

FX20/FX60/FX70 Supervisory Controller GPRS Modem Option Card

Installation Instructions

LP-FXGPRS-0, LP-FXGPRSW-0

Part No. 24-10564-68, Rev. —
Issued October 29, 2010

Refer to the [QuickLIT Web site](http://www.quicklit.com) for the most up-to-date version of this document.

Applications

This document describes the mounting of a General Packet Radio Service (GPRS) wireless modem option kit for FX20/FX60/FX70 Supervisory Controllers.

Note that the GPRS option card is **not supported** in any FX Supervisory Controller that also has the 56 Kbps auto-dial/auto-answer modem option card (LP-FXMDM-0) installed.

This GPRS modem option card is a Global System for Mobile Communications (GSM) cellular modem option card using GPRS data technology, powered by the FX20/FX60/FX70 Supervisory Controller. The option card has two Light-Emitting Diodes (LEDs) to indicate status and signal.

You can order the GPRS modem option card with or without the Subscriber Identity Module (SIM) card.

- **LP-FXGPRSW-0** (bundled **with** the Wyless™ provisioned SIM card)
- **LP-FXGPRS-0** (bundled **without** the Wyless provisioned SIM card)

Note: The GPRS modem option requires a SIM card from an approved vendor. At the time of this publication, only a SIM card provisioned by the Wyless Group is supported for use in the United States.

Note: The FX20/FX60/FX70 Supervisory Controller requires Niagara^{AX}-3.4 or later to support operation of the GPRS modem option card.

For the software configuration and operation of the installed GPRS modem option, refer to:

- *FX GPRS Modem Technical Bulletin (LIT-12011639)*

For information on mounting and wiring an FX20/FX60 Supervisory Controller, refer to:

- *FX20/FX60 Installation Instructions (Part No. 24-10174-77)*

For information on mounting and wiring an FX70 Supervisory Controller, refer to:

- *FX70 Supervisory Controller Installation Instructions (Part No. 24-10564-17)*

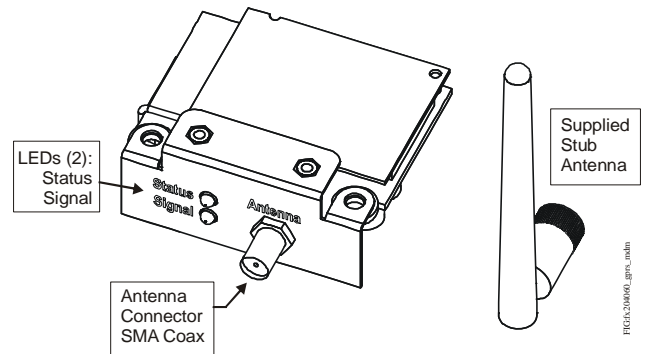


Figure 1: FX20/FX60/FX70 Modem Option Card

North American Emissions Compliance

United States

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

Canada

This Class (A) digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe (A) respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Installation

Parts Included

This package includes the following items:

- LP-FXGPRS-0 modem option card **without** a SIM card, with attached endplate
- or if an LP-FXGPRSW-0 modem option card, **with** a Wyless provisioned SIM card
- a right-angle GSM/GPRS quad-band SMA coax-mounted stub antenna
- *FX20/FX60/FX70 Supervisory Controller GPRS Modem Option Card Installation Instructions (Part No. 24-10564-68)*

Special Tools Needed

The following supplies and tools are required:

- SIM card from approved wireless service provider
- #2 Phillips screwdriver: used to install the GPRS option card

Mounting

Pre-installation

Prior to mounting the GPRS modem option card in the FX20/FX60/FX70 Supervisory Controller, install the SIM card into the connector on the underside of the option card.

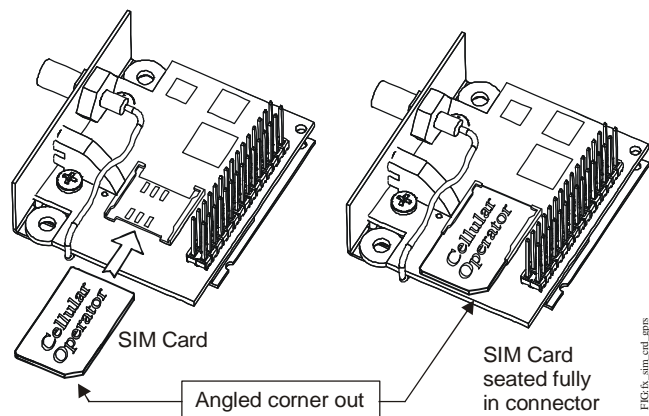


Figure 2: Inserting SIM Card into Underside of GPRS Modem

To install the SIM card, orient the card with its foil connectors down (writing side up) and its angled corner out, and slide the card fully into the connector (see Figure 2).

