

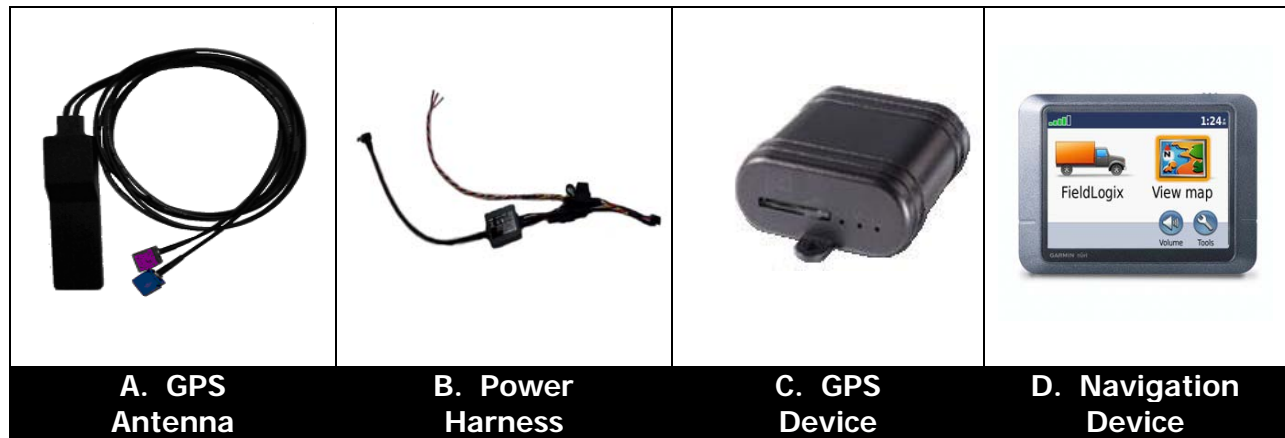


## GPS Device Installation Instructions

You will need the following tools:

- Crimp ring terminal
- Soldering tool and solder
- Torque Seal
- Electrical Tape
- Voltage Meter
- Wire strippers
- Silicone Glue
- Zip Ties
- Wire crimpers

There are 4 components to the GPS device:



The above components must be installed in the following order:

- A. GPS / Cell combo antenna
- B. Power harness
- C. GPS device
- D. Garmin Navigation Device

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## A. Installing the Combo GPS / Cellular Antenna



Mount the antenna in the specified location (see below) and run the antenna leads to the planned location of the GPS device. The standard location is underneath the dashboard. Only perform a roof mount installation if you cannot meet the specifications required in the under dashboard installation or if specified on the work order.

### 1. Under dashboard installation - Standard:

Mount the antenna in a location underneath the dashboard. Be sure to follow the points below:

- The top (side that has the arch) of the antenna must face up toward the sky.
- The antenna should be hidden and must have direct line of sight to the sky through the windshield.
- The antenna cannot be mounted underneath metal as this will interfere with the GPS signal.
- Make sure that the antenna is not beneath a portion of the windshield that has a metal film or tint as this will block the signal.
- Do not crimp or route antenna cables.
- Use the adhesive or silicone glue to secure the bottom of the antenna to its location.

### 2. Roof mount:

Only install a roof mount antenna if specified on the work order or if you cannot find a suitable location underneath the dash board.

Drill a 3/4 inch hole in the front left corner of the roof of the vehicle, just over the A-pillar. Run the antenna leads through the hole down the A-pillar to the device. Mount the GPS antenna to the roof using silicone glue and use silicone on the drilled hole to ensure that there are no leaks. \*\*\*You must ensure that any drilled holes are sealed properly\*\*\*

## **B. Installing the wiring harness:**

This type of harness has three wires. The Red wire is for constant power, the White wire is for ignition, and the Black is for ground.

**Do not plug harness into device when making connections!**



### **Searching for Correct Wires:**

In order to find the correct wires, you must first set your multi meter to DCV or DC voltage 12V or 20V, attach the negative (-) probe to the vehicle chassis ground, and then begin probing the wires you suspect of being the constant and ignition power sources.

**Important:** When searching for the correct wires, DO NOT use a test bulb circuit tester. Often, damage to vehicle computers and vehicle air bag restraint systems result from the use of a test bulb causing a short circuit. Ideally, the use of a digital multi meter is the best tool to search for the correct wires.

*The appropriate power wires should be found in the vehicle's ignition harness  
(See Chart A for the most common color codes for most vehicles)*

### **How to Find Constant Power:**

Locate the wire that you suspect would have constant power. Probe the wire with the meter lead. Turn the vehicle's ignition on and off while metering the wire. This wire should read a constant 12 volts or higher when the ignition is in both the "ON" and "OFF" positions.

Strip the insulation back and connect the red wire from the tracking unit's harness to this constant wire using the hook and wrap technique (See diagram A on the following page). Solder the connection to ensure a quality contact. Refer to Chart A for the most common colors for a constant power connection.

