

EG4® WIFI DONGLE

CONFIGURATION & TROUBLESHOOTING GUIDE



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1. OVERVIEW

This document provides configuration and troubleshooting guidance for the E-Wi-Fi Dongle, which is pictured on the right side of the image below. This guide is not applicable with the earlier version of the dongle (BAXXXXXXXXXX), pictured on the left.



The currently supported E-Wi-Fi dongles can be identified using first two letters in the serial number as shown below:

- **BJXXXXXXXXX**
- **BGXXXXXXXXX**
- **BEXXXXXXXXX**

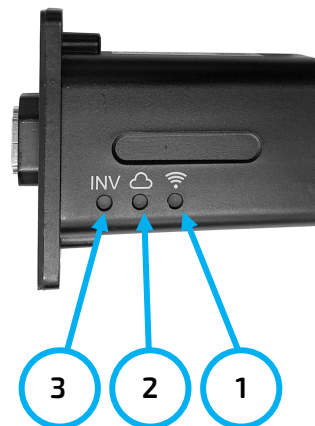
Each "X" in the serial number listed above stands for a set of eight unique numbers assigned to each dongle. The serial number is located on the sticker attached to the side of the dongle.

Going forward, this document will refer to the E-Wi-Fi dongle as Wi-Fi dongle. Any mention of "home Wi-Fi" does NOT refer to the Wi-Fi dongle's wireless network; it refers to a local Wi-Fi network provided by an on-site router or wireless access point.

2. LED INDICATORS AND BUTTON FUNCTIONALITY

LEDs: Each of the three LEDs on the dongle will illuminate green once that step in the boot/configuration process is complete.

1. **Wi-Fi LED:** Dongle has power, and the Wi-Fi hotspot is on.
2. **Cloud LED:** Dongle is communicating with the monitoring server.
3. **INV LED:** Dongle to inverter communication is established and functioning.



Bottom Button: When using dongle firmware version 2.0 or later, press the button on the bottom of the dongle to perform the following:

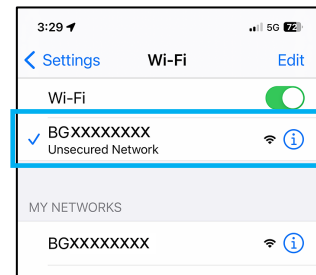
- Reboot the dongle - Hold down the button for 5 seconds, then release.
- Disable encryption - Hold down the button for 10 seconds, then release.

NOTE: It is recommended to use a small Phillips screwdriver or similar object to press the button to ensure it is being pressed in far enough to make the change. The dongle will not reboot until the button is depressed.

3. DONGLE BOOTUP STEPS

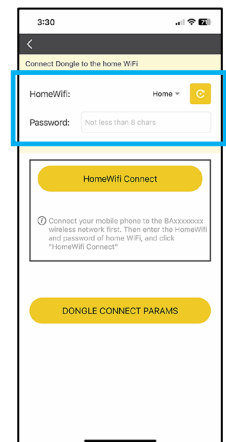
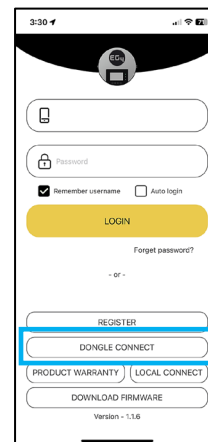
The following steps describe the Wi-Fi dongle bootup sequence:

1. After the Wi-Fi Dongle receives power from the inverter and completes the first step in the bootup process, the Wi-Fi LED should be on. The dongle then creates a hotspot (*see image*) for supported devices to connect to.



NOTE: The dongle should automatically power-on if the inverter is on and the dongle is plugged into the dongle connector. If the Wi-Fi LED is not on, check the physical connection to ensure the dongle is completely seated into the connector on the inverter. The dongle is hot-pluggable, meaning it can be removed and re-inserted with the inverter on.

2. Once the dongle is properly configured, it should successfully connect to the home Wi-Fi network and then to the internet. The Cloud LED will illuminate once the dongle connects to the monitoring server via the internet.
3. Once the dongle has a connection to the monitoring server, it will then set up an internal connection to the inverter. When internal communication is successful, **the INV LED is solid on.**



4. When all three dongle LEDs are on, the inverter can be configured and monitored using the EG4 monitor phone app or the EG4 monitor website.

