Pulse® Installation Guide
For Sales Representatives

Revision Date: March 9, 2020

www.pulseprotects.com

Table of Contents

Introduction

Pulse is a small electronic module that connects to the wiring for the OEM third brake light (aka center high mount stop lamp or CHMSL). Enhancing the standard functionality, when a driver presses the brake pedal, it causes the 3rd brake light (and only the 3rd brake light) to pulse four times.

Pulse is demonstrated in several DOT and manufacturer studies to be very effective at getting the attention of other drivers and helping to prevent rear-end collisions. A DOT study showed that 90% of rear-end collisions are avoidable if the trailing driver has one more second of warning. DOT and NIB (National Insurance Board) statistics reveal that 37% of all accidents are rear-end collisions and 28% of rear-end collisions are deemed to be "Total Losses" by an insurance adjustor. The DOT and manufacturer studies showed:

- A pulsing 3rd brake light decreases the reaction time of the trailing driver by almost 50%.
- A distracted driver is 69% more likely to notice the car ahead stopping or slowing, if that car has a pulsing 3rd brake light.

Pulse is primarily distributed through new car dealerships; however it will work on any new or used vehicle with a 12 volt electrical system and a 3rd brake light drawing 6 amps or less. By law, all vehicles manufactured for sale in the US since 1991 have 3rd brakes lights.

Installing Pulse is a fairly simple operation (Installation Instructions, General). The module has three wire leads:

- Black is ground and T-taps to the vehicle ground
- Red is power-in and connects to the vehicle power supply (12v battery)
- Yellow is power-out and connects to the 3rd brake light

Pulse can be connected at whatever access point is the most convenient. The Model Specific Guidelines, below, includes "tips and tricks" on the easiest and quickest access points for installation. Only a few basic tools are required to install Pulse. These typically include one or more of the following:

- Electrician's pliers (wire cutting and crimping capabilities)
- Knife (or razor blade)
- Phillips screwdriver
- Torx screwdriver
- Needle nose pliers
- Panel puller
- Hook (aka cotter pin removers)
- Computer-safe ground readable test light

Installation Instructions, General

Install the Pulse module as close to the third brake light assembly as possible, leaving yourself enough space to strip wires & crimp connectors, and ensure there is enough room to fit the Pulse module behind the third brake light.

1. Prior to installation, press the brake pedal and verify that the third brake light is functioning properly.

2. Locate the positive and negative wires for the third brake light.

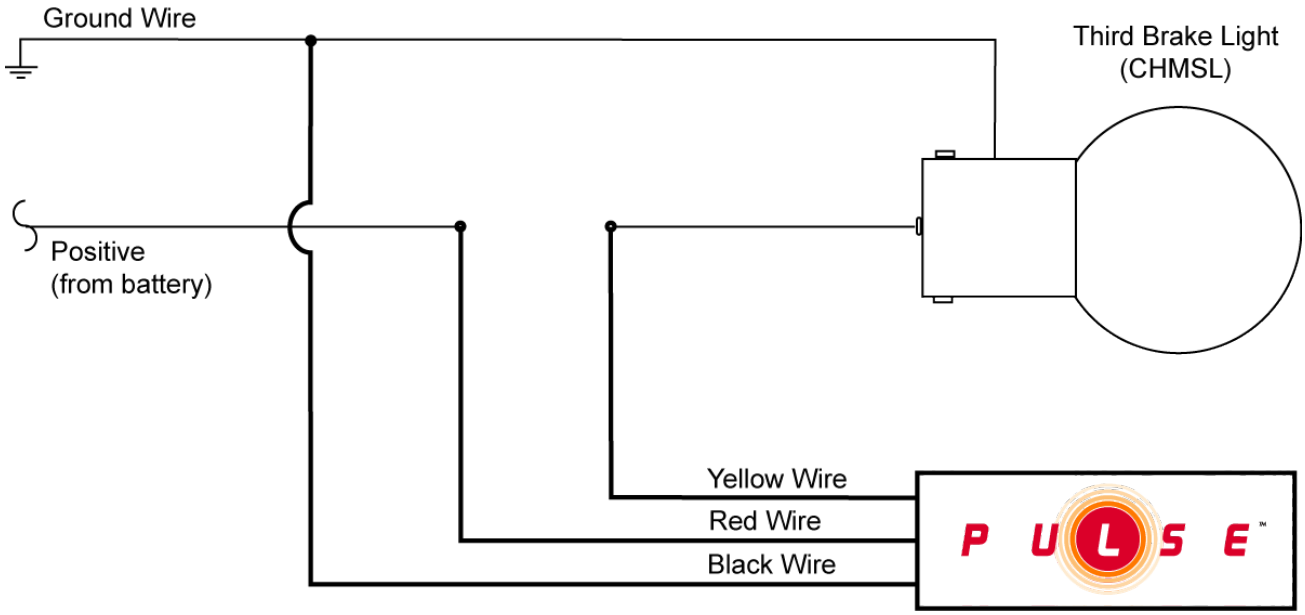
3. Use the red T-Tap clip to attach the black ground wire on the Pulse module to the ground wire for the third brake light.

4. Verify that the ignition key is **OFF** before cutting the positive wire to the third brake light.

5. Cut the positive wire to the third brake light and strip the insulation from both ends of the cut.

6. Install the female bullet connector to the positive wire coming from the third brake light and plug it into the male bullet connector on the Pulse module's yellow wire.

