Feniex Industries
Feniex Interface Module®

A-FIM501-B 2009-2019 Ford E Van, 2011-2016 F250-F550, 2013-2019 Interceptors (Sedan), 2013-2015 Interceptors (Utility), 2015-2017 Expedition
B-FIM502-C 2015-2019 Ford F-150, 2016-2022 Interceptor (Utility Only), 2016-2017 Explorer, 2017 F250-550
G-FIM503-C 2021 Ford F-150
B-FIM536-B 2018 Ford Expedition
A-FIM515-B 2015-2017 Ford Transit and 2016-2017 Escape*
A-FIM601-B 2008-2017 Chevy Express/GM Savana, 2014-2020 Tahoe, 2014-2020 Silverado/Sierra, 2015-2017 Suburban/Yukon
G-FIM403-B 2021-2023 Chevy Tahoe
A-FIM701-B 2015-2017 Charger
C-FIM701-B 2018-2022 Dodge Charger
A-FIM750-B 2013-2017 1500-5500 RAM Trucks
E-FIM750-B 2018-2022 1500-5500 RAM Trucks
A-FIM760-A 2016-2017 Dodge Durango
C-FIM760-A 2018-2020 Dodge Durango

See UIM Programming Utility or contact Intermotive for latest list of supported vehicles

* Vehicle data is limited

Introduction

The FIM Feniex Interface Module® provides access to a broad range of vehicle data such as MPH, RPM, Park Brake, Service Brake, temperatures, transmission range, accelerator pedal, doors, lights, door locks, ABS, MIL, etc., via it's LIN interface. Specific data is vehicle dependent, and by running the FIM Programming Utility software (free download from www.intermotive.net), vehicle information on a particular chassis can easily be determined. Eight virtual programmable outputs can be programmed using the FIM Programming Utility. The Programmer allows logical combinations (AND, OR, =, >, <) of various vehicle data to control the virtual outputs, the status of which are available over LIN. For example, one output can be programmed to go active when ECT>230 OR TFT>250 AND RPM>300 (any numeric values can be used).

Installation Instructions

Disconnect vehicle battery before proceeding with installation

IMPORTANT—READ BEFORE INSTALLATION

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.

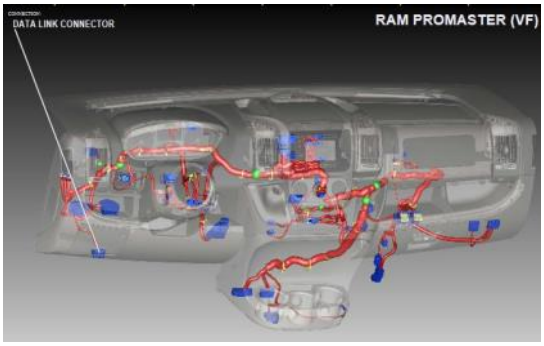
Avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Avoid radio frequency energy from antennas or inverters next to the module. Avoid high voltage spikes in vehicle wiring by always using diode clamped relays when installing upfitter circuits.

FIM Module

Remove the lower dash panel below the steering column area and find a suitable location to mount the FIM module. Locate the module in an area away from any high heat sources (engine heat, heater ducts, etc.). Do not mount the module until all wire harnesses are routed and secure. The last step of the installation is to mount the module.

Data Link Harness (6-pin connector)

The provided FIM Data Link harnesses vary from model to model, depending on which chassis the FIM is being installed.

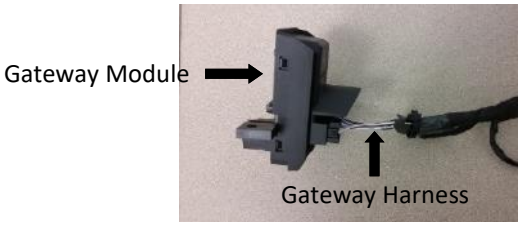


1. Locate the vehicles OBDII Data Link Connector. It will be located below the lower left dash panel.
2. Remove the OEM Data Link connector, and mate it to the FIM Data Link harnesses red connector. Ensure the connection is fully seated and secure with the supplied wire tie.
3. Mount the pass-through connector from the FIM Data Link Harness in the former location of the vehicle's OBDII connector.
4. Secure the FIM Data Link harness so that it does not hang below the lower dash panel.

