



i-STAT TECHNICAL BULLETIN

Configuring Wireless Settings in an i-STAT 1 Wireless Analyzer

Before configuring wireless settings, please enable the wireless functionality by referring to the Technical Bulletin “Procedure for Using the i-STAT® 1 Wireless Analyzer” (Art: 726025-00).

OVERVIEW

This Technical Bulletin describes the following procedures used to configure the i-STAT 1 Wireless Analyzer using an existing wireless network and the i-STAT 1 Wireless Setup Utility:

- Configuring your PC with an additional wireless router (Windows 10)
- Configuring your PC with a wireless card (Windows XP and 7)
- Setting up the Abbott Configuration Ad Hoc Network
- Using the i-STAT 1 Wireless Setup Utility for Configuration
- Transferring the Configuration to the Wireless Analyzer OTA (Over-the-Air)

For i-STAT 1 Wireless Specifications, see the Technical Bulletin “i-STAT® 1 Wireless Analyzer Specifications” (Art: 728644-00).

For procedures on using the i-STAT 1 Wireless Analyzer, see the Technical Bulletin “Procedure for Using the i-STAT® 1 Wireless Analyzer” (Art: 726025-00).

Note: Users must follow site-specific guidelines for operating wireless devices when using the i-STAT 1 Wireless Analyzer.

Please ensure that you are using the latest version of the Wireless Setup Utility. This software can be downloaded from the Abbott Point of Care Website or installed via CD-ROM.

If you have any questions regarding the information in this Technical Bulletin, please contact Abbott Point of Care Technical Support at 800-366-8020, option 1, or by email at techsvc@apoc.abbott.com.

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SYSTEM REQUIREMENTS

The following table lists the System Requirements for the computer used to configure the i-STAT 1 Wireless Analyzer(s). In order to install the Wireless Utility on the computer, you must have Administrative Rights to the computer.

System Requirements
Windows XP SP2 or higher, 32-Bit Edition; Windows 7 32-Bit or 64-Bit Edition; Windows 10 32-bit or 64-bit Edition
1GHZ CPU or higher
15MB HDD space
1GB of RAM or higher
Wireless 802.11b/g Network Card (Windows XP and 7) or Wireless 802.11b/g Router (Windows 10)

Note: Hardware or Software Firewalls may impact the ability to create an ad hoc connection and configure your i-STAT 1 Wireless Analyzer. Please consult your local IT department for assistance with steps to disable Firewalls.

CONFIGURATION PROCEDURE

SECTION 1: Configuring Your Windows 10 PC with additional Wireless Router and Setting Up the Abbott Configuration Ad Hoc Network

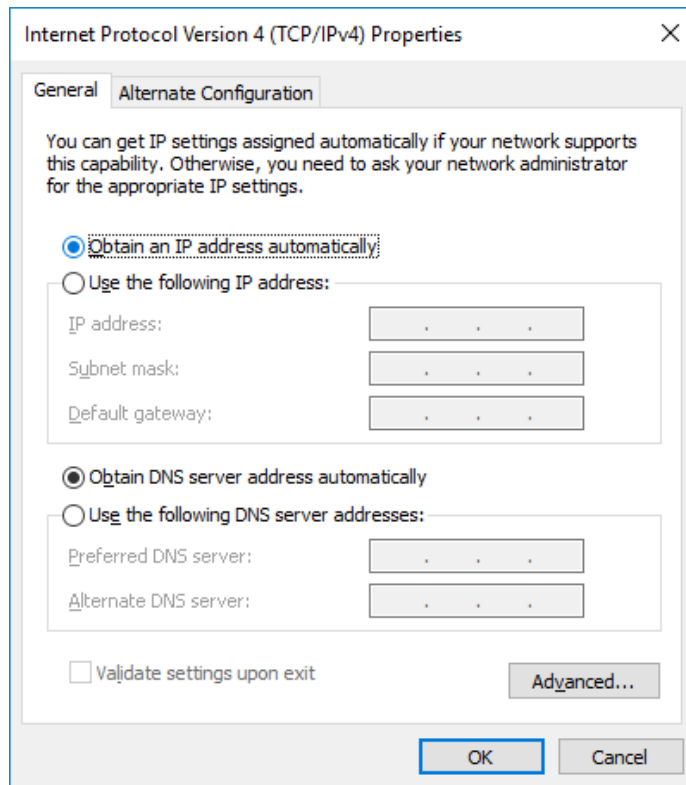
The following procedure describes the steps to configure an i-STAT 1 Wireless Analyzer with the Wireless Setup Utility running on a Windows 10 PC using a wireless router (for document illustration purposes a TP-Link AC750 Wireless Travel Router is used).

Note: If wireless connection from the PC to router is lost during setup, return to available wireless networks and reconnect the network.

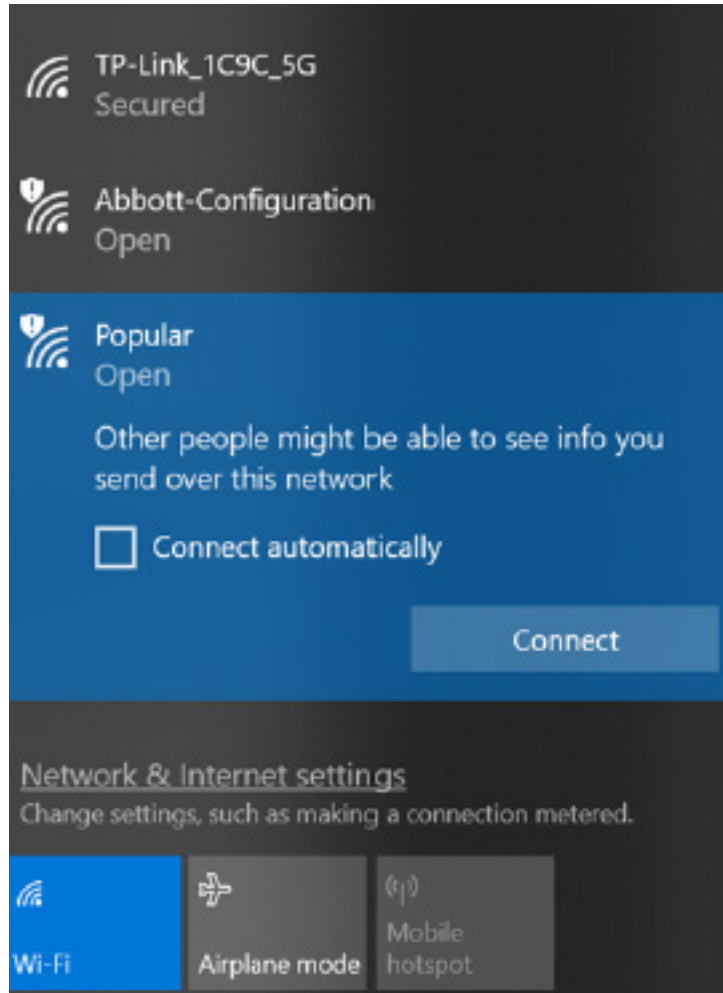
1. Power on the wireless router, wait for the status lights to indicate the router is on and accessible.



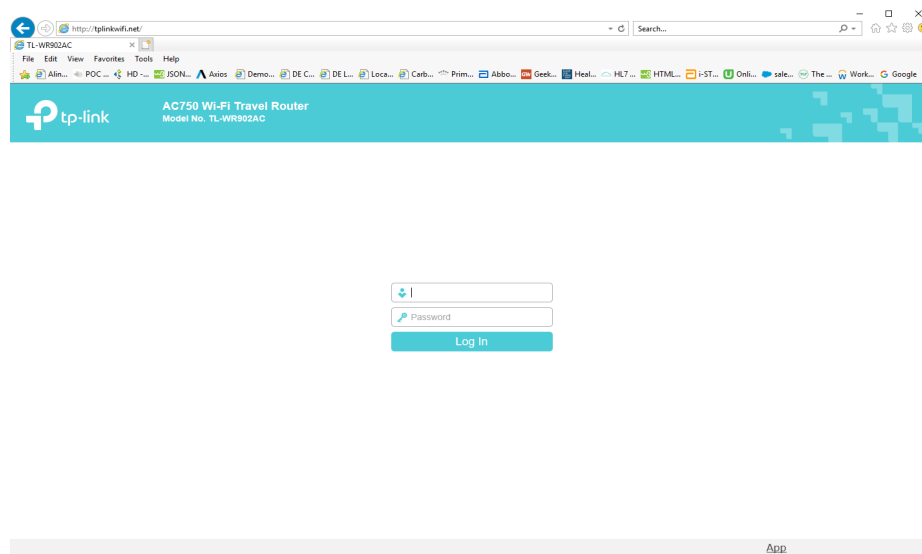
2. Open **Windows Settings** (type 'Settings' in the Windows "Search"), select **Network & Internet** option. On the Network Status page, select **Change adapter options** and a new window will appear. Using your mouse, right click on the Wireless Network Connection, and select **Properties**. In the 'This connection uses the following items:' section, double-click Internet Protocol Version 4 (TCP/IPv4). An additional window will open. On the PC, set the PC to "Obtain an IP address automatically" unless already set.



3. Open wireless menu on PC, search for and connect to the SSID for the router, enter credentials if prompted.

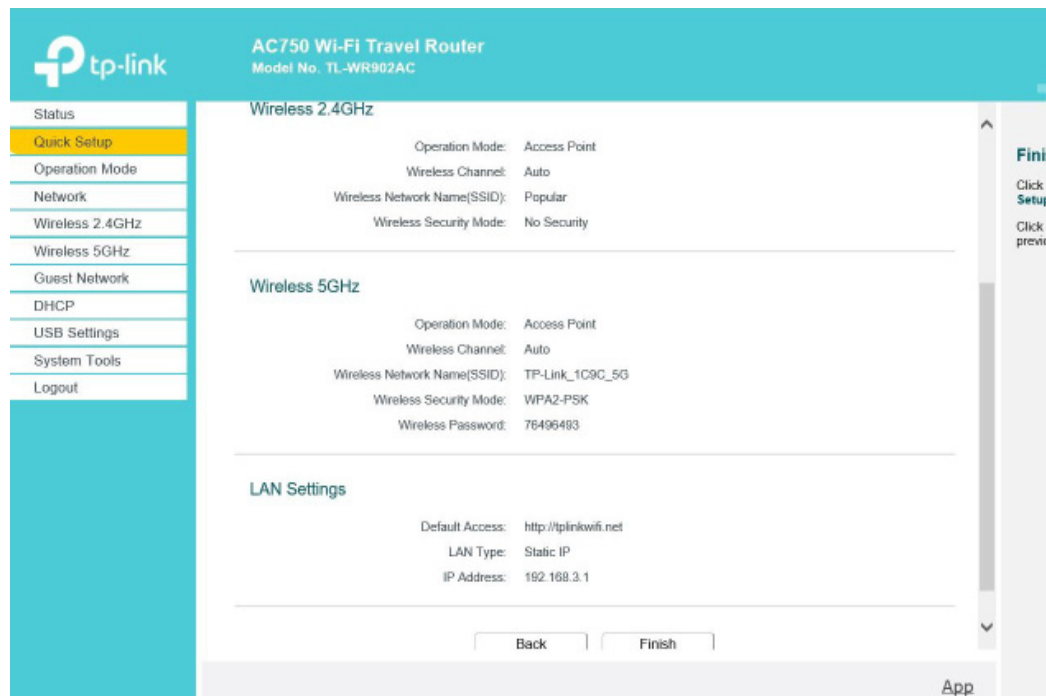


4. On the PC, open an internet browser. Type in the wireless router web address provided by the manufacturer. When the wireless router login page appears, enter the wireless router credentials.

