Cellular Plug-in Troubleshooting Guide - NAM

Revision History

- Version 2.0, November 2023: Content update.
- Version 1.0, December 2019: Initial release.

Contents

> ⚠ **WARNING**
>
> The following troubleshooting steps require you to work inside the inverter. Never install a cellular plug-in or any other hardware while the AC power is connected to the inverter. 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 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.

> ⚠ **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 https://www.solaredge.com/us/support.
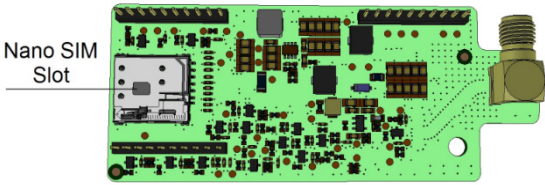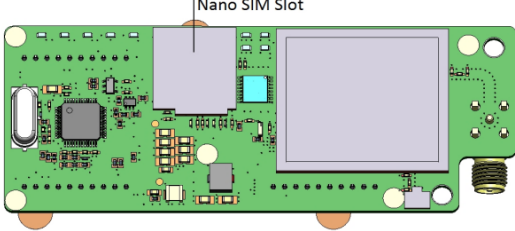
Cellular Coverage Map

SolarEdge cellular modems currently only function on the T-Mobile LTE network. Adequate LTE coverage is required for reliable communications to the SolarEdge Monitoring portal. Before modem installation, verify that the site is installed in an LTE coverage area:

- United States
- Canada

Identifying the Correct Modem

SolarEdge offers two types of cellular modems. One for SetApp-enabled inverters and another for inverters with an LCD. Modems are not cross-compatible, and the appropriate modem must be installed in the correct inverter. Use the table below to help identify the differences between the two model types.

SetApp Enabled Inverters	Inverters with an LCD
 Nano SIM Slot ▬ SIM card slot located on the side of the modem ▬ Small notch under the antenna connection	 Nano SIM Slot ▬ SIM card slot located at the top-center of the modem

NOTE

CDMA and GSM modems are discontinued and no longer functioning due to network shutdowns.

Inverter Firmware

For LTE cellular modem compatibility, verify the inverter firmware version:

- **SetApp enabled inverters:** CPU version 4.7.xx or higher
- **Inverters with LCD:** CPU version 3.2536 or higher

To update the firmware on a SetApp inverter, do as follows:

1. Connect to the internet.
2. Open the SetApp application on your Android or iOS device.
3. Download the latest available firmware to your device.

Once completed, follow the instructions to connect to the inverter. A firmware upgrade should start automatically upon connection if needed. For firmware upgrades on an inverter with a display, tap https://www.solaredge.com/en/support/inverters-with-display

Troubleshooting

Verify the communications status by connecting to the inverter and navigating to **Monitoring Communications** on SetApp inverters, or cycle through the screens on LCD-enabled inverters until you see **Server: <server type> <status>**. If anything but **S_OK** is displayed, see the following sections based on the status:

- Modem Not Detected
- SIM Not Registered
- SIM Not Detected
- Slow/Intermittent Communications to the Monitoring Server

Modem Not Detected

If the inverter does not detect the cellular modem, it will not show as an available communications option. In the event this occurs, perform the following 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 DCD switch to the **OFF** position.
3. Turn off the AC circuit breaker.
4. Remove the cover from the inverter and carefully remove the cellular modem.
5. Investigate the modem for any bent or damaged pins and verify that the modem is the correct type based on the inverter type.

6. Carefully reinstall the modem and verify that the pins on the modem align correctly with the pin sockets on the communication board.

7. Turn on the inverter's AC circuit breaker, while leaving the P/1/0 switch in the **0** (**OFF**) position and verify that at least the three green power LEDs are lit. The power LEDs are labeled: LED1, LED2, and LED3.

> **NOTE**
>
> Some models may have a green power LED labeled as LED6 instead of LED1.

8. Reconnect to the inverter using SetApp and navigate to **Monitoring Communications** to verify if the modem is detected.

> **NOTE**
>
> If the modem is detected, turn the DCD switch to the **ON** position and move the P/1/0 switch to **1** (**ON**).

9. If the modem is still not detected, contact SolarEdge Technical Support. If the status is showing anything but **S_OK** (Server Connection OK) visit the following sections of this guide based on the status message.

If issues persist after performing these steps, contact https://www.solaredge.com/us/support.

SIM Not Registered

A SIM card not registering with the carrier on its initial startup could be due to a low signal to the carrier. To troubleshoot, perform the following steps:

1. Verify the site is in the coverage area.
2. Verify the inverter has the correct firmware version.
3. Verify that the modem is receiving a signal from the cellular network.

> **NOTE**
>
> A stronger signal provides a more reliable connection to the SolarEdge Monitoring server.

4. Verify the supplied antenna is correctly connected to the modem connector.
5. Verify there is nothing on site that could prevent the modem from receiving good reception, such as metal roofing, or an inverter installed in a basement.

If the modem is getting proper coverage, give the inverter 24-48 hours to register the SIM card with the carrier. If the inverter is still not communicating, take photos and/or screenshots of the modem status and contact https://www.solaredge.com/us/support.

If there is no reception to the modem, there is likely no reception at the site and a different communication method may be required.

SIM Not Detected

This indicates the inverter is detecting the modem but is not detecting a SIM card. To troubleshoot, perform the following 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 DCD switch to the **OFF** position.
3. Turn off the AC circuit breaker.
4. Remove the cover from the inverter and carefully remove the cellular modem from the inverter.
5. Check the SIM card slot on the modem and verify the supplied SIM card is installed.
6. Eject the SIM card from the modem by pressing it in towards the center of the modem.
7. Reinsert the SIM card back into the modem by pressing it back in. The SIM card should lock into place.
8. Reinstall the modem to the inverter and reinstall the covers.
9. Power on the AC to the inverter.
10. Turn the DCD switch to the **ON** position.
11. Turn on the inverter by moving the P/1/0 switch to 1 (**ON**) and verify the status in the inverter menu.

If the SIM card is installed and not detected, or if the SIM card is missing from the modem package, please contact https://www.solaredge.com/us/support.

Slow/Intermittent Communications to the Monitoring Server

Inverters with a SolarEdge LTE modem should communicate with the monitoring server approximately every 15 minutes. If the modem is not communicating with the server, this could be due to poor cellular reception on site. To troubleshoot, do the following:

1. Check the server status in the inverter menu and verify that the modem is receiving a signal from the cellular network.

> **NOTE**
>
> A stronger signal provides a more reliable connection to the SolarEdge Monitoring server.

2. If you are not receiving sufficient signal strength, verify the supplied antenna is installed properly to the cellular modem and verify the site is in the coverage area.

3. Verify that there is nothing on site that could prevent the modem from getting a good reception, such as metal roofing, or an inverter installed in a basement.

If the signal strength and reporting cannot be improved, a different communication method may be recommended for the site. If the signal strength is good but you are still seeing intermittent communications to the SolarEdge Monitoring servers, contact https://www.solaredge.com/us/support.