NOTE: Do NOT plug the Data Link harness into the 6-pin connector on the FIM module. This will be done at a later step.

Data Link Harness (FIM502-C)

1. Locate the vehicles Gateway Module (C2431). It will be mounted below the lower left dash panel.
2. Remove the harness behind the Gateway module by pressing the locking tab and pulling outward.
3. Plug the Female side of the InterMotive Gateway Harness into the back of the Gateway module. Ensure the connection is fully seated and secured by the locking tab.
4. Plug the Male side of the InterMotive Data Link Harness into Gateway harness.
5. Secure the BOM Gateway harness so that it does not hang below the lower dash panel.

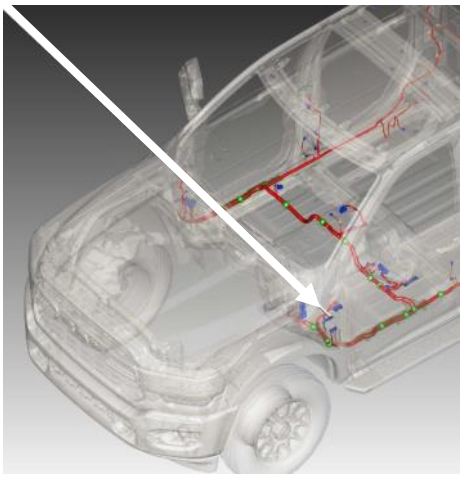


InterMotive Plug and Play Gateway Harness

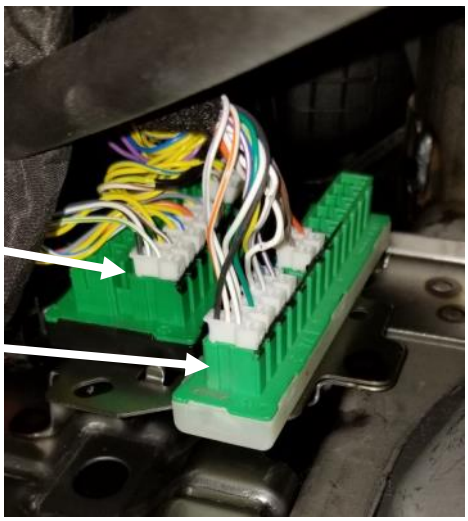
Data Link Harness (**E-FIM750-B**)

1. Locate the vehicle OBDII Data Link Connector. It's 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 FIM kit includes a Data Link harness (see picture). Plug the red connector from the FIM 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 FIM 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 extended harness which then plugs into the mating 6-pin connector on the E-FIM750-B 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 E-FIM750-B connector with **Yellow and Brown wires** into one of the unused ports with the **Black base**.
8. Plug the 2-pin E-FIM750-B connector with **Green and Blue wires** into one of the unused ports with the **White base**.



Data Link Harness (G-FIM403-B) 2021-2023 Chevy Tahoe

1. Locate the Gateway module that is located under the dash and above the accelerator pedal.

2. Locate the 30-pin connector, X1 labeled "BLK" on the module.

Data Link Harness G-FIM403-B 2021-2023 Chevy Tahoe (Continued)

3. Remove the OEM connector from the Gateway module and insert the mating connector from the G-UIM601-B harness, and insert the OEM connector into the mating connector from the G-SOS403-B harness.

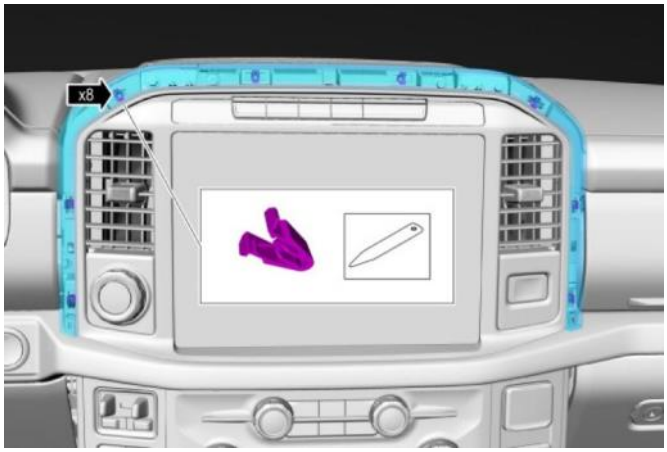
4. Secure the Data Link harness so that it does not hang below the lower dash panel.