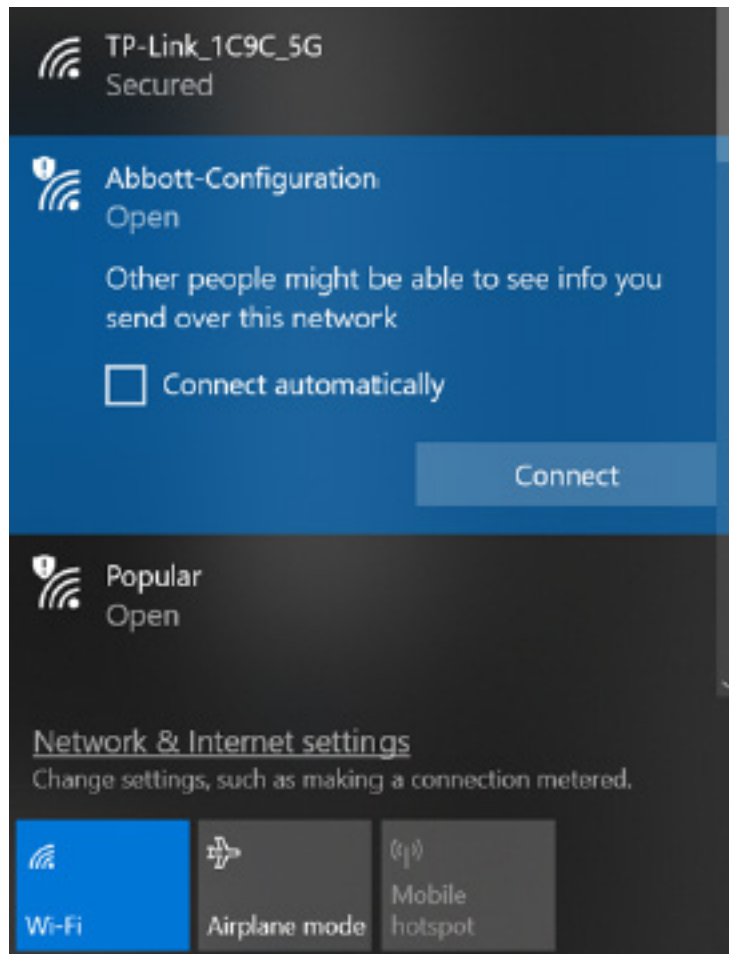


5. From the Router Quick Setup, configure the following settings:

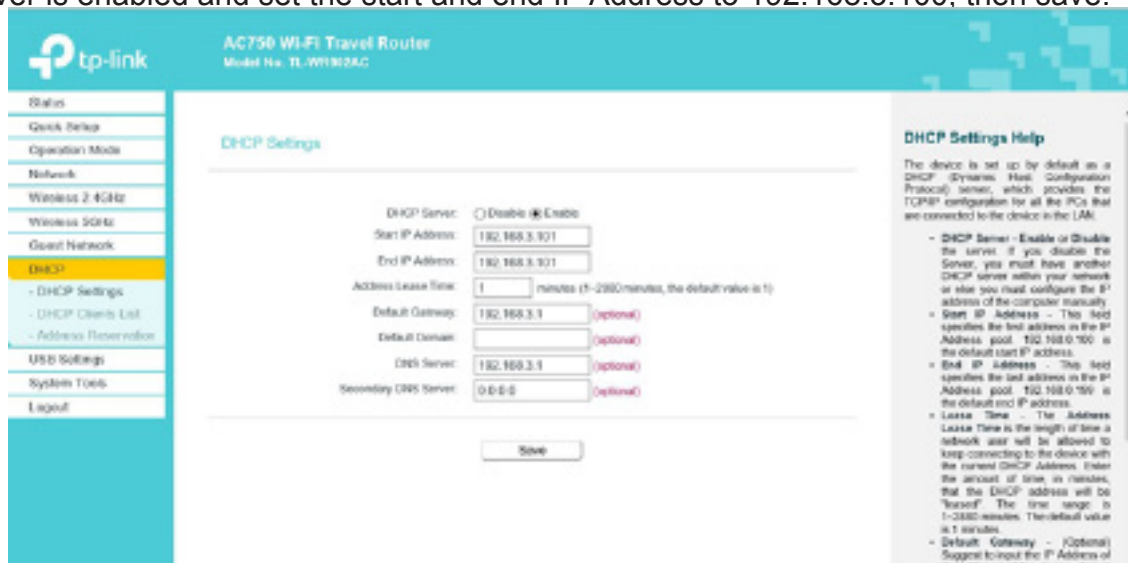
- Access Point
- Set 2.4 GHz wireless SSID to “Abbott-Configuration”.
- Ensure the 2.4 GHz network is in “Open” state (i.e., Wireless Security disabled).
- LAN Type of Static with an IP Address of the router to 192.168.3.1
- Save the settings, the router will reboot.



6. When the router is available, connect the PC to the Wireless network “Abbott-Configuration” and then open an internet browser. Type and access the address “192.168.3.1”. When the wireless router login page appears, enter the wireless router credentials.



7. In the router configuration navigate to the DHCP settings page and ensure the DHCP server is enabled and set the start and end IP Address to 192.168.3.100, then save.



8. Disconnect from the wireless Abbott-Configuration network and reconnect to Abbott-Configuration network to ensure the PC gets the 192.168.3.100 IP address.

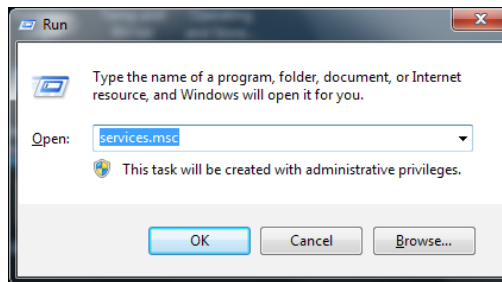
9. Configure the Wireless Analyzer as per Section 4.

SECTION 2: Configuring Your Windows 7 PC with a Wireless Card and Setting Up the Abbott Configuration Ad Hoc Network

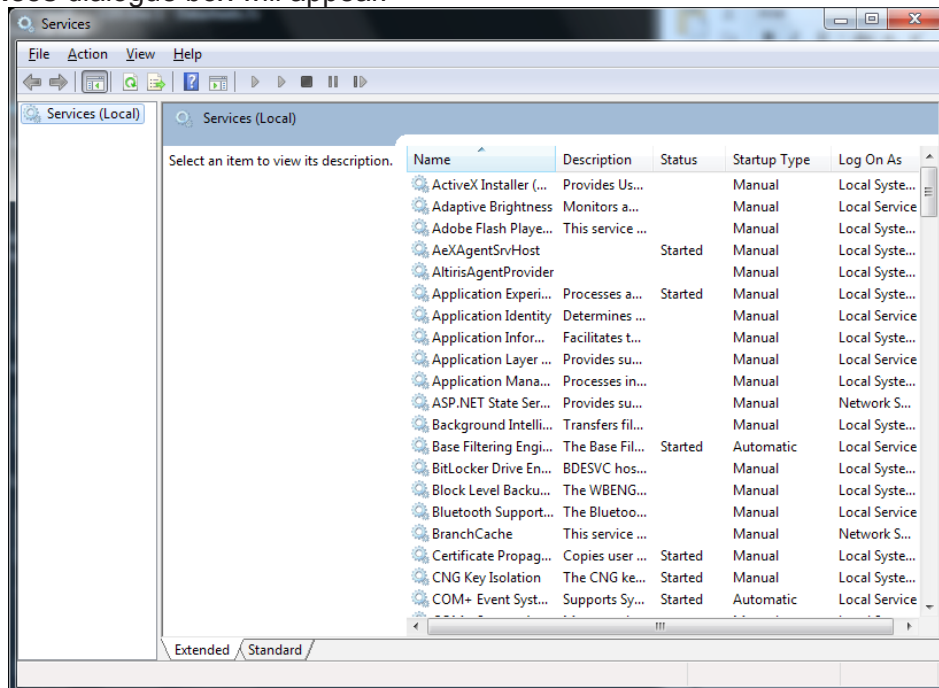
Note: **SECTION 2** only applies to users who have a PC that is running Windows 7. If your PC is running Windows XP, refer to **SECTION 3** for instructions on setting up the ad hoc network.

In order to configure your computer for hosting an ad hoc network, see the instructions below for starting and using the WLAN AutoConfig Tool. If you already have the WLAN AutoConfig Tool enabled, skip to **Step 4**. If this is not the default wireless configuration utility, and you wish to use a different wireless management utility, consult the documentation for that utility on how to set up an ad hoc network.

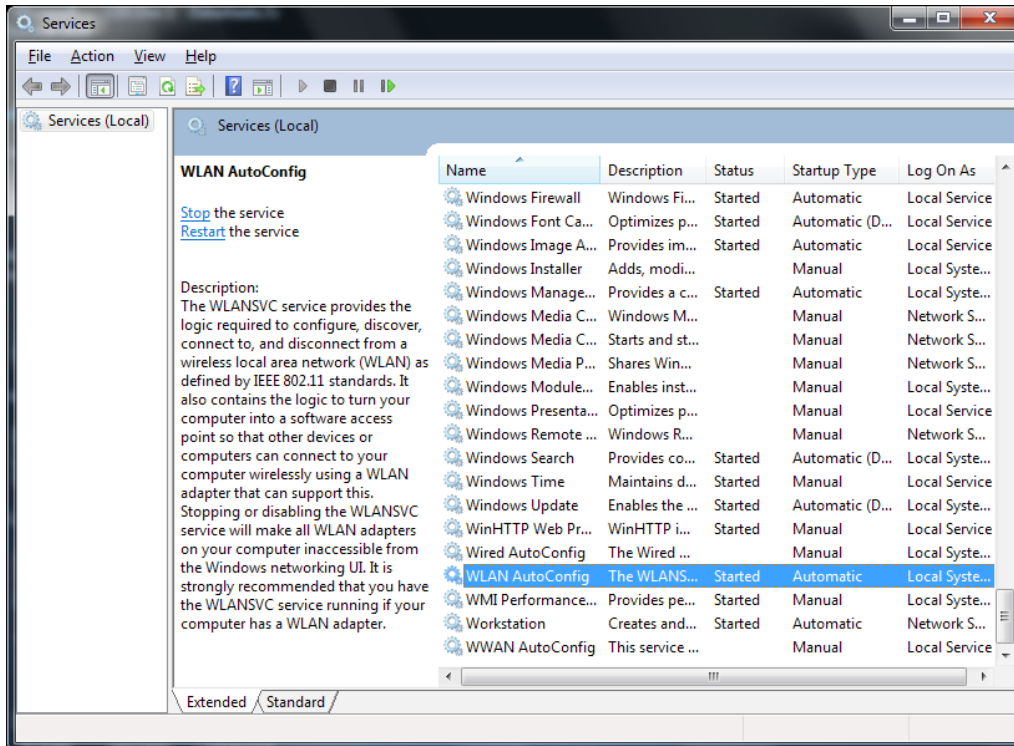
1. From the **Start** menu, type in and select **Run...** At the “**O**pen:” box, type in **services.msc** and click **OK**.



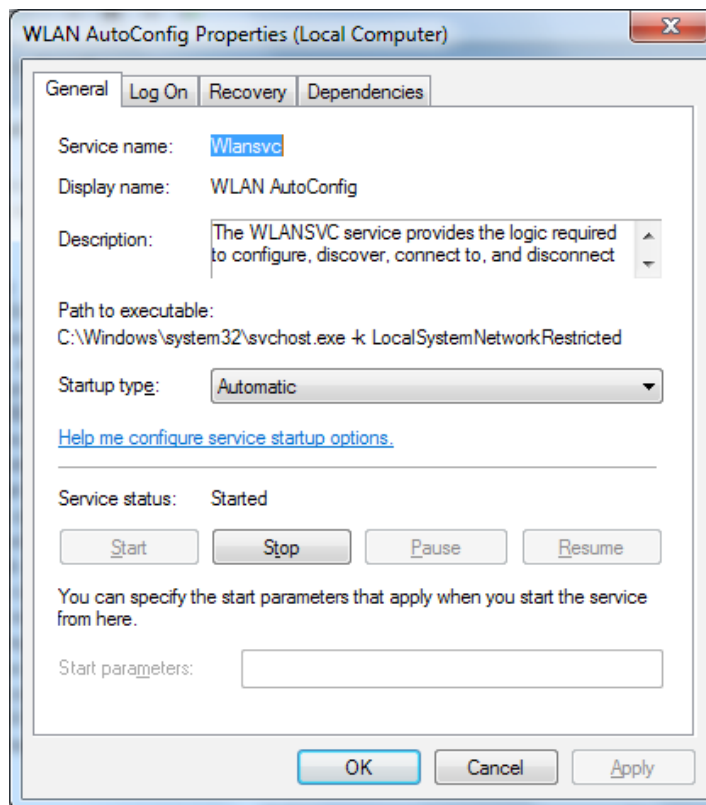
The **Services** dialogue box will appear.



