

GPS Installation Done Right: Avoid Costly Mistakes & Protect Your Assets

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About Ituran

Founded - 1994

Publicly traded on NASDAQ (ITRN)

Revenues in 2024 - ~\$336.3M

Market cap - ~\$721M

Employees - ~3,000

Worldwide subscribers - ~2.4M

Headquarters in

ISRAEL | BRAZIL | USA | ARGENTINA | CANADA





Ituran **Solutions**



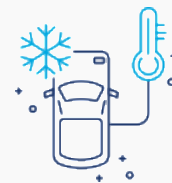
Fleet Management



Stolen Vehicle Recovery



EV Management



Reefer Monitoring & Temp Control



Big Data



Connected car



Micro mobility



Driver Safety



Video Telematics



Shared Mobility Management

Introduction

Welcome to Ituran's GPS installation best practices. In this training section we will cover basic operational features, installation procedures and some basic troubleshooting of our devices.

- You know GPS devices can be powerful tools for managing your portfolio and protecting your collateral—but only if they're installed correctly. A poor installation means wasted time, money, and unreliable tracking when you need it most. Do you want to know what makes a quality, high performing installation?
- In this hands-on Garage Bay experience, Ituran USA will break down:



- [The top five mistakes in installing GPS devices—and how to avoid them](#)
- [The do's and don'ts of installation](#)
- [How long a proper installation should take](#)
- [Hidden risks that can cost you big](#)
- [The things you wish you knew—before you had skips you couldn't find](#)
- [How to grade your installers and assess installation quality](#)

- Watch a live GPS installation demo, get expert tips, and walk away with practical tools to audit your installs—so you can be confident your GPS will work when you need them!

Top 5 Mistakes Installing GPS Devices

- Tools & Connectors
- Wiring
- Location of the device
- Mounting of the device
- Data entry – vehicle info mix-up

Basic Tools for Installation

1. Voltmeter or Test light
2. Panel remover
3. Wire strippers
4. Wire cutters
5. Crimpers
6. Power Drill

Link for a short video:

[Basic Tools for installation](#)

Testers



[LINK FOR PURCHASE](#)

Panel Removers



[LINK FOR PURCHASE](#)

Cutters - Crimpers



Crimpers Stripper Cutter

Electric Drill

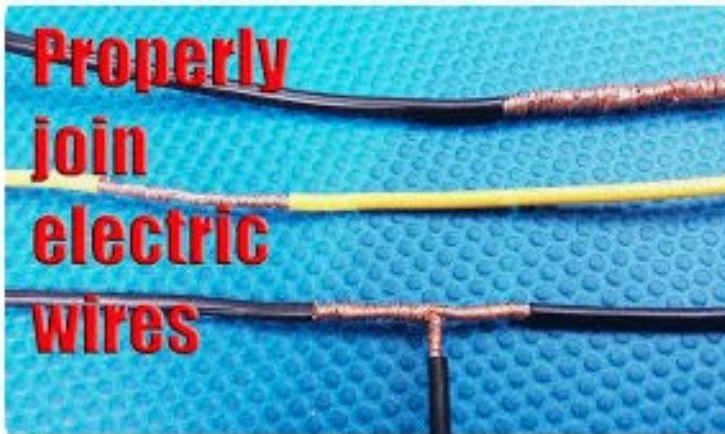


Power Drill with Assorted Bits

Connectors

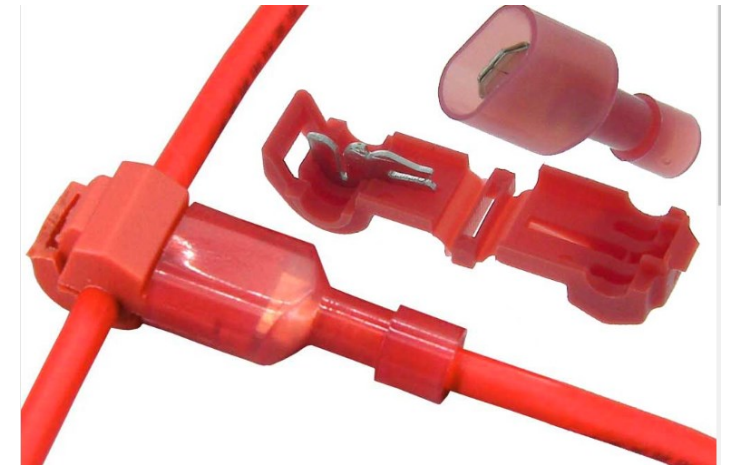
Do - Wire to Wire Connection

Making a wire-to-wire connection is the best possible way to ensure a good connection



Don't

Use quick connectors, such as T-Taps



Wiring

A fundamental part of a successful GPS installation are the right wires the harness should connect to:

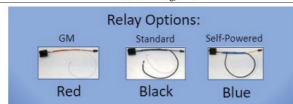
- Power – solid power (not an accessory wire)
- Ground – should be connected to the chassis
- Ignition – true ignition
- Starter

Make sure your installer/technician is getting reliable wiring information

We offer wiring diagrams and pictures along with vehicle specific relays

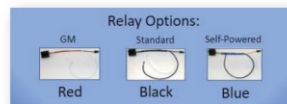
Chevrolet Silverado 1500 2014 - 2019
(Key Start)

Circuit	Wire Color	Polarity	Wire Location	Picture	Note
12Volts	Red/Blue	+	Ignition Switch Harness, Black 6 Pin Plug, Pin 4	No	
Starter	Yellow	+	Under Hood Fuse Box, Green 58 Pin Plug, Pin E2	No	Use with SP or Standard Relay
Ignition	Purple/Black	+	Ignition Switch Harness, Black 6 Pin Plug, Pin 2	No	
Accessory	Purple/Yellow	+	Ignition Switch Harness, Black 6 Pin Plug, Pin 3	No	Use with GM Relay



Toyota Camry Hybrid 2018-2024 (Push Start)

Circuit	Wire Color	Polarity	Wire Location	Picture	Note
12Volts	White (IGN)	+	Car Access System under driver dash, 41 pin plug, pin 21	Yes	
Starter Kill (At Brake Switch)	White	+	Brake Switch, blue 5 pin plug, pin 2 or black 7 pin plug, pin 3	No	Use SP (Blue) Relay Only
Ignition	Violet	+	Dash Fuse Box, white 32 pin plug (BC), pin 13	Yes	



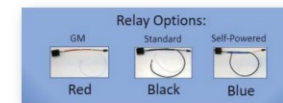
Honda Fit 2009 – 2014 (Key Start)

Circuit	Wire Color	Polarity	Wire Location	Picture	Note
12Volts	White	+	Ignition switch, brown 7 pin plug, pin 3	Yes	
Starter	Pink	+	Ignition switch, brown 7 pin plug, pin 1	Yes	
Ignition	Yellow	+	Ignition switch, brown 7 pin plug, pin 6	Yes	



Nissan Altima 2019-2023 (Push Start)

Circuit	Wire Color	Polarity	Wire Location	Picture	Note
12Volts	Green	+	Dash Fuse Box, rear, white 1 pin plug, pin 1	Yes	
Ignition	LT Blue	+	Dash Fuse Box, white 24 pin plug, pin 10	Yes	Keep in mind wire colors maybe faded
Starter	Red	-	BCM under driver dash, black 24 pin plug, pin 13	Yes	Use Standard Relay Only
Brake Wire Option 2	Blue	+	Brake pedal switch pin #2	Yes	Use SP Relay Only. Could possibly have 2 wires on the same pin.



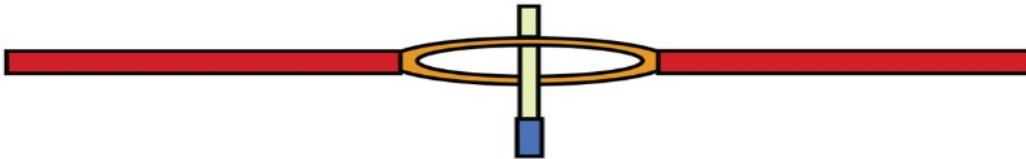
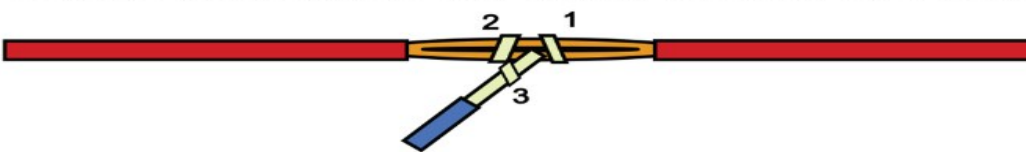




Wire to Wire Connection

Making a wire-to-wire connection is the best possible way to ensure a good connection without the use of soldering or T-Tap connections

Link for a short video:
[Wiring the device](#)

