

i-STAT TECHNICAL BULLETIN

For the i-STAT 1 Wireless Analyzer
FCC ID: 2AAEX-SDMAC

SCOPE

This Technical Bulletin pertains to analyzers with the following label¹:

Wireless Module FCC ID: 2AAEX-SDMAC



OVERVIEW

This Technical Bulletin describes the following procedures used to configure and use the i-STAT 1 Wireless Analyzer:

- Using the AlinIQ NCi for Configuration
- Instructions for transferring configuration to the wireless analyzer wirelessly
- Testing i-STAT cartridges using the i-STAT 1 Wireless Analyzer
- Customizing the handheld to enable the Wireless functionality
- Transmitting data wirelessly to the Data Manager
- Using the Wireless Menu to:
 - View the Wireless Settings and
 - Test the Wireless Connections

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

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 e-mail at: techsvc@apoc.abbott.com.

¹ For i-STAT 1 Wireless Analyzers with labels and FCC ID other than that listed above, refer to the following Technical Bulletins:

- "Procedure for Using the i-STAT 1 Wireless Analyzer" (Art: 726025-00)
- "i-STAT 1 Wireless Analyzer Specifications" (Art: 728644-00)
- "Configuring Wireless Settings in an i-STAT Wireless Analyzer" (Art: 726066-00)

The FCC ID is listed on the i-STAT 1 Wireless Analyzer label. See Art 726066-00 for additional instructions on how to identify the analyzer FCC ID.

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Section 1: Procedure for Using the i-STAT 1 Wireless Analyzer FCC ID: 2AAEX-SDMAC

TESTING i-STAT CARTRIDGES USING THE i-STAT 1 WIRELESS ANALYZER

- The i-STAT 1 Wireless Analyzer has the capability to run all current i-STAT cartridges.
- The procedure for testing i-STAT cartridges using the i-STAT 1 Wireless Analyzer is identical to that used by the i-STAT 1 Analyzer (Model 300). Please refer to the i-STAT 1 System Manual for full details on cartridge testing.
- Items needed for the method of powering the handheld are the same as for the i-STAT 1 Analyzer: two 9-volt lithium batteries or a pair of rechargeable batteries purchased only from Abbott Point of Care. However, the user should expect an approximate 30% reduction in the number of cartridges run per battery charge due to the use of wireless downloads. **Note:** the 30% reduction is an approximation based upon a use model of transmitting results wirelessly following each cartridge run.

CUSTOMIZING THE i-STAT 1 WIRELESS ANALYZER TO ENABLE WIRELESS FUNCTIONALITY

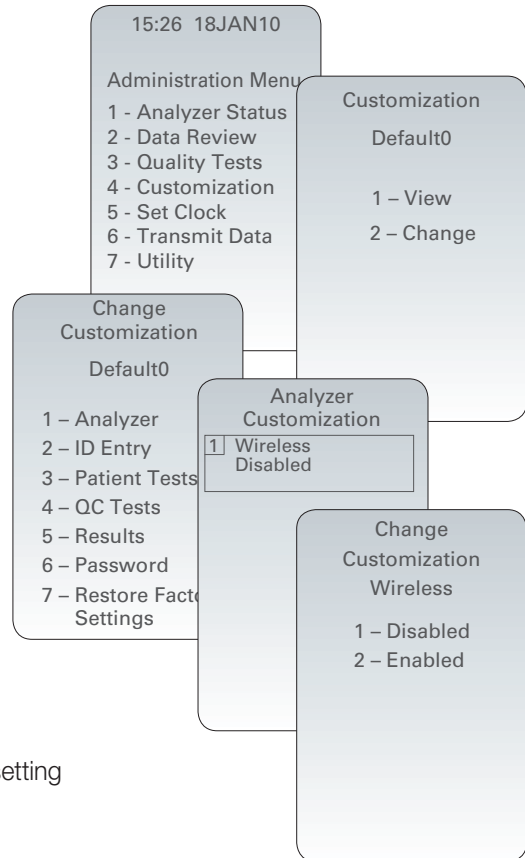
Before configuring the handheld to perform wireless transmissions, the handheld must be customized to enable the Wireless functionality.

The procedure to customize the handheld varies, depending upon whether or not the customization is being done directly using the handheld's keypad, or whether it is being done through the Customization Workspace in Central Data Station (CDS) Version 5 or i-STAT/DE.

- Users who do not have CDS Version 5 or i-STAT/DE → **Proceed to Section A.**
- Users who have CDS Version 5 → **Proceed to Section B.**
- Users who have i-STAT/DE → **Proceed to Section C.**

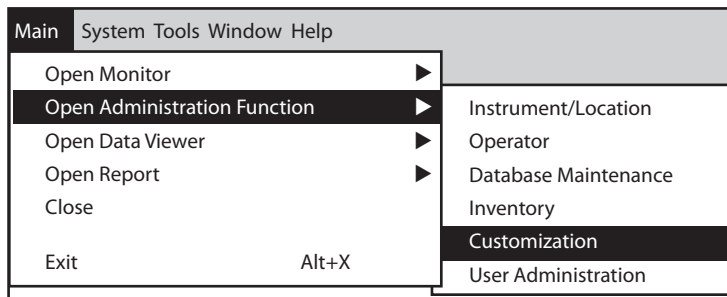
A. Customizing the Handheld to Enable the Wireless Functionality Using the Handheld Keypad

1. Press **1** to turn on the handheld.
2. Press **MENU** to change screen to **Administration Menu**.
3. Press **4** (Customization).
4. Press **2** (Change).
5. Enter password and press **ENT**, or just press **ENT** if no password is required.
6. Press **1** (Analyzer).
7. Press **→** twice.
8. Press **1** (Wireless).
9. Press **2** to change setting to **Enabled**.
10. The “Wireless” listing should now appear as **Enabled**.
11. Press **1** to turn handheld off and save the settings. (If setting is not shown as **Enabled**, return to Step 9).



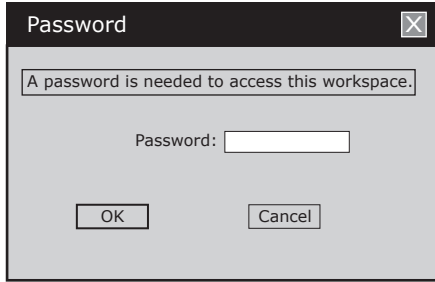
B. Customizing the Handheld to Enable Wireless Functionality Using CDS Version 5

1. Click on **Main → Open Administration Function → Customization**.

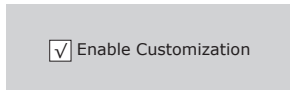


2. Type in your password and click OK. The default password is the word *istat*.

Note: Abbott Point of Care Inc. recommends changing the default password.



3. Make sure the **Enable Customization** box is checked.



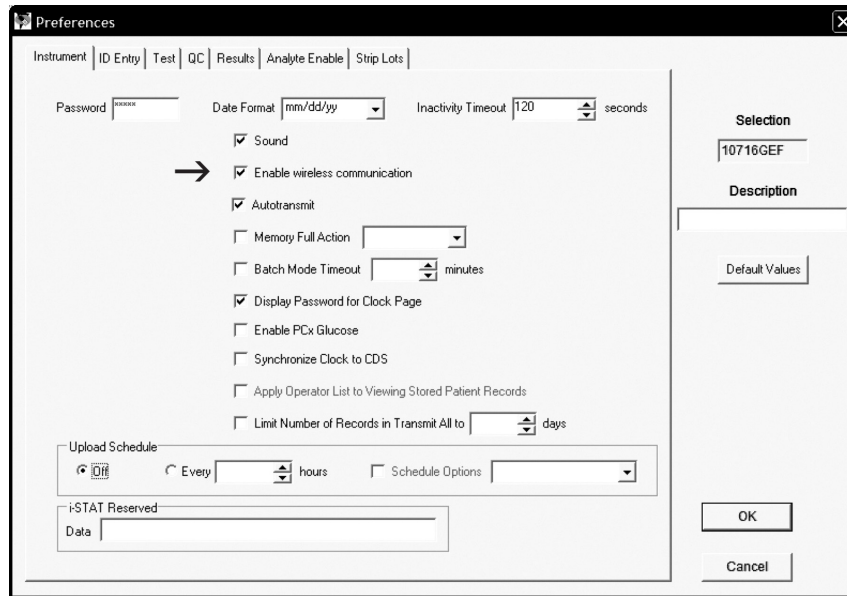
Also, make certain that the **Enable Updates** box is checked for the particular location to which this i-STAT 1 Wireless Handheld is assigned.