Mounting the GPRS Modem Option Card



WARNING: Risk of Electric Shock.

Disconnect power supply before making electrical connections. Contact with components carrying hazardous voltage can cause electric shock and may result in severe personal injury or death.

IMPORTANT: Be careful to plug any option card into its connector properly (pins aligned).

The GPRS modem option card can be installed in either available option slot of an FX20/FX60/FX70 Supervisory Controller. However, Option Slot 2 is typically recommended for port number simplicity.

1. **Remove power** from the FX20/FX60/FX70 Supervisory Controller. Wait for all LEDs to turn off.
2. Remove the cover: press in the four tabs on both ends of the unit, and lift the cover off.

Note: If accessory modules are plugged into the FX20/FX60/FX70 Supervisory Controller, you may need to slide them away from the unit to get to the cover tabs.

3. Remove the battery and bracket assembly by taking out the four screws holding it in place. Set the screws aside for later. Unplug the battery from the connector on the FX20/FX60/FX70 Supervisory Controller. Figure 3 shows an exploded view of an FX20/FX60.

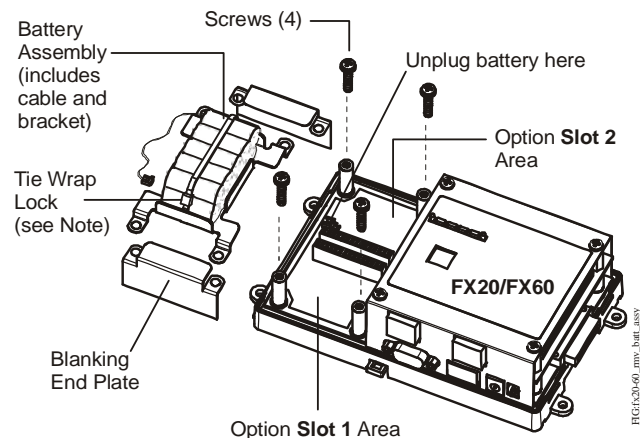


Figure 3: Remove Screws and Battery Assembly

Note: The tie wrap on the battery pack should have its lock knot on top, as shown in Figure 3. If not, cut and remove the tie, then reinstall another tie wrap with the lock tab on top. (If the tie lock is at the bottom, it interferes with the option card.)

4. Remove the blanking end plate for the slot into which you are installing the option card. (Retain the blanking end plate in case the option card must be removed at a later date.)
5. Carefully insert the pins of the GPRS modem option card into the socket of the appropriate option card slot. Make sure the mounting holes on the option card board line up with the standoffs on the base board. If they do not line up, the connector is not properly aligned. Once aligned, press the option card until it is completely seated.

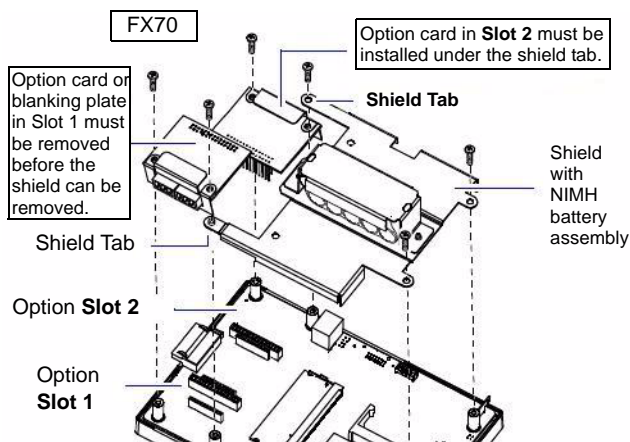
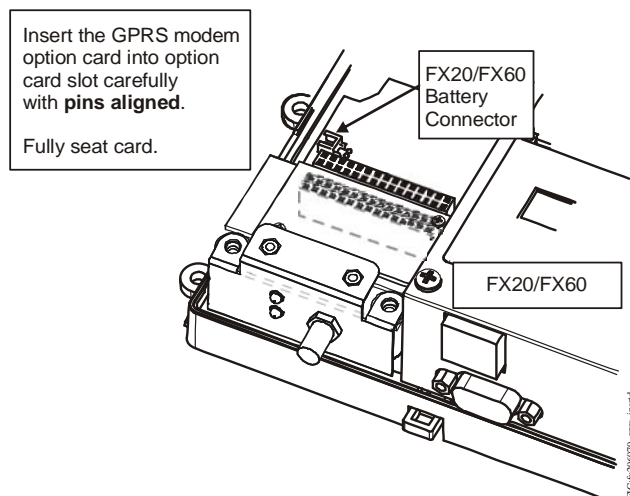


