Small Vehicle Installation Overview
PeopleNet Mobile Gateway®

Small Vehicle Installations

- Unlike Class 6-8 vehicles, small vehicles change significantly from year-to-year, making definitive install instructions impossible.
- Instead, this document will guide the installer through the decision-making process to choose the best install design for the specific vehicle and need.
- When choosing your install design, always keep in mind:
  - Whether the install is permanent or temporary, and how that may influence decisions on holes.
  - The integrity of the existing vehicle wiring.
  - Ease of use for the operator.
  - Access to the parts for maintenance versus keeping everything out of the operator's way.

Install Overview

The basic install steps are:

- Connect the Constant Power, Ignition Sense, and Ground.
- Connect the OBDII Engine Data Module.
- Mount the Display.
- Mount the Antenna.
- Mount the PMG.

Power Connections

Power Connection Basics

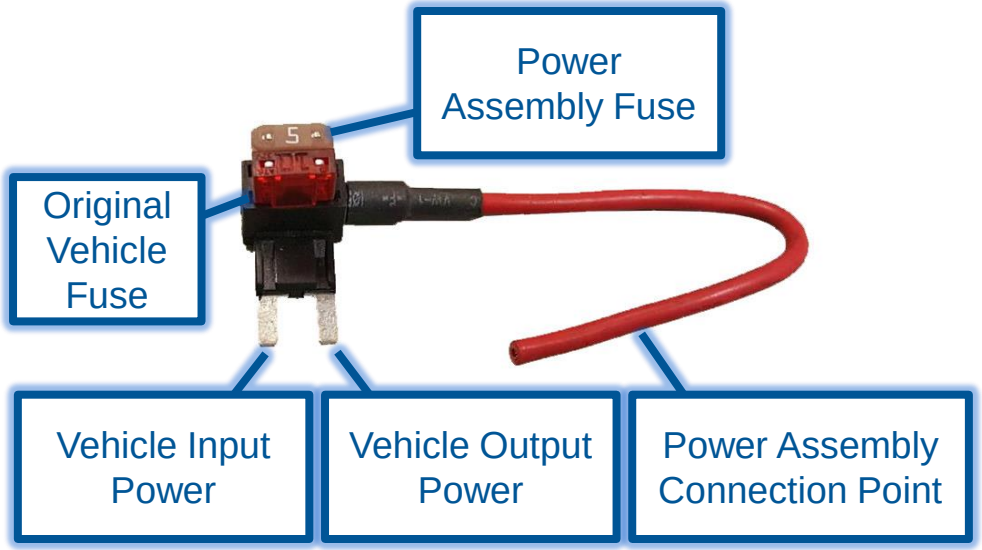
- The PMG and Display require three power connections. These are connected via the Power Assembly, which provides a single fused source for all modules.
  - Red lead – Constant Input Power
    - The combined Display/PMG power draw is fused at 15 amps, so make sure your chosen circuit is rated to that level.
    - Despite that peak potential, the standard peak power draw is less than 5 amps combined, dropping to milliamps once in sleep mode, roughly equivalent to the vehicle's radio preset circuit.
    - Whenever possible, the power source should remain above 11 volts during engine start to avoid loss of power to the modules.
  - White lead – Ignition Sense
    - This lead should connect to a source that only reads ON when the key is ON, with 0 volts when the key is OFF and 0 volts when the key is in Accessory.
  - Black lead – Ground
    - The ground source should be tested to a known good ground, such as the cigarette lighter shield, to make sure the source is not floating.
    - A floating ground is indicated by an ohm reading of 10 or more, usually increasing when the vehicle key is turned ON.

Choosing Power Connections

- Few small vehicles have dedicated spare Power and Ignition sources, but it is worth checking. Look for posts or open bullet connectors in the dash, especially near the fuse panel, and contact your dealership for further instructions.
  - NOTE: Trimble does not recommend cutting existing vehicle wiring.
- If no dedicated spare is found, the best connection is usually at the fuse panel using the Add-a-Circuit adapters shown below.

