



Simon 3 GSM Cellular Module Installation Instructions

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Introduction

This is the *GE Simon 3 GSM Cellular Module Installation Instructions*. The Simon 3 GSM Module (600-1048) enables wireless reporting of all alarms and other system events from the GE Simon 3 control panel using an all-digital, GSM/GPRS wireless (cellular) network. The module can be used as a backup to a telephone line connection to the central monitoring station, or as the primary communication path for all alarm signaling. The wireless alarm signaling and routing service is operated by Alarm.com.

The module interfaces with the Simon 3 panel board, fits into the panel backplate, and is powered by the panel and battery. *Figure 1* shows the main module components.

Figure 1. Main components

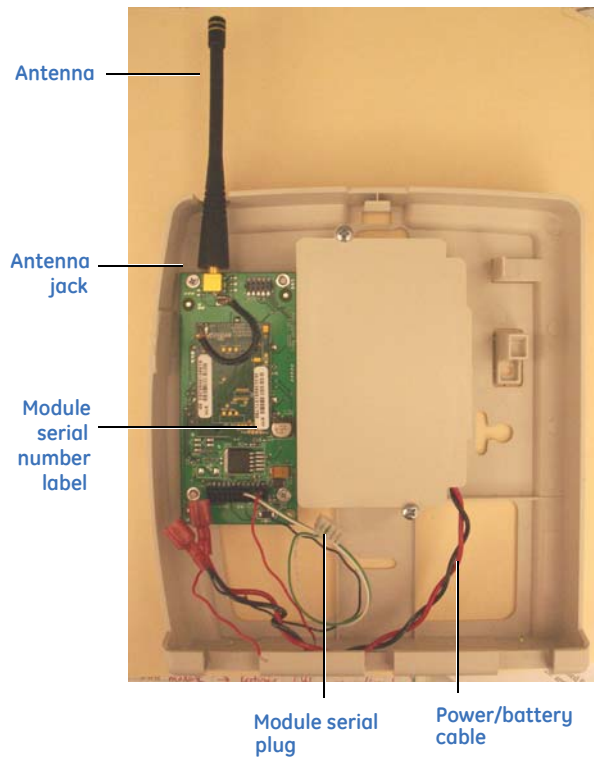


Table 1 describes the component functions

Table 1. Module component descriptions

Component	Function
Module serial plug	Connects to panel board serial connector for data communication.
Power/battery cable	Connect to panel battery charging terminals and backup battery.
Antenna jack	Antenna connection for module.

LEDs

Status LEDs indicate network and module status. *Figure 2* shows the location of the LEDs on the back of the module.

Figure 2. LED location on the back of the module

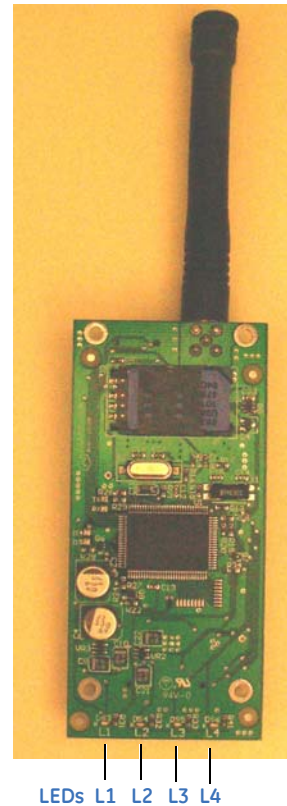


Table 2 describes the LED functions.

Table 2. LED functions

LED	Function
L1	Error LED. Will flash 1 to 8 times in a 4-second interval to indicate specific error conditions such as network error, panel communication error, or GSM radio error.
L2	Panel Communication. Flashes every time a data packet is received from the panel.
L3	GSM Communication. Flashes every time a data packet is received from the GSM radio.
L4	GSM Signal Level. Flashes 0 to 5 times, or toggles on/off when communicating with the Alarm.com server.

See [LED/key information](#) on page 5 for more detailed LED information.

