

# Installation Instructions


**NOTE:** Read the entire instruction manual before starting the installation.

## SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury or property damage. Consult a qualified installer, service agency or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Have a fire extinguisher available. Read these instructions thoroughly and follow all warnings and cautions included in literature and attached to the unit. Consult local building codes and the current edition of the National Electrical Code (NEC) NFPA 70.

In Canada, refer to the current editions of the Canadian Electrical Code CSA C22.1.

Recognize safety information. When you see this symbol  on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand the signal words **DANGER**, **WARNING**, and **CAUTION**. These words are used with the safety-alert symbol. **DANGER** identifies the most serious hazards, which **will** result in severe personal injury or death. **WARNING** signifies hazards, which **could** result in personal injury or death. **CAUTION** is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. **NOTE** is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

## INSTALLATION CONSIDERATIONS

The WiFi Broadband Wireless Remote Access Module (WiFi B-SAM), part number SYSTXBBRWF01, is powered with a 24VAC transformer which is included. A 120VAC supply must be near the mounting location. Provisions must be made to secure the transformer to the outlet. **The D-wire (24VAC) from the Evolution® system must NOT be used to power the Remote Access Module.**

This instruction covers the physical installation and start up of WiFi B-SAM. Use this instruction to guide the actual installation process after the Evolution system(s) have been installed. One WiFi B-SAM is capable of handling two Evolution systems.

## INTRODUCTION

The WiFi B-SAM connects to a network router and allows remote connectivity for up to two Evolution systems within the same building. The Evolution system owner, as well as authorized dealer, can monitor and control the system via the Internet, as well as by telephone. The WiFi B-SAM communicates wirelessly through the homeowner's cable or DSL Internet service. Broadband Internet service with a wireless network router is required. The WiFi B-SAM is not compatible with dial-up

Internet service. The WiFi B-SAM can also monitor a dry-contact sensor to provide a warning for the presence of water in the building, or some other use. If the sensor is active, the Evolution system will not be disabled or shut down.

## Computer Requirements

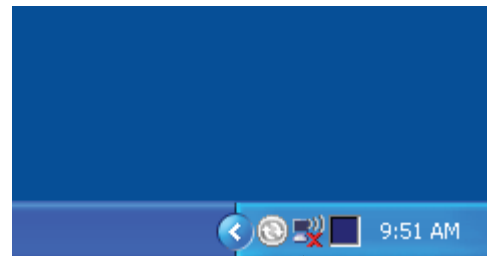
The WiFi B-SAM uses a web-based application to control and monitor the Evolution System. This application will work with any graphic user interface PC operating system (Microsoft, Apple, Linux). The web-based application is optimized for use with Microsoft's Internet Explorer version 6 and above. Other web browsers are compatible with some possible screen formatting issues.

## WiFi INSTALLATION

### BEFORE STARTING:

- **SYSTXBBUID01-B or SYSTXBBUIZ01-B is required (version 14 software revision or higher).**
- **Retrieve your wireless network's SSID (network name) and encryption type and key (if used).**

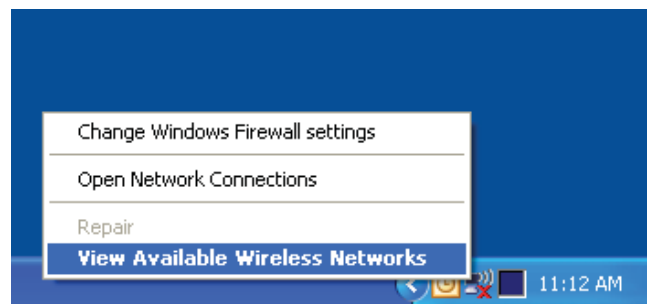
To get the SSID, right-click on the wireless network connection icon in the lower right corner of the desktop on a Windows-based PC that is connected to the wireless network:



Wireless Networks

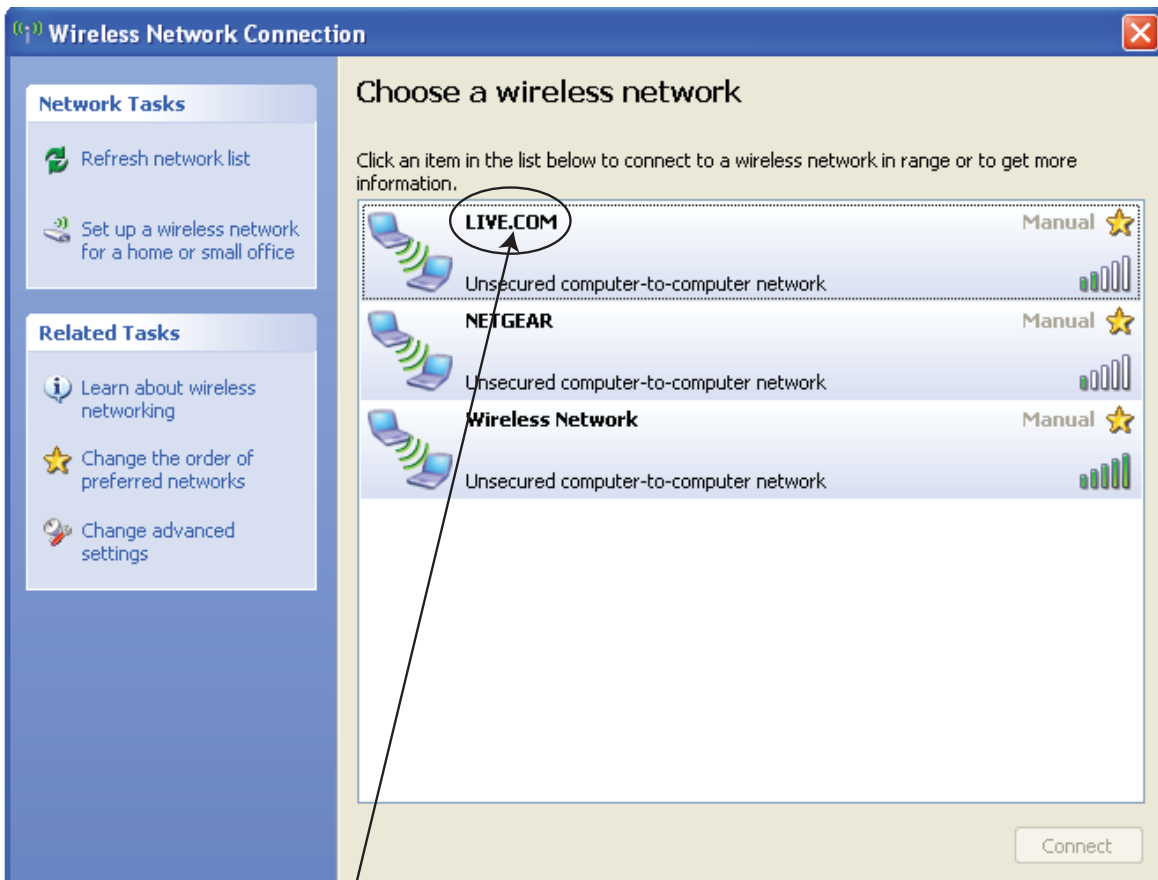
A08408

From the pop-up menu, choose View Available Wireless Networks.



A08409

A window will open showing all of the wireless networks available:



SSID of a network, note the name of your network (including case of letters)

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Encryption type and key will need to be obtained from your wireless router's administration web page. Please see the instructions of your router to obtain this.

Note your network information here before installing the WiFi B-SAM.

**SSID**

**Encryption Type:** \_\_\_\_\_

**Encryption Key:** \_\_\_\_\_

1. Mount WiFi B-SAM and connect ABC wiring and 24VAC transformer.
2. Power up WiFi B-SAM and HVAC system and perform installation procedure from user interface.  
Go to Installer Service menus (10 second press of Advanced) and select INSTALL.  
Ensure "REMOTE ACCESS YES" appears on equipment summary screen (check ABC wiring if not).
3. Go to the WiFi B-SAM Setup screens by pressing the Advanced button on the user interface and then pressing the right side button until the WiFi B-SAM Setup screens appear. These screens will not appear if you do not have a -B model user interface.
4. Press the right side button to get to WiFi B-SAM WIRELESS SETUP 1.
5. Highlight the SSID item and enter your network's SSID (it is case sensitive).  
Press the Temp Up/Down to move the cursor left or right.  
Press the Time Up/Down to change the character.

The Space character is obtained by continuously pressing the Time Down button.

6. If you have encryption, press the right side button to go to WiFi B-SAM WIRELESS SETUP 2.

Select the encryption type.

Enter the encryption key.

Press the Temp Up/Down to move the cursor left or right.