Adding New Power Circuits

ADD-A-CIRCUIT CONNECTORS



- Add-a-Circuit connectors allow the addition of a new circuit on existing fuses.
- These connectors stay seated better than other fuse connections, such as spades or fuse-taps.
- Be sure to match the Add-a-Circuit connector to the fuse type of your vehicle, either Standard, Mini, or Micro.
- Internet search “Add-a-Circuit” plus the fuse size to see retail options.
- Be sure the total of the vehicle and Power Harness fuses does not exceed the circuit’s specified amperage.

Adding New Power Circuits

POSI-TAP CONNECTORS

- If no alternative is available, and creating a 3-way connection to vehicle wiring is necessary, the Posi-Tap connector permits a clean connection with minimal damage to existing wiring.
- Always be sure that any power draw from the PMG plus original vehicle circuit does not exceed the vehicle's circuit specification.
- Internet search "Posi-Tap" to see retail options.

Choosing Fuse Positions

316 **Fuses**

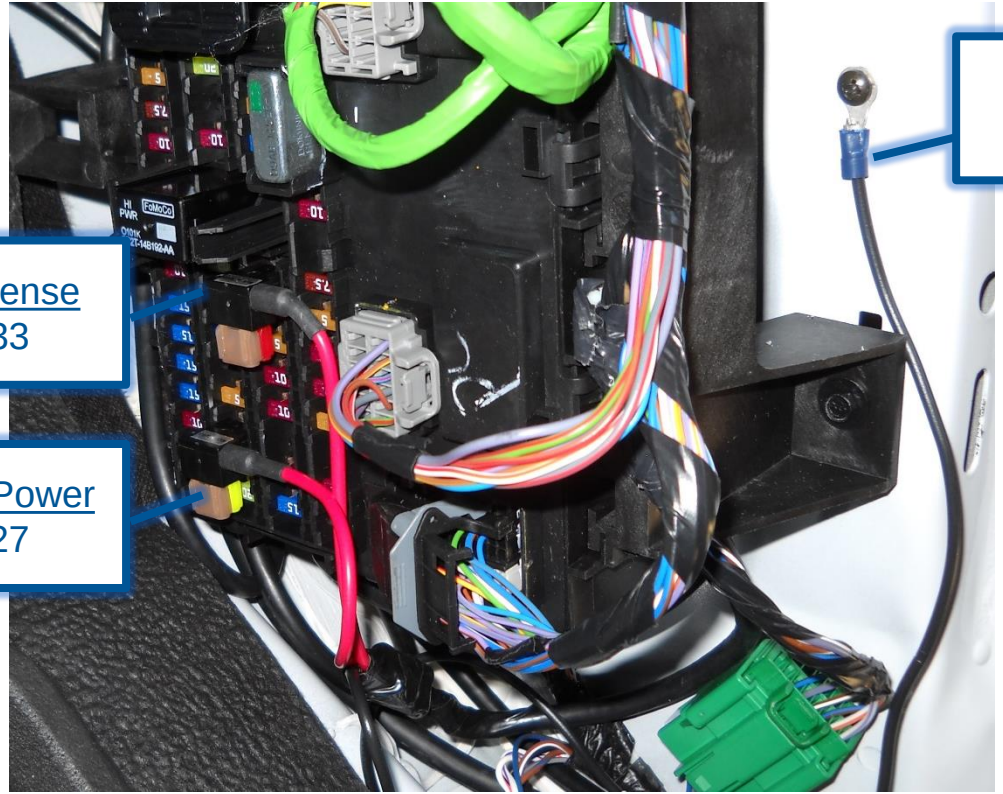
Fuse or relay number	Fuse amp rating	Protected components
10	10A	Run/accessory relay
11	10A	Instrument cluster
12	15A	Interior lighting, Puddle lamps, Backlighting, Cargo lamp
13	15A	Right turn signals/stop lamps
14	15A	Left turn signals/stop lamps
15	15A	Reverse lights, High-mounted stop lamp
16	10A	Right low-beam headlamp
17	10A	Left low-beam headlamp
18	10A	Brake-shift interlock, Keypad illumination, Powertrain control module wakeup, Passive anti-theft system
19	20A	Audio amplifier
20	20A	Power door locks
21	10A	Not used (spare)
22	20A	Horn
23	15A	Steering wheel control module
24	15A	Datalink connector, Steering wheel control module
25	15A	Not used (spare)
26	5A	Radio frequency module
27	20A	Not used (spare)
28	15A	Ignition switch
29	20A	Radio
30	15A	Front parking lamps
31	5A	Brake on/off – Instrument panel, Engine