Before installation

Before you install the module, you must do the following:

1. Set up a dealer account with Alarm.com.
2. Verify that the prospective customer is within the GSM network coverage area.
3. Contact Alarm.com at least 24 hours in advance of installing and setting up a customer account so that Alarm.com can get the modem activated on the cellular network. Go to <https://alarmadmin.alarm.com> for complete details.

After setting up your dealer account and giving advance notice of a new installation, you are ready to create a new customer account.

Create a new customer account

To create a new customer account, do the following:

1. Log on to the Alarm.com dealer website.
2. Enter your dealer login and password, then click **Go to customer support** to access the *Customer Search Data* web page.
3. Click **Create Customer**. The *Step One: Customer Information* screen appears (Figure 3). Enter the required information.

Note: Enter the email address where you would like Alarm.com to send messages.

Figure 3. Step One: Customer Information screen

Step One: Customer Information ?

Required fields are marked with a *

First Name *

Last Name *

Street 1 *

Street 2

City *

State *

Zip Code *

Phone Number *
Home ▼

E-Mail *

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4. Click **Next**. The *Step Two: Create Customer's Login* screen appears (Figure 4). Enter the customer login name. Follow the directions on the screen. You can also click **Automatically Generate Login** and Alarm.com assigns a login for you.

Figure 4. Step Two: Create Customer's Login screen

Step Two: Create Customer's Login ?

Enter the first login preference in the text box below. Alarm.com will check to make sure this login is not already taken, and that it meets the basic login requirements (4-15 alphanumeric characters). You will be prompted to enter a new login if these requirements are not met, or if the login is taken.

[Automatically Generate Login](#)

< - - Back Next - - >

5. Click **Next**. The *Step Three: System Location* screen appears (Figure 5). If the system is begin installed at the address entered in *Step One: Customer Information*, select **Yes** and that information will appear automatically in some of the fields. If the address is different than *Step One: Customer Information*, select **No** and enter the address and time zone where the system is being installed.

Figure 5. Step Three: System Location

Step Three: System Location ?

Will the system be installed at the address entered in Step One?

Yes No

Street 1 *

Street 2

City *

State * & Zip Code *

Time Zone * EST ▼

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6. Click **Next**. The *Step Four: Panel Information* screen appears (Figure 6). The *Modem Serial #* is the last 10 digits of the label on the module circuit board (Figure 1 on page 1). Alarm.com needs at least 24 hours notice for new accounts to ensure the module is active on the wireless network by 5 AM EST on the installation date you enter.

Figure 6. Step Four: Panel Information screen

7. Click **Next**. The *Step Five: Choose a Service Plan* screen appears (Figure 7).

Figure 7. Step Five: Choose a Service Plan screen

Note: Selections in the *Service Plan* screen will vary depending on availability of service plans.

8. Click **Next**. The *Step Six: Central Station Forwarding* screen appear (Figure 8). Select one of the options and enter the central station information.

Figure 8. Step Six: Central Station Forwarding screen

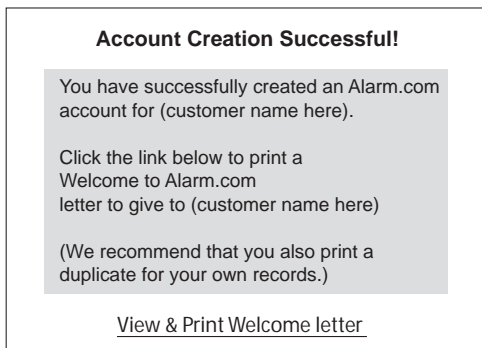
9. Click **Next**. A confirmation screen appears that lets you review all entered information (Figure 9). If changes/corrections are needed, click **edit** next to that data field.

Figure 9. Confirmation screen

- When you are satisfied with the information entered, click **done**. The *Account Creation Successful* screen appears (Figure 10). Click **View and Print Welcome Letter**. Print two copies of the welcome letter, one for the customer and one for your records. This letter includes the customer's login, temporary password, and instructions on how to get started.

Note: If you leave the *Account Creation Successful* screen without printing the welcome letter, you must click **Search customer data** and then select the customer support option *New Welcome Letter*.

Figure 10. Account Creation Successful screen



Installation

Installation consists of removing the existing panel back plastic, mounting, and wiring.

