WindConnect II User's Guide

(For use with TROY WindConnect II Printer Adapters with Bluetooth® Technology)

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<u>NOTE</u>: *The X3 version of this document does not contain any links in the navigation pane. The final copy will contain these links for the reader.*

Electromagnetic Specifications

For electromagnetic specifications, refer to Appendix B in this User's Guide.

Safety Considerations

Prior to the installation and use of this product, review all safety markings and instructions. Do not proceed beyond a WARNING or CAUTION notice until you have understood the hazard and have taken appropriate steps.

Notice

Trademarks

Windows is a trademark of Microsoft Corporation. TROY is a registered trademark of TROY Group.

Warranty

The TROY printer adapters are warranted to be free of defects in materials and workmanship for a period of five years. This period begins upon the date of shipment if the hardware is installed by the Purchaser, or upon installation if the Hardware is installed by TROY. During the warranty period, TROY will repair or replace the unit at no charge provided it is returned to TROY with the freight pre-paid. The warranty on repaired products or replacement products is 30 days or the last day of the warranty of the original defective product, whichever is longer. This warranty does not apply if the product has been damaged by accident, misuse, natural catastrophe, modification, improper service, or conditions resulting from causes external to the product. The warranty shall be void if the TROY serial numbers have been removed.

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Overview

The TROY WindConnect II printer adapter with Bluetooth® technology is a wireless print device that (depending on the model purchased) plugs directly into the USB or parallel port of your printer. By using the WindConnect II, you can conveniently print from a desktop or laptop computer and other devices that use *Bluetooth* technology without using a cable. Please refer to the Quick-Install Guide provided in the product package for hardware setup information. For additional information on this product, visit the TROY web site at www.troygroup.com.

This manual covers installation and configuration of the WindConnect II for use with computers, pocket PCs (PDAs), or mobile phones that have either embedded *Bluetooth* technology or are equipped to use an external adapter that uses *Bluetooth* technology. A troubleshooting section is also provided in the event that your WindConnect II does not perform as specified.

The WindConnect II supports the following profiles:

- Serial Port Profile (SPP)

- Object Push Profile (OPP)

- Hardcopy Cable Replacement Profile (HCRP)

- Basic Printing Profile (BPP)

- Basic Imaging Profile (BIP)

The WindConnect II can be used with devices that use *Bluetooth* technology and support one of these profiles.

NOTE: The BPP and BIP profiles are supported on selected printers (refer to the TROY web site at http://www.troygroup.com).

NOTE: Some sending devices will automatically time out after a few minutes of inactivity. Other sending devices will keep the connection active until forced to disconnect.

IMPORTANT: Other users will not be able to use the WindConnect II while the connection is active with your sending device.

Package Contents

- TROY WindConnect II printer adapter with *Bluetooth* technology
- Power supply module
- USB cable (for USB versions only)
- Quick-Install Instructions (provided in the product package)
- TROY WindConnect II Installation CD
- Warranty Card

<u>NOTE</u>: All discussions, procedures, and other material in this manual concerning connection and communication between devices, are referring to devices and software that use *Bluetooth* technology.

Windows® System Requirements

To print from a Windows-based PC, the following is required:

- A PC equipped with a USB or PCMCIA card that uses *Bluetooth* technology. For a list of compatible USB, PCMCIA and PC adapter cards, visit the TROY web site at http://www.troygroup.com.
- Vendor-supplied software for your USB or PCMCIA adapter card that supports one or more of the supported profiles (OPP, BIP, BPP, HCRP, or SPP) is required to run your PC with the WindConnect II.

To optionally configure the WindConnect II settings using the provided TROY Configuration Utility, your system should include the following components:

- A PC with a 133 MHz or higher processor
- Microsoft Windows 98SE, ME, 2000, or XP operating system
- At least 64 MB of RAM (memory)
- At least 10 MB of free hard disk space to install the software
- A CD-ROM drive (to load the software)

PDA System Requirements

For information on printing to the WindConnect II from a Pocket PC operating system or a Palm OS-based PDA (Personal Digital Assistant), refer to the information provided in this user's guide or visit the TROY web site at http://www.troygroup.com.

About This User's Guide

This user's guide contains information on system requirements, important safety tips, and instructions on the following:

- Installing the WindConnect II hardware
- Installing the WindConnect II Configuration Utility
- Configuring the WindConnect II using the Configuration Utility and software for Windows
- Using the WindConnect II with a Microsoft Windows system
- Using the WindConnect II with other devices that use *Bluetooth* technology such as mobile phones, PDAs, and digital cameras.

Before You Begin

The TROY WindConnect II printer adapter with *Bluetooth* technology is preconfigured at the factory to allow you to print right out of the box without having to first configure the device. Optionally, you can reconfigure the device (change the device name, enable/disable the discovery feature, select security features, and update the device's firmware) at any time using the provided Configuration Utility (refer to **Chapter 4 – Configuring Your Printer Adapter** in this user's guide for more information).

Before installing the WindConnect II, make sure your printer functions properly. The WindConnect II supports either a parallel or USB connection to your printer, depending on the model of WindConnect II purchased. Ensure that you have properly installed your adapter and sending device software on the device as described in the documentation that came with the device.

NOTE: To view a list of supported printers and Bluetooth clients, visit the TROY web site: www.troygroup.com.

Handling Precautions

The printer adapter is designed to withstand normal handling procedures, but reasonable precautions should be exercised during installation, particularly with regard to static discharge. Ensure that you are adequately grounded by touching an unpainted metal portion of the printer chassis while installing the printer adapter.

Printer Adapter Components

The TROY WindConnect II hardware includes the following components:

- **Power connector** – The power supply cable plugs into this connector.

- **Test button** – Pressing this button for approximately one second will print a test page on the printer. Pressing this button for at least five seconds will cause the printer adapter to enter the configuration mode. Holding down the test button while simultaneously applying power to the device will restore the printer adapter to factory default settings.

- **LED status indicators** – A blue LED (Light Emitting Diode) is used to indicate connectivity and activity status using *Bluetooth* technology. A bi-colored (amber/green) LED is used to indicate the operational status of the printer adapter. A green color indicates a ready state, and an amber color indicates an error condition. When in the configuration mode, the bi-colored LED will cycle between amber and green. Refer to **Chapter 5 – Troubleshooting** in this user's guide for detailed LED status light descriptions.

- **USB port** – This port is used for connecting the printer adapter to a USB printer. Refer to **Chapter 4 – Configuring Your Printer Adapter** for instructions on how to use the USB port (USB model only).

- **Parallel Port** – This port is used for connecting the printer adapter to the parallel port of a printer equipped with a 25-pin Centronics interface (parallel model only).

NOTE: If the parallel port version of the WindConnect II does not match up to the parallel port on your printer, you may need an IEEE 1284 B-female to C-male cable adapter to connect the printer adapter to the parallel port of your printer. The cable adapter can be ordered on the web at the following web sites or other web sites you may prefer (www.pccables.com, or www.blackbox.com).
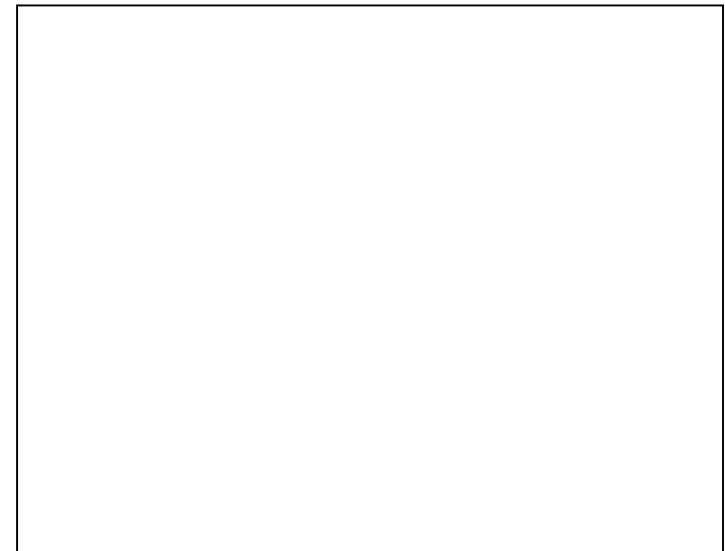
Installing the Hardware onto the USB or Parallel Port

1. Depending on your model of printer adapter, connect the WindConnect II directly to either the USB or IEEE 1284-compliant parallel port of the printer as shown below.

    - If you connect the WindConnect II to the parallel port, be sure to secure the metal locking clasps located on each side of the parallel connector to prevent the device from being accidently disconnected.

    - If you connect the WindConnect II to the USB port of the printer, use the supplied Velcro tabs to attach the printer adapter to the printer or other convenient surface.

2. Plug the power supply module into a suitable AC wall outlet, and then plug the power supply cable into the WindConnect II as shown. When power is applied to the WindConnect II, the blue and green LEDs will blink three times simultaneously as it performs self-checking diagnostics. Refer to *Chapter 5 – Troubleshooting* in this user's guide for detailed LED status light descriptions.

    NOTE: Some printers supply 5 volts on pin 18 of the parallel port, which can be used to power the printer adapter without the need for an external power supply. Refer to the owner's manual that came with your printer. If you are using the USB connection, the external power supply is required.
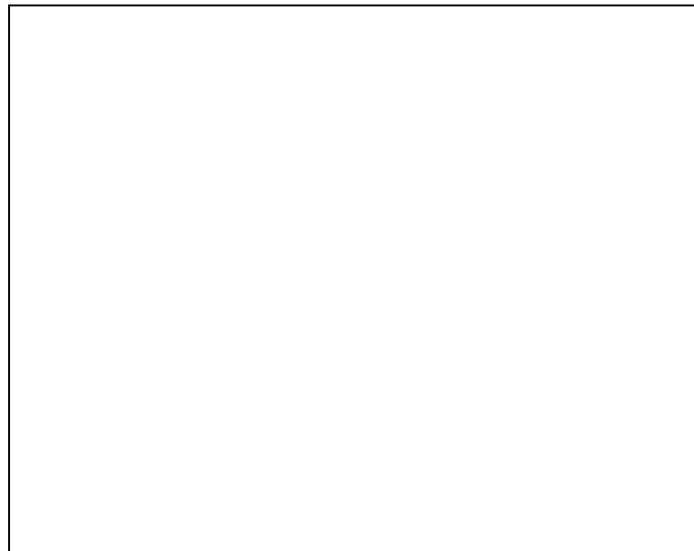
Installing the WindConnect II onto the parallel port   **Installing the WindConnect II using the USB connection**

TROY

Verifying Successful Installation

After the WindConnect II is attached to the printer and powered ON, it will perform a brief startup sequence:

1. The bi-colored LED (amber) and the blue LED will blink three times simultaneously.

2. The bi-colored LED will alternately blink amber and green twice. The blue LED will not illuminate.

3. The bi-colored LED will illuminate green continuously, and the blue LED will blink continuously, indicating a ready state. After connectivity has been established, the blue LED will illuminate continuously.

<u>NOTE</u>: If the bi-colored LED does not illuminate green continuously after the device has finished its startup sequence, then there may be an error. Refer to *Chapter 5 – Troubleshooting* in this user's guide for help.

Verifying the Connection to the Printer

To verify the connection, make sure that both the WindConnect II and the printer are powered on and ready. If the printer adapter has detected the printer and successfully set up communication with it, the green LED will illuminate continuously. If the bi-colored LED remains amber, refer to **Chapter 5 – Troubleshooting** in this user's guide.

Then print a test page by momentarily pressing the test button on the WindConnect II for approximately one second. If the test page prints successfully, then the WindConnect II is ready to print, providing that the client computer and sending device are ready to print.

If the test page does not print, first check to make sure the WindConnect II is securely connected to the printer. Also, make sure that the printer is operating properly and has a sufficient supply of paper and toner or ink. Switch the WindConnect II off and then on again, and then try printing the self-test page again by pressing the test button for approximately one second. If you cannot print a test page, refer to **Chapter 5 – Troubleshooting** in this user's guide.

Configuring a Windows Printer Port Using HCRP

If you are using a PC-compatible computer with a PCMCIA card or USB adapter that has built-in *Bluetooth* technology, you will need to setup your system for printing as follows:

1. Create a virtual printer port using the software provided with your PCMCIA card, USB adapter, or built-in adapter.

2. Use the discovery program provided with your PCMCIA card, USB adapter, or built-in adapter to search for the WindConnect II (refer to the documentation provided with your device for additional information and available services). In some cases, you can assign a static printer port that your WindConnect II HCRP (Hardcopy Cable Replacement Profile) service will use. Otherwise, the discovery program will automatically assign an available printer port. Make a note of this printer port for the next step.

