

Edgeport

USB EXPANSION MODULES
INDUSTRIAL

**Installation
Guide**



www.ionetworks.com

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Installation Guide

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Edgeport/2i

Edgeport/4i

Edgeport/8i

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Federal Communications Commission (FCC) Regulatory Information (USA only)

This provision 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.

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 brouilleur du Canada.

European Community - CE Mark

Declaration of Conformity (DOC)

according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Inside Out Networks
Manufacturer's Addr.: 7004 Bee Caves Rd.
Bldg. 3, Suite 200
Austin, Texas 78746 USA

declares that the product

Product Name: Edgeport/2i, Edgeport/4i,
Edgeport/8i
Model Number(s): 301-1000-12, 301-1000-24,
301-1000-28
Product Options: All

conforms to the relevant EU Directives listed here:

EMC Directive 89/336/EEC |
Low Voltage Directive 73/23/EEC
Amending Directive 93/68 EEC

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

Safety: IEC 950:1991 +A1, A2, A3, A4
EN 60950:1992 + A1, A2, A3, A4

EMC: EN 55022 Class B (1994 w/A1 1995)

EN 50082-1:1992 - Immunity to Electromagnetic Disturbance

IEC 801-2
IEC 801-3
IEC 801-4

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: **1.** this device may not cause harmful interference, and **2.** this device must accept any interference received, including interference that may cause undesired operation.

UL/CSA Safety Information

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

UL 1950, 3rd edition
CSA No. 950

Quality Manager, Austin, Texas July 2001

Edgeport/2i, 4i, and 8i

Cabling the Edgeport/2i, 4i, and 8i

Cable Connections (DB9 Female) for Full Duplex

3 → T _A	(T-)	transmit data negative	
7 → T _B	(T+)	transmit data positive	
8 → R _A	(R-)	receive data negative	
4 → R _B	(R+)	receive data positive	
5 →		signal ground	
1, 2, 6, 9		no connect	

NOTE: For full duplex (in the above diagram) the differential pair T_A and T_B should be together in one twisted pair and R_A and R_B should be together in another twisted pair.

Cable Connections (DB9 Female) for Half Duplex

3 → T _A	(T-)	transmit data negative	
7 → T _B	(T+)	transmit data positive	
8 → R _A	(R-)	receive data negative	
4 → R _B	(R+)	receive data positive	
5 →		signal ground	
1, 2, 6, 9		no connect	

NOTE: Half duplex contains only one twisted pair.

Configuring the DIP Switches

The Edgeport/8i does not have any DIP switches to configure for either Duplex or Grounding. If you have an Edgeport/8i you may proceed to "Installing Edgeport Drivers" on page 4.

2 Position Switch on Edgeport2/i and 4/i

Both the Edgeport/2i and Edgeport/4i have a two position DIP switch. This switch connects the signal ground to chassis ground. **IMPORTANT:** Do not connect signal ground to chassis ground on more than one location in order to prevent ground loops and potentially high currents (figure 1).

After setting the two position DIP switch on the Edgeport/4i (designed to give you four RS-422 serial ports), you may proceed to "Installing Edgeport Drivers" on page 4. For the Edgeport/2i, continue with the next section.