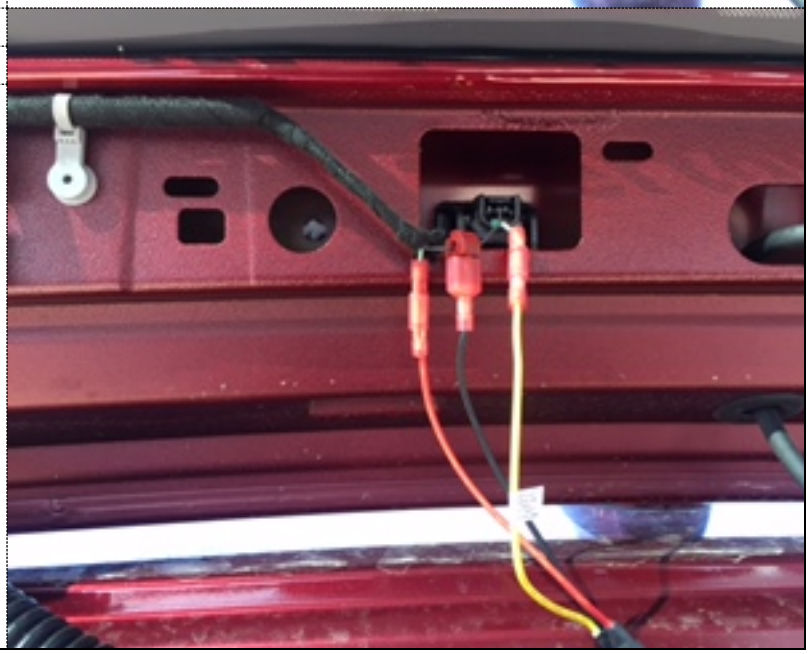
7. Install the male bullet connector to the positive wire coming from the chassis wiring harness and plug it into the female connector on the Pulse module's red wire.



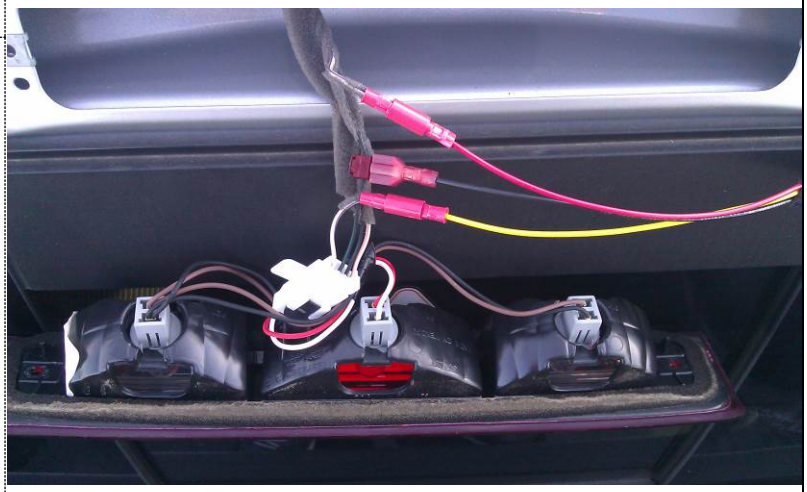
Acura MDX (2015-2020)

Model Year From: 2015 To: 2020	
Access Description: In the lift gate	
Access Instructions: Remove plastic panel at the top of the hatch. The wires are in a hole left of center in a mesh wrap.	
Ground Wire: Black Positive Lead: Orange	
Notes: The power wire may look more brown than orange.	

Chrysler Pacifica (2017-2020)

Model Year From: 2017 To: 2020	
Access Description: In rear hatch	
Access Instructions: Open the rear hatch. Remove the center panel directly behind the high mount brake light. Wires are in 2-pin connector on driver side.	
Ground Wire: Black Positive Lead: White/Green	
Notes:	

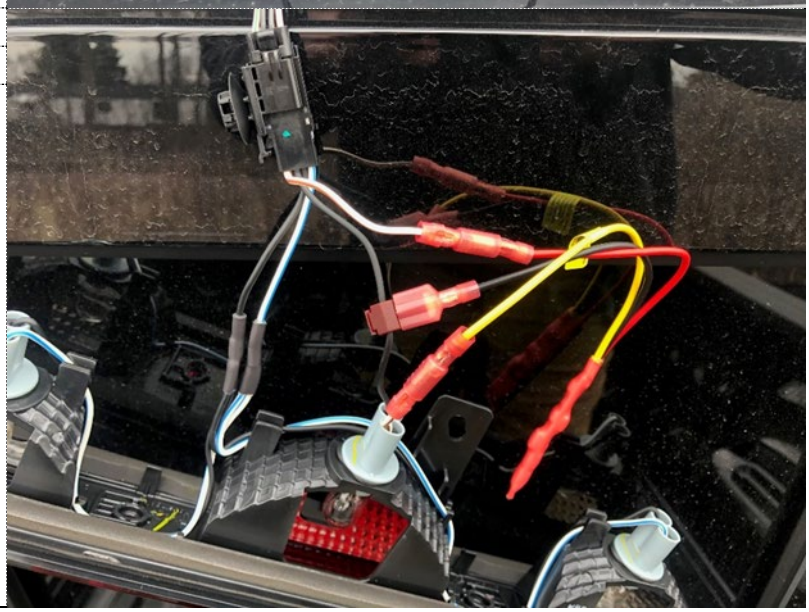
*Dodge Ram (2006-2020) ***USE RED PULSE MODULE****

Model Year From: 2006 To: 2020	
Access Description: Behind the main cabin.	
Access Instructions: Remove the four Phillips screws on the high-mount brake light. Remove the brake light to access the wires.	
Ground Wire: Black Positive Lead: White/Violet	
Notes: **USE RED PULSE MODULE**	