Use the following installation guidelines:

- Simon 3 panels allow a maximum of one module.
- The module draws a maximum of 30 mA average during normal operation. In power save mode, when there is an AC power failure and/or a low panel battery, the module will draw only 10 mA average.
- Do not exceed the panel total output power when using panel power for the module, hardwired sensors, and /or sirens. Refer to the specific panel installation instructions.
- Avoid mounting the panel in areas with excessive metal or electrical wiring, such as furnace or utility rooms.
- Leave 12 to 18 in. of open space around the module antenna.
- Do not install the control panel and module in a basement or other below-ground location. Doing so will negatively impact wireless signal strength.

Tools and supplies needed

You will need the following tools and supplies:

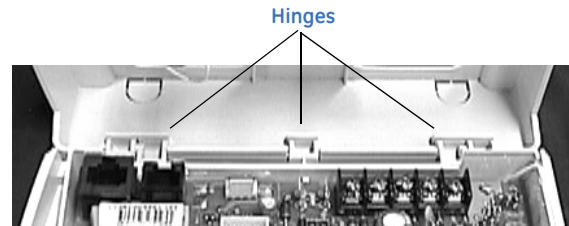
- small blade and Phillips screwdriver;
- screws and anchors (included); and
- drill and bits.

Removing the existing back plastic from the panel

To remove the existing back plastic from the panel, do the following:

- Remove the panel from the box and set it aside.
- Open the panel cover, then release the top chassis latch from the back plastic.
- Lift and slide the front panel so its hinges disengage from the back plastic (Figure 11). Set the panel front aside.

Figure 11. Panel hinges



Mounting and wiring

To mount and wire the unit, do the following:

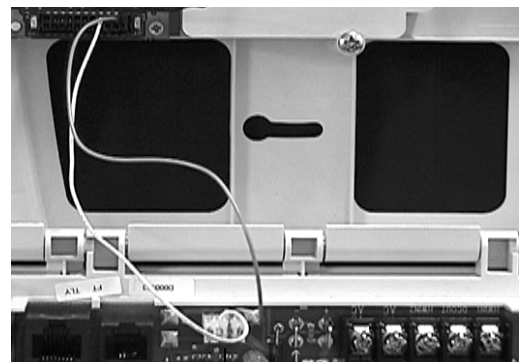
- Mount the new back plastic with the module at the desired location.
- Align the three hinges on the panel chassis with the three slots on the back plastic (Figure 12). The chassis should be hanging upside down.

Figure 12. Aligning the hinges



- Connect siren, hardware zone, and power transformer wires to the panel terminal block and any phone cords to the panel/ phone line jacks. Refer to the panel installation instructions.
- Connect the module serial plug to the panel serial connector (Figure 13).

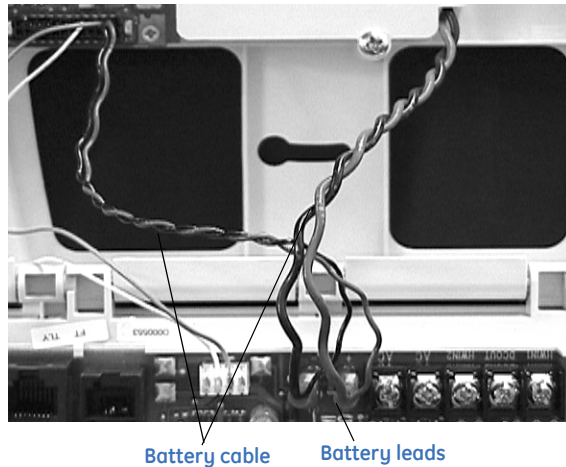
Figure 13. Module serial plug



Module serial plug

- Using the battery cable included with the module, connect the battery wires to the panel board. Observe polarity, red to + and black to - (Figure 14).