Location-based customization profiles:

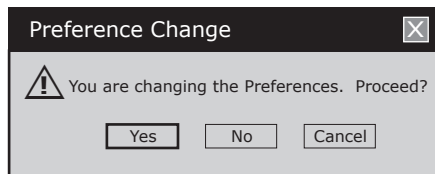
Location	Enable Updates	Use Default Profile	Update CLEW	i-STAT Analyzer CLEW	Philips BAM CLEW	Preferences	STATNotes
A_10.10.90.17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A18		DEFAULT0	CHART0
A_10.10.90.24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A18		DEFAULT0	CHART0
A_10.10.90.31	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A18		DEFAULT0	CHART0
A_10.10.90.32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A18		DEFAULT0	CHART0

4. If the location to which this Handheld is assigned has a checkmark under the **Use Default Profile** column, double click on the alphanumeric code under **Preferences** in the **Default Customization Profile** column. Otherwise, double click on the alphanumeric code under **Preferences** for the specific location to which this Handheld is assigned.

- Once the **Preferences** screen opens, click on the **Instrument** tab. Click the box to **Enable wireless communication**.



- Click **OK** and answer **YES** to the question about changing the preferences.



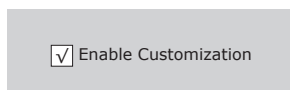
- Download the handheld to the CDS from a downloader in the location to which this handheld is assigned. This action should upload the chosen customization features into the handheld. Repeat step 7 for all handhelds from this same location to be customized. To customize handhelds from other locations for the same features, return to step 1.

C. Customizing the Handheld to Enable Wireless Functionality Using i-STAT/DE

- Access the Customization Workspace

- RALS-Plus Users:
 - For the RALS-Plus application, choose i-STAT from the drop-down menu.
 - Click on **Device Customization**.
- PrecisionWeb Users:
 - Double click on the desktop shortcut or Internet Explorer Favorites for **i-STAT Customization**.

- Make sure the **Enable Customization** box has a check mark in it.

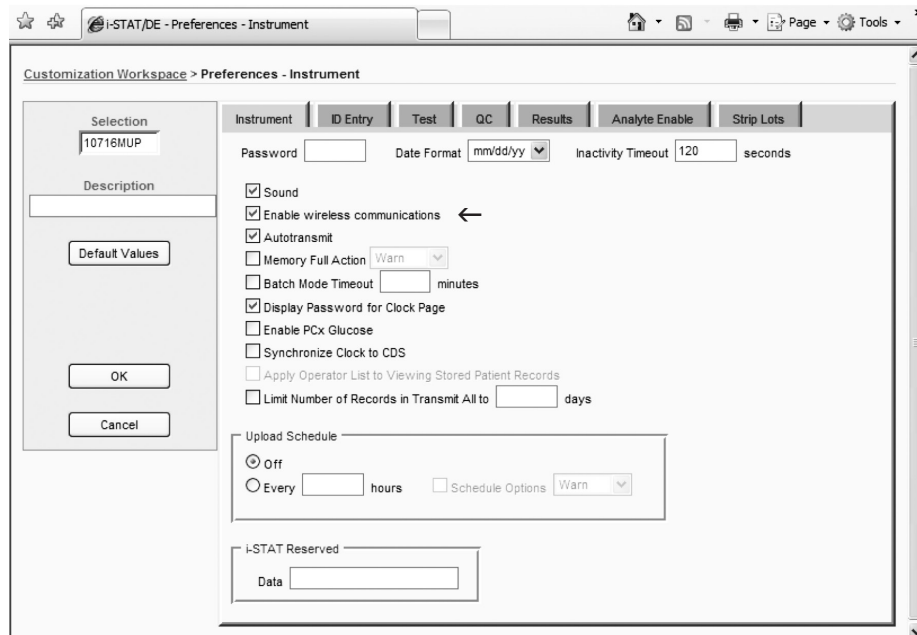


Also, make certain that the **Enable Updates** box is checked for the particular location to which this i-STAT 1 Handheld is assigned.

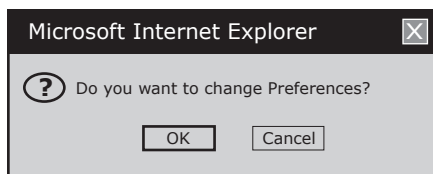
Location	Enabled
ER	<input checked="" type="checkbox"/>
Lab	<input checked="" type="checkbox"/>

3. If the location to which this handheld is assigned has a checkmark under the **Use Default Profile** column, double click on the alphanumeric code under **Preferences** in the **Default Customization Profile** column. Otherwise, double click on the alphanumeric code under **Preferences** for the specific location to which this Handheld is assigned.

4. Once the **Preferences** screen opens, click on the **Instruments** tab. Check the box to **Enable wireless communications**.



5. Click **OK** and answer **YES** to the question about changing the preferences.




6. Download the handheld to the **Data Manager** from a downloader in the location to which the handheld is assigned. This action should upload the chosen customization feature into the handheld. To customize additional handhelds from this same location, repeat step 6. To customize handhelds from other locations for the same features, return to step 1.

CONFIGURING AN i-STAT 1 WIRELESS ANALYZER

After customizing the handheld to enable the wireless functionality, the handheld must be configured to connect to the facility's WLAN. For instructions on configuring an i-STAT 1 Wireless Analyzer, see Section 2.

TRANSMITTING RESULTS TO THE DATA MANAGEMENT SYSTEM



Assuming the handheld is customized for auto-transmission, the handheld will attempt an automatic wireless download transmission under the following conditions:

1. When the handheld powers down automatically, according to its customized schedule, it will attempt to download wirelessly all unsent results immediately before the power-down.
2. If the handheld is placed in a downloader or downloader/recharger, the handheld will first attempt to download wirelessly. If it is successful, the download process is complete. If the wireless download is unsuccessful, the handheld will attempt to download using the downloader or downloader/recharger wired network connection.
3. If the user turns off the handheld by pressing , the handheld will first attempt to download all unsent results wirelessly.

Users may additionally elect to perform an on-demand (forced) transmission of results wirelessly to the data management system:

- directly following an individual test cycle using the Test Options menu, or
- using the Transmit Data menu.

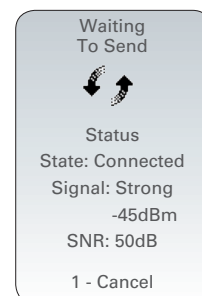
A. Transmitting Data Wirelessly following a Test Cycle Using the Test Options Menu

1. When newly generated test results appear on the handheld display, press  (Test Options).
2. Press  (Transmit Data). A **Waiting to Send** message will appear on the display screen.

Note 2.1: If the user has not transmitted results within 120 seconds after the end of a test cycle, the wireless module will power off to conserve battery power. Then, if a user initiates a transmission when the radio is off, it will need to power on and connect to the network prior to transmission.

The **State** line toward the middle of the screen may display a series of messages as shown below or indicate that it is connected.