4. CONNECTIVITY REQUIREMENTS

Due to certain limitations of the Wi-Fi Dongle, please ensure that the home Wi-Fi network signal and security settings meet the following requirements:

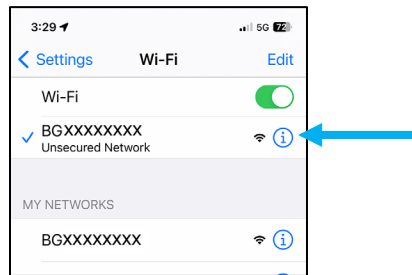
- The Wi-Fi Dongle only supports wireless networks in the 2.4GHz frequency band. If the router supports the 5GHz or 6GHz network frequencies, please confirm the router supports the 2.4GHz network frequency band and it is enabled.
- The Wi-Fi Dongle is compatible with WPA1, WPA2, and WPA3 security protocols on the 2.4GHz network only.
- Ensure the Wi-Fi Dongle can obtain an IP Address by verifying the home Wi-Fi router has DHCP (Dynamic Host Configuration Protocol) setup and it is enabled.

- It is recommended the home Wi-Fi network name length does not exceed 19 characters, and the password length does not exceed 24 characters. It is not recommended to use any of the following special symbols in the password: @, #, \$, %, &, *, ?, _, /, or using a space “keyboard space bar”.

5. VIEWING DONGLE PARAMETERS

The dongle network parameters can be used for troubleshooting various configuration and connectivity issues. This section describes the steps to view the dongle parameters along with a brief description for each parameter.

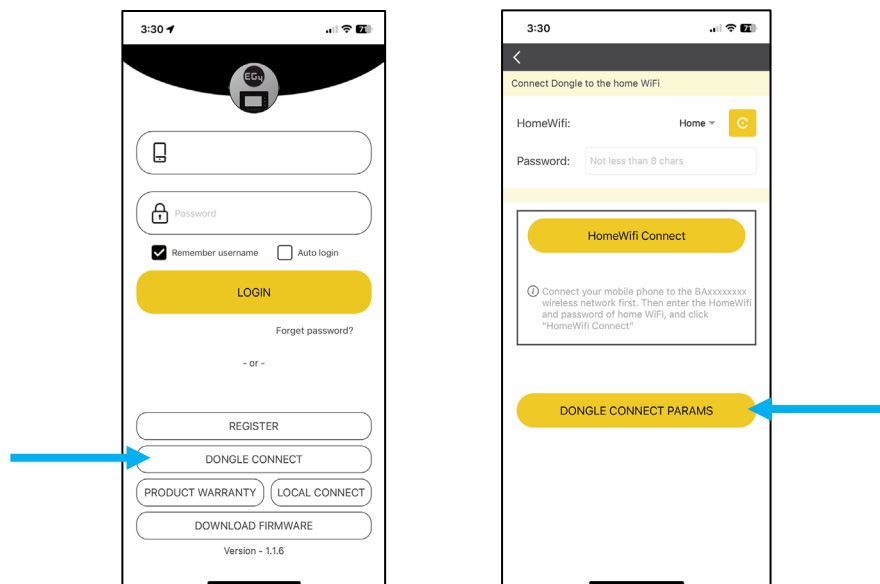
1. Verify the Wi-Fi LED is solid on. If the LED is not on, see section 4.
2. Using an iOS or Android device, connect to the Wi-Fi network created by the dongle, generally it's named as dongle serial number (i.e., BEXXXXXXXXX, BJXXXXXXXX, BGXXXXXXXX).



3. Open the EG4 app and select Dongle Connect. Then select Dongle Connect Params.

NOTE: If the home screen is bypassed after opening the EG4 app, click the user icon in the upper right of the screen and then select logout.

NOTE: After clicking Dongle Connect, give the dongle time to respond to the EG4 monitor phone app. This could take up to 60 seconds based on connectivity strength.



