An ISO 9001:2015 Registered Company

Basic Plow Module Installation Instructions

G-BPM506–A 2021 Ford F-150 With LED headlights
H-BPM506-A 2024 Ford F-150
E-BPM750–A 2021 Ram 1500 DT With LED headlights
A-BPM330-A 2022-2023 Toyota Tundra

The BPM provides a solution for snow plow applications on chassis with LED headlights, which no longer provide discrete headlight control signals. The BPM reads the status of the OEM lighting controls over the vehicle network—head lamp switch, high beam/low beam, turn signals, as well as ignition switch. Additionally, BPM provides the status of these as discrete output signals, which the upfitter can use to control snow plow auxiliary lighting.

The BPM provided discrete outputs are active when the ignition is On, and OEM headlight switch is in the Park position. This is the condition used when plowing with the auxiliary plow lights. This ensures the OEM headlights are off, and not reflecting back in the drivers eyes, and the auxiliary lights are enabled and On.

The BPM outputs can drive up to half an amp—appropriate for controlling upfitter relays, which then power auxiliary plow lighting.

It is the installer's responsibility to route and secure all wiring harnesses where they cannot be damaged by sharp objects, mechanical moving parts and high heat sources. Failure to do so could result in damage to the system or vehicle and create possible safety concerns for the operator and passengers.

It is important to avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Also avoid radio frequency energy from antenna's or inverters next to the module. Finally, avoid high voltage spikes in vehicle wiring by always using diode clamped relays when installing upfitter circuits.

Disconnect the battery before proceeding with the installation.

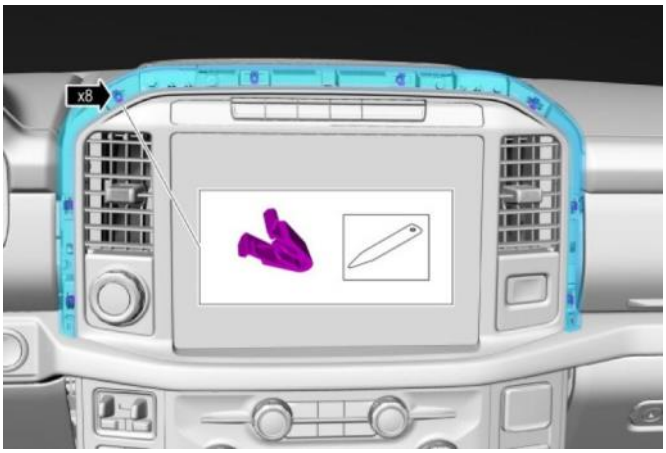
WARNING
Disconnect the battery to prevent setting a check engine light.

Installation Instructions

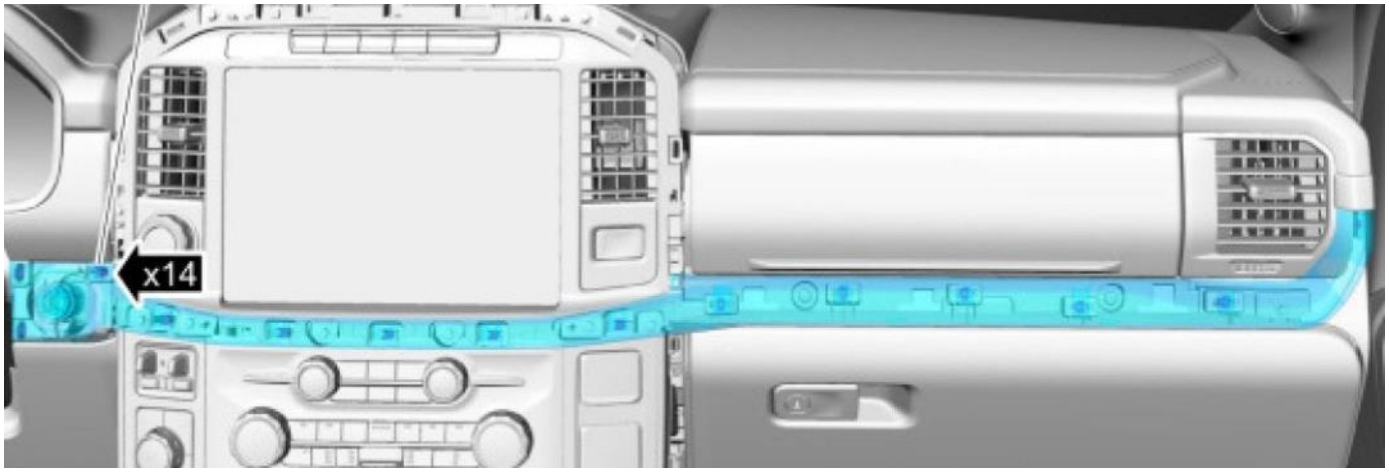
2021, 2024 Ford F-150

The BPM will be connected to the Ford OEM Gateway module. It will be necessary to access the Gateway connector by following the instructions below and on the following pages.