- **Off:** wireless module is off
- **Booting:** loading software on wireless module
- **Joining:** attempting to join the network
- **Associated:** module successfully joined the network, associated with an Access Point, and has been granted permission to communicate to the network
- **Connected:** connected to the data manager

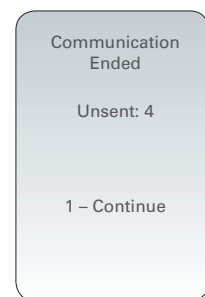
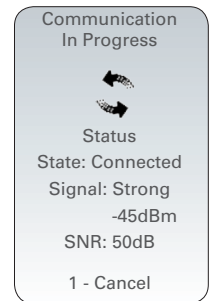


- Once the Connected state is reached, a **Communication in Progress** message will appear at the top of the screen. When this message disappears and the display returns to the Test Menu, the transmission is successful.




Note 3.1: there are two additional parameters on this page which may aid the users in troubleshooting and assessing the strength of the wireless transmission signal.

- **Signal:** indicates the strength of signal in one of three terms: **Weak, Medium** or **Strong**. Additionally, an actual numeric measurement of the signal is displayed. If users are obtaining failed transmissions when the signal strength is weak, they should re-attempt the transmission in a location that provides a signal strength of **Medium** or **Strong**.
- **SNR:** (Signal to Noise Ratio): This is a measurement of a difference between the strength of the wireless signal and the background noise level.

Note 3.2: If there are unsent results remaining in the handheld at the completion of a transmission attempt, a **Communication Ended** message will appear on the handheld indicating how many unsent results are left.

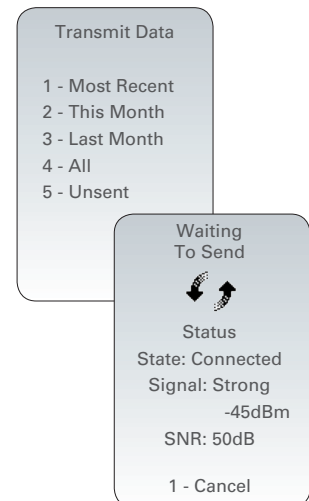


B. Transmitting Data Wirelessly Using the Transmit Data Menu

- Press  to turn on the handheld.
- Press  to change screen to Administration Menu.
- Press  (Transmit Data).
- Press the number key corresponding to the data set you would like to transmit. A **Waiting to Send** message will appear on the display screen.

The **State** line toward the middle of the screen may display a series of messages as shown below or indicate that it is connected.

- **Off:** the wireless module is off
- **Booting:** loading software on wireless module
- **Joining:** attempting to join the network
- **Associated:** module successfully joined the network, associated with an Access Point, and has been granted permission to communicate to the network
- **Connected:** connected to the data manager



5. Once the Connected state is reached, a **Communication in Progress** message will appear at the top of the screen. When this message disappears and the display returns to the Administration Menu, the transmission is successful.

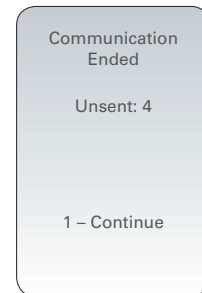
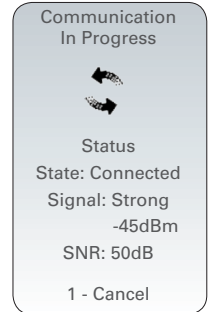
Note 5.1: there are two additional parameters on this page which may aid the users in troubleshooting and assessing the strength of the wireless transmission signal.

- **Signal:** indicates the strength of signal in one of three terms:
 - Weak
 - Medium
 - Strong

Additionally, an actual numeric measurement of the signal is displayed. If users are obtaining failed transmissions when the signal strength is weak, they should re-attempt the transmission in a location that provides a signal strength of **Medium** or **Strong**.

- **SNR:** (Signal to Noise Ratio): This is a measurement of a difference between the strength of the wireless signal and the background noise level.

Note 5.2: If there are unsent results remaining in the handheld at the completion of a transmission attempt, a **Communication Ended** message will appear on the handheld indicating how many unsent results are left.



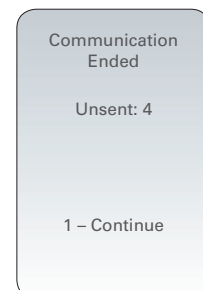
C. Transmitting Results Using the Downloader or Downloader/Recharger

To transmit results from the i-STAT 1 Wireless Analyzer Using a Downloader or DR:

1. Place handheld in Downloader or DR.
2. A **Communication in Progress** message will appear on the handheld display.
3. Do not move the handheld until the **Communication in Progress** messages disappears. Once the message disappears, the transmission is successful.

Note 3.1: When wireless is enabled and configured on an i-STAT 1 Wireless Analyzer, wireless communication will be attempted first. If wireless communication fails, wired communication will then be attempted.

Note 3.2: If there are unsent results remaining in the handheld at the completion of a transmission attempt, a **Communication Ended** message will appear on the handheld indicating how many unsent results are left.






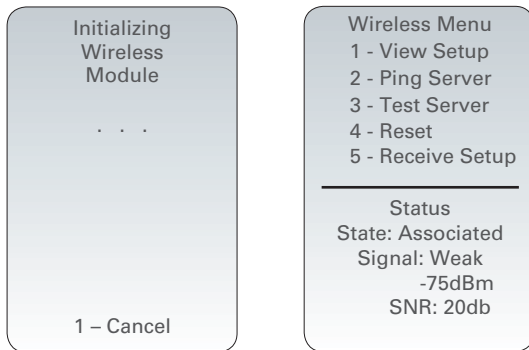
THE WIRELESS MENU


The Wireless Menu aids the user in troubleshooting unsuccessful wireless data transmission by:

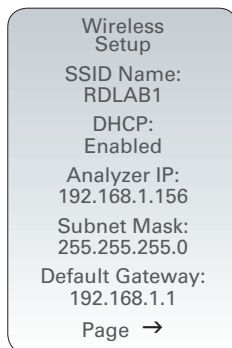
- Allowing the user to view the configuration settings for the handheld in question
- Allowing the user to ping the CDS server to verify communication between the analyzer and the server
- Allowing the user to verify the connection to the CDS server
- Allowing the user to reset the wireless module

To access the Wireless Menu:

1. Press  on the handheld.
2. Press .
3. Press  (Wireless).
4. An **Initializing Wireless Module** message will appear on the screen, followed by the Wireless Menu which has 5 options from which the user may choose.

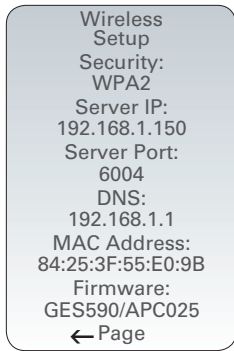


- **1 - View Setup:** Pressing  allows the user to view the following Wireless Setup parameters, separated into a list on two pages:



Page 1

- **SSID (Service Set Identifier) Name:** the name of the Wireless Network
- **DHCP (Dynamic Host Configuration Protocol):** a method for automating the assignment of IP Addresses and other networking information. There are 2 options: **Enabled** or **Disabled**
- **Analyzer IP:** the IP address to which this handheld has been configured (or assigned to by the DHCP Server)
- **Subnet Mask:** a network mask used to determine which subnet an IP Address belongs to
- **Default Gateway:** the device that passes traffic from the local subnet to devices on other subnets

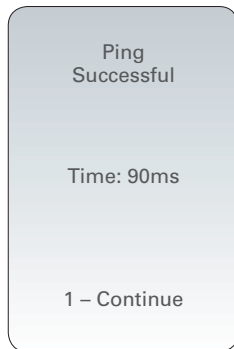
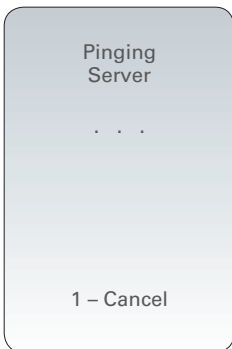