Fuses 317

Fuse or relay number	Fuse amp rating	Protected components
32	15A	Delay/accessory – moonroof, power windows, locks, Automatic dimming mirror/Compass, Trailer tow, power telescope mirrors
33	10A	Rear heated seats
34	10A	Reverse sensing system, 4x4 switch, Rear video, Off road indicator (SVT Raptor), Front video (SVT Raptor), Camera splice module (SVT Raptor)
35	5A	Hill descent switch (SVT Raptor)
36	10A	Restraint control module, Occupant classification system module
37	10A	Trailer brake control
38	10A	Delayed accessory – 110 volt power point, Radio
39	15A	High beam headlamps
40	10A	Rear park lamps
41	7.5A	Passenger airbag deactivation indicator, Upfitter switch (SVT Raptor)
42	5A	Overdrive cancel switch
43	10A	Not used (spare)
44	10A	Not used (spare)
45	5A	Not used (spare)
46	10A	Climate controls module
47	15A	Fog lamps, Exterior mirror turn signals
48	30A Circuit Breaker	Power windows, Power sliding back window
49	Relay	Delayed accessory

- Look for unused spare fuse positions first.
- Test those positions with a volt-meter to determine whether they are constant power, ignition power, or accessory power.
- In this example, a 2013 Ford F-150, we tested the spares and chose “Not Used” position 27 for our constant power.
- The other spares were all either constant or accessory power, so we moved to non-critical circuits for ignition sense. We connected ignition to position 33, the Rear Heated Seats circuit.