Press the Time Up/Down to change the character.

Encryption type and key will need to be obtained from your wireless router's administration web page. Please see the instructions of your router to obtain this.

7. Exit the menus by pressing the Advanced button, saving all entries.
8. Give the system about 2 minutes to respond to all the changes.
9. The green LED light on the WiFi B-SAM wireless circuit board will flash if it is NOT connected. The LED will be lit solid if it is connected to your network.
10. If the LED is lit solid, give the system 15 minutes to transmit your equipment information to the server. Then, go to the web site and register your system by clicking on New User link. Enter your WiFi B-SAM's serial number and MAC Address.
11. If the LED continues to blink, check your SSID and encryption entry for errors.

## Check Equipment and Job Site

INSPECT EQUIPMENT - File claim with shipping company, prior to installation, if shipment is damaged or incomplete.

## Component Location and Wiring Considerations

### ⚠ WARNING

#### ELECTRICAL OPERATION HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing system, the main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than 1 power disconnect switch. Lock out and tag switch with a suitable warning label.

**NOTE:** All wiring must comply with national, state, and local codes.

**LOCATING THE UNIT** - WiFi B-SAM is approved for indoor use only and should never be installed with any of its components exposed to outdoor environmental conditions. The WiFi B-SAM may be installed in any area where the temperature remains between -4°F / -20°C and 158°F / 70°C, and there is no condensation. The cover must be installed to prevent damage from other sources. Do not locate where it will be accessible to children. It should be mounted in the vertical position.

For wiring convenience, the WiFi B-SAM can be located anywhere between the network router and HVAC equipment. WiFi B-SAM does not need to be located near the HVAC equipment and can be located near the router, where the wireless signal strength remains strong (good or very good).

### ⚠ CAUTION

#### EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage.

Do not mount unit on plenum, ductwork, or flush against furnace.

**WIRING CONSIDERATIONS** - Ordinary thermostat wire is ideal when wiring the WiFi B-SAM (shielded cable is not necessary). Use 22 gauge or larger for normal wiring. Lengths over 100 ft / 30 m should use 20 gauge or larger wire.

## Install Components

### INSTALL WiFi B-SAM

The WiFi B-SAM is designed so that wires can be inserted through the back cover from above or below. Plan wire routing before mounting.

1. Remove cover to access mounting holes.
2. Mount back plate to wall using screws and wall anchors provided.
3. Level back plate and tighten screws.

### ⚠ CAUTION

#### EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Improper wiring of the ABC connector will cause the system to operate improperly. Check to make sure all wiring is correct before proceeding with installation or turning on of power.

## Connect Evolution Systems

Connect the A, B, and C wires from the Evolution system to terminals labeled A1, B1, and C1. Connect the second Evolution system (if present) to the terminals labeled A2, B2 and C2.

ABC bus wiring only requires a three-wire connection; however, it is good practice to run thermostat cable greater than three wires in the event of a damaged or broken wire during the installation.

It is recommended that the following color-code be used when wiring each ABC connector:

A - Green	Data A
B - Yellow	Data B
C - White	24VAC (Com)

**NOTE:** The D-wire (red- 24 VAC hot) from the Evolution system is not connected to the WiFi B-SAM. It is not mandatory that the above color code be used, but each ABC connector in the system **MUST** be wired consistently.

## Connect Auxiliary Sensor (optional)

The WiFi B-SAM will support a dry contact sensor for use with water detection or some other use as seen fit. Connect one side of the contacts to connector AUX C (common) and the other side to connector AUX (input). The sensor input can provide up to 20mA at 5 volts d.c. If the sensor input is active, it will not shutdown or affect operation of the HVAC system(s). A pop-up message will appear on the User Interface indicating the auxiliary sensor is active. The homeowner will also be notified via email and/or phone if so chosen on the Internet web interface.

## Connect Power Source

A separate 24VAC transformer is included to power the WiFi B-SAM. **Do NOT connect the D-wire (24VAC hot) from the Evolution system.**

The transformer is heavy. Make sure it is secured to the power outlet with an appropriate screw through the boss on the transformer.

## System Start-Up

The User Interface of the Evolution system will automatically find the WiFi B-SAM at power on. It will enter the system installation screens automatically and will display the Equipment Summary screen when finished. The Equipment Summary screen will display REMOTE ACCESS near the bottom.

