

→ tiwiPro™ | Installation Manual



driver safety | fleet management | compliance

 inthinc™

About this Document:

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F	Updated information on routing cables and potential impact on airbags	Scott Vecchiarelli	3-30-2015

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About the tiwiPro™ Device

FCC Notification:

This device 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.

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 the 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.

Industry Canada Notification:

This product meets the applicable Industry Canada technical specifications. This Class B digital apparatus complies with Canadian ICES-003. Changes or modifications to the tiwiPro™ that are not expressly approved by inthinc, inc. could void the user's authority to operate the tiwiPro™.

About inthinc™

inthinc is a global company centered on telematics, fleet solutions and driving safety. Its breakthrough driving safety solutions are designed to safeguard lives, save money and protect the environment. inthinc technology dramatically improves driver behavior and has been documented to reduce accidents by more than 80 percent. For more information please visit www.inthinc.com.

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About this Guide

Installation of the inthinc tiwiPro™ system requires great attention to detail, as inthinc has a high-standard for quality workmanship. If the tiwiPro system is not installed by a trained technician or is not installed correctly, the product may not work as intended.

This guide provides installation requirements and instructions for tiwiPro system installations. It also serves as a starting point and study guide for the installer trainee, and a reference manual for the certified installer. Information contained within this document changes frequently, we highly recommend obtaining the latest version of this manual online at inthinc™ University (<https://training.inthinc.com/iu>) prior to new installations.

For system support or for assistance with installation of the waySmart product, contact:



24-Hour Technical Support

(866) 294-8637 opt. 3

OR

support@inthinc.com



tiwiPro™ Introduction

tiwiPro™ is designed to mentor drivers and improve driving behavior, by integrating in-cab audible notifications, that coach drivers when they are speeding, not wearing a seatbelt, or driving aggressively.

The system is designed to give drivers an opportunity to correct their behavior by incorporating speed buffers and violation grace periods. If the driver does not correct their behavior within the allotted grace period, then a violation is recorded and sent to the inthinc web portal for administrators to review.

Drivers are scored based on the safe operation of the motor vehicle. If a driver receives a recorded violation, their score will be decremented based on the egregiousness of the violation.

This document is designed to guide you through the installation and activation of the tiwiPro device in all commercial applications. For more information about the inthinc web portal or how drivers are scored, refer to the *inthinc Portal User Guide*.



tiwiPro™ Device at a glance:

LED Indicator Lights
These lights will indicate the status of the tiwi unit.

- ⓘ BLUE = GPS lock
- ⓘ RED = driving violation
- ⓘ GREEN = tiwi has power

Green Button (eCall)
Press this button to orient the tiwi unit during installation. After installation pressing this button will call a predetermined emergency phone number which can be configured in the inthinc web portal.

External Speaker
Provides in-cab verbal coaching to drivers.

GPIO Port (General Purpose Input/Output)
Used to connect external components, such as the External Seatbelt Sensor, to the tiwi unit.

OBD-II Adapter
Plugs in to most OBD-II diagnostic ports in vehicles built since 1996.

There is an OBD-II to 6-pin or 9-pin adapter for installations in Heavy-Duty Trucks.

Adhesive Pads (x4)
Used to adhere the tiwi unit to the windshield of a vehicle.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following 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. This Class B digital apparatus complies with Canadian C.S.T. 1002. This device complies with the CE Marking requirements of Directive 2002/95/EC (RoHS), Directive 2006/66/EC (Battery), and Directive 2011/65/EU (REACH). This contains FCC ID: D9E-WMP100, IC: 2851C-WMP100, and CE Marking.

tiwiPro™ Hardware

Qty:	Part Name	Part Number	Image
1	tiwiPro, OBD-II, (Light Duty Vehicle) OR	P/N# 900-00042	
1	tiwiPro, J1939, (Heavy Duty Vehicle)	P/N# 900-00069 (Not pictured)	

tiwiPro™ Adapter Cables

Qty:	Part Name	Part Number	Image
Optional	OBD-II > Deutsch 1939, 9-Pin Adapter	P/N# 840-00075	Image not available at this time
Optional	OBD-II > 9-Pin CAT Adapter	P/N# 840-00079	Image not available at this time
Optional	OBD-II > Deutsch 6-Pin Adapter	P/N# 840-00117	Image not available at this time
Optional	CAN 9-Pin 1939 > 6-Pin 1708 Adapter	P/N# 840-00153	Image not available at this time

tiwiPro™ Add-On Hardware Components

Qty:	Part Name	Part Number	Image
Optional	RF (Radio Frequency) Kill Switch	P/N# 900-00072	
Optional	External Seatbelt Sensor Kit	P/N# 900-00045	
Optional	Bulk Adhesive Kit (includes Araldite 2028 2-part adhesive, Dispensing Gun, Plunger, Mixing Nozzle)	P/N# 870-00034	

Tools & Supplies Required

				
Flat Head & Phillips Screwdriver	Molding Removal Tool	Wire Cutters	Putty Knife	12v Defroster (P/N 490-00042)
				
Zip Ties	Alcohol Wipes	Cloth Towel	Electrical Tape	

Section 1

tiwiPro™ Pre-Installation

IN THIS SECTION:

- ▶ **Configure Vehicle Profile** 11
- ▶ **Configure Device > Vehicle Assignment** 12

Pre-Installation Set-up

Prior to Installing a tiwiPro™ device in the vehicle there are a few items that need to be completed before a device can be installed. In order to complete the pre-installation requirements, you will need access to the inthinc web portal. If you do not have access to the inthinc portal, you can request access from your system administrator.

Pre-Installation requirements are as follows:

- ✓ Verify you have all of the parts & components necessary to complete the installation
- ✓ Verify you have all of the necessary tools & supplies to complete the installation
- ✓ Vehicle profile must be created in the inthinc portal (including VIN #) prior to the installation

1 Create Vehicle Profile in the inthinc™ Web Portal

Prior to installing the tiwiPro™ device, you will need to Add a Vehicle to the inthinc web portal. This basically means that you need to create a new vehicle profile and provide us with some information about the vehicle, specifically the VIN number. The tiwiPro™ device will automatically download firmware for the vehicle make/model based on the VIN # entered in the portal. The firmware (EMU or Emulation File) will download when orienting the tiwiPro™ unit during installation. This section will provide instructions on how to create a New Vehicle Profile in the inthinc portal.

WARNING! IF THE VEHICLE VIN # IS NOT SET-UP IN THE PORTAL, THE UNIT WILL NOT DOWNLOAD FIRMWARE AND THEREFORE WILL NOT OPERATE AS DESIRED.

▼ Follow these steps to **Add a Vehicle** in the inthinc portal:

1. Navigate to the inthinc portal URL: <https://my.inthinc.com> or <https://customername.inthinc.com>
2. To Add a Vehicle, go to **Admin > Vehicles > Add Vehicle**
3. Enter Vehicle information in the Required Fields (as indicated by the red * asterisk) on the **Add Vehicle Form** (see *image 1 below*). The Required fields are explained in greater detail in table 1 on page 12
4. Click the **Save** button when finished

Note: After the tiwiPro™ unit has been installed, and has communicated with the portal, you can revisit this page to complete vehicle-specific device configuration. See *Page 29* of this guide for more information.

The screenshot shows the 'Admin - Edit Vehicle' page in the inthinc portal. The page is divided into several sections:

- Vehicle Information:** Fields for VIN (*), Make (*), Model (*), Year (*), Color, Weight (lbs), License #, State (*), and Odometer (mi).
- Vehicle Profile:** Fields for Vehicle ID (*), Status (*), and a dropdown for Team.
- Vehicle Assignment:** A note: 'You must assign a device to this vehicle before assigning a driver.'
- Device Assignments:** Fields for Product and Assigned Device.

A note at the bottom of the form reads: 'Note: Select the Speed & Sensitivity tab to define device settings.' The form has 'Save' and 'Cancel' buttons at the top right and bottom right.

Image 1 - Vehicle Profile Page

For more information about adding a vehicle to the inthinc portal, refer to the inthinc™ Portal User Manual available at inthinc™ university. (<https://training.inthinc.com/iu>)

TABLE 1 : Add Vehicle Form Required Fields

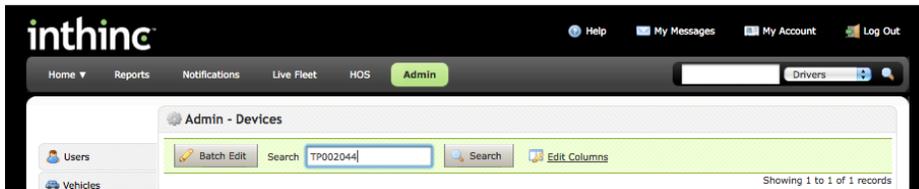
Required Field	Description
Vehicle Information Section:	
*VIN	Enter the 17 alpha-character VIN # for the vehicle. This is an especially important field because the tiwiPro™ unit will download the correct EMU file for the vehicle based on the VIN you enter. If you do not enter the correct VIN for the vehicle, the tiwiPro™ unit may not operate as desired.
*Make	Enter the Vehicle Make (i.e. Ford, GMC, Toyota)
*Model	Enter the Vehicle Model (i.e. F-150, Sierra, Camry)
*Year	Enter the Vehicle Year
*State	Enter the State
Vehicle Profile Section:	
*Vehicle ID	Enter the identifier for the Vehicle. This identifier can be alpha or numeric or a combination of both and can be of any length.
*Status	Set the Vehicle Status. Active will indicate the vehicle is active and being driven. Inactive indicates the vehicle is no longer being driven and the profile will be hidden in all reports.
Vehicle Assignment Section:	
*Team	Select from the drop-down the Team/Group this vehicle will be assigned to. This designates what reporting structure the vehicle will be categorized in.