3. Set up the driver using the printer port assigned from Step 2.

4. Establish a connection with the WindConnect II's HCRP service. A successful connection is usually indicated with an icon on the service (depending on your software), and a window will appear, designating the printer port that the connection is using. The blue LED on the WindConnect II will change from blinking to solid when a connection is established.

   NOTE: If the security option is enabled in the WindConnect II, you may be required to provide a PIN (Personal Identification Number) before a connection is established. If a passkey is required, a passkey screen will appear, prompting you to enter the appropriate passkey. After the correct passkey is entered, a connection is established, and Windows will remember the successful authentication, making it unnecessary to re-enter the passkey for subsequent connections. If an incorrect passkey is entered, the connection attempt will fail, and the utility will return to its initial state. If the utility is unable to establish a connection with the print adapter, an error message will be displayed, and the main window will default to its initial state. If you forgot your passkey, perform a cold reset to restore the device to factory default conditions (no passkey) by removing power from the device, pressing and holding the test button while reapplying power to the device. The blue LED on the WindConnect II will illuminate when a connection is established.

5. Proceed to the section entitled "How to Set Up and Print" in this chapter.

   NOTE: The WindConnect II should automatically time out after one minute of inactivity.

   NOTE: If your software does not support HCRP, you must configure your software to use the Serial Port Profile (SPP), which functions as a virtual COM port, to print.

If your software supports printing with HCRP, use that method (refer to your software vendor's instructions). Most applications that use *Bluetooth* technology support printing using SPP. If you software does not support HCRP, use the instructions on the following page for printing using SPP.

Configuring a Windows COM Port Using SPP

If you are using a PC-compatible computer with a PCMCIA card or USB adapter that has built-in *Bluetooth* technology, you will need to setup your system for printing as follows:

1. Create a virtual COM port using the software provided with your PCMCIA card, USB adapter, or built-in adapter.

2. Use the discovery program provided with your PCMCIA card, USB adapter, or built-in adapter to search for the WindConnect II (refer to the documentation provided with your device for additional information and available services). In some cases, you can assign a static COM port that your WindConnect II serial port service will use. Otherwise, the discovery program will automatically assign an available COM port. Make a note of this COM port for the next step.

3. Set up the driver using the COM port assigned from Step 2.

4. Establish a connection with the WindConnect II's serial port service. A successful connection is usually indicated with an icon on the service (depending on your software), and a window will appear, designating the COM port that the connection is using. The blue LED on the WindConnect II will change from blinking to solid when a connection is established.

    NOTE: If the security option is enabled in the WindConnect II, you may be required to provide a PIN (Personal Identification Number) before a connection is established. If a passkey is required, a passkey screen will appear, prompting you to enter the appropriate passkey. After the correct passkey is entered, a connection is established, and Windows will remember the successful authentication, making it unnecessary to re-enter the passkey for subsequent connections. If an incorrect passkey is entered, the connection attempt will fail, and the utility will return to its initial state. If the utility is unable to establish a connection with the print adapter, an error message will be displayed, and the main window will default to its initial state. If you forgot your passkey, perform a cold reset to restore the device to factory default conditions (no passkey) by removing power from the device, pressing and holding the test button while reapplying power to the device. The blue LED on the WindConnect II will illuminate when a connection is established.

5. Proceed to the section entitled "Setting Up a Printer for use with the Printer Adapter" in this chapter.

    NOTE: The WindConnect II should automatically time out after one minute of inactivity.
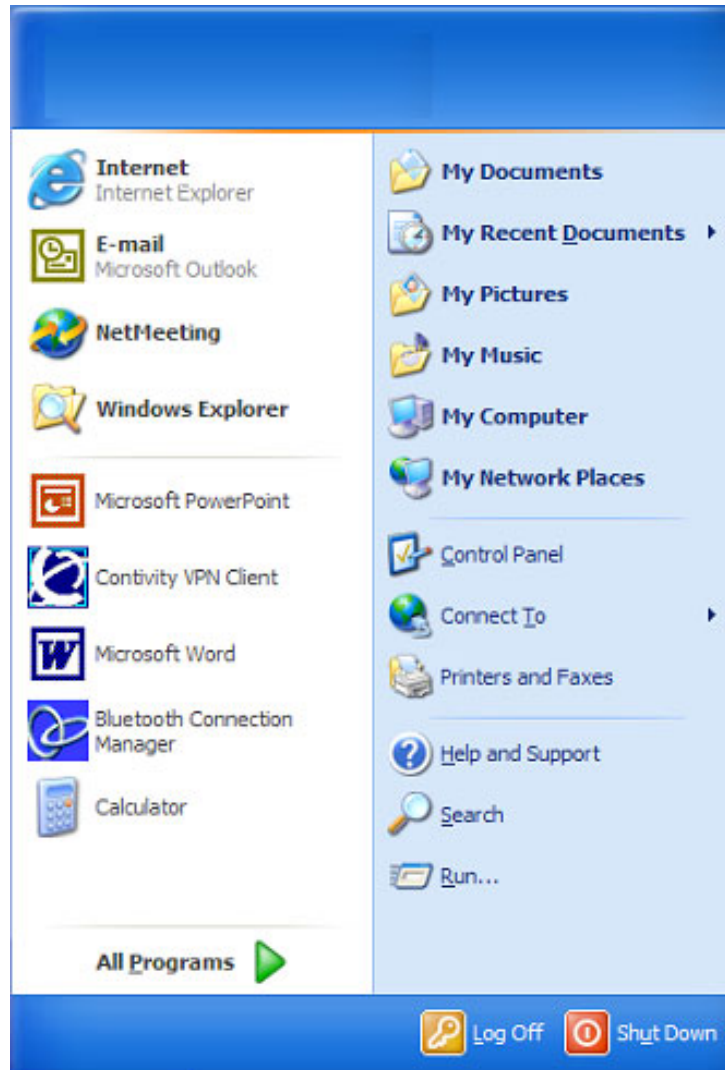
Setting Up a Printer for Use with the Printer Adapter

Use the following steps to install and connect to a printer using the Serial Port Profile. Be sure to use the COM port designated by your sending device's software.

1. From the Windows desktop, click on **Start, Printers and Faxes** to open the printer and faxes manager window.
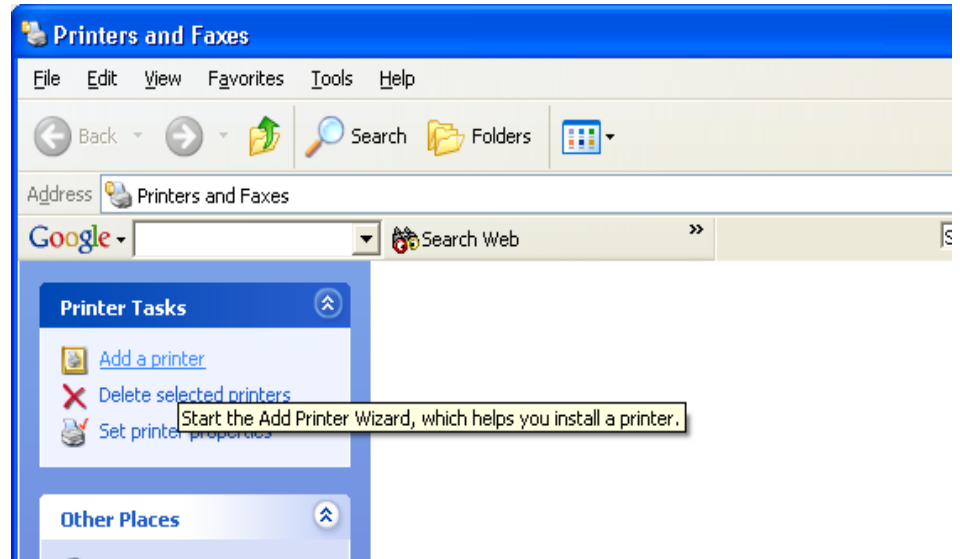
Setting Up a Printer for Use with the Printer Adapter (cont.)

2. Click on ***Add a printer*** to launch the Add Printer wizard. Click on ***Next*** to continue.

Setting Up a Printer for Use with the Printer Adapter (cont.)

3. Select Local printer attached to this computer, uncheck **Automatically detect and install my Plug and Play printer**, and then click on **Next**.

4. Under **Use the following port**, select the COM port number from the drop-down list that was previously assigned by your software application, and then click on **Next**.
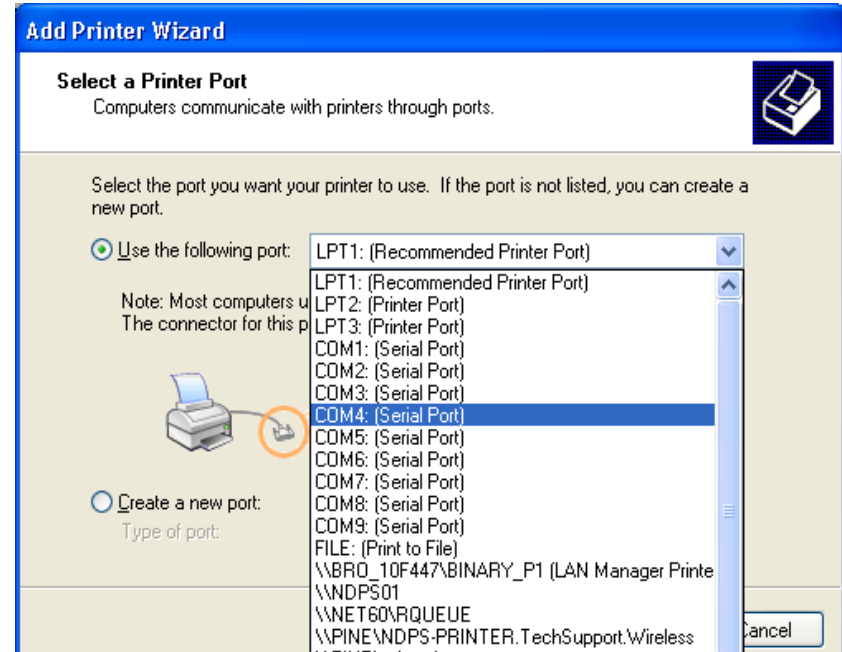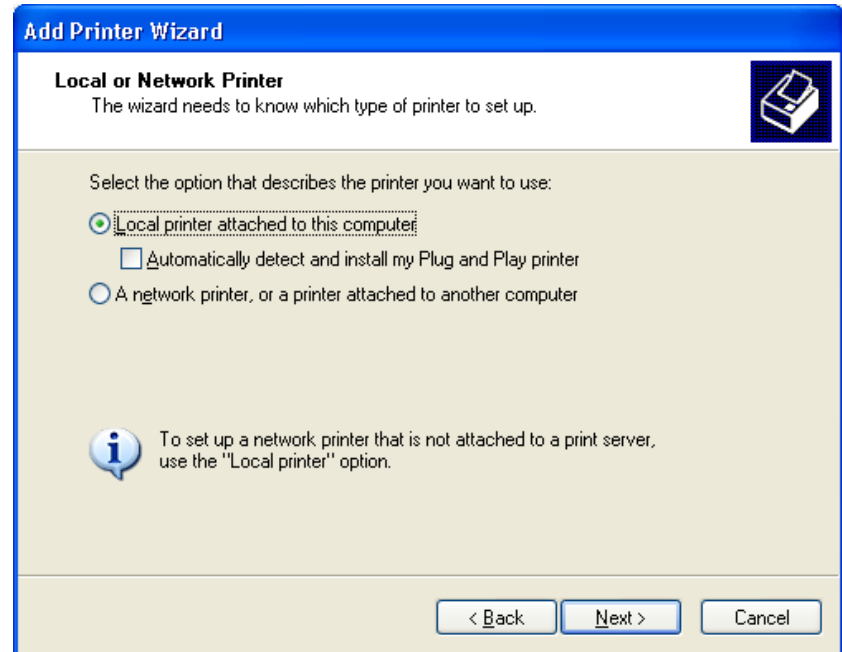
Setting Up a Printer for Use with the Printer Adapter (cont.)

