

## Wirelessly Connect Envoy and Enlighten

This Technical Brief describes three methods of configuring an Enphase USB Wi-Fi adapter to a wireless modem or router. To enable the Envoy to report to the Enlighten web-based monitoring and analysis software over a wireless network, you need the following:

- An Enphase Wireless Adapter, (order Enphase WF-01 separately). Enphase supports only this wireless N USB, 802.11b/g/n adapter. Other wireless adapters may not operate correctly and are not supported.
- Up-to-date web browser to view Enlighten. Supported browsers are Internet Explorer 8 or higher, Firefox 11 or higher, Chrome 5 or higher, and Safari 5 or higher. Enlighten requires Adobe Flash Player 10 or higher. For Internet Explorer 8 users, install the Google Chrome Frame plug-in. Enlighten is compatible with Internet-enabled mobile devices running iOS 5 or higher and Android 4 or higher.

Enphase recommends locating the Envoy as close as possible to the load center or switchboard. However, this can often result in the Envoy being a long distance from the router. If you have this type of installation scenario, use the Enphase wireless adapter to wirelessly connect the Envoy to a Wi-Fi router.



**NOTE:** The operating temperature range for the Enphase-provided wireless adapter is 0°C to 40°C (32°F to 104°F).

Use one of the following methods to allow the Envoy to report to Enlighten:

**Method A:** Use a Wireless Router that Supports WPS Protocol

**Method B:** Use a Wireless Router with Another Connection Protocol

**Method C:** Use Installer Toolkit to Create a Temporary Wireless Access Point

### Method A: Use a Wireless Router that Supports WPS Protocol

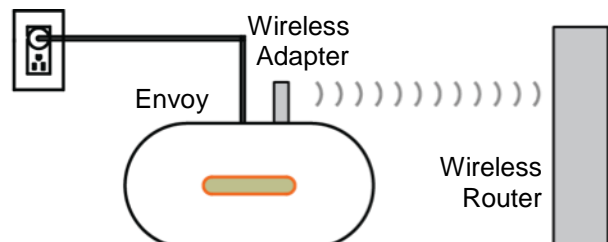
This method requires a wireless router that supports WPS.

To install the wireless adapter using WPS, do the following:



**NOTE:** You must use the Enphase wireless adapter (WF-01), and the router or access point must support wireless connections. Other wireless adapters may not operate correctly and are not supported by Enphase.

- a. On the Envoy, verify that no Ethernet cable is plugged into the Envoy RJ45 port.
- b. Verify that the wireless router you are connecting to supports Wi-Fi WPS. On the router, look for a button labeled “WPS”.
- c. Verify that the start-up message on the Envoy LCD screen reads “R3.8” or later.



- If it does not, upgrade the Envoy by connecting the Envoy Ethernet port to the broadband router with the Ethernet cable that came with the Envoy.



**WARNING!** Do not remove power from the Envoy if the LCD displays: “Upgrading. . . Do Not Unplug.”

- After the upgrade completes, **unplug the Ethernet cable from the Envoy.**

- d. Once you have verified that the Envoy is running release R3.8 (or later), plug the wireless adapter into the left USB port (looking at Envoy from the front), and wait for 10 seconds.
- e. Press and hold the WPS button on the wireless router (or access point) for two seconds. On many routers, the WPS button flashes at this point.
- f. Within two minutes, return to the Envoy. Press and hold the Envoy menu button until the Envoy Menu appears. Release the Envoy menu button when **Enable Wi-Fi WPS** appears on the LCD screen.

Enable Wi-Fi WPS

Within two minutes an updated IP address appears on the Envoy LCD screen. This IP address begins with a “W” to indicate that a wireless connection is established.

- g. If the updated IP address does not appear, retry the previous steps as the connection window may have timed out.

Within a minute, the Envoy LCD screen displays **+Web**, indicating a successful connection to Enphase.

## Method B: Use a Wireless Router with Another Connection Protocol

This method requires a wireless router.

The Envoy with wireless adapter supports several wireless security protocols in addition to Wi-Fi WPS. These include WEP Open System, WEP Shared Key, WPA-PSK, WPA2-PSK, WPA-EAP, and WPA2-EAP. If your router does not support Wi-Fi WPS or you do not wish to use Wi-Fi WPS, you can follow these steps to establish a wireless connection using one of the listed protocols.

To install the wireless adapter using a non-WPS protocol, do the following:

- a. Verify that the wireless adapter is fully seated in the left USB port (looking at Envoy from the front).
- b. Plug the included Ethernet cable either to a laptop directly or to a PC on the same broadband router network.
- c. Access the Envoy Administration page.
- d. Enter the default login credentials for the Administration menu:
  - Username: **admin**
  - Password: **admin**
- e. From the Administration menu, select **Wi-Fi Configuration**. This menu option is available only when the wireless adapter is installed in a USB port on the Envoy.