MAKING "TAP-ON" WIRE WRAP CONNECTIONS

1. Strip back one inch of insulation on the vehicle wire.
One Inch of Bare Wire

2. Separate the strands of the vehicle wire to create hole.

3. Insert the wire from the remote starter/bypass through the hole.

4. Wrap the wire around one side, then the other, and finally itself.

5. Lay the starter wire along side the vehicle wire.

6. Tape connection, and wire tie remote start/ bypass and vehicle wires together.


Location of Device

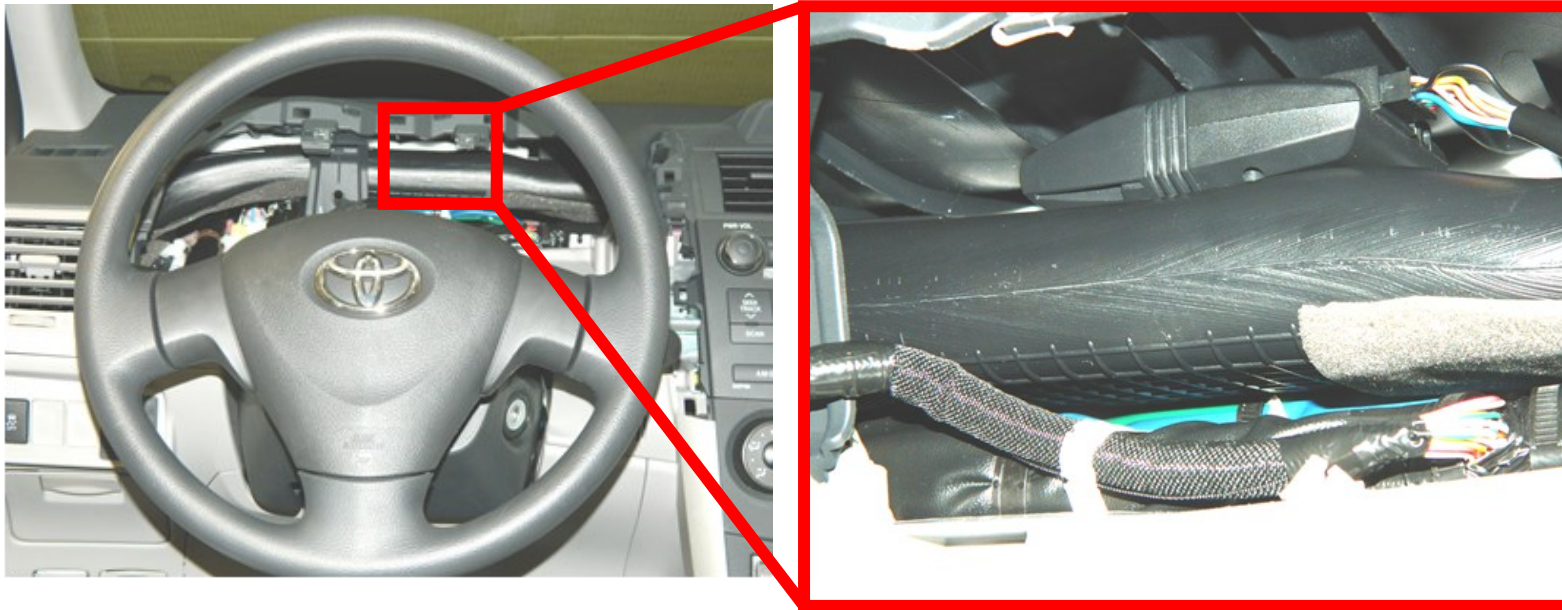
The location of the device is crucial for optimal performance. There are few important guidelines to follow:

- The device should have clear “view” to the sky, so it will have the ability to lock GPS.
- **Good spots are:**
 - Wire devices –
 - under the dash, as high as possible
 - On top of the AC ducts behind the instrument cluster
 - Wireless devices –
 - Under the passenger seat
 - Under the rear seat
- **Bad spots are:**
 - Under the hood – covered with metal & exposed to humidity
 - In the trunk – covered with metal
 - Under steering wheel column

Mounting of the Device

A solid mount of the device is important for the device performance and reduce tampering:

- We don't want it to dangle and fall from the cluster on the driver leg.
- We don't want to have the device be visible to the driver.
- Crash Sensor: The device must be mounted flat and secured with "This Side Up" facing up. This is important for the sensors to trigger accurate crash alerts.



Note: never install the device in the engine compartment of the vehicle.

[Mounting Device Video Link](#)

Data Integrity

Vehicle data associated with the GPS device is very important, so you won't end up with a Honda Civic, when you sent the repo order for a Ford F-150.

Best practice is to have a VIN scanner and decoder within the GPS company app. By scanning the device IP and the VIN you automatically associates the right vehicle info with the device.

All your tech need to add are the color & Stock No. which are not part of the VIN.

