

GPRS Modem Option Card

NPB-GPRS

INSTALL SHEET

This document covers the mounting of the NPB-GPRS wireless modem option card in a Tridium® JACE® controller, including models T-200/600 (JACE 2/6), T-700 (JACE-7), or Security JACE series.

The GPRS option card is *not supported* in any JACE that also has a dialup modem (NPB-MDM) option installed.

Table 1 NPB-GPRS modem option description.

Description	Models/Notes
GSM cellular modem using GPRS (General Packet Radio Service) data technology, powered by the JACE controller. Has 2 LEDs to indicate status and signal. Uses SMA coax connector (with provided antenna), optional GPRS-CBL-EXT antenna extension, or use another external antenna.	<ul style="list-style-type: none"> • NPB-GPRS-W (bundled with Wyless provisioned SIM card) • NPB-GPRS (without SIM) • GPRS-SIM-W (only a SIM card provisioned by Wyless) <p>Note the GPRS modem option requires a SIM (subscriber identity module) card from an approved vendor. At the time of this document, only a SIM card provisioned by the <i>Wyless Group</i> is supported for use in the U.S.</p>

Note The JACE requires NiagaraAX-3.4 or later to support operation of the NPB-GPRS.

Not covered in this document is the *software setup and operation* of the installed NPB-GPRS modem option. Refer to the NiagaraAX *GPRS modem option - Engineering Notes* document for this information.

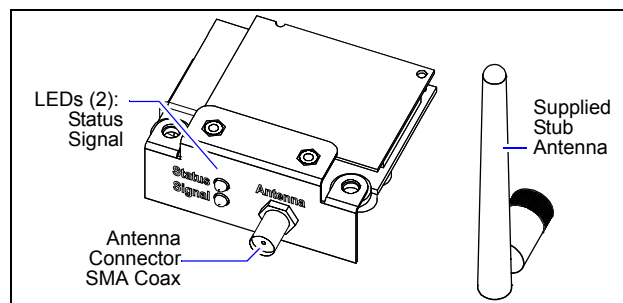
Refer to the appropriate JACE® mounting and wiring document for further installation details.

Included in this Package

Included in this package you should find the following items:

- a NPB-GPRS modem option card, with pre-attached endplate.
- if a NPB-GPRS-W, a Wyless provisioned SIM card, ready for [pre-installation](#).
- a right-angle GSM/GPRS quad-band SMA coax-mounted stub antenna.
- This *NPB-GPRS GPRS Modem Option Card*, Part Number 11317 Rev 1.6.

Figure 1 NPB-GPRS Modem Option.



Material and Tools Required

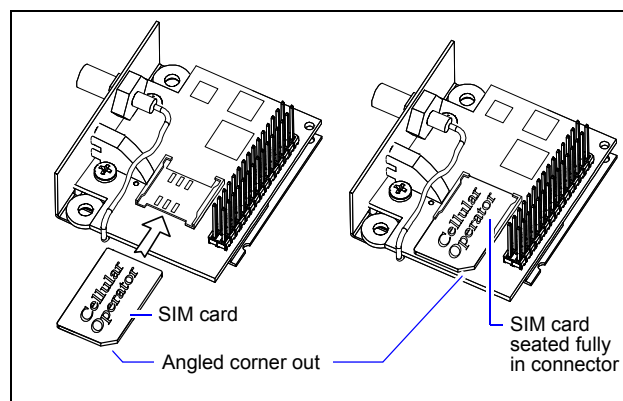
The following supplies and tools are required:

- SIM card from approved wireless service provider (see model notes in [Table 1](#)).
- #2 phillips screwdriver: used to install the NPB-GPRS option card.

Pre-installation

Prior to mounting the NPB-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 NPB-GPRS.



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.

Mounting



Warning Power to the controller 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 option card in either of the option card slots of the controller, as needed.

Procedure 1 Mounting the option card on a JACE.

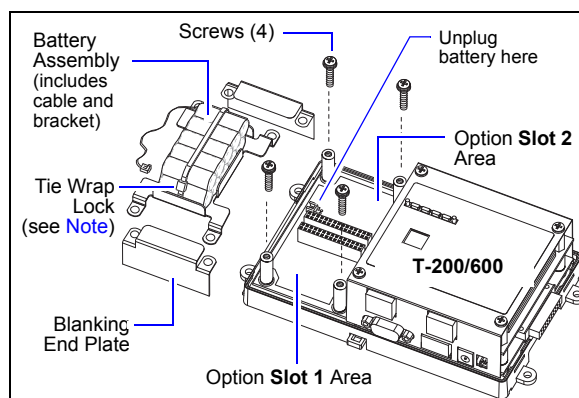
1. **Remove power** from the JACE — see the previous [Warning](#). Wait for all LEDs on the unit to be Off.
2. Remove the controller's cover. Press in the four tabs on both ends of the unit, and lift the cover off.



