# Hubport®

## USB HUB

## Installation Guide

**Models:**

**Hubport/4**

**Hubport/7**

**Hubport/14**

**/c Models:**

**Hubport/4c**

**Hubport/7c**

**Hubport/4c DC**

**Hubport/7c DC**

# www.digi.com

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# Introduction to Hubs

Thank you for purchasing the Hubport, a self-powered Universal Serial Bus (USB) hub designed to provide a convenient and effective means of bringing USB connectivity to your PC, server, or laptop. The Hubport also delivers the potential of Digi International's Edgeport USB to Serial (RS-232) expansion module.

Hubs, critical components in the USB architecture, are wiring concentrators that enable the attachment of multiple devices, thus converting a single attachment point into multiple attachment points. USB architecture allows a cascaded multiple hub configuration with certain power limitations (explained later in this section). See figure 1.
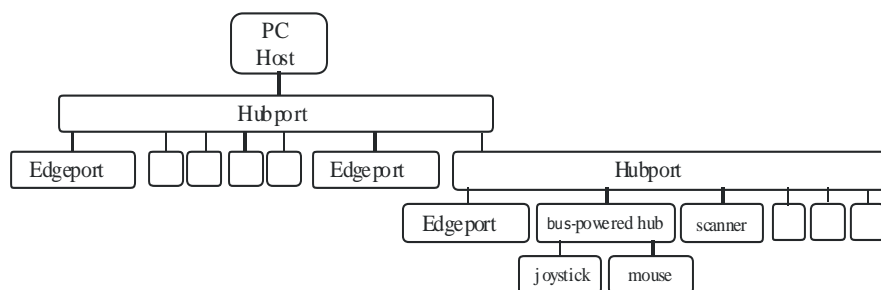
Figure 1: Example of a Typical Hub Configuration

Each hub has an upstream port, connecting to the host, and multiple downstream ports, connecting to downstream devices, possibly including other hubs. A hub can detect attachment and detachment of downstream devices and enable and monitor the distribution of the power to downstream devices via their integral hardware and the operating system.

Each USB device reports its power requirements to the operating system, which then enables and disables the device as a function of its power requirements and the amount of available power. High powered devices typically need to be connected to a self-powered hub, such as the Hubport, which obtains power from its external power supply and provides up to 500 mA for each downstream port. Only low powered devices, such as a mouse, can be connected to a bus-powered hub, which obtains power from its upstream host and provides up to 100 mA for each downstream port.

Due to the limited available power for bus-powered hubs, cascading two bus-powered hubs is an illegal topology, and devices connected to the second hub will not function. *USB specifications limit the connection of a bus-powered hub to a self-powered hub or host only.* All Hubports, except the Hubport/4c in bus-powered mode, operate as self-powered hubs, and are not affected by this limitation.

According to the USB Specification, the maximum limit of hubs cascaded in series cannot exceed five. In other words, you may have a maximum of five hubs between any device and the host. This does NOT mean that the maximum number of hubs in a system is five. Indeed, up to seven hubs can be connected parallel *at any given level*. You must tally both external and embedded hubs when counting downstream hubs.

# Specifications

| Product | USB2.0 High Speed† | Powering Method | USB Downstream Ports | Power Requirements |
|---|---|---|---|---|
| Hubport/4 | No | Self* | 4 | 5VDC @2A |
| Hubport/4c | Yes | Self* | 4 | 5VDC @2A |
| | | USB Bus | 2 | None |
| Hubport/4c DC 50001326-22 50001326-23 | Yes | Self* | 4 | Variable 5.5 - 30VDC @15W |
| Hubport/4c DC 50001326-20 50001326-21 | Yes | Self* | 4 | Variable 10 - 28VDC @15W |
| Hubport/7 | No | Self* | 7 | 5VDC @3A |
| Hubport/7c | Yes | Self * | 7 | 5VDC @3A |
| Hubport/7cDC 50001326-50 50001326-51 | Yes | Self* | 7 | 5.5v – 30v @15W |
| Hubport/7c DC 50001326-30 50001326-31 | Yes | Self* | 7 | Variable 10-28DC @24W |
| Hubport/14 | Yes | Self | 14 | Uses a single 120/230VAC 50/60Hz power input through the rear IEC 60320 inlet with a maximum power requirement of 40W. |

# Connecting Your Hubport

Type A                    Type B

Note that Windows NT 4.0 users *must* install the drivers before connecting a Hubport. To connect the cables included with your Hubport:

1) Plug one end of the power supply* into the back of your Hubport and the other end into an AC outlet.

2a) To connect your Hubport to a PC, plug the Type A end of the USB cable into one of the PC's USB Type A slots and the Type B end of the USB cable into the back of the Hubport.

