

**FCC Regulation - Part 15****Declaration of Conformity (DoC)**

FCC ID: xxx55m1073 or xxx55M1074

This device complies with Part 15 of the FCC Rules. 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.

This product contains either a class 1 or class 2 Bluetooth transceiver board (part numbers 55001073 and 55001074 respectively). The following statement refers to this board:

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

**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: Inside Out Networks  
Manufacturer's Addr.: 7004 Bee Caves Rd.  
Bldg. 3, Ste. 200  
Austin, TX 78746 USA

declares that the product

Product Name: Wavespeed/S  
Model Number(s): 301-1121-01, 301-1123-01  
301-1122-01, 301-1124-01  
301-1124-01

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**

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.

EN 55022 Class B (1994 w/A1 1995)

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

EN55024 (1998)

Test	Specification EN55024	Requirement
Electro-static Discharge	EN61000-4-2	+4 kV contact +8kV air
Radiated Immunity	EN61000-4-3	3 V/m
Electrical Fast Transient Burst	EN61000-4-4	1kV (A/C), .5kV (I/O)
Surge	EN61000-4-5	2kV common mode 1kV differential mode
Conducted Immunity	EN61000-4-6	3V rms
Magnetic Immunity	EN61000-4-8	1 A/m Not Applicable
Voltage Dips & Interrupts	EN61000-4-11	>95%, 30% & >95%

**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

Quality Manager  
Austin, Texas  
04/03

**Inside Out Networks**  
**A Digi International Company**[www.ionetworks.com](http://www.ionetworks.com)

7004 Bee Caves Road  
Building 3, Suite 200  
Austin, TX 78746  
512-306-0600 ph  
512-306-0694 fax

[info@ionetworks.com](mailto:info@ionetworks.com)  
[sales@ionetworks.com](mailto:sales@ionetworks.com)  
[support@ionetworks.com](mailto:support@ionetworks.com)

Digi North America: 877-912-3444  
Digi Europe: +49-231-9747-0  
Digi Hong Kong: +852-2833-1008

[info@digi.com](mailto:info@digi.com)

**Inside Out**  
**NETWORKS**™

90000xxx Rev A



# Wavespeed/S

## CABLE REPLACEMENT DRIVE

## Installation Guide



# Wavespeed/S

The Wavespeed/S provides an easy-to-use serial cable replacement solution targeted for legacy and future applications that use RS-232 via a serial cable to transfer data between devices. The serial cable between two pieces of hardware can be replaced with a Bluetooth wireless link. The conversion to the wireless link is transparent to the software applications. The Wavespeed/S, following initial configuration using a Windows-based Configuration Wizard, will take on the specified DTE or DCE personality and port settings. Data and control signals on the hardware's COM port will be transmitted between the two Wavespeed/S, which will then simulate the appropriate signals on their external COM port.

Using the Configuration Wizard, a Wavespeed/S can be configured to run in Server mode. In this mode, the device does not require a companion Wavespeed/S to operate. The device will make a serial port profile (SPP) server port available for any SPP-capable Bluetooth device to connect to.

## Installing the Configuration Utility

When in use, the Wavespeed/S devices can be connected to any type of device with RS-232 connections, but during configuration, one of the devices must be connected to a COM port of a Windows PC or laptop. During the configuration process, this is referred to as the local device. The other device must be within the Bluetooth operating range (approximately 10 meters) of the PC-connected device. During the configuration process, this is referred to as the remote device. The switch on both devices must be in the CONFIG position.

1. Insert the CD-ROM into the CD-ROM drive.
2. Using the File Manager, go to the CD-ROM drive. Begin the installation process by double-clicking on the file **SETUP.EXE**. Follow the on screen instructions.
3. Once the installation is complete, select the Configuration Wizard icon from the Start button to start the wizard.

## Configuring the Wavespeed/S

The first screen of Configuration Utility gives a general overview of the tasks needed to configure the devices. Select "Next" to begin the configuration process.