5. Select the manufacturer and driver of the printer that your WindConnect II is attached to, and then click on **Next**.
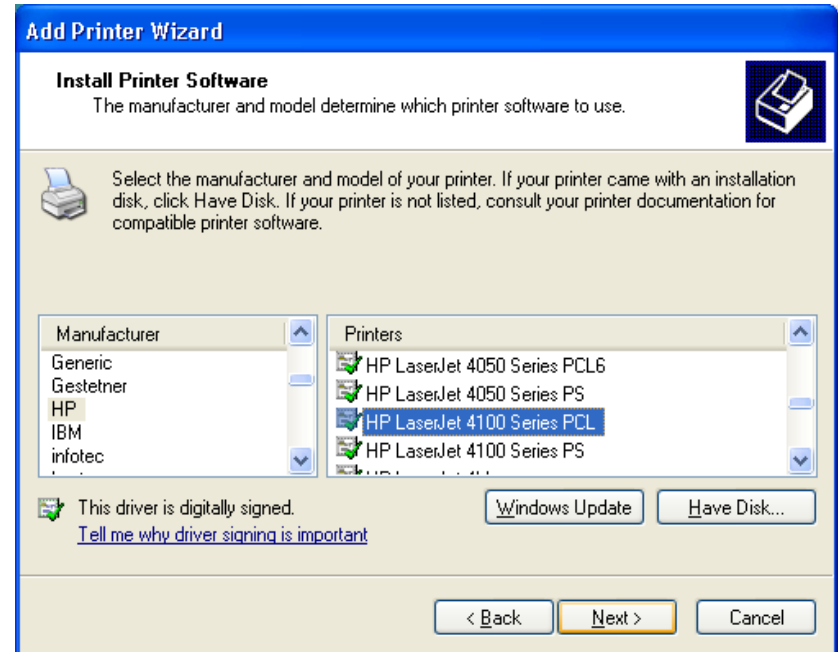
6. Type in a name for the printer you just created (e.g., printer in conference room, Dave's printer, sales department printer, etc.) or leave the suggested default name, select **Yes** if you want to use it as your default printer, and then click on **Next**.
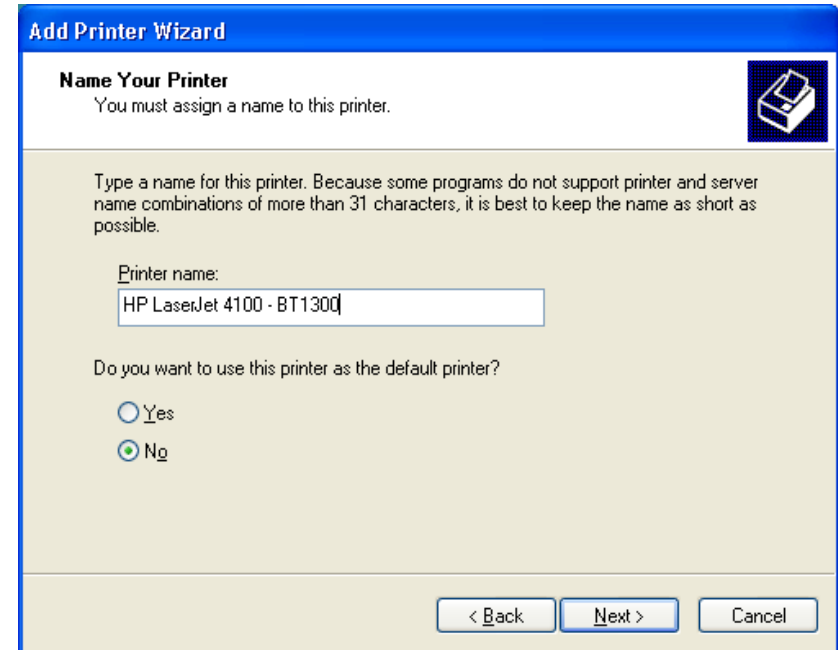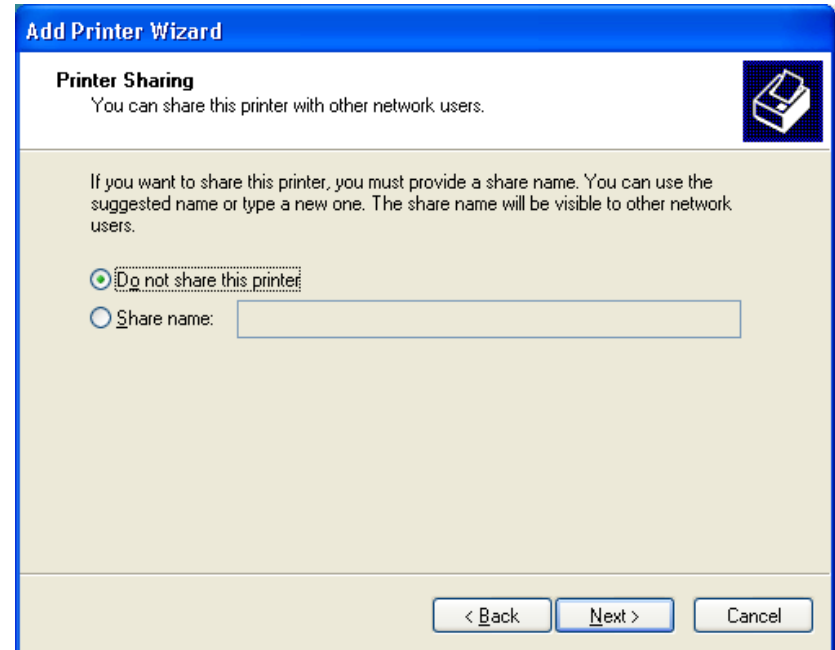
Setting Up a Printer for Use with the Printer Adapter (cont.)
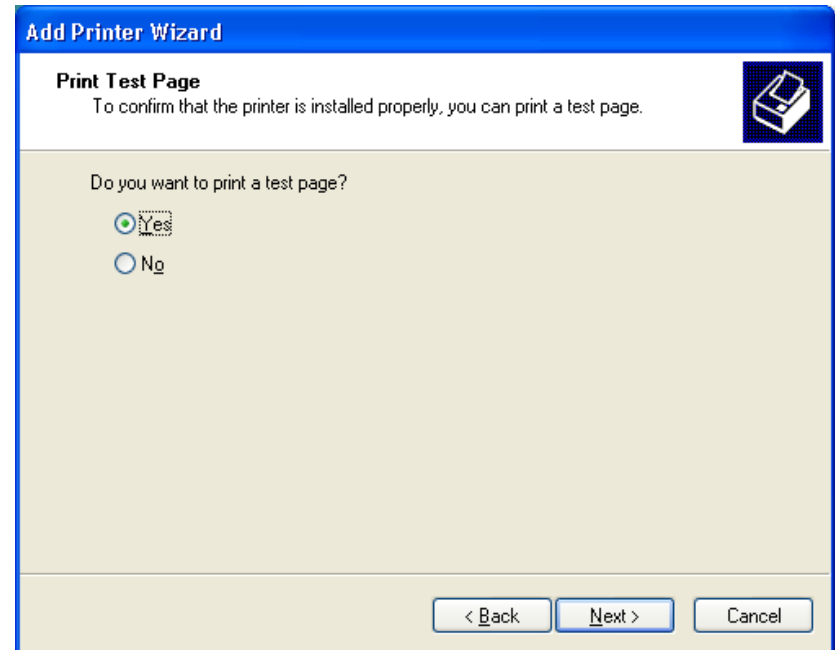
7. Click on *Next* if you do not wish to share this printer. Otherwise, select *Share Name*, and enter a name for this printer.

8. Click on *Next* to print a test page; otherwise, select *No*, and then click on *Next* to continue.

   NOTE: The device must be selected in order for a test page to print.

9. Click on **Finish** to complete the Add Printer Wizard.
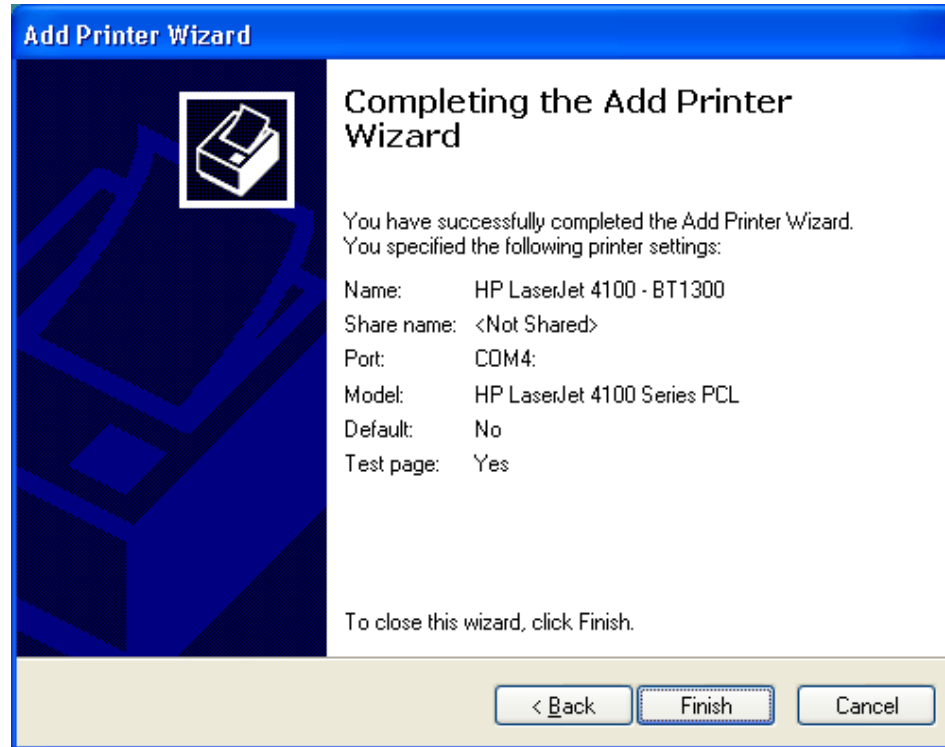
10. If the printer driver has not been previously installed, the driver files will be copied in the Windows system folder.
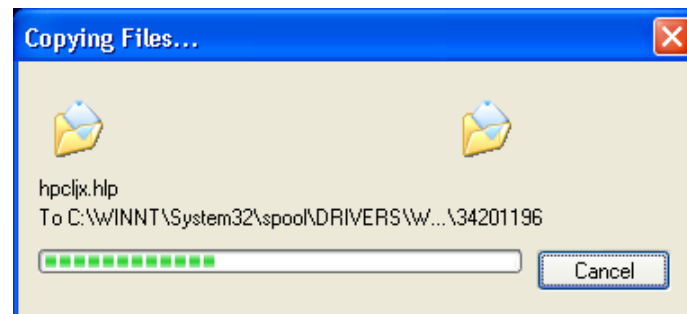
11. Once a test page has been successfully printed, click on **OK** to continue. Your new printer will now be listed in the Printers and Faxes Manager window. You are now ready to print to your WindConnect II from any application.
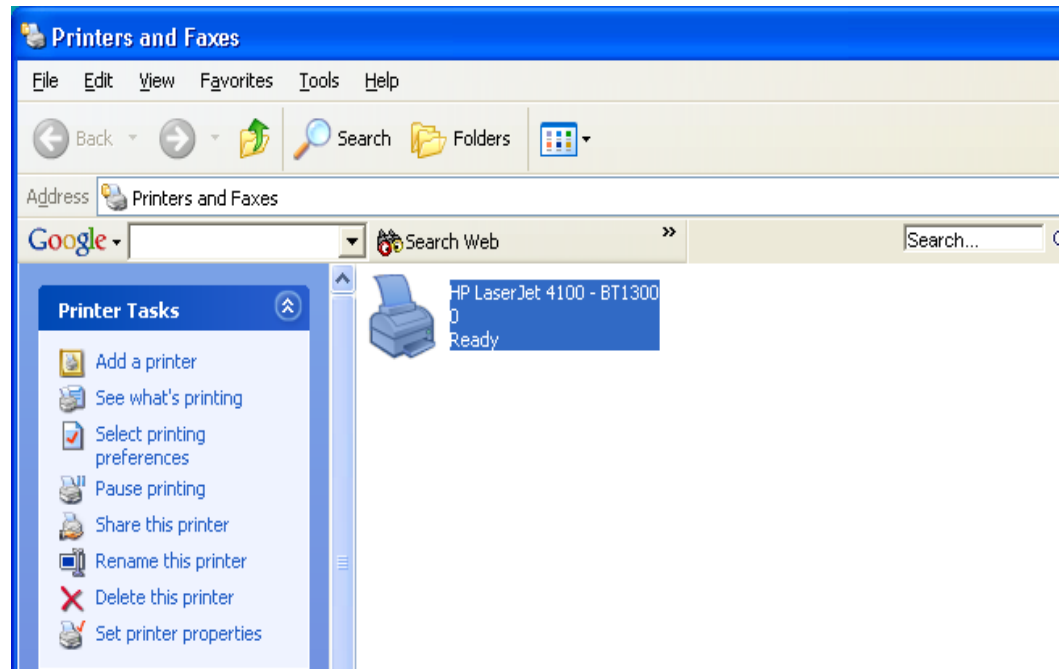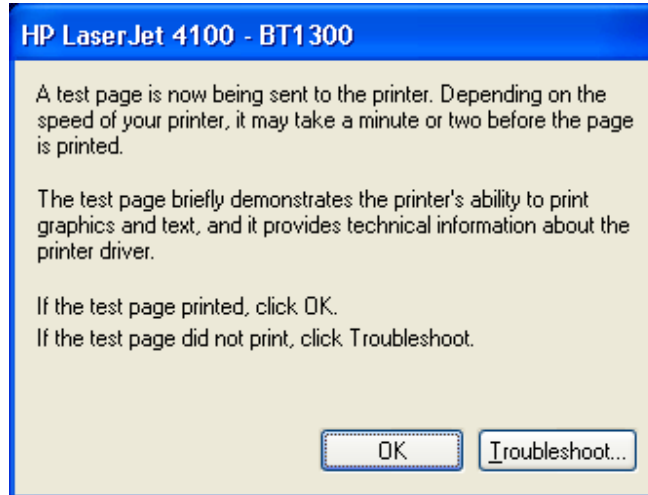
How to Set Up and Print from Windows XP