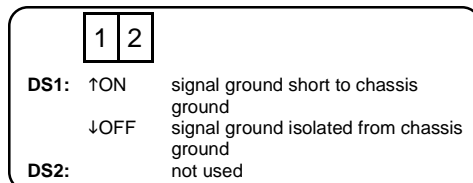


Figure 1: Two Position DIP Switch

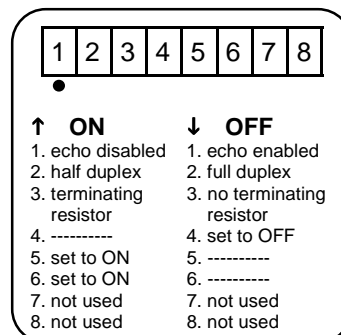


Figure 2: Eight Position DIP Switch

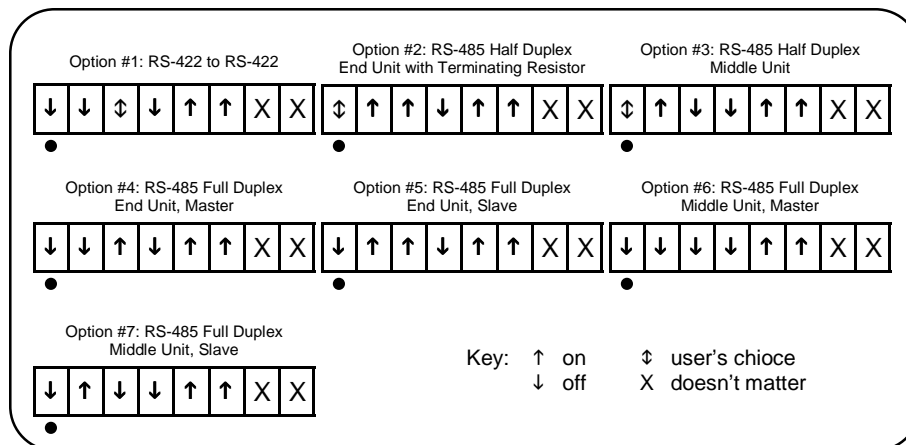


Figure 3: Various Configurations for the Edgeport/2i DIP Switches

8 Position Switch on the Edgeport/2i

The Edgeport/2i, which supports both RS-422 and RS-485, has two sets of eight position DIP switches, one set for each serial port. Figure 2 shows what each switch selects in its ON and OFF positions. Consult the diagrams in figure 3 for various configuration options. For more configuration information, go to the documentation section of our web site at www.ionetworks.com/support. After configuration, you may proceed to "Installing Edgeport Drivers" on this page.

Installing Edgeport Drivers

The installation instructions in this guide are for installing the Edgeport software from CD. If you are installing from diskette and using Windows 95 or 98, when prompted for the location of the drivers, specify your 3-1/2" floppy drive (usually a:). NT users will not be prompted and will need to locate the driver by double-clicking on their floppy drive. In either case, you will not need to specify a directory.

These installation instructions are for installing the Edgeport software from CD. If you are installing from diskette and using Windows 95, 98, CE, SE, ME, or 2000, when prompted for the location of the drivers, specify your 3-1/2" floppy drive (usually a:). NT users will not be prompted and will need to locate the driver by double-clicking on their floppy drive. In either case, you will not need to specify a directory.

For Windows 95 Users

Follow the instructions described in "Plugging Edgeport Into Your PC" on page 6. After connecting the USB cable, if the Update Device Driver Wizard dialog does not appear, please review "Using USB with Windows 95" in the Appendix. Otherwise, click **Next** to continue with driver installation.

To install the Edgeport drivers:

- 1) Insert the "Edgeport Driver" CD into your CD-ROM drive.
- 2) After Windows fails to locate the drivers on your floppy disk drive, click **Other Locations...**.

- 3) When the Select Other Location dialog appears, type <CD drive letter>:\Win95 and click "OK".
- 4) Confirm that Windows has found the correct driver location and click "Finish".
- 5) When Windows prompts you for the driver disk, click "OK".
- 6) At the next Windows prompt, type <CD drive letter>:\Win95 and click "OK".

After installing the drivers, Windows will detect your Edgeport's new COM ports and will begin to initialize them. Installation is complete when no more dialogs appear. Your new communication ports, numbered sequentially following the existing ports in your system, are now ready!

For Windows 98, CE, SE, and ME Users

- 1) Insert the "Edgeport Driver" CD into your CD-ROM drive.
- 2) Follow the instructions described in "Plugging Edgeport Into Your PC" on page 6. After connecting the USB cable, the Add New Hardware Wizard appears. Click "Next".
- 3) Select "Search for the best driver for your device" and click "Next".
- 4) Select "Specify a location" and type in <CD drive letter>:\Win98. Then click "Next".
- 5) Confirm that Windows is pointing to <CD drive letter>:\Win98. Click "Next". Windows will then copy over the driver files.
- 6) Click "Finish" to complete the driver installation.