2. Scroll down and select **WLAN AutoConfig**.

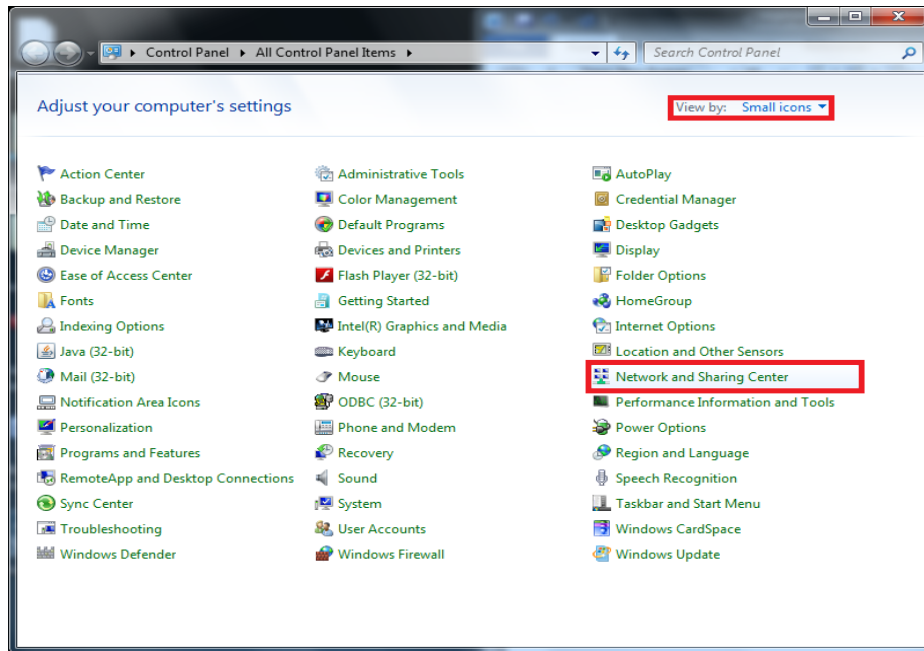


3. Double click the **WLAN AutoConfig** item to open the “Properties” dialog box.

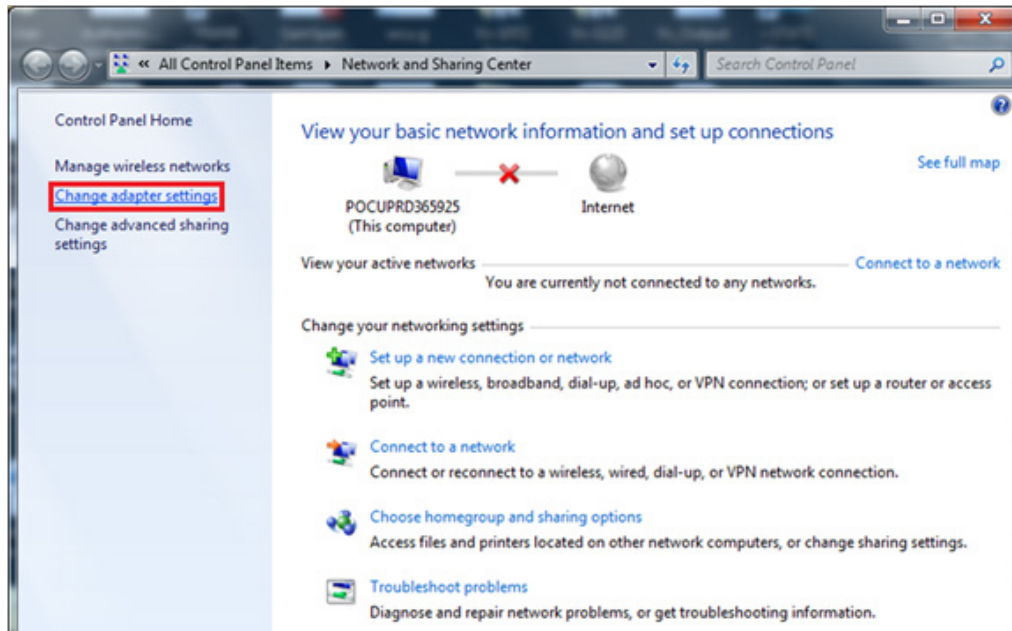


Select **Automatic** from the “Startup type:” drop down menu and click **Apply** or **OK**. (If needed click **Start** to begin the service).

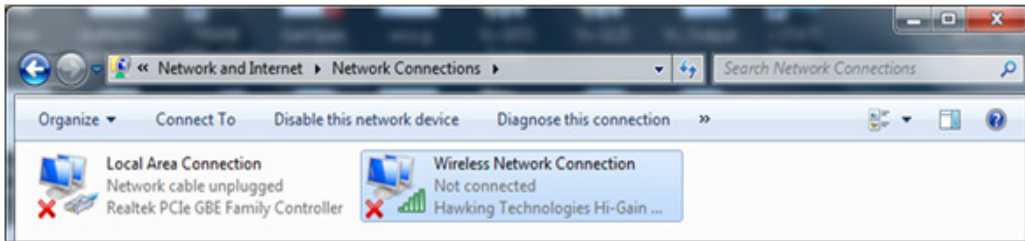
- From the **Start** menu, click **Control Panel**. From the “View by:” drop down menu select **Small icons** and click **Network and Sharing Center**.



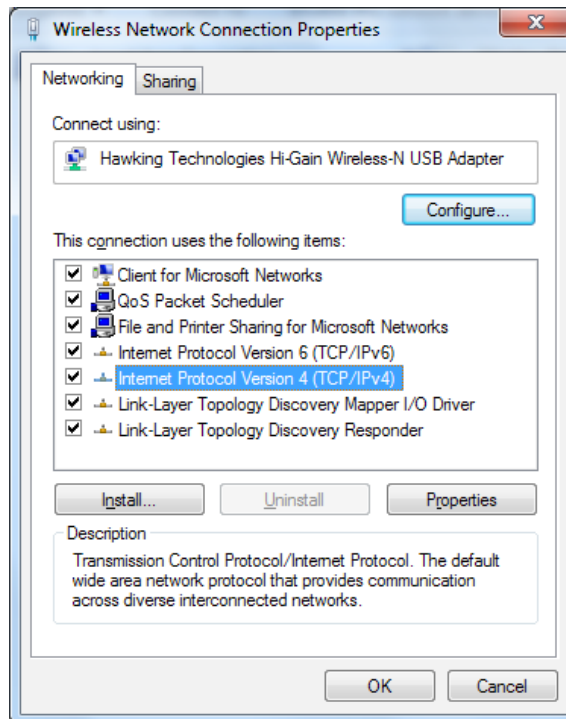
- Click **Change adapter settings**.



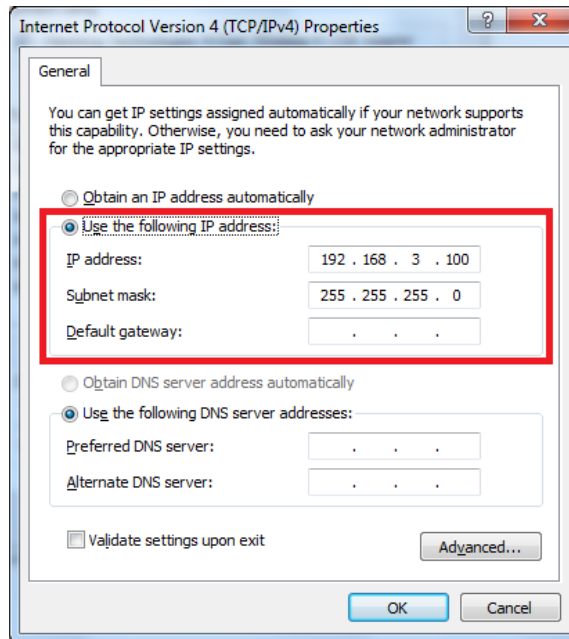
6. Using your mouse, right click on the **Wireless Network Connection**, and click **Properties**.



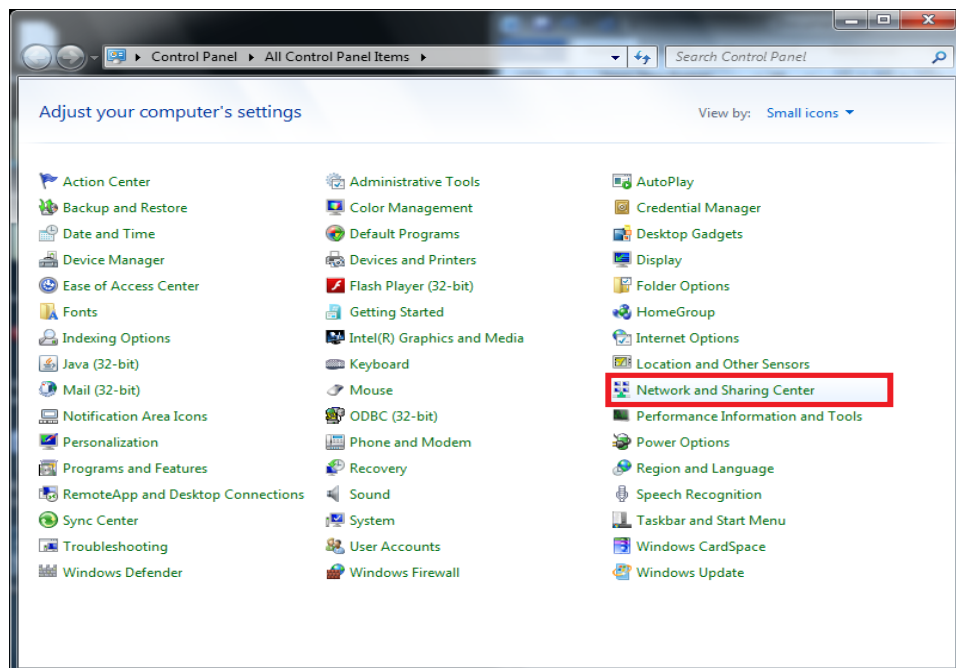
7. In the "This connection uses the following items:" section, double click on **Internet Protocol Version 4 (TCP/IPv4)**. An additional window will open.



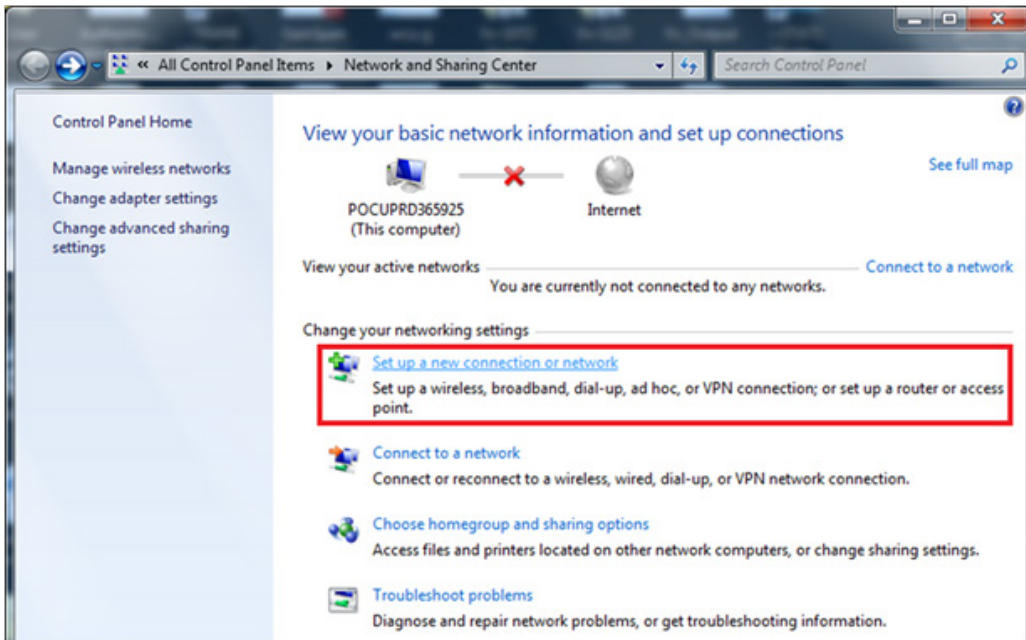
8. To establish an ad hoc network with a wireless analyzer, the PC must be set to a specific IP address.
 - Select **Use the following IP address**. If the **Use the following IP Address** radio button is already selected, record the IP Address, Subnet Mask, and Default Gateway already listed there. This will allow you the option of restoring these settings once the configuration process is complete.
 - Type **192.168.3.100** in the IP address box and press **Tab**. The Subnet mask will automatically populate and the “Default gateway:” should be left blank (as shown below).



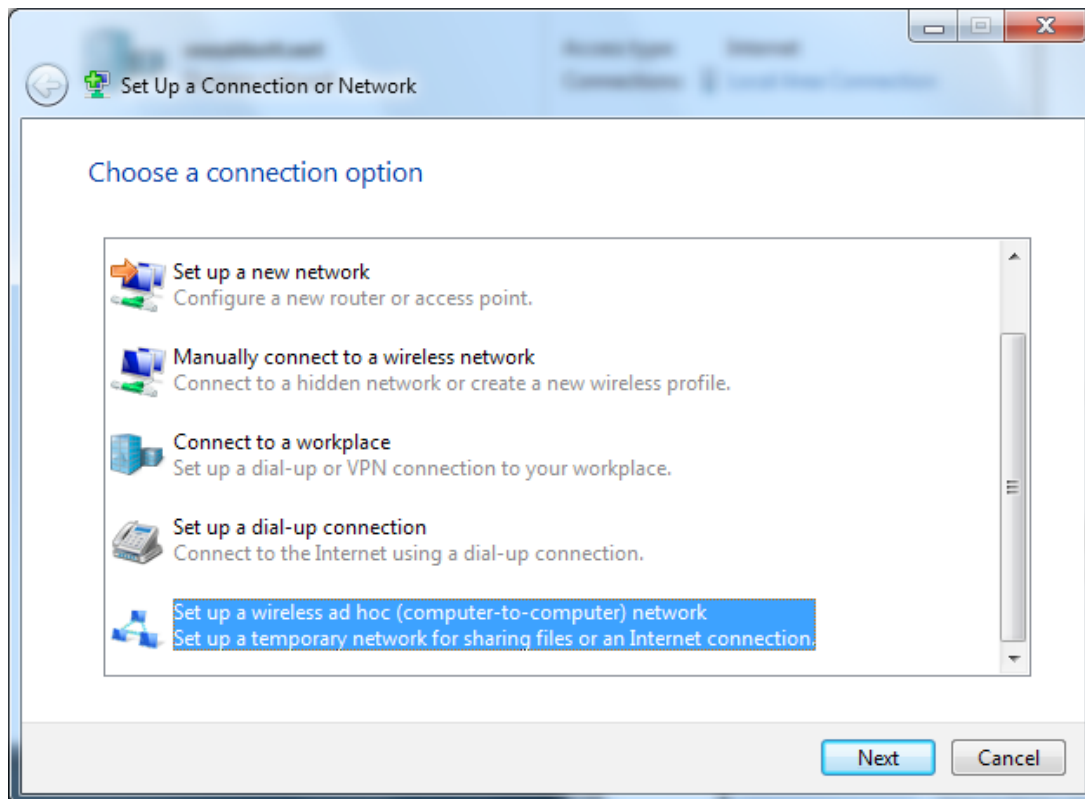
9. Click **OK**, close all windows, and return to the desktop. The PC is now configured for the next step of creating the ad hoc network.
10. Disconnect your PC from any hardwired networks.
11. From the **Start** menu, click **Control Panel** → **Network and Sharing Center**.