Example

Page 2

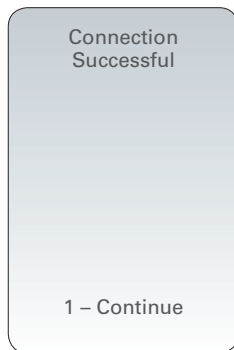
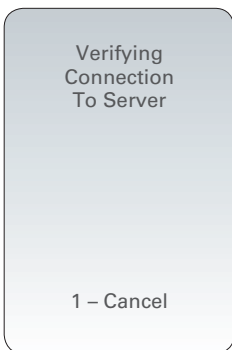
- **Security:** the authentication method for the network
- **Server IP:** the IP Address of the CDS
- **Server Port:** the TCP port assignment on the Data Manager for the i-STAT 1 handhelds
- **DNS (Domain Name Server):** server that translates domain names to IP Addresses
- **MAC Address:** MAC address of the wireless module contained in the handheld
- **Firmware:** the Firmware revision of the wireless submodule

- **2 - Ping Server:** Pressing **2** allows the user to ping the CDS server. The handheld display will indicate if the ping process was successful and will show the round-trip ping time in milliseconds. If the ping was unsuccessful, a **Ping Failed** message (with an error code) will appear.



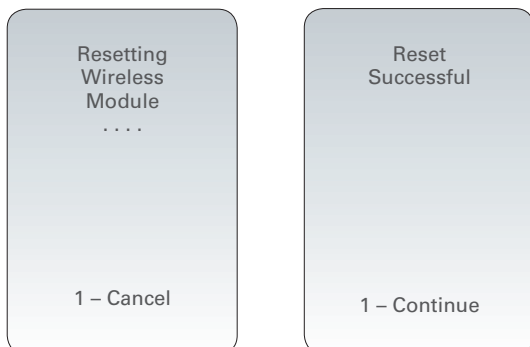
Note: Pressing **1-Continue** after the Ping Results screen navigates the user back to the Wireless Menu.

- **3 - Test Server:** Pressing **3** allows the user to verify the connection to the CDS server. A message **Connection Successful** or **Connection Failed** (with error code) will appear on the display following the test.



Note: Pressing **1-Continue** after the Test Server screen navigates the user back to the Wireless Menu.

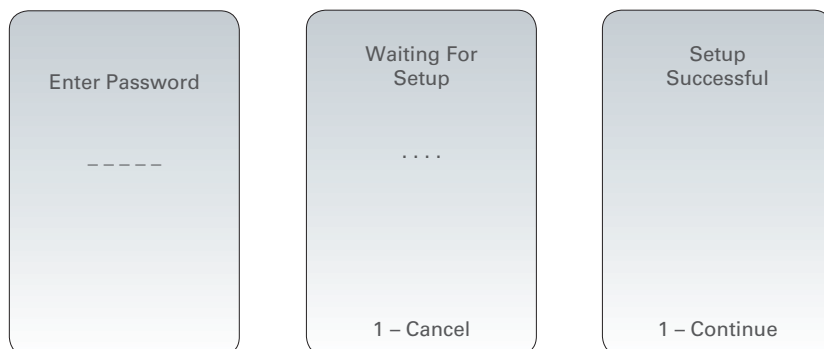
- **4 - Reset:** Pressing **4** resets the wireless module. The user will receive either a **Reset Successful** or **Reset Failed** message (with an error code) on the display. Reset powers off and powers back on the wireless module. It does not reset the settings to factory default.



Note: Pressing **1-Continue** after the Reset screen navigates the user back to the Wireless Menu.

- **5 - Receive Setup:** Pressing **5** puts the handheld in setup mode, so that the handheld can connect to the i-STAT 1 Wireless Setup Utility.

After pressing **5**, the user is asked for a password. After entering the appropriate password or pressing **ENT**, the user will see a **Waiting for Setup** screen. Once the test is complete, a **Setup Successful** or **Setup Failed** message (with an error code) will appear.



Note: Pressing **1-Continue** after the Receive Setup screen navigates the user back to the Wireless Menu.

Note 5.1: The **Receive Setup** function should only be used by IT personnel using the instructions found in Section 2.

ERROR CODE MESSAGES

Error Code Description	Wireless Module FCC ID: 2AAEX-SDMAC
Wireless module is not configured	GS000
DHCP Process Time Out	GS001
Connection to Access Point has failed	GS002, GS010
Failed to make a TCP connection to Data Manager Port 6004	GS003
Failed to complete configuration file load process	GS020
Device customization failed to enable wireless module	GS030
Failed Ping request	TIMEOUT
Network is not configured	Not applicable
No WLAN connection is available	Not applicable

Section 2: Configuring an i-STAT 1 Wireless Analyzer FCC ID: 2AAEX-SDMAC

The Network Connectivity utility for i-STAT (AlinIQ NCI) is used to configure the instrument to connect to wireless networks. The NCI utility package must be downloaded from the Abbott Point of Care website. It is best practice to load NCI onto a computer that is installed behind the healthcare facility's firewall, and that has antivirus software installed on it.

The following is an overview of the steps required to perform the configuration:

1. Download the NCI from Abbott Point of Care and install on a Windows PC.
2. Use the NCI to create Network Configuration (NC) file (with file extension .incc) that contains the network parameters and security credentials required by the instrument to connect to the facility network.
3. Upload the .incc files to the instruments.

Before beginning:

- Read this document in its entirety.
- Share this document with the IT department. Their help will be needed to:
 - define how the instrument is to connect to the network
 - define the network to which the instruments are to connect (SSID, authentication protocol)
 - supply network access credentials for the network (that is, username, password, security certificates/keys)
 - identify connection details (IP address and DNS server address modes, etc.)

Have available:

- computer running Microsoft Windows 7 or Windows 10 and Internet Explorer 11 or Edge browser

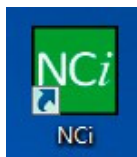
After securing all of the above:

- Download the NCI utility package from the Abbott Point of Care website to your computer. The package will download to your desktop, unless you specify otherwise. See the instruction below.

Installing NCI:

- Navigate to the Abbott Point of Care website
- Find the link to the NCI utility
- Follow the instructions on the screen
- When the NCI_Installer.msi file download completes, double click on the file and follow the instructions to install the NCI

When the installation of NCI completes, this icon will appear on the desktop:



To run NCI, double click the icon. The NCI screen displays.



Note: NCI consists of one screen, though it must be scrolled to be viewed in its entirety. For this reason, the screen is shown here in sections.

A. Creating a Network Configuration (NC) File

On the first screen of the NCi, specify that the Network Configuration Tool is being used to configure the i-STAT 1 Wireless (with 2.4/5 GHz).

Network Configuration Tool version 2.0.0.6

Use this program to create or change your network configuration (NC) files to configure the network settings of your **i-STAT Alinity** or **i-STAT 1 Wireless (with 2.4/5 GHz capability)** instruments so that they can operate on your network.

Please select type of instrument

i-STAT Alinity i-STAT 1 Wireless (with 2.4/5 GHz)

B. General Section

On the first section of the NCi screen, specify whether this NC file will be used for multiple i-STAT 1 Wireless instruments or a single instrument. Unless your facility requires that each instrument have its own unique security credentials, a single NC file may be used for all instruments connecting to the same network.

Numbered labels (**1A**) are used in this section to highlight areas of the screen. These labels are for the purpose of this document only. They are not part of the actual NCi screen.

1. General

Enter information to customize the name you want to give your NC file.

The configuration will be used for: **1B**

1A Multiple instruments Instrument SN- **1C**

1D Configuration Name: (maximum 53 characters)


1E NC File Name:

The configuration will be used for:

Select one of these radio buttons:

1A Multiple instruments

Use this NC file for multiple instruments. This is the default.

