Solar PV Inverter Wi-Fi Troubleshooting Flowchart

1. Is the inverter connecting to Wi-Fi?
Yes: No action needed. Monitor regularly
No: Proceed to step 2

2. Is your router broadcasting a 2.4GHz signal?
Yes: Proceed to step 3
No: Access router settings and enable the 2.4GHz band. Then try reconnecting

3. Are the 2.4GHz and 5GHz bands sharing the same SSID (network name)?
Yes: Access router settings and split the bands into two separate SSIDs (e.g., HomeNetwork_2.4G and HomeNetwork_5G). Connect the inverter only to the 2.4GHz SSID. Then retry connection
No: Ensure the inverter is connected to the 2.4GHz SSID. If so, proceed to step 4

4. Is the inverter within range of the router?
Yes: Proceed to step 5
No: Use a Wi-Fi extender with a LAN port, such as the TP-Link RE550 or Netgear AX1800, and place it midway between the router and inverter

5. Is there interference from other devices?
Yes: Move devices like microwaves and cordless phones away from the router and inverter
No: Proceed to step 6

6. Has the inverter firmware been updated?
Yes: Proceed to step 7
No: Update the firmware according to the manufacturer's instructions

7. Does the Wi-Fi signal remain weak?
Yes: Use a Wi-Fi analyzer app like NetSpot for iOS or WiFi Analyzer for Android to locate weak zones and reposition the router or extender accordingly
No: Proceed to step 8

8. **Would a wired connection be possible?**

Yes: Use a powerline adapter with Ethernet support, such as the TP-Link TL-WPA4221 Kit

No: Consult the inverter manufacturer for further troubleshooting or consider professional assistance

How to Separate 2.4GHz and 5GHz Wi-Fi Bands

General Steps:

1. **Access Router Settings: Connect to your router's network.**
   - Open a web browser and enter the router's IP address (commonly 192.168.0.1 or 192.168.1.1)
   - Log in using your admin credentials (often found on the router's label)

2. **Disable Band Steering or Smart Connect:**
   - Locate the setting named "Smart Connect" or "Band Steering."
   - Disable this feature to allow separate control over each frequency band

3. **Rename SSIDs for Each Band:**
   - Navigate to the wireless settings section
   - Find the 2.4GHz band settings and rename the SSID to something like HomeNetwork_2.4G
   - Find the 5GHz band settings and rename the SSID to something like HomeNetwork_5G
   - Save the changes

4. **Reconnect Devices:**
   - On your inverter, search for available Wi-Fi networks
   - Select the 2.4GHz SSID (HomeNetwork_2.4G) and enter the password to connect

Router-Specific Instructions:

TP-Link Routers:

- Navigate to **Wireless Settings**
- Under the 2.4GHz section, set the SSID to YourNetwork_2.4G
- Under the 5GHz section, set the SSID to YourNetwork_5G
- Save the settings

Netgear Routers:

- Access the router's web interface
- Go to **Wireless Settings**
- Uncheck **Smart Connect** to separate the bands
- Rename the 2.4GHz SSID to YourNetwork_2.4G
- Rename the 5GHz SSID to YourNetwork_5G
- Save the changes

Asus Routers:

- Log in to the Asus router's web interface
- Navigate to **Advanced Settings** > **Wireless**
- Disable **Smart Connect**
- Under the 2.4GHz band, set the SSID to YourNetwork_2.4G
- Under the 5GHz band, set the SSID to YourNetwork_5G
- Apply the settings

Remedy	Pros	Cons
Separating 2.4GHz and 5GHz SSIDs	Allows manual allocation of devices to appropriate bands. Improves performance for devices sensitive to specific bands. Reduces interference and congestion on each band. Enhances compatibility with legacy devices.	Requires manual management of device connections. May cause confusion with multiple network names. Devices may not switch bands automatically when moving around.
Using Wi-Fi Extenders	Extends Wi-Fi coverage to areas with weak signals. Provides stable wired connections for devices like	May introduce additional latency. Potential for signal degradation if not properly