Activation Status - **Edit Platform**

Assign

Test

Load

Activate

Send

57.233.1.60

VIN *

3KPFK4A79HE081171

Label

18691

Descr

Sedan/Saloon

Stock *

18691

Plate

Year

2017

x

Make

KIA

x

Model

Forte

x

Color

Tan

x

Make: KIA

Model: Forte

Driveline:

EngineType: 4

Trim: Sedan/Saloon

Pause

Save

GPS Installation Do's & Don't

Item	Do	Don't
Personnel doing installation	Qualified, trained and experienced Tech	Unexperienced, uneducated employee
Location of the device	Inside the dash as high as possible	Trunk, Engine compartment, places blocked by metal
Connector type	Hard wire to wire connection	Quick connectors / T-Taps
Relay types (Starter disable)	Use vehicle type specific relays for higher efficiency, accuracy and safety	
Mounting of the device	Firm & secure mount with zip ties and Velcro	Loose mount which allows device movement
Data entry	Use a VIN decoder to minimize human errors, use stickers on deal-jacket & door jam	Give a tech 5 devices & car keys, which can cause confusion
Activation of the GPS	Activate the device as soon as the installation was completed	Postponed the activation time
Time of installation	Installation should be done as part of the recon process	Not when the customer is in the office waiting for the key
Testing of the GPS	Make sure to test GPS performance at the end of activation and before vehicle delivery	No testing

Installation Methods

1.Basic Hardwire

This is the most common used installation method that is used in order to Locate the vehicle.

2.OBD Connection

This method is quick and simple to wire since it's a plug and play installation. (no wiring involved)

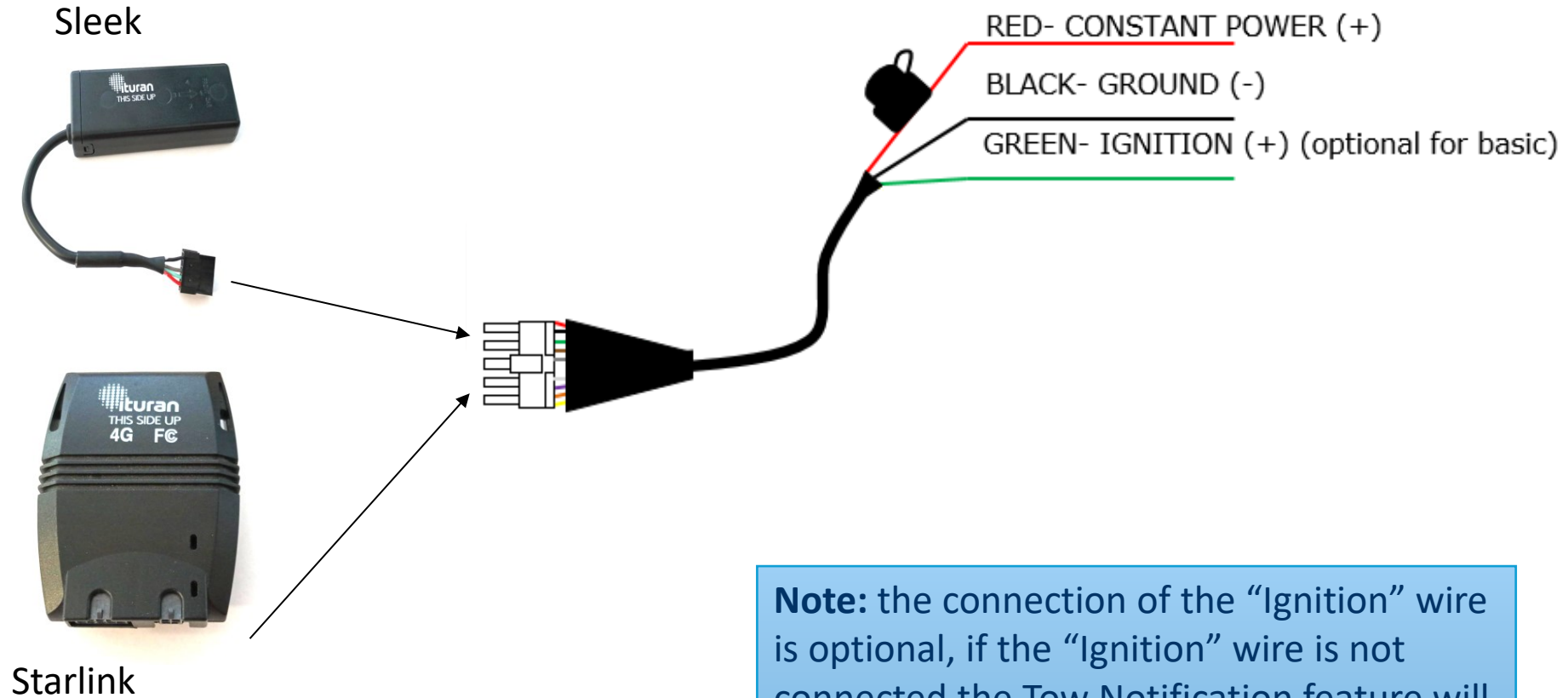
3.Hardwire with Starter Disable

Similar to the “Hardwire” this method requires the use of a relay in order to interrupt the starter circuit.