1. Remove the upper center stack bezel using a plastic trim tool. There are 8 clips securing it to the dash.



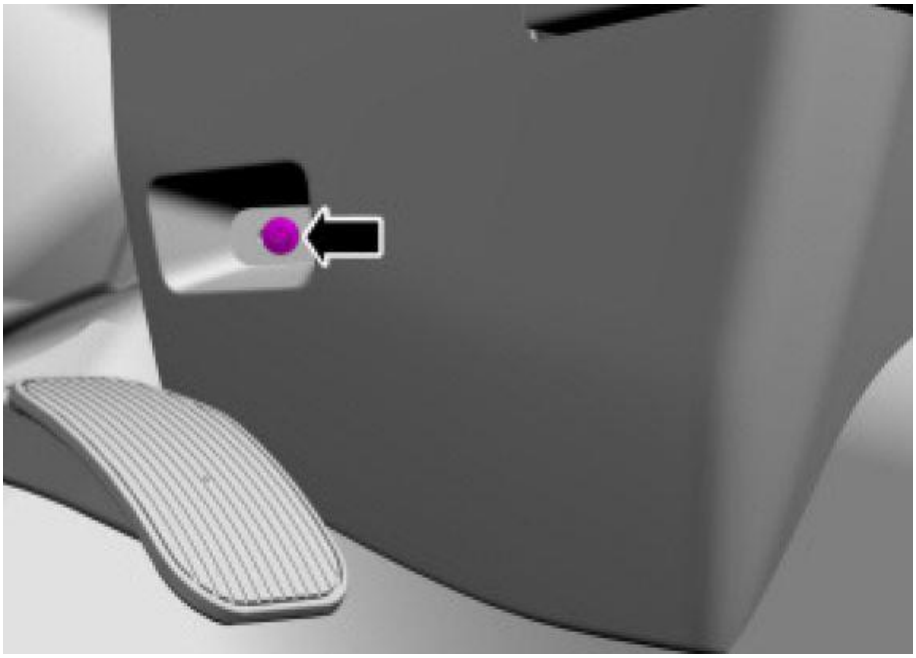
2. Remove the instrument center trim panel using a plastic trim tool. There are 14 clips securing it to the dash.



Installation Instructions (continued)

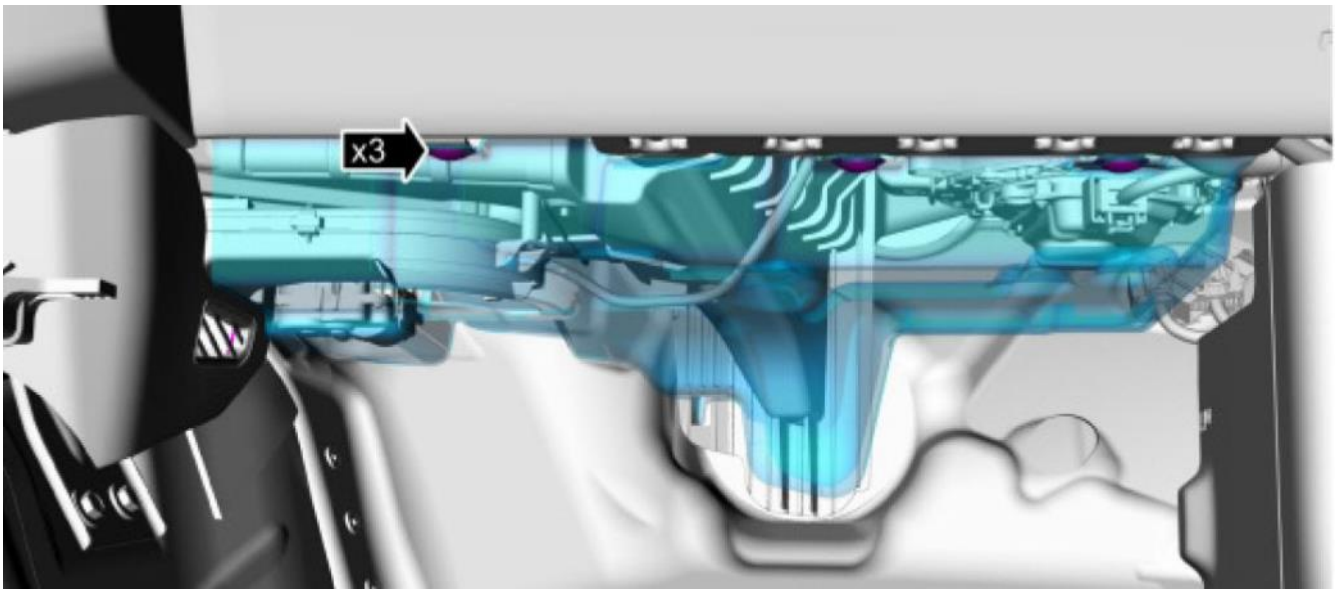
3. Grasp the lower trim panel below the steering column and pull down. Unscrew the (2) 7mm screws and remove them. Remove the remainder of the lower steering column panel using a plastic trim removal tool. There are 7 clips securing it to the dash.