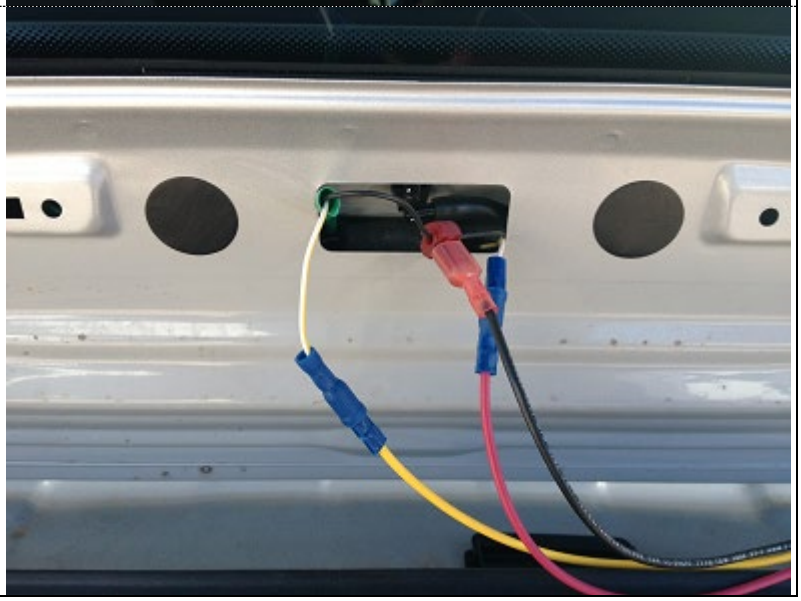
Ford Explorer (2010-2019)

Model Year From: 2010	To: 2019
Access Description: In the rear hatch.	
Access Instructions: Open the rear hatch. Pull down the top of the trim without removing the whole piece. The wires are located at the black two pin plug.	
Ground Wire: Black	
Positive Lead: Brown	
Notes: Unplug the black two pin plug for easier access.	

Ford F-150 (2009-2020)

Model Year From: 2009 To: 2020	
Access Description: Behind the brake light assembly.	
Access Instructions: Remove the two Phillips screws on both sides of the brake light, or the 4 T-20 screws on newer models. Remove the brake light assembly to access the wires behind the light. The wires are in the center 2-pin plug on the light assembly.	
Ground Wire: Black	
Positive Lead: Orange	
Notes: **Do not install Pulse on Ford Raptors.**	

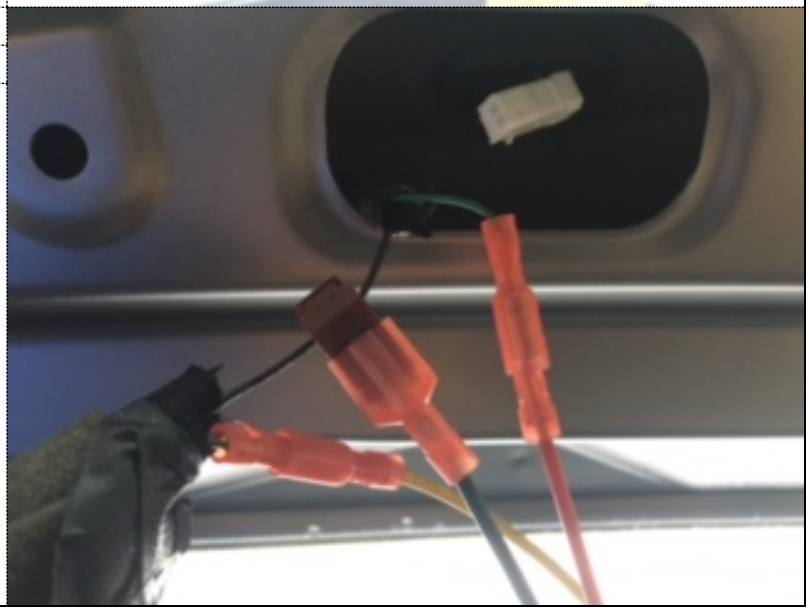
Chevy Spark (2013-2020)

Model Year From: 2013	To: 2020
Access Description: In the trunk hatch.	
Access Instructions: Open the trunk hatch. Remove the center cover at the top of the trunk hatch. The wires are behind the small rectangular cover.	
Ground Wire: Black	
Positive Lead: White/Yellow	
Notes:	

Chevy Trax (2015-2020)/ Buick Encore (2014-2020)

Model Year From: 2014 To: 2020	
Access Description: In the rear hatch.	
Access Instructions: Open the rear hatch. Remove the center panel at the top of the hatch. The wires are in a black 2-pin plug running with washer fluid hose.	
Ground Wire: Black Positive Lead: Violet/green	
Notes: On earlier model's positive wire may be orange or light blue	

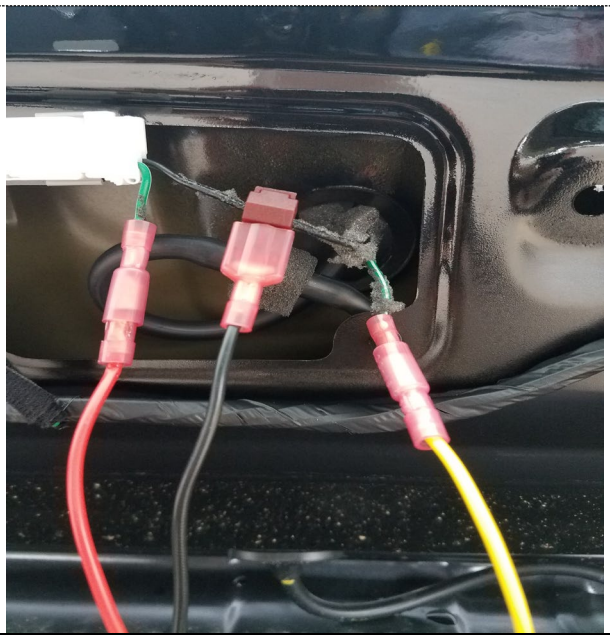
Honda CRV (2017-2020)

Model Year From: 2017	To: 2020
Access Description: In the lift gate	
Access Instructions: Open the lift gate. Remove the center cover at the top of the hatch. The wires are on the left side in the two-pin plug behind the brake light.	
Ground Wire: Black	
Positive Lead: Green	
Notes:	