2 Configure Device > Vehicle Assignment in the Portal

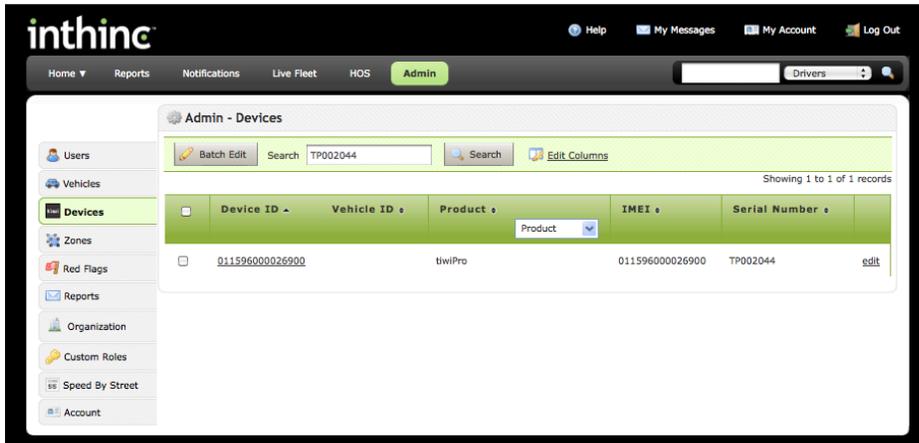
After creating a new vehicle profile for the vehicle you are installing the tiwiPro™ into, the next step is to assign or “pair” the tiwiPro™ unit and the vehicle. This step is imperative for the tiwiPro™ unit to download the correct firmware (EMU) file.

▼ Follow these steps to make the **Device > Vehicle Assignment** in the inthinc portal:

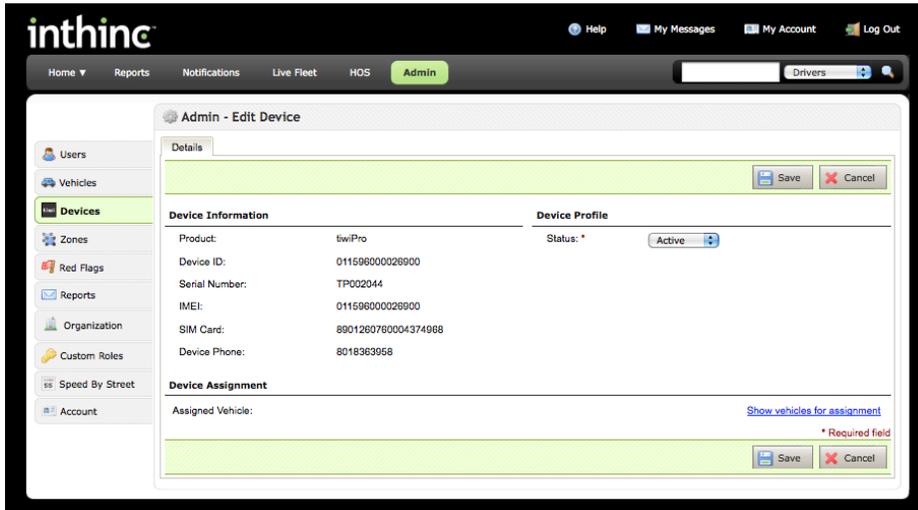
1. From the inthinc portal, go to **Admin > Devices**
2. In the *Search Field*, type the **tiwiPro™ device number (TP#####)** and click **Search**



3. The tiwiPro™ unit will display in the list. Click the **Edit** button in the far-right column. The *Device Information* page will display



4. In the *Device Assignment* section, click the **Show Vehicles for Assignment** link



5. Once the *Vehicle List* displays, you will need to find the vehicle you are installing the tiwiPro™ unit in, and select the vehicle by clicking the radio button in the left column (see User Tip below)



6. After you have made the vehicle assignment, click the **Save** button at the bottom of the page

Note: The above process of assigning the tiwiPro™ unit to the vehicle is sometimes referred to as “pairing” the device to the vehicle. After you have completed the pre-installation steps outlined in this section, the tiwiPro™ device can be installed in the vehicle.



User Tip...

This simplest way of finding a vehicle in the list is to type the Vehicle ID number into the Search box at the top of the list and clicking Search. This will filter the list to find any possible matches. Otherwise, you can manually scroll through the list, sorting or filtering columns as needed to locate the vehicle.

Section 2

tiwiPro™ Hardware Installation

IN THIS SECTION:

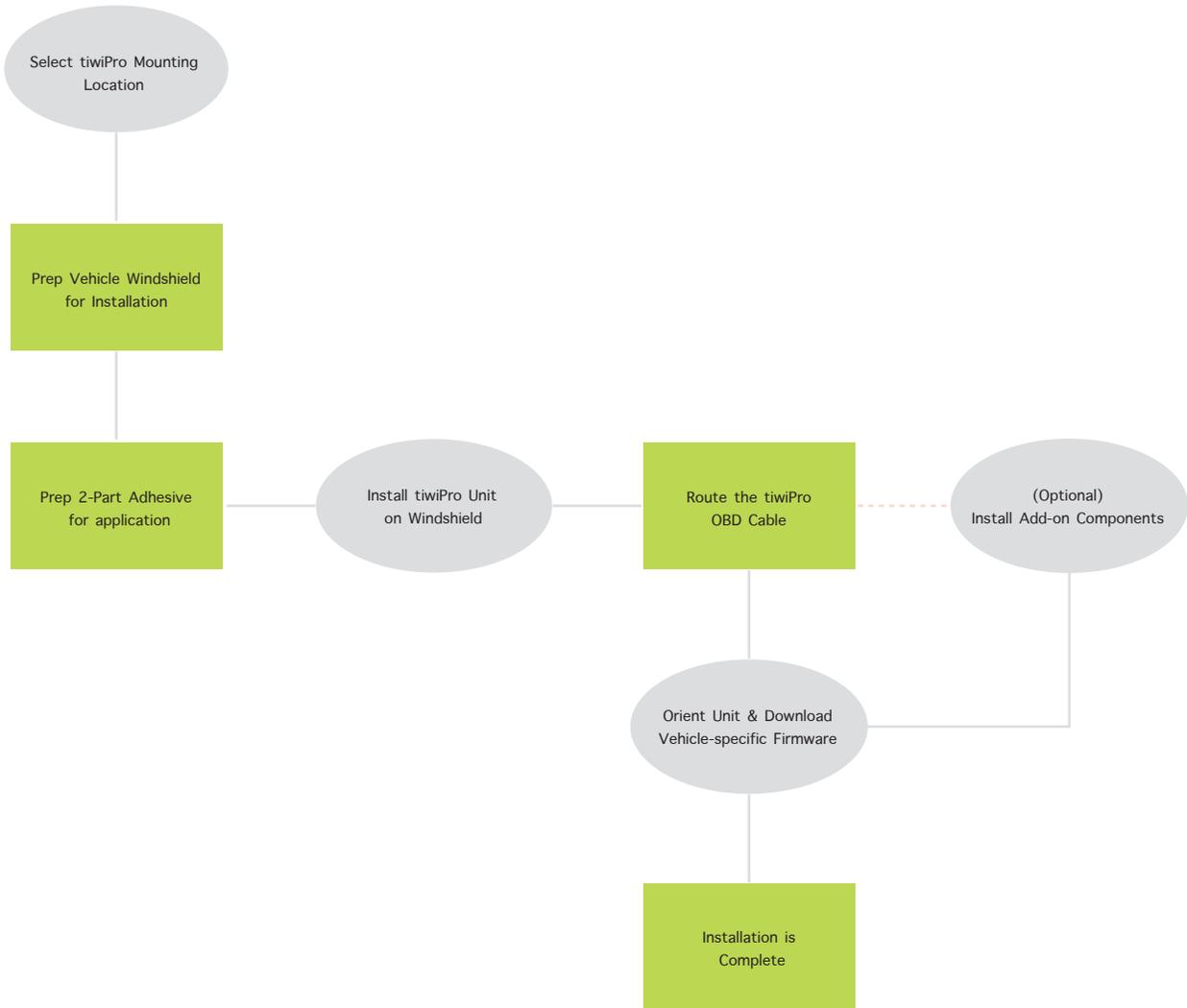
- ▶ **Hardware Overview** 17
- ▶ **Select Installation Location** 19
- ▶ **Prep Windshield for Installation** 20
- ▶ **Mix 2-Part Adhesive** 21
- ▶ **Mount tiwiPro™ on Windshield** 22
- ▶ **Route the tiwiPro™ Cable** 23
- ▶ **Install Add-on Components** 24
- ▶ **Orient & Download Firmware** 25

tiwiPro™ Hardware Installation

The installation procedure is a several step process that will include, selecting and preparing the installation site, mounting the tiwiPro™ hardware, and the final step is orienting and downloading the vehicle-specific firmware (EMU) file. Follow the instructions outlined in this section to install the tiwiPro™ device in any vehicle type.

It is highly recommended that you review these instructions completely at least once prior to attempting to install the tiwiPro™ device. See the chart below for a high-level understanding of how the hardware is installed.

High-Level Overview of Installation Process:



1 Select Mounting Location

Currently, there are three recommended mounting locations for the tiwiPro unit. This section will outline where in the vehicle the unit should be installed and any considerations you should make when deciding on the installation location.

The tiwiPro™ unit should be installed in one of following locations:



Driver side, upper-left corner of windshield



Driver side, lower-left corner of windshield



Passenger side, behind the rear-view mirror

▼ Things to consider when determining the installation location for the tiwiPro™ :

- To comply with FCC SAR rules governing RF energy absorption, ensure the device will be 8 inches (20cm) or more from the human body (driver) when installed.
- If the *External Seatbelt Sensor* add-on component is being installed with the unit, ensure there is sufficient room to install the connector. See the section, *tiwiPro™ External Seatbelt Sensor Installation* on Page 37 for more information.



Important Information for DOT Regulated Commercial Vehicles

U.S. Department of Transportation - FMCSA Rules and Regulations: 49 CFR 393.60(e)

(e) Prohibition on obstructions to the driver's field of view—(1) Devices mounted at the top of the windshield. Antennas, transponders, and similar devices must not be mounted more than 152 mm (6 inches) below the upper edge of the windshield. These devices must be located outside the area swept by the windshield wipers, and outside the driver's sight lines to the road and highway signs and signals.

