

Wi-Fi TROUBLESHOOTING CHECKLIST FOR Comfort Sync™ THERMOSTAT

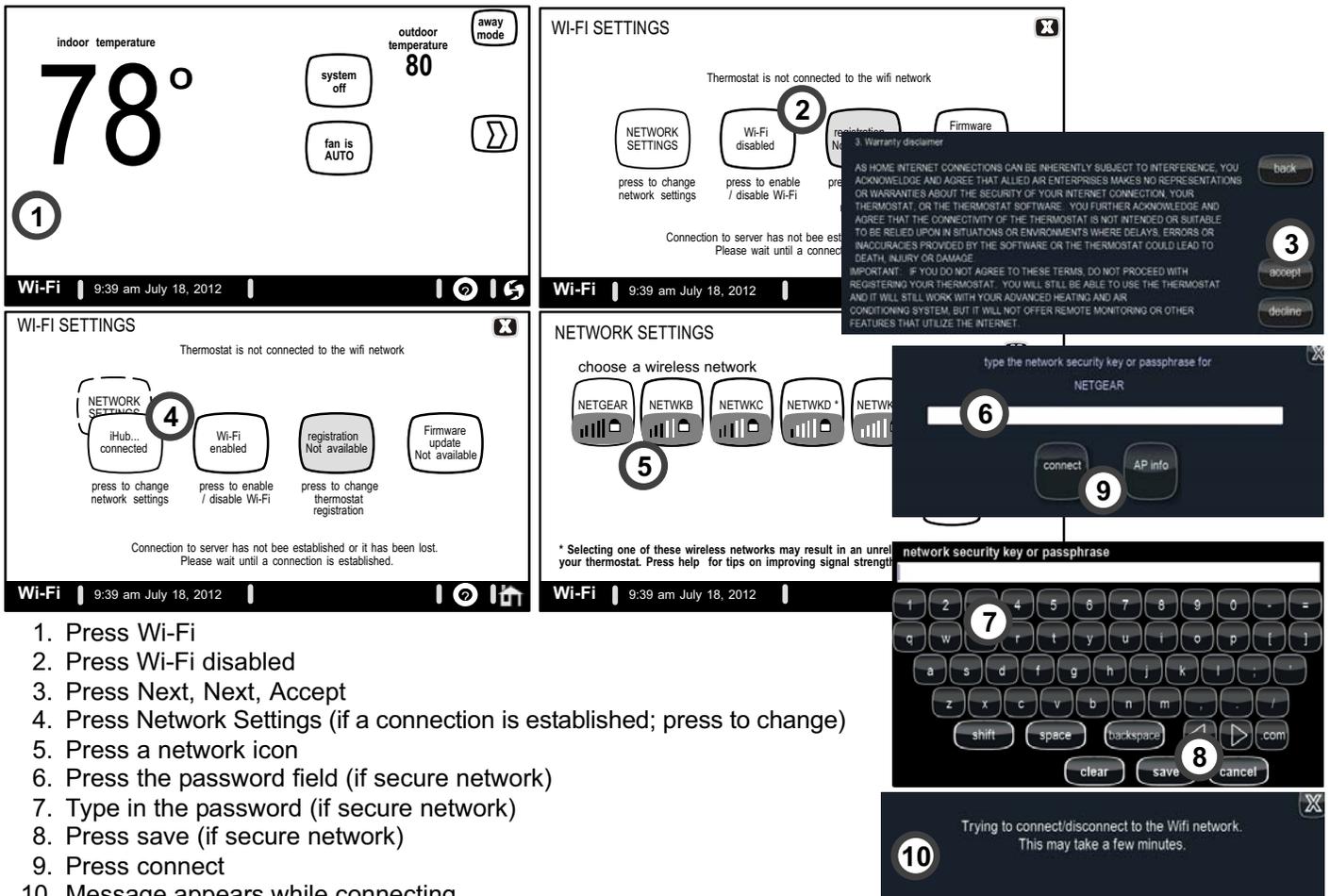
Establishing Wi-Fi and internet connections

The Comfort Sync™ thermostat requires connectivity to a Wi-Fi router and to the internet via the Allied server.