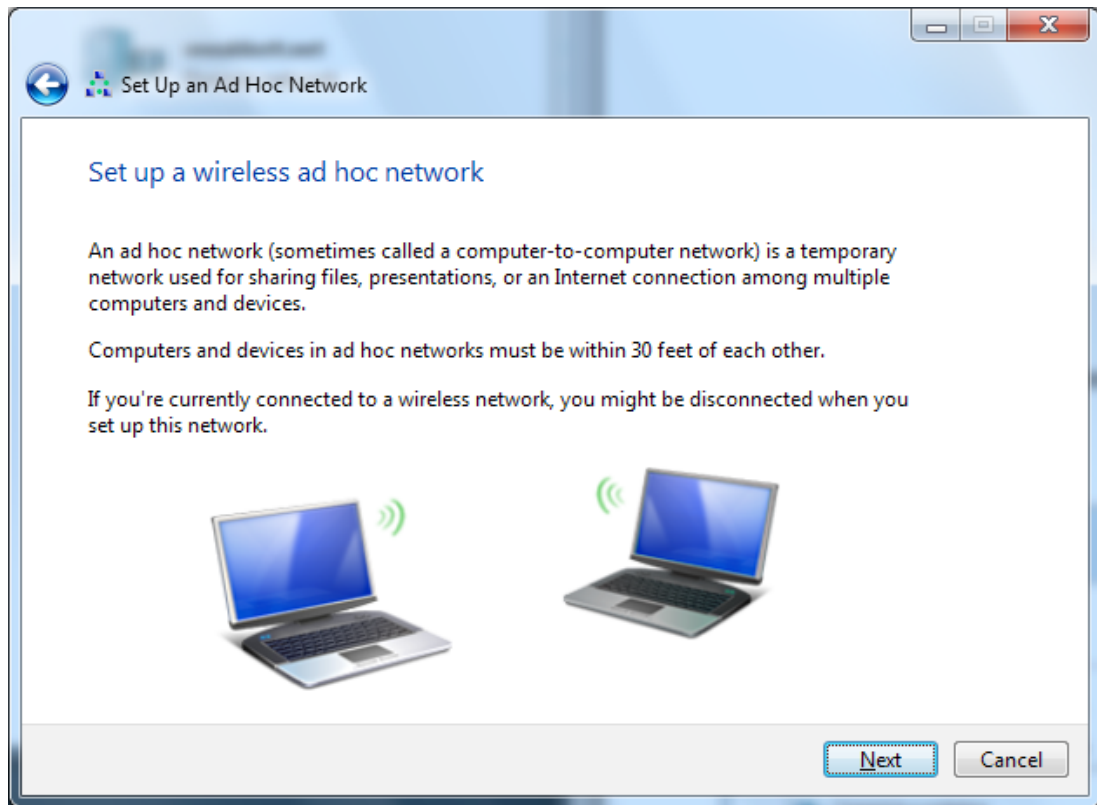
12. Click **Set up a new connection or network**.



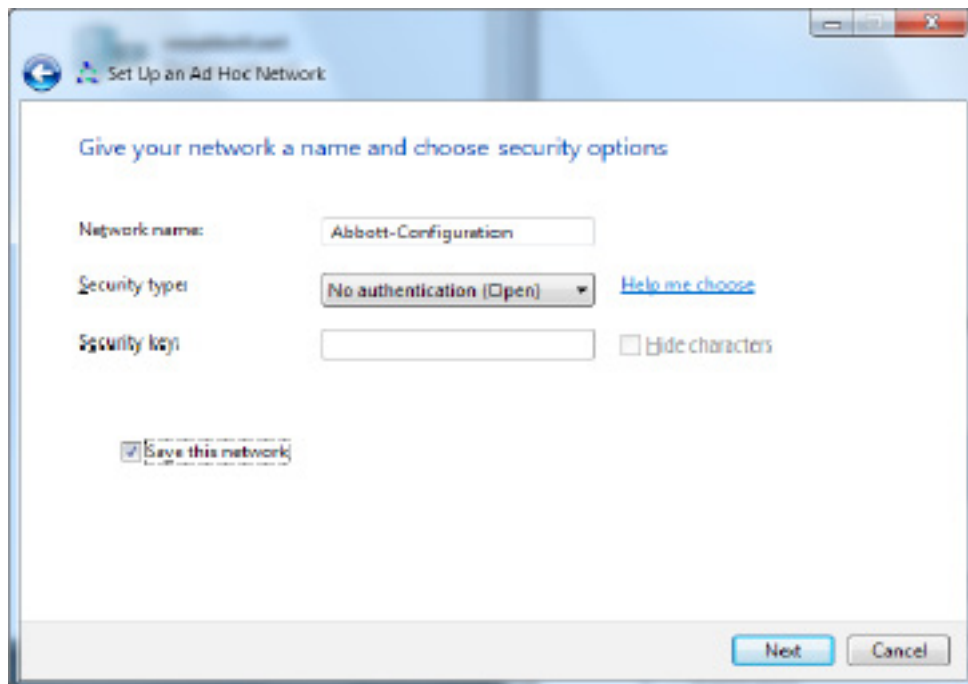
13. Scroll down and select **Set up a wireless ad hoc (computer-to-computer) network**, then click **Next**.



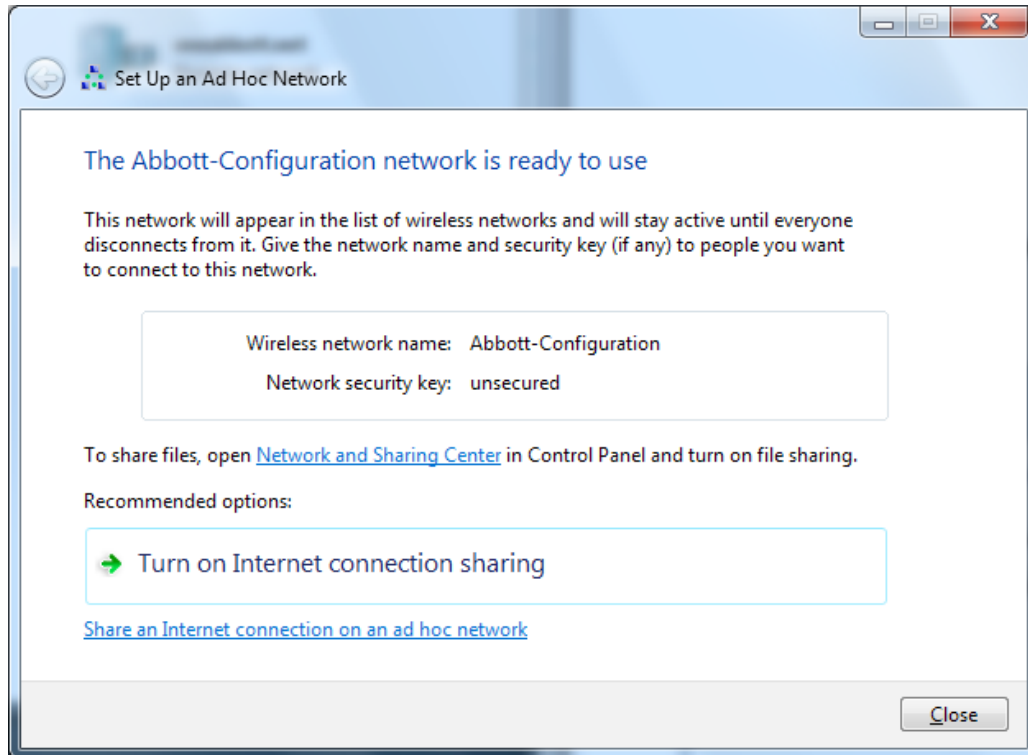
14. Click **Next**.




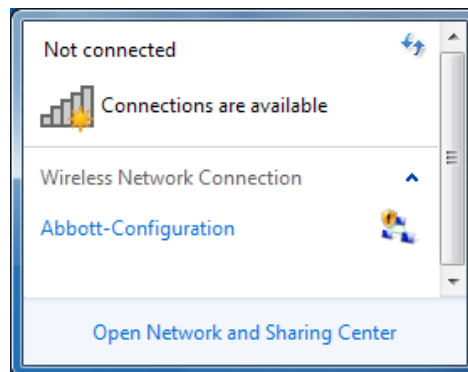
15. Enter the "Network Name:" exactly as follows: **Abbott-Configuration**. For the "Security type:" select **No authentication (Open)**, check **Save this network**, then click **Next**.



16. Once the ad hoc network is ready to use, the following window will appear. Click **C**lose. The Abbott-Configuration network has now been successfully created.

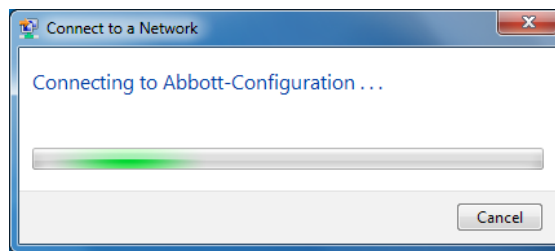
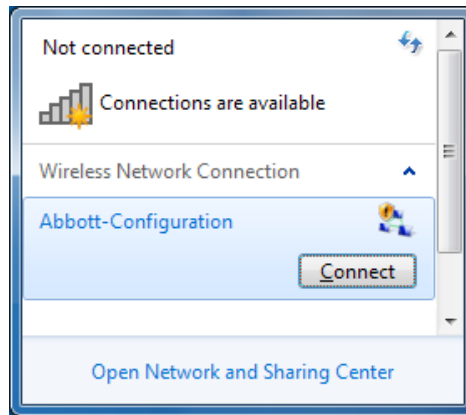


17. Click on the **Network Icon**  in the notification area on the taskbar. The following window will appear.

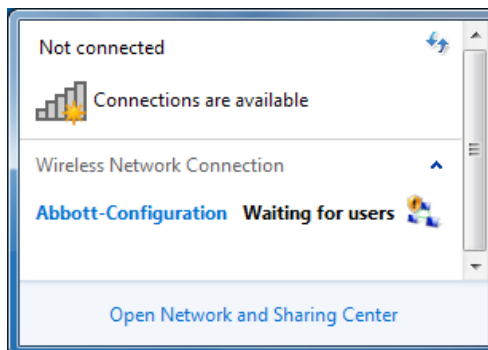


Note: If the Abbott-Configuration ad hoc network is “Waiting for users”, proceed to **SECTION 4**. Otherwise, continue to **Step 18**.

18. Select the Abbott-Configuration ad hoc network then click **C**onnect.




19. Once the "Connect to a Network" window has closed, click on the **Network Icon** in the notification area on the taskbar. Confirm that the Abbott-Configuration ad hoc network is now "Waiting for users". The network is now ready to configure analyzers.



20. Proceed to **SECTION 4** for instructions on using the i-STAT 1 Wireless Setup Utility for Configuration.

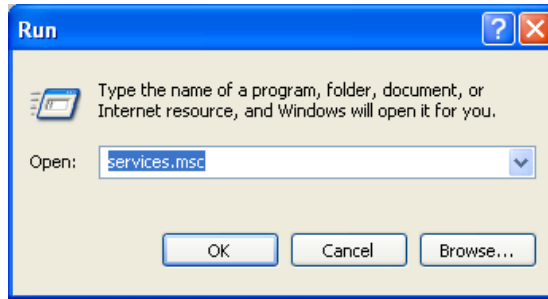
SECTION 3: Configuring Your Windows XP PC with a Wireless Card and Setting Up the Abbott Configuration Ad Hoc Network

Note: **SECTION 3** only applies to users who have a PC that is running Windows XP. If your PC is running Windows 7, refer to **SECTION 2** for instructions on setting up the ad hoc network.