To accommodate for these requirements, if the tiwiPro™ unit is installed in the upper-left corner (driver side) of the windshield, make sure the entire unit is installed within the top 6" inches of the windshield, per the rule stated above.

For more information, please see: <http://www.fmcsa.dot.gov>



2 Prepare Vehicle Windshield for Installation

Preparing the vehicle's windshield prior to installing the tiwiPro device may be one of the most important aspects of installing the unit. If the windshield is not clean, the unit will have a difficult time adhering to the windshield and may eventually detach. Follow the instructions below to adequately clean and prepare the windshield for installation.

▼ Follow these steps to Prepare the installation Site:

1. Before proceeding, see Environmental Considerations section to understand what is required to prepare the installation site.
2. Clean a 6"x6" inch area of the windshield in the location where the unit will be installed:
 - a. Clear mounting location of any labels, stickers or debris. If needed, use a solvent such as lacquer thinner or acetone to clean the area of any debris.
 - b. Using a clean, dry towel, thoroughly wipe the installation area to make sure surface is clean and dry.
 - c. Use the alcohol wipe provided in the tiwiPro kit and thoroughly clean the installation surface.
 - d. Again, using a clean, dry towel, wipe off any residue or remaining liquid, making sure the surface is dry.



Use clean, dry towel to clean installation area



Ensure installation area is clean and dry



Environmental Considerations

There are several environmental considerations to make when installing tiwiPro units in hot, cold, or humid climates. If any of these environmental factors exist, follow the recommendations in this section to ensure the tiwiPro installation is successful.

Cold Climates

- Windshield needs to be a minimum of 68°F (20°C) to install the tiwiPro unit. If the windshield is cold, use the vehicle's heater/defroster to warm the windshield to the appropriate temperature

Note: if the vehicle's heater/defroster is not adequate to warm the windshield, we recommend using a 12v heater fan, or hair dryer. Do Not Use a torch or heat gun as the temperature is too hot and may crack the windshield

- Make sure the tiwiPro device is room temperature before attempting to install the unit

Humid Climates

- The vehicle windshield must be completely dry before attempting to install the tiwiPro device. This presents a challenge in humid environments. Blowing air across the windshield, using the vehicle defroster, is one of the best ways to dry the windshield.
- Use a dry cloth towel to adequately dry the surface area before installing the unit

Hot Climates

- The vehicle windshield should not be excessively hot when attempting to install the tiwiPro device. Use the vehicle's air conditioning to cool the windshield as much as possible before installing the unit

3 Prepare & Mix 2-Part Adhesive

We use a 2-part adhesive bonding agent to help with the longevity of the tiwiPro adhesion to the vehicle windshield. It's important to note that when mixing the 2-part adhesive, you only have a limited amount of time to apply the adhesive to the tiwiPro unit and mount the unit to the windshield, before the adhesive starts to set-up.



Important Note:

The total amount of time between mixing the adhesive and mounting the tiwiPro device to the vehicle windshield, should be approximately five (5) minutes or less. It is recommended to remove the adhesive backing from the tiwiPro unit prior to mixing the adhesive.

▼ Follow these steps to **Prepare & Mix 2-Part Adhesive:**

1. Locate the Araldite 2-Part Adhesive package that is included with the tiwiPro installation kit. The adhesive packet inside should contain two separate liquid parts, one that is clear and one that is slightly yellow. Verify that the packet contains both parts before mixing.



Araldite 2-Part Adhesive

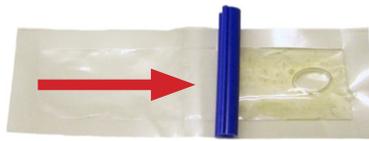


Adhesive Packet

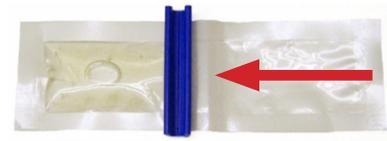
2. Mix the 2-Part Adhesive as follows:
 - a. If the two halves of the pouch are separated by a mechanical clip, remove the clip to mix the adhesive. If the halves are separated by a bonded strip, squeeze on one side until liquid bursts through to the other side
 - b. Thoroughly mix the two adhesive parts by squeezing all of the liquid from one end to the other while kneading the packet. Do this several times to ensure a thorough mixing, paying particular attention to the liquid in the corners of the packet



Squeeze liquid one direction, mixing thoroughly



Squeeze liquid the other direction, mixing thoroughly



Squeeze liquid back the first direction, mixing thoroughly

Adhesive Handling and Storage

- Keep the uncured adhesive off of your hands and skin
- Wash hands or any reusable tools with soap and warm water before the adhesive cures
- Adhesive Vendor Handling Precautions:

“Caution - Our products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended.”

4 Mount tiwiPro™ Unit on Windshield

Mounting the tiwiPro unit to the vehicle windshield requires applying a 2-part adhesive to provide a more secure bond to the surface of the windshield. The tiwiPro unit needs to be attached to the windshield immediately after the 2-part adhesive has been applied. Not following these instructions precisely, may result in the tiwiPro unit not adhering properly to the mounting surface.

▼ Follow these steps to **Mount the tiwiPro™ Unit to the Windshield**:

1. Remove the adhesive backing (red or white dots) protecting the adhering surfaces of the adhesive pads on the tiwiPro unit. Be careful to keep the adhering surfaces clean.



Remove red/white adhesive backing from the adhesive pads on the tiwiPro unit.



2. Apply the mixed adhesive to the adhesive pads on the tiwiPro device as follows:
 - a. Cut the corner of the adhesive pouch creating a small opening to squeeze the adhesive from. Then, waste a small amount of adhesive before applying to the tiwiPro device. This ensures that you do not apply any adhesive from the corner of the pouch that may not have been thoroughly mixed.
 - b. Apply 1 drop of the mixed adhesive to the centers of the upper-left and lower-right corner adhesive pads on the tiwiPro unit, see image below. The goal is to use just enough adhesive to cover the adhesive pad, you don't need much.



Apply 1 drop of the mixed adhesive on the upper-left and lower-right adhesive pads on the tiwiPro unit.



3. Install the tiwiPro unit in predefined area on the windshield. Apply sufficient pressure to adequately secure the device in place. Hold firmly in place for approximately 60 seconds. Be careful to not press the green button on the front of the unit while mounting to the windshield.



Important!
Mount the tiwiPro unit to the windshield so that the OBD cable points downward from the device, as pictured.



Important Note:

The tiwiPro unit must be installed with the cable protruding downward from the device, Otherwise, the unit will not "orient" correctly, and will not work as intended.

5 Route the tiwiPro™ Cable to the Vehicle Diagnostic Port

Use the information in this section to route the tiwiPro cable to the vehicle diagnostic port, which is sometimes referred to as the “data link connection” (DLC).

Since 1996, U.S. Federal Law requires all vehicles (domestic and imported) sold in the United States use an OBD-II type connector. The OBD-II port in late model vehicles is required to be located within 14 inches of the center of the steering column, making it easy to locate.

Some large trucks and commercial vehicles will have a 6-pin or 9-pin Deutsch type connection, rather than an OBD-II connection. Because of this difference, we manufacture two different types of tiwiPro units, one with a standard OBD-II connection for light-duty trucks and passenger vehicles (P/N# 900-00042), and one with a 9-pin Deutsch connection for large trucks (P/N# 900-00069).

There are also several adapter cables available to accommodate installation in most vehicle types. See the *tiwiPro™ Hardware* section of this manual for more information on available parts and cables.



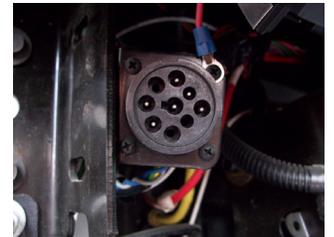
Light Duty Trucks & Passenger Vehicles



The OBD-II port will be located within 14 inches of the steering column, usually just under the steering column to the left or right.



Heavy Duty Trucks & Commercial Vehicles



The 6-pin or 9-pin Deutsch connection will be located under the dash, usually just to the left or right of the steering column.

▼ Things to consider before routing the tiwiPro cable:

- Be aware of vehicle air bags when removing any vehicle panels and installing the device. Be sure to not impede or hinder the operation of a vehicle airbag. Alternate cable routing may be required.
- Be aware of sharp metal edges that may cut the tiwiPro cable upon repetitive rubbing against the surface. You may need to fabricate something to place between the sharp edge and the tiwiPro cable to prevent any damage. This is not common, but may occur when installing in a large truck.
- Route the cables in an efficient and professional manner, paying particular attention to detail. inthinc maintains a high-standard for quality, professional workmanship.

▼ Follow these steps to **Route the tiwiPro™ cable to the Vehicle Diagnostic Port:**

1. With the tiwiPro™ unit already installed on the vehicle windshield, carefully route the tiwiPro cable to the vehicle diagnostic port. Keep in mind the tiwiPro unit is still trying to bond with the windshield, avoid tugging or pulling on the cable which may cause the tiwiPro unit to detach from the windshield.



OBD-II Diagnostic Port



9-Pin Deutsch Diagnostic Port

2. The route required depends on the selected mounting site and the make/model of the vehicle. See the section, *Selecting a Mounting Location* in this manual for more information.

Installation Location	Routing Instructions	Image
Lower-Left (Driver-Side) Windshield	Route the cable between the dash and the edge of the door, toward the underside of the dashboard, removing any vehicle panels, trim, or molding necessary.	
Upper-Left (Driver-Side) Windshield	Route the cable through the A-pillar down to the underside of the dashboard, removing any vehicle panels, trim, or molding necessary. Important: Be sure to not impede or hinder the operation of a vehicle airbag. Alternate cable routing may be required.	

Note: Commercial vehicles require the tiwiPro unit to be installed in the upper-left (driver-side) corner of the windshield. Route the cable accordingly per the instructions above.

3. Plug the tiwiPro cable into the vehicle diagnostic port.
4. Neatly secure any excess cable, using the provided cable ties, in a location that will not interfere with the operation of the vehicle.
5. It is recommended that you not replace any of the vehicle panels or trim until after the tiwiPro unit has been successfully oriented and programmed, which will be covered in Step 7.