Note If accessory modules are plugged into the controller, you may need to slide them away from the unit to get to the cover tabs.

3. If a T-200/600 series or Security JACE, remove the battery and bracket assembly by taking out the screws holding it in place, setting screws aside for later. See [Figure 3](#) for an exploded view.

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 *re-install* another tie wrap with its lock tab on top. (Tie lock at bottom interferes with option card).

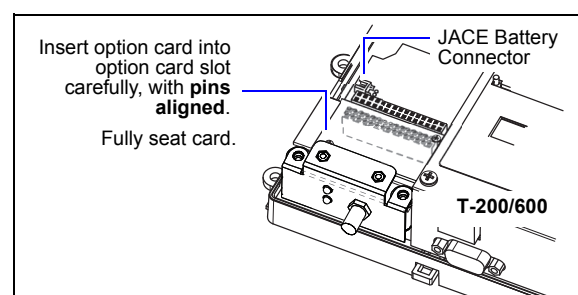
4. Remove the blanking end plate for the slot you are installing the option card into. (Retain the blanking end plate in case the option card must be removed at a later date.)



Note Slot 2 option card installation in a T-700 controller requires careful attention! See the *T-700 Mounting and Wiring Guide* for more details. This document focuses on installation in a T-200/600 series (JACE 2/6) controller.

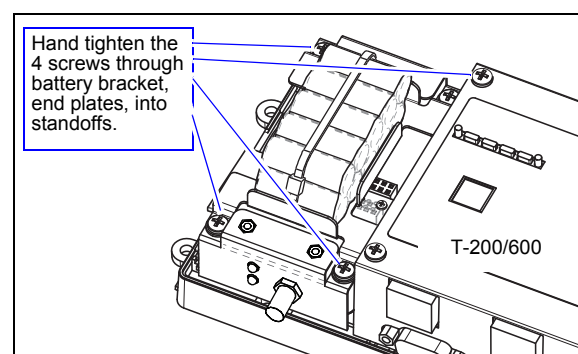
5. Carefully insert the pins of the NPB-GPRS into the socket of the appropriate option card slot. The mounting holes on the option board should line up with the standoffs on the base board. If they do not, the connector is not properly aligned. Press until the option card is completely seated.

Figure 4 NPB-GPRS inserted, end plate on top.



6. If unplugged, plug the battery cable back into the battery connector on the JACE (see [Figure 4](#)).
7. For the T-200/600 series or Security JACE, set the battery and bracket assembly back over the option card slots, with mounting holes aligned with the standoffs. Screws enter holes in the battery bracket first.

Figure 5 Re-fasten screws through battery bracket.



8. Place the screws through the battery bracket, end plates, and into the standoffs on the JACE base board. Hand tighten these screws.
9. Replace the JACE cover. If accessory modules were unplugged, plug them back into the JACE as before, and secure.

COM Port Usage

The NPB-GPRS modem option has two onboard UARTs, and so adds two COM ports on the installed JACE controller. The hosted station automatically resolves the option's COM addresses.

- If a T-200/600 or Security JACE controller and installed in Option Slot 1, or if the *only* option card, ports are COM3 and COM4.
- If a T-700 controller and installed in Option Slot 1, or if the *only* option card, ports are COM5 and COM6.

If installed in Slot 1 of a JACE along with *another* option card that uses COM ports in Option Slot 2, note that COM assignments for that other card are affected.

For example, if aT-200/600 with a NPB-GPRS option installed in Slot 1, and a single port RS-232 option (NPB-232) installed in Slot 2, COM assignments are: Slot 1 (GPRS): COM3, COM4; Slot 2 (RS-232): COM5.