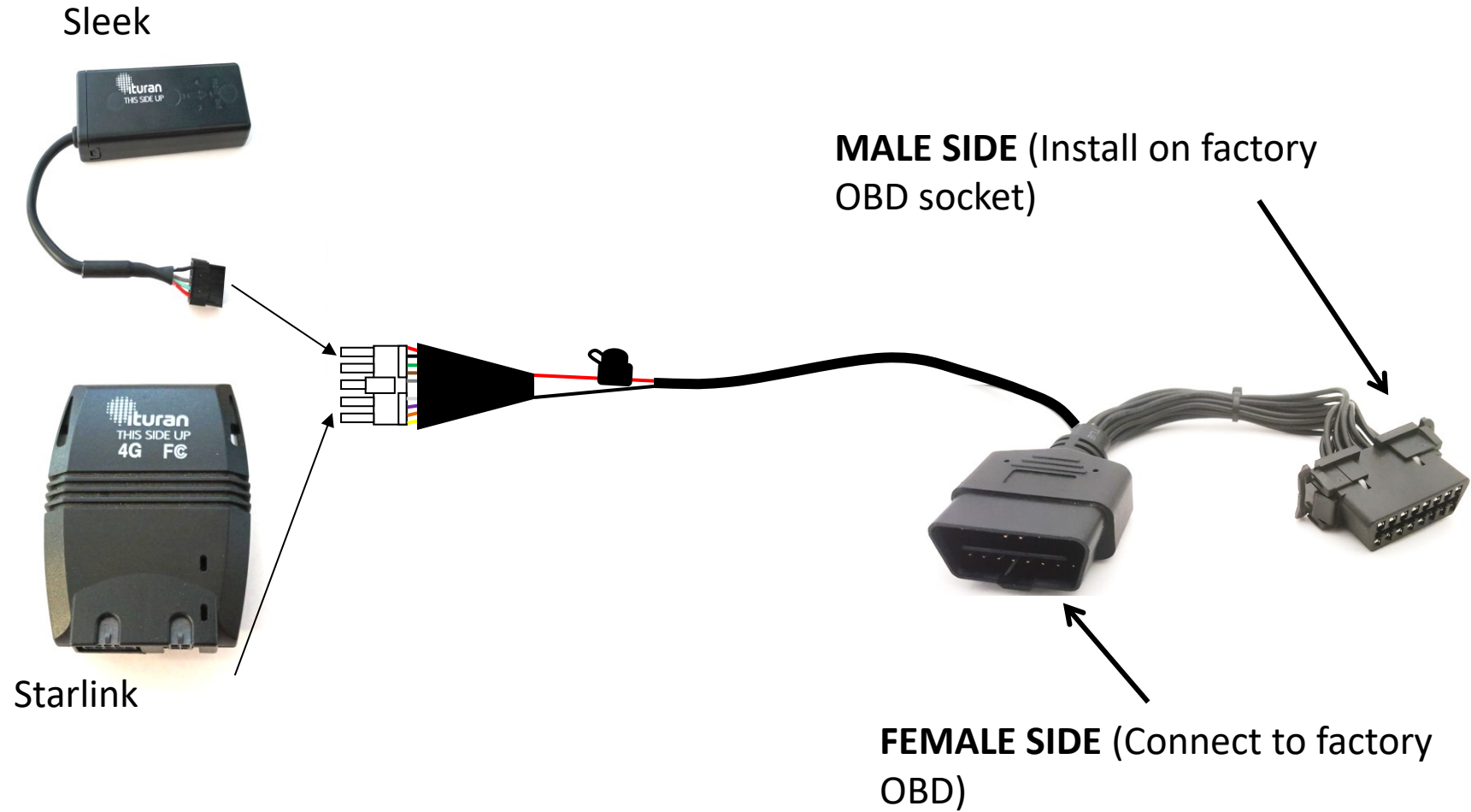
4.Payment Reminder

This method is exactly like the “Hardwire with starter disable” but with the addition of a small buzzer.