Example Connection 2013 Ford F-150



Ground
Screwed to cab wall

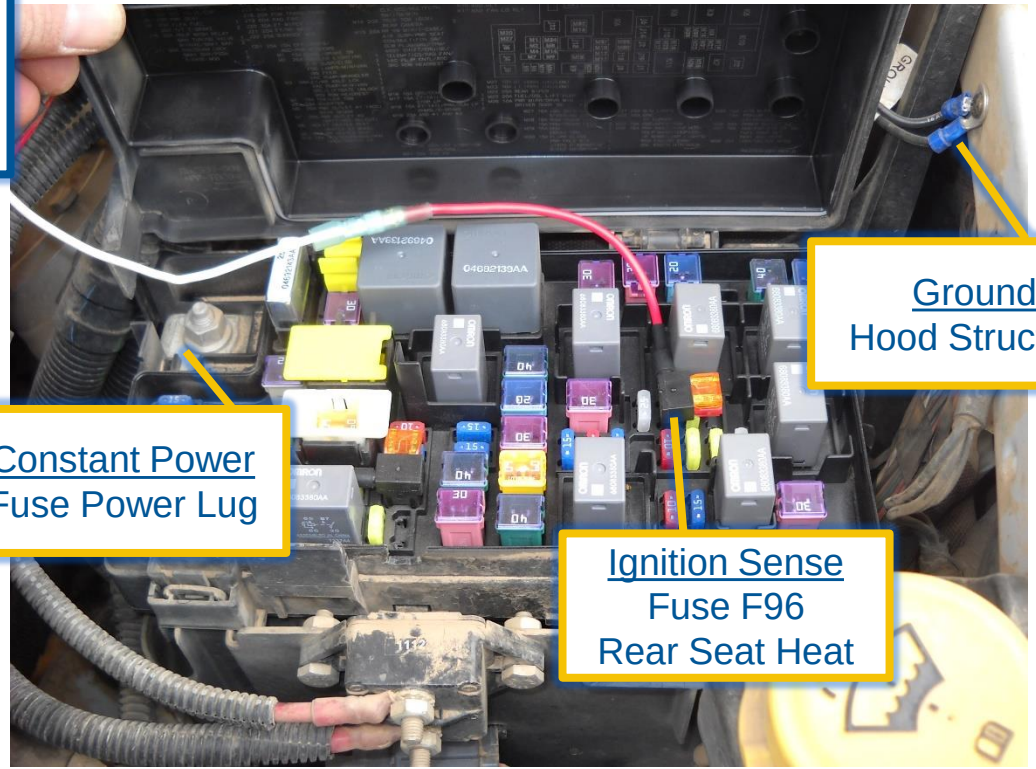
Ignition Sense
Fuse 33

Constant Power
Fuse 27

Example Connection 2014 Dodge RAM

The only fuse panel on this Dodge that carries a true ignition (not accessory) is under the hood.

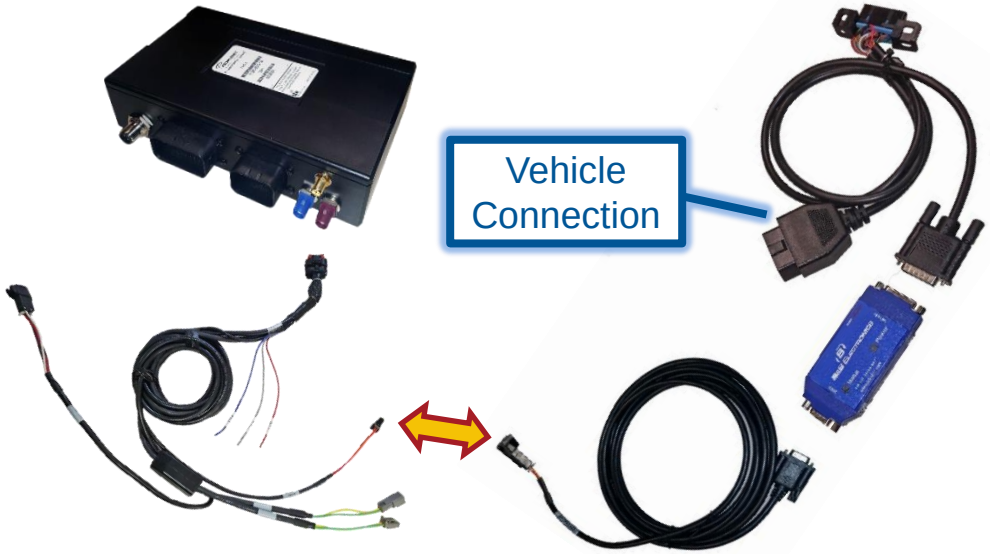
Cavity	Cartridge Fuse	Micro Fuse	Description
		Yellow	
F94		10 Amp Red	Shifter / Transfer Case Module
F95		10 Amp Red	Rear Camera / Park Assist
F96		10 Amp Red	Rear Seat Heater Switch
F97		25 Amp Natural	Rear Heated Seats & Heated Steering Wheel – If Equipped
F98		25 Amp Natural	Front Heated Seats – If Equipped
F99		10 Amp Red	Climate Control
F101		15 Amp Blue	Electrochromatic Mirror / Smart High Beams – If Equipped