If REMOTE ACCESS is not displayed on the Equipment Summary screen, check connections to the ABC wires as well as ensure the yellow LED is lit on the WiFi B-SAM (this ensures the module has power). The Green LED will be lit next to each ABC connection if the User Interface has established communications.

## Network Setup

After the Evolution system has learned the WiFi B-SAM, the homeowner's network parameters may be entered at the User Interface. If the homeowner's network router is setup for DHCP, then the WiFi B-SAM's network parameters cannot be changed. To edit the network parameters, enter the Advance Setup screens and press the right side button several times until WiFi B-SAM SETUP appears.

## MAC Address and Serial Number

The MAC Address and Serial Number of the WiFi B-SAM is used by the system owner to register their system with Bryant. Write down the MAC Address and WiFi B-SAM serial number in the home owner's guide. The serial number can be found on the WiFi B-SAM packaging, at the bottom of the large WiFi B-SAM circuit board, or in the User Interface INSTALL/SERVICE menus under SERVICE->MODEL/SERIAL NUMBERS selection. The MAC address can be found on a label on the wireless module.

If the MAC Address is missing or unreadable, it can be found by entering the INSTALL/SERVICE menus of the User Interface (10 second press of the Advance button). The MAC Address will be listed on the SETUP-SAM SETUP->SAM SETUP 1 screen.

### Ethernet Module Green Light

A flashing green light on the Ethernet module indicates no connection with the network. The light will remain solid when connection is made.

### Self-Test

The purpose of this test is to verify effective 2-way Internet communication.

Press and hold the TEST switch for at least 5 seconds. A flashing Yellow LED will indicate the test is in progress. A flashing Yellow and Green LED means the transmission is complete and the System Access Module is waiting for a reply. A constant Green LED means the test has passed. This test should be completed in just a few seconds.

If the Red LED is lit solid, then the WiFi B-SAM failed to send the message. Ensure that network connectivity is present and that the homeowner's Internet service is operating properly.

If the Yellow LED is lit solid, then the WiFi B-SAM sent its message but did not receive a reply. The Bryant server may be down. Retry at a later time.

Test aborting - There is no method to abort a test once it is started, other than to remove power.

The LEDs will maintain their state for 1 hour after the test. Pressing the Radio Test button momentarily will clear the LEDs. Pressing the Radio Test button again for five seconds will repeat the radio test.

### RS-232 Connector

An RS-232 port has been provided for connection to home automation equipment. Consult your home automation supplier for support.

### Updating System Profile

The Evolution System will automatically send system information to Bryant's computer servers within one hour after the system has been successfully installed. Access to the system via the Internet or telephone will not be available until this occurs. The system can be forced to send its information through the following process if Internet and telephone access is required immediately. Press and hold the Radio Test button for 15 seconds. When the button is first pressed the Red LED will turn on. Five seconds into the press, the Yellow LED will turn on. Fifteen seconds into the press, the Green COM1 LED will turn on. Release the button when the Green LED turns on.

The Red LED will flash when messages are being sent. The Red and Yellow LEDs will flash when the WiFi B-SAM is waiting for

message replies. Upon successful profiling, both Green LEDs will be lit. If profiling is not successful, the Red LED will be lit solid.

If the Evolution system ABC wiring is moved from connector 1 to connector 2 (or vice versa), or Evolution equipment has changed, the WiFi B-SAM must update Bryant's servers with the new information. This will happen automatically within one hour, or can be manually forced with the process described above.

### Local PC Access

The Evolution System(s) can be monitored, and the WiFi B-SAM setup can be changed, through use of the WiFi B-SAM's embedded web server. From a PC on the same network as the WiFi B-SAM, type the IP address of the WiFi B-SAM in the address field of your web browser.