Figure 14. Connecting battery wires to the panel



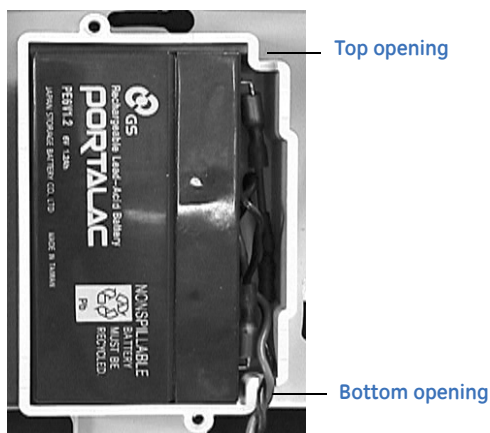
- Screw the antenna onto the antenna jack (Figure 1 on page 1).

Power up

Whenever a module is added or changed, you must remove panel power and reapply it for the panel and module to communicate successfully. To power up the module and panel, do the following:

- Verify that all wiring connections are correct.
- Remove the battery cover and battery from the mounting plate of the old panel.
- Connect battery leads to the battery. Observe polarity, red to + and black to -.
- Place the battery inside the battery compartment of the new mounting plate and run the battery cable through the top or bottom openings (Figure 15).

Figure 15. Battery in compartment



- Replace the battery compartment cover.
- Plug the panel power transformer into the AC outlet.

Module registration

To register the module, you need to do a manual phone test or initiate a panic/alarm. To do a manual phone test, do the following:

- Enter the installer code.
- Press the option button and wait for the panel to say *Option 1*.
- Close the cover. The panel will beep.
- Wait for a second beep (up to 15 seconds).
- Press and hold the 9/0 key until the panel announces *Remote phone test*.

Note: Only three manual phone tests are allowed in a three day period. If more manual phone tests are required, unplug the module at the module connector and plug back in.

Power settings that change on power up

Some panel features are changed automatically on power up to provide optimum module performance. These features should not be altered by the installer. The affected features and their respective settings are:

Sensor/zone 24. Upon initial modem power up, the panel recognizes and learns the module as sensor/zone 24 and assigns Module as the sensor/zone name. Any device previously residing in panel memory as sensor/zone 24 is automatically deleted and must be learned into panel memory using any available sensor/zone number between 01 and 23.

Clock. The modem sets the panel clock at power up and then updates it every 18 hours. It is important to select the correct panel time zone on the ADC website, or the panel time will not be accurate. If a system is powered up before the customer account has been created, the time zone will default to Eastern Time.

LED/key information

Four small LEDs are mounted on the backside of the module and are visible through one of the openings at the back of the panel. If the table-top support is installed, the LEDs can be seen through a narrow slit on the right side of the table top.

LED 1 (red)

LED 1 flashes when an error is encountered. The number of flashes is the error number. If there are two or more errors at the same time, the errors will be flashed one after the other. The LED will stay off for at least four seconds between errors.

1 flash. Module cannot communicate with the panel. Check wiring between the panel and the module. Make sure the green and white wires are not swapped.

2 flashes. The SIM card is missing. The SIM card holder can be found underneath the module.

3 flashes. This error is common if the module takes more than 10 seconds to register with the GSM network. If it persists for more than a few seconds, the module is unable to register with the GSM network. Check LED 4 for signal level. If signal level is too low, change the panel's location or use a higher gain antenna. If the signal is good, the module may be roaming on a GSM network that doesn't partner with ATT-Cingular. If the module had been communicating in the past, there may be new interference from some other device or building.

4 flashes. The module is registered on the GSM network but cannot connect with Alarm.com. Contact Alarm.com.

5 flashes. Radio portion of the module is not working correctly.

6 flashes. This is an error only if it persists for more than a minute. Otherwise, it's just an indication that the module is fixing an unusual condition regarding communication with the GSM network.

LED 2 (yellow)

LED 2 flashes with every communication between the module and the panel. Normal pattern calls for a series of quick flashes every two seconds in normal mode or four seconds in power save mode.

LED 3 (green)

LED 3 flashes with every communication between the module and its radio unit in idle mode, and with every communication with Alarm.com in connected mode. In power save mode, this LED flashes in unison with LED 2.

LED 4 (green)

Indicates the GSM signal level as a number of flashes (1 to 6). Signal level is updated every eight seconds if it changes a lot or every 20 seconds if it's fairly stable. No flashes indicates:

- the module is in power save mode or in connected mode;
- the module is powered up or just exited power save mode; or
- there is no GSM tower coverage in the area.