Trimble

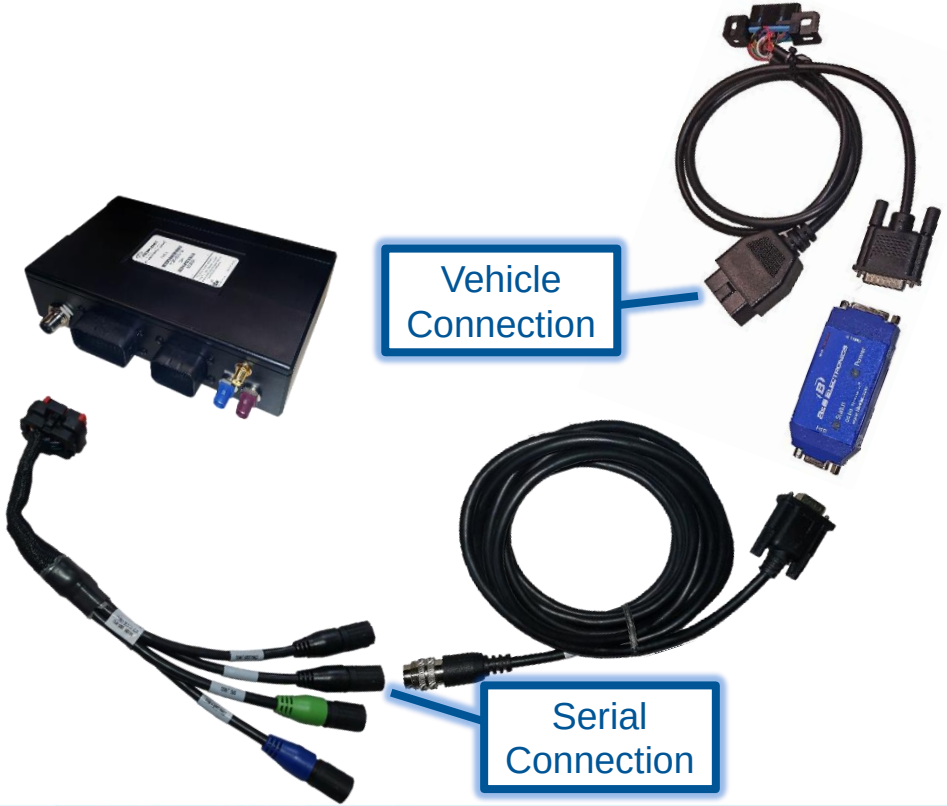
OBDII Engine Data

OBD-II Module Overview – V2+



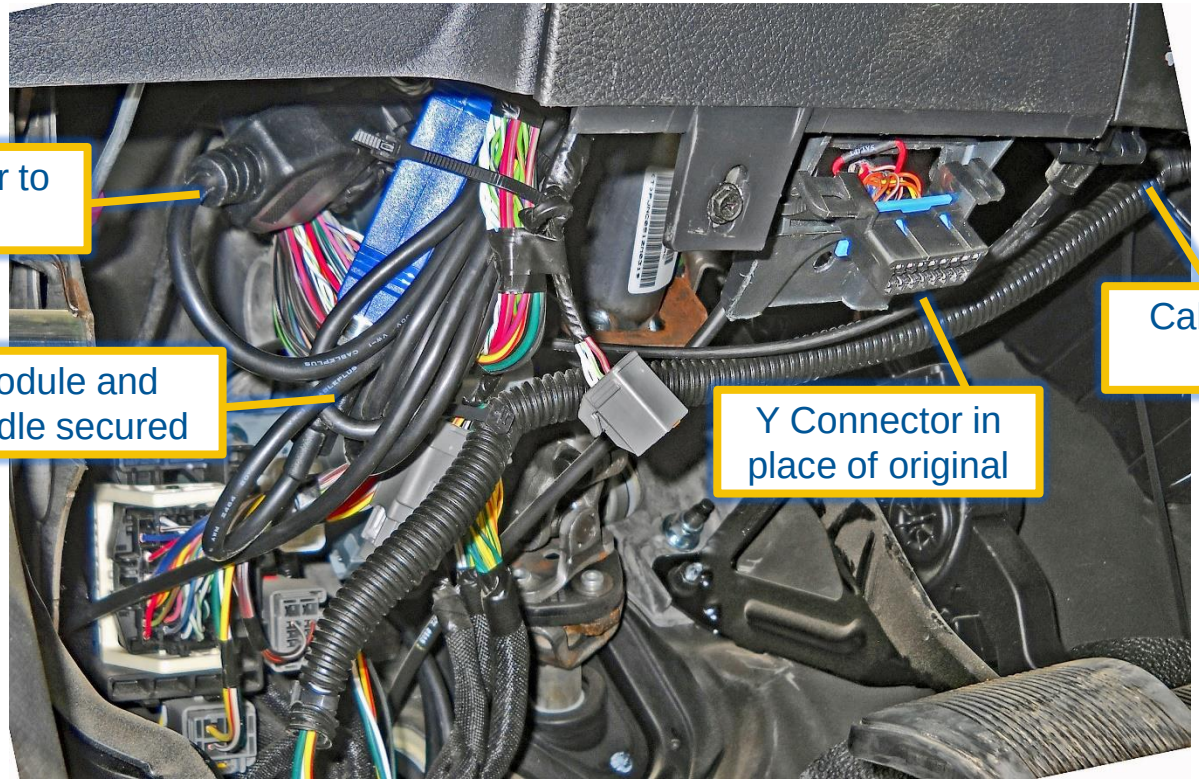
- The V2+ model of OBD-II module will connect to the PMG and vehicle as shown.
- Note that the L-016-0708 cable connects to the J1708 port of the PMG 2-pin cable.
- There is no special configuration for this model. The OBD-II data will be read as J1708 data automatically.