Basic Hardwire



OBD Connection



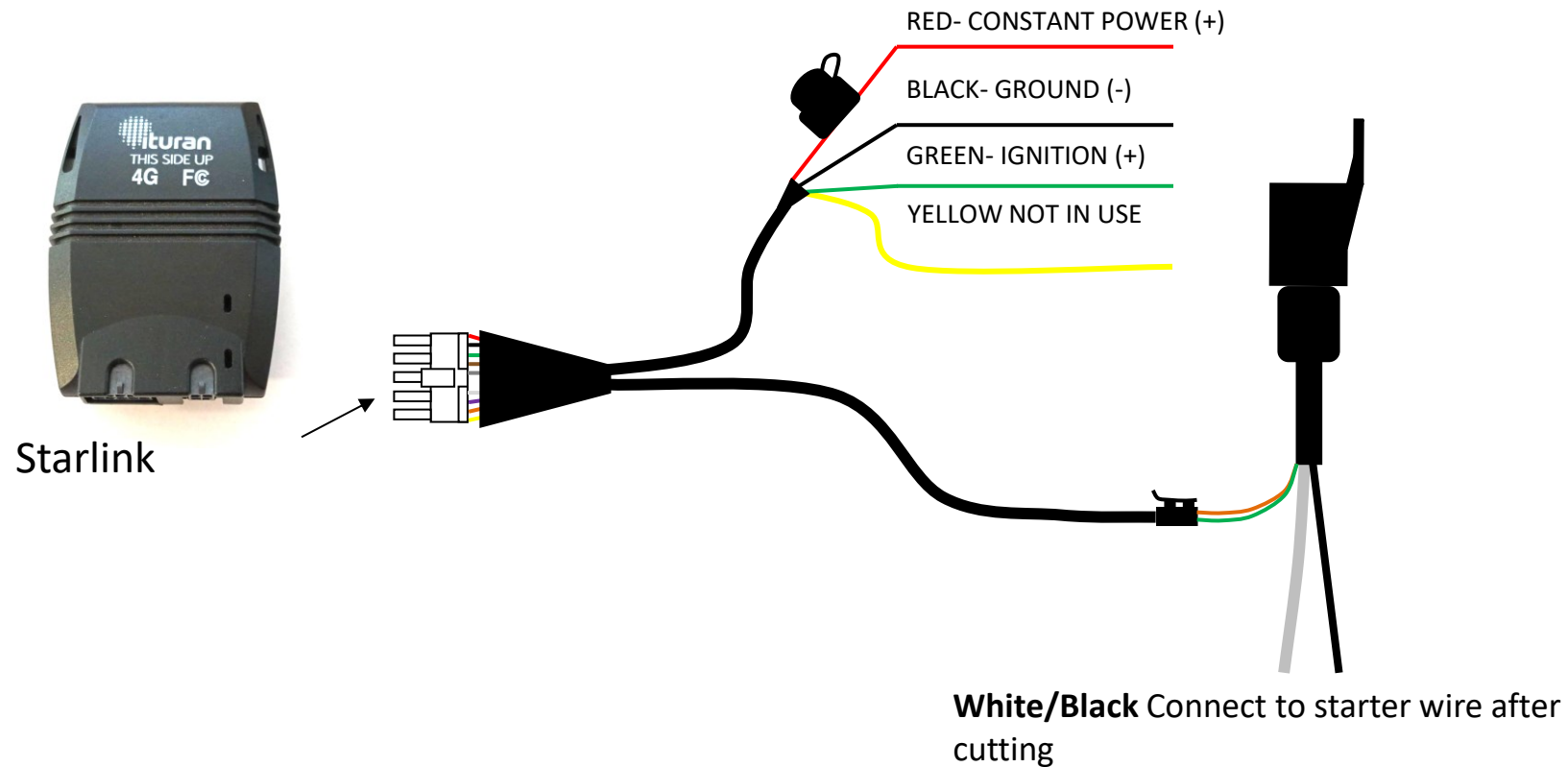
OBD Connector

On-Board Diagnostics, or OBD, is an automotive term referring to a vehicle's self-diagnostic and reporting capability. OBD systems give the vehicle owner or a repair technician access to state of health information for various vehicle sub-systems.

The OBD (On Board Diagnostics) connector is located under the dashboard of every car. In that connector we can find power and ground wires, relevant to our installation. This will be required to use when the Diagnostics feature is available.

