

NXG-7102(-SIM) 4G/2G Cellular Module Installation Sheet

Product Summary

Cellular Modem

This module adds 4G cellular communication capabilities to the xGenConnect alarm panel. It can provide alarm reporting and remote access over a 4G mobile network via UltraSync Cloud.

If 4G signal is unavailable, the module will switch to 2G where available. One SIM card may be pre-installed and should not be removed.

Only alarm traffic is routed to cellular, video from cameras is not.

Before You Begin

The xGenConnect panel should be provisioned before going to site. This allows the panel to connect to the servers and be programmed using the UltraSync+ app, DLX900, or UltraSync Portal.

SIM card(s) must be activated to provide internet to the panel.

The xGenConnect panel should be configured to allow remote access. This requires the Web Access Passcode to be set, and adding the site to the UltraSync+ app.

Pre-Installation Check

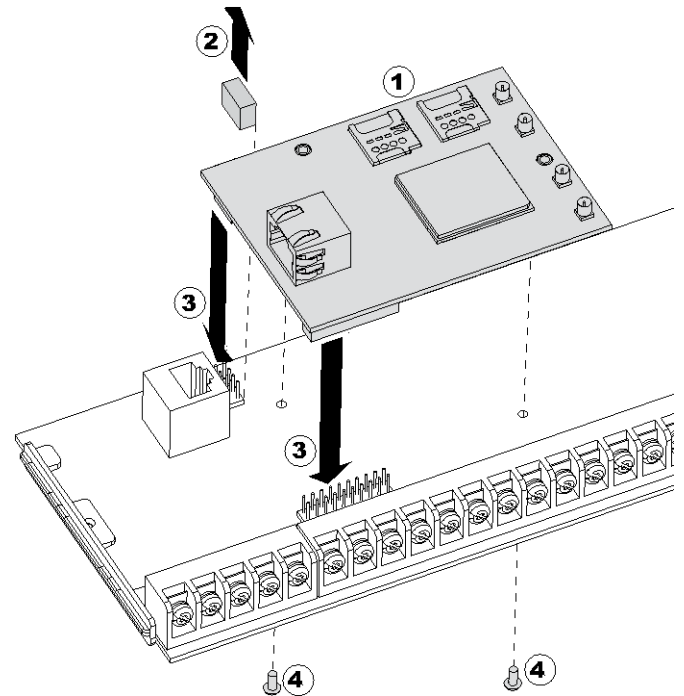
The OpenSignal app can be used to check cellular signal strength, location of cell towers, and perform speed tests. It may assist installers in identifying a suitable location for the alarm panel.

If the alarm panel is installed in a location with poor cellular signal, it may report intermittent communication errors.

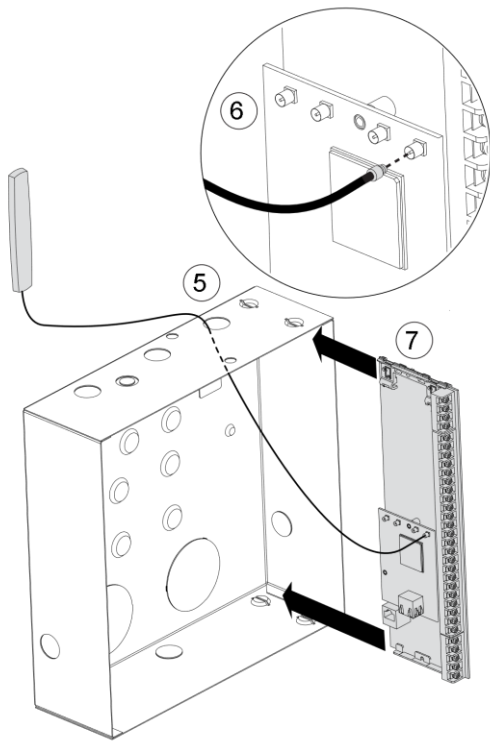
Carrier do not warrant or support this app.

1. Download and install the OpenSignal app on your smart phone.
2. Open the app and check 4G signal strength is good.
3. If signal strength is poor, find an alternative location. Installing an additional diversity antenna, or external high gain antennas may assist.

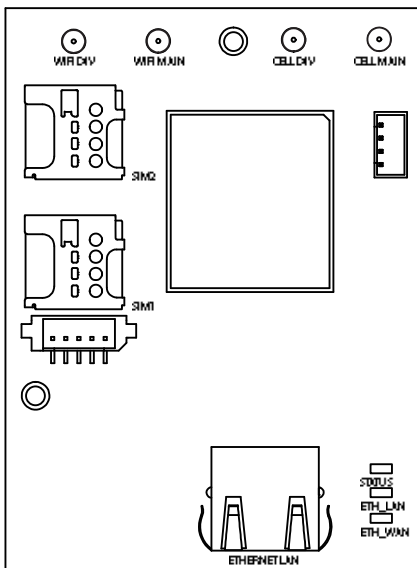
Installing the Module



1. Check the SIM card is installed in SIM1 slot.
2. Remove J14, an 8-way header located next to the xGenConnect Ethernet port. J14 links the Ethernet port to the panel. When the cellular module is installed, the Ethernet port becomes the cellular module's Ethernet WAN port.
3. Align the module to the 8-pin and 16-pin headers on the xGenConnect. Push down to attach the module. Take care not to bend the pins.
4. Attach the provided screws to the reverse side of the xGenConnect to secure the module. Do not overtighten screws.