### PC/Laptop COM Port Selection

1. Specify to which COM port the local Wavespeed/S device is attached. The COM port can be selected in one of two ways. One, if you know which COM port the local device is attached to, select the port from the combo box and select the **Set COM Port Selection** button. Two, if you are unsure which port the local device is attached to, click the **Auto Detect** button.
2. After the Configuration Wizard has verified that it can communicate with the local device, select the **Next** button to move to the next step of the configuration process.

### Remote Device Discovery and Bonding

Device Discovery and Bonding pairs two Wavespeed/S devices by creating a unique bond that ensures that, following the configuration procedure, those two devices will transfer information only to each other.

This screen detects and lists all of the Wavespeed/S devices within the operating range (approximately 10 meters). The Bluetooth Address (BD\_ADDR) and product name of the detected devices are displayed in the Device Selection list.

The following steps complete the Device Discovery and Bonding process:

1. Select the **Search** button. The Configuration Wizard fills in the list box with the Wavespeed/S devices that are in the area. If you do not see the desired device in the list box, continue searching by selecting the **Search** button.
2. If you do not know the address of the remote device that you want to pair with, select a device address from the list and select the **Ping** button. The green LED on the selected device will light for 5 seconds. Continue selecting addresses and selecting the **Ping** button until you find the correct device.
3. Select the address of the device you want to pair with from the list and select the **Bond** button. The Configuration Wizard will bond with the selected device and give you an indication of the status of the procedure.
4. The Configuration Wizard automatically notifies you that the bonding was successful. If the procedure fails, retry the bonding process.
5. Select the **Next** button when bonding is complete.

### Configuring Local Device Port Settings

The next step in the configuration process is to specify the local device's port emulation settings and type. In this step, you will specify how the Wavespeed/S device communicates over the COM port to the TARGET application with which it will be interfacing (not how it communicates with the PC or laptop). In other words, if your application currently sends data at 9600 baud with 8 data bits, 1 stop bit, no parity, and software flow control, you need to specify those settings for the Wavespeed/S device. In addition, you must determine if the TARGET application is a DTE or DCE device. The Wavespeed/S device must be set to the opposite device type of the device to which it will be attached. One of the Wavespeed/S devices must be a DTE device and the other must be a DCE device. You may need to use a NULL modem adaptor on one of the devices.

1. For each port setting, select the desired value.
2. When all settings are specified, select the **Set Port Configuration** button to send the settings to the local device.
3. After viewing the confirmation message, select the **Next** button.

### Configure Remote Device Port Settings

The next step in the configuration process is to specify the remote device's port emulation settings and type. In this step, you specify how the remote Wavespeed/S device will communicate over the COM port to the TARGET application with which will be interfacing. In other words, if your application currently sends data at 9600 baud with 8 data bits, 1 stop bit, no parity, and

software flow control, you need to specify those settings for the remote Wavespeed/S device. In addition, you must determine if the TARGET application is a DTE or DCE device. The Wavespeed/S device should be set to the opposite device type of the device to which it will be attached. DTE/DCE Determination, for a detailed discussion of this topic. One of the Wavespeed/S devices must be a DTE device and the other must be a DCE device. You may need to use a NULL modem adaptor on one of the devices.

In most cases, the port settings, such as baud rate, data bits, et cetera, are the same as those set in the local device configuration. Therefore, the Configuration Wizard initialises the settings to those values.

1. For each category, select the desired value.
2. When all selections are specified, select the **Set Port Configuration** button to send the settings to the remote device.
3. After viewing the confirmation message, select the **Next** button.

### Save Configuration Settings

The final step in the configuration process is to have the Wavespeed/S devices save the configuration parameters.

1. While in the Save Configuration Settings, select the **Save** button to store the settings. Until reconfigured, the devices use the settings that you selected.

### Regulation and 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.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.