4. Remove the 7 mm screw from the lower instrument panel trim.

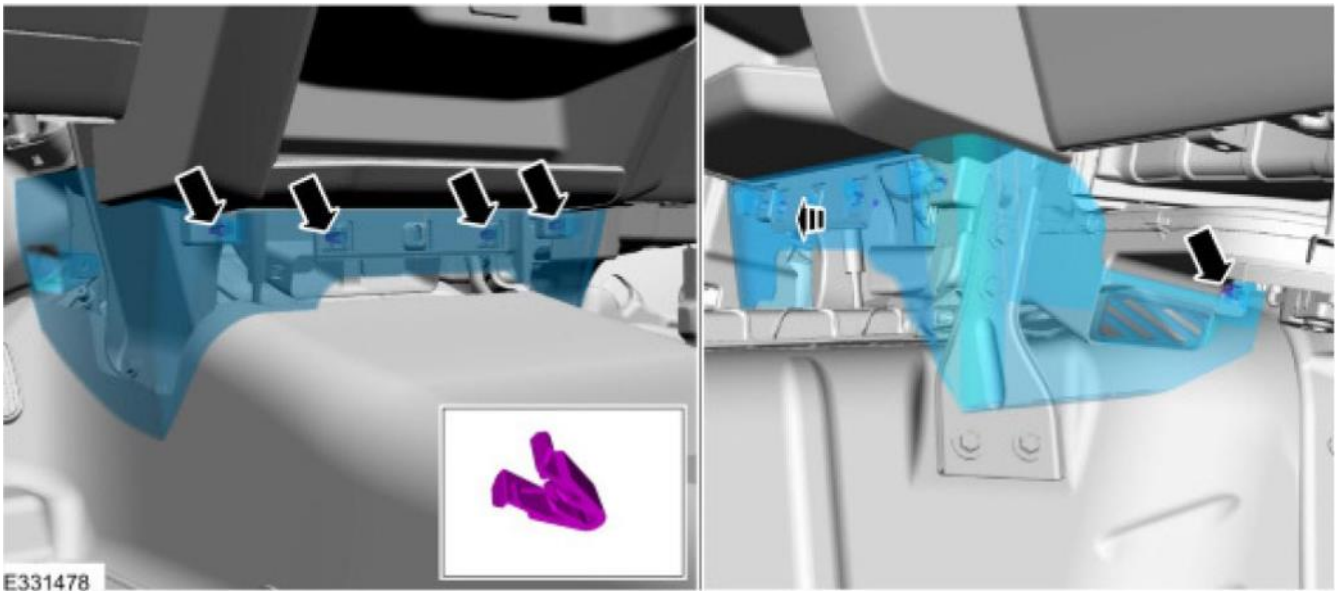


Installation Instructions (continued)

5. Remove the (3) pin-type retainers from the fabric trim panel located below the glovebox and remove the trim panel.

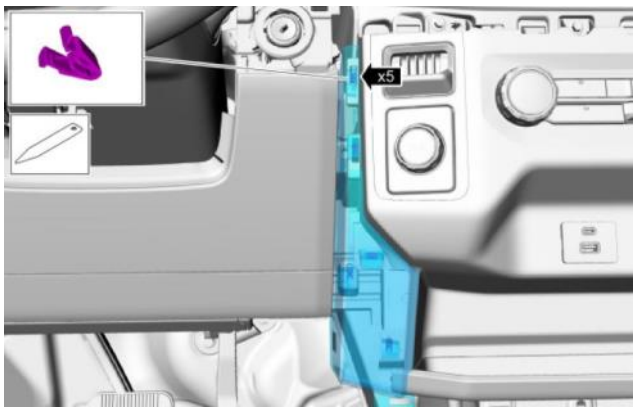


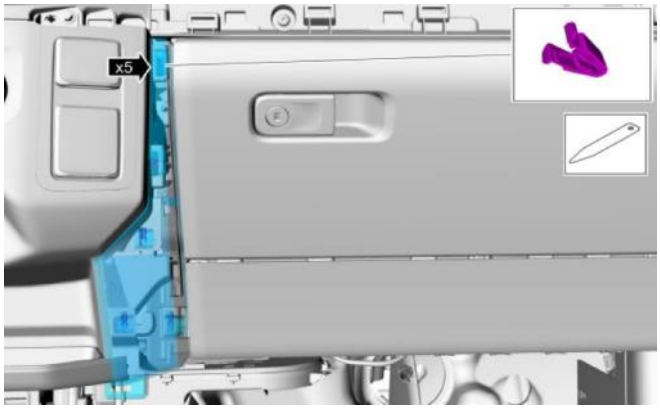
6. Remove the lower instrument panel trim using a plastic trim removal tool. There are 6 clips securing it to the dash.



Installation Instructions (continued)

7. Remove the left and right lower center stack trim panels. Each side has 5 securing clips.





8. Remove the (6) 7 mm screws from the lower center stack trim panel.

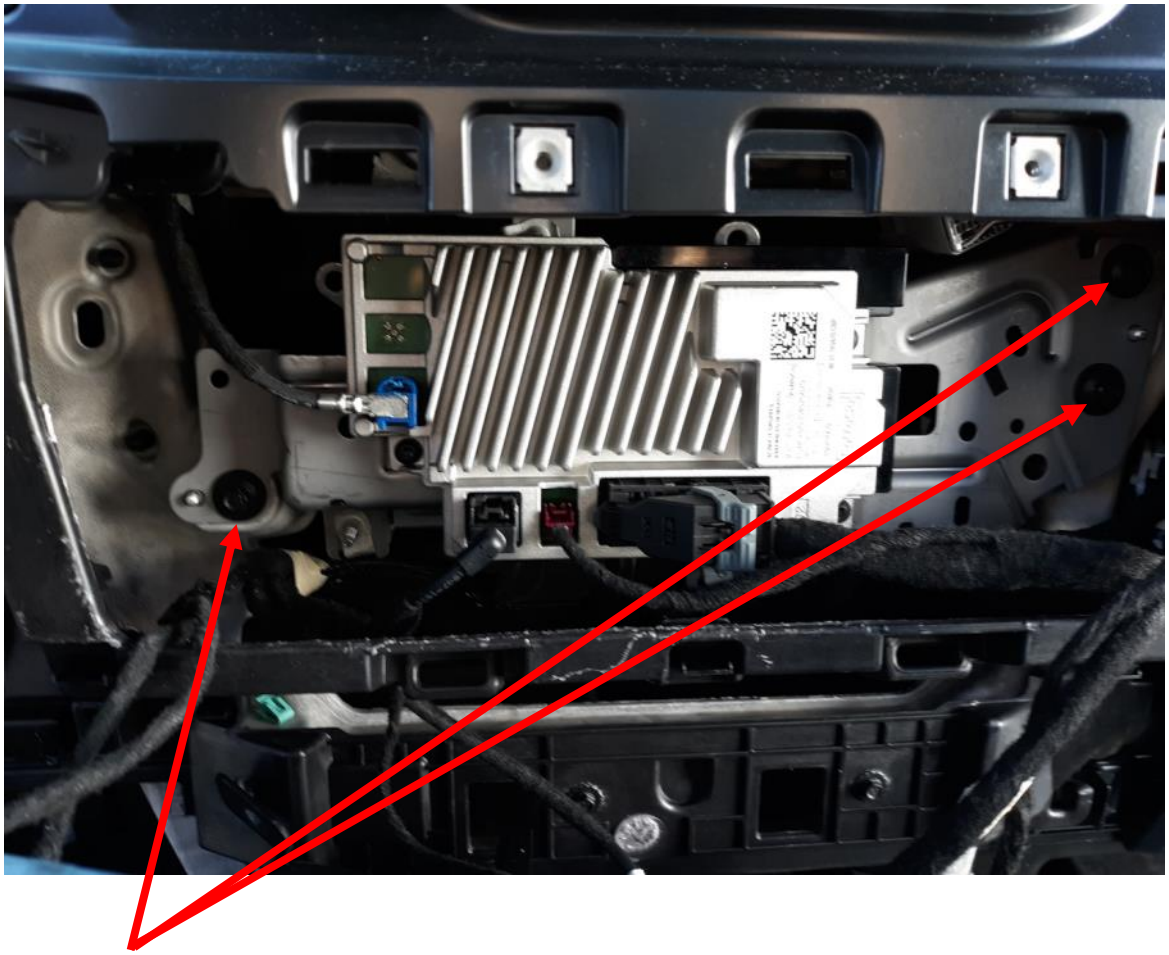
Installation Instructions (continued)