5. Plug the free end of the Data Link harness into the mating 6-pin connector on the SOS-B module.

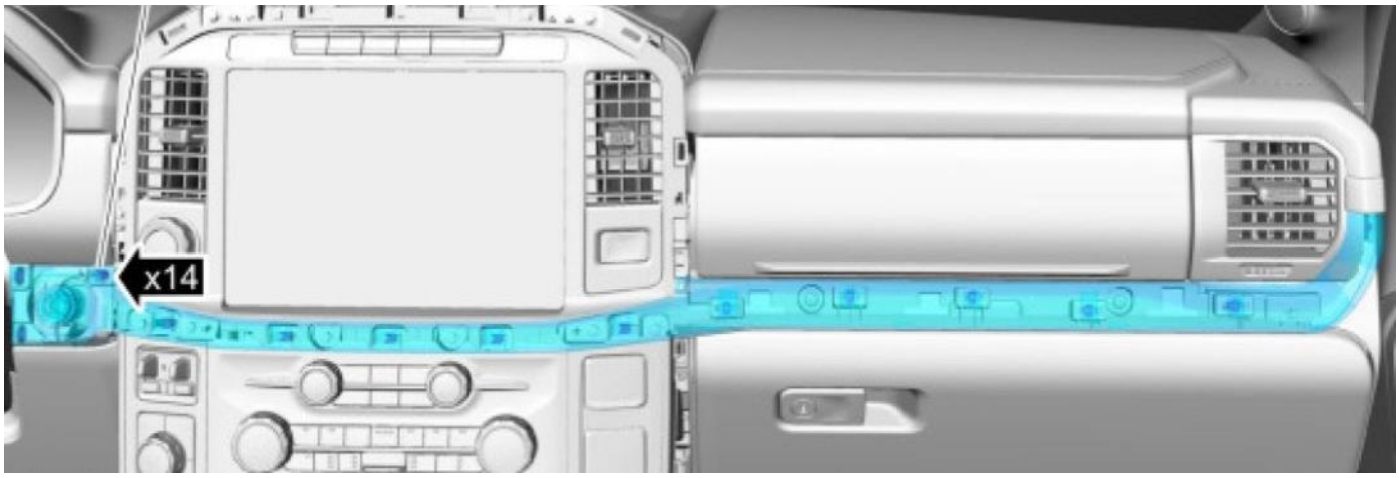
Installation Instructions (Continued)

Data Link Harness (G-FIM503-C)

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



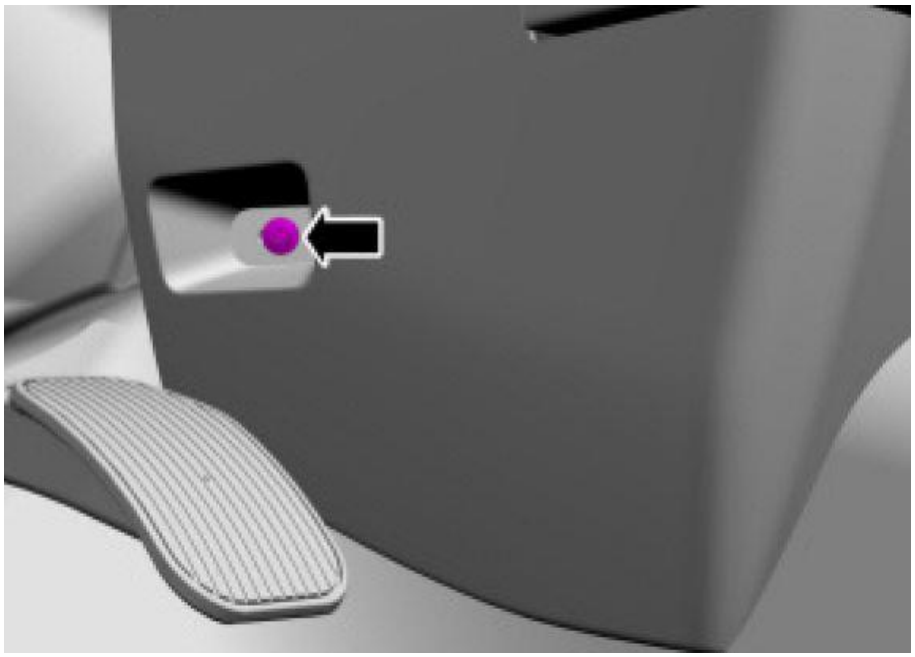
2. Remove the instrument center trim panel using a plastic trim tool. There are 14 clips securing it to the dash.