In connected mode, the LED toggles on and off.

Module states (modes)

The module states (modes) are:

Idle mode. AC power is up, the battery level is greater than 6 volts, the status button of the panel is not announcing *system low battery*, and the module is not communicating with Alarm.com.

- L1 - Flashes errors, if any.
- L2 - Communication with panel.
- L3 - Communication with radio unit.
- L4 - Signal level (1 to 6 bars).

Power save mode. The module just powered up, or AC power is down, or battery level is less than 6 volts, or the status button is announcing *system low battery*. The module draws 10 mA while in power save mode. It is fully functional and will go into connected mode as soon as a signal needs to be sent. Pressing the 9/0 key for 10 seconds or more will switch the module into idle mode and update the signal level reading.

- L1 - Inactive.
- L2 - Communication with panel.
- L3 - Same flashing pattern as L2.
- L4 - Inactive.

Connected mode. The module is connected to Alarm.com and reported an alarm or other condition. The module stays in connected mode for at least six minutes at a time unless the 9/0 key is pressed for 10 seconds or more, which will cause the module to go into the idle mode.

- L1 - Flashes errors, if any.
- L2 - Communication with panel.
- L3 - Communication with Alarm.com.
- L4 - Alternates two seconds on, then two seconds off.

Key presses

Press any of the following panel keys for 10 seconds or more and listen to the following information:

1/2 key. 10-digit module serial number. This number is needed to create an Alarm.com account.

3/4 key. 4-digit module firmware version.

5/6 key. 15-digit SIM card number. You may be asked for this number by a technical support representative to verify that the module was activated on the GSM network.

7/8 key. List of types of reports that the module will send to Alarm.com and to the central station. See [Key reports \(7/8 key\)](#).

9/0 key. Signal level and module status or error, if any (see [Key status \(9/0 key\)](#)). This key is also used to trip a manual phone test or to force the module to read the signal level.

Lights on. Battery voltage as read by the module, to two decimal places. For example, 653 means 6.53 volts.

Lights off. If the module is powered and is communicating with the panel, the panel will announce one of the messages in [Lights off key reports](#) on page 7. If the panel remains silent, the module may not be powered on.

Key reports (7/8 key)

Press the 7/8 key for 10 seconds or more to get a list of the types of reports that will be sent to Alarm.com and/or the central station. Reports can be turned on or off via the Alarm.com Dealer web site.

Note: Certain report types are not included with all Alarm.com service plans. Contact Alarm.com for further information.

Report numbers that are not listed here are special messages that are used by Alarm.com only and are not forwarded to the central station. They are announced by the panel for troubleshooting only.

- 2 - Module will send phone tests (manual and automatic)
- 5 - Module will send alarms (all types).
- 7 - Module will send sensor troubles
- 8 - Module will send closings/openings.
- 10 - Module will send sensor bypass.
- 11 - Module will send AC failure.
- 13 - Module will send panel programming.
- 14 - Module will send tampers (tamper alarms are in number 5).
- 15 - Module will send alarm cancels.
- 16 - Module will send normal activity events (contact opening/closing, motion activation, etc.).
- 18 - Module will send regular *alive* signals.
- 40 - Module will send panel low battery.

Key status (9/0 key)

Press the 9/0 key for 10 seconds or more to get the signal level and the module status or error, if any.

The panel will announce a number for the signal level (0 to 6) followed by a letter for the status or error.

- I - Idle.
- C - Connected.
- O - Power save.
- L - Connecting.
- A - Disconnecting.
- M - SIM card is missing (same as LED 1 two flashes error).

G - Cannot register module with GSM network (same as LED 1 three flashes error).

K - Cannot connect to Alarm.com (same as LED 1 four flashes error).

D - Radio not working correctly (same as LED 1 five flashes error).

Pressing the 9/0 key for 10 seconds while the module is connected to Alarm.com (but not actively transmitting), or in power save mode will allow the module to refresh its signal level reading. This can be useful during panel installation while looking for the best location, and when the module is likely to go in power save mode because the transformer is unplugged, or because it's connected to Alarm.com.