When using the Microsoft Windows XP built-in *Bluetooth* features (Windows XP Service Pack 1 must be installed to use these features), the wireless printing is performed using a technology called Hardcopy Cable Replacement Profile (HCRP), which allows automatic installation of the printer driver for your attached printer that uses *Bluetooth* technology. To set up a printer using Windows XP, follow these steps:

1. From the Windows desktop, click on **Start**, **Printers and Faxes** to open the printer and faxes manager window. Click on **Add a printer** to launch the Add Printer wizard.
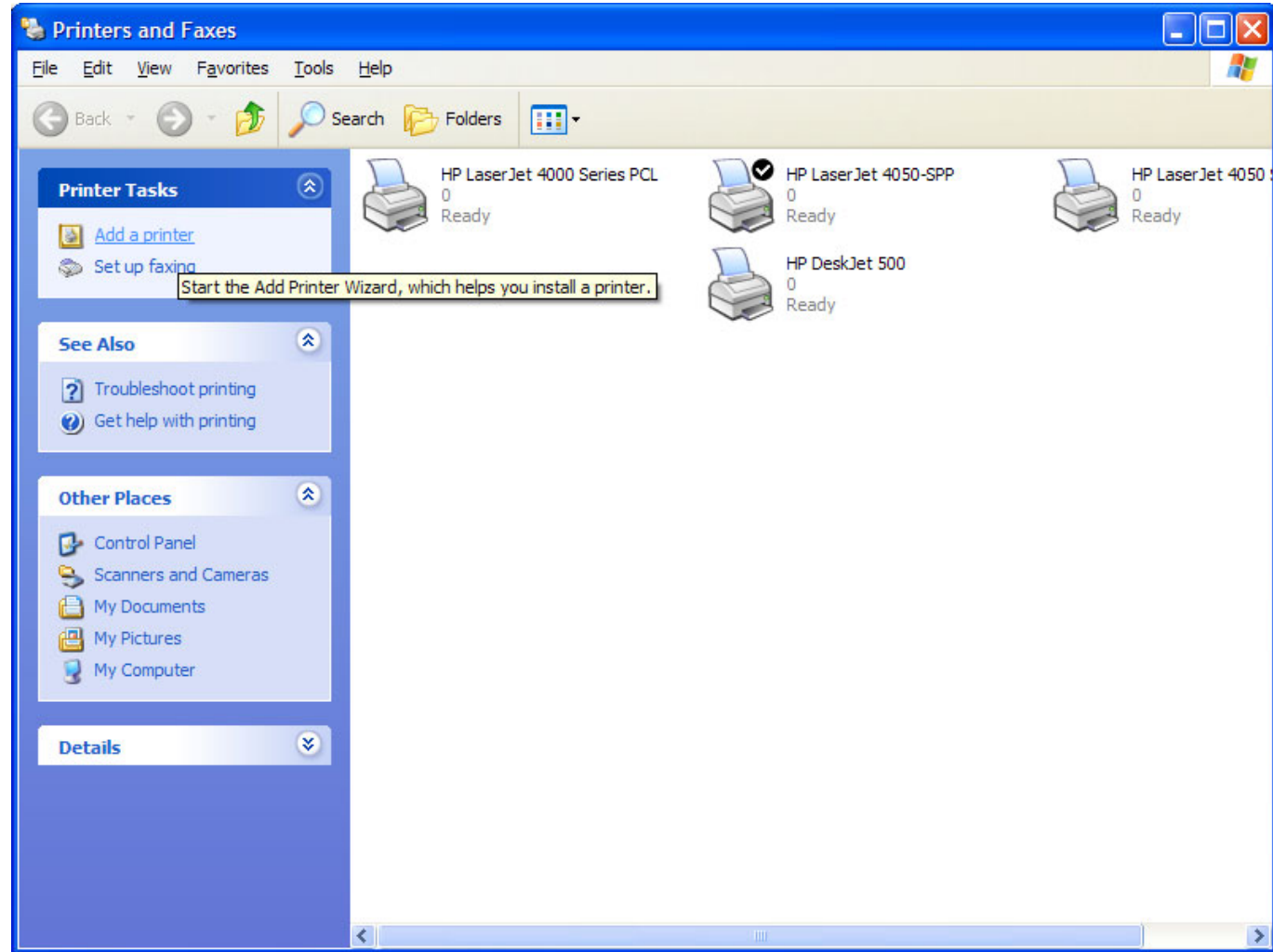
**How to Set
Up and Print
from
Windows XP
(cont.)**

2. Click on **Next** to continue.
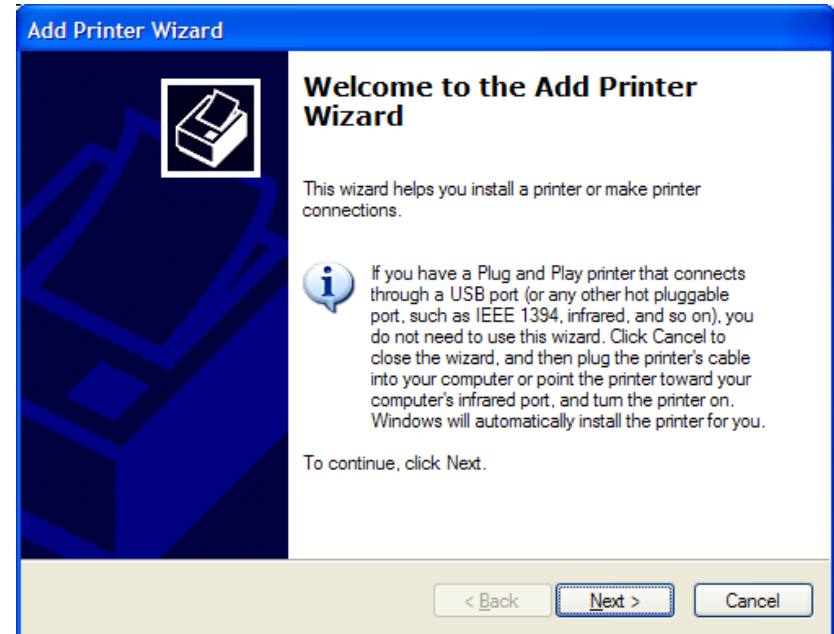
3. Select **A wireless printer**, and then click on **Next**. The wizard will automatically detect and install new wireless printers.
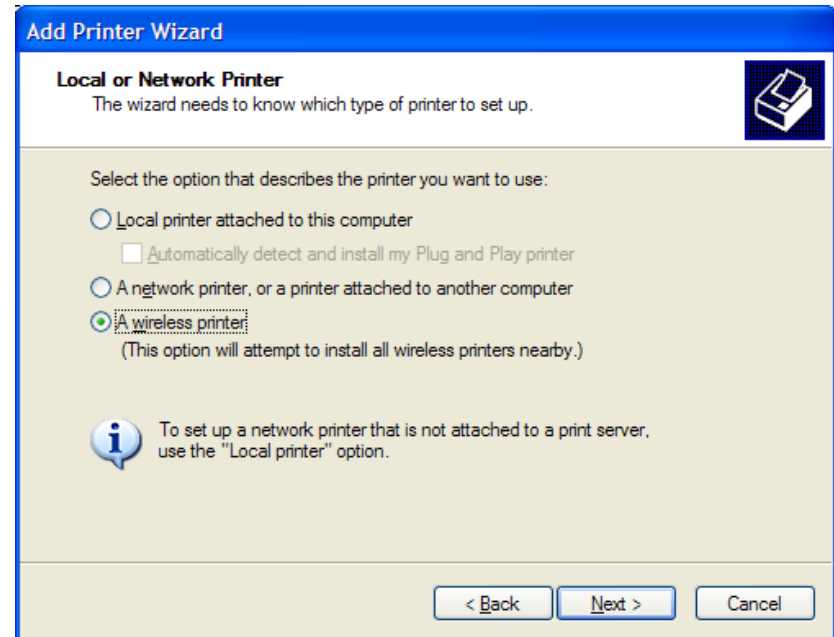
4. After your wireless printer has been found by Windows, the "Welcome to the Found New Hardware Wizard" screen will appear. Select ***Install the software automatically (Recommended)***, and then click on ***Next***. The hardware wizard will automatically install the required software for your wireless printer. When the automatic installation is complete, the "Printers and Faxes" screen will appear, displaying your new wireless printer name next to the printer icon. You can use the default printer name, or you can double-click on the printer name and type in a new name.
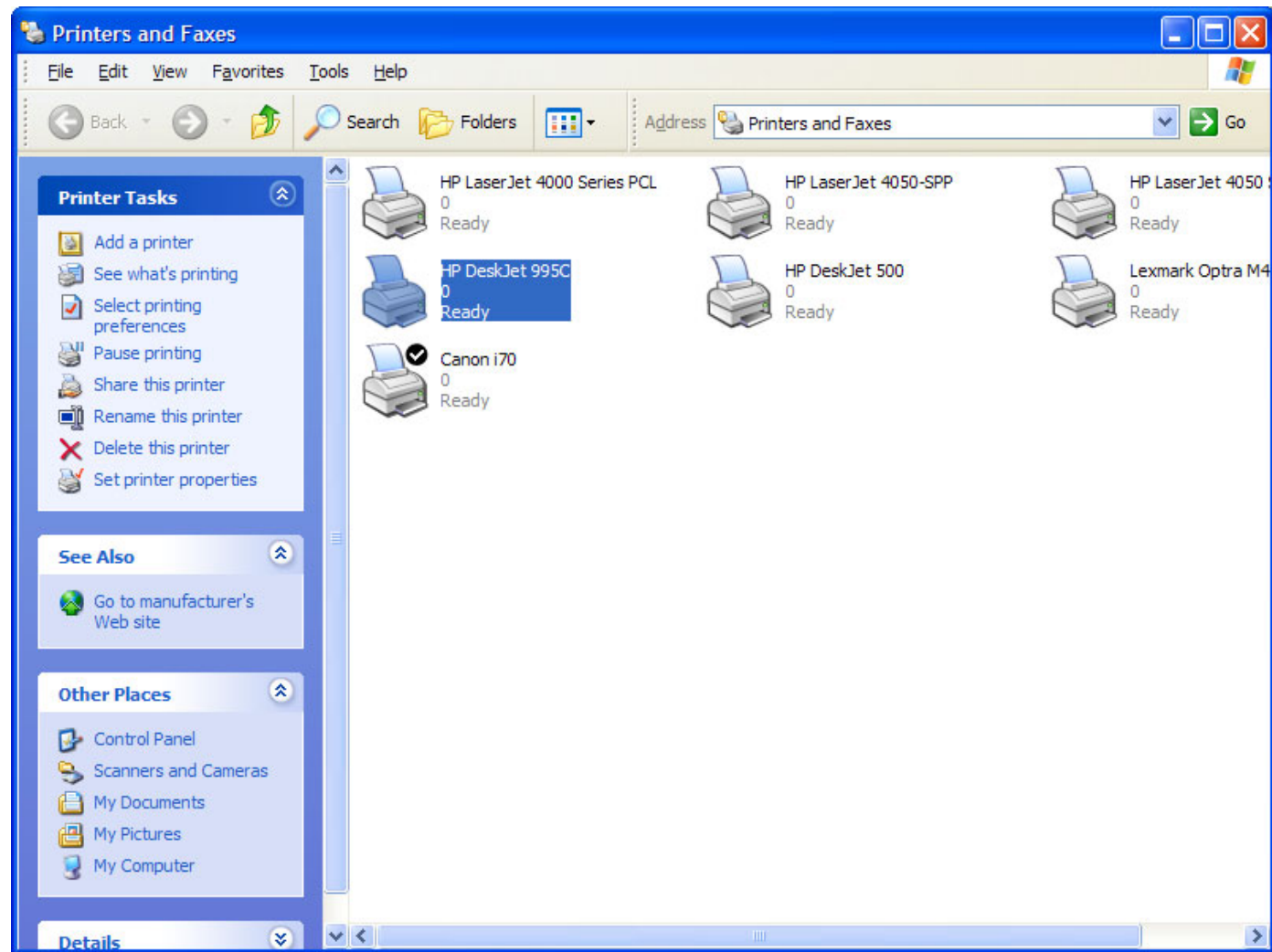
Moving the Printer Adapter to Another Printer

Before you can automatically install the WindConnect II on another printer, you must first do the following:

1. Click on **Start**, and then select **Control Panel**.

2. Select **Wireless Link**.

3. Select the page name **Bluetooth**.

4. Select the **Bluetooth Printer Adapter**, and then click on **Remove**.

5. Close the wireless link, and then follow the instructions from above, starting on page 3-10.

Printing the First Job

After performing the setup and configuration instructions described in the previous sections of this user's guide, you should now be able to print in the usual manner from any standard Windows application program.