9. Remove the (2) 10 mm screws from the left and the right sides of the center stack trim panel.

10. Lower the center stack trim panel without disconnecting connectors.

Installation Instructions (continued)

11. Locate the Gateway module below the radio and unplug its connectors.



12. Remove the (3) 8 mm screws from the Gateway module mounting bracket.

Installation Instructions (continued)

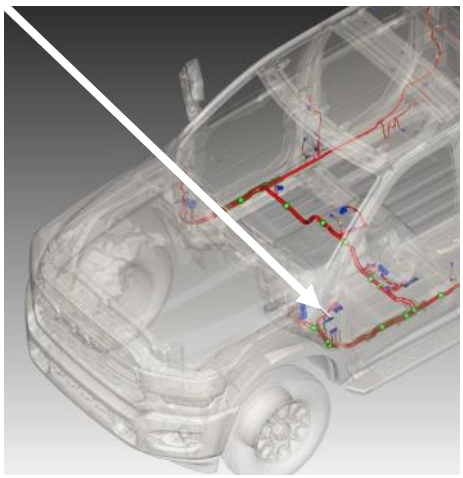
13. Locate the 26-pin connector and disconnect it from the Gateway Module.

14. Plug the Data Link Harness 26-pin connector in between the two mating OEM Gateway connectors. Ensure that the connectors are fully seated.

2021 Ram 1500 (DT)

1. Locate the vehicle OBDII Data Link Connector. It is a White 16 pin connector around the area above the drivers left foot.
2. Use a flat screwdriver to remove the OEM OBDII connector. There are tabs on the sides of the connector that allow it to snap into place. Press the tabs and push the connector up and out of its bracket. The BPM kit includes a Data Link harness (see picture). Plug the red connector from the Data Link Harness into the vehicle's OBDII connector. Ensure the connection is fully seated and secured with the supplied wire tie.

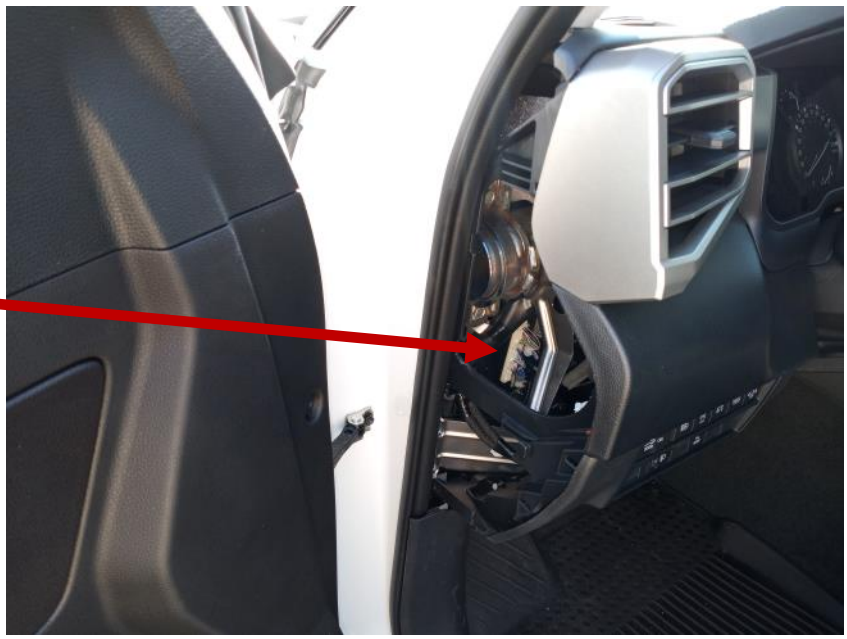
3. Mount the white connector from the BPM Data Link Harness in the former location of the vehicle's OBDII connector by snapping it into place.
4. Plug the free end of the Data Link Harness into the mating 6-pin connector on the BPM module.
5. Locate the STAR connector bank in the location shown (next to the Park Brake).



