



Tractor Interface Module
Installation Instructions
Switch Input (TIM-SI) 821-7002



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WARNING! Always use appropriate personal protective equipment (ppe) during the installation and maintenance of the sensors and or related systems on a vehicle. If you have questions regarding which ppe are appropriate, please consult [OSHA 3151-12R 2003](#) to determine appropriate equipment.

Installation Instructions

Switch Input (TIM-SI) 821-7002

Getting Started

The Tractor Interface Module (TIM-SI) is an intuitive device that interfaces between the Trimble on board computer and the BatRF wireless TPMS sensors. It wirelessly receives the tire pressure information transmitted from the BatRF AirBAT TPMS sensors to provide alerts to the driver via the TIM-SI mounted LED light and to remote personnel via email or SMS text messages (if supported by the On Board Computer (OBC) provider). To learn more about the features of this product the User Guide can be downloaded from the BatRF website at www.batrf.com. Select *Library -> Installation Instructions*. To enable the remote alert features of the product consult the OBC provider documentation.

The TIM-SI ships with the following:

1. Tractor Interface Module - Switch Input
2. USB 4 wire power/alert cable and GPS Antenna
3. Adhesive backed Dual Lock mushroom Tape and primer to mount the TIM-SI

1.



2.



USB 4-Wire Power Cable
(03-821-0160)

GPS Antenna
(03-821-0008)

3.



Primer

Dual Lock
Mushroom Tape

Installing the TIM-SI

1. Locate the On Board Computer (OBC).

TIP – Typical mounting locations for the OBC are:

- a. Behind or under the passenger seat
- b. Behind or under the driver's seat
- c. For **Sleeper Cabs**, in the storage area under the bed accessible from the outside of the truck, or in the closet near the bed.

2. Select a Mounting Location for the TIM-SI-SI.

TIP – Choose a location that will allow for easy routing for the cable that runs between the TIM-SI-SI and the OBC and between the TIM-SI-SI and the GPS Antenna.

IMPORTANT – The TIM-SI-SI wirelessly communicates with the Airbat TPMS sensors; thus the mounting location must meet the following requirements:

DO:

- Mount the TIM-SI-SI at within 1" of window height or higher in the cab.

DO NOT:

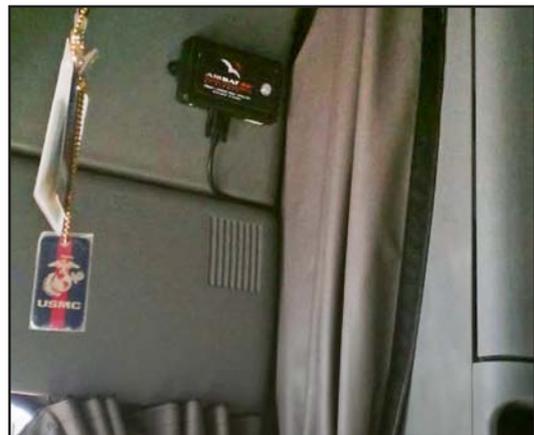
- Mount the TIM-SI-SI where metallic objects are within 1" of the front face next to the upper right hand corner of the box (where the receiving antenna is located).
- Mount the TIM-SI-SI within 12 inches of other wireless transmitters (in-cab WiFi, Blu-tooth and microwave ovens).
- Mount the TIM-SI-SI outside the cab of the tractor, the enclosure is not watertight.

Typically the TIM-SI-SI is mounted above the passenger door (sleeper cabs) or on or near the lower passenger side of the rear window (day cabs).

The TIM-SI-SI also may be mounted directly onto the rear window. If this is the preferred mounting method, it should be mounted on the passenger side in a position that does not obstruct the drivers view.



Day Cab Example



Sleeper Cab Example

3. Install the TIM-SI-SI

In this step, you will use the supplied locking tape to physically mount the TIM-SI unit in the vehicle. Before applying the adhesive side of the tape to a surface, the surface should be free and clear of any oil, dust or other materials. A primer swab is supplied to clean the surface prior to mounting.

To open the primer, squeeze the vial at the center where a round dot is located. Use the tape primer to clean the mounting surface on the back of the TIM-SI and the desired mounting location. Next, peel the Dual Locking Mushroom head Tape adhesive back strip and adhere a piece to each end of the back of the TIM-SI (see example photo). Mount the mating pieces to the TIM-SI and then remove the backing adhesive strip. Press the TIM-SI firmly to set the adhesive. Press the TIM firmly to set the adhesive.