1. From the menu bar of your application, click on **File**, and then **Print**.
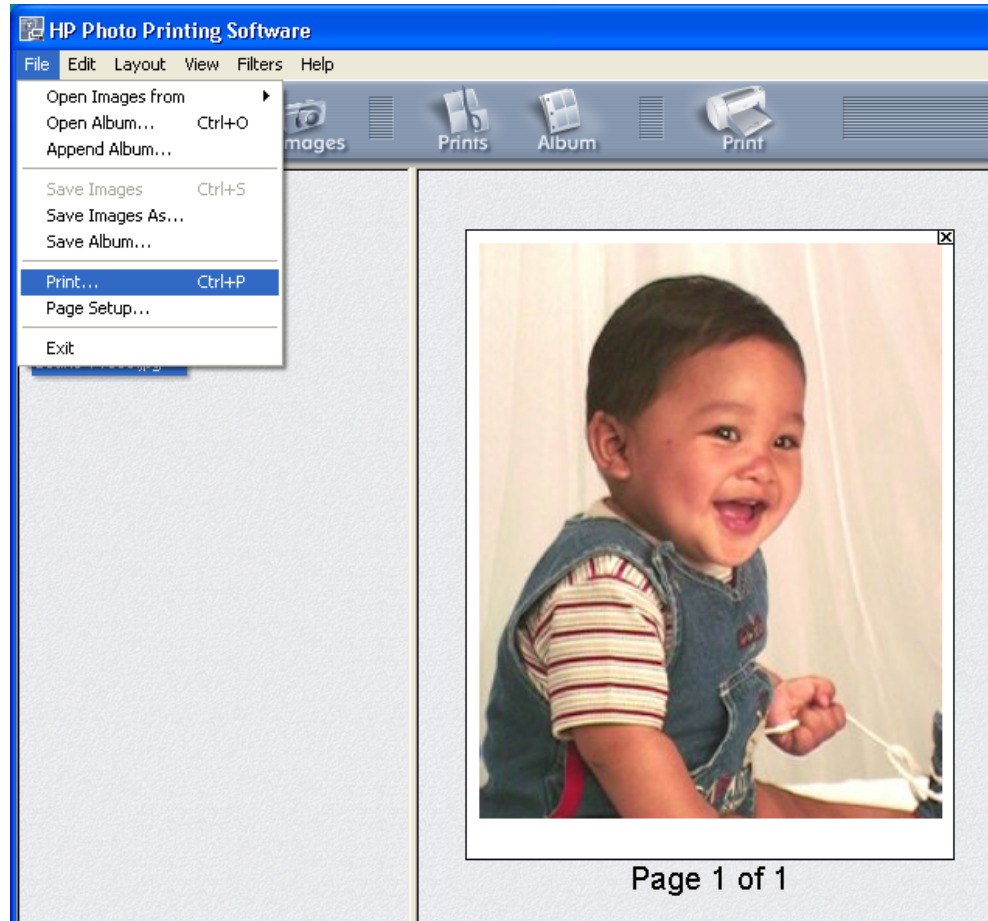
Printing the First Job (cont.)

2. Select the printer name you created, and then click on **OK**. The WindConnect II's Serial Port Profile or Hardcopy Cable Replacement Profile will automatically establish a connection with your PC as indicated by the connection icon, or you may need to manually start the connection in your software.
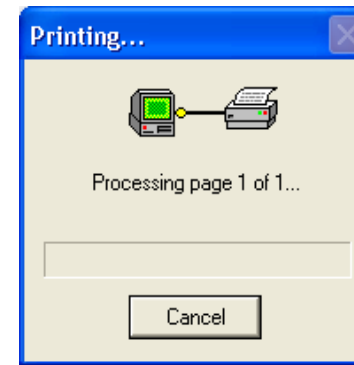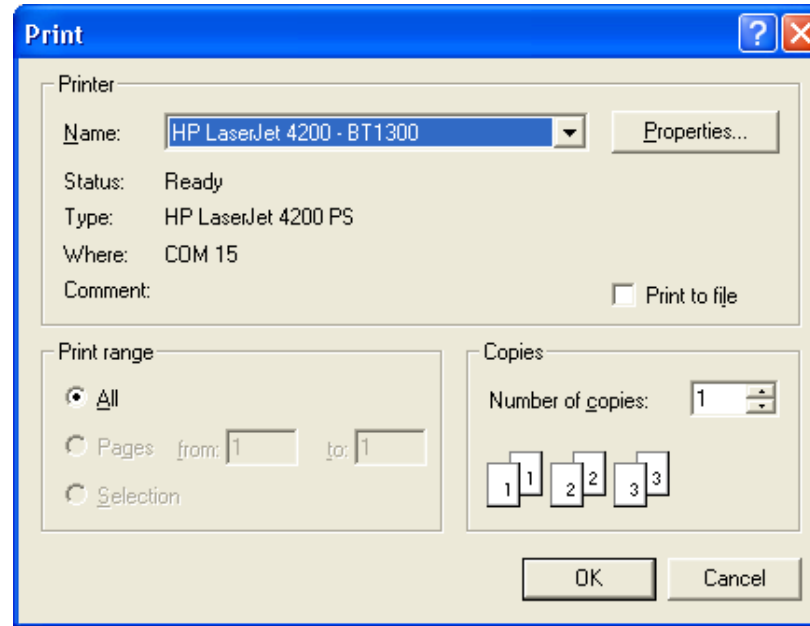
3. After the job is printed, the connection will automatically terminate, and the *Bluetooth* connection icon will disappear.

Printing Additional Jobs

After you print the first time, your application will remember the printer you used. If you print again, the job will be sent to the same WindConnect II-equipped printer automatically. You can either click on **File**, **Print**, and **OK**, or just click on the printer icon on your application's toolbar, and then click on **OK**.

If you have more than one WindConnect II installed and have added those printers in your PC, you can select a different printer to print your document before clicking on **OK**. Some client adapters will require a separate COM port to be defined for each printer. In this case, each printer that uses *Bluetooth* technology must use a unique COM port in order to send the print job to the correct WindConnect II-equipped printer.

Configuring Other Devices using SPP

The WindConnect II is designed to allow printing from a variety of devices that use *Bluetooth* technology. Such devices must support the Serial Port Profile (SPP), Object Push Profile (OPP), Hardcopy Cable Replacement Profile (HCRP), or Basic Imaging Profile (BIP) in order to work with the WindConnect II printer adapter. Check the documentation that came with your sending device to make sure that it supports one of these profiles.

To use the WindConnect II if the device does not have built-in *Bluetooth* technology support, you must first install the appropriate hardware and software on your desktop, laptop, handheld computer, or other device that requires printing capabilities. Follow the instructions supplied with the device. The installation program will install a discovery program, which will include a Serial Port Profile (a port that redirects I/O from an application program so that it travels over the wireless link instead of a serial port).

To send a job to a printer connected to a WindConnect II, you will need to setup your printing application so that it uses the serial port profile. When you want to print over the wireless link, use the discovery program to select the printer equipped with the WindConnect II. After you have selected the printer that use *Bluetooth* technology, you can print in the normal manner just as if your device was directly cabled to the printer.

Printing Requirements for Other Devices

PDAs

- The WindConnect II must be installed and verified as previously described.

- <u>Pocket PC or Palm</u>: A print application or other software solution must be installed. Refer to the vendor's web site for more information on your particular device.

Printing From a PDA, Mobile Phone, or Camera Enabled with *Bluetooth* Technology

The WindConnect II supports the Object Push Profile (OPP), which allows mobile phones and other devices that support this profile to send files to other devices that use *Bluetooth* technology. If your device has the ability to send a file directly to another device, you can send Contacts (VCard), Calendar entries (VCalendar), and JPEG picture files to the WindConnect II that will print on most PCL 5- compatible printers. Refer to the documentation that came with your device for instructions on sending these types of files.

Third Party Applications for the PocketPC PDA and Palm PDA:

PocketPC and Palm Operating Systems do not have a printing system built in. TROY recommends the use of the following third-party software for printing with *Bluetooth* technology from PDAs. Instructions for printing can also be found at these web sites.

PocketPC:	PrintPocketCE	http://www.fieldsoftware.com
	PrintBoy	http://www.bachmannsoftware.com
Palm:	BTPrint	http://www.iscomplete.com
	PrintBoy	http://www.bachmannsoftware.com

Overview

The WindConnect II is preconfigured to allow you to print right out of the box; however, you may optionally reconfigure the device at any time using the provided TROY Configuration Utility and the instructions provided in this chapter. The Configuration Utility allows you to change the device name, enable/disable the discovery feature, select security features, and update the device's firmware.

Summary of Configuration Steps

The following basic steps are required to change the configuration of your WindConnect II. A sending device must be installed on your PC in order to access the WindConnect II.

- Connect to the WindConnect II from your PC. You must use the Serial Port Profile (SPP), which will require that you set up a COM port.

- Install the TROY Configuration Utility on your PC.

- Place the WindConnect II into configuration mode by pressing the test button for five seconds.

- Configure the WindConnect II using the TROY Configuration Utility

Installing the Configuration Utility

1. Load the **TROY WindConnect II Installation** CD into the CD-ROM drive of your computer. The CD should start automatically and display a menu.

   NOTE: **If the CD fails to start automatically, click on the Windows *Start* button, select *Run*, type D:\setup.exe, and then click on *OK* to begin the installation process.**

2. From the CD menu, click on **Install Configuration Utility** to begin the installation process. When the **Welcome** window appears, click on **Next** to continue the installation process. Follow the prompts to install the software.

   NOTE: **To exit the installation process at any time before the installation is complete, click on *Cancel* to stop the installation process.**

Using the TROY Configuration Utility (Windows 98SE, ME, 2000, XP)

NOTE: To use the Microsoft *Bluetooth* stack, you must be running the Windows XP operating system with SP1 (Service Pack 1) installed in order to communicate with the WindConnect II.

1. Before using the TROY Configuration Utility, the WindConnect II must be placed into the configuration mode before any of its settings can be changed. Press and hold the test button on the printer adapter for at least five seconds until the bi-colored LED cycles between amber and green to indicate that it has entered the configuration mode. After the printer adapter configuration is complete, the device will automatically reboot.

   NOTE: You cannot print while the WindConnect II is in configuration mode.

2. From the Windows desktop, click on **Start**, **Programs**, and then click on **Configuration Utility**. The **Port Status** tab screen will appear; however, none of the controls will be active until a connection is established in Step 3.

NOTE: If the security option is enabled in the WindConnect II, you may be required to provide a PIN (Personal Identification Number) before a connection is established. If a passkey is required, a passkey screen will appear, prompting you to enter the appropriate passkey. After the correct passkey is entered, a connection is established, and Windows will remember the successful authentication, making it unnecessary to re-enter the passkey for subsequent connections. If an incorrect passkey is entered, the connection attempt will fail, and the utility will return to its initial state. If the utility is unable to establish a connection with the print adapter, an error message will be displayed, and the main window will default to its initial state. If you forgot your passkey, perform a cold reset to restore the device to factory default conditions (no passkey) by removing power from the device, pressing and holding the test button while reapplying power to the device.

Windows 98SE, ME, 2000 Operating Systems using Non-Microsoft Bluetooth Stack:

3. Click on the **Connection** button, select the COM port configured for the Serial Port Profile (SPP) on the host computer (refer to Section 3 for setting up a virtual COM port), and then click on **OK**.

NOTE: An error message "*Unable to connect to the device specified. Ensure that the device is powered on and is in configuration mode*." could possibly appear due to the printer and the configuration utility both trying to use the assigned COM port simultaneously. If this occurs, refer to *Chapter 5 – Troubleshooting*.

Once a connection is established with the printer adapter, all the controls on the Port Status window will be enabled and the current device settings will be displayed as shown on the next page.

