub PoweredUSB cable routing



2.3.7 Peripheral cable connection options

Figure 2-8 through Figure 2-14 provide examples of peripheral cable combinations and connection options for the CyberData 4-Port PoweredUSB 2.0 Hub. The following table provides details about the CyberData PoweredUSB Cables displayed in these figures.

PoweredUSB
cable sources

Custom cables of different lengths and colors can be purchased from CyberData as follows:

- Via email: sales@cyberdata.net
- Via phone: Sales (831) 373-2601

Figure	PoweredUSB Cable Description	CyberData Part Number
Figure 2-8	12V to 2x4	010693C
Figure 2-9	12V to 12V Power Jack	Contact CyberData
Figure 2-10	24V PoweredUSB to 3-Pin Power Mini-DIN	010631A
Figure 2-11	24V to "Y" Cable 3-Pin Power Mini-DIN to USB "B"	010714A
Figure 2-12	12V to "Y" Cable, RS232 and Power Jack	010763
Figure 2-13	24V to 1x8	010617A
Figure 2-14	24V to "Y" Cable, RS232 and Power Jack	

Figure 2-8. Cable, +12V PoweredUSB to 2x4 PoweredUSB

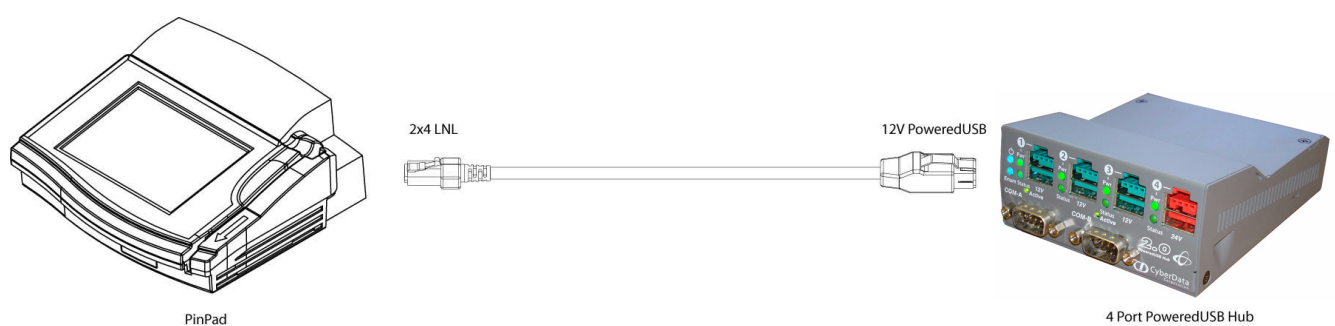


Figure 2-9. Cables; +12V PoweredUSB to +12V Power Jack and RS-232 to RS-232

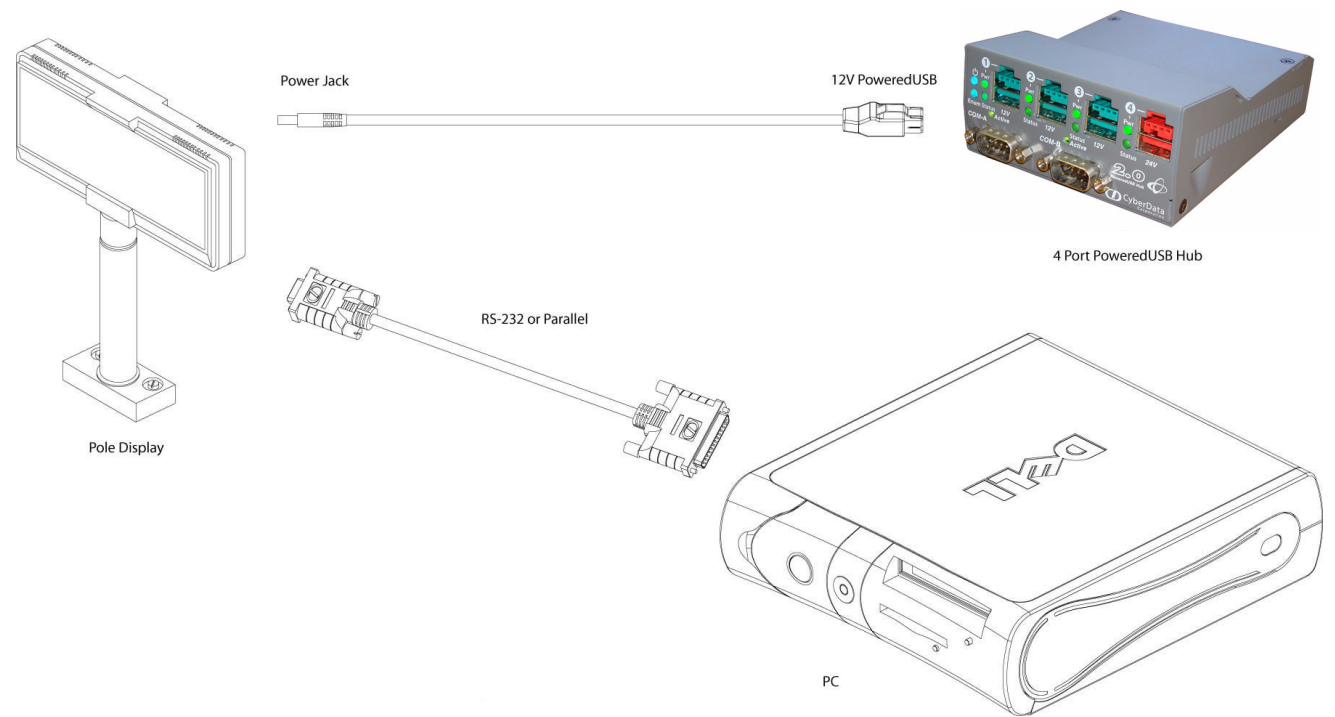


Figure 2-10. Cables; +24V PoweredUSB to 3-Pin Mini-DIN and RS-232 to RS-232 or Parallel to Parallel