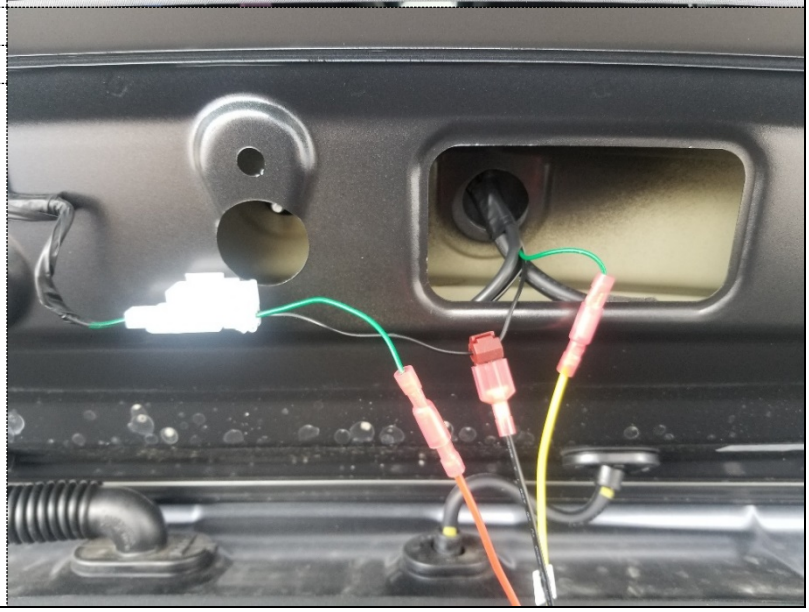
Honda Civic (2006-2020)

Model Year From: 2006	To: 2020
Access Description: In the trunk.	
Access Instructions: Open the trunk. The wires are directly underneath the brake light. Gray 2-pin plug.	
Ground Wire: Black	
Positive Lead: Green	
Notes:	

Hyundai Santa Fe (2011-2020)

Model Year From: 2011 To: 2020	
Access Description: In the trunk hatch.	
Access Instructions: Open the hatch and remove the center panel at the top of the hatch. This will give you access to the wires just behind the third brake light.	
Ground Wire: Black Positive Lead: Green Notes:	

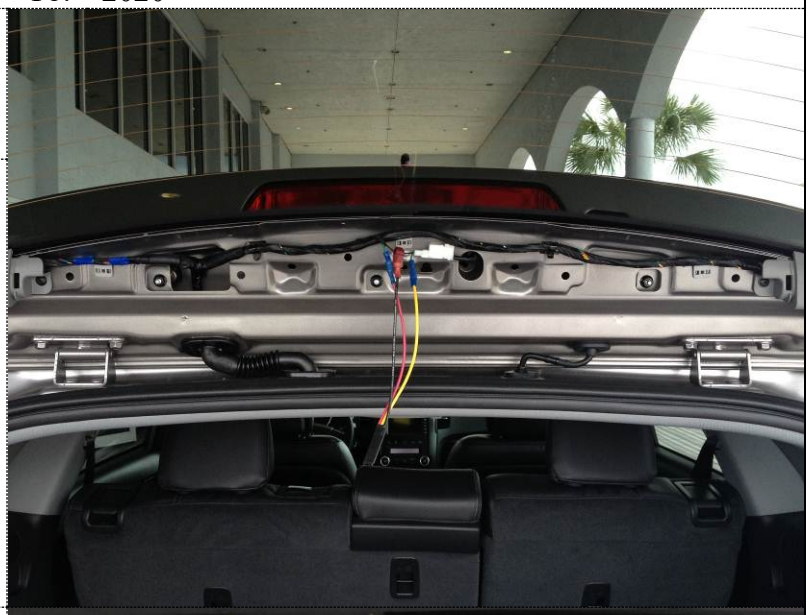
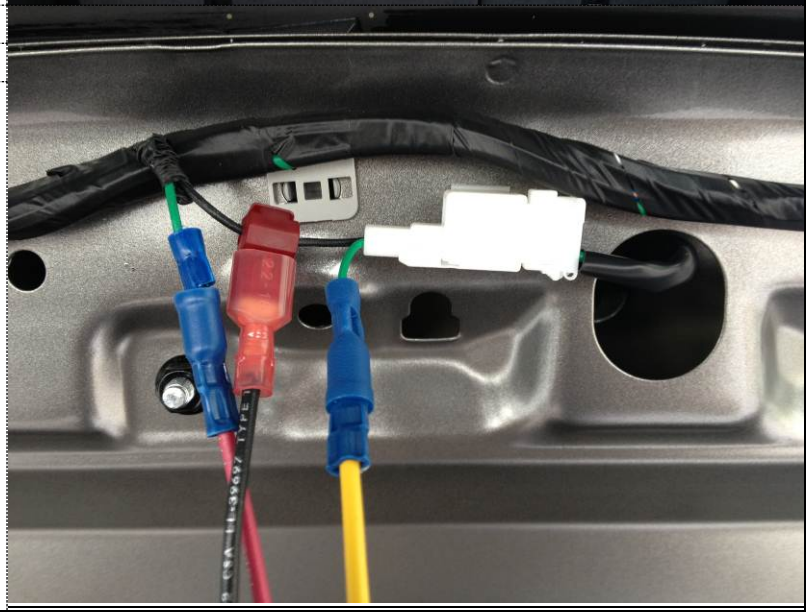
Hyundai Kona (2018-2020)

Model Year From: 2018	To: 2020
Access Description: In the rear hatch	
Access Instructions: Open the hatch and remove the center panel at the top of the hatch. This will give you access to the wires just behind the third brake light.	
Ground Wire: Black Positive Lead: Green Notes:	