4. The configuration parameters used by the dongle when connecting and communicating over the Wi-Fi network are described below:

AP State	
Function	Enable
Ip	10.10.10.1
Netmask	255.255.255.0
STA State	
Function	Enable
Ip	192.168.1.74
Netmask	255.255.255.0
Gateway	192.168.1.1
AP Parameter	
SSID	BGXXXXXXX
Encryption Mode	<input type="checkbox"/>
AP Password	<input type="password"/> SET
Restart Dongle	<input type="button" value="SET"/>
Station Parameter	
SSID	Home
Password	<input type="password"/>
Connection State	Connected
Network 1 State	
Protocol	TCPClient
Remote Port	3.101.7.137
Server Address(ip or domain)	4346
TCP Client State	Connected
Network 2 State	
Protocol	TCPServer
Local Port	8000

This is the dongle's IP address of the when it is acting as the access point to other Wi-Fi devices (i.e. phones, tablets, etc). This is also the gateway address attached devices use when communicating to the dongle via Wi-Fi. The dongle IP address 10.10.10.1/24 is pre-set at the factory and will always be the same.

This is the DHCP IP address the dongle received from the home Wi-Fi network. The gateway listed here is the IP address of the home Wi-Fi router. If the user knows the home Wi-Fi router password, the gateway address can be used to connect to the router if network parameters need to be changed. If the STA State area does not populate with an IP address, the dongle is not properly connecting to the home Wi-Fi router (network).

This area displays encryption information for the dongle's Wi-Fi network, including the SSID of the dongle, if encryption mode is enabled or disabled, the encryption password, and a button to restart the dongle. Enabling encryption mode provides a level of security when connecting a device directly to the dongle. By default, any device can connect to the dongle without requiring a password (no security).

The SSID of the home Wi-Fi network, password, and connection state.

The protocol and address used to communicate with the EG4 monitoring server over the internet.

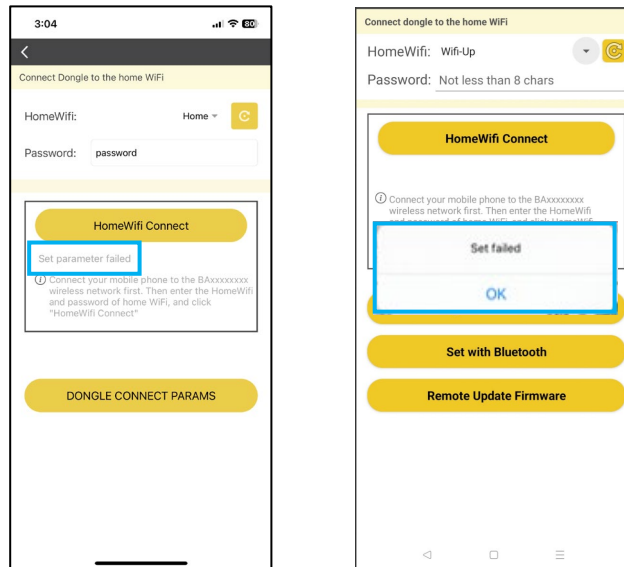
Protocol and port used for internal communication between dongle and inverter.

6. TROUBLESHOOTING DONGLE NETWORK CONFIGURATION

Error: “Set failed” and/or “Set parameter failed”

Description: This error message may appear after selecting any button in the app that performs an action. For example, selecting the HomeWiFi Connect button as shown below.

Fix: Confirm the phone is connected to the dongle’s Wi-Fi network and the dongle’s wireless LED is illuminated. If those two conditions are met, wait a few minutes and retry the last step that failed. At times the dongle can become busy or slow to respond to the app.



Error: Lost Hotspot Connection

Description: This error will occur when there is an issue connecting to the dongle hotspot properly, or the phone has disconnected from the dongle hotspot and is trying to connect using the mobile Cellular Network.

Fix: Verify the phone is not set up to connect to a cellular network when Wi-Fi connectivity is poor or is not providing a connection to the internet. The WLAN/Wi-Fi assist can be disabled or the Cellular can be temporarily disabled during the dongle setup process.