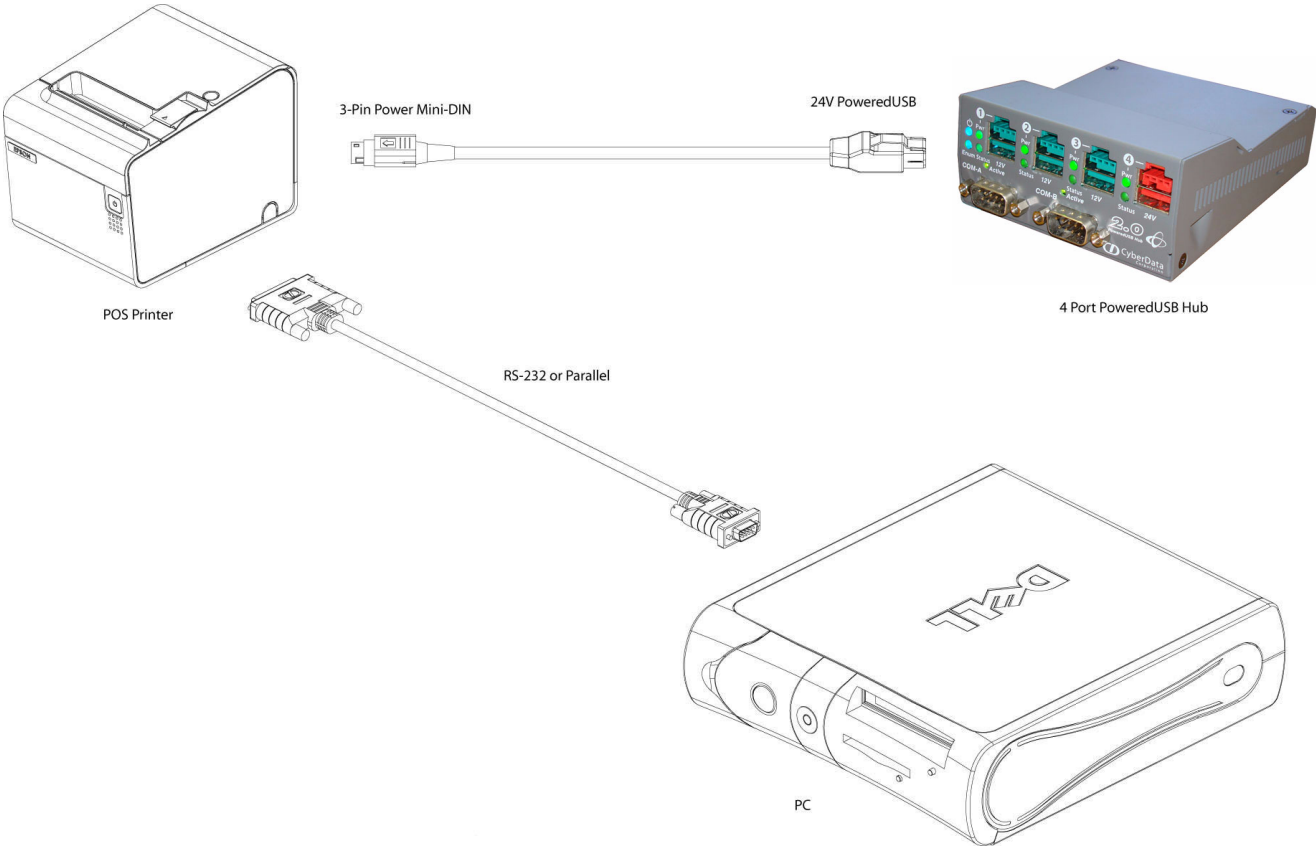


Figure 2-11. “Y” Cable, +24V PoweredUSB to 3-Pin Power Mini-DIN and USB “B” Connectors

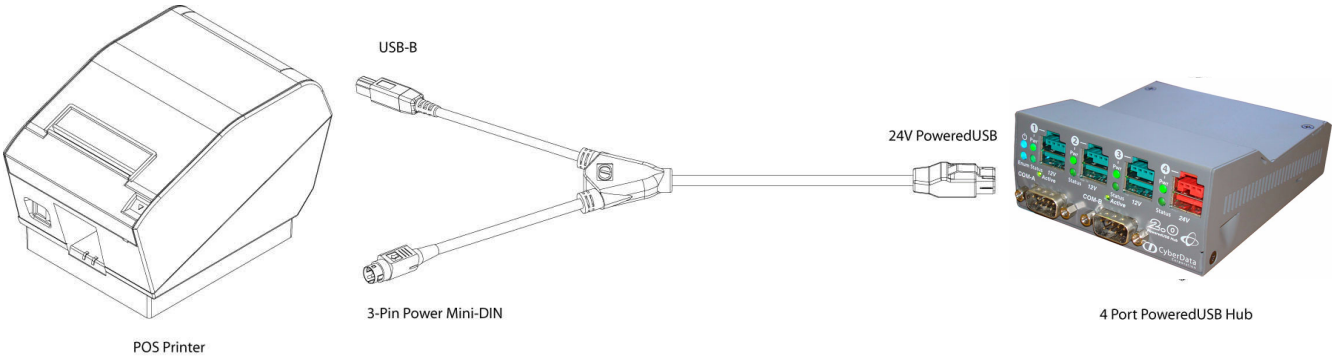


Figure 2-12. RS232 to USB Converter “Y” Cable +12V (PC Enumerates this device as an RS-232 COM port)