After installing the drivers, Windows will detect your Edgeport's new COM ports and will begin to initialize them. Installation is complete when no more dialogs appear. Your new communication ports, numbered sequentially following the existing ports in your system, are now ready!

For Windows NT Users

Because Microsoft does not support USB in NT4.0, Inside Out Networks supplies a USB stack that will be installed along with the necessary drivers. NOTE: You must install the drivers using an account that has administrative privileges!

To install the USB stack and Edgeport drivers:

- 1a) Insert the "Edgeport Driver" CD into your CD-ROM drive.
- 2a) When the welcome dialog appears, click the "Install Driver" button.
- OR -
- 1b) From the Start menu, select **Run**.
- 2b) Type <CD drive letter>:\NT40\ip4n4XXX.exe, and click "OK".

Note: "XXX" represents a version number. Example: Driver version 1.31 would be ip4n4131.exe.

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 version 1.14 or later:* 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.

3c) *If you are replacing version 1.13 or earlier:* The Edgeport Drivers Installation Complete dialog tells you that the Edgeport drivers have been updated. Before the updates can take effect, however, you will need to reboot your computer. To reboot immediately, eject the "Edgeport Driver" disk, select the option to restart the computer now, and click "Finish".

Plugging Edgeport Into Your PC

Plug the Type A end of the USB cable into the USB port located in the back of your PC or into an available USB port on a standard hub or into an Inside Out Networks Hubport. Plug the Type B end of the USB cable into the back of the Edgeport.*

If the drivers are not already installed, you may return to the installation instructions for your operating system or proceed to the "Installing Edgeport Drivers" section, beginning on page 4.

Appendix A

Using USB with Windows 95

If you are using Windows 95 OSR2.1 or above, please continue with the sections below. If not, see the note at the end of Appendix A.

Checking for USB Hardware

To verify that the necessary hardware, a USB Host Controller, is installed in your system, make sure that your PC has USB connectors. If not, then this system will not support USB regardless of the Windows version. You will need to purchase a PCI USB controller card, such as the Step Up Kit from Inside Out Networks. If your PC has USB connectors, verify that the USB hardware is enabled in your system BIOS configuration.

In some cases your manufacturer may have elected to ship your PC without the USB support drivers installed. If the two USB device manager hardware listings are absent in your Device Manager, proceed to "Installing Microsoft USB Support" on page 8.

After installing USB Support from your Microsoft Windows 95 OEM system disk, check your Device Manager again. If the two devices are not present or Windows Plug & Play does not auto detect the Edgeport, try the following:

- 1) If only the HOST Controller is listed in the Device Manager then remove it and reboot.
- 2) From the Control Panel, open the System Properties and select "Check for a device labeled ?UNKNOWN." If ROOT HUB and HOST Controller are listed, then remove them and reboot.

If, after rebooting, the Add Hardware Wizard finds the USB devices and requires new drivers, such as UHCD.SYS, you can locate the drivers in the C:\WINDOWS\SYSTEM directory. If, after following the procedures described in this guide, you are still having installation problems, please call (512)306-0600 and ask for Technical Support.

Determining USB Support

If you have an earlier version than Windows 95 OSR2.1, please read the Note at the end of "Installing Microsoft USB Support" on page 8. Otherwise, to determine if your system supports USB, perform the following steps:

- 1) Insert the "Edgeport Driver" CD into your CD-ROM drive.
- 2) In the START menu, select RUN.

At the CD drive letter>:\Win95\usbready.

One of two USB System Checker dialogs will appear. If your system does not support USB, the dialog will read, "**This system DOES NOT currently support USB!**" Proceed to "Determining Why Support Is Not Present" on page 8.

If your system supports USB, the dialog will read, "**This system DOES have s USB**" and you may continue with the Windows 95 installation instructions for your particular Edgeport product..

Checking for Full USB Support in the Device Manager

- 1) From the main desktop area of Windows, right click on the My Computer icon and choose Properties to open the System Properties window.

- 2) Click once on the Device Manager tab to view a listing of installed hardware devices.
- 3) In the Device Manager tab, your hardware devices are in alphabetical order and should include a Universal serial bus controller toward the bottom of the list. Double click on this device to open it.