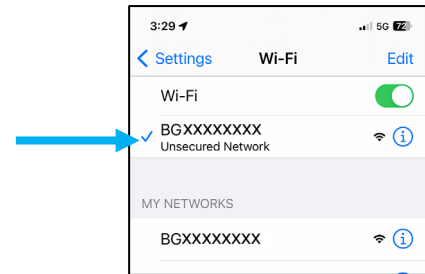
To disable WLAN and W-Fi assist perform the following:

- Android – Select Settings → click Cellular, then scroll down the page (screen). Locate 'WLAN assistant' and disable this setting.
- iOS – Select Settings → click Cellular, then scroll to the bottom of the page (screen). Locate "Wi-F- Assist" and disable this setting.

7. ENABLING DONGLE NETWORK SECURITY

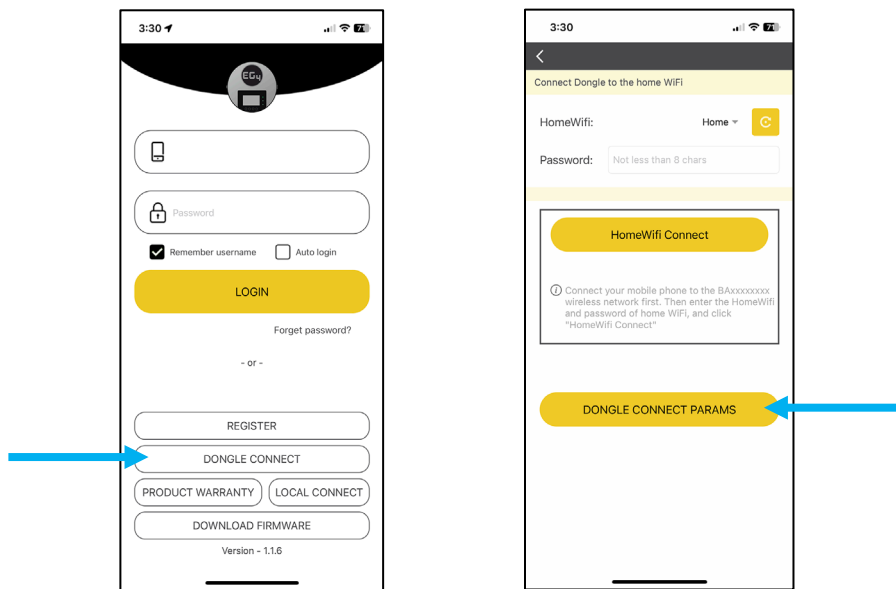
The following steps describe the process of configuring and enabling WPA2 security for the dongle's wireless network:

1. Verify the Wi-Fi LED is solid on. If the LED is not on, see section 4.
2. Using a supported device, connect the Wi-Fi network created by the dongle, generally it's named as dongle serial number (i.e., BEXXXXXXXX, BJXXXXXXX, BGXXXXXXX).
3. Open the EG4 app and select DONGLE CONNECT. Then select DONGLE CONNECT PARAMS.

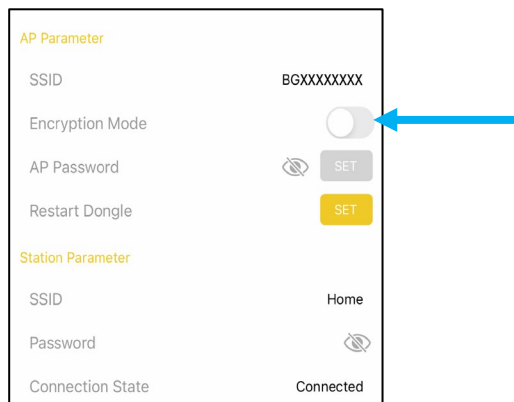


NOTE: If the home screen is bypassed when opening the EG4 app, click the user icon in the upper right of the screen and then select logout.

