

Zigbee On-Site Troubleshooting Guide - NAM

Revision History

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Contents

Safety Precautions	1
Overview.....	1
Configure the Gateway	2
On-Site Troubleshooting.....	2
Zigbee Module not Detected	2
Gateway not Connected to the Inverter	3
Intermittent Communications from the Site	3



WARNING

The following troubleshooting steps require you to work inside the inverter. Never install a Zigbee module or any other hardware while the AC power is connected to the inverter or damage may occur. Failure to disconnect AC power can result in injury or death. Never open the inverter if it is raining, or expose the inverter to moisture. Always follow your company's safety protocols when working inside the inverter.

Safety Precautions

For safety purposes, perform the following steps before removing any covers:

1. Turn off the inverter by moving the P/1/0 switch to **0 (OFF)** position and wait for V_{DC} on the inverter to drop below 50V.

To verify that V_{DC} has dropped below 50V:

- **Inverters via SetApp:** Connect to SetApp>Inverter's **Status** page>DC voltage field
- **Inverters with an LCD screen:** A message is displayed letting you know that V_{DC} is lowering and not to disconnect. Once V_{DC} drops below 50V the message no longer appears.



NOTE

(NAM only): If the DC does not reach a safe level, turn off the DC Disconnect (DCD) switch and measure the voltage with a voltmeter.

2. (NAM only): Turn the DCD switch to the OFF position.
3. Turn off the AC circuit breaker.



CAUTION

If the Inverter's AC circuit breaker trips on-site, do not power on the AC circuit breaker before investigating the inverter for any internal damage, such as debris or thermal damage. If any damage is found, take photos and contact [SolarEdge Technical Support](#).

Overview

Inverters can connect to the SolarEdge Monitoring Portal via a SolarEdge Zigbee Home Gateway wireless connection. This guide helps to identify and provide troubleshooting steps for the most common Zigbee Home Gateway connection and communication issues.



NOTE

This guide does not replace contacting [SolarEdge Technical Support](#). Following the steps in this guide is not a guarantee that a Return Merchandise Authorization (RMA) will be granted and further onsite support may be required.

Configure the Gateway

When using Zigbee communications, you must verify that the gateway is configured correctly to enable an inverter connection. Use the following steps to configure the default settings if you are using Zigbee communications on an inverter:

- **LCD-enabled inverter:**
 1. From the inverter, navigate to the **Communications** menu and verify that the server is set to **Zigbee**.
There is no Zigbee server option if the inverter does not detect the Zigbee module.
 2. From the **Communications** menu, navigate to **Zigbee Conf** and verify that the settings are set correctly in the inverter menu, as outlined below.
- **SetApp-enabled inverter:**
 1. Connect to the inverter using **SetApp** and navigate to **Monitoring Communications**.
 2. From the menu, set **Zigbee** as the default communication type if not selected.
There is no Zigbee server option if the inverter does not detect the Zigbee module.
 3. Click the **Edit** button at the bottom of the page to adjust Zigbee settings at the inverter.

Once Zigbee has been set as the default server type and you can access the Zigbee configuration, verify that the following settings are set correctly in the inverter menu:

Inverter Menu	Settings
Device Type	Zigbee
Protocol	MPS (multi-point slave/follower)
ID	1
Profile	<p>The profile is dependent on the part number of the gateway itself.</p> <p>You can find the full part number on the silver label at the bottom of the gateway.</p> <p>ZB2007: Use for gateways with -K5- in the part number.</p> <p>Legacy: Use for gateways with -K- in the part number.</p>



NOTE

SolarEdge Technical Support no longer supports the older Zigbee Gateways without the SolarEdge branding. If you are having issues with one of these gateways, we recommend that you either purchase an updated Zigbee Communications kit for the inverter or change the communications type to another supported communications type.

On-Site Troubleshooting

There are different troubleshooting steps that you can perform on-site to help identify the cause of any potential communication issues.

Zigbee Module not Detected

This occurs when the inverter is unable to detect the Zigbee module installed on the communications board. If you are unable to select Zigbee as a server and are unable to change Zigbee settings, perform the following troubleshooting steps:

1. Turn off the inverter by moving the P/1/0 switch to the **0 (OFF)** position and wait for V_{DC} on the inverter to drop below 50V.
2. Turn the DC Disconnect (DCD) switch to the **OFF** position.
3. Turn off the AC circuit breaker and remove the top cover.
4. Carefully remove the installed Zigbee module and investigate it for any bent pins or damage to the card and verify that the correct Zigbee module is installed.

- **LCD-enabled inverter:** The Zigbee module is approximately 1"x1" with two separate rows of pins.
 - **SetApp enabled inverter:** The Zigbee follower module is approximately 3"x1" with three separate rows of pins. This looks like a cellular modem but does not have a SIM card slot.
5. If no damage is found on the Zigbee module, carefully reinstall the card and make sure that the pins on the card are properly aligned with the pin sockets on the communication board.
 6. Replace the top cover and turn on the AC circuit breaker.
 7. If damage is found, and/or if the pins are not aligned properly on the communication board, please collect photos and contact [SolarEdge Technical Support](#).

Gateway not Connected to the Inverter

If the gateway is not connecting with the inverter, perform the following steps:

1. Verify that the inverter has the correct gateway [configuration](#).
2. Once you have verified the configuration, load the Zigbee defaults from the Zigbee **Configuration** menu on the inverter.
3. Plug the gateway into a wall plug close to the inverter and hold down the red button for 30 seconds to load Zigbee defaults at the gateway. Ethernet connectivity is not required in this step.
4. Once the LEDs on the gateway return to the default status, initiate a Zigbee follower detection on the gateway by holding the red button for 5 seconds.
5. All the LEDs on the side of the gateway will flash for a few minutes while the gateway searches for the inverter.
6. Verify that there is a connection between the gateway and inverter by checking for the flashing amber LED on the gateway. This flashes once every 5 seconds for every inverter connected.
You must also check the inverter menus to verify that the communication status detects a gateway.
S_OK is not displayed when the gateway is disconnected from the internet.
7. Move the gateway to its permanent location, where it will be connected to the internet via ethernet.
8. Verify the gateway connection by checking for the flashing amber LED on the gateway after plugging the gateway back into AC power.
S_OK is not displayed when the gateway is disconnected from the internet and the inverter.

If the gateway is still having connection issues, please contact [SolarEdge Technical Support](#) for further assistance.

Intermittent Communications from the Site

Inverters with Zigbee communications should report to the SolarEdge Monitoring Portal every 15-30 minutes. If the reporting window gets longer, this could be due to range and/or interference issues with the Zigbee wireless communications. Do the following:

1. Update the firmware for the inverter and the Zigbee Home Gateway on-site.
2. Move the gateway as close to the inverter as possible while still plugged into the router for a connection.
3. Install Zigbee repeaters between the inverter and the installed Zigbee Home Gateway to extend the wireless signal.



NOTE

Only SolarEdge Technical Support can remotely update the Zigbee Home Gateway firmware.

If the above steps fail to communicate with the inverter, Zigbee may not be a viable communication solution for the site, and other communication types are recommended. Please contact [SolarEdge Technical Support](#) for a review if intermittent communication issues persist.