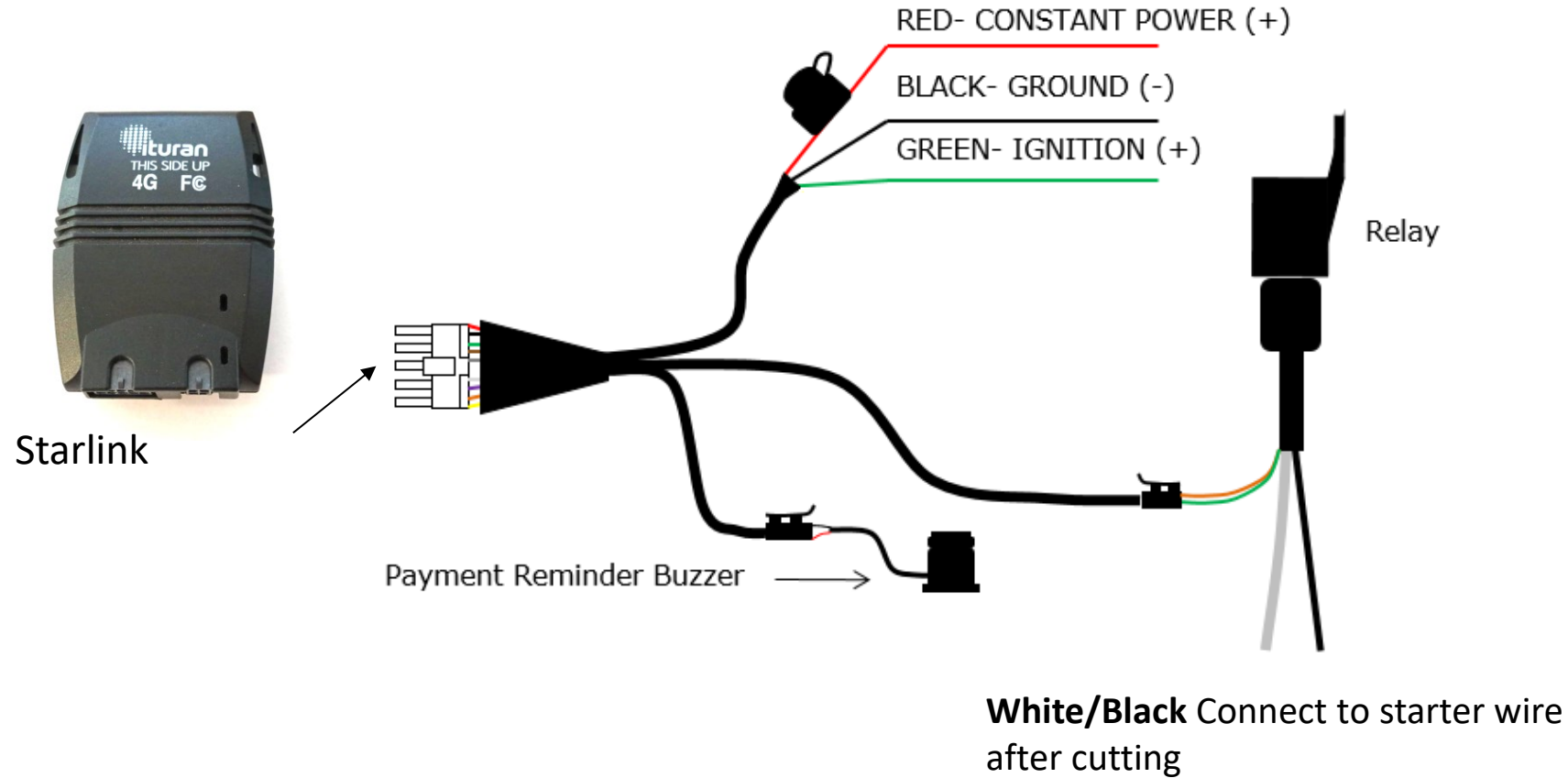


Hardwire with Starter Disable

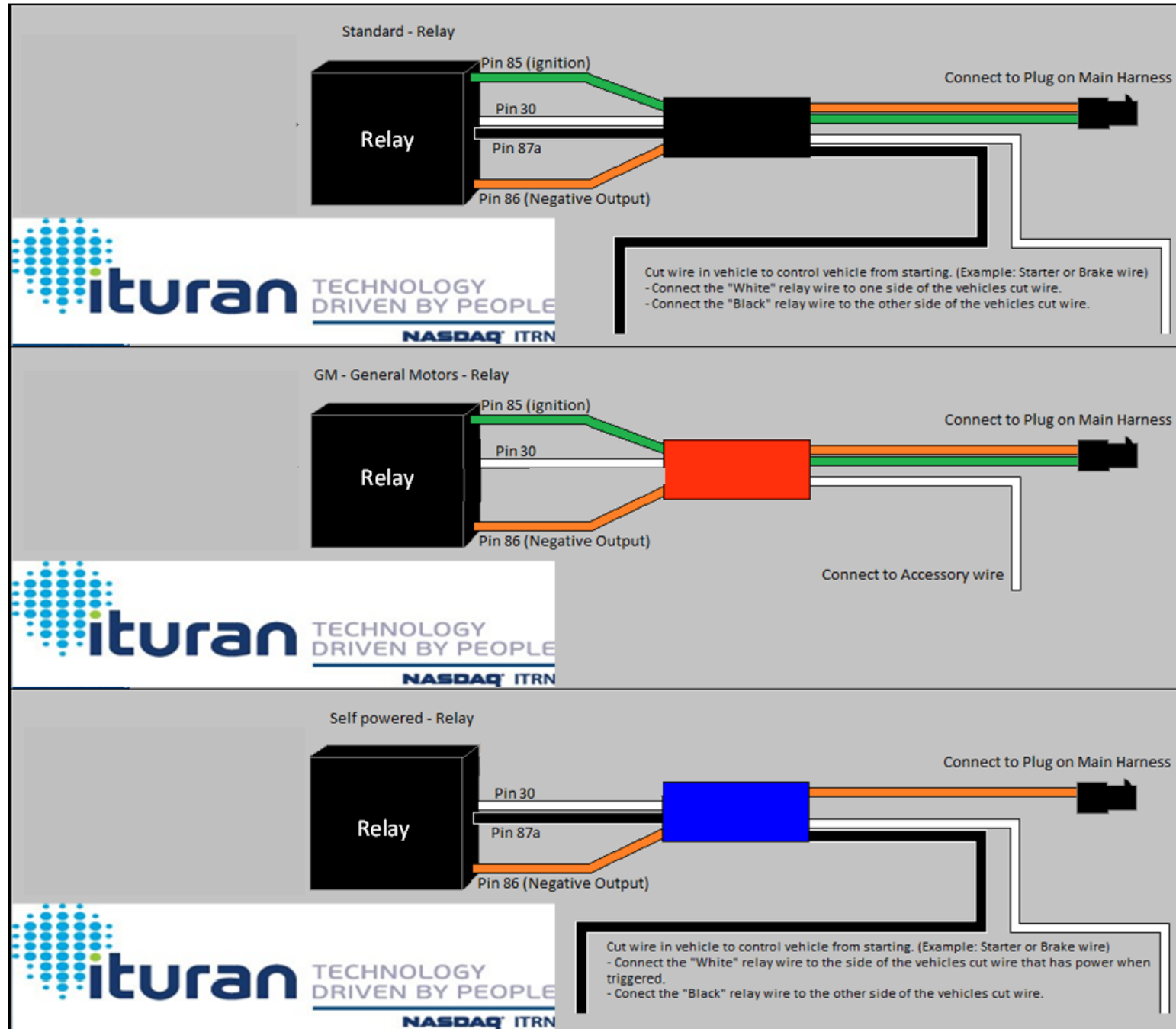


Note: the connection of the “Ignition” wire is critical for the operation of the “Starter Disable” feature.

Payment Reminder Collection Tool Harness



Note: the connection of the “Ignition” wire is critical for the operation of the “Starter Disable” feature.



Timing of Proper GPS Installation

- Installation time varies based on the tech knowledge/experience, installation type and vehicle
- On average here are general guidelines for installation time by a tech:
 - Basic Hardwire: 20-30 minutes
 - OBD Connection: 15-25 minutes
 - Hardwire with Starter Disable: 30-45 minutes
 - Hardwire with Starter Disable & Payment Reminder: 35-45 minutes

Hidden Risks

- Risk of damaging the vehicle:
 - Damage to the BCM – wrong wires
 - Burn the starter motor – wrong wires
- Unable to recover vehicle if ever stolen
- Unable to reposes a vehicle
- Unable to locate/monitor for collection purposes
- Miss GPS functionality such as HeartBeat, Parking Behavior, Mileage reading etc. if wired incorrectly
- False alerts such as:
 - Tow alerts - loose ignition wire
 - Crash sensor – GPS not mounted properly

The things you wish you knew before you had SKIPS

- Do you know we have a dashboard that can show your account GPS health status? know ahead of time which devices are having performance challenges such as bad install.
- Auditing your installation process can prevent costly surprises.
- Check your GPS reporting that presents you with vehicle Parking behavior/Most parked locations.
- Make sure your GPS has a backup battery alerting you of GPS tampering by the customer.
- Can you monitor if your vehicles has been towed, impounded, been in an accident or out of the country?

How to grade your installers & asses installation quality

- Review the Do & Don't list
