

WHELEN[®]

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Installation Guide: Vehicle Safety Gateway (VSG)

Warnings to Installers

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that they can operate the system without taking their eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. **PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.**

Warnings to Users

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.

Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

⚠ WARNING: This product can expose you to chemicals including Lead which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.**
- **Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.**
- **Failure to use specified installation parts and/or hardware will void the product warranty.**
- **If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr the holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro®, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.**
- **For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post (this does not include products that use cigar power cords).**
- **If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **This product contains either strobe light(s), halogen light(s), high-intensity LEDs or a combination of these lights. Do not stare directly into these lights. Momentary blindness and/or eye damage could result.**
- **Use only soap and water to clean the outer lens. Use of other chemicals could result in premature lens cracking (crazing) and discoloration. Lenses in this condition have significantly reduced effectiveness and should be replaced immediately. Inspect and operate this product regularly to confirm its proper operation and mounting condition. Do not use a pressure washer to clean this product.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

Internet of Things Module for Over-The-Air & Vehicle to Cloud Communication

Features:

- 4G/LTE
- 3 SubMiniature version A (SMA) Coaxial Connectors
- 3 LTE (Two Band 14 and one GNSS)
- Ethernet
- WeCanX™ Family
- 7 +/- inputs for Generic Use
- USB-C
- USB-A
- OBD2 Connection

Specifications:

Input Voltage	10-30V
Main Input Current	3A
Standby Current (no ignition)	1.5mA
Operating Temperature (C)	-30°C to +60°C
Storage Temperature :	-40°C to +70°C
Humidity	99% (Non-condensing)
Dimensions	7.07 L X 4.57W X 1.05D

Vehicle Safety Gateway (VSG)
Contains FCC ID: R17LE910C4NF

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.

IMPORTANT WARNING: Changes or modifications not expressly approved by the OEM responsible for compliance could void the users authority to operate the equipment. This applies to any modification of the device including the use of an unauthorized antenna.

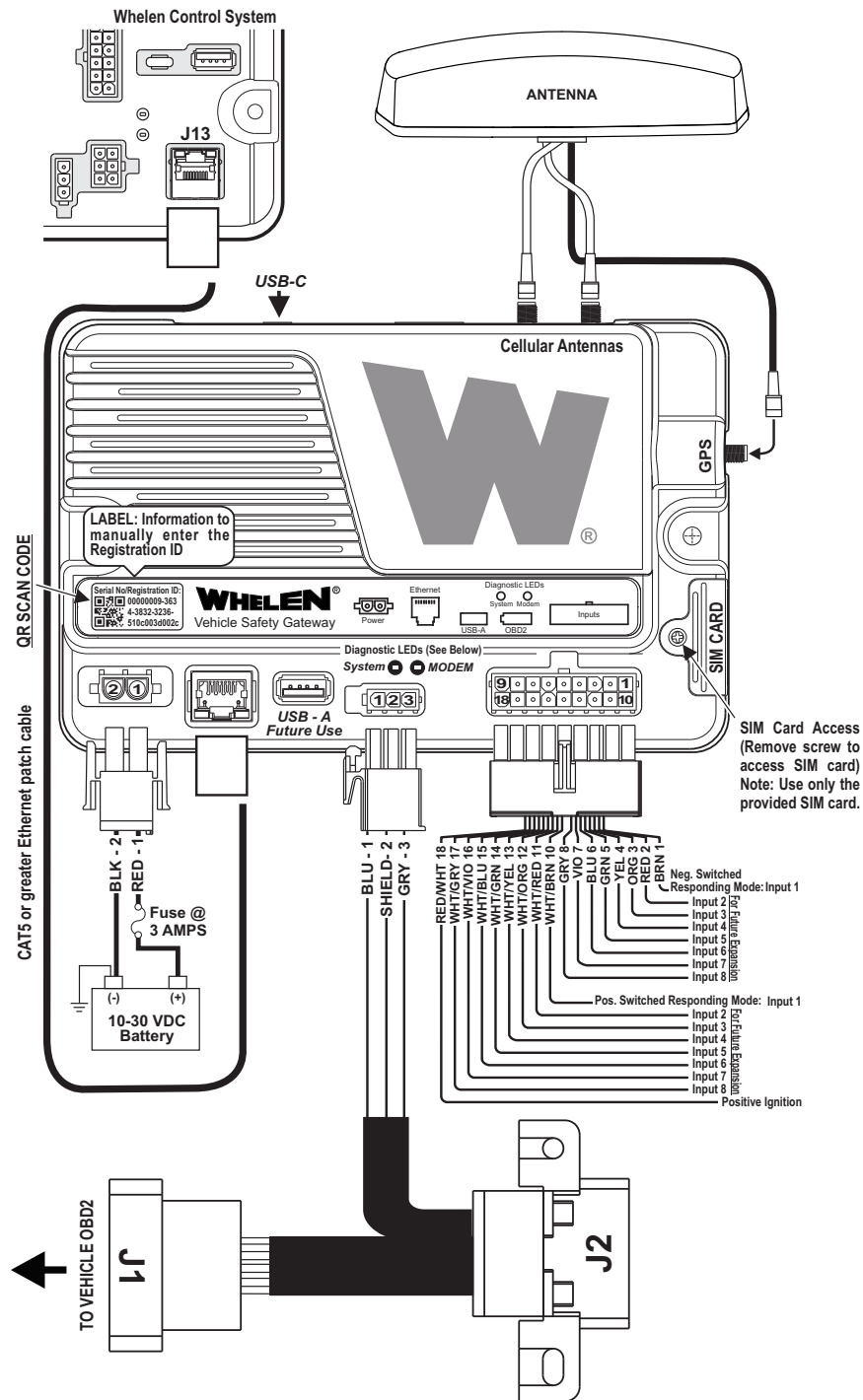
IMPORTANT: This device is to be used only for mobile and fixed application. The antenna(s) used for this transmitter must be installed to provide a separate distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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 cost undesired operation.