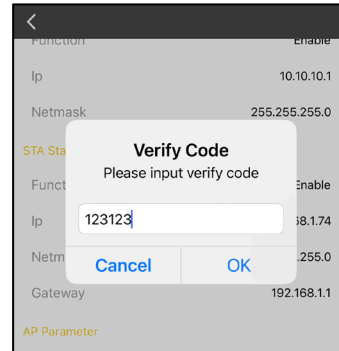
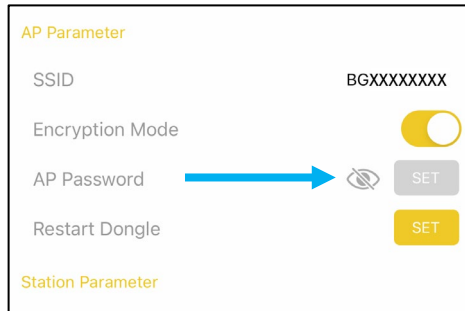
NOTE: After clicking DONGLE CONNECT, give the dongle time to respond to the Phone app. This could take up to 60 seconds based on connectivity strength.



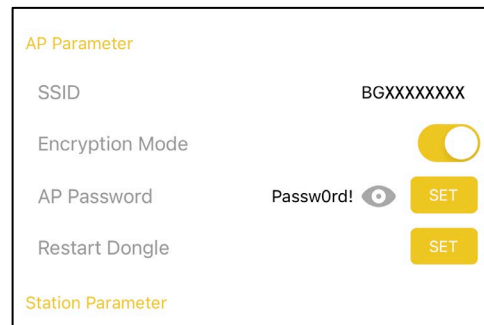
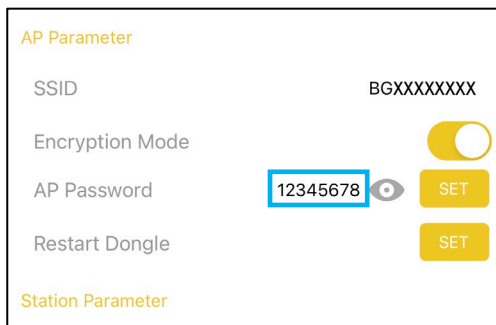
4. Click the Encryption Mode slider to start the configuration process. This step alone will not enable encryption. If the app is closed or the back arrow is selected to move to the previous screen, this step will need to be completed again.



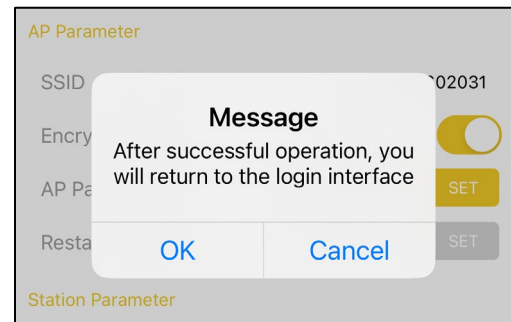
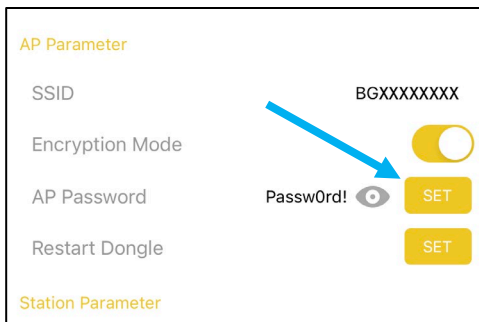
5. Select the “eye” icon and enter the verification code 123123. The ok button may need to be selected twice, depending on communication and/or software lag.



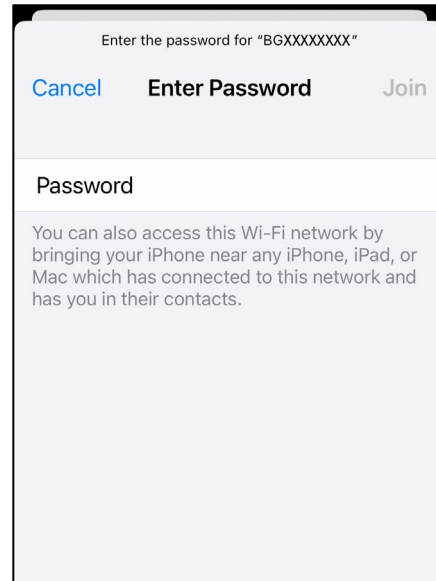
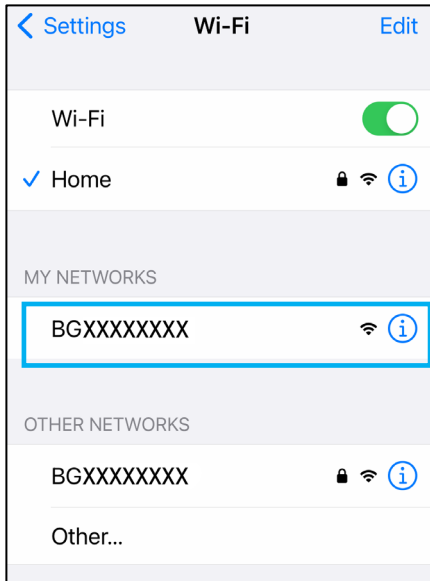
6. The default WPA2 password set at the factory is “12345678”. To change the default password, click inside the password area and over-write the existing password using the desired password. In the example below, the password is set to “Passw0rd!”. It’s also recommended to follow the password guidelines described in section 4.



