Hubport®

USB HUB

Installation Guide

Models:
Hubport/4
Hubport/7

/c Models:
Hubport/4c
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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.

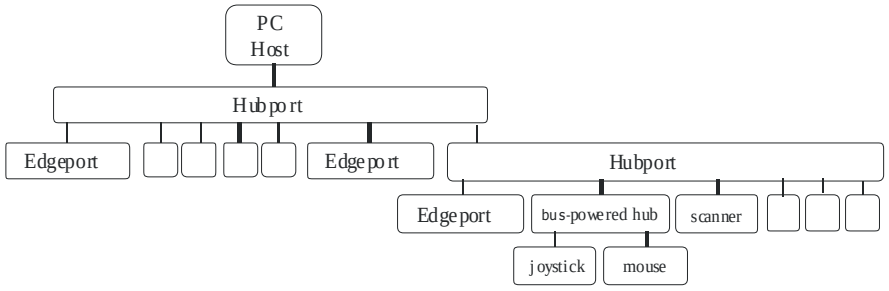

Figure 1: Example of a Typical Hub Configuration

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/7c DC	Yes	Self*	7	Variable 10-28DC @24W

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

For /c Hubport Models

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

Regulatory & Other Information

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Federal Communications Commission

(FCC) Regulatory Information (USA only)

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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet that is on a circuit different from the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: The connection of a non-shielded interface cable to this equipment will invalidate the FCC Certification for this device.

FCC Regulation - Part 15 Declaration of Conformity (DoC)

This device complies with the requirements of the Code of Federal Regulations listed below:

FCC Title 47 CFR, Part 15 Class B for a digital device.

Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

Department of Communication (DOC) Notice (Canada only)

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouiller du Canada.

European Community - CE Mark Declaration of Conformity (DOC)

According to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:

Digi International

Manufacturer's Addr.:

11001 Bren Road East
Minnetonka, MN 55343

declares that the product

Product Name: **Hubport/4**

Model Numbers

North America	International
301-1010-04	301-2010-04

Product Name: **Hubport/4c**

Model Numbers

North America	International
301-1010-45	301-2010-24

Product Name: **Hubport/4c DC**

Model Numbers

North America	International
301-1010-42	301-2010-42

Product Name: **Hubport/7**

Model Numbers

North America	International
301-1010-07	301-2010-07

Product Name: **Hubport/7c**

Model Numbers

North America	International
301-1010-75	301-2010-27

Product Name: **Hubport/7c DC**

Model Numbers

North America	International
301-1010-72	301-2010-72

Product Name: **Hubport/4 DC**

Model Numbers

North America	International
301-1010-30	301-2010-30

Product Name: **Hubport/7 DC**

Model Numbers

North America	International
301-1010-70	301-2010-70

Product Options:

All

conforms to the relevant EU Directives listed here:

EMC Directive 2004/108/EC|
Low Voltage Directive 2006/95/EC
R&TTE 1999/5/EC

using the relevant section of the following EU standards and other normative documents:

EMC:

EN55022 Class B(2006)

EN55024 (1998+A1,A2)

EN61000-3-2(2000+A2)

EN61000-3-3(1995+A1,A2)

Safety:

EN 60950 (2001)

The following summarizes the specifications and requirements for EN55024, EN55022 Class B & CISPR 22 Class B emission and immunity tests. If the actual test levels are higher or different than required, these levels are listed in the appropriate tables.

EN55022

Test	Specification EN55022	Requirement
Radiated Emissions	—	Class B
Conducted Emissions	CISPR 22	Class B

EN 55024

Test	Specification EN55024	Requirement
Electrostatic Discharge	EN61000-4-2	+2,+4 kV direct contact +2,+4 kV and +8kV air (insulated surfaces) +2,+4 kV(HCP&VCP) indirect
Radiated Immunity	EN61000-4-3	3 V/m, 80Mhz-1000Mhz, amp mod 1kHz sine wave at 80%
Electrical Fast Transient Burst	EN61000-4-4	+0.5kV,+ 1kV (A/C) +0..5kV (I/O)
Surge	EN61000-4-5	+0.5kV,+ 1kV 1kV
Conducted Immunity	EN61000-4-6	3Vrms, .150Mhz to 80Mhz, amp mod. 1kHz wave at 80%
Magnetic Immunity	EN61000-4-8	1 A/m Not Applicable
Voltage Dips & Interrupts	EN61000-4-11	>95%10ms, 30%@500ms & >95%@5sec reduction at rated voltage

European Contact

Digi International
Joseph-von-Fraunhofer Str. 23
44227 Dortmund, GERMANY
49-231-9747-0

UL/CSA Safety Information

This device complies with the requirements of following safety standards below:

UL 1950, 3rd edition

CSA No. 950 July 2006

Quality Manager
Austin, Texas

China RoHS statement:

The Table of Toxic and Hazardous Substances/Elements and their Content shall apply to any product covered by this manual and labeled with the following symbol:

The Table of Toxic and Hazardous Substances/Elements and their Content as required by China's Management Methods for the Control of Pollution from Electronic Information Products						
Part Name (部件名称)	Toxic and Hazardous Substances or Elements **(有毒有害物质或元素)** Lead (Pb) (铅)	Mercury (Hg) (汞)	Cadmium (Cd) (镉)	Hexavalent Chromium (Cr (VI)) (六价铬)	Polybrominated biphenyls (PBB) (多溴联苯)	Polybrominated diphenyl ethers (PBDE) (多溴二苯醚)
301-1002-08	X	O	O	O	O	O

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T 11363-2006.
表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下.

X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T 11363-2006.
示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求.

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