6 [Optional] Install any Add-On Components

In some cases there may be one or more additional components that will need to be installed in addition to the tiwiPro unit, such as the RF Kill Switch, or an External Seat Belt Sensor. If any additional hardware components are to be installed, it should be done before proceeding to the next step which is to “orient” the unit and download vehicle-specific firmware.

For more information on how to install the RF Kill Switch, see page 35 of this manual. For more information on how to install an External Seat Belt Sensor, see page 37 of this manual.

7 Orient tiwiPro™ Unit & Download Firmware

The final step in the installation process is to “orient” the tiwiPro unit and download the vehicle-specific firmware (EMU) file. Orienting the unit ensures that the unit will correctly capture crash and aggressive driving events when the vehicle is in motion. The vehicle-specific firmware or EMU (emulation) file is downloaded to the unit automatically and allows the unit to capture data directly from the vehicle, such as: seat belt compliance, idle statistics, fuel consumption, and more.



Important Note:

The Vehicle VIN # must be configured on the Vehicle profile within the inthinc portal, or the unit will NOT download the vehicle-specific firmware file and therefore will not operate as desired.

▼ Follow these steps to **Orient tiwiPro™** Unit and **Download EMU File**:

1. In order for the device to properly orient, ensure the following:
 - Vehicle is parked on a flat surface with the ignition turned off.
 - Unit has acquired GPS (Blue LED light will be illuminated). If the unit does not have GPS lock, ensure the vehicle is outdoors where the tiwiPro unit has an unobstructed view of the GPS satellites in the sky.
2. Make sure Green LED indicator light is illuminated or flashing, indicating the tiwiPro™ unit has power. Note: If the LED lights do not illuminate, simply tap the device a few times to activate the motion sensor which will wake the unit.
3. Push and hold the Green button on the front of the device for approximately 15 seconds, or until the Red LED light illuminates, then release the button.



Press and hold the green button for approximately 15 seconds, until the Red LED light illuminates.

4. After approximately 30-60 seconds:
 - If all LED lights flash a few times and the audio message “device oriented” is heard; the device is properly oriented. Continue to step 5.
 - If audio “invalid orientation” is heard, wait 3-5 minutes and repeat step 3. If problem persists, contact inthinc Technical Support for assistance.
5. Once the device is properly oriented, the device will automatically download a vehicle-specific emulation (EMU) file - **this may take up to 10 minutes** - “EMU File Installed” audio message will play when the download process is complete.

Once the EMU (Firmware) file has been successfully installed, the installation and programming of the tiwiPro™ device is complete. Now that the tiwiPro unit has been installed, you can update the vehicle profile in the inthinc portal and configure the vehicle-specific speed and sensitivity settings for the device, as described in the next section.

Section 3

Post-Installation & Configuration

IN THIS SECTION:

- ▶ **tiwiPro™ Configuration Settings** 29

Post-Installation tiwiPro™ Device Configuration & Settings

After the tiwiPro device has been installed and the firmware has been downloaded to the unit, there are additional device settings that can be configured in the inthinc portal. This section will provide information on what items can be configured, and how to set these parameters for each vehicle.

Content covered in this section will focus mainly on the additional tiwiPro configuration that can only be completed once the unit has been installed in the vehicle. If the unit has not been installed and programmed, you will need to complete the installation before configuring any of the parameters explained in this section.

Below is a list of all of the parameters that can now be configured, including an explanation of how the configuration will affect the tiwiPro unit.

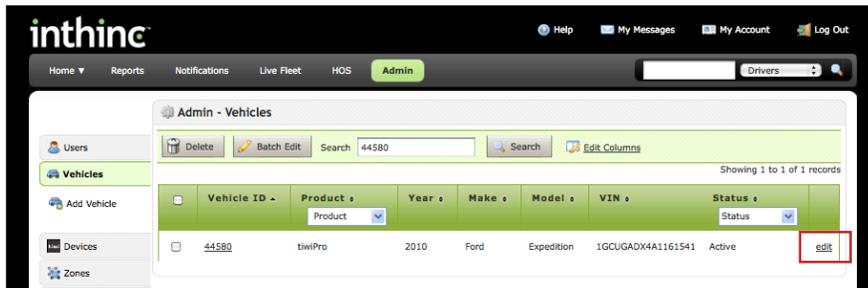
Post-Installation - tiwiPro™ Device Configurable Parameters:

- **Zone Type** - Specify whether the vehicle should be classified as Light-Duty or Heavy-Duty as it relates to how the vehicle will be impacted by any smartZones that have been created.
- **eCall Phone Number** - Enter the phone number the tiwiPro unit should call in the event a driver presses the eCall (emergency) call button on the unit.
- **Auto Log Off** - Configure when the tiwiPro unit should automatically logout the driver currently assigned to the vehicle. Note: This value can be configured so the unit will never automatically logout a driver if desired.
- **Assign Driver to Vehicle** - If applicable, you can permanently assign a driver to a specific vehicle. Drivers that are permanently assigned to a vehicle do not need to use an RFID card to log in/out of the vehicle.
- **Speed Buffers** - Configure speed buffers for specific speed ranges. Drivers can exceed the posted speed limit by the value of the speed buffer before receiving in-cab, verbal coaching or a speeding violation.
- **Aggressive Driving Sensitivity** - Configure the sensitivity for the four aggressive driving behaviors monitored, making the tiwiPro device either more or less sensitive to these maneuvers.
- **Idle Mentoring** - Configure whether you want in-cab idle mentoring enabled or disabled. If enabled, you can configure the time interval when the driver receives in-cab, verbal coaching for excessive idling.

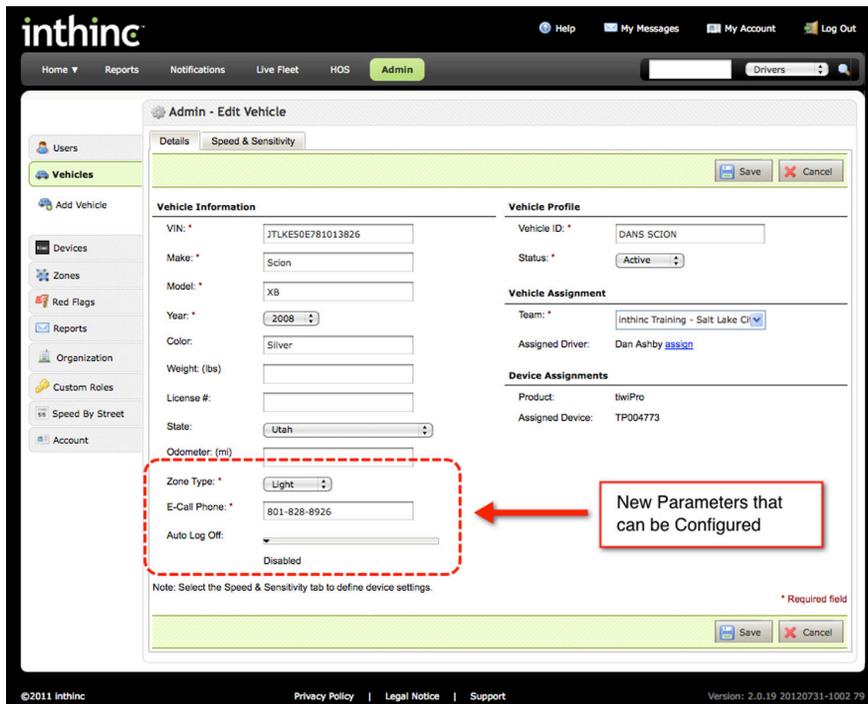


Configure Zone Type, eCall Phone Number, and Auto Log Off

1. From the main menu, navigate to **Admin Tab > Vehicles Sub-tab**
2. Type the Vehicle ID number into the Search field and click the **Search** button
3. Once the Vehicle record displays in the list, click the **Edit** button in the far-right column



4. The Vehicle Profile page will display. (See Image below)
5. Edit the additional vehicle fields now available (see *Table 2* below for more information).
6. When finished, click the Save button.



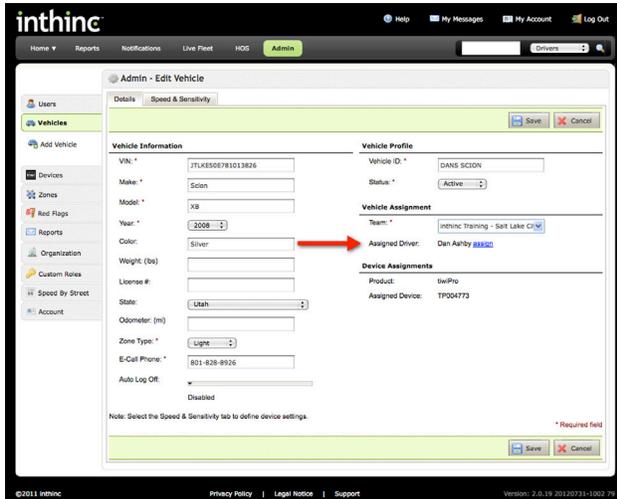
Vehicle Profile page with new configurable parameters highlighted

TABLE 2 : Additional Vehicle Configuration

Required Field	Description
Vehicle Information Section:	
*Zone Type	Select from either light, medium, or heavy for zone type. This attribute is applicable when creating zones. You can create zones and restrict them to certain vehicle types: light, medium, heavy, or all vehicle types.
*E-Call Phone	Enter the phone number that will be dialed when the E-Call button is pressed on the tiwiPro™ unit. Note: To enable this feature, contact your inthinc Account Manager.
Auto Log Off (Optional)	This field is not required however, it will allow you to specify a time-out period for the tiwiPro™ unit. More specifically, how long before you would like the tiwiPro™ unit to log-off the driver after the vehicle has been turned off. Use the slider to specify a time value.