Figure 4: GPRS Modem Option Card Inserted

IMPORTANT: For the FX70, carefully pry up the shield tab to install the option card under the tab. Do not install the option card in slot 2 with the card resting on top of the shield tab. Otherwise an electrical short or some other issue from misaligned card header pins may result.

6. Plug the battery cable into the battery connector on the FX20/FX60/FX70 Supervisory Controller (see Figure 4 for location).
7. Set the battery and bracket assembly back over the option card slots, with the mounting holes aligned with the standoffs.
8. Place the four screws through the battery bracket, end plates, and into the standoffs on the FX20/FX60/FX70 Supervisory Controller base board. Hand tighten these screws.

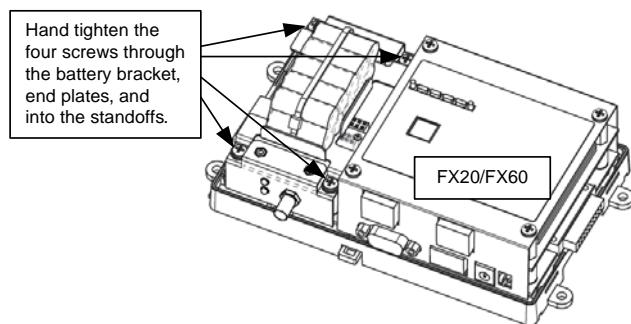


Figure 5: Fasten the Battery Bracket

9. Replace the FX20/FX60/FX70 Supervisory Controller cover. If accessory modules were unplugged, plug them back into the FX20/FX60/FX70 Supervisory Controller as before and secure them.

Attaching the Antenna

A GSM/GPRS stub antenna with right-angle SMA male coax connector is provided for use with an FX20/FX60/FX70 Supervisory Controller. To attach the antenna, insert it into the SMA coax jack on the modem and finger-tighten the knurled nut (see Figure 6).

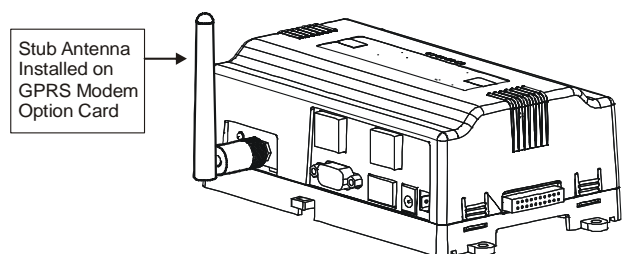


Figure 6: SMA Stub Antenna Installed on FX20/FX60

Rotate the antenna to whatever position you need for mounting clearance and/or best reception. If needed, use the [Antenna Extension Option](#) on page 4.

Antenna Extension Option

To locate the included stub antenna up to 6.56 ft (2 m) away from the FX Supervisory Controller, order and install the option. This antenna extension option includes a 6.56 ft (2 m) SMA-type coax extension cable and steel bracket for wall or panel mounting. See Figure 7 for details and dimensions.