Wi-Fi Router Connectivity

(Thermostat to homeowner's Wi-Fi router). "Wi-Fi" in the bottom left corner is the "button" used to access the Wi-Fi settings screen. "Wi-Fi" with a  beneath it indicates a

prior connection to the server has been lost. If a connection had been lost, then re-established, the triangle goes away. Wi-Fi must be enabled, you must agree to the User Agreement, a local network must be chosen, and a password may need to be entered. Follow the step-by-step procedure outlined in figure 1.



1. Press Wi-Fi
2. Press Wi-Fi disabled
3. Press Next, Next, Accept
4. Press Network Settings (if a connection is established; press to change)
5. Press a network icon
6. Press the password field (if secure network)
7. Type in the password (if secure network)
8. Press save (if secure network)
9. Press connect
10. Message appears while connecting.

Figure 1. Connecting to Wi-Fi Router

Allied Server Connectivity

(Homeowner's router and Internet Service Provider [ISP] to the Allied Server). This connection is used when registering your thermostat. (Connection is up or down and there is no strength indicator for this).

When there is not a good internet connection from the router to the internet, the thermostat will not register. You will only know this if you input your e-mail address and system description and press on the register button and see the thermostat "clocking" and the registration request pop up box is not shown (see figure 2).



If the the registration request pop up box is shown then you should receive an email back from the server to your email address directing you to the consumer portal to make an account on the Allied server. If you don't see it in your inbox make sure you check you Junk and Spam mail boxes.

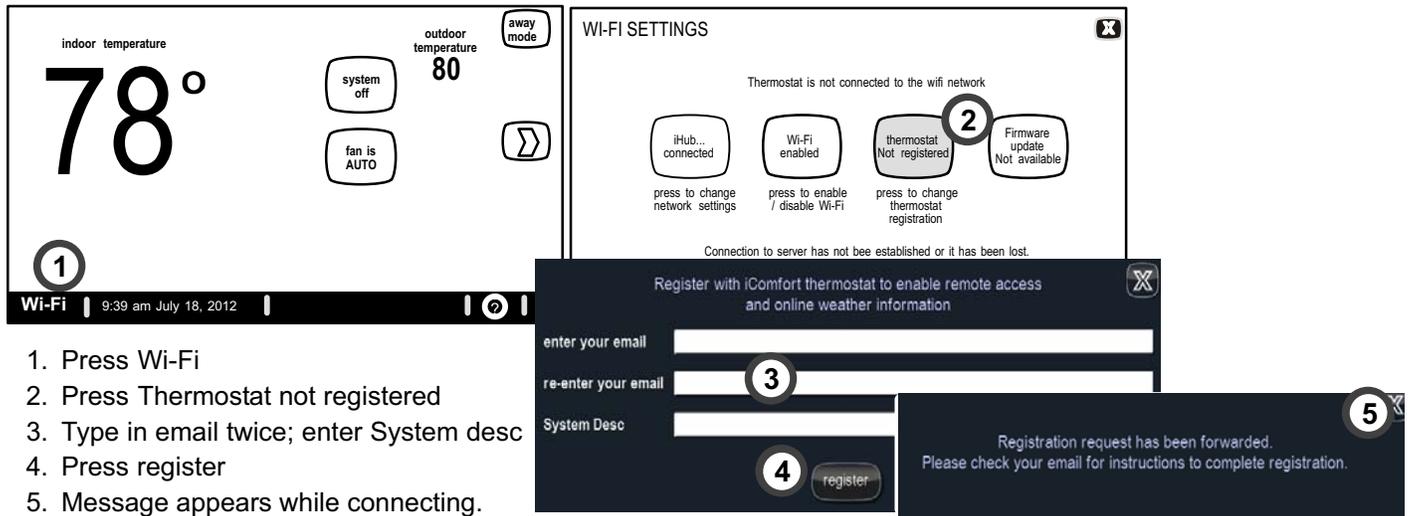
If you don't get the pop up box that says the registration request has been forwarded then the email was not sent to the server and the return registration link will not be sent to your email address. Try all the router troubleshooting procedures and if you still can't get it to send the email, cycle the power to the thermostat.

to ask for the Allied server mac address again and try to resend the email. If multiple routers are in the home make sure each router has a different name.

To set up the server connection, follow the step-by-step procedure outlined in figure 2.