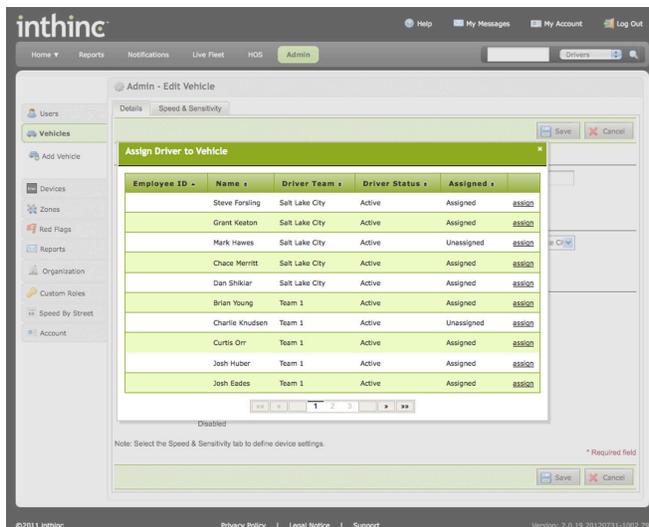
Assign Driver to Vehicle

1. From the main menu, navigate to **Admin Tab > Vehicles Sub-tab**
2. Type the Vehicle ID number into the Search field and click the **Search** button
3. Locate the Vehicle record displayed in the list, click the **Edit** button in the far-right column
4. In the Vehicle Assignment section, click the underlined **Assign** link



The screenshot shows the 'Admin - Edit Vehicle' interface. The 'Vehicle Assignment' section is active, displaying the 'Assigned Driver' field with the name 'Dan Ashby' and a blue underlined link. A red arrow points to this link. Other fields include VIN, Make (Scion), Model (XB), Year (2008), Color (Silver), License #, State (Utah), and Odometer (mi).

5. A pop-up will display with a list of Drivers that you can assign to the vehicle. Scroll through the list, using the page buttons if necessary, and locate the driver you wish to assign to the vehicle.
6. Select the driver by clicking the **Assign** link in the far-right column



The screenshot shows the 'Admin - Edit Vehicle' interface with a pop-up window titled 'Assign Driver to Vehicle'. The pop-up contains a table of drivers with the following columns: Employee ID, Name, Driver Team, Driver Status, and Assigned. The 'Assigned' column contains blue underlined links. The table lists several drivers, including Steve Forstling, Grant Keaton, Mark Hawes, Chace Merritt, Dan Shiklar, Brian Young, Charlie Khudsen, Curtis Orr, Josh Huber, and Josh Eades.

Employee ID	Name	Driver Team	Driver Status	Assigned
	Steve Forstling	Salt Lake City	Active	Assigned #8982
	Grant Keaton	Salt Lake City	Active	Assigned #8982
	Mark Hawes	Salt Lake City	Active	Unassigned #8982
	Chace Merritt	Salt Lake City	Active	Assigned #8982
	Dan Shiklar	Salt Lake City	Active	Assigned #8982
	Brian Young	Team 1	Active	Assigned #8982
	Charlie Khudsen	Team 1	Active	Unassigned #8982
	Curtis Orr	Team 1	Active	Assigned #8982
	Josh Huber	Team 1	Active	Assigned #8982
	Josh Eades	Team 1	Active	Assigned #8982

7. Once the page refreshes, click the **Save** button to save your changes.



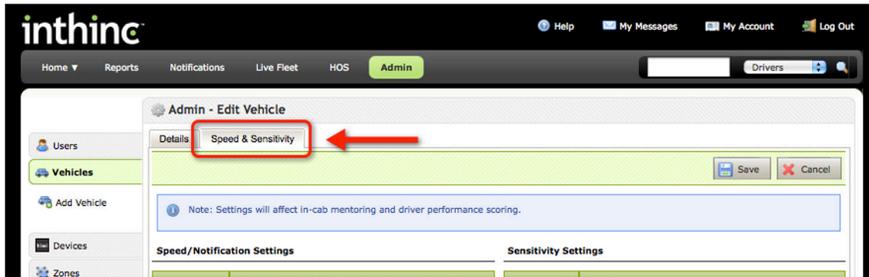
Driver Login with RFID Card

The alternative to permanently assigning a driver to a vehicle, is to assign the driver an RFID card and require they login to the vehicle using the assigned RFID card. This is a good alternative if your vehicles are “shared” vehicles that may be used by many potential drivers.



Configure Speed Buffers, Aggressive Driving Sensitivity, and Idle Mentoring

1. From the main menu, navigate to **Admin Tab > Vehicles Sub-tab**
2. Type the Vehicle ID number into the Search field and click the **Search** button
3. Once the Vehicle record displays in the list, click the **Edit** button in the far-right column
4. The Vehicle Profile page will display. Click on the **Speed & Sensitivity** sub-tab at the top of the page.



5. Make the necessary changes to the Speed/Notification settings and Sensitivity settings, click the Save button when finished. For more information about these settings and how they affect the vehicle, see the *inthinc Portal User Manual*.

Speed & Sensitivity Settings page at a glance:

Limit	Notify driver when exceeding posted limit by
0 to 25	5 mph
26 to 50	5 mph
51 to 75	5 mph
Adjust all: + -	
Or anytime driver's speed exceeds	78 mph

Attribute	Setting
Hard Accelerate	least [slider] most current value: average
Hard Brake	least [slider] most current value: less (-1)
Hard Bump	least [slider] most current value: average
Unsafe Turn	least [slider] most current value: less (-1)
Idling Threshold	least [slider] most current value: 2:00
Idle Mentoring	<input checked="" type="checkbox"/>

Speed Buffers

Adjust speed buffer for each MPH range. This value represents the speed at which the unit will provide in-cab audio coaching

Aggressive Driving Settings

Adjust the tiwiPro™ unit's sensitivity as it relates to Hard Acceleration, Hard Braking, Unsafe Turns, and Hard Bumps.

Enable Idle Mentoring

Enable idle mentoring and adjust the threshold (in minutes) when the unit will provide audio in-cab coaching for excessive idling.



For More Information...

For more information about the tiwiPro™ configuration settings, or any other information related to the tiwiPro solution, refer to the many resources available at inthinc™ university. (<https://training.inthinc.com/iu>)

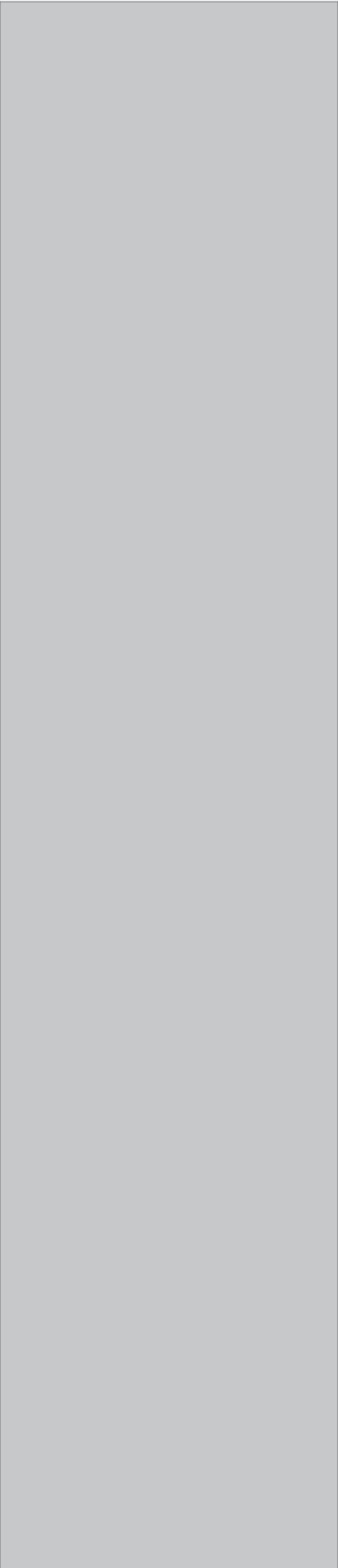
inthinc
→ university

Section 4

Add-On Hardware

IN THIS SECTION:

- ▶ **tiwiPro™ RF Kill Switch** **35**
- ▶ **External Seat Belt Sensor** **37**



tiwiPro™ RF Kill Switch Installation

Overview

The RF Kill Switch is an add-on component that can be used with tiwiPro units. The RF (Radio Frequency) Kill Switch (P/N# 900-0072) allows the driver to enable or disable RF communication by simply turning a key, which is typically mounted on the vehicle dashboard.

The RF Kill Switch does more than just disable RF Communication, it actually disables all power to the tiwiPro unit. Because the RF radio is also the main processor in tiwiPro units, we need to disable all power to eliminate the radio frequencies generated by the device. This is important to remember because if the unit is not receiving power, it will not capture and record driving data or transmit any data to the inthinc portal.

There will be instances where the RF Communication of the tiwiPro unit must be disabled. For instance, mining sites that conduct blasting are extremely sensitive to RF signals and typically require all vehicles, with RF capability, to disable their RF Communication within a certain proximity of the blast site. These customers may elect to install the tiwiPro RF Kill switch to easily enable/disable RF Communication when needed.

These instructions are to guide you through the installation of the RF Kill Switch hardware.

How the RF Kill Switch Works

Turning the RF key “Off” and removing the key will send a signal to the tiwiPro unit indicating the key has been turned off. In approximately 1-3 minutes after turning the key off, the RF communication will be disabled and the tiwiPro unit will be non-functional.

The visual indicator that RF communication has been disabled are the LED lights on the front of the tiwiPro unit. If the LED lights are not illuminated, the RF communication has been “disabled”.

To enable RF communication, insert and turn the RF key to the “On” position. Within a few minutes the LED lights on the tiwiPro unit should briefly flash and the Green LED light will illuminate, indicating the tiwiPro unit has power and is functioning properly.

Required Materials

Very few materials are needed to install an RF Kill switch with a tiwiPro™ device. The RF Kill Switch kit will include all materials needed to install the product.