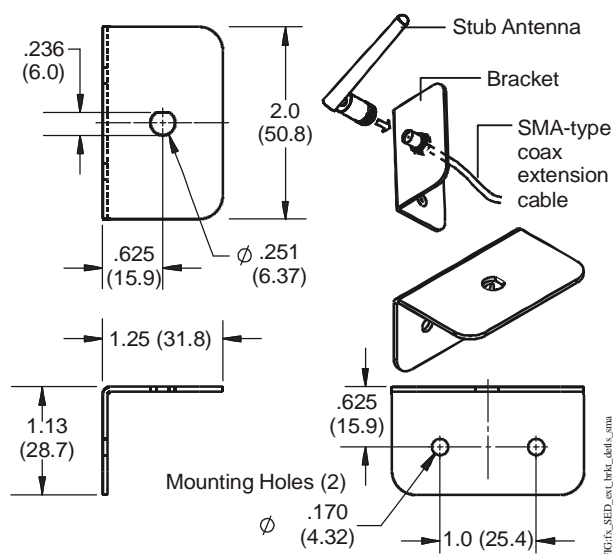


Figure 7: Extension Cable and Antenna Mounting Bracket Dimensions, in. (mm)

Some installations may require a different external antenna.

Note: Any external antenna must be compatible with the GSM 900/1,800 frequency, and the 50-ohm impedance, of the SMA coax connector on the GPRS modem option card.

Operation

LEDs

Two LEDs are on the endplate of the GPRS modem option card. On the option card label these LEDs appear as STATUS and SIGNAL (see Figure 1).

These two LEDs are briefly described as follows:

- **STATUS (green)** — Flashes various LED patterns based on the state of the modem. This LED is directly under control of the modem itself (rather than the modem driver).

Upon initial power-up, the Status LED pattern is typically 600 ms On/600 ms Off, and may change depending on various modem state changes.

- **SIGNAL (green)** — Indicates the Received Signal Strength Indicator (RSSI), according to the number of short (350 ms On) flash patterns. (Analogous to number of bars on a cell phone.)

For further details on the operation of both LEDs, refer to the *FX GPRS Modem Technical Bulletin (LIT-12011639)*.

Modem Checkout

After mounting the GPRS modem option card and attaching the antenna, power on the FX20/FX60/FX70 Supervisory Controller. Following reboot of the FX20/FX60/FX70 Supervisory Controller, configure the modem by opening a platform connection to the FX20/FX60/FX70 Supervisory Controller.

To verify modem communications, verify that status properties in the **GPRS Modem Configuration** platform view show returned values.

Repair Information

If the GPRS modem option card fails to operate within its specifications, replace the unit. For a replacement GPRS option card, contact the nearest Johnson Controls® representative.

Options and Parts

Standard replacement parts are listed in Table 1.

Table 1: Parts for GPRS Modem Option Card

Order Code	Description
LP-FXGPRSE-0	6.56 ft (2 m) SMA-type coax extension cable, and mounting bracket. See Antenna Extension Option on page 4.
LP-FXGPRSS-0	Replacement SIM card, provisioned by Wyless.
LP-FXGPRS-0	GPRS modem option card, without bundled SIM card.
LP-FXGPRSW-0	GPRS modem option card, with bundled SIM card.
LP-KITGPRSA-0	Replacement right-angle GSM/GPRS quad-band SMA coax-mounted stub antenna.

Approvals

Federal Communications Commission (FCC): The Siemens® TC63 cellular communications module used on the LP-FXGPRS-0 and LP-FXGPRSW-0 modem option card is FCC approved, and has an FCC ID of QIPTC63

If installing another option card that uses COM ports, note that COM assignments for that other card are affected if you install the GPRS modem option card in Option Slot 1.

See Table 2 for the COM port assignments.

COM Port Usage

The GPRS modem option card consumes two COM ports on the installed FX20/FX60/FX70 Supervisory Controller.

Table 2: COM Slot Assignments for the FX20/FX60/FX70 Controller with a GPRS Modem

FX20/FX60		FX70	
Only one GPRS card supported		Only one GPRS card supported	
Option Slot 1	Option Slot 2	Option Slot 1	Option Slot 2
GPRS = COM3, COM4		GPRS = COM5, COM6	
RS-232 = COM3	GPRS = COM4, COM5	RS-232 = COM5	GPRS = COM6, COM7
RS-485 = COM3, COM4	GPRS = COM5, COM6	RS-485 = COM5, COM6	GPRS = COM7, COM8
LON = LON1	GPRS = COM3, COM4	LON = LON1	GPRS = COM5, COM6
Wireless TEC = COM1	GPRS = COM3, COM4	Wireless TEC = COM3	GPRS = COM5, COM6
Sedona = COM3	GPRS = COM4, COM5	Sedona = COM5	GPRS = COM6, COM7



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