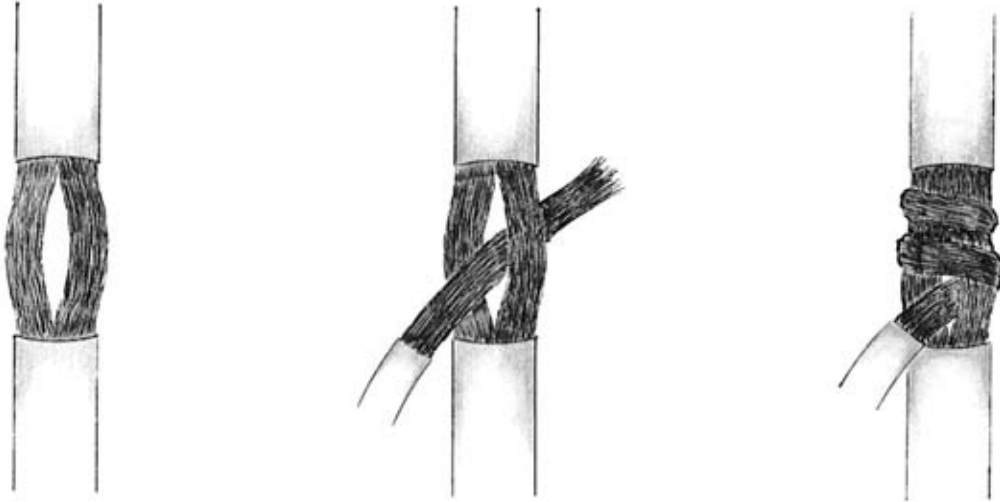
### **How to Find Ignition (switched) power:**

Locate the wire that you suspect to have ignition (Switched) power. Probe the wire with the meter lead.

- With the key in the ignition and turned to the "ON" position (Not starting the vehicle), the wire should meter 12 volts or more.
- With the lead still probing the wire, start the vehicle. When the car is cranking, the wire's voltage should not drop by more than 2 volts.
- Turn the key to the "OFF" position, the voltage should drop down to 0.

Strip the insulation back and connect the white wire from the tracking unit's harness to this ignition wire using the hook and wrap technique (See Diagram A). Solder the connection. Refer to the chart A for the most common colors for the ignition power connections.

**Diagram A**  
**Hook & Wrap Method**



Strip the wire that you will connect the device's wire to and spread the wire apart and insert the device's wire. Wrap the wire and solder the connection. Be sure to use electrical tape to cover the soldered wire. You should also use a zip tie around the electrical tape to ensure that the connection is secure.

### **Connecting to Ground:**

Crimp a ring terminal at the end of the black wire coming from the tracking unit's harness. Connect it directly to the vehicle's chassis via an existing bolt or self tapping screw. A common grounding area would be at the driver's kick panel. Scrape off any paint at the point of grounding to ensure a good connection.

Run the wiring harness' plug connector to the GPS device and run the Garmin FMI Cable to the desired Garmin Navigation Device location (example: top center of dash)

## C. Mounting the Devices



Find a secure location underneath the dashboard to mount the GPS device. Do not mount device under the hood of the vehicle or in the engine compartment. The heat from any of these locations may cause product failure.

The device's LEDs should be mounted facing the rear of the vehicle so that they are visible for testing purposes. Use zip ties to mount the device to an existing wiring loom or other available location.

Connect the GPS and GSM/Cellular antenna connectors to the device. Use a bead of torque seal around the point of connection to ensure that any future signs of tampering are visible.

Connect the wiring harness plug to the device. The Ground/black wire should be on the far left side of the device, matching the "ground" plug on the device's front panel.

**\*\*Do not power up the device before connecting the GPS and GSM/Cellular antennas first\*\*** Doing so may result in product failure.



Find a location on the top center of the dash that **DOES NOT BLOCK** the vision of the driver to the road. Safe placement of this device is important as improper placement can create an unsafe blind spot for the vehicle operator (Please see Work Order for specified mounting method).

If using the suction cup mount to the windshield, please clean the area of the windshield with the alcohol wipe provided. Moisten suction cup then mount onto windshield.

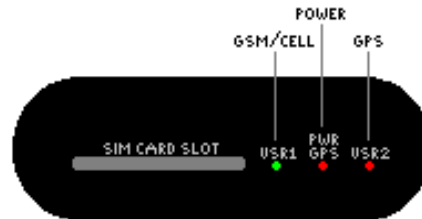
If using dash mount with the double sided tape, please clean the area of the dash with the alcohol wipe provided. Allow cleaned area to dry. Remove mounting tape film and mount onto the dash.

Once mounted, connect the FMI cable to the Garmin Navigation Device.

## D.Test the device

In order to test the device, the vehicle must be parked outside in an open area so that it can receive a GPS lock. The device's LEDs will indicate proper operation.

### Device LED Codes



**PWR GPS** – This LED will become **solid RED** when the device receives constant power.

**USR2 – GPS** - This LED will become **solid RED** when the device receives a GPS lock. This process may take between 5 to 15 minutes.

**USR1 – GSM / Cellular** - This LED will become **solid GREEN** within 1 minute of powering up the device. This indicates that the device is receiving a cellular signal.

**\*Once all three LEDs are lit solid and the Garmin Navigation device is plugged in and mounted, make sure the vehicle is off and call 888-803-0200 Option 4 to test the operation of the devices. DO NOT release the vehicle to the client until the devices have been tested.**

## LED Troubleshooting

LED Pattern	Probable Issue	Solution
PWR GPS will not light up	Device is not receiving power	<ol style="list-style-type: none"><li>1. Check power harness to ensure that connections to the device are secure.</li><li>2. Check to ensure that the power and ground connections are secure and that the correct power sources were selected.</li></ol>
Flashing Green USR1	Device is not receiving a good cellular signal.	<ol style="list-style-type: none"><li>1. Unplug the wire harness, wait 15 seconds, then plug back in.</li><li>2. If the above action does not resolve the issue, try moving the vehicle or move the antenna to see if the signal improves.</li></ol>
USR2 (GPS) will not light up	Device is not receiving a GPS signal	<ol style="list-style-type: none"><li>1. Make sure that the top of the GPS antenna is facing directly skyward and is not obstructed by metal.</li><li>2. Try a different location</li><li>3. Move the antenna outside the vehicle to see if the light will become solid.</li></ol>