- tiwiPro™ RF Kill Switch Kit (P/N# 900-00072) Package Contents:



tiwiPro™ RF Kill Switch



Cable Ties

Installation Procedure

1. Install the RF Kill Switch after the tiwiPro™ unit has been installed in the vehicle, but prior to connecting the tiwiPro™ unit to the vehicle diagnostic port
2. Locate the vehicle diagnostic port (for more information on where the port is located, see *Appendix* on page 41 of this manual. The RF Kill switch, when installed, will be located close to the vehicle diagnostic port, typically under dashboard close to the steering column.
3. Connect the tiwiPro™ cable to the OBD connection on the RF Kill switch cable
4. Plug the RF Kill switch into the vehicles OBD-II port
5. Route the key switch cable (4ft.) and use the provided hardware to mount the switch somewhere on the dashboard or where it will be accessible for the driver. Install in such a manner that will not interfere with normal vehicle operation.



tiwiPro™ External Seat Belt Sensor Installation

When a vehicle make/model is does not have seat belt support through EMU firmware, an external Seat Belt Sensor must be installed to detect the seat belt status. There are installation scenarios where one of these sensors will need to be installed. These instructions will guide you through the installation of the External Seat Belt Sensor.

Overview

Most late model vehicles do not require installing the external Seat Belt Sensor, as we collect seat belt information from the vehicle computer and can detect when the seat belt is engaged without using any additional hardware. However, there are installation scenarios when you would need to install the external Seat Belt Sensor. This occurs most often when the installation is in an older model vehicle, or in a Heavy-Duty vehicle such as a box truck.

Refer to the *EMU Vehicle List* on page 47 to determine if the make/model of the vehicle has seat belt support through firmware, or if an external Seat Belt Sensor will need to be installed.

Required Materials

The External Seatbelt Sensor is packaged as a kit, which the contents will be outlined below. There are also some other tools that will be required to complete the installation process.

■ tiwiPro™ External Seatbelt Sensor Kit (P/N# 900-00045) Package Contents:



Alcohol Wipes



Magnet Cover



Reed Switch



Heat Shrink Tubing



Sandpaper



Cable Ties



Perma-Bond Adhesive Package



Solder Crimpers



Magnet

■ Additional Items Needed:



Electrical Tape



Heat Gun



Needle Nose Pliers



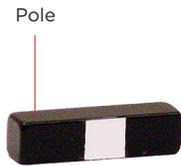
End Cutting Pliers

Installation Procedure

Follow the instructions in this section to guide you through the installation of the Seat Belt Sensor. This procedure can take up to 45 minutes to complete, allow adequate time for proper adhesion.

1 Step One

Without adhesive, test the location for fit and operation of the magnet and reed sensor switch:



- 1 The magnet has two sides that are called "poles". The poles are opposite to the side marked with white paint.



- 2 Place the magnet with either pole touching the metal of the seatbelt tongue.



- 3 Place the magnet cover over the magnet and ensure the cover does not obstruct normal buckle engagement. There may be a plastic lip around the tongue that prevents you from adhering the magnet and magnet cover to the metal.



- 4 Engage the seatbelt tongue into the latch. The magnet should be on the opposite side of the belt and tongue as the release button.

Note: Some seatbelt tongues do not have a front and back and can be inserted into the latch both ways. The sensor needs to detect the tongue in either position. Install a magnet on both sides of the tongue if needed. This is not typical.

2 Step Two

If there is a plastic lip around the web slot of the tongue that obstructs placement of the magnet and magnet cover, remove that section of the lip (Skip to Step 3 if this step is not necessary):



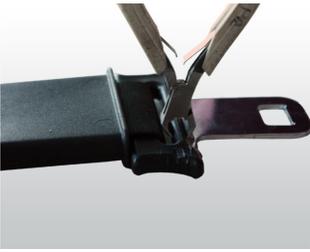
- 1 Place the magnet cover on top of the lip in the desired location.



- 2 Mark the plastic at the ends of the cover ears, leaving approximately 1/16 inch clearance at each end.



- 3 Using angled, flush cut wire cutters, cut the lip at each mark.



- 4 Using wire cutters again, remove only the plastic necessary to clear the mounting site.



- 5 Without adhesive, place one pole side of the magnet on the metal tongue and place cover on magnet.

3 Step Three

Test the magnet for function:



- 1 Hold or tape the reed switch sensor in place on the side of the latch body opposite the release button so that the long axis of the switch is parallel to the direction of buckle engagement and the cable runs toward the mounting strap.



- 2 Place the end of the switch 1/8" to 1/4" inch from the top edge of the latch body.



- 3 Mark the location of the magnet, magnet cover, and reed sensor switch to ensure they will be bonded in the same location.

4 Step Four

Prepare the surfaces that will be glued:



- 1 Without removing black coating, lightly sand (1-3 strokes) both pole sides of the magnet (poles are described in step 1).



- 2 Thoroughly sand the magnet cover ears.



- 3 Lightly sand the reed switch sensor side that will be glued.



- 4 Sand the seatbelt tongue where the magnet will be placed.



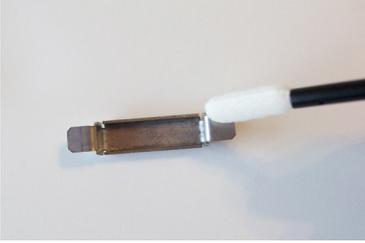
- 5 Sand the latch body where the reed sensor switch will be placed.



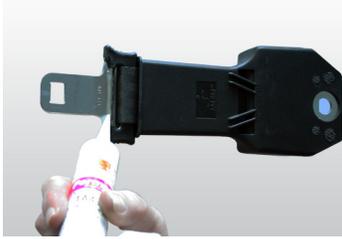
- 6 Clean the magnet, magnet cover, reed switch sensor, and sanded seatbelt surfaces with one of the alcohol wipes provided.

5 Step Five

Glue the magnet and cover to the tongue as described in the steps below:



- 1 Place TA4246 Initiator on the magnet cover ears, the inside of the magnet cover, and one sanded pole of the magnet.



- 2 Place TA4246 Adhesive on the prepared seatbelt tongue (small bead) the length of the magnet cover.



- 3 Using pliers, carefully place the initiator-coated magnet pole on the adhesive bead on the tongue.



- 4 Place TA4246 Adhesive on the top of the magnet.



- 5 Press the magnet cover in place.



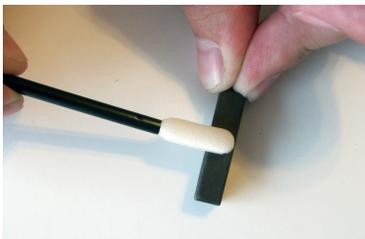
- 6 Before the adhesive dries:
- Engage buckle tongue and latch and ensure magnet is properly placed
 - Verify that any extra adhesive does not get on the seatbelt webbing and does not interfere with buckle engagement.
 - Either clamp the cover in place or orient the tongue horizontally so that the cover rests in place while the adhesive sets (10-15 minutes).

6 Step Six

Glue the reed sensor switch to the seat belt latch:



- 1 Put 1/16" inch bead of TA4246 Adhesive on the sanded seatbelt latch.



- 2 Coat the sanded side of the sensor with TA4246 Initiator.



- 3 Place reed sensor switch on glue with wire extending away from the latch opening. Do not extend the switch above the top edge of the latch.



- 4 Use tape to hold the reed sensor switch in place until the adhesive sets. usually about 30 minutes.



- 5 Clean any adhesive off your hands with the provided alcohol wipe.



- 6 After the 30 minute cure time, use another alcohol wipe and thoroughly clean around the bonded areas.

7 Step Seven

Complete the installation by following the below steps:



- 1 Wrap the latch and sensor with the included heat shrink tubing, then use a heat source (such as a heat gun) to shrink the tubing.



- 2 Route the reed sensor switch cable back to the tiwiPro™ device in such a way that the cable is not likely to be damaged by driver seat movement or equipment.



- 3 Plug the reed sensor switch into the tiwiPro™ device and route the cable around the corner of the unit and cable tie it to the main tiwi cable within 2 inches of the unit. Leave a little play in the cable. It should not be so tight as to place a strain on the connector.

8 Step Eight

In order to use the magnetic seatbelt sensor, the tiwiPro™ unit must be properly configured. This configuration should have been performed prior to shipment. If this is a new device however, the commands may still be pending.

For new devices, follow the steps below to determine whether or not the tiwiPro™ is configured properly. If the magnetic seatbelt sensor installation is a retrofit, skip these steps and instead verify the seatbelt sensor installation by test driving the vehicle after installation with the seatbelt both buckled and unbuckled.

1. Plug the tiwiPro™ into the vehicle (it does not have to be mounted)
2. Swipe an invalid RFID card (an RFID card that has not been assigned to a driver)
3. Ensure no seatbelt sensor is connected (unbuckle the seatbelt or otherwise move the magnet away)
4. After you hear the “Invalid Driver” audio play, you should begin hearing the “Seatbelt Violation” audio every 20 seconds. This indicates the seatbelt sensor is configured.
5. If you hear the “Seatbelt Violation” audio, the seatbelt sensor is configured properly. If you do not hear the “Seatbelt Violation” audio, please contact inthinc Technical Support for troubleshooting.

9 Step Nine

After completing the installation of the magnetic seatbelt sensor, the last step to verify the sensor is working correctly, is to test drive the vehicle. During the test drive, attempt the following:

- Buckle the seatbelt and begin the test drive. If you hear “Seatbelt Violation” audio while the seatbelt is buckled, the unit is not detecting the seatbelt is engaged. Verify the installation of the seatbelt sensor and ensure the unit is configured as outlined in Step 8.
- Unbuckle the seatbelt while driving. If you hear “Seatbelt Violation”, the unit detected the seatbelt was unbuckled and is working properly. If you do not hear any audio when you unbuckle the seatbelt, the unit is not detecting the seatbelt sensor. Verify the installation and ensure the unit is configured as outlined in Step 8.

Appendix

Resources & Information

IN THIS SECTION:

- ▶ **DLC Location by Vehicle Type** **45**
- ▶ **EMU Vehicle List** **47**
- ▶ **Basic Troubleshooting** **51**

DLC Location by Vehicle Type

The following table will provide the location of the DLC (data link connector) or vehicle diagnostic port, by vehicle type. Passenger and light-duty vehicles typically use an OBD-II port, whereas heavy-duty vehicles use a 6/9-pin port. If your vehicle is not listed in the table below, refer to the vehicle owner manual for location of the diagnostic port.