The interface displays a list of available networks.

The screenshot shows the Envoy Administration web interface. At the top, there is a navigation bar with the Enphase Energy logo on the left, the Envoy Serial Number (121143130772) in the center, and the 'enlighten' logo on the right. Below the navigation bar, there are links for 'Home', 'Events', 'Production', 'Inventory', and 'Administration'. A 'Language' dropdown menu is set to 'English'. The main content area is titled 'System Administration' and contains a list of configuration options: Administration Home, Device Grid Configuration, Device Conditions and Controls, Device Scan Control, Power Meter Configuration, ZigBee Device Configuration, Security Administration, Date, Time, Timezone, Ethernet Configuration, and Wi-Fi Configuration. At the bottom of the page, there is a copyright notice: © 2007-2013, [e] Enphase Energy, Inc. All rights reserved. | Licenses

f. Click a network to select it, enter the password, and click **Test Connection**.

- If you don't see your network listed, the router SSID broadcast may be blocked. If so, enter the SSID (name) and password.
- If your network is not blocked and not listed, click **Re-Scan** to refresh the list of networks.

Status messages appear during the connection process, including "Connection Test" and Confirmation".

g. Click **Join Network** when displayed.

Once you have joined a network, it appears in bold in the list of available networks.

h. Disconnect the Ethernet cable.

Within two minutes, an updated IP address appears on the Envoy LCD screen. This IP address begins with a "**W**" to indicate that a wireless connection is established.

Within a minute, the Envoy LCD screen displays **+Web**, indicating a successful connection to Enphase.

The screenshot shows the Enphase Envoy web interface. At the top, there is a navigation bar with 'Home', 'Events', and 'Production'. The main content area is titled 'System Administration > Wi-Fi Configuration'. It includes sections for 'Current Wi-Fi Settings' (showing 'Sonic.net\_703' as the verified network), 'Available Wi-Fi Networks' (with 'Sonic.net\_703' selected), 'Advanced Settings' (for country selection), and 'Manual Configuration' (for custom network settings). A 'Test Connection' button is visible at the bottom.

## Method C: Use Installer Toolkit to Create a Temporary Wireless Access Point

If there is no wireless LAN onsite, you can use the Envoy and Installer Toolkit to create a temporary wireless Access Point (AP). The Envoy must have an Enphase wireless adapter installed in the left USB port and must be running software version 3.11 or later. You must have the Enphase Installer Toolkit mobile app installed on your mobile device.

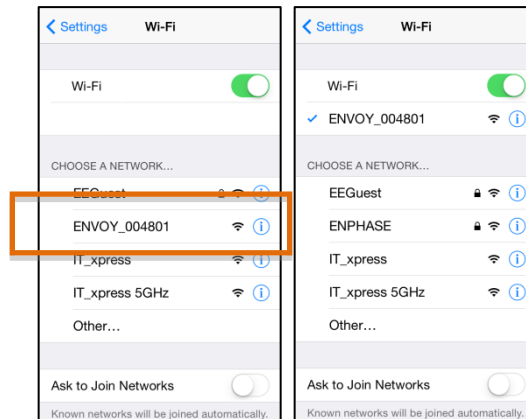



**NOTE:** To install an Enphase wireless adapter, follow the instructions in the Envoy Installation and Operation manual at <http://www.enphase.com/support>.

- Verify that the wireless adapter is fully seated in the left USB port (looking at Envoy from the front).
- Press and hold the Envoy menu button (on the right side of the Envoy). Release it when the LCD screen displays **Enable Wi-Fi AP**. AP Mode remains enabled on the Envoy for eight hours, by default.

Enable Wi-Fi AP

- Select **Settings** on your device and then select **Wi-Fi**. Tap "ENVOY\_nnnnnn" (where "nnnnnn" represents the final six digits of the Envoy serial number) from the list of available networks.



- d. Open the Installer Toolkit mobile app and tap **Connect to an Envoy**. If the connection is successful, the app automatically connects to that Envoy.
- e. Tap the Wi-Fi icon  to the right of the IP Address to select which network the Envoy will use for reporting to Enlighten.  
The list displays available networks and their signal strengths and whether or not the network is password protected.
- f. Tap the network that the Envoy will use for reporting to Enlighten.



- g. If the network is password protected, enter the password at the prompt.
- h. Wait while the Envoy connects to the Wi-Fi network.

Within two minutes, an updated IP address appears on the Envoy LCD screen. This IP address begins with a **W** to indicate that a wireless connection is established.

Within a minute, the Envoy LCD screen displays **+Web**, indicating a successful connection to Enphase.