Once you have created your Allied account, the thermostat will be shown as registered and the "Firmware update button" will default to "auto" (see figure 3). You will also see the weather information on the home screen and control the setting from the consumer portal.

iPhone app, iPad app, and Android app can be downloaded from the App Store or Android Store.



1. Press Wi-Fi
2. Press Thermostat not registered
3. Type in email twice; enter System desc
4. Press register
5. Message appears while connecting.

Figure 2. Connecting to the Allied Server

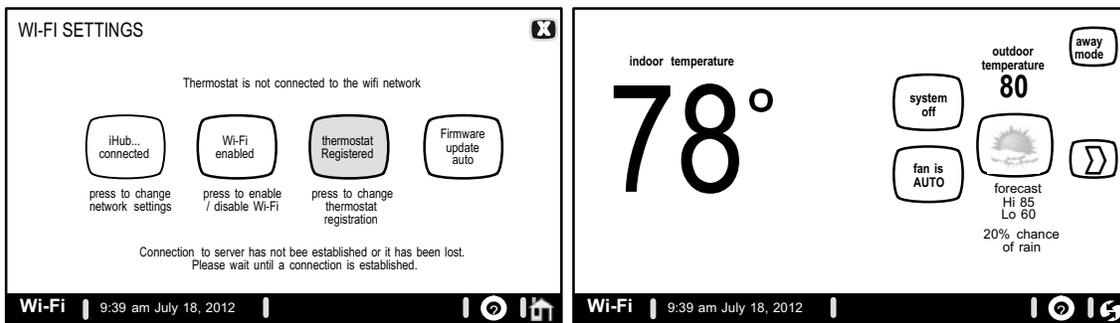


Figure 3. Screen appearance after registration completed

Notes about connecting

Connecting to Wi-Fi

"Wi-Fi" visible at the lower-left corner of the home (status bar) screen indicates connection to the user's local access point (This is NOT an indication of connection to the Allied server). "Wi-Fi" with a Δ beneath it indicates NOT Connected to Wi-Fi access point (see figure 4).

"Wi-Fi" with a Δ beneath Wi-Fi can mean that the Wi-Fi has NOT been enabled. (There are only two states: enabled or disabled).

If "Wi-Fi" only is present, the easiest way to confirm that you have an internet connection is to check the home screen and see if the weather is displayed.

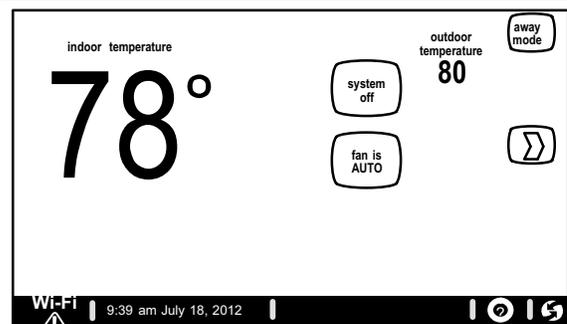


Figure 4. Wi-Fi not enabled or signal lost

No weather indicates no internet connection unless it is in a 15-minute update. Press this “Wi-Fi” button in the status bar to access the “Wi-Fi Settings” screens. If Wi-Fi is currently disabled (never-enabled or has been disabled), then ONLY the **Wi-Fi disabled** button is in white (selectable). All other buttons are grayed-out (not selectable).

Network Settings button

Pressing “NETWORK SETTINGS” button from the Wi-Fi screen goes to a screen that shows a graphical view of buttons representing all available wireless networks and a “create new AP” button for connecting to a non-broadcasting or new access point (AP). Display will show up to 11 access points (Order of display is by signal strength). Press “Refresh” to repopulate this screen if user’s access point is not displayed. Repeat 2 or 3 times, if necessary.

If user’s access point is not shown, the signal may be too weak, or the user may have non-broadcasting SSID (access point). For weak signal, follow normal recommendations to improve access point signal strength (see Basic Router/Modem Check section). A signal strength greater than -70db should be able to connect to the router (see Router Signal Strength section).

For non-broadcasting SSID (access point name), then press “create new AP” button to manually set-up access point. When creating a new AP, you have the option of selecting a security level. Select one of the options, depending on the security defined in the homeowner’s router. When you select an option other than none, the password field appears.