OBD-II Module Overview – Serial Port Models



- The serial port models of OBD-II module will connect to the PMG and vehicle as shown.
- Note which serial connection is used, UART 0 or 3, as that will be needed for the activation.
- For complete OBDII install, activation, and repair instructions, review the document on the PeopleNet Support Center.
  - If you do not have a Support Center login, email Support@PeopleNetOnline.com and they will provide a login.

OBDII Example



Display Mount

Display Mount Principles

- The display should be mounted to a solid base, either metal or sturdy plastic, with a backing plate or large washers to avoid breakage.
- The display should be mounted in the driver's heads-up view, but it must not block the driver's access to gauges or switches or the view over the dash.
- Some small vehicles provide a dash space sturdy enough to direct-mount a RAM swivel (included in the install kit), but many more require some sort of addition, either an angle bracket or longer RAM that can mount to the floor.

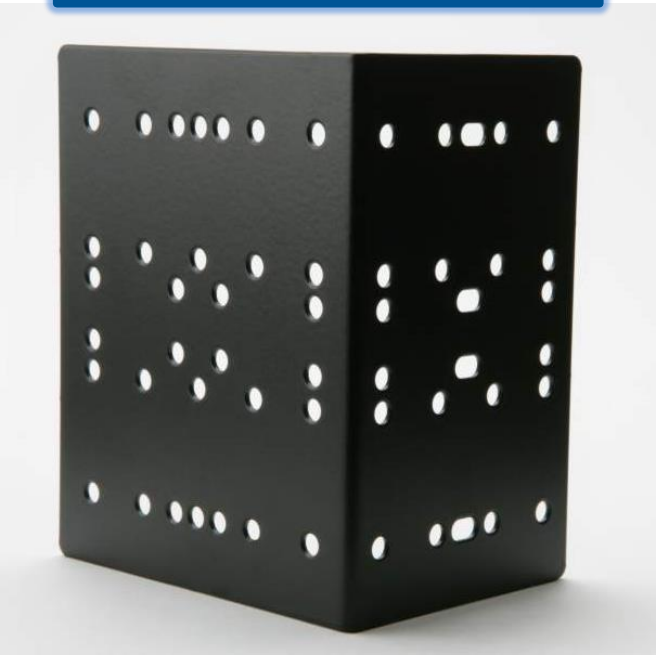
Standard RAM Example – Isuzu

The RAM base is mounted to the back of the center dash storage space using bolts and large washers.