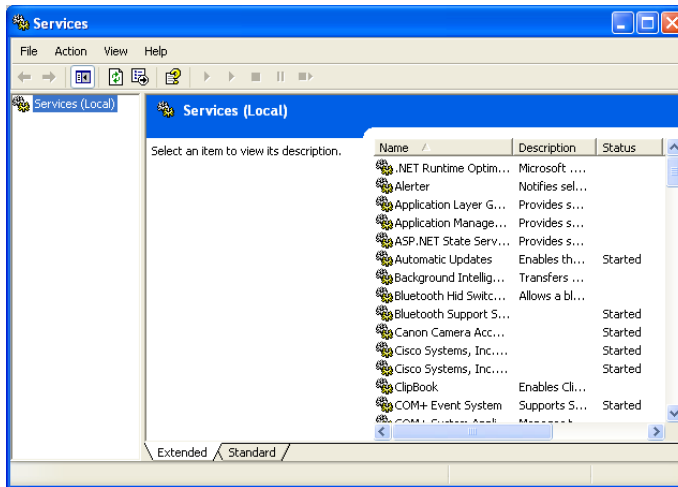
In order to configure your computer for hosting an ad hoc network, see the instructions below for starting and using the Wireless Zero Configuration Tool. If you already have the Wireless Zero Configuration Tool enabled, skip to **Step 4**. You can verify the wireless utility your computer is running by double clicking on the wireless signal indicator icon on your system tray . If this is

not the default wireless configuration utility, and you wish to use a different wireless management utility, consult the documentation for that utility on how to set up an ad hoc network.

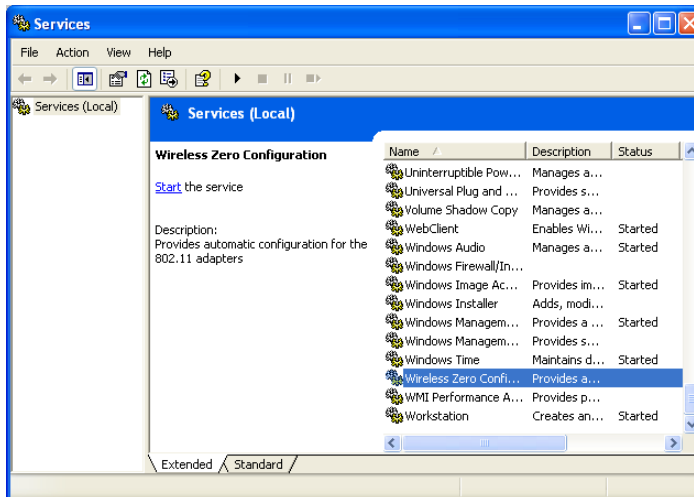
1. From the **Start** menu, select **Run...** At the “Open:” box, type in **services.msc** and click **OK**.



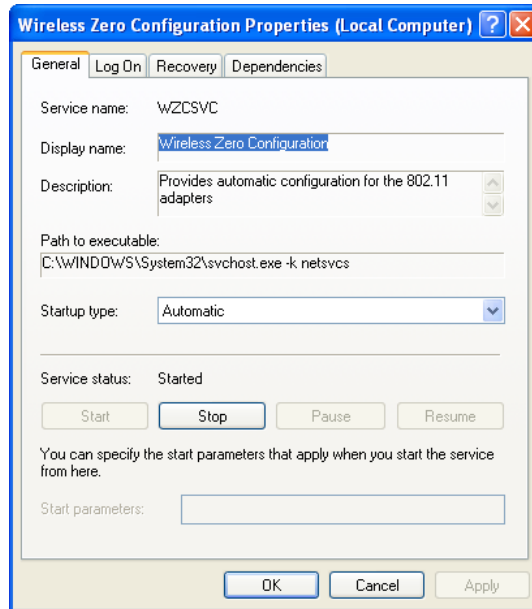
The **Services** dialogue box will appear.



2. Scroll down and select **Wireless Zero Configuration**.

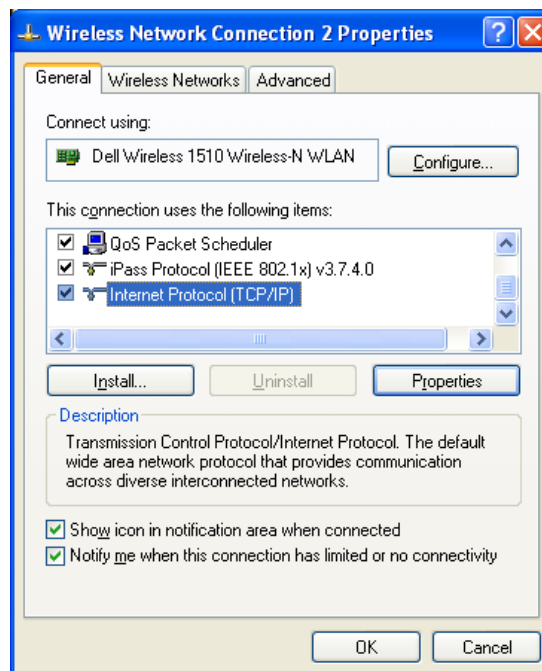


3. Double click the **Wireless Zero Configuration** item to open the “Properties” dialog box.

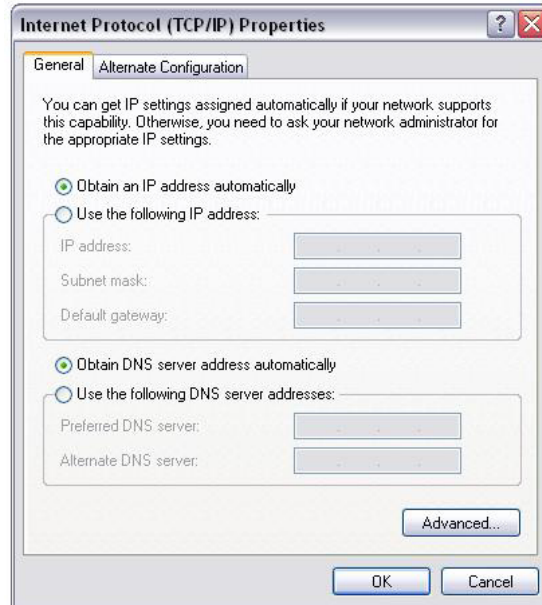


Select **Automatic** from the “Startup type:” drop down menu and click **Apply** or **OK**. (If needed, click **Start** to begin the service).

4. From the **Start** menu, select **Settings** → **Control Panel**.
5. Select **Network and Internet Connections** → **Network Connections**.
6. Using your mouse, right click on the **Wireless Network Connection** and click **Properties**. The following window will appear.

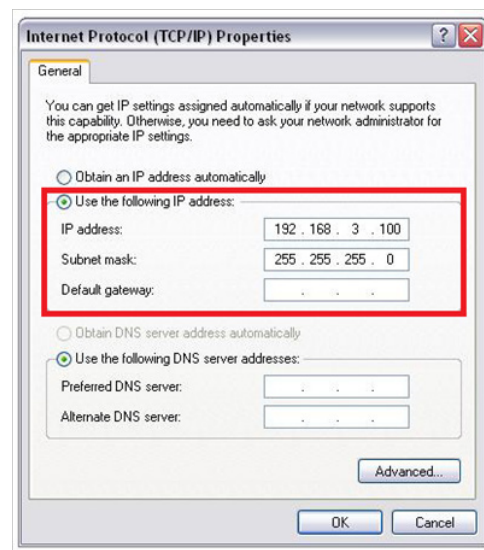


7. In the “This connection uses the following items:” section, double click on **Internet Protocol (TCP/IP)**. An additional window will open.

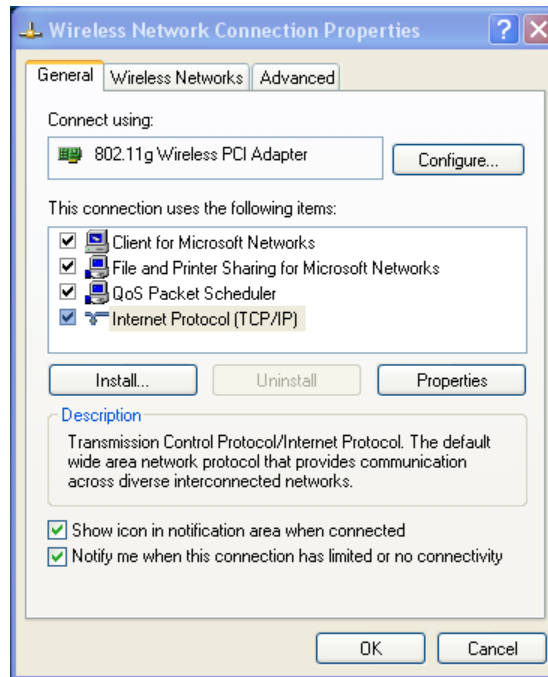


8. To establish an ad hoc network with a wireless handheld, the PC must be set to a specific IP address.

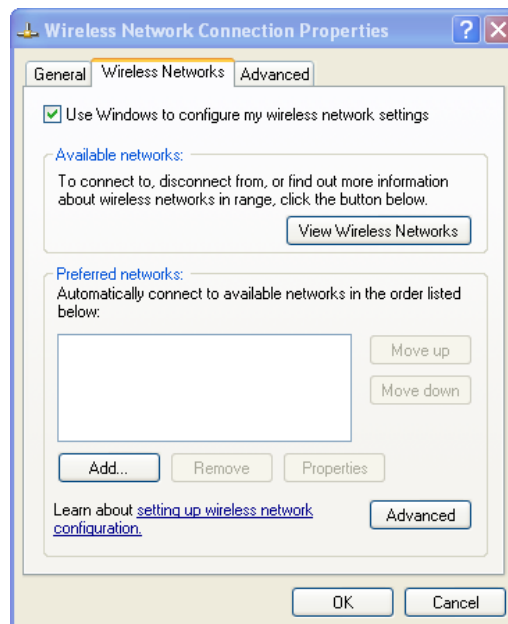
- Select **Use the following IP Address**. If the **Use the following IP Address** radio button is already selected, record the IP Address, Subnet Mask, and Default Gateway already listed there. This will allow you the option of restoring these settings once the configuration process is complete.
 - Type **192.168.3.100** in the IP address box and press **Tab**. The Subnet mask will automatically populate and the “Default gateway:” should be left blank (as shown below).



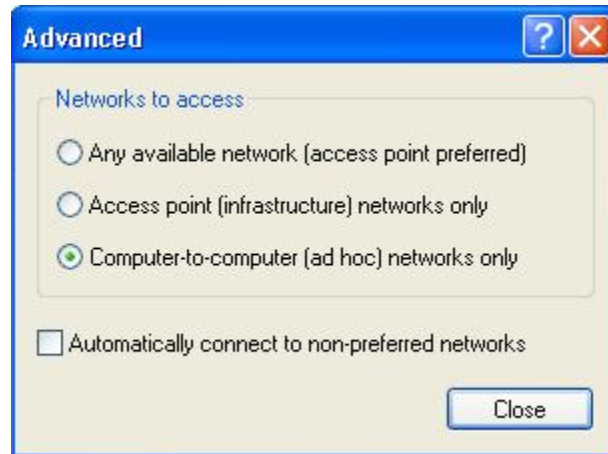
9. Click **OK**, close all windows, and return to the desktop. The PC is now configured for the next step in creating the ad hoc network.
10. Disconnect your PC from any hardwired networks.
11. From the **Start** menu, select **Settings** → **Control Panel**.
12. Click **Network and Internet Connections** → **Network Connections**. Right click on the **Wireless Network Connection** icon, and click **Properties**. The following window will appear.



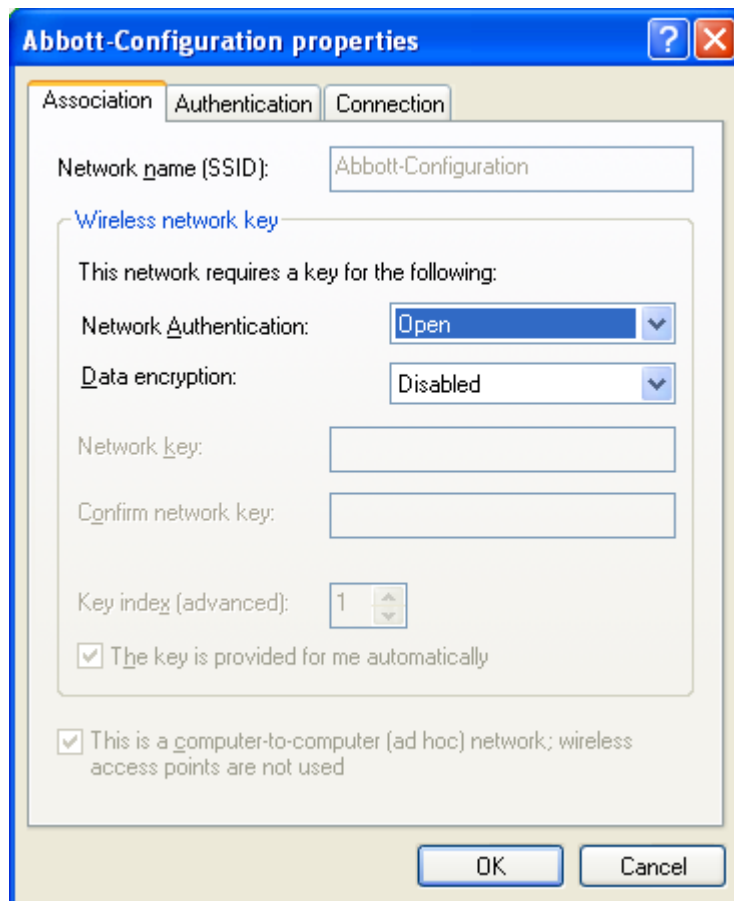
13. Click the **Wireless Networks** tab. Check the box next to “Use Windows to configure my wireless network settings” and click the **Advanced** button.



