

T-GPRS-XPR Modem Option INSTALLATION SHEETS

This document covers the mounting and cabling of a T-GPRS-XPR wireless modem option retrofit kit in a Tridium® T-202 or T-602 Express series JACE® controller (model T-202-XPR-24 or T-602-XPR-24), also known as a T-x02-XPR-24.

Table 1 T-GPRS-XPR modem option kit description.

Description	Notes
GSM cellular modem option card using GPRS (General Packet Radio Service) data technology. Option card has 2 LEDs to indicate status and signal. Kit includes a Wyless provisioned SIM card, a coax-connected stub antenna with 6.5ft. (2m) SMA coax cable, and antenna mounting bracket.	Option card consumes the <i>only</i> option card slot in the controller. Option is not supported if the T-x02-XPR-24 controller has the factory-installed onboard GPRS modem (controller model T-202-XPR-24-GW or T-602-XPR-24-GW). At the time of this document, only a SIM card provisioned by the Wyless Group is supported for use in the U.S.



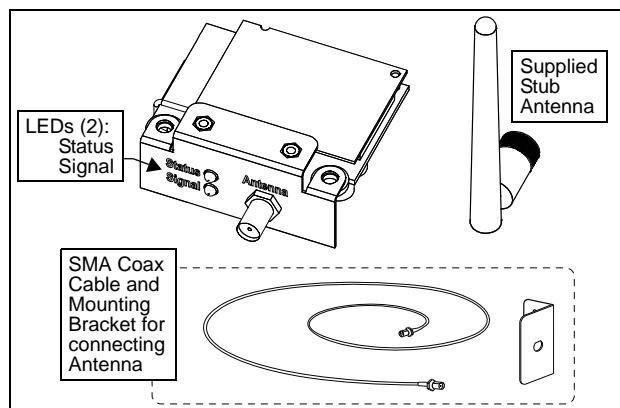
Note Installation of the T-NPB-GPRS modem option for *other* JACE models is covered in a different document. Also not covered is the *software setup and operation* of the installed GPRS modem option. See [“Related Documentation,”](#) page 4, for other documents.

Included in this Package

Included in this package you should find the following items:

- a GPRS modem option card, with pre-attached endplate.
- a Wyless provisioned SIM card, ready for [pre-installation](#).
- a right-angle GSM/GPRS quad-band SMA coax-mounted stub antenna.
- an antenna mounting bracket.
- a 6.56 ft. (2m) SMA coax antenna cable.
- This *T-GPRS-XPR Modem Option Installation Sheets* document, Part Number 11636 Rev 1.

Figure 1 T-GPRS-XPR Modem Option Kit.



Material and Tools Required

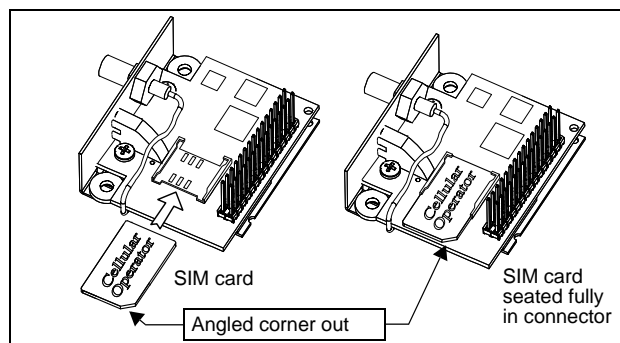
The following supplies and tools are required:

- #1 and #2 phillips screwdrivers: to remove and refasten covers on the T-x02-XPR-24 controller, and to install the GPRS modem card.
- Any other tools needed for mounting the antenna bracket. See [Figure 8](#) on page 3 for bracket details.

Pre-installation

Prior to mounting the GPRS modem option card in the JACE, install the SIM card into the connector on the underside of the option card.

Figure 2 Inserting SIM into underside of GPRS modem.



To install, orient the SIM with its foil connectors down (writing side up) and its angled corner out, and slide fully into the connector. See [Figure 2](#) above.

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Mounting



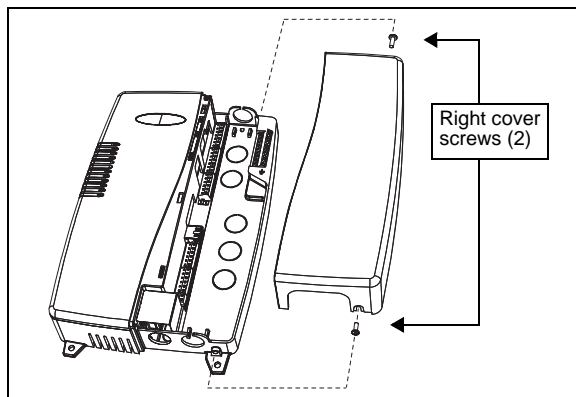
Warning Power to the JACE must be OFF when installing or removing option cards, or damage will occur! Also, you must be very careful to plug any option card into its connector properly (pins aligned).