OR

2b) To connect a standard USB device to your Hubport, plug the Type A end of the USB cable into the Hubport and the Type B end into the device.

*† USB 2.0 High Speed is **not** supported by Windows 98.*

*\* Power to this product may be supplied by a UL Listed Direct Plug-In Power Unit marked "Class 2" with a minimum rating listed in the Specifications table above if used in the U.S. and Canada or a power supply with similar rating and approved by your local safety code if it is used elsewhere.*

*1. Some units may be equipped with a pigtail connection. Follow the polarity markings on the cable.*
*2. For polarity on Hubports with a threaded locking connector, use center positive as follows:   −   +*
*3. For polarity on all other Hubports, use the following:   +   −*

# Installing Hubport Drivers

## For Windows 98, 2000, and XP Users

After following the instructions described in "Connecting Your Hubport" in the previous section, installation will be complete.

## For Windows NT 4.0 Users

Because Microsoft does not support USB in NT4.0, Digi International supplies a set of USB drivers that will be installed along with the necessary Hubport drivers. NOTE: You must install the drivers using an account that has administrative privileges!

To install the USB stack and Hubport drivers:

1) Insert the "Edgeport Driver" CD Version 2.60 or above into your CD-ROM drive.

2) When the welcome dialog appears, click the **Install Driver** button.

Once the driver installation program has begun, follow the on screen instructions.

3a) *If you are installing drivers for the first time*: An Information dialog informs you that the installation was successful. After clicking **OK**, the installation is complete.

3b) *If you are replacing existing Edgeport drivers:* Follow the on-screen instructions. Note that, before beginning the installation of the drivers, all applications with open ports must be closed and all USB devices unplugged. If you close all the applications and unplug all the USB devices, then you will not need to reboot for the new drivers to take effect immediately. If any applications are left open or USB devices plugged in, you may choose to abort the installation or to continue and be required to reboot before the upgrade can take effect.

Follow the instructions described in "Connecting Your Hubport" in the previous section. When finished with the instructions, your new communication ports, numbered sequentially following the existing ports in your system, are ready.

Note that because Windows NT 4.0 is *not* Plug-and-Play, you will *not* see a pop-up dialog box indicating that new hardware has been found. You may verify correct installation with the USB Status Utility.

The USB Status Utility (Viewer) can be accessed by clicking the USB icon in your system tray or by clicking on Start/Programs/Digi USB/USB Status Utility. This utility lists all the USB devices installed on your PC and provides other relevant information for each device. You may also use this utility to create a log file.

# Interpreting the Status Lights

## For Hubport/4 and Hubport/7

The green **System Status LED** indicates that the USB ports are successfully set up and the Hubport is operating normally. The green **Port Status LED's** (numbered 1-4 or 1-7) each indicate that the corresponding port is powered.

## For /c Hubport Models

The green **Power LED** located next to the power connector indicates that the Hubport has power. The green **Port Status LED's** (numbered 1-4 or 1-7) each indicate that the attached USB device is connected and enumerated.

## For Hubport/14

The **System Status LED** is green when fully operational.  The **Port Status LED's** are green when fully operational and blink green when a port needs attention.

# Hardware Specifications

## Hubport/14

**Dimensions**

Length: 4.97 in (12.62 cm)
Width: 17.00 in (43.18 cm)
Height: 1.74 in (4.42 cm)
Weight: 35.00 oz. (1134g)

**Environmental**

Operating temperature: $32^o$ F to $131^o$ F ($0^o$ C to $55^o$ C)
Relative humidity: 0% to 95% (non-condensing)

**Power Requirements**

The Hubport/14 uses a single 120/230VAC 50/60Hz power input through the rear IEC 60320 inlet. The maximum power requirement of the Hubport/14 is 40W.

**Hardware Interface Features**

The unit provides a single upstream (standard B-type receptacle) and 14 downstream (standard A-type receptacles) USB 2.0 compliant ports. The unit will attach to the upstream device as a Full-/High-speed hub. The downstream ports support Low-Speed, Full-Speed and High-Speed downstream devices.

Each downstream facing port provides a green LED status indicator. Color definitions are as follows:

| Off | Port out of operation |
|---|---|
| Green | Port fully operational |
| Blinking Off/Green | Port needs attention |

The unit features a System Status green LED as well with the following color definitions:

| Off | Unit out of operation |
|---|---|
| Green | Unit is powered |

# Regulatory & Other Information

All relevant domestic and international regulatory and safety information, including Declaration of Conformity (DoC) notices, may be found at www.digi.com/certifications. When prompted, enter the part number printed on the product label.

**Warning: HAZARDOUS VOLTAGE INSIDE**. Before making any servicing on the unit, make sure the power is disconnected. It must be ensured that the power supply cannot be accidentally connected.

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