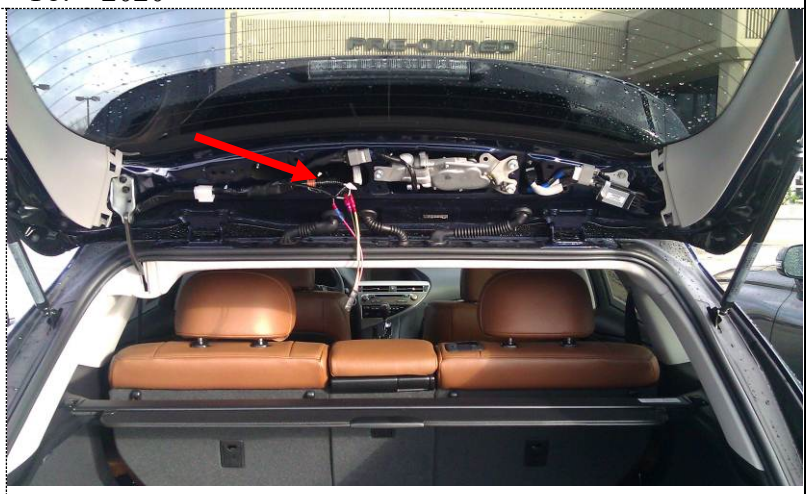
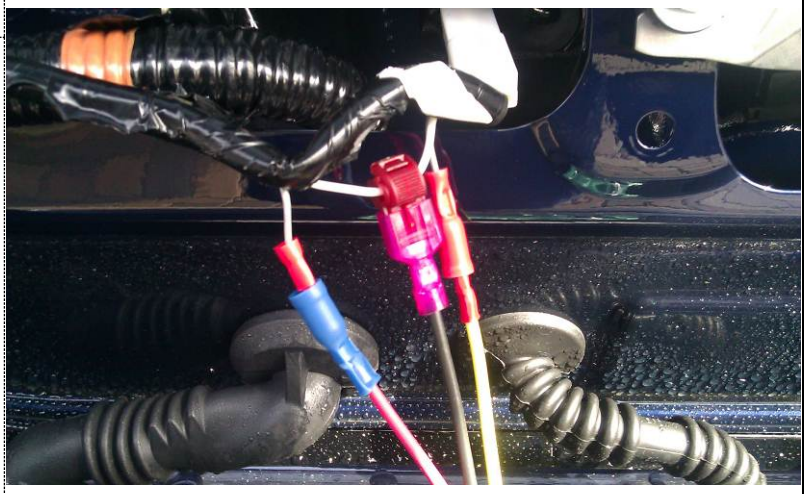
Kia Niro (2018-2020)

Model Year From: 2018 To: 2020	
Access Description: In rear hatch	
Access Instructions: Open rear hatch. Remove trim panel at top of hatch. Wires are in 2-pin connector to the left.	
Ground Wire: Black	
Positive Lead: Green	
Notes:	

Kia Sorento (2012-2020)

Model Year From: 2012 To: 2020	
Access Description: In the trunk hatch.	
Access Instructions: Open the rear hatch. Remove the center panel at the top of the hatch. The wires are in a White 2-pin plug.	
Ground Wire: Black	
Positive Lead: Green/Brown	
Notes: 2014-2016 positive is red 2012-2013 positive is green	

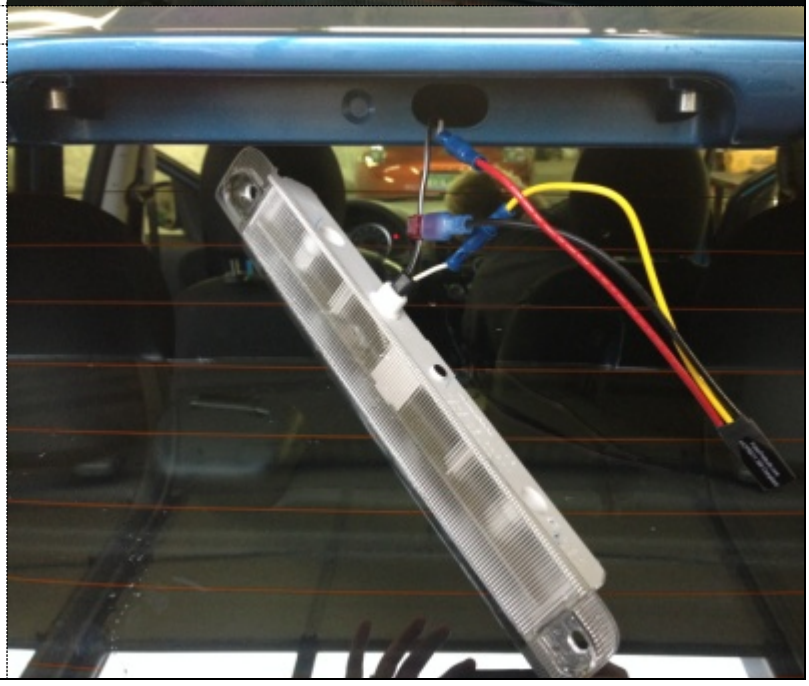
Lexus RX (2013-2020)

Model Year From:	2013	To: 2020
	Access Description: In the trunk hatch.	
	Access Instructions: Remove the center cover at the top of the hatch. The wires are in a white two pin plug at the center.	
Ground Wire:	White/Black	
Positive Lead:	Black	
	Notes: **2013-2015 ground is white and positive is grey.**	

Mazda CX-5 (2017-2020)

Model Year From: 2017	To: 2020
Access Description: In the trunk hatch.	
Access Instructions: Open the trunk hatch. Remove the center cover at the top of the hatch. The wires are behind the panel.	
Ground Wire: White Positive Lead: Green	
Notes:	

Mitsubishi Mirage (2014-2020)

Model Year From: 2014	To: 2020
Access Description: Rear of vehicle with hatch closed	
Access Instructions: Remove both screws holding in the 3rd brake light.	
Ground Wire: Black/White	
Positive Lead: White	
Notes: Alternate location: Open hatch and remove panel directly behind light.	