6. There are multiple banks of Star connectors. One of the banks has a white base and the other has a black base.
7. Plug the 2-pin BPM connector with **yellow and brown wires** into one of the unused ports with the **black base**.

2022 Toyota Tundra

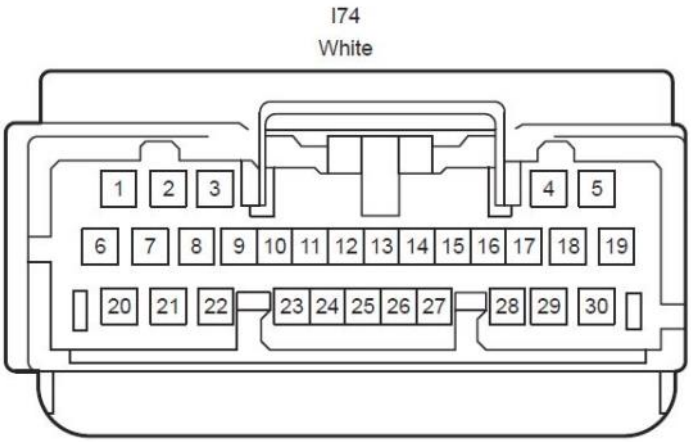
1. Pull the panel from the left side of the dash and locate the row of white connectors.



2. Locate the White 30-pin connector (I74) at the top of the bank of connectors and remove it.
3. Locate the Black wire in Pin 1 and the White wire in pin 2 of the connector.
4. Attach the blunt cut Black wire on the BPM330 harness and connect it to the Black wire in Pin #1 of the 30-pin connector using the provided Posi-Tap.*
5. Attach the blunt cut White wire on the BPM330 harness and connect it to the White wire in Pin #2 of the 30-pin connector using the provided Posi-Tap.*

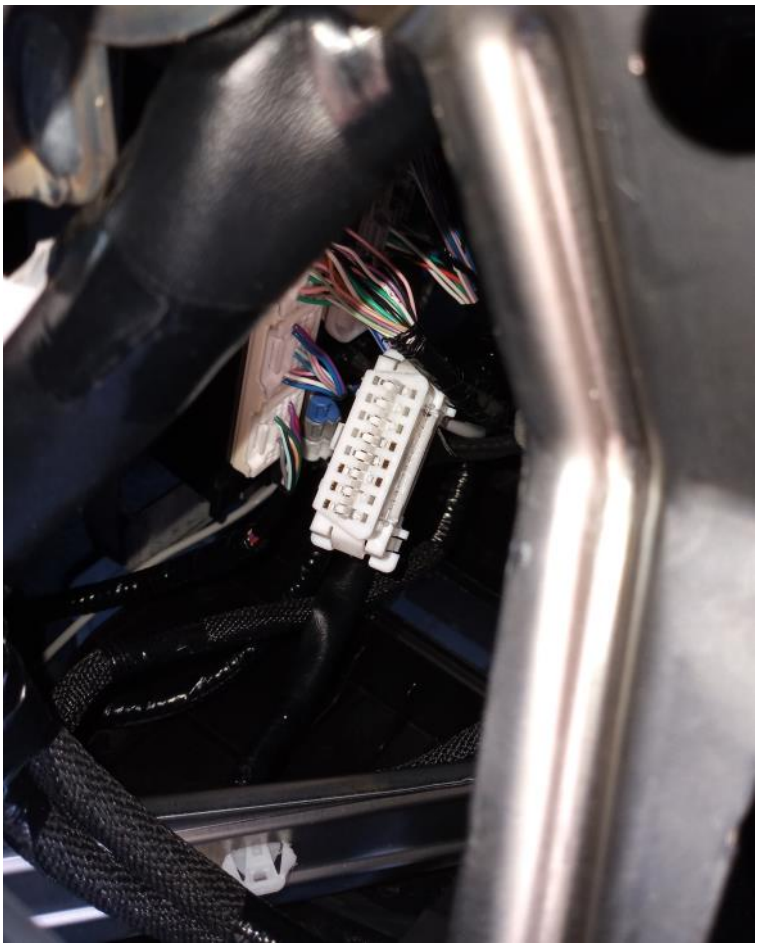
*Unscrew the Black cap on the included Posi-Tap connector and install it on the appropriate wire, then screw the rest of the connector onto the cap.

Unscrew the other end of the Posi-Tap connector, and insert the appropriate wire from the BPM330 harness through the loose piece so the wire end is even with the piece edge. Hold the wire so it doesn't push back out of the Posi-tap, and screw it back into the main Posi-Tap body. Holding the main Posi-Tap body, gently pull on the wire to make sure it is connected.



Data Link Harness Installation

1. Locate the White OEM OBDII connector under the dash (see photo) and release it from the dash panel by pressing in on the two tabs on the side of the connector. Push it up through the dash and locate it near the previously Posi-Tapped wires.



2. Plug the Red connector from the BPM330 Data Link Harness into the vehicle's OBDII connector. Ensure the connection is fully seated and secure with the supplied wire tie.
3. Mount the White pass-through connector from the BPM330 Data Link Harness in the former location of the vehicle's OBDII connector.
4. Plug the 6-pin connector into the BPM330 module.

4-Pin and 10-Pin Output Definition

Output 1 - Pin 3, J1

- Provides +12V when the vehicle key is in the RUN position.

Output 2 - Pin 1, J1

- Provides +12V when the vehicle key is in the RUN position AND the vehicle headlight switch is in Park Light position (only) AND vehicle headlight beam select switch is in the high-beam position.

Output 3 - Pin 2, J1

- Provides +12V when the vehicle key is in the RUN position AND vehicle headlight switch is in Park Light position (only) AND vehicle headlight beam select switch is in low-beam position.