In order for the Edgeport and other USB devices to work properly, at least two devices are required and will be listed. Although the exact name of each manufacturer's device listing can vary, the names of these two required USB devices should include the following descriptive words:

- USB Root Hub
- USB Host Controller

The above is an example of what you might see listed under the Universal serial bus controller. If you do not see one or both of these devices, go to "Determining Why Support Is Not Present" in the next section.

Determining Why Support Is Not Present*

The DETAILS button in USBREADY can help you determine what is preventing USB support.

- 1) Click on the DETAILS button.

If the USB Class Host Controller window reads, "**No USB Host Controller Found**" then the necessary hardware, a USB Host Controller, has not been detected. If your PC does not have USB connectors, then this system will not support USB regardless of the Windows version. You will need to purchase a PCI USB controller card, such as the Step-Up card from Inside Out Networks. If your PC does have USB connectors, verify that the USB hardware is enabled in your system BIOS configuration.

If the USB Class Host Controller window displays any other message, such as "**Standard,**" "**Intel,**" "**Universal,**" or "**Open**" Host Controller, then hardware support is present, but an incompatible version of Windows is currently installed.

If the Test Results Details dialog shows Windows 95 version 4.0.1111, which is Windows 95 OSR.2, proceed to "Installing Microsoft USB Support" on this page. You will need to upgrade to OSR 2.1 by installing the USB supplement before installing the Edgeport.

Installing Microsoft USB Support

Microsoft provides a supplemental program (usbsupp.exe) to allow users to upgrade Windows 95 version OSR2 to support the Universal Serial Bus. In order to install this support perform the following steps:

- 1) Insert your Windows 95 CD into your CD ROM drive.
- 2) In the START menu, select RUN.
- 3) Type **<CD drive letter>:\other\usb\usbsupp**.

Follow the instructions on the screen. After rebooting, return to the Windows 95 installation instructions for your particular Edgeport product. Ensure that the Test Results Details (from the Details button in the USB System Checker dialog) displays Windows 95 version 4.1212 or higher.

*Note that Windows 95 versions 4.0.950 and 4.0.950a do not support the upgrade path to USB. Unfortunately, Microsoft has not provided an upgrade path to OSR2 from earlier versions of Windows. OSR2 must be preinstalled by your PC vendor. Contact your PC vendor for more information.

Appendix B

Using the Edgeport Utility Program

With Windows 95, 98, CE, SE, ME, 2000, and NT

To access the Edgeport configuration utility program, select **Run...** from the **Start** menu and type **edgeport**. This program allows you to manage various resources of your Rapidport. You can check the mapping of each physical communications port to the Windows COM port numbers. You can reassign the physical ports on your Edgeport to any available Windows COM port number from 1 to 255, or give your Edgeport a user friendly Device Name. This capability is particularly helpful if you have more than one Edgeport. You may check the version numbers and other information pertaining to the Edgeport drivers.

Advanced Edgeport options are:

Option 1: Clicking the Uninstall button will remove the Edgeport device drivers and utilities.

Option 2: Allows you to configure how COM ports will be assigned.

The driver supports COM port number assignment in two ways:

1. Assign COM ports based on converter serial number.

This is the default setting. In this mode, the driver uses the serial number of each converter to uniquely identify it, and the COM port assignments for a given converter are based on its serial number. No matter which physical USB port a converter is plugged into, it will maintain its assigned COM port numbers.

2. Assign COM ports based on physical USB port.

In this mode, the driver identifies a converter based on the physical USB port it is plugged into. This effectively assigns COM port numbers to physical USB ports. No matter which converter is plugged into a given USB port, it will use the COM port numbers assigned to that USB port. This permits a converter to be replaced with a new unit, and, although the new unit has a different serial number, it will receive the same COM port assignments as the old unit because they were both plugged into the same USB port.

When using this mode, converters are identified not by their serial number, but by a 2-7 digit number that identifies which USB port it is plugged into.

After changing this setting, you will need to reboot before the change takes effect.

With Windows NT

From the Start menu, select Programs, Inside Out Networks Utilities, Edgeport Configuration Utility. The Edgeport Properties dialog contains the same functions as described above. Note, however, that you must have administrative privileges in order to change the COM port settings. For more information, see the Support section at our website, www.ionetworks.com.