Mount the GPRS modem card in the *only* option card slot of the T-x02-XPR-24 controller.

Procedure 1 Mounting T-GPRS-XPR modem option card.

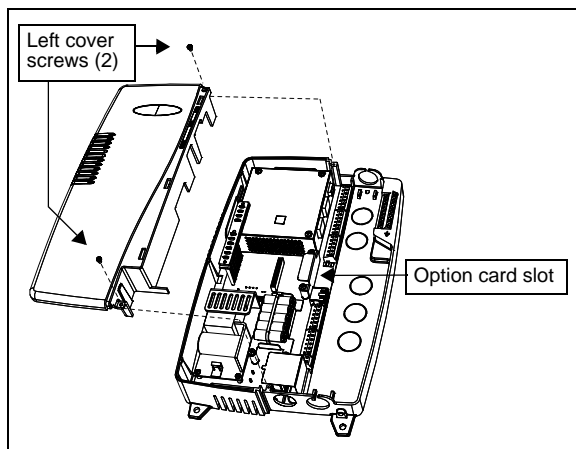
1. Remove power from the JACE—see the previous [Warning](#). Wait for all LEDs to turn off.
2. Using a #1 phillips screwdriver, remove the right cover first, see [Figure 3](#). Set the two screws aside.

Figure 3 Right cover removal and replacement.



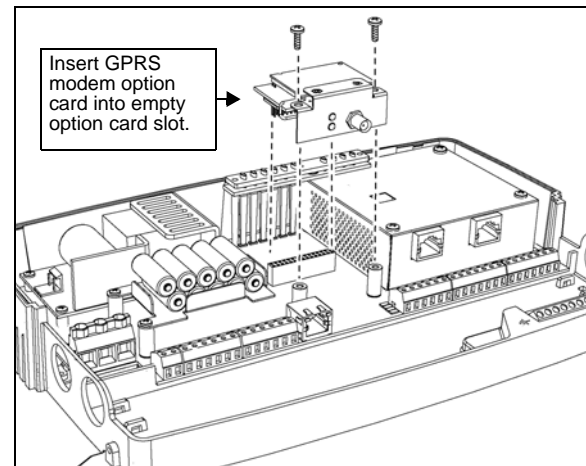
3. Remove the left cover next, see [Figure 4](#). Again, set the two screws aside.

Figure 4 Left cover removal and replacement.



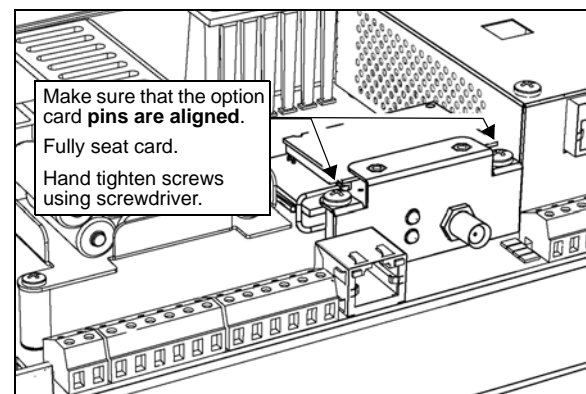
4. Using a #2 phillips screwdriver, remove the blanking plate from the JACE's option card slot.
5. Carefully insert the pins of the modem option card into the socket of the option card slot. The mounting holes on the end plate should line up with the standoffs on the base board. If they do not, the connector is not properly aligned

Figure 5 Insert option card with pins aligned.



6. Press until the option card is completely seated.

Figure 6 GPRS modem inserted, screws tightened.



7. Place the two screws through the option card end plate and into the standoffs on the JACE base board. Hand tighten these screws ([Figure 6](#)).
8. Replace the left cover (see [Figure 4](#) in Step 3.), refastening with the two screws set aside.