### Account Setup

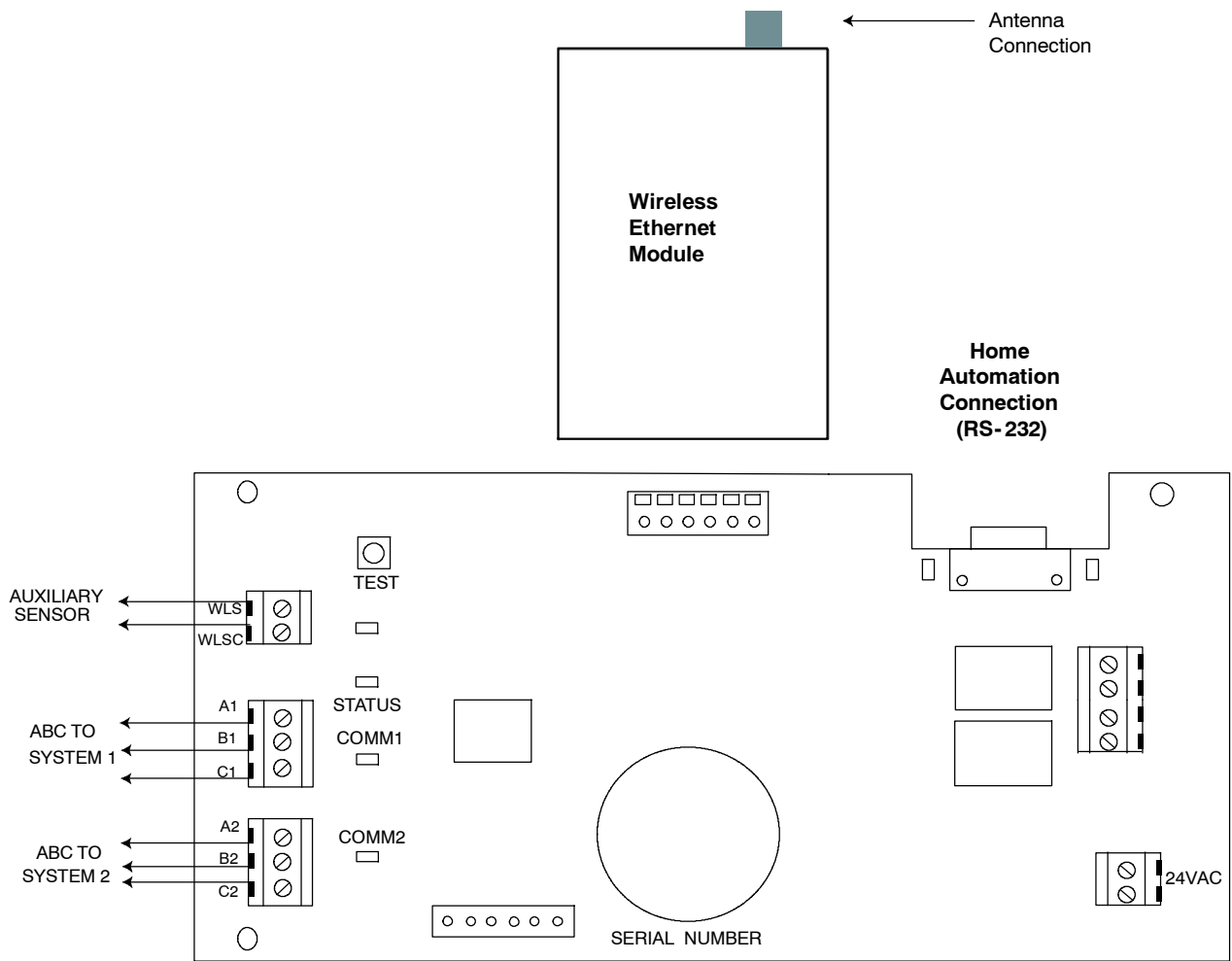
Setting up your Evolution Remote Access Account requires Internet access and should take just a few minutes of your time. Before logging on to the Internet site listed below, be sure to have the following information available:

1. WiFi B-SAM serial number and MAC address.
2. The name and contact information of person you want the system to contact if maintenance or service is required.
3. The name of the dealer you would like to perform Routine Maintenance and/or Emergency Service.
4. To setup your Remote Access Account, go to the following Internet address: [www.myevolution.bryant.com](http://www.myevolution.bryant.com)
5. At the welcome page, look for the text "New Users: Click Here".

## TROUBLESHOOTING

**FAULT INDICATORS** - Under normal operation, the Yellow and Green LED will be on continuously (solid). If the WiFi B-SAM does not receive communications with the Evolution system, the green LED will not be on. If there are faults present, the yellow LED indicator will blink a two-digit status code. The first digit will blink at a fast rate, the second at a slow rate.

STATUS CODE	DESCRIPTION	RESOLUTION
45	Board Failure	Replace WiFi B-SAM.
62	Loss of communication with Ethernet device	Ensure that cable between WiFi B-SAM circuit boards are seated properly. Replace WiFi B-SAM.
64	Auxiliary sensor active	Auxiliary sensor terminals are shorted by external device.
66	Wireless network not detected	Make sure network parameters are correct in WiFi B-SAM setup screens.
67	No communication with server	Make sure router is connected to the Internet and network parameters are correct.