Windows XP Operating Systems using the Microsoft Bluetooth Stack:

4. Click on the **Connection** button, select the printer you wish to use from the displayed list, and then click on **OK**. Once a connection is established with the printer adapter, all the controls on the Port Status window will be enabled and the current device settings will be displayed as shown on the next page.
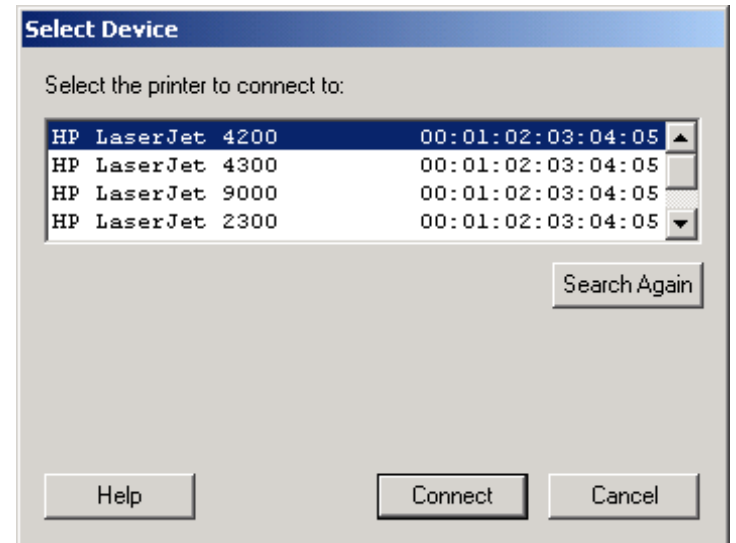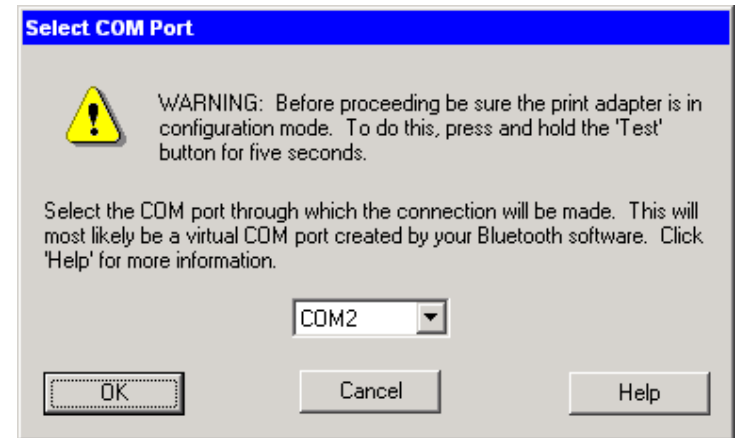
Using the Configuration Utility (cont.)

After a COM port is selected and the connection is established, the Port Status tab window will become active. The Printer Model field displays the name of the printer. The Printer Status field displays the operational state of the printer. If the displayed printer status indicates an error (Out of Toner, Paper Jam, etc.), correct the problem before proceeding. Once the printer has been restored to a ready state, click the *Refresh* button to view the updated printer status. To print a test page displaying the current printer adapter settings, click the *Print Test Page* button. The Parallel Port group box displays the current parallel port settings of the WindConnect II. It is recommended that you do not change these settings.
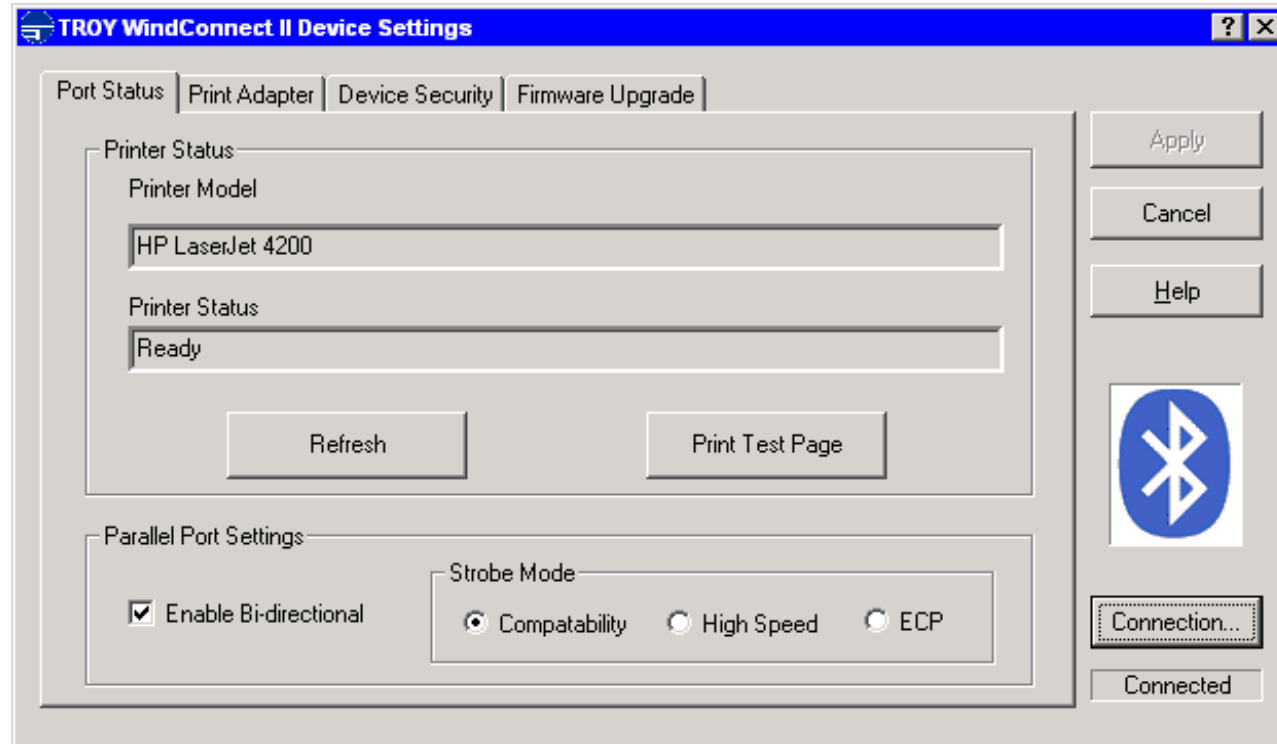
4. To enable or disable the services used for the printer adapter, click on the **Printer Adapter** tab. The Name edit box will display the user-defined name of the selected printer adapter. The Services group box will display the currently selected services. It is recommended that you do not change these settings unless it becomes necessary.

NOTE: **If the host PC is using the Serial Port Profile (SPP) to print and this service is disabled (unchecked), the printer adapter will not be able to print a job.**
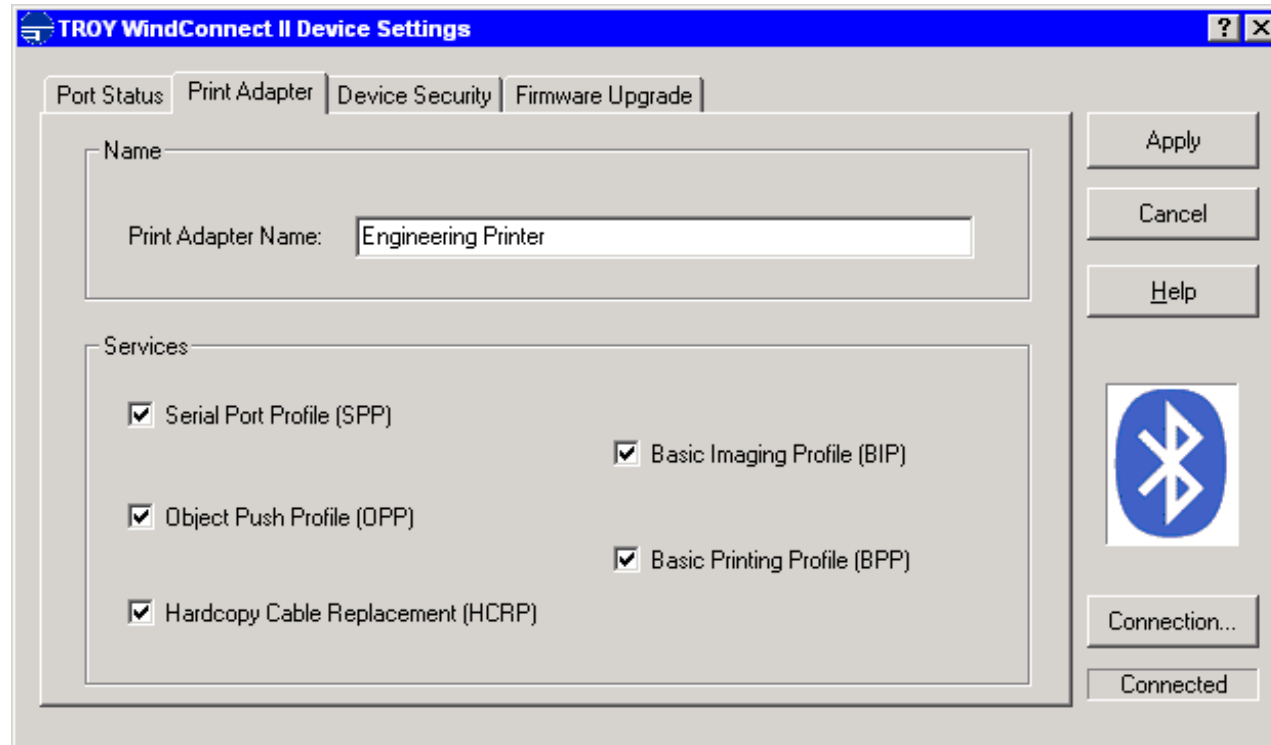
Using the Configuration Utility (cont.)

5. To access the security options for the printer adapter, click on the **Device Security** tab. To enable security features, place a checkmark in the box labeled **Enable Device Security**. To limit access to your printer that uses *Bluetooth* technology, you can choose a PIN (Personal Identification Number) of up to 16 characters in length. Enter the desired PIN (using either 4, 8, 12, or 16 characters), and then click on **Apply** to save your selection. A PIN allows you to limit access to your printer that uses *Bluetooth* technology by giving the PIN to a single user or a group of specified users. All users are required to use the same PIN.

6. From the **Discoverability** group box, select **Discoverable** (default) if you want other devices that use *Bluetooth* technology to find your printer, or select **Non-discoverable** if you do not want other sending devices to see your printer.

   NOTE: **If you are sharing your printer, select "Discoverable" so that other users can find your printer. If you select "Non-discoverable", your printer will not be visible to anyone, including yourself. In this case, if you forget the address of your printer, you will not be able to access your WindConnect II and will have to reset the printer adapter to factory defaults in order to access the device and change its configuration.**

7. To clear all previous link keys, place a checkmark in the **Clear link keys** checkbox located in the Device Security group box, and then click on **Apply** to finish. Clearing all link keys will require each device to authenticate again.

TROY
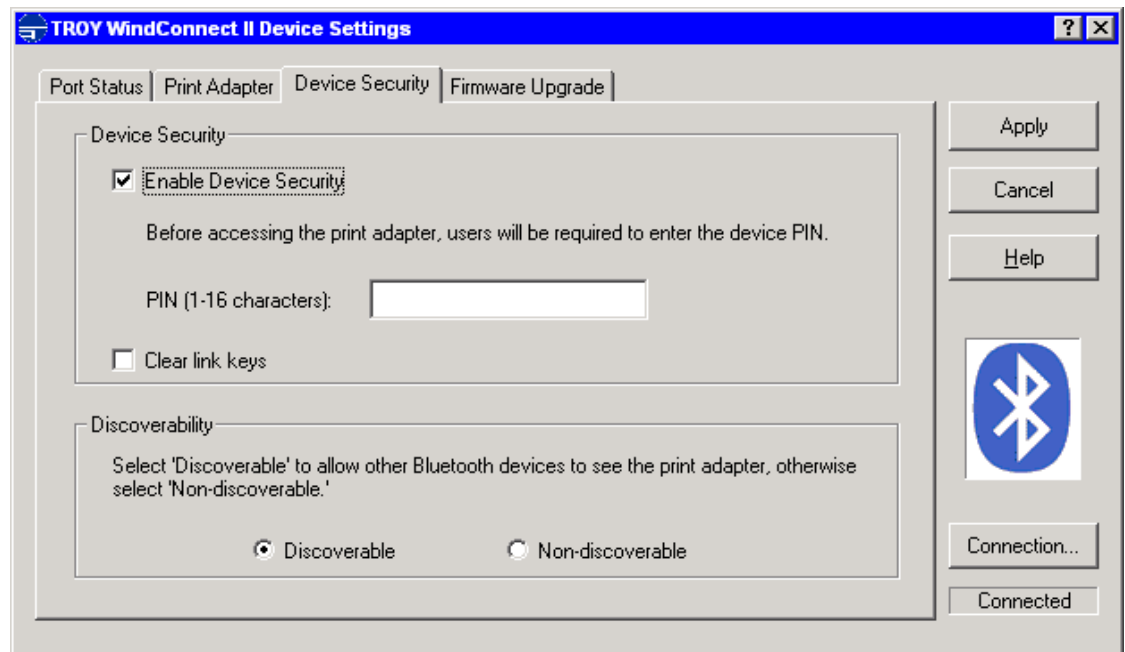
Using the Configuration Utility (cont.)