Output 4 - Pin 6, J1

- Provides +12V when the vehicle key is in the RUN position AND the vehicle headlight switch is in the Park Light position (only).

Output 5 - Pin 7, J1

- Connected to 12V+ when the vehicle turn signal switch is in the Right Turn position.

OR

- Connected to 12V+ when the vehicle hazard/emergency light switch is activated.

Output 6 - Pin 4, J1

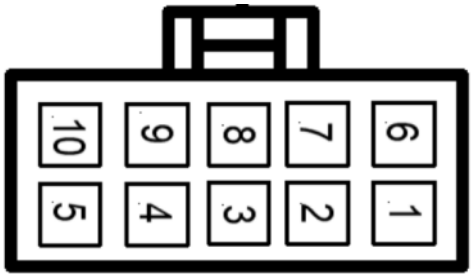
- Connected to 12V+ when the vehicle turn signal switch is in the Left Turn position.

OR

- Connected to 12V+ when the vehicle hazard/emergency light switch is activated.

Output 7 - Pin 3, J5

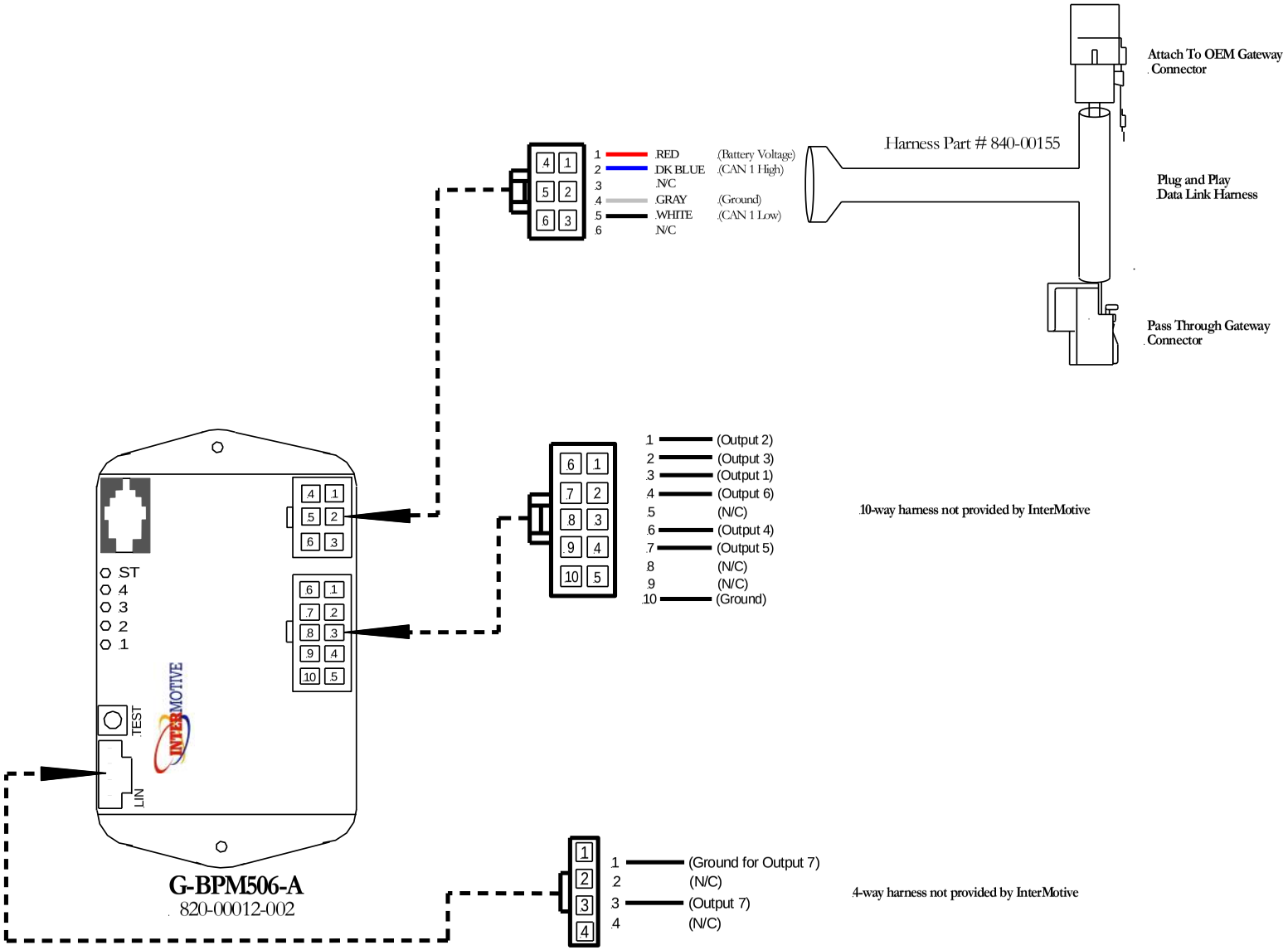
- Connected to 12V+ when the vehicle high-beams are On.