7. Click SET to save the password which will also enable WPA2 security. There may be a short pause after clicking the Set button. Click OK to verify the setup is complete. The dongle will reboot and should be back online within a couple minutes.



- Go to the phone's Wi-Fi settings and re-select the dongle's Wi-Fi network. The lock icon should appear next to the dongle's wireless network which means security is enabled. Enter the password created in the previous step.

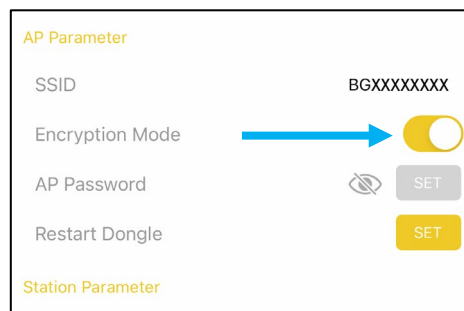


- The EG4 app can now be used as it was previously when security was not enabled. Also note, enabling and setting up WPA2 security on the dongle's Wi-Fi network will not change the dongle's ability to connect to the home Wi-Fi network.

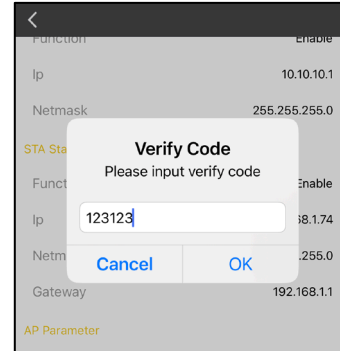
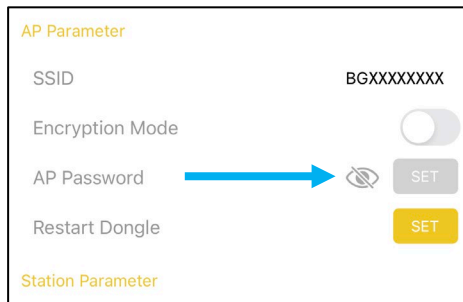
8. DISABLING DONGLE NETWORK SECURITY

There are two options to disable the security settings for the dongle's network.

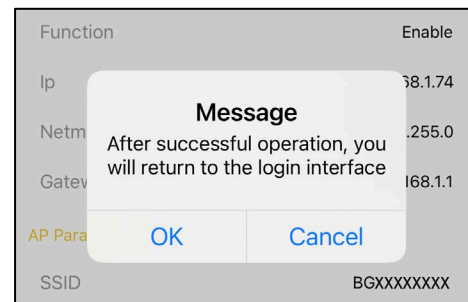
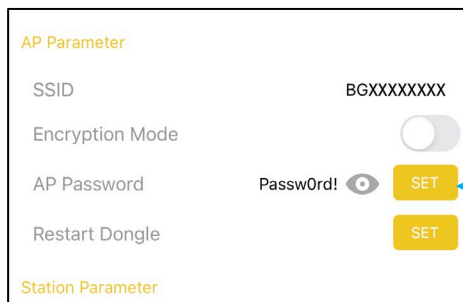
- Option 1:** Hold down the reset button on the bottom of the dongle for at least 10 seconds and release. This is the quickest and easiest option because it does not require using the currently set WPA2 password set on the dongle's Wi-Fi network.
- Option 2:** Use the EG4 App to disable the security settings on the dongle. This option can only be used if the WPA2 password is known. Follow the step list below:
 - Connect a phone to the dongle's Wi-Fi network. If the network was not previously saved on the current phone, enter the dongle's WPA2 password when prompted.
 - Open the EG4 app and select DONGLE CONNECT.
 - Under AP Parameter area, select the slider button next to Encryption Mode to disable security.