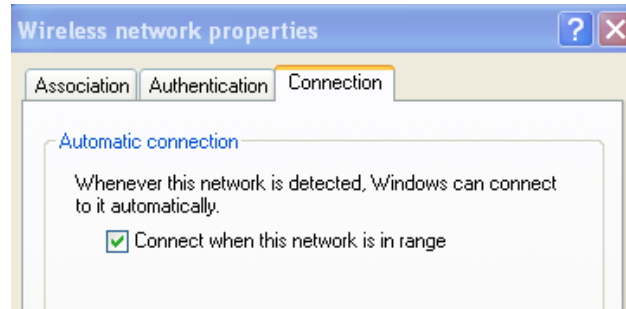
14. Select the **Computer-to-computer (ad hoc) networks only** radio button and click **Close**.



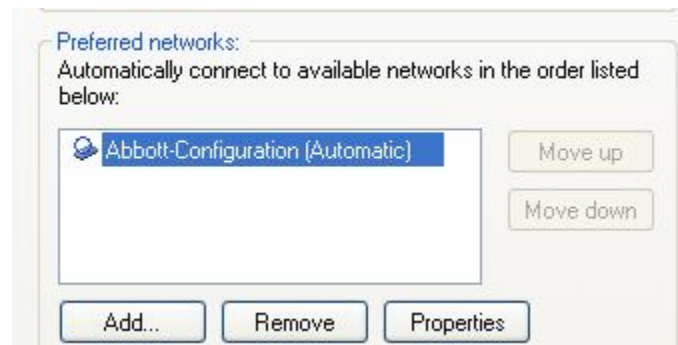
15. Under the “Preferred networks” section, click **Add...** Enter the SSID of the network exactly as follows: **Abbott-Configuration**. “Network Authentication:” should be **Open** and “Data Encryption:” should be **Disabled**.



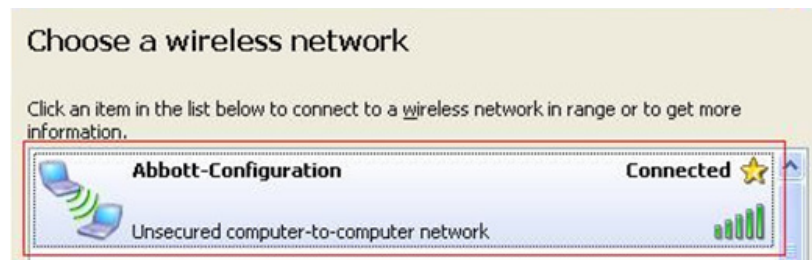
16. Click the **Connection** tab. Under the “Automatic connection” section, check the “Connect when this network is in range” box and click **OK**. If the “Wireless Network Connection” box appears, click **Continue Anyway**; otherwise, proceed to **Step 17**.



17. Click the **Wireless Network** tab. In the “Preferred networks:” section of the **Wireless Networks** tab, select the “Abbott-Configuration” network listing and move it to the top by clicking the **Move up** button if necessary. Click **OK**.



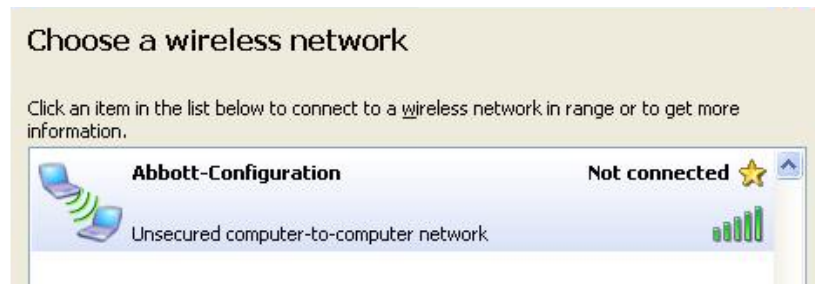
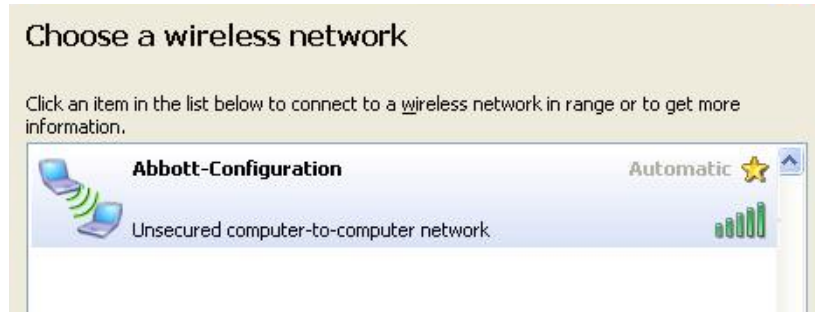
18. 18A. In order to force the connection, perform **Steps 4** through **10** of **SECTION 5**. Double click on the **Wireless Network Connection** icon. Locate the “Abbott-Configuration” wireless network in the list of wireless devices that appears. The “Connected” network state is the desired state. If this appears, proceed to **Step 19**.



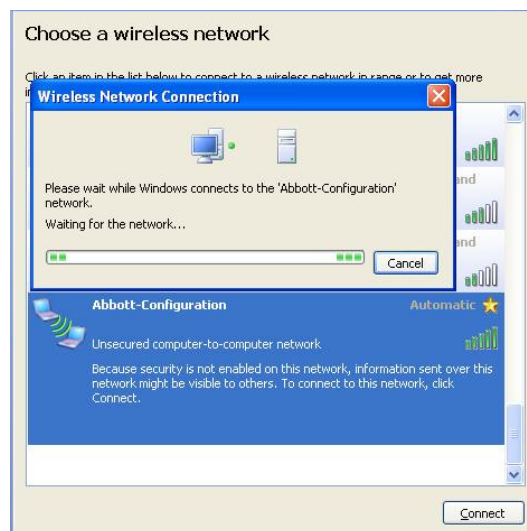
Note 18.1: If the “Abbott-Configuration” does not show it to be in the “Connected” network

state, continue to **Step 18B** to force the connection.

18B. If either of the two following network states appears, double click on the “Abbott-Configuration” network box to establish the ad hoc network, then proceed to **Step 18C**.



18C. The following dialog box will then appear. In order to force the connection, perform **Steps 4 through 10** in **SECTION 5**.



19. The “Abbott-Configuration” ad hoc wireless network is ready for communication with the analyzer when the network state changes to “Connected”.
20. Proceed to **SECTION 4** for instructions on using the i-STAT 1 Wireless Setup Utility for Configuration.

SECTION 4: Using the i-STAT 1 Wireless Setup Utility for Configuration

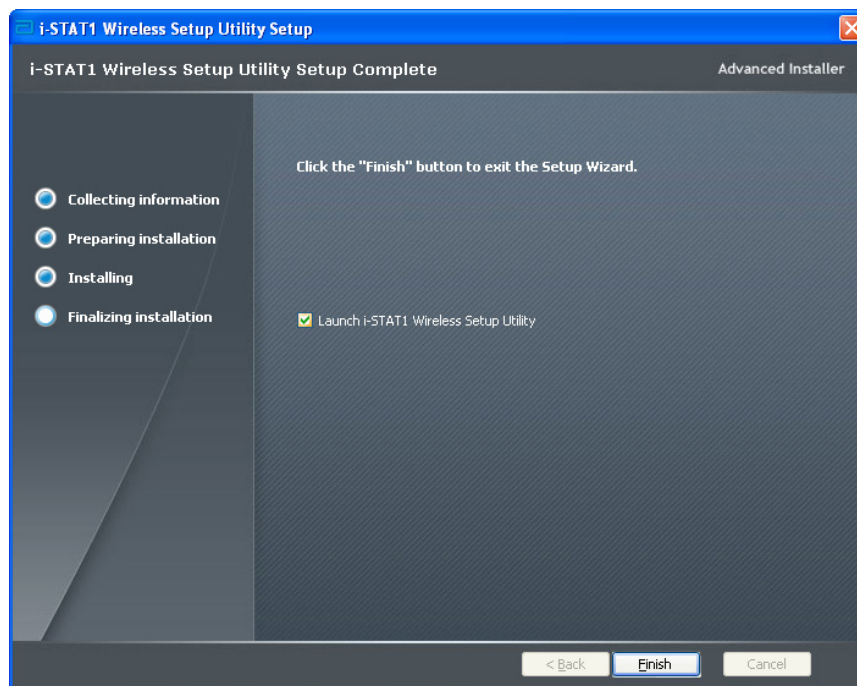
You can download the software file from the Abbott Point of Care Website or use the Wireless Setup Utility CD-ROM. Please select the corresponding instructions:

Caution: Only one analyzer can be configured at a time.

Caution: The ad hoc network must be shut down once the analyzer configuration process is complete in order to avoid accidental reprogramming of additional analyzers.

Abbott Point of Care Website Download Instructions

1. Close all open programs on the computer.
2. Navigate to www.pointofcare.abbott, Go to Support > Product Software > Wireless Configuration > Access Software
3. Under the “Step 2: Download Wireless Configuration Utility v2.0” section, click on “Download Wireless Configuration Utility”.
4. When the dialog box appears, choose **Run**. The Utility Setup Screen will then appear.
5. Follow the instruction steps for the Installation Wizard.
 - Read and accept the terms and license agreement.
 - Use the default directories that appear during the installation process.



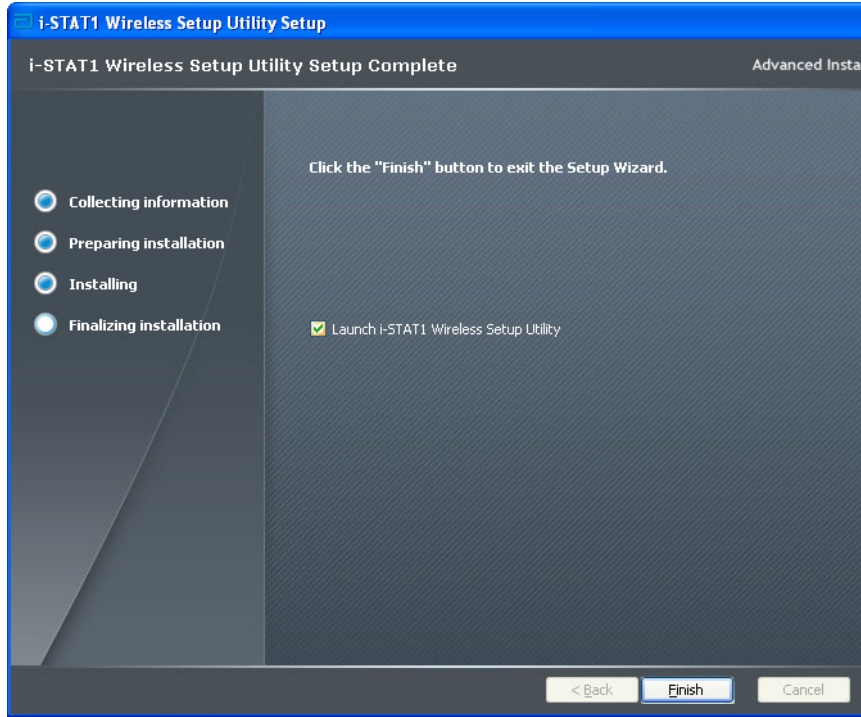
6. When the installation is complete, check the **Launch i-STAT 1 Wireless Setup Utility** and then select **Finish**. The message “i-STAT 1 Wireless Setup Utility has been installed successfully” will appear and the i-STAT 1 Wireless Setup Utility screen will automatically open.

Wireless Utility CD-ROM Installation Instructions

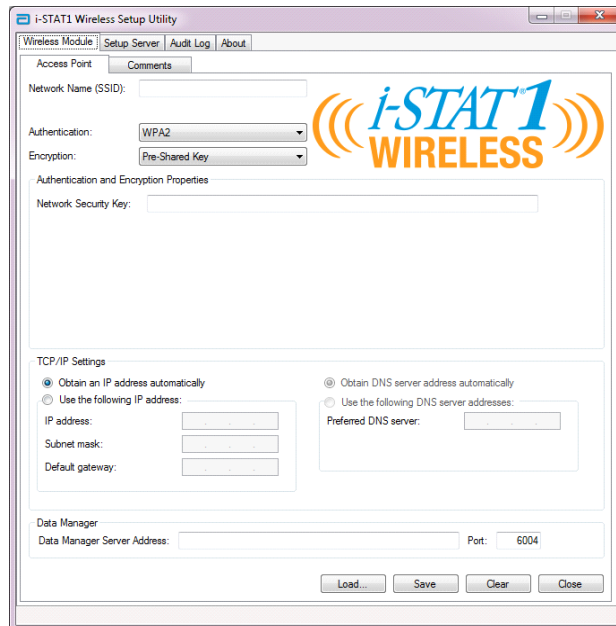
1. Close all open programs on the computer.
2. Insert the i-STAT 1 Wireless Setup Utility CD-ROM into the CD-ROM drive of the PC being

used for configuration.