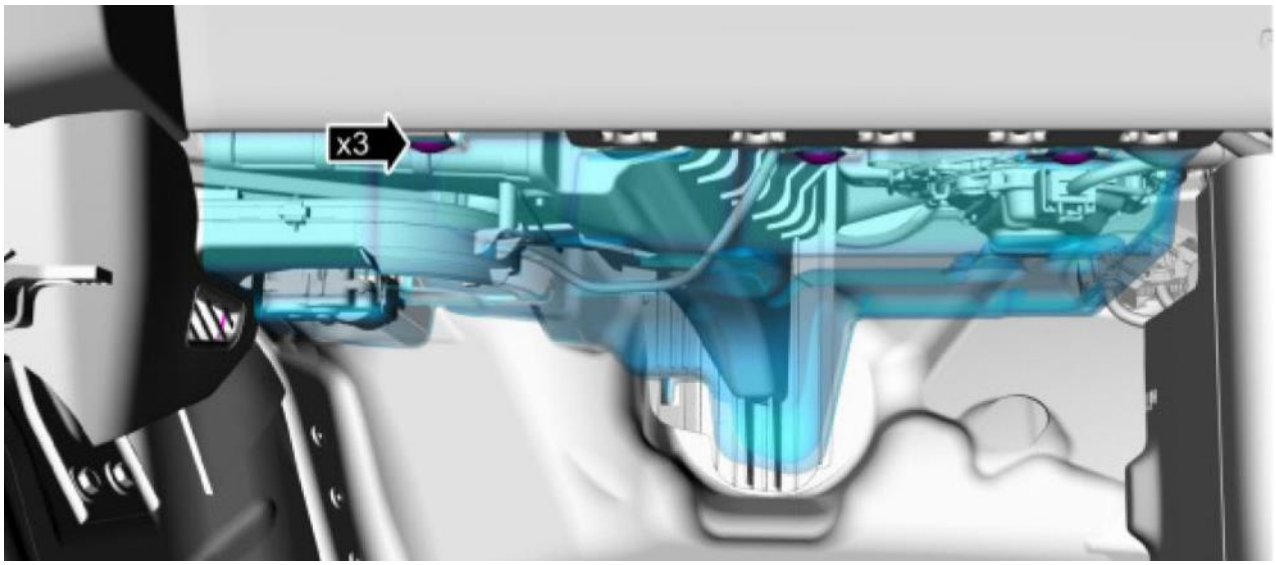
Installation Instructions (Continued)

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.