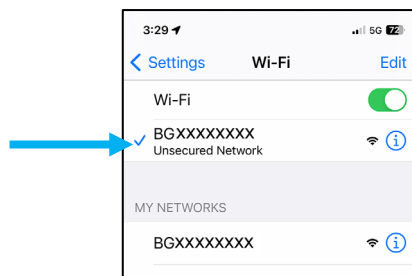
- Click the “eye” icon and enter the verification code 123123.



- Click the SET button. There may be a short pause after clicking SET. If this step is not completed, security will NOT be disabled. Select OK, when prompted. The dongle will reboot, and security will be disabled after the reboot is complete.



- When selecting the dongle’s Wi-Fi network, the lock icon should no longer be displayed and a password should not be required to connect to the dongle’s network.



9. UPDATE DONGLE FIRMWARE USING APP

Before starting a dongle firmware update, verify all three LEDs are on and the dongle is online and has access to the monitoring server (EG4 Monitor Website). Dongle updates require downloading firmware from the server over the internet. If there are any issues connecting to the monitoring server, please refer to section 2 and section 3. Then please connect your phone to Dongle's wireless network.

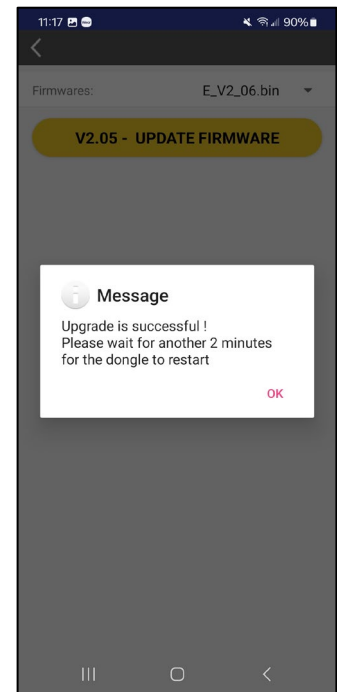
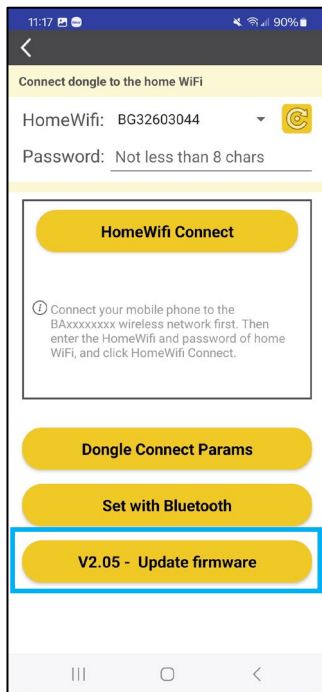


NOTE: Before starting a firmware update, verify the EG4 APP is Android version 1.3.1 or later. Apple iOS does not currently support upgrading the dongle FW.



REMINDER: Before starting a dongle firmware update, verify all 3 LEDs are ON, the dongle is online, and your phone is connected to the dongle's Wi-Fi.

1. Connect the phone to the dongle's wireless network.
2. Open the EG4 app and Select DONGLE CONNECT.
3. The current dongle firmware will be displayed on the Update Firmware button. Select the *Vx.xx Update Firmware* button to start the upgrade process. The EG4 APP will automatically locate the latest firmware version available. At the time of this writing, the latest version in the image below is 2.06.
4. Select *Vx.x.x Update Firmware* to load the new firmware to the dongle.
5. The dongle FW should immediately load to the dongle followed by the message shown below. Click OK and wait for the dongle to reboot, which should not take more than a couple minutes. Once rebooted, verify the dongle firmware was updated using the dongle connect option in the app, or by using Monitor Center.





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