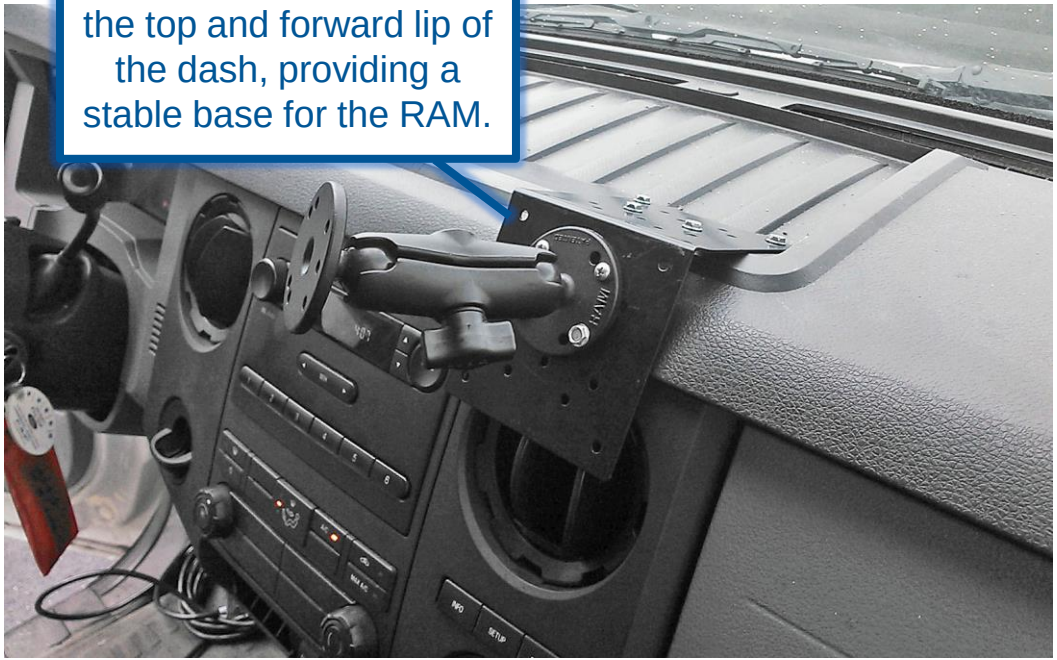
The cable passes through a 1” hole drilled in that same space.

L-Bracket Example – Ford F-250

Part H-050-0110



The L-Bracket mounts to the top and forward lip of the dash, providing a stable base for the RAM.



RAM Pod Mount Example – Ford F550

NOTE THIS IS NOT A TRIMBLE PART. FOLLOW THE LINK FOR RAM MOUNT ORDERING INFO.

RAM Pod HD
RAM-316-HDR-202U

The base attaches to the passenger's seat mounting bolt, with a long arm to put the display in range of the driver.

Long Swivel Example – Isuzu

NOTE THIS IS NOT A TRIMBLE PART. FOLLOW THE LINK FOR RAM MOUNT ORDERING INFO.

Long RAM Swivel
RAM-B-101U-C

The longer swivel mount works well for vehicles with a large center hump, attaching to the floor and putting the display in the driver's reach.