Note

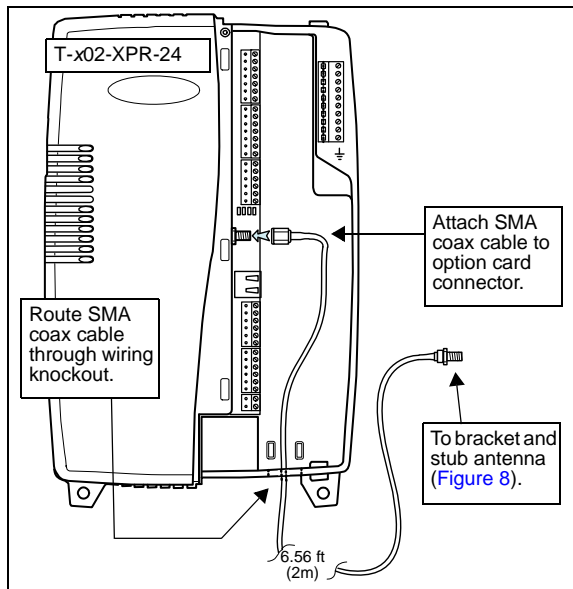
Leave the right cover off for [antenna installation](#). You may wish to leave it off until completing [modem checkout](#), to see [LEDs](#).

Antenna Installation

Procedure 2 Installing the T-GPRS-XPR antenna

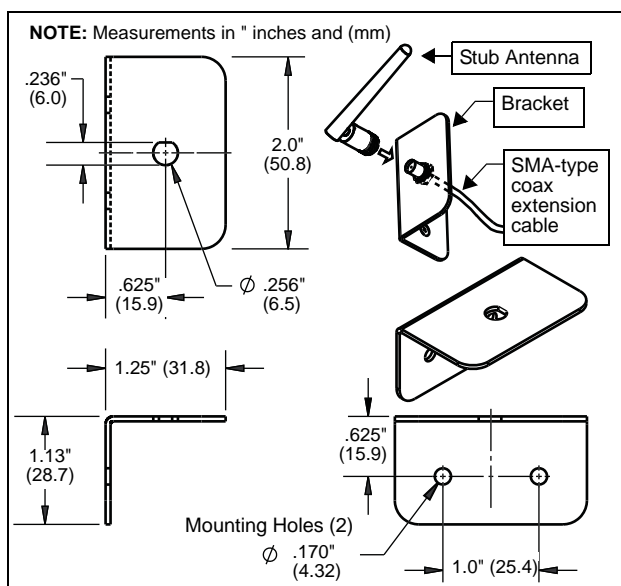
1. Route the included SMA coax cable through the appropriate wiring knockout of the T-x02-XPR-24 controller (top, bottom, or back), and attach it to the GPRS modem option card. See [Figure 7](#).

Figure 7 SMA coax cable routed through knockout.



2. Mount the antenna bracket within reach of the 6.56 ft. (2m) SMA-type coax extension cable. [Figure 8](#) shows bracket details and dimensions.

Figure 8 Bracket details.



3. Fasten the end of the SMA coax cable in the mounting bracket and attach the antenna by finger tightening the knurled nut.
4. Rotate in whatever position is needed for mounting clearance and/or best reception.

Some installations may require a different external antenna.



Note

Any external antenna must be compatible with the GSM 900/1800 frequency and the 50Ω impedance of the SMA coax connector on the GPRS modem option.

LEDs

Two LEDs are on the endplate of the GPRS modem option card. On the option card label these appear as "STATUS" and "SIGNAL"—see [Figure 1](#) on page 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 NiagaraAX modem driver).

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

- SIGNAL (green) — Indicates the RSSI (received signal strength indicator), according to the number of short (350ms On) flash patterns. Analogous to "number of bars" on a cell phone.

For further details on the operation of both LEDs, see the *NiagaraAX GPRS modem option - Engineering Notes* document.

Modem Checkout



Note

The controller's right cover must be off to see the two LEDs on the GPRS modem option card. After modem checkout, *replace the right cover*. See step 2. on page 2.

After [mounting](#) the GPRS option card and completing [antenna installation](#), power the JACE on. Following reboot of the JACE, you can configure the modem by opening a platform connection to the JACE.

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

Related Documentation

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

- *GPRS modem option - Engineering Notes*

For more information on mounting and wiring a T-x02-XPR-24 controller, refer to this document:

- *T-x02-XPR-24 Mounting and Wiring Instructions*

For installation details on the T-NPB-GPRS modem option for *other* JACE controller models (JACE-2/6/7 series), refer to this document:

- *T-NPB-GPRS Modem Option Installation Sheet*

Options and Parts

The following replacement parts may be ordered for the T-GPRS-XPR modem option kit:

Table 2 Parts for T-GPRS-XPR modem option.

Option/Part	Description
T-GPRS-CB-EXT	6.56 ft (2m) SMA-type coax extension cable, and antenna mounting bracket.
T-GPRS-SIM-W	Replacement SIM card, provisioned by Wyles.
11166	Replacement right-angle GSM/GPRS quad-band SMA coax-mounted stub antenna.

Approvals

FCC: The Siemens TC63 cellular communications module used on the T-NPB-GPRS modem option card is FCC approved, and has an FCC ID of QIPTC63.