Lights off key reports

The *lights off* key reports are:

Remote access OK. The transmitter is able to communicate with Alarm.com through the wireless network.

No remote access. The module is unable to communicate with the wireless network. Follow the guidelines in [Improving wireless signal strength](#).

Module failure 1. The module is not registered with the wireless network yet. Follow the guidelines in [Improving wireless signal strength](#). Make sure to register the module with the wireless network (see [Setting up a new subscriber](#)).

Module failure 2. The module is registered with the wireless network, but the signal is too weak for proper communication with the network. Follow the guidelines in [Improving wireless signal strength](#).

Module failure 3. The module is registered and is able to send and receive messages some of the time, but not always. This is usually a sign of poor wireless coverage. Follow the guidelines in [Improving wireless signal strength](#).

Improving wireless signal strength

For optimal wireless signal strength, follow these guidelines:

- Install the module above ground level, as high up as possible within the structure.
- Install the module near or adjacent to an outside-facing wall of the structure.
- Install the module in an area of the structure that is closest to the nearest wireless tower location. Contact Alarm.com technical support for the location of the nearest wireless tower.
- Do not install the module inside a metal structure or close to large metal objects or ducts.
- Make sure to follow the antenna positioning guidelines that are included with the antenna. Certain antennas must be oriented a specific way in order to receive signals.
- Upgrade the antenna. If you are using the 1/4 wave antenna included with the GSM Gateway Module, upgrade to a 1/2 wave antenna or to a higher-gain remote cable antenna. Certain antennas are also suitable for outdoor mounting. Contact Alarm.com technical support for antenna options.

As you make changes to the module location or antenna to improve strength, you can press and hold the Simon panel keypad 9/0 key to get an updated signal strength reading. The panel will announce a number for the signal level between 0 and 6 (6 is the strongest signal strength reading).

Troubleshooting/testing

- *The LEDs are not responding.*
Turn off the panel power and verify that all wiring is correct.
- *Module status LEDs do not turn on immediately after initial power up.*
You must wait 5 to 10 minutes after power up for module to communicate with Alarm.com.
- *Panel/sirens are beeping even though the system is not armed.*
Press touchpad status button and panel reports the trouble condition. Consult the panel manual for details.
Note: If the module is powered down for a short period of time, buffered messages may be received when module power is restored.
- *Panel will not perform manual phone test.*
Only three manual phone tests are allowed in a three day period. If more manual phone tests are required, unplug the module at the module connector and plug back in.

Setting up a new subscriber

This section describes how to set up your customer's Alarm.com website account and only applies to Web/Interactive customers. Once the customer account has been created and the module has been installed, the end user must go to www.alarm.com or custom dealer website to complete the new subscriber setup procedure. To complete the new subscriber setup you need the following:

- the login and temporary password included on the Alarm.com *Welcome Letter*;
- a list of the system sensors and touchpads; and
- at least one phone number and e-mail address where Alarm.com can send notifications

Note: If the sensors and touchpads were not learned in before connecting the modem, an updated sensor list must be requested from the dealer site under **Support Options | Sensor List**.

When you have this information, go to www.alarm.com or custom dealer website and log on using the login and temporary password. A *New Subscriber Setup* wizard appears to help the customer create their address book and turn on Alarm.com Notifications.

Note: At least one sensor must be learned into the panel to complete the new subscriber setup.

FCC compliance

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Specifications

Compatibility	Simon 3 panels with software versions 3.5 and later
Power requirements	6V nominal
Standby current	30mA (10mA in power save mode)
Peak current	1.7A
Operating temperature	32 to 120°F (0 to 49°C)
Storage temperature	-30 to 140°F (-34 to 60°C)
Max. relative humidity	90% non-condensing
Cellular network	Quad-band GSM/GPRS
Dimensions (H x W)	4 1/16 x 1 7/8 in.
Listings	FCC Part 15, PTCRB Cingular

Technical support

Toll-free: 888.GESECURity (888.437.3287 in the US, including Alaska and Hawaii; Puerto Rico; Canada).
Outside the toll-free area: Contact your local dealer.

www.gesecurity.com