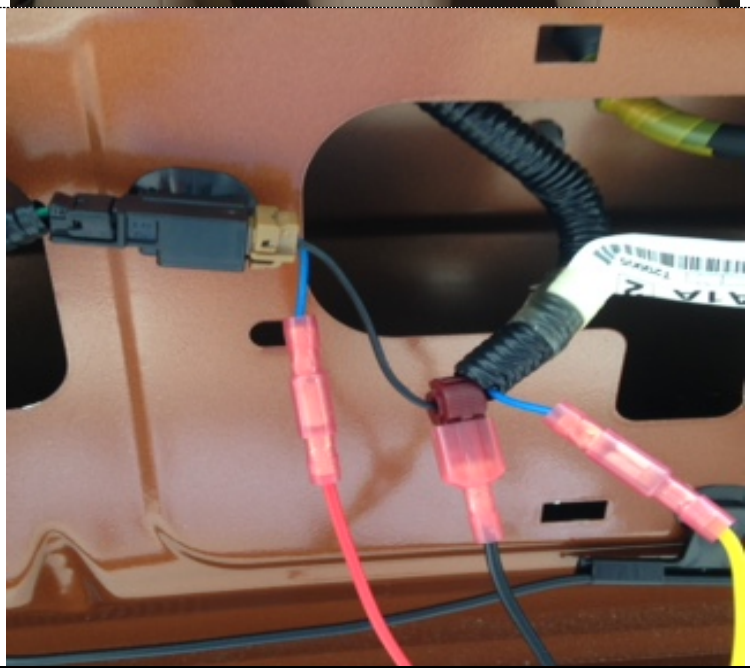
Mitsubishi Outlander Sport (2010-2020)

Model Year From: 2010 To: 2020	
Access Description: In the trunk hatch.	
Access Instructions: Open the trunk hatch. Remove the center panel at the top of the hatch. The wires are on the driver side behind the panel.	
Ground Wire: Black Positive Lead: Brown	
Notes:	

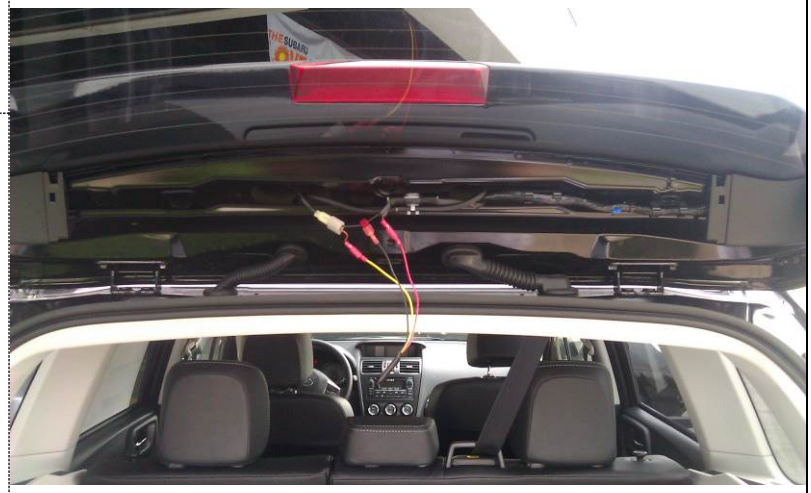
Nissan Sentra (2014-2020)

Model Year From: 2014	To: 2020
Access Description: Inside the car at the third brake light.	
Access Instructions: Open the rear door and locate the high mount brake light at the bottom of the rear window. Remove the high mount brake light by lifting up and pull towards the front of the car. Unplug for easier install.	
Ground Wire: Black	
Positive Lead: White	
Notes:	

Nissan Murano / Infiniti EX (2016-2020)

Model Year From: 2016	To: 2020
Access Description: In the lift gate.	
Access Instructions: Open the hatch of the SUV. Remove the center panel at the top of the hatch. The wires are in a two-pin harness behind the panel.	
Ground Wire: Black Positive Lead: Blue Notes:	

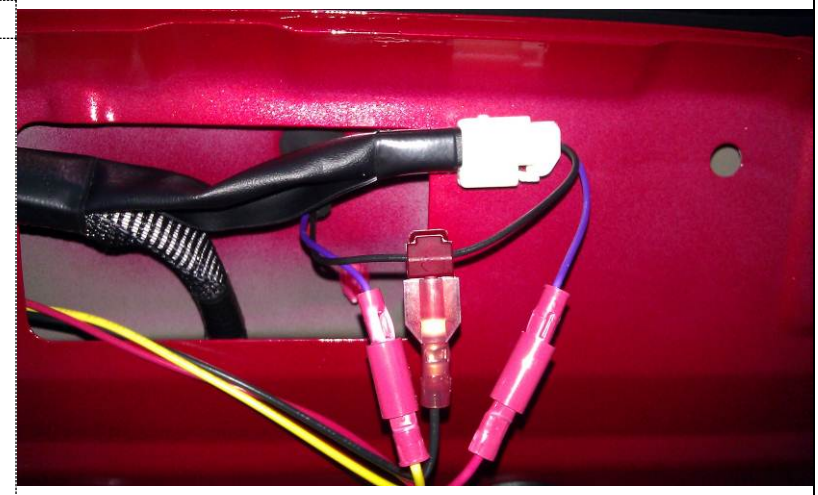
Subaru Forester (2014-2020)

Model Year From: 2014	To: 2020
Access Description: In the trunk hatch.	
Access Instructions: Open the trunk hatch. Remove the cover at the top of the hatch. The wires are on the right side under the cover.	
Ground Wire: Black Positive Lead: Brown	
Notes: **Some models the wires may be in a plastic loom.**	