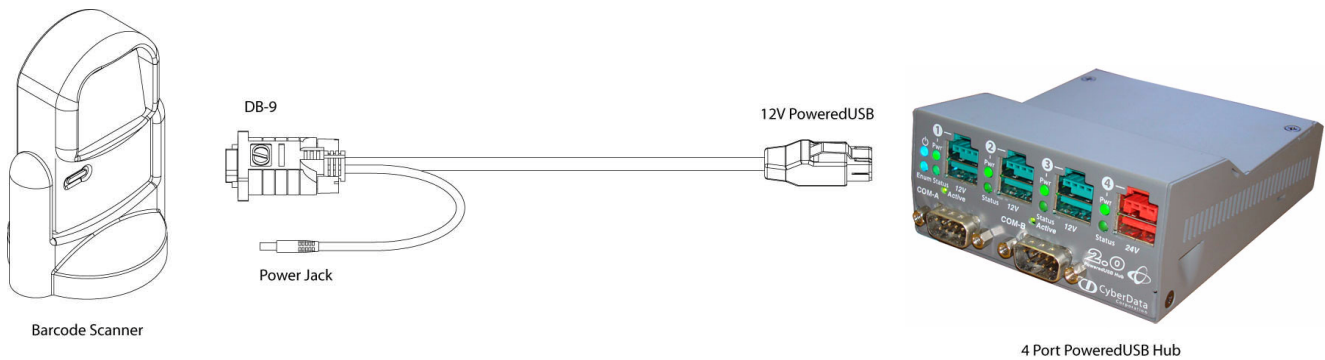
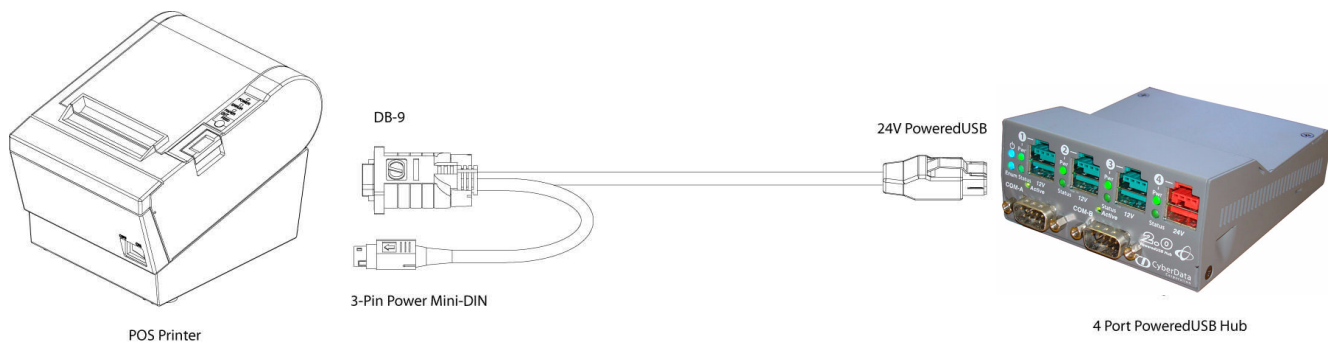


Figure 2-13. Cable, +24V PoweredUSB to 1x8 PoweredUSB



Figure 2-14. RS232 to USB Converter “Y” Cable +24V



2.4 Operation

The CyberData 4-Port PoweredUSB 2.0 Hub is a standard USB Hub that complies with the USB 2.0 specification, and adds PoweredUSB ports. When connected to a Host, it is enumerated as a *Generic USB Hub*. This Hub also meets the PoweredUSB .08g specification. For more information about this specification, go to www.poweredusb.org.

POS peripheral caveat According to the USB 2.0 specification, devices attached to a USB interface should enumerate from the Hub's USB Vbus, regardless of the PoweredUSB powered ports. Some POS devices do not comply with this specification, and will not enumerate unless the upper sections of the PoweredUSB ports are active.

When running on operating systems such as Windows XP with *no* devices attached (an empty Hub), the operating system turns the Hub off. The operating system does not detect non-compliant peripherals when they are hot-plugged into an empty Hub. Consequently PoweredUSB power is not supplied to the peripheral. In this case, you can restore correct operation as follows.