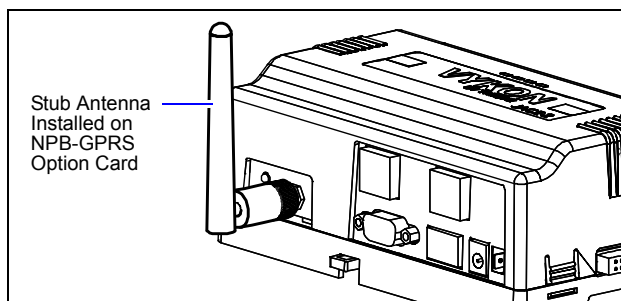
The same option card mix in a T-700 controller yields: Slot 1 (GPRS): COM5, COM6; Slot 2 (RS-232): COM7

The NPB-GPRS installed in the only (single) option slot of a T-202/602-XPR (M2M JACE) controller is seen as COM7 and COM8.

Attaching Antenna

A GSM/GPRS stub antenna with right-angle SMA male coax connector is provided for use with a T-200/600 series or T-700 controller. To attach, simply insert into the SMA coax jack on the modem, and finger-tighten the knurled nut (Figure 6).

Figure 6 SMA stub antenna on JACE 2/6 series.



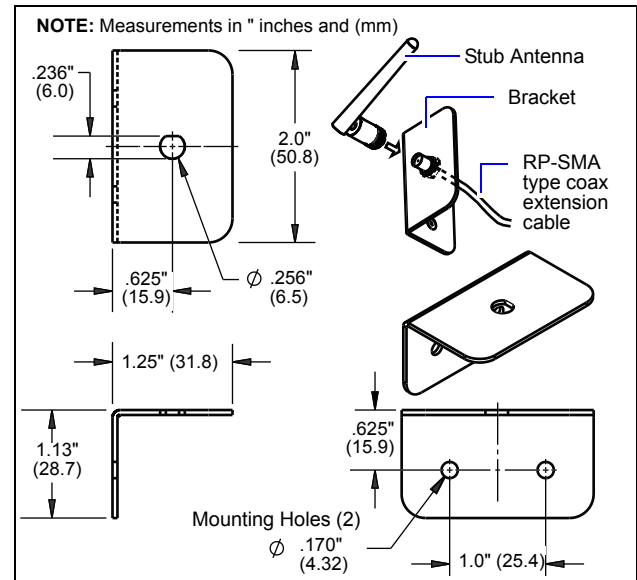
Rotate in whatever position is needed for mounting clearance and/or best reception. If needed, you can use the GPRS-CBL-EXT antenna extension option.

Antenna Extension Option

To locate the included stub antenna off the T-200/600 or T-700 controller, order and install the GPRS-CBL-EXT option. Included is a 6.56 ft. (2m)

SMA-type coax extension cable and steel bracket for wall or panel mounting. See Figure 7 for bracket details and dimensions.

Figure 7 GPRS-CBL-EXT bracket details.



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 NPB-GPRS modem option.

LEDs

Two LEDs are on the endplate of the NPB-GPRS 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 more details on option's LEDs, see the NiagaraAX document: *GPRS modem option - Engineering Notes*.

Modem Checkout

After mounting the NPB-GPRS modem option and attaching the antenna, power the JACE on. Following this controller reboot, 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*

Refer to the appropriate mounting and wiring document for further installation details on various models of JACE controllers, expansion modules, and other option cards.

Options and Parts

The following options and replacement parts may be ordered for the NPB-GPRS-W or NPB-GPRS modem:

Table 2 Parts for NPB-GPRS modem option.

Option/Part	Description
GPRS-CBL-EXT	6.56 ft (2m) SMA-type coax extension cable, and mounting bracket. See “Antenna Extension Option” on page 3.
GPRS-SIM-W	Replacement SIM card, provisioned by Wyless.
NPB-GPRS	Replacement GPRS modem option card, without bundled SIM card.
11166	Replacement right-angle GSM/GPRS quad-band SMA coax-mounted stub antenna.

Approvals

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

Information and/or specifications published here are current as of the date of publication of this document. Tridium, Inc. reserves the right to change or modify specifications without prior notice. The latest product specifications can be found by contacting our corporate headquarters, Richmond, Virginia. Products or features contained herein are covered by one or more U.S. or foreign patents. This document may be copied by parties who are authorized to distribute Tridium products in connection with distribution of those products, subject to the contracts that authorize such distribution. It may not otherwise, in whole or in part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form without prior written consent from Tridium, Inc. Complete confidentiality, trademark, copyright and patent notifications can be found at: <http://www.tridium.com/galleries/SignUp/Confidentiality.pdf>. © 2012 Tridium, Inc.