Back of Connector

Back of Connector

Ford Installation



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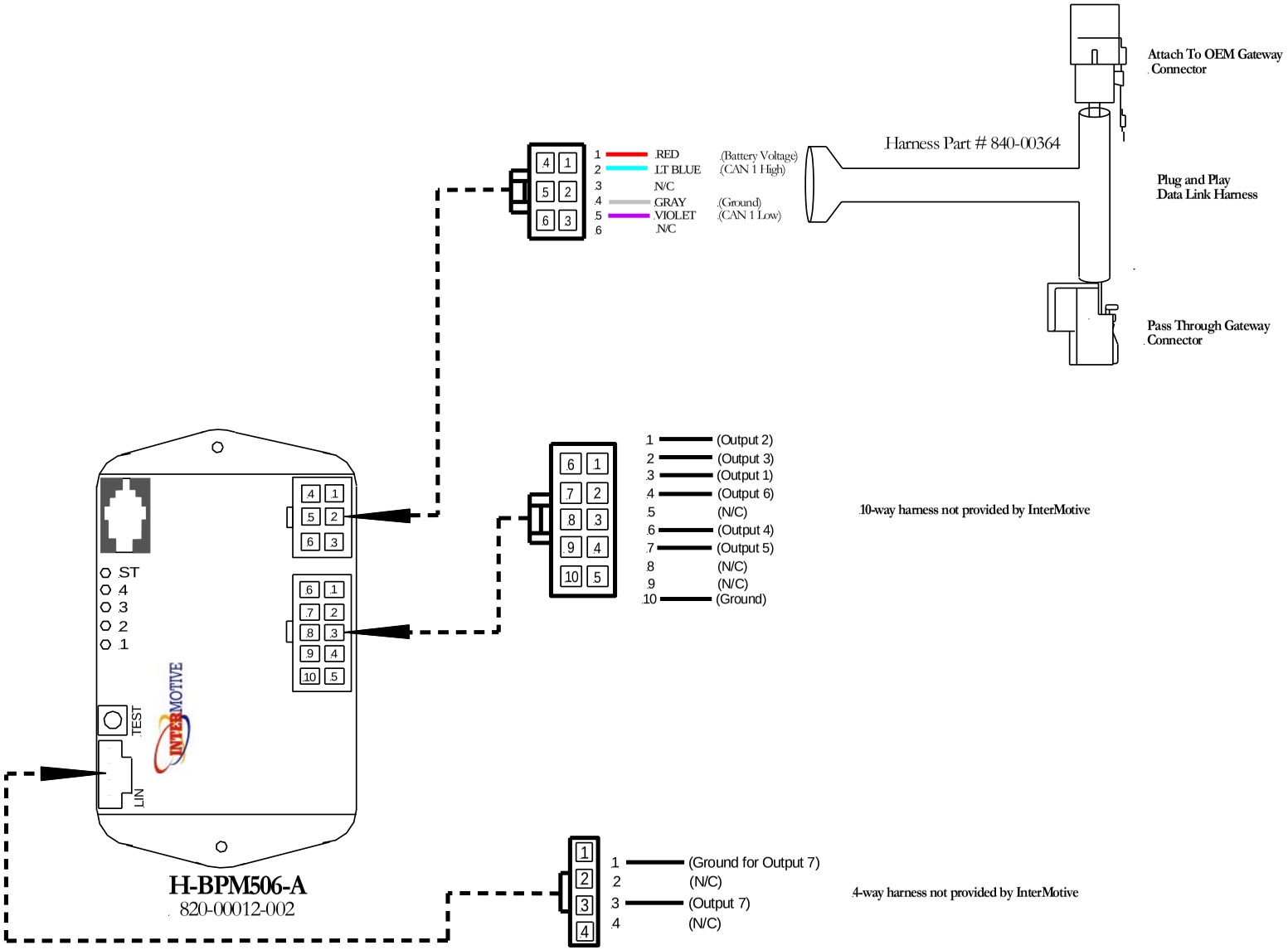
Ford Installation



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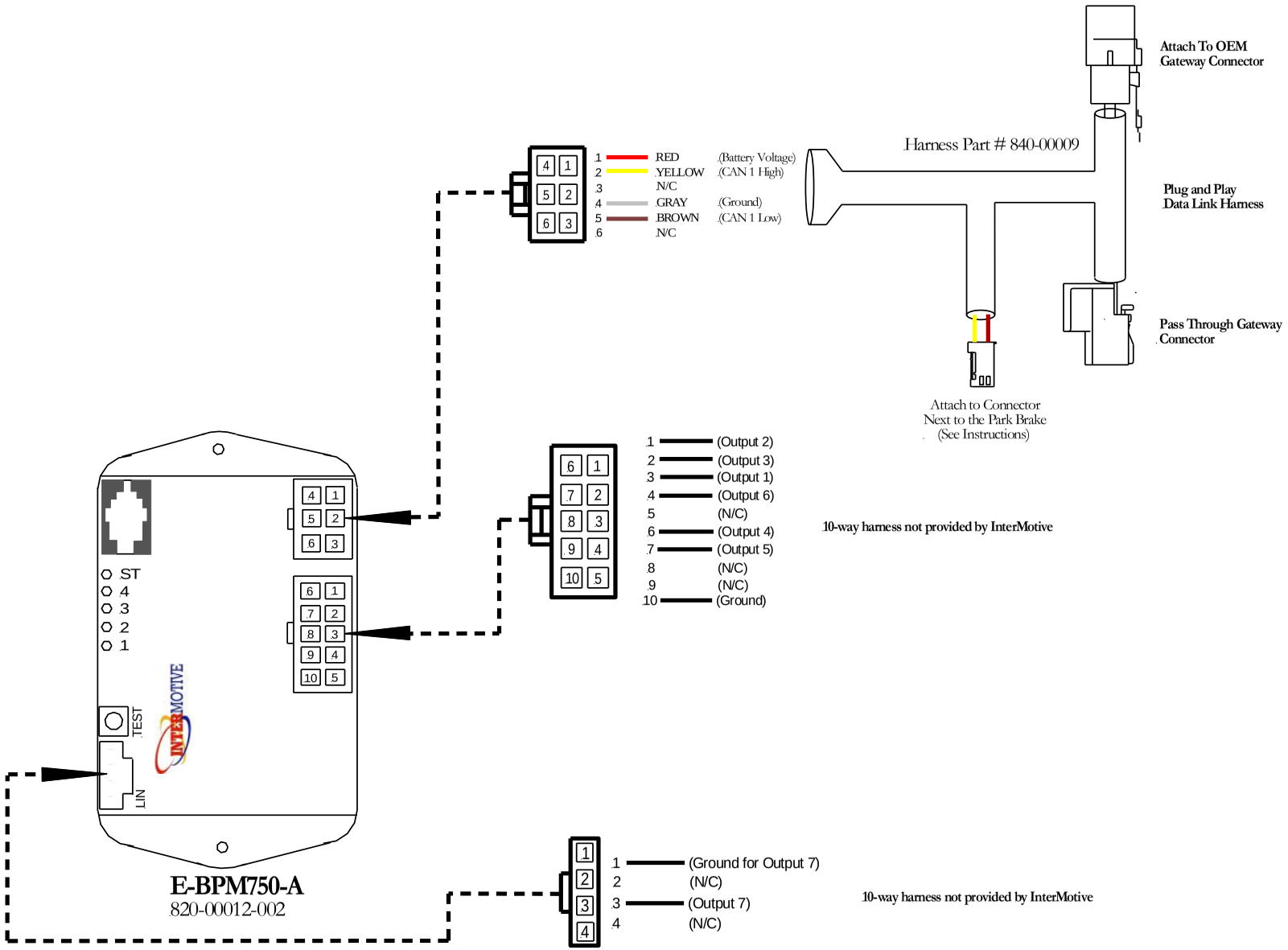
Ram Installation