5. Remove knockouts as needed from enclosure, then feed the antenna through.
6. Connect the antenna to the MMCX connector on the module labeled CELL MAIN. Do not attach to wall before checking signal strength.
7. Slide the xGenConnect into the enclosure.
8. Turn on power to xGenConnect. The LEDs on the module should light:



STATUS: on indicates power is connected to the module.

ETH_LAN: on indicates LAN cable plugged in to module, off indicates LAN cable not plugged in, blinking indicates activity on LAN port.

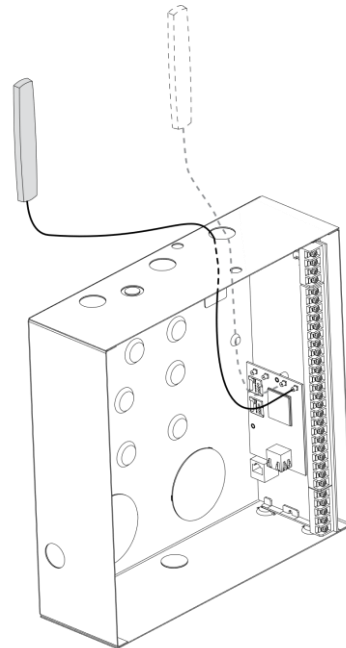
ETH_WAN: on indicates WAN cable plugged into panel, off indicates WAN cable not plugged in, blinking indicates activity on WAN port.

9. Check the cellular signal strength (see following page).

10. The module supports “antenna diversity” to improve multipath reception. If signal strength is not sufficient, then connect extra antenna to the MMCX connector labeled “CELL DIV”.

For best reception, install the DIVERSity antenna parallel to the MAIN antenna and at least 20cm apart. Antennas should be attached away from metal surfaces.

11. Once module is fully functioning, fix the antennas to the wall. Surface should be clean and dry. The alarm panel should look like this once assembled:




Single/Dual Path Reporting

If only single path cellular reporting is required, then follow steps to check signal strength.

If dual path (cellular and Ethernet) reporting is required, check signal strength first. If it is acceptable, connect the panel to the customer router with an Ethernet cable.

Note: Dual path is only available if panel Ethernet reporting and cellular module reporting are used.

Check Signal Strength Using NXG-1820 Keypad

1. Turn on power.
2. Wait 3-5 min for the module to boot and connect to the cellular network.
3. Enter a valid PIN code on a NXG-1820 keypad to get access to the main screen.
4. Press MENU – [PIN code] – [ENTER] – Settings – Status – Connection Status.
5. Check “UltraSync Status” shows “Connected”.
6. Scroll Right .
7. Check “Signal Strength” is acceptable.

Signal Strength



- If the reported value is -88 to -51 then the signal strength is OK.
- If the reported value is -121 to -89 then installing an external high-gain antenna is recommended.

Note: Signal strength varies day to day and is not an absolute value. Use the UltraSync Portal to track signal strength performance over time.

Default the Module

If required, clear all the settings of the module back to factory default:

1. Launch the UltraSync+ app.
2. Tap the site name to login to the panel.
3. Tap the Menu button on the top left.
4. Tap Advanced.
5. Tap Shortcut.
6. Enter **24.910**.
7. Press ENTER.

Connect Module to Customer Router

Connect the Ethernet WAN port on the xGenConnect to the customer's router using an Ethernet cable.

Troubleshooting

Signal Strength is poor, unable to connect using app

If cellular reception is poor, then the app will be unable to connect. Provide internet from the customer's router:

1. Connect an Ethernet cable to the Ethernet WAN port on the xGenConnect panel.
2. Connect the other end of the Ethernet cable to an available LAN port on the customer's router.

Check Signal Strength Using UltraSync+ App

1. If panel is online, the signal strength may be checked remotely using the app:
2. Turn on power.
3. Log in to the panel.
4. Tap Settings – Connection Status.
5. Scroll down to Signal Strength.
6. Check whether Signal Strength is acceptable.

Check Signal Strength Using Web Server

If panel is offline, the signal strength can be checked using the web server:

1. Turn on power.
2. Connect device (smartphone or laptop) to customer's router.
3. On the keypad, go to the Installer menu and select Communicator > IP Configuration > IP Address, and note the IP address displayed.
4. Open web browser and enter panel IP address.
5. Log in to the panel.
6. Click Settings > Connection Status.
7. Scroll down to Signal Strength.
8. Check whether Signal Strength is acceptable.