**WiFi Module Control Board**

A06513

**SYSTEM BRW F01**

WiFi B-SAM SETUP 1	
AUX:	<b>AUX SENSOR</b>
IP TYPE:	DHCP
IP:	192.168.100.0
MAC ADDR:	00:01:02:03:04:05
SUBNET MASK:	255.255.255.000
SERVER STATUS:	CONNECTED
< BACK	NEXT >

WiFi B-SAM SETUP 2	
DEFAULT GATEWAY:	192.168.001.001
DNS SERVER:	061.010.231.015
PORT:	49152
SERVER STATUS:	CONNECTED
< BACK	NEXT >

**AUX:** The auxiliary sensor can be renamed to something meaningful, such as WATER or GENERATOR. Use the Temp +/- buttons to move between letters, and the Time +/- button to choose letters.

**IP TYPE:** Choose DHCP (default) or STATIC for the Internet addressing type.

**IP:** Shows the current IP address of the SAM. If IP TYPE is STATIC then this item can be change. Use the Temp +/- buttons to move between letters, and the Time +/- button to choose letters. If IP TYPE is DHCP, the IP address cannot be changed.

**MAC ADDR:** Shows the MAC Address of the SAM's network module.

**SUBNET MASK:** If IP TYPE is STATIC, this can be changed to a different subnet number. Use the Temp +/- buttons to move between letters, and the Time +/- button to choose letters. If IP TYPE is DHCP, the SUBNET MASK cannot be changed.

**DEFAULT GATEWAY:** If IP TYPE is STATIC, this can be changed to point to a different gateway. Use the Temp +/- buttons to move between letters, and the Time +/- button to choose letters. If IP TYPE is DHCP, the DEFAULT GATEWAY cannot be changed.

**DNS SERVER:** If IP TYPE is STATIC, this can be changed to point to a different DNS server. Use the Temp +/- buttons to move between letters, and the Time +/- button to choose letters. If IP TYPE is DHCP, the DNS SERVER cannot be changed.

**PORT:** This can be changed to use a different port through the homeowner's network. The default is port 49152.

**SERVER STATUS:** Shows status of the SAM connection to Bryant's servers. If the screen shows NON CONNECTED, please check network settings or network cable.

Pressing the right side button (for NEXT >) will display the following screen:

WiFi B-SAM WIRELESS 1	
SSID:	HOME
CHANNEL:	0
SIGNAL STRENGTH:	<div style="display: flex; justify-content: space-around; align-items: center;"> <span>■</span> <span>■</span> <span>■</span> <span>□</span> <span>□</span> <span>□</span> <span>□</span> <span>□</span> </div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>L</span> <span>H</span> </div>
SERVER STATUS:	CONNECTED
< BACK	NEXT >

WiFi B-SAM WIRELESS 2	
ENCRYPTION:	WEP 64 BIT HEX
KEY:	
ENTER 10 HEX DIGITS 0-9, A-F	
< BACK	NEXT >

**SSID:** Enter the name of the homeowner's wireless network using the Temp +/- and Time +/- buttons.

**CHANNEL:** This field determines which frequency to use. It can be left on Channel 0 to search automatically, or adjusted to the one being used by the homeowner's wireless router.

**ENCRYPTION:** This chooses the type of security used by the homeowner's wireless router. Choose:

- None - no data encryption
- WEP (Wired Equivalent Privacy) - use WEP 64 or 128 bit data encryption
- WPA (WiFi Protected Access Pre-Shared Key ) - use WPA-PSK standard encryption

**KEY:** WEP 64 BIT HEX (10 hex digits)

WEP 64 BIT CHARS (5 ASCII characters)

WEP 128 BIT HEX (26 hex digits)

WEP 128 BIT CHARS (13 ASCII characters)

WPA PSK HEX (8 to 64 hex digits)

WPA PSK CHARS (8 to 63 ASCII characters)

**SIGNAL STRENGTH:** Displays the current signal strength of the identified wireless router (SSID). Nine bars is full strength. CONNECTED means the SAM has connected with the wireless router. NOT CONNECTED will mean either one of the parameters is incorrect, or the signal strength may be too low.