RAM Universal Cup Holder Mount

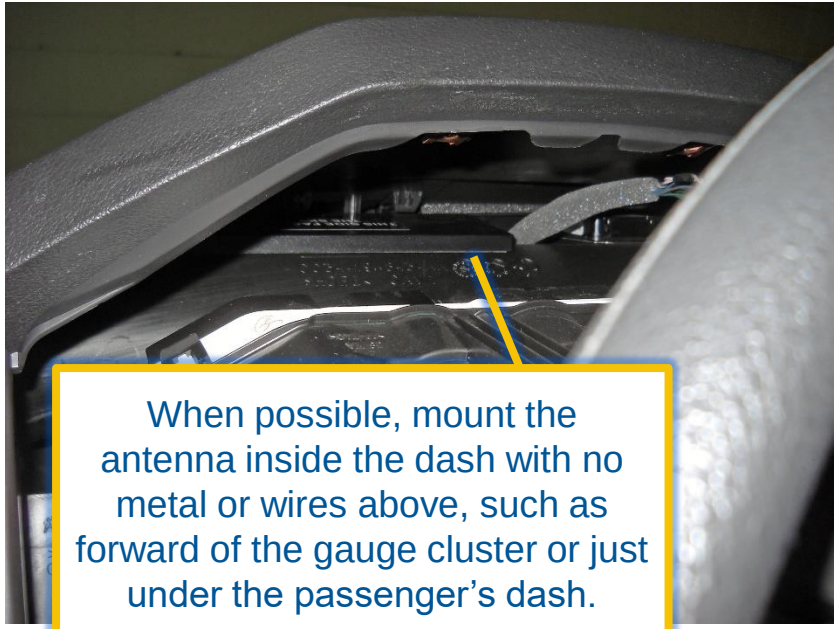
NOTE THIS IS NOT A TRIMBLE PART. FOLLOW THE LINK FOR RAM MOUNT ORDERING INFO.

RAM Universal Cup Holder Mount
RAP-299-3-UN8U

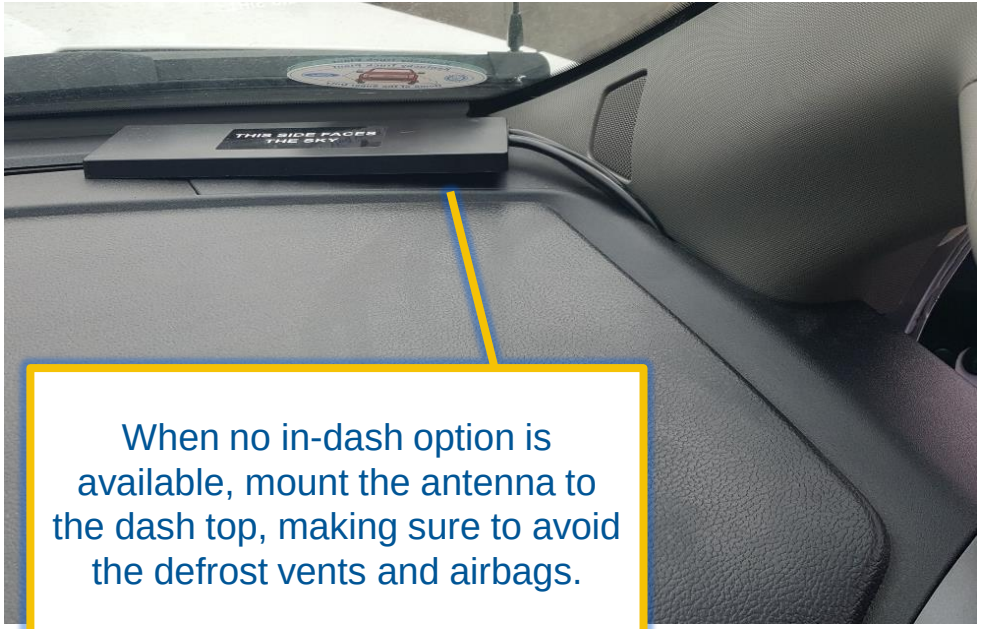
This mount provides a base for the RAM swivel inside a standard cup-holder.

Antenna

Antenna Mount



When possible, mount the antenna inside the dash with no metal or wires above, such as forward of the gauge cluster or just under the passenger's dash.



When no in-dash option is available, mount the antenna to the dash top, making sure to avoid the defrost vents and airbags.

PMG Mount

In-Dash PMG Mount

- Many vehicles have enough space in the low/center dash or behind/below the glove-box.
- Check those locations first, making sure any mount would be safe for the PMG connectors and would not interfere with the vehicle operation, including air-bags.
- If no in-dash space is available, mount the PMG under the passenger's seat as shown below.

Under-Seat PMG Mount