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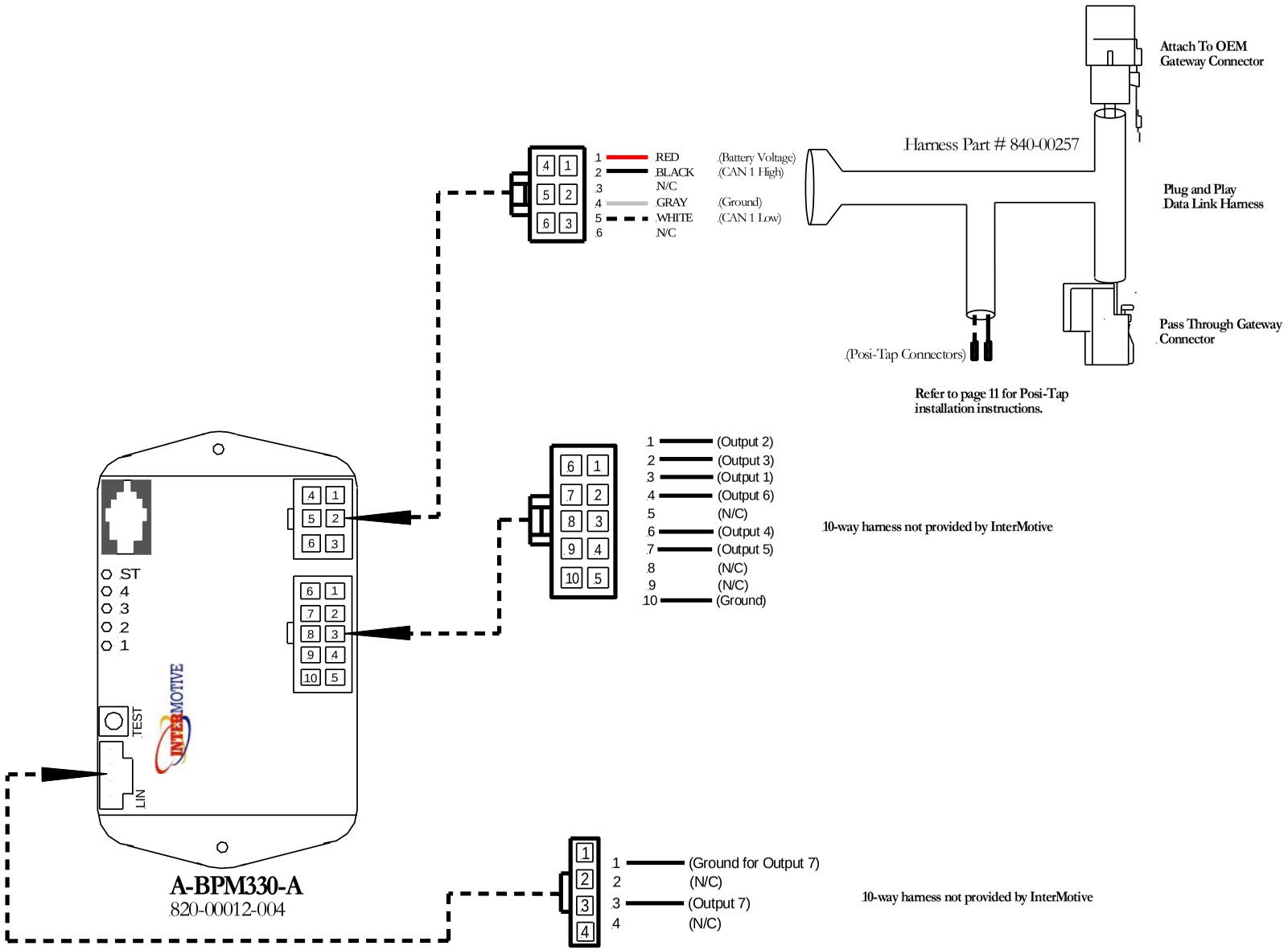
Toyota Installation



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