 **Note:** This option may not be available if your facility requires individual Enterprise Security Certificates for each instrument.

1B Instrument

This NC file will apply only to one instrument. If this option is selected, the instrument's serial number is required:

1C SN-

Serial number of the instrument to which this NC file applies.

When a serial number is specified, the NC file name will include it, as shown here:

DefaultConfig.snnnnn.incc

1D Configuration Name

Name for the NC file. Specify up to 53 alphanumeric characters.

1E NC File Name

This field is automatically populated with the NC file name and cannot be changed.

Copy info from an existing file

Click this option to open an existing NC file, copy its contents, and then save it to a new name. Navigate to the folder containing the NC file you wish to copy.

Note: Attempting to rename an NC file causes unpredictable results. Instead, use the function **Copy info from an existing file** and save the file to a new name.

Edit an existing file

Click this option to edit an existing NC file. Navigate to the folder containing the NC file you wish to edit.

The next section of the NCI screen is for configuring a connection a wireless connection.

C. Wireless Network Connection


This section of the screen is used to configure connectivity to a wireless network. Some of the options displayed on the screen depend upon the authentication type, and are noted as such.

2. Wireless Network Connection

2A I want the I-STAT 1 Wireless (with 2.4/5 GHz) to connect to my facility's WIRELESS network.

2B Network Name (SSID):

2C Authentication Type:

2D Network Security Key: 

2E IP Address Mode: Automatic (DHCP) Use the following IP Address

2F IP Address:

2G Subnet Mask:

2H Default Gateway:

2I DNS Server Address Mode: Automatic (DHCP) Use the following IP Address

2J Preferred DNS:

2K Alternate DNS:

2L I want to set the Wi-Fi Frequency Bands manually.

2A I want the i-STAT 1 Wireless (with 2.4/5 GHz) to connect to my facility's WIRELESS network

Select this check box to configure wireless network connectivity.


2B Network Name (SSID):

Name of the wireless local area network (WLAN)

2C Authentication Type:

The selection of Authentication Type controls the WPA Type, Authentication Method, and Cipher Types as shown in this table:

Authentication Type	Authentication Method
WPA2/WPA Personal	PSK
WPA2/WPA Enterprise	EAP

 **Note:** When WPA2/WPA Personal is selected, the Network Security Key field will be enabled. When WPA2/WPA Enterprise is selected, refer to the **Options for Enterprise Authentication Types** sections for the security credential fields that will be enabled.

2D Network Security Key

Enter the PSK passphrase, 8 to 63 characters, or 64-digit HEX key. By default, bullets (••••) are displayed as you type the key.

2E IP Address Mode

Select either:

- **Automatic (DHCP)** Obtain IP addresses and networking parameters automatically from a DHCP server.
- **Use the following IP address** Select this check box if you are using a static IP address. Specify values for:
 - **2F IP Address** IPv4 address of instrument in decimal dot notation.
Example: 172.16.254.1
 - **2G Subnet Mask** IPv4 mask that defines the Subnet in decimal dot notation.
Example: 255.255.255.0
 - **2H Default Gateway** IP address for routing device that passes traffic between different subnets and networks in decimal dot notation. Example: 172.16.254.1
 - **2I DNS Server Address Mode** Reserved for Future Use
 - **Automatic (DHCP)** Obtain IP addresses and networking parameters automatically from a DHCP server.
 - **Use the following IP address** Select this check box if you need to specify the DNS server address manually. Specify values for:
 - **2J Preferred DNS** Reserved for Future Use
 - **2K Alternate DNS** Reserved for Future Use

2L I want to set the Wi-Fi Frequency Bands manually.

Select this check box to configure the instrument to use either the 2.4 or 5 GHz frequency band exclusively. When both values are selected, the instrument will automatically select which band to use. Select one of the check boxes to limit the instrument to that band only:

2.4G

5G

Options for Enterprise Authentication Types

When **Authentication Type** selected is WPA2/WPA Enterprise, the options shown here are enabled:

EAP Method

Select one of the following:

TLS

TTLS/MSCHAPv2

PEAPv0/EAP-MSCHAPv2

Validate the Server Certificate

Select this check box to configure the instrument to validate the server certificate. Unselect the check box if this is not required.

Server Name

Network name of the authentication server.

CA Certificate File

Name of the file that contains the Certificate Authority certificate.

Client Certificate File

Name of the file that contains the client certificate.

Client Key File

Name of the file that contains the client key.

Client Key Password

Password for the client key.

Username/Identity

Username required by the authentication server.

D. Data Manager

Specify the following information for connectivity to Data Manager.

3. Data Manager Information

I want the i-STAT 1 Wireless (with 2.4/5 GHz) to connect to a Data Manager.

Data Manager Server Address: <input type="text"/>	Port: <input type="text" value="6004"/>
---	---

E. Save the Network Connectivity (incc) file

After supplying the information for connectivity, you are prompted to save the incc file. The saved file can be uploaded to an i-STAT 1 Wireless instrument.

At the bottom of the NCi screen, choose **Save Network Connectivity (incc) File**, then click **Continue**.

Depending upon the browser in use the incc file will be saved to the Downloads directory, or, at the bottom of the screen a banner may display with the prompts shown below.



Note: Best practice is to select Save which will save the file to the Downloads directory. Opening NC (incc) files in a text editor is not recommended.

Do you want to open or save *filename.incc*?

Open

Open the incc file in a text editor.

Save

Save the file to the Downloads directory.

Save as

Save the file to a specified destination.

Note: If you use this option make note of the destination where the file is saved. This information will be needed to load the incc file onto the i-STAT 1 Wireless.

Save and open

Not recommended.

Cancel

Do not save the file.

F. Loading a Network Configuration File to the Instrument

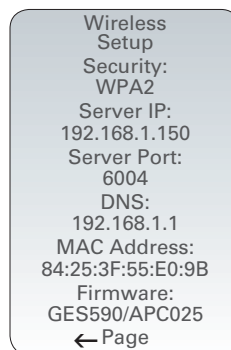
Have available:

- A computer with a wireless network interface and
- Internet Explorer 11 or Edge browser

Before uploading the NC (incc) file to the instrument, note the MAC address of each instrument by following these steps:

NOTE – If wireless is not yet enabled, refer to Section 1, CUSTOMIZING THE i-STAT 1 WIRELESS ANALYZER TO ENABLE WIRELESS FUNCTIONALITY

1. Power on the Analyzer with the On/Off key.
2. Press the MENU key.
3. Navigate to the Wireless Menu by pressing 8 – Wireless.
4. Wait for the wireless module to initialize, if initialization fails and the Wireless Menu does not display, navigate to the Wireless Menu by pressing 1 (Continue)
5. Press 1 to View Setup
6. Press the Right Arrow key once to display the Wireless Setup page 2.
7. The wireless module MAC Address is displayed near the bottom of the Wireless Setup page 2:



8. Record the MAC Address for use in subsequent steps.

Hint: if you record the MAC address in a text file and save it to your desktop, you can copy and paste the address when needed in the subsequent steps.

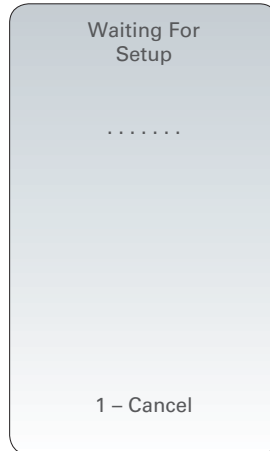
9. Power off the Analyzer with the On/Off key.