8. Click on the *Firmware Upgrade* tab to update the WindConnect II firmware. Updating the firmware will not change the printer adapter's configuration.

9. Click on the *Upgrade Firmware* button to begin the update process. The firmware upgrade screen will appear.

10. Specify the location (path) of the firmware file (xxxxx.bin) in the *Filename* field, and then click on the *Upgrade* button to load the file into the flash-file memory area of the WindConnect II. You will be reminded that all configuration changes that have not been applied will be lost. Click on *OK* to continue. Upon successful completion of the firmware update process, the WindConnect II will automatically reboot, break the *Bluetooth* connection, and return to the ready state (tri-colored LED illuminated as solid green). A new connection must be established with the printer adapter after the firmware has been updated. Click on the *Check for Upgrades* button to access the TROY web site for the latest version of printer adapter firmware. Print a test page to view the current firmware date of your printer adapter and compare it to the firmware file date listed on the TROY web site. Upgrade your printer adapter firmware only if the firmware version date shown on the TROY web site is newer than the date shown on the printer adpater configuration page.
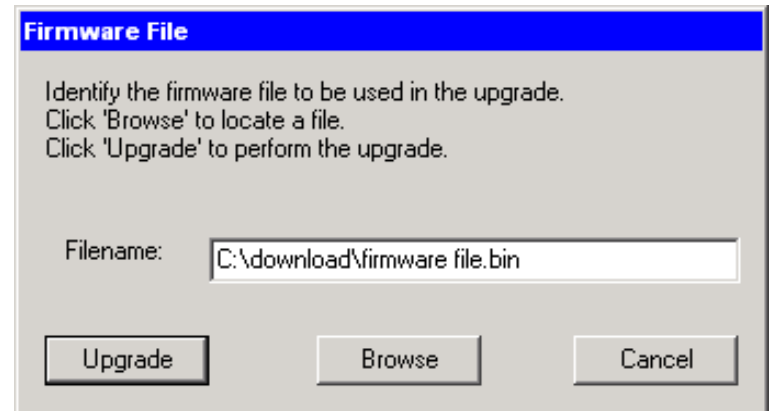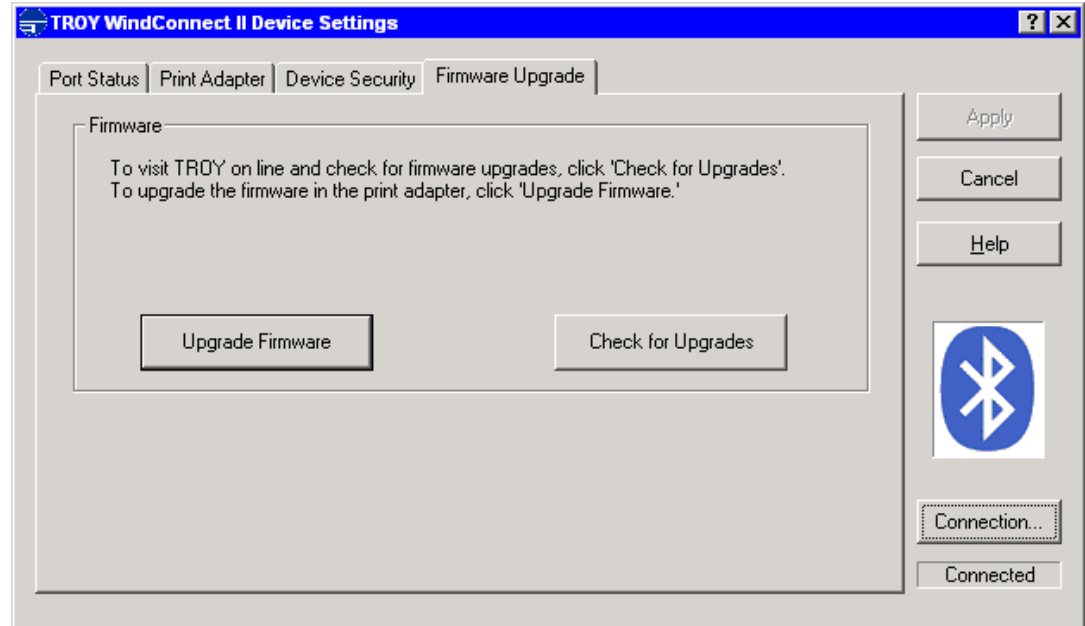
NOTE: The latest printer adapter firmware file can be downloaded from http://www.troygroup.com.

Verifying Setup

If you can print a self-test page, your WindConnect II and printer are communicating properly. If you cannot print a self-test page, verify that the following general requirements are met:

- Ensure your printer already functions properly via a USB or parallel printer cable.

- Ensure the appropriate software is installed for your PCMCIA card and/or USB adapter. Ensure the sending device is within maximum unobstructed range of 10 meters (33 feet). If your sending device is not able to discover the WindConnect II on the first attempt, try searching for the device more than once. In many cases a second attempt will prove successful.

- Ensure the WindConnect II is in discovery mode (bi-colored LED illuminated solid green, blue LED blinking slowly). If not, reboot the printer adapter by momentarily removing power from the device and then restoring power again. Wait for the device to initialize.

- Ensure power is supplied to the printer and the WindConnect II. Some printers can supply the required 5 volts to the WindConnect II via pin 18 on the parallel port. Check the documentation supplied with your printer to determine if you need to use the external power supply that came with your WindConnect II.

- Go to the TROY web site for more information: http://www.troygroup.com/wireless.

Verifying Printer Operation

- Print a test page by pressing the test button on the printer adapter for one second. If a test page prints, your printer and WindConnect II are functioning properly.

- If a test page does not print, cycle power to both the printer and WindConnect II. Wait for the printer and WindConnect II to initialize before attempting to print a test page.

- If a test page still does not print, verify that your printer is operating correctly by directly connecting your printer to a PC via the parallel or USB connection and then printing a test page.

- If you cannot get your printer to print, verify that your printer is powered on, is on line, and that no error conditions exist (out of paper, out of toner or ink, paper jam, etc.). Correct any printer problems as needed before continuing.

    NOTE: When an error occurs on the printer, the print job will be delayed and the WindConnect II will wait indefinitely for user intervention to clear the error condition on the printer. When the error condition is cleared and the printer is back on line, the print job will resume.

- Ensure the WindConnect II is powered up and ready (solid green LED) and is securely connected via a USB cable or directly to the parallel port on the printer (depending on your model of WindConnect II). If the problem persists, contact TROY technical support (refer to *Chapter 6 – Where to Get Help*).

Verifying Connectivity Using *Bluetooth* Technology

- Verify connection activity between your sending device and the WindConnect II (the blue LED will be solid blue when the WindConnect II is connected to a sending device). To ensure connectivity, the sending device must be within a maximum unobstructed range of 10 meters (33 feet) of the WindConnect II.

- Verify communication by going to your *Bluetooth* network neighborhood to see if the WindConnect II and other devices are listed. If you can see other devices, but the WindConnect II is not listed, perform a cold reset on the WindConnect II by removing power from the device, holding the test button down while reapplying power to the device. A cold reset will restore all factory default settings for the device. If you do not see any devices listed in your *Bluetooth* network neighborhood, check to make sure that your software is working properly, or contact the manufacturer of your sending device.

- If you can see other clients in your *Bluetooth* network neighborhood, but cannot see the WindConnect II after performing a cold reset, then contact TROY technical support (refer **to *Chapter 6 – Where to Get Help*** for detailed information).

    NOTE: The sending device may remember the previous printer name the WindConnect II was connected to. When the device names are updated, the device will still be available to print with the old name.

- If you can print a test page and have verified communication from the sending device to the WindConnect II and still cannot print a job, contact your print application vendor for assistance.

Trouble-shooting by Symptom

Use the following steps to help identify and resolve WindConnect II problems. Refer to the previous pages in this chapter to ensure that the general operational conditions for the device have been met before proceeding with the specific conditions listed in the table below. For each condition listed in the following troubleshooting table, perform each action item in the order presented until the problem is resolved. If you cannot resolve the problem, call TROY technical support for assistance.

Condition	Action
Printer adapter does not print a self-test page.	Check the printer adapter: ▪ Verify the printer adapter is securely connected to printer via the parallel port or USB connection (depending on the model of printer adapter being used). ▪ Verify that the printer adapter power module is plugged in to an AC power outlet and the power cable is plugged into the printer adapter. If the power module is plugged into a power strip, ensure the power strip is switched ON. ▪ Verify the printer adapter is in a ready state (solid green LED and blinking blue LED). If the printer is ready, press the test button to print a self-test page. ▪ If a self-test page does not print, cycle power to the printer adapter and printer, and then try printing a test page again. ▪ If a self-test page still does not print, perform a cold reset on the printer adapter by removing power from the device, holding down the test button while reapplying power to the device. A cold reset will restore the factory default settings. If you still cannot print a test page, then proceed with the following troubleshooting checks: Check printer: ▪ Verify the printer is powered on, is on line, and that no error conditions exist (out of paper, out of toner or ink, paper jam, etc.). Correct any printer problems as needed before continuing. ▪ Verify printer functionality by connecting the printer directly to your computer and printing a page from your computer. ▪ If the problem persists, call TROY technical support.
Cannot establish communication with the printer adapter using *Bluetooth* technology	View your Bluetooth Places list: ▪ If more then one WindConnect II with a similar printer name was discovered, view the last six digits of the WindConnect II serial number (printed on the serial number label and on the self-test page) to identify a unique printer.

Trouble-shooting by Symptom (cont.)

No devices using *Bluetooth* technology appear in my discovered list	Verify operation of the WindConnect II and sending device: ▪ Verify printer adapter is powered on and is in a ready state (solid green LED and blinking blue LED). If not, cycle power to the printer adapter. ▪ Verify that the sending device is powered ON. ▪ Cycle the sending device power, and try discovering the printer adapter again. ▪ If you are within range of more than one device and no other devices that use *Bluetooth* technology are found, contact the sending device manufacturer.
My WindConnect-equipped printer does not appear in my list of discovered devices	Verify the following conditions: ▪ Due to the client-caching scheme used in some software, the sending device may not immediately update the printer name. The previous printer name (the last printer the WindConnect II was attached to when the client did a search) will instead appear in your list of discovered devices. ▪ Ensure your WindConnect II-equipped printer is within the range (a maximum unobstructed range of 10 meters or 33 feet). ▪ Ensure the WindConnect II security configuration is set to "discoverable". ▪ Cycle the WindConnect II power, and then try discovering the printer adapter again. ▪ Perform a cold reset on the WindConnect II to return the printer adapter to factory default settings (the device will be set to "discoverable"). If the WindConnect II still cannot be seen in your list of discovered devices and other devices are listed, call TROY technical support (refer to ***Chapter 6 – Where to Get Help***).
Cannot print to the WindConnect II from my software	After verifying there are no hardware or discovery problems as described above, verify the following conditions: ▪ Verify a print connection by sending a V-card to the printer (PIM over OBEX) or by sending a simple text document. ▪ Verify the WindConnect II-equipped printer is within a maximum unobstructed range of 10 meters or 33 feet. Note that the *Bluetooth* neighborhood will continue to show discovered devices even after the devices have been powered OFF. ▪ Verify sending device driver installation. ▪ Restart your print application (a print application such as hp mobile printing is required to print from a PDA). ▪ Reboot your computer or PDA.

Trouble-shooting by Symptom (cont.)

Cannot configure the WindConnect II	By default, the WindConnect II should be able to print right out of the box. ▪ The WindConnect II must be run from a computer in order to configure the printer adapter. The WindConnect II cannot be configured using a PDA.

Error Message:
 	
"Unable to connect to the device specified. Ensure that the device is powered on and is in configuration mode."
	1. Verify that the WindConnect II is plugged in to a power source.
	
	2. Check that the WindConnect II is in configuration mode (the LEDs should be alternating between amber and green). If not, press the Test button for five seconds to place the WindConnect II into the configuration mode.
	
	3. If you have configured your printer(s) to print using SPP, go into the printer properties and temporarily assign all printers that are configured for printing with *Bluetooth* technology to an unused port, such as LPT3, COM1, or COM2.
	