TABLE 5 - DLC Location by Vehicle Type				
Manufacture	Model Year	OBD Location	Covered/Uncovered	DLC Type
ACURA				
CL	2003 - Current	Below steering column to the right	Uncovered	OBD-II
RL	2003-2005	Below steering column to the right	Uncovered	OBD-II
TL	2004 - Current	Below steering column to the left	Uncovered	OBD-II
Integra	1996-1999	Beneath passenger side dash	Uncovered	OBD-II
Integra	2000-2001	In console on passenger side	Uncovered	OBD-II
BMW				
3-Series / 5-Series	1996 - Current	Below steering column to the left	Covered	OBD-II
7-Series	2002 - Current	Below steering column to the left	Covered	OBD-II
X3 / M Roadster	2004 - Current	Below steering column to the left	Covered	OBD-II
Z3 Series	1997 - 2002	Next to console on passenger side	Covered	OBD-II
CHEVROLET				
Colorado	2004 - Current	Below steering column to the left	Uncovered	OBD-II
Express	1998 - 2004	Below steering column to the left	Uncovered	OBD-II
Impalla	2000 - Current	Below steering column to the right	Uncovered	OBD-II
Malibu	2004 - Current	Below steering column	Uncovered	OBD-II
Silverado	2004 - Current	Below steering column to the left	Uncovered	OBD-II
Suburban	2004 - Current	Below steering column to the left	Uncovered	OBD-II
Tahoe	1996 - 2004	Below steering column to the left	Uncovered	OBD-II
Trailblazer	2002 - 2004	Below steering column to the left	Uncovered	OBD-II
DODGE				
RAM 1500	2002 - Current	Below steering column	Uncovered	OBD-II
RAM 2500	2002 - Current	Driver side dash above console	Uncovered	OBD-II
Durango	2003 - 2004	Below steering column to the left	Uncovered	OBD-II
Caravan	1996 - 2004	Below steering column to the left	Uncovered	OBD-II
HONDA				
Accord	1999 - Current	Below steering column to the left	Uncovered	OBD-II
CR-V	2003 -2004	Below steering column to the right	Uncovered	OBD-II
Odyssey	1999 - Current	Below steering column to the right	Uncovered	OBD-II
Prelude	1997 - Current	In front of console on passenger side	Uncovered	OBD-II
FORD				
Crown Victoria	1996 - 2004	Below steering column to the right	Uncovered	OBD-II
Econoline E-150	2004 - Current	Below steering column	Uncovered	OBD-II
Expedition	1997 - Current	Below steering column to the right	Uncovered	OBD-II
Explorer / Escape	2004 - Current	Below steering column to the left	Uncovered	OBD-II
Focus	1999 - Current	Below steering column to the left	Covered	OBD-II
Fusion	2006 - Current	Below steering column to the left	Uncovered	OBD-II
Windstar	2000 - Current	Below steering column	Uncovered	OBD-II
F-150	2004 - Current	Below steering column	Uncovered	OBD-II
F-250 / 350 / 450 / 550	2004 - Current	Below steering column	Uncovered	OBD-II
F-650	2004 - Current	Below steering column	Uncovered	6-pin/9-pin or OBD-II
F-750	2004 - Current	Below steering column	Uncovered	6-pin/9-pin or OBD-II
GMC				
Canyon	2004	Below steering column to the left	Uncovered	OBD-II
Envoy	2004 - Current	Below steering column to the left	Uncovered	OBD-II
Savana	2002 - 2004	Below steering column to the left	Uncovered	OBD-II
Sierra	1996 - Current	Below steering column to the left	Uncovered	OBD-II
Suburban	1996 - 2002	Below steering column to the left	Uncovered	OBD-II
Yukon	1999 - 2004	Below steering column to the left	Uncovered	OBD-II
Yukon XL	1999 - 2004	Below steering column to the left	Uncovered	OBD-II
JEEP				
Grand Cherokee	1996 - Current	Below steering column to the left	Uncovered	OBD-II
Liberty	2002 - Current	Below steering column to the right	Uncovered	OBD-II
LAND ROVER				
Defender	1997 - Current	Above fuse panel	Covered	OBD-II
Range Rover	1996 - 2002	Passenger side dash above console	Uncovered	OBD-II
Range Rover	2003 - Current	Below steering column to the left	Uncovered	OBD-II
MAZDA				
Mazda 3	2004 - Current	Below steering column to the left	Uncovered	OBD-II
Mazda 6	2004 - Current	Below steering column	Uncovered	OBD-II
Miata	2004 - Current	Below steering column	Uncovered	OBD-II
SUBARU				
Legacy	2000 - Current	Below steering column to the left	Uncovered	OBD-II
SVX	1996 - 1997	Below steering column	Covered	OBD-II
TOYOTA				
Avalon	2004 - Current	Below steering column	Covered	OBD-II
Camry	2004 - Current	Below steering column	Uncovered	OBD-II
Prius	2004 - Current	Below steering column to the right	Uncovered	OBD-II
Tacoma	2004 - Current	Below steering column to the left	Uncovered	OBD-II
Tundra	2004 - Current	Below steering column to the right	Uncovered	OBD-II

VOLKSWAGON				
Cabrio, Golf, Jetta	1999 - Current	Below steering column to the left	Uncovered	OBD-II
Eurovan	2004 - Current	Below steering column	Uncovered	OBD-II
Passat	2004 - Current	Below steering column to the left	Uncovered	OBD-II

*** If your vehicle is not listed in the table above, refer to the vehicle owner manual for DLC location

EMU Support Chart

Legend		
Standard OBD Cable	840-00053	
GM Standard OBD Cable	840-00052	
Deutsch 6-Pin Connector	840-00029	
Deutsch 9-Pin Connector	840-00030	
Deutsch 6-pin or 9-pin Connector	840-00029 / 840-00030	
Seatbelt Support		✓
Demotes Half Year Issues		✓+

GENERAL MOTORS																						
EMU Code (YY = Year)	Make	Model	EMU File Name	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	
114-29-YY	Chevrolet	Impalla	CL2ISOKWPHS1_090514b																			
			chevy_CL2Silverado														✓					
			GM-Ex_CL2-01b									✓	✓	✓	✓	✓						
			HS2SWGMT820_090305			✓	✓	✓	✓	✓	✓											
			GM-A_SwHS2-03_WS	✓	✓																	
114-14-YY	Chevrolet/GMC	Colorado/Canyon	chevy_cl2colorado							✓	✓	✓	✓									
			GM-Co_HS1CL2-01		✓	✓	✓	✓	✓													
114-38-YY	Chevrolet	Malibu	chevy_CL2Silverado											✓	✓	✓	✓					
			GM_Generic_canSW_05_ws820				✓	✓	✓	✓	✓	✓	✓									
			GM-Ma_SwHS2-02_ws		✓	✓																
114-73-YY	Chevrolet/GMC	Silverado/Sierra (Diesel)	HS2SWGMT820_090305				✓	✓	✓	✓												
			GM-K25D_SwHS2-02W	✓	✓	✓																
114-79-YY	Chevrolet/GMC	Silverado/Sierra (Gas)	CL2ISOKWPHS1_090514b																			
			chevy_CL2Silverado												✓	✓	✓					
			GM-Ex_CL2-01b							✓+	✓	✓	✓	✓								
			HS2SWGMT820_090305				✓	✓	✓	✓+												
			GM-A_SwHS2-02b_ws820	✓	✓	✓	✓															
114-66-YY	Chevrolet/GMC	Traverse/Acadia	HS2SWGMT820_090305				✓	✓	✓	✓												
			GM-A_SwHS2-02b_ws820	✓	✓	✓																
114-66-YY	Chevrolet/GMC	Tahoe/Yukon/Suburban	chevy_CL2Silverado												✓	✓	✓					
			GM-Ex_CL2-01b							✓+	✓	✓	✓	✓								
			HS2SWGMT820_090305				✓	✓	✓	✓+												
			GM-A_SwHS2-02b_ws820	✓	✓	✓																
114-26-YY	Chevrolet/GMC	Express/Savanah	chevy_CL2Silverado												✓	✓	✓					
			GM-Ex_CL2-01b							✓+	✓	✓	✓	✓								
			HS2SWGMT820_090305				✓	✓	✓	✓+												
			GM-A_SwHS2-02b_ws820		✓	✓																
130-55-YY	Chevrolet/GMC	Equinox/Terrain	GM-Tr_SwHS2-01_TP	✓	✓	✓	✓															
114-68-YY	Chevrolet	Trailblazer (2002-2009)	chevy_cl2colorado											✓	✓	✓						
			chevy_cl2Hummer							✓	✓	✓										
			GM-Ex_CL2-01b					✓	✓													
130-08-YY	GMC	Envoy (1998-2009)	Chevy_CL2Colorado							✓	✓	✓	✓									
			Chevy_canCL2_H3					✓	✓													
114-30-YY	GMC	Kodiak	CL2ISOKWPHS1_090514b																			
FORD MOTOR CO.																						
EMU Code (YY = Year)	Make	Model	EMU File Name	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	
126-05-YY	Ford	Crown Victoria	FordGE_SCPK-03										✓	✓	✓	✓	✓					
			Ford_Generic_16							✓	✓	✓										
			FordGE_HSIMS2K-04				✓	✓	✓													

FORD MOTOR CO. (CONTINUED...)