Enter password (if simply logging into an existing network) or enter the network name if creating a new AP. The keyboard appears for typing in the password or network name. If you mistype the password or if you cannot connect to the selected network (AP), the “connecting” dialog will time out and the AP list Wi-Fi icon name will appear in the list but remain grayed. “Wi-Fi” with a Δ beneath it will appear (or remain) in the status bar. The Network name and password cannot end with a space.

Connecting to Allied Server

The third from left button on the WI-FI SETTINGS screen is labeled with three possible names:

- **Registration Not Available**—The button will appear grayed-out (non-selectable) until Wi-Fi is set up.
- **Thermostat Not Registered**—If so labeled, the button’s indicates that the user has connected to Wi-Fi but has never set up an account with Allied.
- **Thermostat Registered**—If so labeled, the user is connected and registered.

User enters their e-mail address and the system description if multiple thermostats in the home (Example Master bedroom, Game room, Main home etc.). The Allied server sends an e-mail to the user with a link to continue with the registration process (this can take a few minutes) from their computer to set up their Consumer account with the Allied server. Once the account information is entered the Consumer Portal can be accessed from any location that has internet connection. This moves from thermostat sup-

port to consumer portal support (www.mycomfortsync.com). (A pop up dialog box indicates that email is sent to server and user must wait for a few minutes for registration email from server approx. 5 min).

Firmware Update Button (see figure 5)

1. Firmware Update (Off) – No automatic firmware updates.
2. If the status is changed from Off to Auto, it will trigger an immediate check and update for the firmware update. This can take up to 1 hour to complete depending on the user’s internet speed, signal strength, internet traffic, etc.
3. Changing from Auto to Off during a download will NOT stop the current download if it is already in process.
4. Firmware Update (Auto) – (Default state). If enabled, the thermostat checks for firmware update a few minutes after commissioning and then every 24 hours in early morning hours.
5. Once a download is completed, the thermostat stops all activity for up to 3 seconds, restarts for 5 seconds, then continues with normal operation. All prior system and user settings are retained (Equipment, programs, Wi-Fi settings, etc.). Note a variation in indoor temperature may be observed after restart. This is normal operation of the thermostat while the temperature sensor algorithms adjust after a restart of the system.

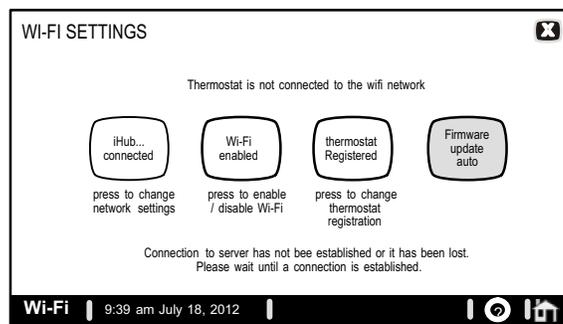


Figure 5. Firmware button

Router / Modem Check if connection fails

1. Make sure the router and modem are turned on.
2. Make sure the router is set to the “b” band. (Even if you have connections on other devices it is not a guaranty that the stat will connect and has a strong signal.)
3. Check for connections to other wireless devices and internet connection.
4. Make sure the Comfort Sync™ thermostat’s Wi-Fi is enabled and connected to the home network (AP).
5. If having difficulty connecting to the router, online research the router model number and/or internet provider to discover and verify that the router band is set to “B & G” bands or “B & G & N” bands. You will need to access the routers utility program to make any changes. If not accessible please contact your service provider for help. The thermostat will not connect to dedicated “N or G” band routers at this time. NOTE: When set to “B & G” bands, video streaming will likely be slower than “N” band. If homeowner has implemented a dedicated “N” band router for the purpose of video streaming, a separate router for the thermostat may be

required. If router does not have the capability of accessing the "B" band, an additional router must be added to the system.