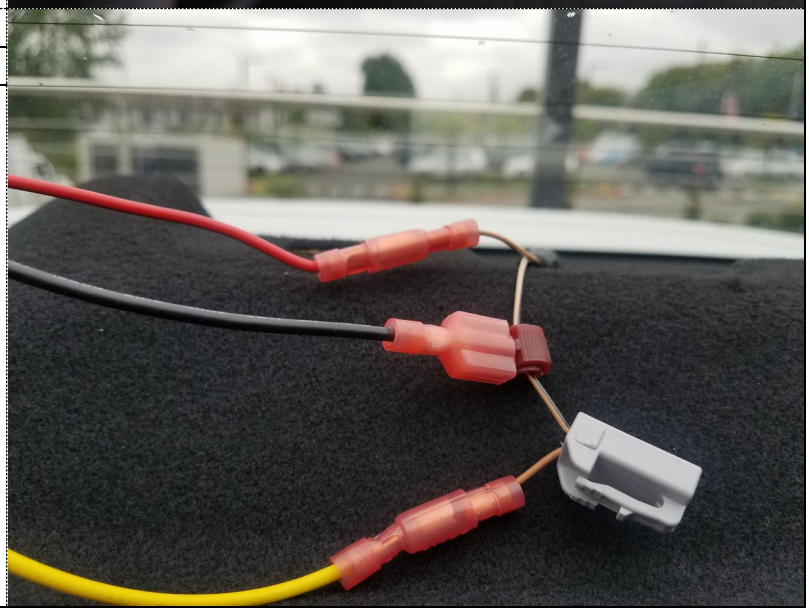
Subaru Outback (2010-2019)

Model Year From: 2010 To: 2019	
Access Description: In the trunk hatch.	
Access Instructions: Open the trunk hatch. Remove the center panel at the top of the hatch. The wires are covered with a rubber loom.	
Ground Wire: Black Positive Lead: Brown	
Notes: Do not attempt an installation on a 2020 model unless you have spoken to Jim Sheehan or Gary Hall beforehand.	

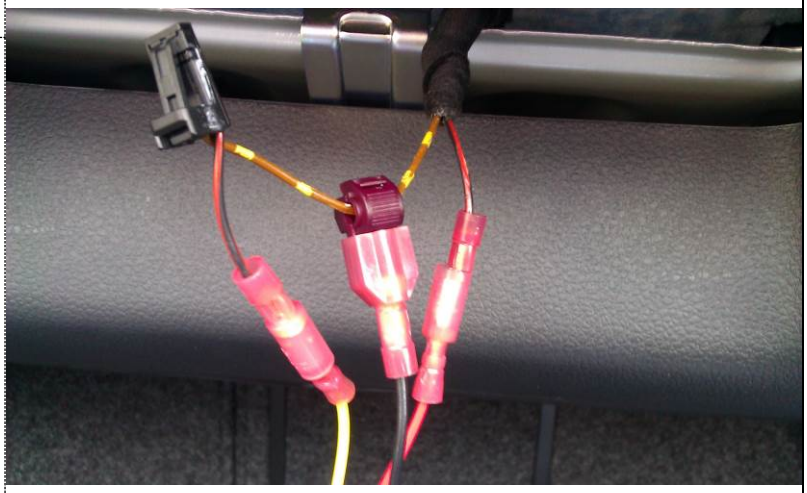
Toyota Rav4 (2013-2020) With or Without Integrated Rear Camera

Model Year From: 2013 To: 2020	
Access Description: In the trunk hatch.	
Access Instructions: Open the hatch. Remove the center cover at the top of the hatch. The wires are in the White two-pin plug in the center of the hatch.	
Ground Wire: Black	
Positive Lead: Violet	
Notes:	

Toyota Camry (2018-2020)

Model Year From: 2018		To: 2020
Access Description: Inside the car at the brake light		
Access Instructions: Remove the brake light assembly. It pops straight up from the front and then pull towards the front of the car. Unplug the light for a simpler installation.		
Ground Wire: White/Black		
Positive Lead: Tan		
Notes:		

VW Jetta (2010-2019) VW Passat (2010-2020) (Must Use a Red Module)

Model Year From: 2010 To: 2020	
Access Description: In the trunk.	
Access Instructions: Open the trunk. The wires are directly underneath the brake light. Black 2-pin plug.	
Ground Wire: Brown Positive Lead: Black/Red	
Notes: **Must use a red module.**	

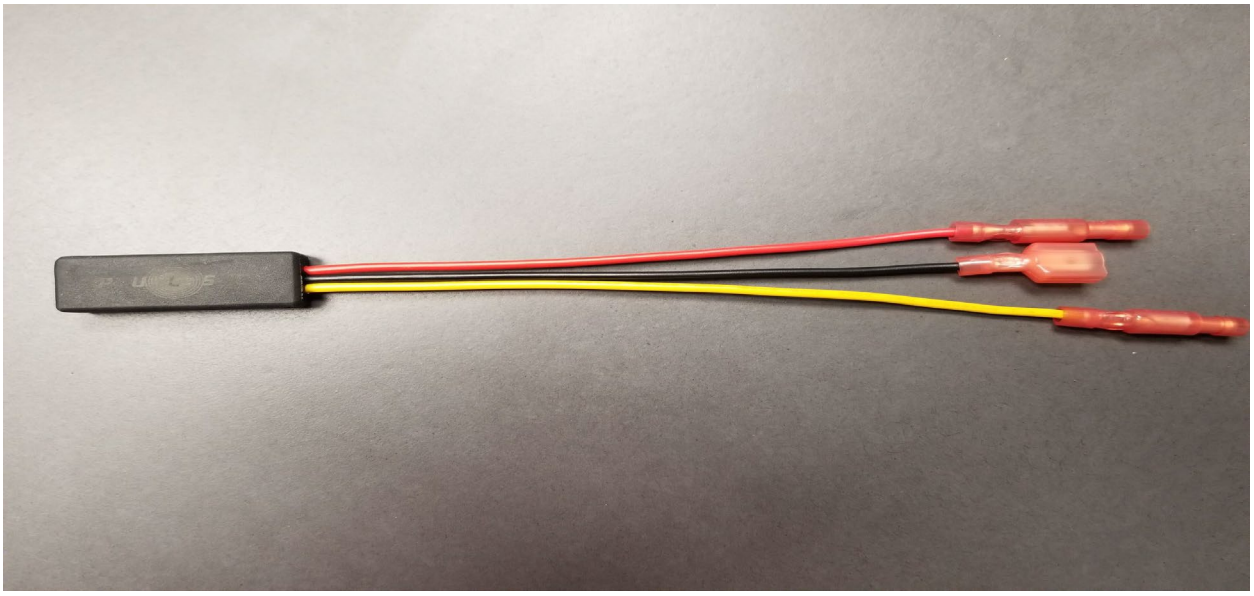
Special Instructions

Testing for Ground

Ensure that a computer-safe ground tester is used whenever a ground tester is required

Terms and Terminology

Pulse Module	The Pulse module is shown below, complete with mating connectors, ready to install.