- Use **My Computer** or **Windows Explorer** to access the CD-ROM drive. Double click on **setup.exe**. The “Utility Setup” screen will then appear.
3. Follow the instruction steps for the Installation Wizard.
- Read and accept the terms and license agreement.
 - Use the default directories that appear during the installation process.



4. When the installation is complete, check the **Launch i-STAT 1 Wireless Setup Utility** and then select **Finish**. The message “i-STAT 1 Wireless Setup Utility has been installed successfully” will appear and the i-STAT 1 Wireless Setup Utility screen will automatically open.



The i-STAT 1 Wireless Setup Utility Screen contains 4 tabs.

- **Wireless Module:** This tab contains two sub-tabs:
 - **Access Point:** the tab used when entering the Network Name, Authentication and Encryption type information, TCP/IP settings, and Data Manager Server IP information for the analyzer to be configured.
 - **Comments:** the tab used when entering optional hospital contact information. (This information will not be transmitted to the analyzer but will be saved as part of the configuration profile.)
- **Setup Server:** this tab is used to control the transmission of the configuration profile to the analyzer, to enable a firmware upgrade, and to view messages indicating the progress of the setup communication with the analyzer.
- **Audit Log:** this tab captures interaction information with the Setup Utility. For example, did the analyzer receive the configuration, the firmware, or both?
- **About:** this tab displays the Utility's version and copyright information.

5. If you are configuring an analyzer using a previously saved configuration profile, click on **Load** at the bottom of the screen, select the location of the saved profile, and click **Open**. Proceed directly to **SECTION 5, Step 1** below. If not using an existing configuration profile, proceed to **Step 6**.

Note 5.1: For security purposes, network security keys are never saved with the configuration file.

Note 5.2: The Network Name (SSID) cannot contain the following character: , (comma)

6. In the **Access Point** tab, enter the Network Name (SSID), Authentication type, and Encryption type for the WLAN to which you would like your analyzer configured for wireless transmission. Complete any Authentication and Encryption Prompts that appear.

Note 6.1: See Appendix 2 for a current listing of the Authentication and Encryption type selection options.

Note 6.2: For demonstration purposes, the following information was entered:

Network Name: Test_SSID_5

Authentication: WPA

Encryption: Pre-Shared Key

Network Security Key: Test_Security_Key_5

The screenshot shows the 'Access Point' configuration screen. At the top, there are two tabs: 'Access Point' (selected) and 'Comments'. Below the tabs, there are four input fields: 'Network Name (SSID):' with the value 'Test_SSID_5', 'Authentication:' with a dropdown menu set to 'WPA', 'Encryption:' with a dropdown menu set to 'Pre-Shared Key', and 'Network Security Key:' with the value 'Test_Security_Key_5'. A blue header 'Authentication and Encryption Properties' is visible above the Network Security Key field.

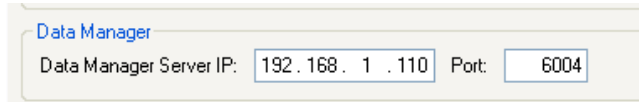
7. In the "TCP/IP Setting" section, select one of the two options for assigning the IP address of

the analyzer being configured:

- If you want to use the DHCP server, select **Obtain IP address automatically** (Default Setting).
- If you want to configure your analyzer with a static IP address, select **Use the following IP address**. If this option is selected, the user must then enter the IP Address, Subnet Mask, and Default Gateway assigned to the analyzer being configured.

8. In the “Data Manager” section, enter the **Data Manager Server IP address** to indicate the IP address to which the i-STAT results should be sent.

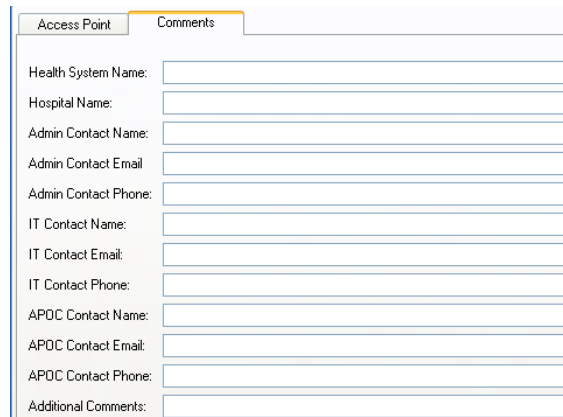
Note 8.1: For demonstration purposes, the following information was entered into the text box Data Manager Server IP: **192.168.1.110**.



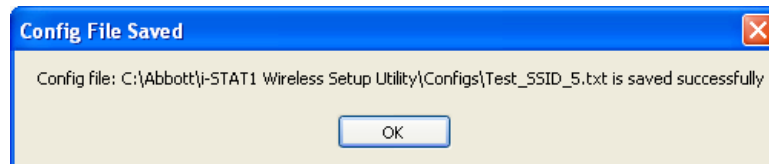
9. The default communication port for i-STAT 1 analyzers is port 6004. Do not modify this setting unless you have modified it in your Data Manager.

10. **Optional:** Click on the **Comments** tab and enter any desired contact information.

Note 10.1: The information entered in the **Comments** tab does not get transmitted to the analyzer. However, it does become part of the saved configuration file.



11. **Optional:** If this configuration is intended to be used again later, click **Save**. If it is not, proceed directly to **SECTION 5**. In the “Save Configuration File...” dialog box that appears, choose a location for the file to be stored, assign a File Name and type it in the text box, and then click **Save**. The i-STAT 1 Wireless Setup Utility will confirm that the file is saved in the selected location.

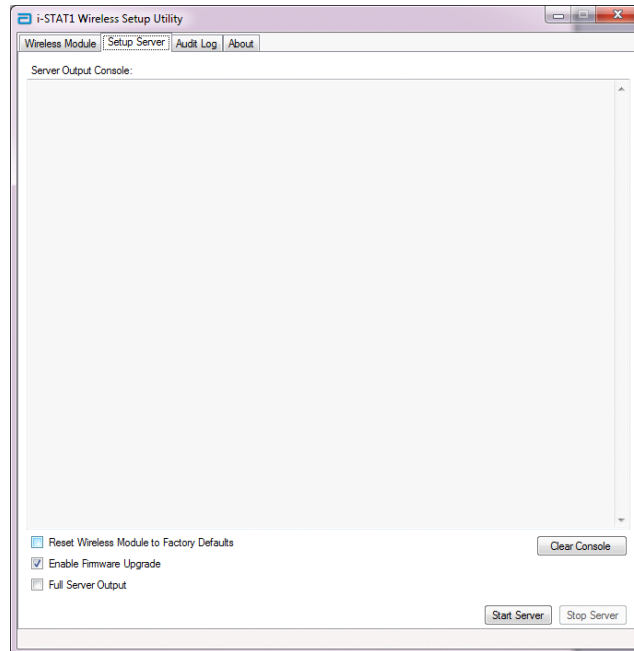


Note 11.1: For security purposes, network security keys are never saved with the configuration file.

12. Click **OK**. The i-STAT 1 Wireless Setup Utility is now ready to configure the wireless analyzer.

SECTION 5: Transferring the Configuration to the Wireless Analyzer OTA (Over-the-Air)

1. With the i-STAT 1 Wireless Setup Utility still open, click on the **Setup Server** tab at the top of the screen.



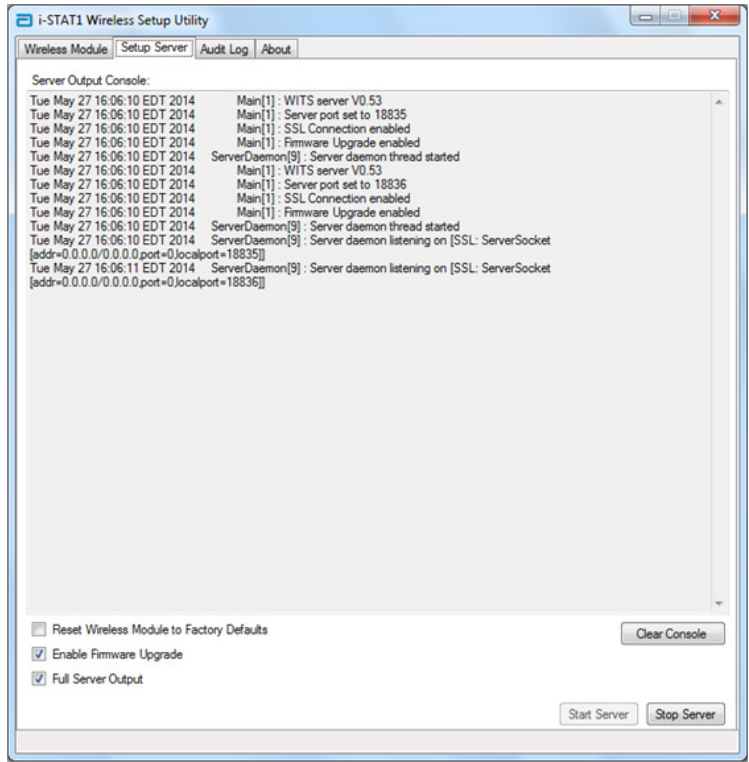
There are 3 check boxes at the bottom of the screen.

- **Reset Wireless Module to Factory Defaults:** this option may be selected in order to clear the facility's network configuration settings before returning the analyzer to Abbott Point of Care for replacement.
- **Enable Firmware Upgrade:** if the i-STAT 1 Wireless Setup Utility CD-ROM contains a newer version of firmware, users should choose this option.

Note 1.1: Analyzers containing **Wireless Module FCC ID: YOPGS1500M (Firmware: GEXPSX.X.X/MCUX.X)** will not have Over-the-Air (OTA) update capability.

- **Full Server Output:** this option adds output information about communication with the analyzer during the setup process. It is recommended to turn this option **ON** to have full view of the configuration process.
2. Click **Start Server**. Messages will appear in the "Server Output Console" window to indicate

the progress of the download of the configuration profile to the analyzer.



3. The i-STAT 1 Wireless Setup Utility is now ready to communicate with the i-STAT 1 Wireless analyzer.

4. Press the **On/Off** key on the i-STAT 1 Wireless analyzer.

CAUTION: Ensure that only one analyzer is powered on at a time for configuration purposes.

CAUTION: Ensure that only one computer is configured with an ad hoc network named “Abbott-Configuration”.

CAUTION: It is recommended that you do not perform software updates on the analyzer while the i-STAT 1 Wireless Setup Utility is running.

5. Press **Menu**.

```
16:12 08MAR10
Administration Menu
1-Analyzer Status
2-Data Review
3-Quality Tests
4-Customization
5-Set Clock
6-Transmit Data
7-Utility
8-Wireless
```

6. Press **8-Wireless**.

```
Initializing
Wireless
Module
...

1 - Cancel
```

Note 6.1: Analyzer must remain at least 20 cm (approx. 8 inches) from the body (head and torso) when the radio is on. The radio is on

- whenever the analyzer is transmitting,
- when an operator is using the Wireless Utility Menu, and
- during the 2 minutes following a test cycle.

7. Press **1 - Cancel** in the Initializing Wireless Module screen. The Wireless Menu screen will appear.

```
Wireless Menu
1-View Setup
  -Ping Server
  -Test Server
4-Reset
5-Receive Setup
-----
      Status
State: Not Assoc.
Signal: -----
      -----
      SNR: -----
```

8. Press **5-Receive Setup**.

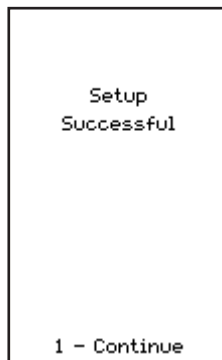
9. Enter your Password at the prompt. If your facility does not have a Password, press **ENT**.



10. When “Waiting for Setup” appears on the analyzer display, the i-STAT 1 Wireless Setup Utility will be sending data via the ad hoc network.



11. Once “Setup Successful” appears on the analyzer display, return to the Wireless menu by pressing **1 - Continue**.



If additional analyzers need to be configured:

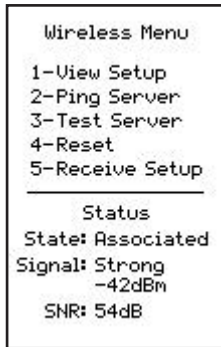
- If using the same configuration profile that was just used to configure the previous analyzer, turn off the analyzer that was just configured and return to **SECTION 5, Step 1** to configure the next analyzer.
- If using a new profile to configure the next analyzer, turn off the analyzer that was just configured and return to **SECTION 4, Step 4** to configure the next analyzer.