To upload an NC (incc) file, follow these steps (for experienced users, Appendix 1 contains a quick reference guide to these steps):

On the instrument:

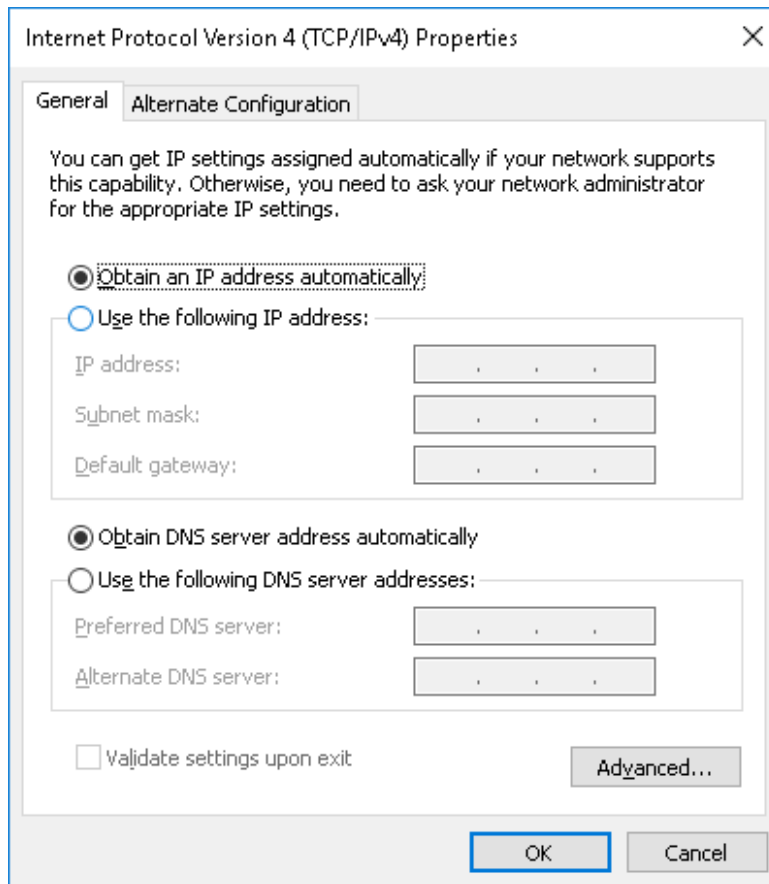
10. Power on the Analyzer with the On/Off key.
11. Press the MENU key.
12. Navigate to the Wireless Menu by pressing 8 – Wireless.
13. Wait for the wireless module to initialize, if initialization fails and the Wireless Menu does not display, navigate to the Wireless Menu by pressing 1 (Continue)

14. Press 5 – Receive Setup. Enter password (if one is set), then press ENT key to display the Waiting for Setup screen:



On the computer with wireless network interface:

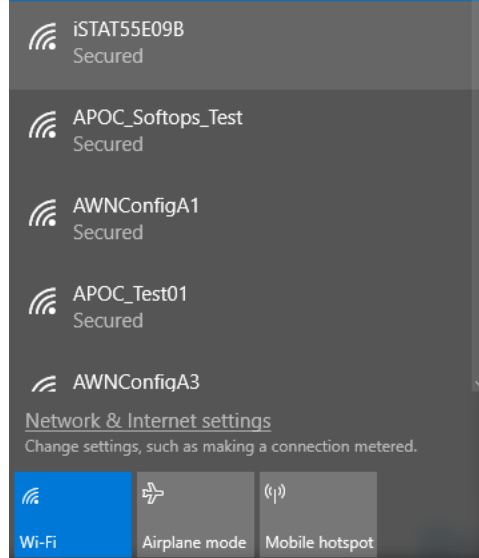
15. Ensure the wireless network interface is enabled, and its TCP/IPv4 properties set to “Obtain an IP address automatically” (DHCP Enabled)



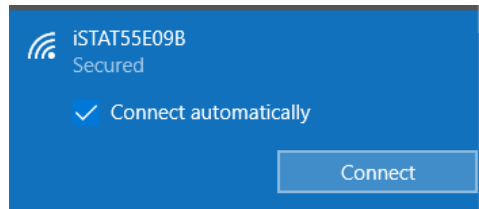
16. Locate the Wireless icon  or Network icon  in the taskbar near the system clock

17. Click on the icon to display the list of available wireless networks

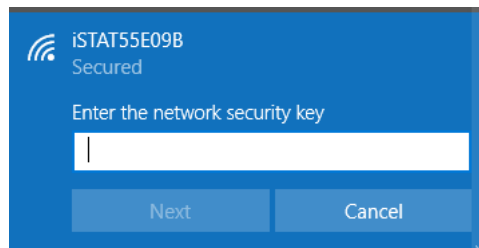
18. In the list of networks displayed, scroll to find the network 'iSTATXXXXXX' where 'XXXXXX' is the last 3 bytes of the wireless module MAC address. For example: **iSTAT55E09B**



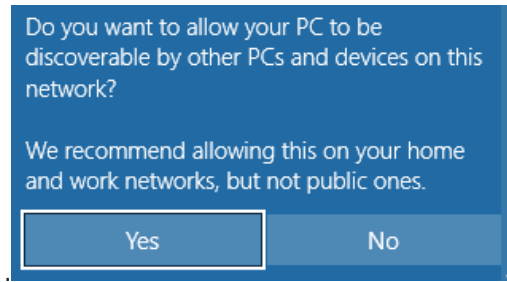
19. Select the network, check the box 'Connect automatically', then Click 'Connect'



20. Enter password 'istatYYYYYYYYXXXXXX' where 'YYYYYYYYXXXXXX' is the wireless module MAC address (excluding the ':' delimiter between bytes) using numbers and capital letters and 'istat' is in lower case letters. For example: **istat84253F55E09B**

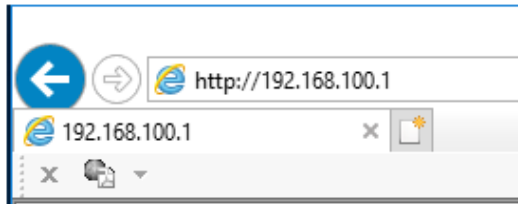


NOTE – if you see the following message displayed, click No.