4. Install the cable between the TIM-SI and the OBC.

Both power and the alert Output signal are run through this cable (eliminates the need for a separate power cable).

- 4a.** Plug the USB Type A end of the cable into the “+12VDC Alert” connector on the left side of the TIM-SI-SI.
- 4b.** Connect the pigtail end of the cable to the OBC and power.
 - **Black Wire:** Chassis Ground
 - **Red Wire:** +12VDC ignition power; 0.15 Amps Max
 - **White Wire:** Alert Output; connect to the OBC Switch Input
 - **Green Wire:** Optional Tamper Detect Output; connect to a different OBC Switch input. A 100K ohm resistor must also be connected between the switch input and +12VDC power (battery or ignition);

5. Install the GPS Antenna and Plug into the TIM-SI.

Mount the GPS antenna in any orientation where it has a good view of the sky usually near the windshield or on the dashboard is a good location. It can be mounted using the provided adhesive tape or if mounted externally on a metallic surface (internal magnet will hold in place).

Plug the GPS cable into the “GPS” connector and turn the nut until it is finger tight + 1/8 turn with a wrench.



Dual Lock Mushroom Tape mounted to the back of TIM-SI unit.



4a



5



5

Testing TIM- SI Installation

It is recommended that each installation be tested to ensure proper operation. To test the TIM-SI reader performance after installing all the AirBAT TPMS wheel-end sensors and the TIM-SI, follow these steps:

1. Verify Proper Installation

Visually ensure the following:

- a. The **GPS Antenna** is connected to the TIM-SI (SMA connector labeled “GPS”); the end of the cable with the amplified antenna (1¾” x 1¾” x ½” square box) is mounted where it has a good view of the sky (to receive the signal from the GPS satellites).
- b. The TIM-SI is mounted at window height or higher for good receive signal strength.
- c. When powered on the **Low Tire Alert** light may have a short flash of all colors followed by **green** for about two seconds and then goes out. If it flashes **red** after the **green** this indicates that the GPS antenna is either drawing too much current (replace it) or drawing too little current (not connected; connect or replace).

2. Bind The AirBAT Sensors to the TIM-SI

To bind the AirBATs to the TIM-SI, drive the vehicle for at least 1 mile (straight line distance; i.e. do NOT circle the block six times to equal 1 mile). For test purposes only, ensure the TIM-SI is powered for at least 2 minutes prior to driving to ensure the GPS has adequate time to acquire

the satellite signals (GPS must have view of the sky with no roof overhead). After the test drive, unplug the “+12 VDC Alert” connector found on the left side of the TIM-SI. Wait for about 10 seconds until the **Low Tire Alert** light has stopped blinking blue and has turned a solid red or the light is off. Plug the cable back in and watch the light blinks. The first blink may have a short flash of all colors but then is green for about 2 seconds confirming initial boot successful; then count the number of blue blinks that follow which indicates the number of sensors that are bound to the TIM-SI. The number of blue blinks should match the number of AirBATs that were mounted on the vehicle during the drive to bind the AirBATs.

3. Test the TPMS System

First verify that the OBC system provider (Cadec, Qualcomm etc.) is properly configured for that vehicle to send the alert all the way to the back office (via logistics web page or email). At the vehicle, loosen one of the AirBAT hoses to drop the pressure and verify that the AirBAT is blinking red. Verify that the TIM-SI **Low Tire Alert** light begins blinking to indicate the low pressure alert (should occur within 30 seconds of AirBAT beginning to blink). Finally, verify that the alert was received via the OBC system provider (may take up to ten minutes depending on the OBC provider).

If you are not successful with the installation and need support, please contact your sales agent or STEMCO's customer service and technical support line at (800) 527-8492, select option 2.

On-Board Computer Provider Compatibility

The TIM-SI was designed to provide a universal interface that will work with most OBCs supplied to the market today. Contact STEMCO customer support for the latest compatibility list if the OBC used by your fleet does not appear in the list below.

Compatible Products Model Numbers:

Trimble TVG-660



Certifications

FCC (USA)

This unit complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC FCC ID: SRA-821

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying Rf exposure compliance.

Should you need any additional assistance with any problems or issues please contact STEMCO Customer Service at (800) 527-8492.

Industry Canada

Contains/Contient IC: 7413A-821

NOTICE: This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Avis: Cet appareil est conforme avec Industrie Canada RSS standard exempts de licence (s). Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne peut pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement du dispositif.

This document may be referenced by STEMCO Part# 09-930-8212