12. On the PC desktop, select **Stop Server** in the i-STAT 1 Wireless Setup Utility.

13. Close the i-STAT 1 Wireless Setup Utility Program and all associated folders on the PC desktop.

14. To check that your analyzer is properly connection to your WLAN, press **4-Reset** on the Wireless Menu to reset the module and connect to the network. Once the “Reset Successful” appears on the analyzer display, return to the Wireless Menu by pressing **1-Continue**. Confirm that the “State” line towards the bottom of the Wireless Menu displays “Associated”. Once associated, proceed to step 15.

If the analyzer has been turned off or the analyzer is no longer displaying the Wireless Menu, press **Menu** to access the Administration Menu. Press **8-Wireless** on the Administration Menu and wait for the Wireless Module to initialize. Confirm that the “State” line towards the bottom of the Wireless Menu displays “Associated”. Once associated, proceed to step 15.



Note 14.1: For analyzers containing **Wireless Module FCC ID: YOPGS1500M (Firmware: GEXPSX.X.X/MCUX.X)**, SNR is not available. The SNR field will display “SNR: --dB”.

15. Press **1-View Setup** and verify that all settings have been captured correctly.
16. To check if the analyzer is properly connected to the Data Manager and can transmit results, press **3-Test Server**. The following screen will appear.



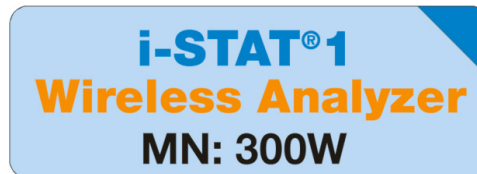
17. Upon successful connection to the Data Manager, the following screen will appear.



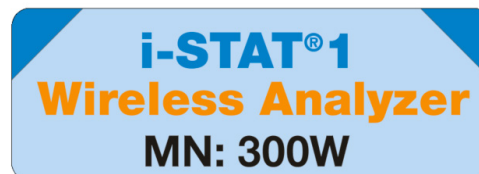
APPENDIX 1: i-STAT 1 WIRELESS ANALYZER LABELS

Note: Pictured below are the different labels that the i-STAT 1 Wireless Analyzer may have. This label can be found on the back of the analyzer. Analyzers whose label contains a triangle in the upper right corner are referred to as having **Wireless Module FCC ID: PI405W (Firmware: 6.5.X.X/X.X)**, where X is \geq one digit). Analyzers whose label contains two blue triangles, one in each of the upper corners, are referred to as having **Wireless Module FCC ID: YOPGS1500M without SHA-256 support (Firmware: GEXPSX.X.X/MCUX.X)**. Analyzers whose label contains two orange triangles, one in each of the upper corners, are referred to as having **Wireless Module FCC ID: YOPGS1500M with SHA-256 support (Firmware: GEXPSX.X.X/MCUX.X)**. Analyzers whose label contains one orange triangle in the upper left corner and one blue triangle in the upper right corner, are referred to as having **Wireless Module FCC ID: YOPGS1500M with SHA-256 support and wireless security update 2018 (Firmware: GEXPSX.X.X/MCUX.X)**.

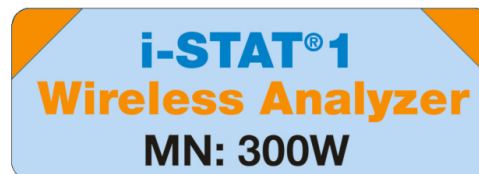
**Wireless Module FCC ID: PI405W
(Firmware: 6.5.X.X/X.X)**



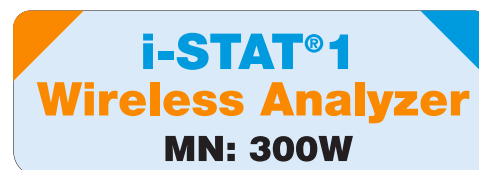
**Wireless Module FCC ID: YOPGS1500M without SHA-256 support
(Firmware: GEXPSX.X.X/MCUX.X)**



**Wireless Module FCC ID: YOPGS1500M with SHA-256 support
(Firmware: GEXPSX.X.X/MCUX.X)**



**Wireless Module FCC ID: YOPGS1500M with SHA-256 support and wireless security
update 2018 (Firmware: GEXPSX.X.X/MCUX.X)**



APPENDIX 2: AUTHENTICATION, ENCRYPTION TYPE, AND DISPLAY SELECTION OPTIONS

Authentication	OPEN	SHARED	WPA	WPA	WPA2	WPA2
Encryption	WEP	WEP	Pre-Shared Key	EAP-TTLS, EAP-TLS*, PEAP-MSCHAP	Pre-Shared Key	EAP-TTLS, EAP-TLS*, PEAP-MSCHAP
Wireless Module (FCC ID: PI405W) Display	WEP OPEN	SHARED WEP	WPA I PSK	WPA I ENTERPRISE	WPA II PSK	WPA II ENTERPRISE
Wireless Module (FCC ID: YOPGS1500M) Display	OPEN	SHARED	WPA	WPA	WPA2	WPA2

*For the EAP-TLS Encryption type, a Certificate Authority (referred to as CA Certificate in the Wireless Setup Utility) is required in addition to a Client Certificate and Client Private Key.

APPENDIX 3: REQUIREMENTS WHEN USING THE WIRELESS ANALYZER WITH NETWORK CERTIFICATES

¹ Certificate Validation for Wireless Analyzers with Wireless Module FCC ID: PI405W

Authentication	Encryption Type	Certificates	Wireless Module FCC ID: PI405W		Wireless Module FCC ID: YOPGS1500M		Stored In
			Required for Connection?	Validity Date checked?	Required for Connection?	Validity Date checked?	
WPA and WPA2	EAP-TLS	Server Certificate	Yes	No ¹	Yes	Yes ²	Authentication Server
		Client Certificate	Yes	No ¹	Yes	Yes ²	Wireless Analyzer (via the Wireless Setup Utility)
		CA Certificate	Optional	No ¹	Yes	Yes ²	
WPA and WPA2	EAP-TTLS	Server Certificate	Yes	No ¹	Yes	Yes ²	Authentication Server
		Client Certificate	Yes	No ¹	Yes	Yes ²	Wireless Analyzer (via the Wireless Setup Utility)
		CA Certificate	Optional	No ¹	Optional	Yes ²	
WPA and WPA2	PEAP-MSCHAP	Server Certificate	Yes	No ¹	Yes	Yes ²	Authentication Server
		CA Certificate	Optional	No ¹	Optional	Yes ²	Wireless Analyzer (via the Wireless Setup Utility)

The Wireless Module does not validate the validity date of certificates during wireless network association.

² Certificate Validation for Wireless Analyzers with Wireless Module FCC ID: YOPGS1500M

The Wireless Module validates the date of certificates during wireless network association; therefore, up-to-date certificates are required when using EAP-TLS, EAP-TTLS, and PEAP-MSCHAP encryption. This requirement applies to both the certificate that is loaded into the Wireless Analyzer and the certificate in the authentication server. Therefore, the use of expired certificates will prevent association between the Wireless Analyzer and the wireless network.

The Wireless Module checks the validity date of certificates during each association attempt against a timestamp that was generated at the time of Wireless Module configuration. The timestamp generated at the time of Wireless Module configuration is the PC system clock date and time. Therefore, the Wireless Module must be configured using the i-STAT 1 Wireless Setup Utility at a date and time within the start date and expiration date of the certificates. In addition, the Wireless Module must be reset to factory defaults and reconfigured using the i-STAT 1 Wireless Setup Utility whenever certificates are updated regardless of whether or not changes are made to wireless network settings. Failure to reset and reconfigure the Wireless Module with a timestamp that is between the certificate validity start and expiration dates will prevent association between the Wireless Analyzer and the wireless network.

APPENDIX 4: SETTING UP THE AD HOC NETWORK AND CONFIGURING THE WIRELESS ANALYZER WITH WINDOWS 7 QUICK REFERENCE

Download the latest version of the Wireless Setup Utility from the Abbott Point of Care website:
<http://www.pointofcare.abbott>

1. Set Wireless Network Connection to Static IP for i-STAT Wireless Analyzer to PC Communication
 - a. Right click on wireless icon on the bottom taskbar.
 - b. Click on “Open Network and Sharing Center” (at bottom).
 - c. Click on “Manage wireless networks” (top left).
 - d. Click on “Adapter properties”.
 - e. Select “Internet Protocol Version 4 (TCP/IPv4)”.
 - f. Click on “Properties”.
 - g. Select “Use the following IP address”.
 - h. Enter IP address “192.168.3.100”.
 - i. Press the Tab key. The subnet mask populates automatically (255.255.255.0).
 - j. Click “OK” and exit out of the “Wireless Network Connection Properties” window.

2. Set up the Ad Hoc Network called “Abbott-Configuration”
 - a. On the “Manage Wireless Networks” window, click “Add”. Choose “Create an ad hoc network” and create ad hoc network with network name “Abbott-Configuration” (type exactly as shown).
 - b. Select “No Authentication” for Security Type (dropdown).
 - c. Select “Save this Network”.
 - d. Click “Next”.
 - e. Click “Close”.
 - f. Verify “Abbott-Configuration” network appears on the wireless network list.

3. Set up the i-STAT 1 Wireless Setup Utility

On the i-STAT 1 Wireless Setup Utility Wireless Module tab,

 - a. Network Name (SSID) - Customer Network
 - b. Authentication (use dropdown) - Customer Network
 - c. Encryption (use dropdown) - Customer Network
 - d. Network Security Key or user name/password - Customer Network
 - e. TCP/IP Settings - Mark “Obtain an IP address automatically” if using DHCP or “Use the following IP address” if using Static IP.
If using DHCP, reserve the IP Address for the Wireless Analyzer.
 - f. Data Manager Server Address - IP Address of i-STAT CDS or DE.
 - g. Click “Save” to save configuration to PC. The network key will not be saved.

On the i-STAT 1 Wireless Setup Utility Setup Server tab,

- a. Check box “Enable Firmware Upgrade”.
- b. Check box “Full Server Output”.

4. Follow instructions to configure wireless i-STAT handheld
 - a. Make sure that the wireless functionality is enabled on the i-STAT 1 Wireless Analyzer before starting the configuration process.
 - b. Configure only one i-STAT 1 Wireless Analyzer at a time.
 - c. Configuration may take up to 5-7 minutes per device.

5. Configuring the i-STAT 1 Wireless Analyzer

On the i-STAT 1 Wireless Setup Utility Setup Server tab,

- a. Click “Start Server”. A few lines of text will populate the Server Output Console.

On the Wireless Analyzer,

- a. Power ON > MENU > 8-Wireless > 1-Cancel > Wait for the wireless module to finish booting > 5-Receive Setup > Enter at Password prompt as needed > “Waiting for Setup” appears on the Wireless Analyzer display.
- b. Check status of “Abbott-Configuration” network on the PC. See if connecting or double-click to force the connection.
- c. Wireless Analyzer states “Setup Successful” or “Setup Failed”.
- d. If successful setup occurs, select 1-Continue > 4-Reset to connect to wireless network.
- e. If successful association occurs, select 2-Ping Server then 3-Test Server on the Wireless Menu to verify connection to server.
 - If Wireless Analyzer fails to associate, ping server, or test server, check the network settings that have been entered into the Wireless Setup Utility.

6. Test Communication

- a. Run Electronic Simulator.
- b. Transmit Results.
- c. Verify results appear in Data Manager.

7. When all Wireless Analyzers have been configured, remember to reset PC wireless network adapter back to “Obtain an IP address automatically” in the “Internet Protocol Version 4 (TCP/IPv4) Properties” window. Refer to step 1 on how to access the “Internet Protocol Version 4 (TCP/IPv4) Properties” window.

APPENDIX 5:i-STAT Wireless Menu Tree (when the Wireless feature is enabled)

Test Menu	Administration Menu	
1-Last Result 2- STAT Cartridge	1-Analyzer Status	Temp Pressure Battery Uses Serial CLEW Version Custom StoredRecords Total Unsent
	2-Data Review	1-Patient 2-Control 3-Proficiency 4-Cal Ver 5-Simulator 6-All 7-List
	3-Quality Tests	1-Control 2-Proficiency 3-Cal Ver 4-Simulator
	4-Customization	1-View <ul style="list-style-type: none"> 1-Analyzer 2-IDEntry 3-PatientTests 4QCTests 5Results
		2- Change <ul style="list-style-type: none"> 1-Analyzer 2-IDEntry 3-PatientTests 4QCTests 5Results 6Password 7-Restore Factory Settings
	5-Set Clock	
	6-Transmit Data	1-Most Recent 2-This Month 3-Last Month 4-All 5-Unsent
	7-Utility	1-Send Software 2-Clear Memory 3-Receive Software

8-Wireless	Wireless Menu		
	1-View Setup	SSID Name DHCP Analyzer IP Subnet Mask Default Gateway Page ➡	Security Server IP Server Port DNS Mac Address Firmware ← Page
	2-Ping Server 3-Test Server 4-Reset 5-Receive Setup Status State Signal -----		

i-STAT 1 Analyzer customization options for language are: English, Japanese, German, Italian, Dutch, Spanish, French, Swedish, Portuguese, Danish, and Finnish

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