6. Reboot your router
 - A Unplug your power cord, wait 30 seconds, then reconnect. If you have multiple routers, try rebooting all of them when problems occur.
 - B If there are multiple routers you must have different names and passwords for each one.
 - C On your computer, turning Wi-Fi off and then back on will force the system to rescan for available networks. Do you see the network your thermostat is trying to connect to?
7. Power cycle the thermostat.
8. Keep cordless phones, microwaves and other electrical equipment at least 3.5 feet (1m) away from access point.
 - A Try moving your router closer to the device if possible. If connection is improved, then there is probably some interference. Must have signal stronger than -70db (also, see Router Signal Strength on page 3); anything less will have signal losses or not connect at all.
 - B Adjust the direction of the router toward the thermostat. Adjust the router's antenna. A signal repeater may be needed.
9. Try changing channels on the access point and test it out with one of your internet devices (i.e. laptop, desktop). The IP address to the server from the thermostat will be close to the same IP address from the computer to the server (www.mycomfortsync.com).

Computer connections:

- A On Access Point, Login to configuration (usually web based interface; see figure 6) → go to Wireless Settings select a different channel → Save settings.
 - B Devices cannot change Wi-Fi channel. It is set only at the router.
 - C On the thermostat, disable, then re-enable the Wi-Fi connection.
10. Antenna in thermostat is fixed and cannot be moved. Location of your access point with respect to the thermostat is very important.
 11. Baby monitors, garage door openers and wireless video cameras may create signal interference.
 12. Check your encryption key (Password).
 13. Double check and re-enter your WEP/WPA encryption keys/passphrases (usually found on the router). If set to WEP security, change to WPA if allowed.
 14. In your thermostat's wireless settings, verify that your encryption key (password) is correct. There can not be spaces at the end of the SSID or Password.
 15. It is important to note that number of walls that the signal must pass thru to reach the thermostat can be an issue. (e.g. 4 indoor walls, or 1 outdoor wall + 2 indoor walls could mean a weak signal at the thermostat).
 16. The addition of a signal repeater or extender maybe an option. (Desktop or wall outlet plug-in devices are

available online or at your local electronics stores in price range \$70 - \$150).

17. If multiple routers are in the home make sure each router has a different name.
18. If you don't get the pop up box that says the registration request has been forwarded (as shown in figure 2), then the email was not sent to the server and the return registration link will not be sent to your email address. Try all the router troubleshooting procedures and if you still can't get it to send the email, cycle the power to the thermostat. This will cause the thermostat to ask for the Allied server mac address again and try to resend the email.
19. If all is correct, refer user to their Router manufacturer and Network provider. Router may have incoming fire wall check with service provider.

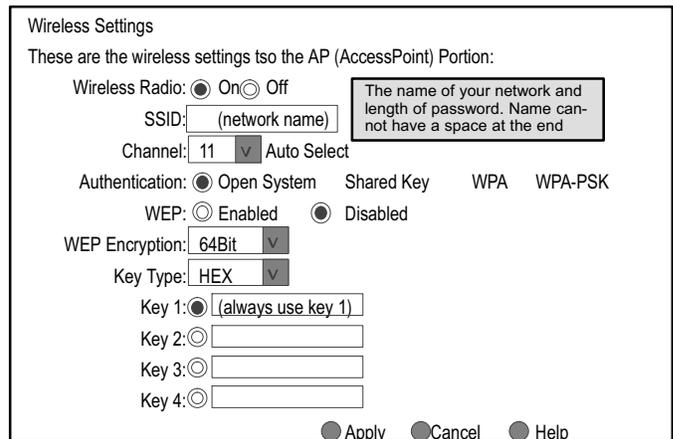


Figure 6. Typical router wireless setting screen

Router signal strength

After connecting to your router, you can check your signal strength by pushing the Wi-Fi icon on the home screen, then the networks button, then your network button, then the AP info button (see figure 7).



Figure 7. Access connection data

A strong wireless signal (RSSI) is indicated by a NEGATIVE decibel number in the range from -46 to -58db; anything greater than -80db will not connect (see figure 8).

If you are connected but have a signal above -70db then you may consider adding a signal repeater/extender or making some of the other router adjustment mentioned in the Router / Modem Check section

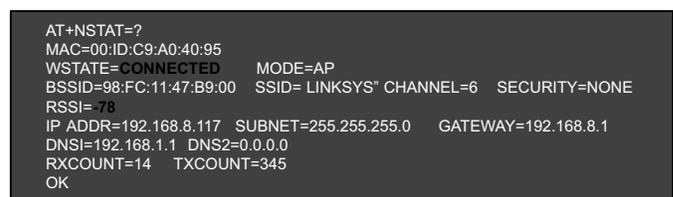


Figure 8. Connection data