T-Tap Fitting:	An OEM approved electrical connector designed to clamp down onto an existing wire, making contact but without cutting the existing wire. Pictured below, the connector “clam shells” around an existing wire, punching the existing wire into the teeth of the connector. Once it’s clamped into place, the connector forms the female side of the connector and is ready for the male blade on the Pulse™ ground wire to be inserted.

Bullet Connector, Male: OEM approved connector, as shown. One end is designed to be crimped onto the wire to be connected. The bullet shaped end is designed to fit into the barrel of the mating female connector.

Bullet Connector, Female: OEM approved connector, as shown. One end is designed to be crimped onto the wire to be connected. The open end is designed to receive the bullet shaped, mating male connector.

Running Board: The bottom panel between the carpet and the outside vehicle body, near the floor.

A-Pillar: The vertical support beam located between the front windshield and the front door.

B-Pillar: The vertical support beam located between the front door and the rear door.

C-Pillar: The vertical support beam located behind the rear door

Panel: A plastic vehicle body part that is integral in the interior furnishing or trim of the vehicle (e.g. trim piece, molding, etc.).

Cover:	A plastic part that conceals an access point to the vehicle wiring or that hides exposed wiring.
Trunk Lid:	The part of the trunk that opens and closes.
Trunk Lid Cover:	The plastic or carpet lining the inside of the trunk lid. Also referred to as the trunk liner.
Trunk Hatch:	On many SUV's and mini-vans, the rear door that opens in the upward motion.
Trunk Hatch Cover:	Access point to vehicle wiring in the trunk hatch. Sometimes the cover will be in the Trunk Hatch Panel
Trunk Hatch Panel:	A panel that is a major trim piece on the inside of the trunk hatch
Boot:	Either end of a rubber housing that holds all the wiring going from the vehicle body to the Trunk Hatch.
3rd Brake Light:	Center high-mount stop lamp, or CHMSL, located on the center-line of the vehicle and above the primary brake lights
Brake Light Cover:	Plastic cover designed to hide the exposed wiring on the back of a brake light in applications where the back of the brake light is exposed or accessible.

Troubleshooting Guide

If the 3rd Brake Light does not Illuminate

Scenario 1: The light bulb in the 3rd brake light is burned out.

Step one of the Installation Instructions, General is to test that the 3rd brake light is operational. Based on experience, 10% to 20% of the 3rd brake lights on used cars have burned out light bulbs.

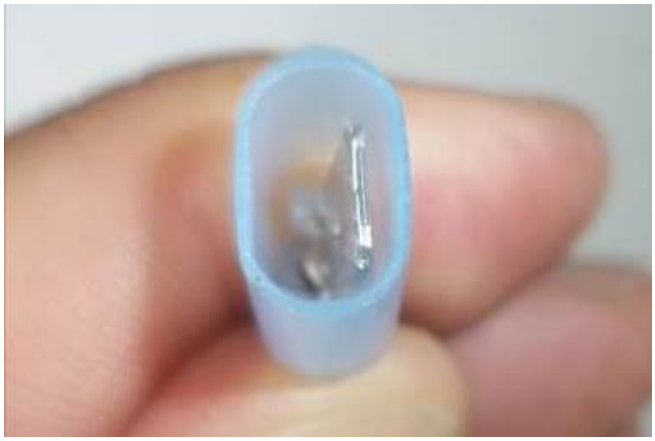
Scenario 2: There is no power to the module.

Possible Cause: *Is the wiring harness plugged into the 3rd brake light?* For ease of access to the wires to the 3rd brake light, sometimes people unplug the connector to the 3rd brake light. Ensure that the connector to the 3rd brake light is properly plugged back in.

Possible Cause: *Did the bullet connector get crimped onto the exposed wire?* With the 18 AWG (blue) bullet connectors, it is possible on some vehicle models (where the wires to the 3rd brake light are 22 AWG) for the vehicle wires to be inserted too far into the connector … causing the bullet connector to be crimped down onto the insulation, rather than onto the exposed wire. This can happen to either the mating male bullet connector on the battery (red) side or the mating female bullet connector on the light (yellow) side.

Scenario 3: The module is not grounded.

Possible Cause: *Did the male tab on the end of the black wire connected to the module get bent to the side and not go into the female slot in the T-Tap connector?* See picture below. If the male tab gets bent to the side, it won't engage the T-Tap connector and will not connect to ground.



Scenario 4: The T-Tap was installed incorrectly, cutting the ground wire.

Possible Cause: *Is the ground wire to the 3rd brake light trapped between teeth of the T-Tap connector?* If the ground wire doesn't get properly trapped between the teeth of the T-Tap connector, it is possible that the connector will cut the ground wire, causing the 3rd brake light to not illuminate.

If the 3rd Brake Light comes on but does not Pulse

It should be noted that this is the fail-safe mode for the module. If the module is damaged or if the module is wired backwards, it is designed to revert to normal, non-pulsing, operations.

Scenario 1: Module is properly grounded but the power connectors are backwards. In this case, the T-Tap connector is correctly attached to the vehicle ground wire, but the red/yellow wires are reversed. The red wire is supposed to be connected to the vehicle power wire coming from the battery. The yellow wire is supposed to be connected to the vehicle power wire going to the 3rd brake light.

Scenario 2: The module is connected backwards with the module ground wire connected to the vehicle power wire, and the module power wires are connected to the vehicle ground wire.

Scenario 3: It is possible that the module is physically damaged. This is the least likely case, but it is possible for a module to be damaged during shipping and handling or it is possible for a module to get pinched by a panel pin (or something similar) during installation.

Contact Info for Installation Support

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Eastern Standard Time