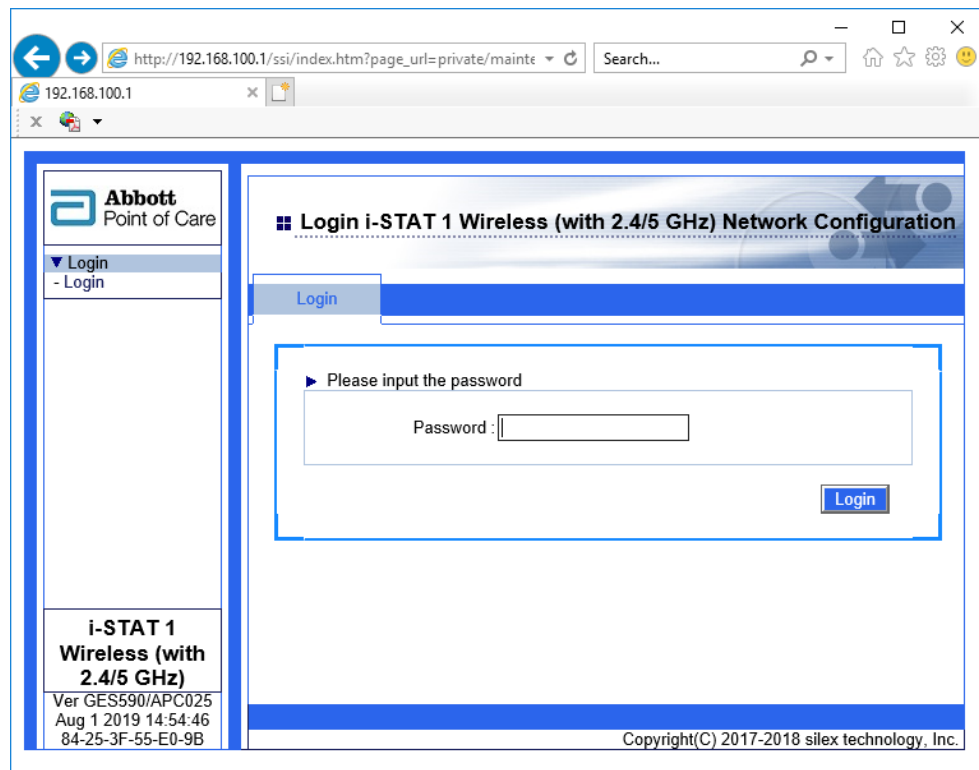


21. Launch the web browser

22. In the address bar of the web browser, enter the following address: 'http://192.168.100.1'

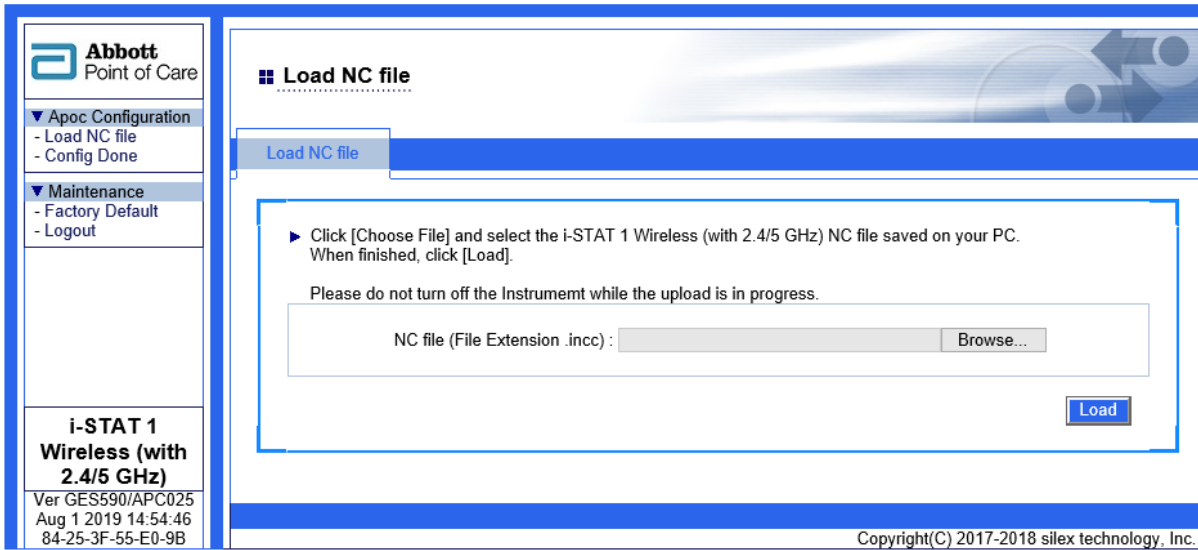


23. The following page will be displayed:

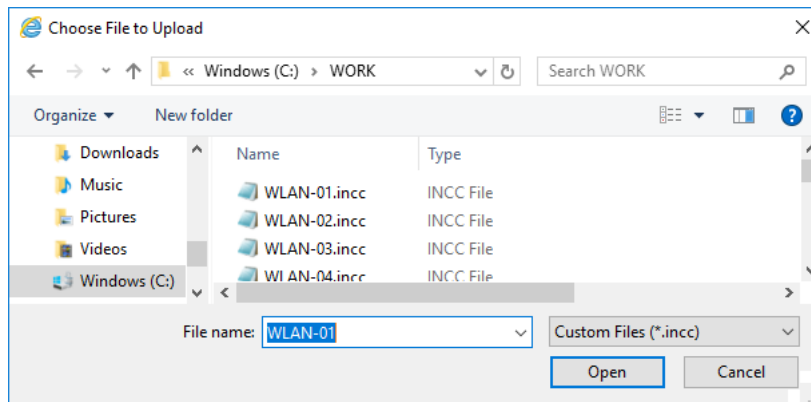


24. Enter login password 'access'

25. The following page will be displayed:

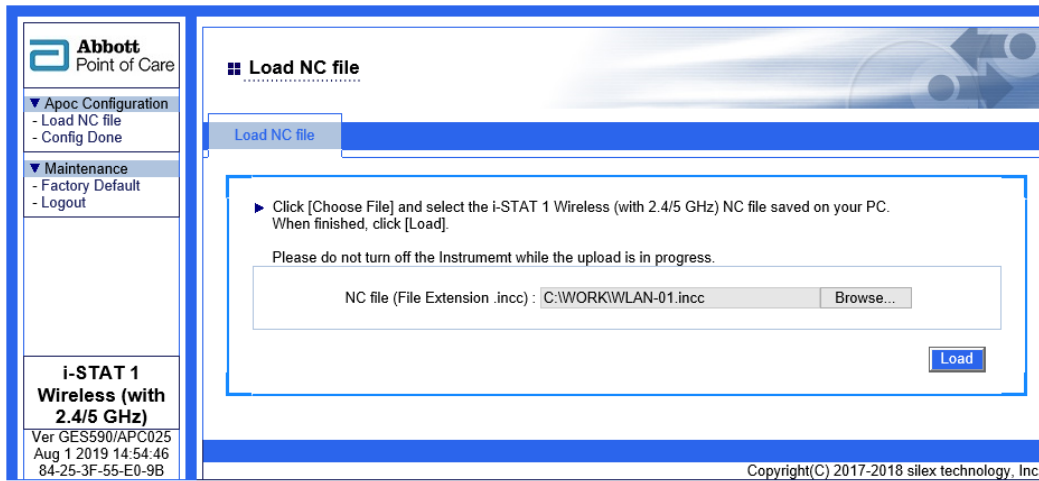


26. Click Browse and navigate to the location of the Network Configuration file

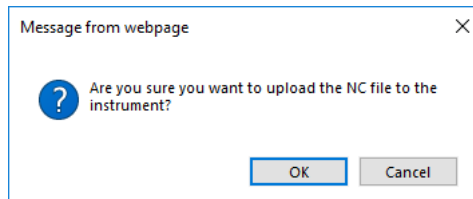


27. Select the Network Configuration file, then click 'Open'

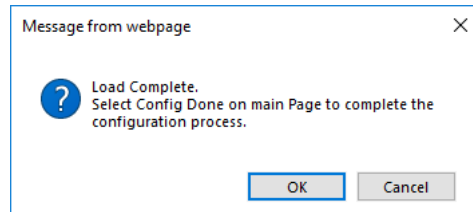
28. Click 'Load'.



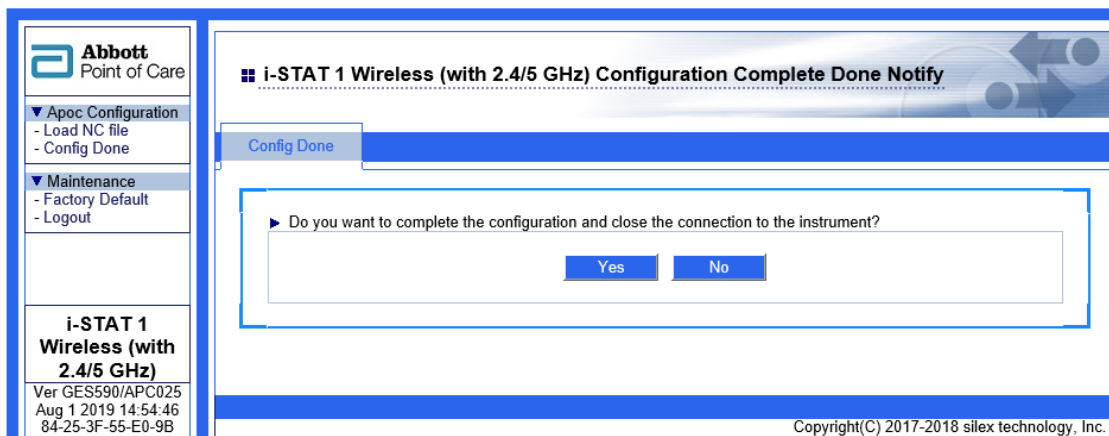
29. Click 'OK' to confirm.