Appendix C

Using the USB Status Utility (Viewer)

For Windows NT Only

The USB Status Utility can be accessed by clicking the USB icon in your system tray or by clicking on Start, Programs, Inside Out Networks Utilities, 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.

Appendix D

Interpreting the System Status Light

Red This light signifies a loss of USB communication with the host. If the loss is due to unplugging the unit, when it is reconnected the light will blink red a few moments before turning green. Otherwise, the light indicates a problem with the drivers, which may need to be reinstalled. The red light will also blink during installation until the installation is complete.

Amber This light signifies serial port activity on the Edgeport. The amber light may also flash briefly during installation.

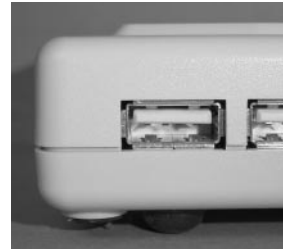
Green This light indicates the serial ports are successfully set up and the Edgeport is operating normally.

Appendix E

USB Cabling Diagrams



Type A
plug and receptacle



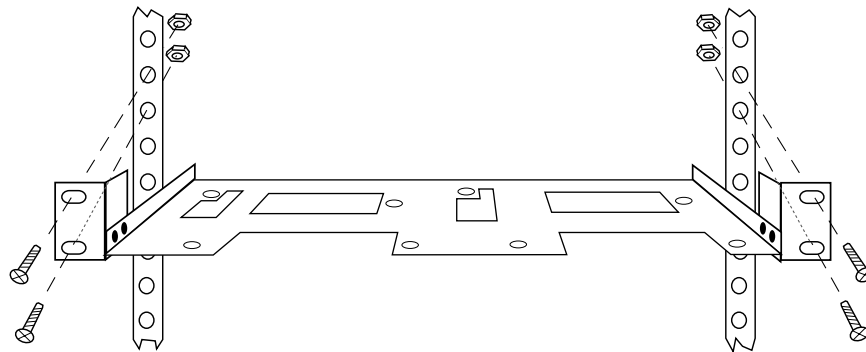
Type B
plug and receptacle



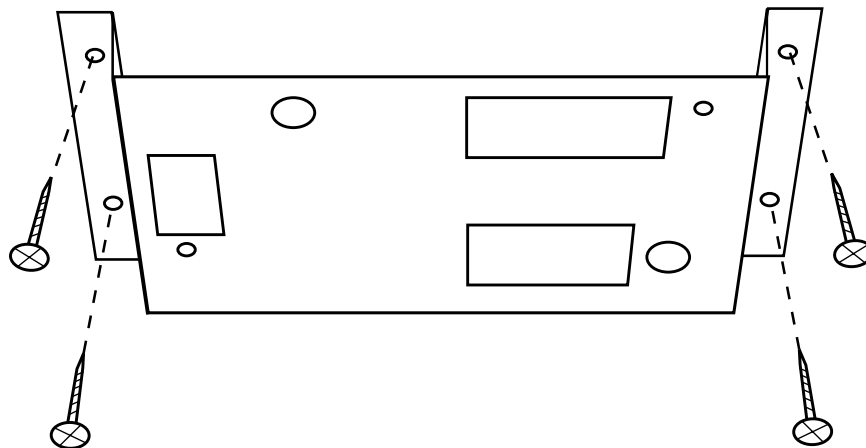
Appendix F

Mounting Diagrams

Rack Mount Kit



Under-Shelf Mounting Bracket



Nuts, bolts, and screws are not included.

Revision History

<u>Revision</u>	<u>Date</u>	<u>(Page(s)/ Location) Change</u>
A	10/98	(all) Original
B	07/01	(all) renumbered pages with title page starting as "1" and updated all page number references, (front cover) removed part numbers, (inside cover) removed stacking instructions, (1) added title page with TOC, (2) moved the fine print from end of guide, updated address, changed year in copyright notice, (3-5) updated installation procedures on the various platforms, (9) added cabling diagrams, (10) added mounting diagrams, (back cover) added document part numbers and logo, updated address

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