Important Considerations:

- To avoid false status reports, Core and VSG should be tied to the same ignition source.
- If VSG has been powered on prior to device activation with WCP, you will need to power cycle the VSG after activation to achieve a network connection.
- The OBD2 connection should never be made to WeCanX. Only use the supplied OBD2 passthrough harness.
- Verify VSG is running firmware version 5.0, or later, before connecting OBD2 passthrough harness to vehicle OBD2 connection and VSG.
- If dashboard warning lights appear after OBD2 connection, disconnect the harness to prevent further issues.

Wiring Diagram



Troubleshooting Diagnostic LEDs:

System LED (See Above):

Yellow	Initializing
Cyan	Connected to WCP - GPS Offline
Blue	Connected to WCP - GPS Online
Blue/Green	Connected to Core and WCP - GPS Online
White	OTA download in progress
Red	Connection or OTA Error
Purple	Booting and Installing firmware updates
Green	Going to sleep

Modem LED (See Above):

Solid Green	Unit On - Not communicating with CPU
Flashing Green	Unit On - Communicating with CPU

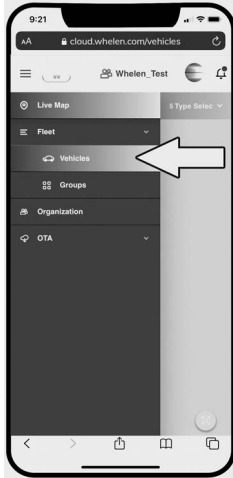
NOTE: All fusing provided by customer.

Whelen Cloud Platform

Login to WCP (cloud.whelen.com/login) using the credentials provided by your Field Solutions Engineer.

Registering Vehicle to WCP:

Step 1



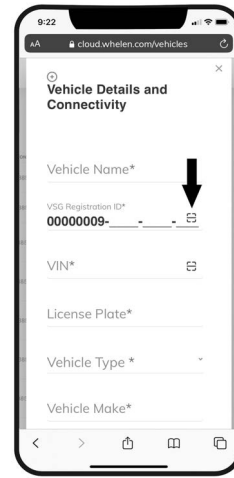
In the side panel, navigate to Fleet -> Vehicle.

Step 2



Choose 'Create Vehicle' in the top-right corner.

Step 3



In the VSG Registration ID field, click the scanner icon. Your device will prompt you to allow permission for the browser to access your device's camera.

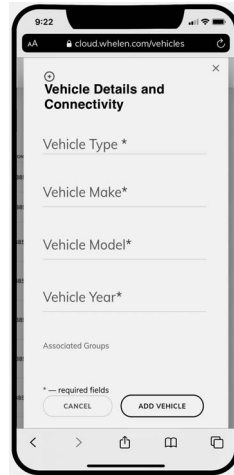
Step 4



Choose which device camera to use. Scan the QR code located on the top of the VSG (See Wiring Diagram). This will automatically populate the 'VSG Registration ID' field.

Note: If QR code does not scan, you can manually enter the ID field.

Step 5



Provide a descriptive name in the 'Vehicle Name' field that will help you easily identify the vehicle.

Once the required fields are populated. Choose an option from the 'Vehicle Type' drop down menu. This option will display different icons on the Live Map dependent on the vehicle type you choose.

Once complete, select 'Add Vehicle'.

Confirming Registration:

Once the VSG is registered, apply power to the device. The status indicator LED should Flash blue indicating the VSG is connected to the Whelen Cloud Platform. It may take several minutes for the VSG to acquire a GPS fix if this is the first run. Once the GPS is fixed, the vehicle should now display its location in the 'Live Map' view.