30. Click 'OK' to acknowledge load complete.



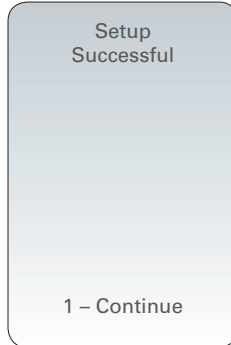
31. On the menu on the left, click 'Config Done/Restart'



32. Click Yes. Click 'OK' to confirm.

On the instrument:

33. Screen should display Setup Successful



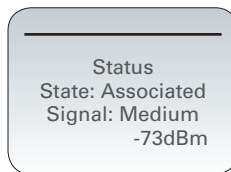
34. Power off instrument

35. Power on instrument

36. Press MENU, then navigate to the Wireless menu:

8 – Wireless

37. Allow the instrument time to connect to the network. Verify the status is 'Associated'.



Section 3: Updating Wireless Module Firmware FCC ID: 2AAEX-SDMAC

i-STAT 1 Wireless analyzers with wireless module FCC ID 2AAEX-SDMAC are built with wireless module firmware pre-installed and ready to operate. Should an update to wireless module firmware in the field be needed, Abbott Point of Care will provide instructions for performing the update (Procedure for Updating Wireless Module FCC ID 2AAEX-SDMAC Firmware ART-764619-00), and access to the updated firmware.

Section 4: i-STAT 1 Wireless Analyzer FCC ID: 2AAEX-SDMAC Specifications

The following i-STAT 1 Wireless Analyzer specifications supplement the i-STAT 1 Analyzer specifications found in Section 2 of the i-STAT 1 System Manual. The i-STAT 1 Wireless Analyzer shares all operational specifications with the i-STAT 1 Analyzer with the exception of the following:

1. The i-STAT 1 Wireless Analyzer can communicate with a Data Manager using an existing 802.11 a/b/g/n Wireless LAN.
2. The i-STAT 1 Wireless Analyzer does not have the capability to run glucose test strips.
3. An approximate 30% reduction in the lifetime of battery charge due to the use of wireless downloads is expected. See Section 2 of the i-STAT 1 System Manual for additional battery charge lifetime information.

The following table shows a comparison of the communication capabilities of the i-STAT 1 Analyzer and the i-STAT 1 Wireless Analyzer.

Communication Capabilities Comparison Table for i-STAT 1 Analyzer Variants

Communication Process	i-STAT 1 Analyzer	i-STAT 1 Wireless Analyzer	
Downloading Results to the Data Manager via a Downloader or a Downloader/Recharger	YES	YES	All i-STAT 1 communication peripherals are compatible
Downloading Results to the Data Manager via 802.11 a/b/g/n Wi-Fi	NO	YES	The analyzer utilizes existing facility 802.11 a/b/g/n Wi-Fi access points
Downloading customization settings, operator lists, STAT/Notes information, etc., via 802.11 a/b/g/n Wi-Fi	NO	YES	Customization settings will be downloaded via 802.11a/b/g/n Wi-Fi access points
Updating Handheld Software via a Downloader or Downloader/Recharger	YES	YES	
Updating Handheld Software via 802.11 a/b/g/n Wi-Fi	NO	NO	Users are required to have a Downloader or a Downloader/Recharger for bi-annual software updates

Wireless Specifications

For Analyzers containing Wireless Module FCC ID: 2AAEX-SDMAC

(Firmware displayed as “GES590/ACPxxx”)

WIRELESS STANDARDS SUPPORTED	IEEE 802.11a/b/g/n
RADIO FREQUENCY UTILIZED	2.4 / 5 GHz
MAX RF TRANSMIT POWER	+17.5 dBm (802.11b / 1 Mbps)
RF RECEIVE SENSITIVITY	-95 dBm
RF ANTENNA	Flex Micro PCB Antenna
DATA TRANSFER RATES	150 Mbps -1Mbps
CONNECTION MODES	Wireless LAN infrastructure and access point (used for configuration of wireless LAN security settings)
WIRELESS SECURITY SUPPORTED	WPA2/WPA Personal (Pre-Shared Key) WPA2/WPA Enterprise (EAP-TLS, EAP-TTLS, PEAP)
SUPPORTED NETWORK CERTIFICATE HASH ALGORITHM	SHA-1, SHA-256, SHA-384
BATTERY LIFE	An approximate 30% reduction in the life of the battery (in terms of cartridge usage) due to the use of the wireless downloads is expected. Note: this 30% reduction is an approximation based upon a use model of transmitting results wirelessly following each cartridge run. See Section 2 of the i-STAT System Manual (i-STAT1 Analyzer) for additional battery lifetime information.
RADIO COMPLIANCE	Modular Approval Contains FCC ID: 2AAEX-SDMAC
SAFETY COMPLIANCE	Standard for the Safety of Electrical Equipment for Measurement, Control, and Laboratory Use – IEC 61010-1: 2nd. Ed.
RF EXPOSURE COMPLIANCE	FCC OET-65C (Ed 01-01)
LASER COMPLIANCE	Complies with the U.S. 21 CFR 1040.10 and 1040.11 except for deviations pursuant to laser Notice No. 50, dated June 24, 2007. EN 60825-1:1994 + A1:2002 + A2:2001 IEC 60825-1:1993 + A1:1997 + A2:2001
EMC COMPLIANCE	FCC Part 15 Subpart B Class A

FCC Compliance Statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

APPENDIX 1: QUICK REFERENCE – LOADING A NETWORK CONFIGURATION FILE (.incc) TO THE I-STAT 1 WIRELESS, FCC ID 2AAEX-SDMAC

To upload a Network Configuration file (incc) file created by the NCI utility to the I-STAT 1 Wireless, FCC ID 2AAEX-SDMA, follow these steps:

On the instrument:

1. Power on the Analyzer with the On/Off key.
2. Press the MENU key.
3. Navigate to the Wireless Menu by pressing 8 – Wireless.
4. Wait for the wireless module to initialize, if initialization fails and the Wireless Menu does not display, navigate to the Wireless Menu by pressing 1 (Continue)
5. Press 5 – Receive Setup. Enter password (if one is set), then press ENT key to display the Waiting for Setup screen:

On the computer with wireless network interface:

6. Ensure the wireless network is enabled, and its TCP/IPv4 properties set to “Obtain an IP address automatically” (DHCP Enabled)
7. Locate the Wireless icon or Network icon in the taskbar near the system clock
8. Click on the icon to display the available wireless networks
9. In the list of networks displayed, scroll to find the network ‘iSTATXXXXXX’ where ‘XXXXXX’ is the last 3 bytes of the wireless module MAC address. For example: **iSTAT55E09B**
10. Select the network, check the box ‘Connect automatically’, then Click ‘Connect’
11. Enter password ‘istatYYYYYYXXXXXX’ where ‘YYYYYYXXXXXX’ is the wireless module MAC address (excluding the ‘:’ delimiter between bytes) using numbers and capital letters and ‘istat’ is in lower case letters. For example: **istat84253F55E09B**
12. Launch the web browser
13. In the address bar of the web browser, enter the following address: ‘http://192.168.100.1’
14. From menu on left, select ‘Login’
15. Enter login password ‘access’
16. From menu on left, select ‘Load NC File’
17. Click Browse and navigate to the location of the Network Configuration file
18. Select the Network Configuration file, then click ‘Open’
19. Click ‘Load’.
20. Click ‘OK’ to confirm.
21. Click ‘OK’ to acknowledge load complete.
22. Click ‘Config Done/Restart’
23. Click Yes. Click ‘OK’ to confirm.