	To assign a printer to an unused port::
	
	    a) Click on **Start**, and then select **Printers and Faxes**.
	
	    b) Right-click on the printer, and select **Properties** from the pop-up menu.
	
	    c) Select the **Ports** tab and temporarily assign a print port or serial port to the printer.
	
	    d) Click on **OK** to finish.
	
	NOTE: After you are finished using the configuration utility, remember to reassign the printer(s).

Forgot my passkey	The WindConnect II has a limit of 50 link keys. Older link keys will roll off the link key list. ▪ Use the "Clear all existing link keys on the printer" option to erase all link keys. All link keys will be deleted. New passkeys will have to be generated. ▪ Your system administrator should know your passkey. If the passkey is lost, perform a cold reset to restore the printer adapter to factory default settings. All link keys will be lost and new passkeys will have to be generated.

Self-Test Page Example

```
       WindConnect II   Configuration

       Name:           HP LaserJet 4000 Series 3E:04:00
       Printer:               HP LaserJet 4000 Series
       BDADDR:                     00:04:3E:C1:94:A7
       Discovery mode:                   Discoverable
       Authentication:                        Enabled
       Serial Number:                          629908
       Boot Firmware PN:                    76174-010A
       Main Firmware PN:                    75174-010A
       Boot Ver:                                  1.1
       Firmware Ver:        WC2P-1.19  (2003.10.30)
       Bluetooth Stack Ver:        2.0  (2003.10.31)
       Supported profiles:   BIP, BPP, HCRP, OPP, SPP
```

LED Status Indicators

State	Bluetooth LED (blue)	Power/Status LED (green/amber)	Description
Power on self test	Slow Blinking	Blinking Green	Blinks for the duration of the power on self-test.
Ready	N/A	Solid Green	Self-test passed. Device ready.
No connection or activity with *Bluetooth* technology	Slow Blinking	N/A	Device is waiting for a connection – no connection is currently established.
Connection with Bluetooth technology	Solid	N/A	Connection established.
Activity (RX or TX)	Rapid Blinking	N/A	Blue LED blinks rapidly during link activity.
Printer I/O activity/self test page	N/A	Blinking Green	USB or 1284 (parallel port) activity.
Printer adapter error, Self test failure, Flash update failure, USB overcurrent	N/A	Blinking Amber	Any firmware or hardware failure not covered by other states.
Failure to communicate with printer (I/O error)	N/A	Solid Amber	Printer communication error.
Configuration/Firmware update mode	N/A	Amber/Green toggle	Bi-colored LED toggles while in configuration mode and while the flash memory is being reprogrammed.

Test Button Sequences

Command	Sequence
Print a Test/Configuration Page	Press the test button for approximately one second (do not press it for more than three seconds). A test page will print, and the bi-colored LED will blink green during printing.
Perform a Cold Reset (restores factory defaults)	Press and hold the test button while applying power to the device, and then release the test button and allow the unit to initialize (approximately four seconds). All non-volatile parameters will be reset to their factory default values.
Enter Configuration/ Firmware Upgrade Mode	Press and hold the test button for at least five seconds until the bi-colored LED cycles between amber and green to indicate that it has entered the configuration mode. A firmware upgrade or configuration can now be performed using the provided TROY Configuration Utility. After the print adapter is reprogrammed by a firmware upgrade, it will automatically reboot and then indicate a ready state (solid green LED). If the firmware update process fails, the print adapter will automatically reboot and then return to the configuration mode if the flash memory was programmed incorrectly.

Customer Support Options

TROY offers several customer support options to assist you in the event you experience difficulties with your WindConnect II Bluetooth printer adapter, including web support, telephone support, repair services, extended warranty, and advance replacement.

Worldwide Web Support

The TROY web site provides answers to many common technical questions and also includes copies of product manuals and literature, as well as utilities and firmware load images. You can visit the TROY web site at: http://www.troygroup.com.

Contacting TROY

NOTE: Before contacting TROY technical support, please refer to *Chapter 5 – Troubleshooting* in this manual or the TROY web site to isolate any problems, and be sure to write down any error messages. Also, make sure that you have the serial number of the product (located on the product label) available when you contact TROY technical support.

To contact TROY directly, use one of the following numbers:

North and South America:

If you need to talk to one of our Technical Support Specialists, our support line is open Monday through Friday, 8 AM to 8 PM, Eastern Standard Time.

U.S. 48 contiguous States: (800) 332-6427
Canada, Alaska, Hawaii, and South America: +1-304-232-0899
E-Mail: technicalsupport@troygroup.com

Europe:

Technical support is available in either German or English from Monday through Thursday, 9 AM to 12 PM and 1 PM to 5 PM, and on Friday from 9 AM to 12 PM and 1 PM to 4 PM.

Phone:	+49 (0) 7032-9454-21
E-Mail: support@troygroup.de
Web:	http://www.troygroup.de

Corporate Headquarters:

TROY Group, Inc.
2331 South Pullman Street
Santa Ana, CA 92705   USA
(949) 250-3280

Components	Specification
Model	WindConnect II printer adapter with Bluetooth® technology (parallel / USB versions)
Processor	Coldfire MCF5272
Flash Memory	16 Mbits
RAM Memory	64 Mbits
Processor Speed	66 Mhz
Interfaces Supported	USB 1.1 Host (full speed) or IEEE 1284 Parallel Printer Interface, Bluetooth 1.1
Bluetooth Profiles Supported	Serial Port Profile (SPP) Object Push Profile (OPP) Hardcopy Cable Replacement Profile (HCRP) Basic Printing Profile (BPP) Basic Imaging Profile (BIP)
Power Requirements	270 mA at 5 volts (an additional 100 mA is required if USB power is supplied to the printer)
Power Module	Input: 120 / 220 VAC, Output: 500 mA at 5 volts
Radio Performance	**Specification**
Minimum radiated output power	> -5 dBm
Radiation Pattern	Omni-directional
Frequency	79 channels, 2402 – 2480 MHz
VSWR (Voltage Standing Wave Ratio)	< 2.5:1
Bluetooth Compliance (BT 1.1)	EN 300-328, EN 301-489-1, EN 301-489-17, FCC 15.247, EN 60950, RSS-210

FCC Compliance Statement for United States Users

This equipment has been tested and found to comply within 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 or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try 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 receiver
- Connect the equipment to an outlet on a circuit other than the circuit bused by the receiver
- Consult the dealer or an experienced radio/TV technician for help

Warning

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

For European Users

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. TROY cannot be responsible for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22/European Standard EN55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communications devices.

TROY

For Canadian Users

This Class B apparatus complies with Canadian ICES-003. The term "IC" before the radio certification number only signifies that Industry of Canada technical specifications were met.

Supplemental Information

The product herewith complies with the requirements of the Low Voltage Directive 72/23/EEC and the EMC Directive 89/336/EEC and carries the CE marking accordingly. This product was tested in a typical configuration with TROY and other associated products.

Declaration of Conformity
(according to ISO/IEC Guide 22 and EN45014)

According to 47CFR, Part 2 and 15 for Class B Personal Computers and Peripherals; and/or CPU Boards and Power Supplies used with Class B Personal Computers:

We: TROY GROUP, INC.
Located at: 2331 South Pullman Street
                                   Santa Ana, CA USA

Declare under sole responsibility that the product identified herein, complies with 47CFR Part 2 and 15 of the FCC rules as a Class B digital device. Each product marketed, is identical to the representative unit tested and found to be compliant with the standards. Records maintained continue to reflect the equipment being produced can be expected to be within the variation accepted, due to quantity production and testing on a statistical basis as required by 47CFR §2.909. 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.

Trade Name: TROY
Type of Product: Printer Adapter
Model: WindConnect II

Regulatory Information

European Union (EU)

TROY hereby declares that the Bluetooth™ wireless technology built into the WindConnect II Bluetooth printer adapter, is in compliance with the essential requirements and other relevant provisions of European Directive 1999/5/EC. The internal Bluetooth function is a Bluetooth power class 1 intended radio device using the 2.4 GHz frequency band (2.400GHz – 2.4835GHz). It is intended for wireless communication with other Bluetooth-enabled devices using the Bluetooth Generic Access, Service Discovery Application, Serial Port and Object Push Networking profiles. The internal Bluetooth wireless technology complies with all applicable regulations in the following countries: Austria, Belgium, Denmark, Finland, Greece, Germany, Iceland, Ireland, Luxembourg, Norway, Portugal, Spain, Sweden, Switzerland, the Netherlands and the United Kingdom.

The use of Bluetooth wireless technology in other countries than those listed above may be restricted: before using Bluetooth products, please confirm with the frequency management authority in the country where you plan to use it. In some situations or environments, the use of Bluetooth wireless technology might be restricted by the proprietor of the building or responsible representatives of the organization, for example onboard airplanes, in hospitals or in any other environment where the risk of interference with other devices or services is perceived or identified as harmful.

If you are uncertain of the policy that applies to the use in a specific organization or environment, you are encouraged to ask for authorization to use Bluetooth wireless technology prior to switching it on. Consult your physician or the manufacturer of personal medical devices (pacemakers, hearing aids, etc.) regarding any restrictions on the use of Bluetooth wireless technology.

United States of America and Canada

Tested to Comply With FCC Standards FOR HOME OR OFFICE USE. See FCC 47CFR, Part 15.19(b)(2).
This device complies with part 15 of the FCC rules and with RSS-210 / RSS-139 of the Industry Canada.
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.
The radiated output power of WindConnect II wireless printer adapter is far below the FCC radio frequency exposure limits. Nevertheless, the WindConnect II shall be used in such a manner that the potential for human contact during normal operation is minimized. A minimum separation of 20 cm (8 inches) must be maintained between the antenna and the person for this device to satisfy the RF exposure requirements of the FCC. Note that any changes or modifications to this equipment not expressly approved by the manufacturer may void the FCC authorization to operate this equipment.

Canada (IC notice)

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment that is installed outdoors is subject to licensing.

Appendix C   Glossary

Terms and Definitions

Term	Definition
Authentication	The user must verify a numeric passkey before a connection or activity can be completed.
Authorization	The user must approve a connection or activity before it can be completed.
***BIP (Basic Imaging Profile)**	Enables image formatting by ensuring that images are delivered or retrieved in a format that is usable by the destination when an image exchange involves one or more limited devices that can process only selected image formats (taken from MPI tech news web site).
***Bluetooth* neighborhood or device group**	A collection of devices that use *Bluetooth* technology.
Bonding (paired devices)	The process of creating a trusted connection between your device and another. Once a bond is created, the two devices become paired. A trusted device does not require authentication or authorization.
***BPP (Basic Printing Profile)**	Designed primarily for limited resource devices to allow printing of complex pictures and documents without the need to load a different driver for each printer used.
Cold Reset	Used to set the WindConnect II to factory defaults. To perform a cold reset, press and hold the test button for longer than five seconds.
Device address	Unique electronic address of a Bluetooth device.
Device discovery	The location and recognition of another Bluetooth device.
Device name	The name provided by a Bluetooth device when it is discovered by another device.
Discoverable	Allows the Bluetooth client to see the WindConnect II in the "Bluetooth Neighborhood".
Encryption	A method of protecting data from being read or used by unauthorized users.
* HCRP (Hard Copy Replacement Profile)	A cable replacement technology developed by the Bluetooth Special Interest Group (SIG), and is designed to send data from the sending device to the printer using existing printer drivers to format the data being sent to the printer.
Link key	A key used to securely pair devices.
MMS (Multimedia Message Service)	A method of transmitting graphics, video clips, sound files, and short text messages over a wireless network.

Appendix C   Glossary

**Terms and
Definitions
(cont.)**

Non-Discoverable	Prevents the WindConnect II from being seen in the "Bluetooth Neighborhood".
*OPP (Object Push Profile)	Derived from the standards originally used for infrared communications, the Object Push Profile is relatively easy to implement in these devices (e.g., mobile phones, PDAs).
Passkey	A user code entered to authenticate connections or activities requested by other devices.
PIM (Personal Information Manager)	A collection of applications used to manage daily business tasks (e.g., contacts, calendars).
Profiles	A collection of Bluetooth settings.
Service discovery	Used to determine which applications you have in common with other devices.
SMS (Short Message Service)	Similar to paging, SMS is a service used for sending short text messages to mobile phones.
*SPP	Emulates a hardwired RS-232 serial port, such as a Windows COM port (e.g., COM3) and is, therefore, compatible with a significant number of laptop and PDA software applications and drivers because most Windows printer drivers support printing to a COM port.

"The Implementation of Bluetooth Printing Capabilities: A TROY Wireless White Paper" is available for viewing at http://wireless.troygroup.com/wireless/downloads/books/whitepapers/Bluetooth%20Printing%2001-22-02.pdf