- Make sure you are utilizing the GPS Installation Check-List
- The way connections are made:
 - Good - wire to wire, butt connectors
 - Bad - t-taps, Scotchlocks
- Device placement, making sure it is secured and away from metal
- Proper wiring routing and concealment



The Ituran Difference - More Reliability

The one that you can count on when you really need it

You can count on Ituran's products and services because:

- We have the highest level of up-time (as measured internally and by clients)
- We manufacture the hardware, the firmware, and the software specifically for your industry
- Controlling the total solution:
 - Leads to better reliability – the number one need in our industry!
 - Gives us the ability to innovate faster – keep up with technological trends & deliver more valuable features
 - Helps us stay ahead of and on top of regulatory and compliancy requirements
 - Streamline the integration process with other important systems
- Being a public company, you can continually see our financial strength and on-going R&D investments
- Our Core Values drive us to the highest level of Customer Service and Satisfaction

MILITARY GRADE PRODUCT MANUFACTURING

- Product was initially designed to save lives.

No cutting corners!

- Product fully manufactured in Israel with highest quality standards to support the highest caliber of clients
- Robust product to address extreme climate conditions worldwide
- Constant projects being developed in conjunction with Israeli Military & Police with advanced abilities
- Control over assembly line provides high level of QA, flexibility and rapid customization
- All software and hardware R&D are done in-house. Makes development easier as adjustments can be made on both sides.
- Built with the concept of “cannot fail” (less than 0.5% failure rate)



Got questions...? Email us at:
technicalsupport@ituranusa.com