EMU Code (YY = Year)	Make	Model	EMU File Name	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
126-17-YY	Ford	Expedition	FordGE_SCPK-03											✓							
			FordGE_HSIMS2K-04				✓	✓	✓	✓	✓	✓	✓								
			FordF15_BGS-05		✓	✓															
126-14-YY	Ford	Escape	SCPISOKWPHS1_090518																		
			Ford_Generic_16							✓	✓										
			FordGE_HSIMS2K-04				✓	✓	✓												
			FordEsc_SPD-03		✓	✓															
126-19-YY	Ford	Explorer	FordGE_SCPK-03											✓	✓						
			Ford_Generic_16							✓	✓	✓	✓								
			FordGE_HSIMS2K-04				✓	✓	✓												
			FordEX_HSI-03	✓	✓	✓															
126-40-YY	Ford	Focus	FordGE_SCPK-03b												✓	✓					
			Ford_Generic_16							✓	✓	✓	✓	✓							
			FordGE_HSIMS2K-04				✓	✓	✓												
			FordFCS_HSIMS2-02	✓	✓	✓															
126-43-YY	Ford	Fusion	Ford_Generic_16						✓	✓											
			FordGE_HSIMS2K-04		✓	✓	✓	✓													
126-51-YY	Ford	Taurus	FordGE_SCPK-03																		
			Ford_Generic_16							✓	✓	✓									
			FordGE_HSIMS2K-04	✓	✓	✓	✓	✓	✓												
126-22-YY	Ford	F-150 E Series	FordGE_SCPK-03											✓	✓						
			Ford_Generic_16							✓	✓	✓	✓								
			FordF15_BGS-01b				✓	✓	✓												
			FordF15_BGS-05	✓	✓	✓															
126-26-YY	Ford	F-250/350/450/550 (Diesel)	Ford_ScpDiesel-01b																		
			HSIMS2-FOF2_090715				✓	✓	✓	✓											
			FordF2-11_07	✓	✓	✓															
126-17-YY	Ford	F-250/350/450/550 (Gas)	FordGE_SCPK-03																		
			FordGE_HSIMS2K-04				✓	✓	✓	✓											
			FordF15_BGS-05	✓	✓	✓															
126-36-YY	Ford	F-650	J1939-J1708_JPid_13-WS																		
126-37-YY	Ford	F-750	J1939-J1708_JPid_13-WS																		

CHRYSLER CORP.

EMU Code (YY = Year)	Make	Model	EMU File Name	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
120-13-YY	Dodge	Caravan	dodge_caravan_y2007							✓											
			CDJ-V_HSI-03b		✓	✓	✓	✓	✓												
120-12-YY	Dodge	Durango	CDJ_Generic								✓	✓	✓								
			CDJ-ND_HSI-01				✓	✓	✓	✓											
			CDJ-R11_HSI-03			✓															
120-09-YY	Dodge	Dakota	CDJ-ND_HSI-01			✓	✓	✓	✓	✓	✓	✓									
140-03-YY	Jeep	Grand Cherokee	CDJ_Generic							✓	✓	✓									
			CDJ-GC_HSI-01				✓	✓	✓												
			CDJ-R11_HSI-02			✓															
140-04-YY	Jeep	Liberty	CDJ-V_HSI-03b		✓	✓	✓	✓	✓	✓	✓										
120-21-YY	Dodge	RAM (Gas)	HSIDORA_090713				✓	✓	✓	✓	✓										
			CDJ-R11_HSI-02		✓	✓															
120-24-YY	Dodge	RAM (Diesel)	HSIDORA_090713				✓	✓	✓	✓	✓										
			CDJ-R211_HSI-03		✓	✓															

MITSUBISHI																					
EMU Code (YY = Year)	Make	Model	EMU File Name	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
160-07-YY	Mitsubishi	Montero SUV/Truck (Diesel)	CL2ISOKWPHS1_090514b																		
160-03-YY	Mitsubishi	Endeavor SUV/Truck (Gas)	MIT-EN_HSI-03			✓															
NISSAN																					
EMU Code (YY = Year)	Make	Model	EMU File Name	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
164-06-YY	Nissan	Frontier (GAS)	NissanSE_HSI-01		✓	✓	✓	✓	✓	✓	✓										
164-14-YY	Nissan	Pickup/SUV (Diesel)	HS1-NiNav_04			✓	✓	✓	✓	✓	✓										
TOYOTA																					
EMU Code (YY = Year)	Make	Model	EMU File Name	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
187-30-YY	Toyota	Prada	ToyotaCO_HSI-02			✓	✓	✓	✓	✓	✓										
187-20-YY	Toyota	Tacoma (Gas)	HS1KWPTOTA_090305					✓	✓	✓	✓										
			ToyotaCO_HSI-03		✓	✓	✓														
187-25-YY	Toyota	Tundra (Gas)	HS1KWPTOTA_090305				✓	✓	✓	✓	✓										
			ToyotaSQ_HSI-01		✓	✓															
187-08-YY	Toyota	International Land Crusier	KWP_Generic-01																		
187-30-YY	Toyota	Hilux (No MPG data)	ToyotaCO_HSI-02																		
HEAVY TRUCK																					
EMU Code (YY = Year)	Make	Model	EMU File Name	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
149-00-YY	All Makes	All Models	J1939-J1708_JPid_15-WS																		
UNKNOWN EMU																					
EMU Code (YY = Year)	Make	Model	EMU File Name	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
132-03-96	All Makes	Use if NO EMU support	UnknownMake																		

tiwiPro™ Troubleshooting

Use the following table to quickly troubleshoot issues encountered with the tiwiPro™ system. If you are experiencing an issue that is not listed below, contact inthinc **Technical Support at 1-866-294-8637 opt. 3.**

Category	Symptom	Possible Solution(s)
Device	<i>Device lights aren't on</i>	<ul style="list-style-type: none"> Verify that the device is plugged in to the OBD-II. (For a list of common OBD port locations, see <i>page 41</i>) If the device is plugged in and the lights are still not on, unplug the device for 30 seconds, then reconnect the device. You should immediately have a green light (power). After 10-15 seconds you should have a blue light (GPS lock).
	<i>Device has no blue light</i>	<ul style="list-style-type: none"> No blue light may indicate no GPS lock. Move vehicle to get clear line of sight to the southern sky (away from tall buildings and trees) which can contribute to GPS satellite loss.
	<i>Device won't orient</i>	<ul style="list-style-type: none"> Vehicle needs to be on a flat surface before the unit will orient itself. The blue LED light needs to be illuminated before you can orient the device. If the blue LED is not illuminated, move the vehicle to get clear line of sight to the southern sky, and then try again.
	<i>When orienting device, device beeps instead of giving audible confirmation</i>	<ul style="list-style-type: none"> Micro SD card may not be properly inserted or may be missing. Check slot closest to edge (opposite of power cord). Micro SD card should sit well below the slot opening. If necessary, press the card in using a key or paperclip.
	<i>Device has no audio</i>	<ul style="list-style-type: none"> If LED lights function on device, but there is no audio, it might be intentional. Contact inthinc Technical Support at 1-866-294-8637 opt. 3.
	<i>I pressed the green call button and nothing happened</i>	<ul style="list-style-type: none"> Vehicle may be out of cell coverage area or the SIM card may not be provisioned correctly. Device may be defective
	<i>I pressed the green call button and got voicemail instead of a person</i>	<ul style="list-style-type: none"> A custom E-Call number may not have been set-up in the portal. For more information on how to set up E-Call capabilities, see the <i>inthinc Portal User Manual</i>.
	<i>When removing a tiwiPro™ device from a vehicle, how do I clean the adhesive off the windshield?</i>	<ul style="list-style-type: none"> On windshields, rubbing alcohol should remove the adhesive. On plastic or vinyl surfaces, we recommend using a commercial gum removal product, such as Goo Gone®.
Vehicle	<i>Where is the OBD-II port in the vehicle?</i>	<ul style="list-style-type: none"> For a list of OBD-II port locations, see <i>page 41</i> of this guide. If your vehicle does not appear on the list, refer to the vehicle's owners manual from the vehicle manufacture.
	<i>Non-Critical vehicle dashboard issue: Seatbelt, Idling, RPM, or MPG status is not accurate?</i>	<ul style="list-style-type: none"> (1) Compare vehicle VIN number to the VIN number entered in the inthinc portal. (Admin > Vehicles) (2) If the VIN numbers do not match, edit the VIN number on the vehicle profile page in the inthinc portal, then re-orient vehicle by pressing the green call button on the tiwiPro™ device. If the VIN numbers are the same, then it may be a hardware problem, contact inthinc Technical Support at 1-866-294-8637 opt. 3.
Vehicle (Cont.)	<p><i>Critical vehicle dashboard systems are behaving strangely:</i></p> <ul style="list-style-type: none"> <i>Dash lights are not on</i> <i>Gauges are making a sweeping motion</i> <i>A component module (traction control, security, theft, etc.) is disabled</i> 	<ul style="list-style-type: none"> (1) unplug the tiwiPro™ device from the vehicle OBD (2) turn the vehicle off and then on again (3) if engine starts, skip to the next step. If the engine does not start, pull ground terminal from the battery, let it sit for 10 minutes, reconnect ground terminal, then restart vehicle. (4) compare the vehicle VIN number to the VIN number entered in the inthinc portal. (go to Admin > Vehicles) (5) if VIN numbers do not match, edit the VIN number on the vehicle profile page in the inthinc portal (Admin > Vehicles) then re-orient the tiwiPro™ device by pressing the green call button. (6) if the VIN numbers match, it may be a hardware problem. Contact inthinc Technical Support at 1-866-294-8637 opt. 3.

	<i>Vehicle Battery is dead</i>	<ul style="list-style-type: none"> It is possible that the device did not go into <i>low power mode</i>. To avoid having your vehicle battery drained, verify that the LED lights are not illuminated when the vehicle ignition is off. Pay attention to where you park the vehicle because the tiwiPro™ device is extremely sensitive to motion. A strong gust of wind or vibration (such as parking close to a railroad track) can trigger the device to power on when the vehicle ignition is off.
	<i>Aggressive driving is extremely sensitive</i>	<ul style="list-style-type: none"> You can adjust aggressive driving sensitivity settings in the inthinc portal: <ol style="list-style-type: none"> Go to Admin > Vehicles Select the vehicle, then click Edit Select the Speed & Sensitivity tab Adjust sensitivity sliders for aggressive driving to a less sensitive value Click Save to exit and save your changes. It will take some time before the vehicle downloads the new settings (usually within 24 hours if the vehicle is powered on and can receive downloads)
	<i>Aggressive driving shows Hard Brake when it should show Hard Acceleration</i>	<ul style="list-style-type: none"> Ensure that the device is installed in the vehicle with the power cable protruding down (south), from the device, and that the LED lights are facing the driver. The tiwiPro™ device should not be mounted sideways (i.e. where the cable or LEDs point towards the middle of the vehicle).

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