1. Unplug the Host side connection for five seconds, and then plug it in again.
2. Be sure that at least one USB device is plugged in when the computer is booted, or leaves standby mode.
3. Plug in a standard USB compliant device, such as a mouse or keyboard.
4. Disable the low-power, standby operation. With this configuration, power is always supplied to the PoweredUSB ports regardless of the PC's operational state. For more information, contact CyberData as instructed in [Section B.3, "Contact Information"](#).

2.5 Port Electrical Specifications

The CyberData 4-Port PoweredUSB 2.0 Hub adheres to the USB 2.0 electrical specifications as follows:

Standard USB lower A supply Each lower portion of the PoweredUSB port provides +5V @ 500mA. If more than 500mA are drawn from a port, that port goes into USB over current, the +5 volts is turned off, and the condition is reported to the host according to USB 2.0 specifications.

PoweredUSB supply The listed maximum currents depend on the selected power supply. Both the +12V and +24V PoweredUSB ports are protected with active over current circuits. If an over current condition occurs, unplug the DC connection, remove the overcurrent condition, and re-cycle the DC connection to the Hub by unplugging it, and then plugging it in again.

- +12V Ports (3) – 1.5A each
- +24V Port (1) – 2.3A

Appendix A: Setting up the Hub on Windows XP

For connecting the CyberData 4-Port PoweredUSB 2.0 Hub to a PC running the Windows XP operating system, keep in mind:

1. Microsoft XP Service Pack 1 or higher must be installed.
2. When connecting the Hub for the first time, it is important to perform the enumeration correctly. A Microsoft XP Service Pack issue does not enumerate and recognize a Hub when no devices are attached to it. To correctly enumerate the CyberData 4-Port PoweredUSB 2.0 Hub, attach a peripheral whose drivers are included in Windows XP, such as a USB mouse, prior to enumerating the Hub. To accomplish this:
 - a. Connect a USB mouse to one of the lower, standard USB, Hub ports.
 - b. Connect the power cord to the Hub.
 - c. With the PC powered up, connect the host control cable from the Hub to a USB port on the PC. Doing so displays the *Found new hardware* dialog, indicating that the PC is searching for drivers for the Hub.
 - d. When the PC completes the driver search, it displays the *Found new hardware* dialog, in search of a driver for the mouse. If required, click **Next** in all screens of the wizard to complete the driver selection for the mouse.

At this point, you should be able to plug in and install a USB device provided you have also installed its drivers, or have them available for installation.

Appendix B: Troubleshooting/Technical Support

B.1 Frequently Asked Questions (FAQ)

To see a list of frequently asked questions for your product, click on the **FAQs** tab at the following webpage:

<https://www.cyberdata.net/collections/poweredusb/products/010845>

B.2 Documentation

The documentation for this product is released in an English language version only.

To download PDF copies of CyberData product documentation, click on the **Downloads** tab at the following webpage:

<https://www.cyberdata.net/collections/poweredusb/products/010845>

B.3 Contact Information

Contact	<p>CyberData Corporation 3 Justin Court Monterey, CA 93940 USA www.CyberData.net Phone: 800-CYBERDATA (800-292-3732) Fax: 831-373-4193</p>
Sales	<p>Sales 831-373-2601, Extension 334</p>
Technical Support	<p>The fastest way to get technical support for your VoIP product is to submit a VoIP Technical Support form at the following website:</p> <p>http://support.cyberdata.net/</p> <p>The Support Form initiates a ticket which CyberData uses for tracking customer requests. Most importantly, the Support Form tells us which PBX system and software version that you are using, the make and model of the switch, and other important information. This information is essential for troubleshooting. Please also include as much detail as possible in the Comments section of the Support Form.</p> <p>Phone: (831) 373-2601, Extension 333</p>

B.4 Warranty and RMA Information

The most recent warranty and RMA information is available at the following website address:

<http://support.cyberdata.net/>

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