Cell State does not show Connected, Cell Service is not showing a valid service

1. If a SIM card is preinstalled, no configuration is necessary. Check if the SIM card is installed correctly, try defaulting the module, and power cycling the system.
2. If the SIM card requires custom settings:
3. Login to the panel (e.g. UltraSync+ app)
4. Click Advanced – Communicator – Cellular Configuration.
5. Click SIM1.
6. Enter the APN, Username, Password, CHAP/PAP authentication, PIN, and PUK codes as instructed by the carrier.
7. Click Save.
8. Click Settings – Connection Status.
9. Check SIM cards are connecting to their network.

Alarm Transmission Path and Alarm Transmission System Faults

See xGenConnect Installation and Programming Guide, section "Alarm Transmission Path and Alarm Transmission System Faults" for information.

Cannot access cameras

Video streaming require a functioning primary IP path.

1. xGenConnect Ethernet WAN port must be connected to the customer's broadband internet router via Ethernet cable.
2. Cameras should be connected via Ethernet LAN on the cellular module.
3. Check the primary IP path is connected and functioning.
4. Connect laptop to Ethernet LAN on cellular module and confirm internet access is possible.
5. Ping cameras.
6. Check UltraSync Portal for camera state.
7. Reboot the customer router and wait 5 minutes. This will reset the internet connection.
8. If still not working, power cycle panel and wait 5 minutes. This will reset the security LAN.
9. If still not working, power cycle camera(s) and wait 5 minutes. This will reset the client devices.

Secondary cellular path is only for alarm delivery. Video features cannot be accessed via the cellular network.

Features

- Client Mode – module can connect to customer's broadband router as a client to report alarm messages and stream cameras. Alarm delivery and video is delivered over the primary IP path.
- Security LAN – module can provide a LAN to allow cameras to connect to the system. This separates security devices from end-user equipment.
- Cellular Backup – module can provide a secondary path over a cellular network to deliver alarm messages if the primary IP path is unavailable. Dual path or single path cellular reporting must be enabled in the UltraSync Portal.
- Camera Support – supports up to sixteen (16) UltraSync Gen 2 Bullet and Indoor Cube Cameras. Cameras must be activated using the UltraSync+ app or have a secure password set. These should be connected via Ethernet to an Ethernet Switch (not included) connected to the module's LAN port.

Note: Doorbell camera is not supported.

- DHCP Server – security devices connecting to the router can be allocated an IP address using DHCP.
- DHCP IP Address Range – 192.168.33.100 to 192.168.33.250
- IP Address Range – for devices configured with a static IP address, use 192.168.33.10 to 192.168.33.250
- Lease Period – 12 hours.
- DNS – fixed at 192.168.33.1.
- Gateway – fixed at 192.168.33.1.

Specifications

Compatible alarm receivers (RCT)	UltraSync Receiver OH NetRec Receiver
Voltage	13.8 VDC (provided by panel)
Current:	
Maximum	200 mA at 13.8V
Quiescent	118 mA at 13.8V
Average	138 mA at 13.8V
Frequency Band	GSM/GPRS/EDGE: 900 / 1800 MHz LTE: 800 MHz (B20) / 900 MHz (B8) / 1800 MHz (B3) / 2100 MHz (B1)
Transmit Power	EGSM900: Class 4 (+32.5 dBm ±2 dB) GSM1800: Class 1 (+30 dBm ±2 dB) GSM900 8-PSK: Class E2 (+26.5 dBm ±3 dB) GSM1800 8-PSK: Class E2 (+26 dBm +3/-4 dB) LTE800, LTE FDD B20, LTE900, LTE FDD B8, LTE1800, LTE FDD B3, LTE2100, LTE FDD B1: Class 3 (+23 dBm ±2 dB)
External connector	MMCX
Dimensions (W × H × D)	136 x 80 x 5 mm
Storage temperature	-34° to 60°C (-30° to 140°F)
Weight	150 g
Operating temperature	-10 to +55°C (+14 to 131°F)
Relative humidity	maximum 90% noncondensing
Environmental class	II

Regulatory Information

Manufacturer	Placed on the market by: Carrier Fire & Security Americas Corporation, Inc. 3211 Progress Drive, Lincolnton, NC, 28092, USA Authorized EU manufacturing representative: Carrier Fire & Security B.V. Kelvinstraat 7, 6003 DH Weert, Netherlands
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SP3 and SP4 (GSM/GPRS)
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Product documentation



Please consult the following web link to retrieve the electronic version of the product documentation.

This link will guide you to the EMEA regional contact page. On this page you can request your login to the secured web portal where all manuals are stored.

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