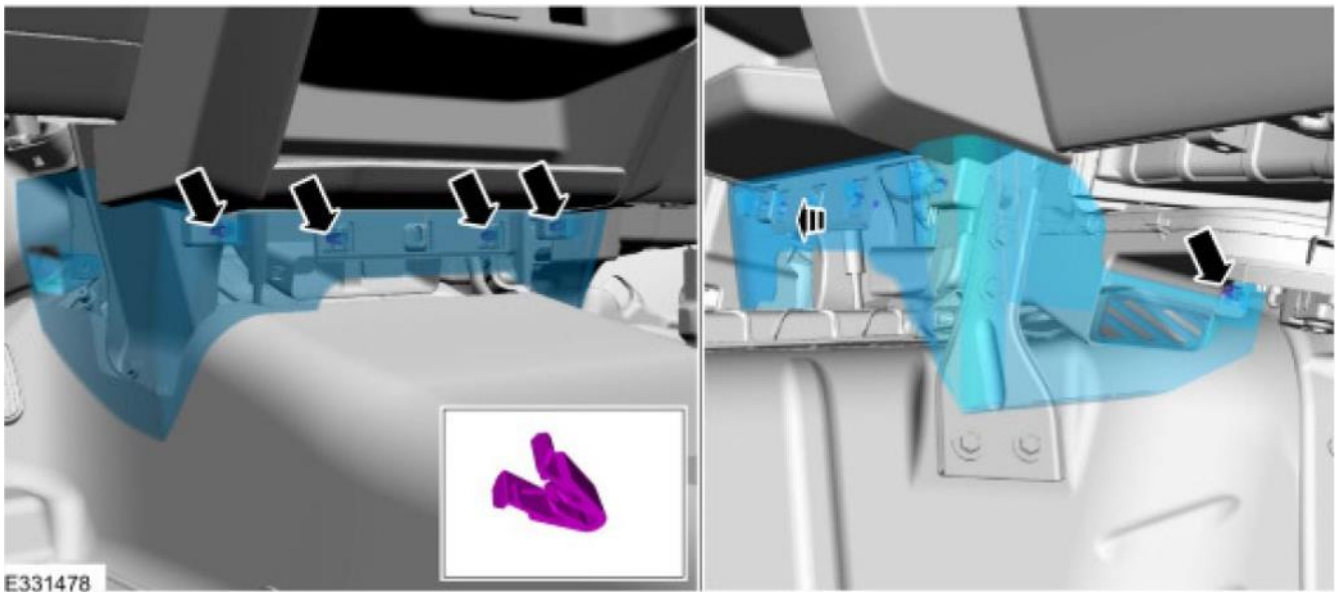
4. Remove the 7mm screw from the instrument panel lower trim panel.



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

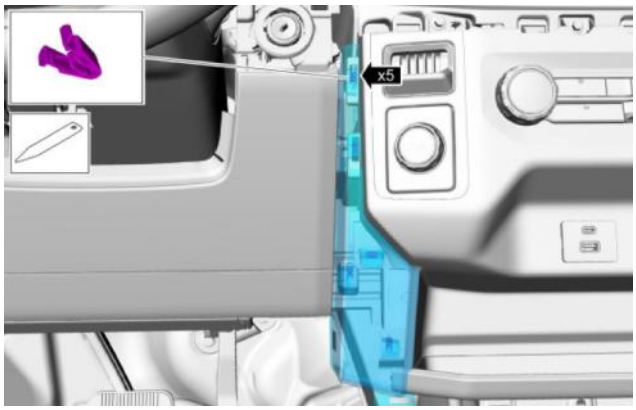


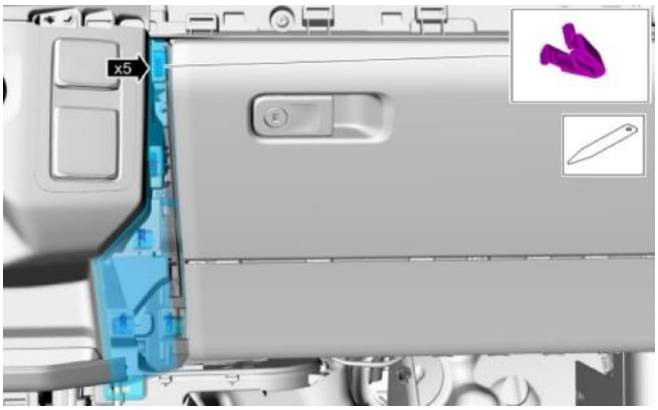
6. Remove the instrument panel lower trim panel using a plastic trim removal tool. There are 6 clips securing it to the dash.



Installation Instructions (Continued)

7. Remove the left and right lower centerstack trim panels. They each have 5 clips securing it to the dash.





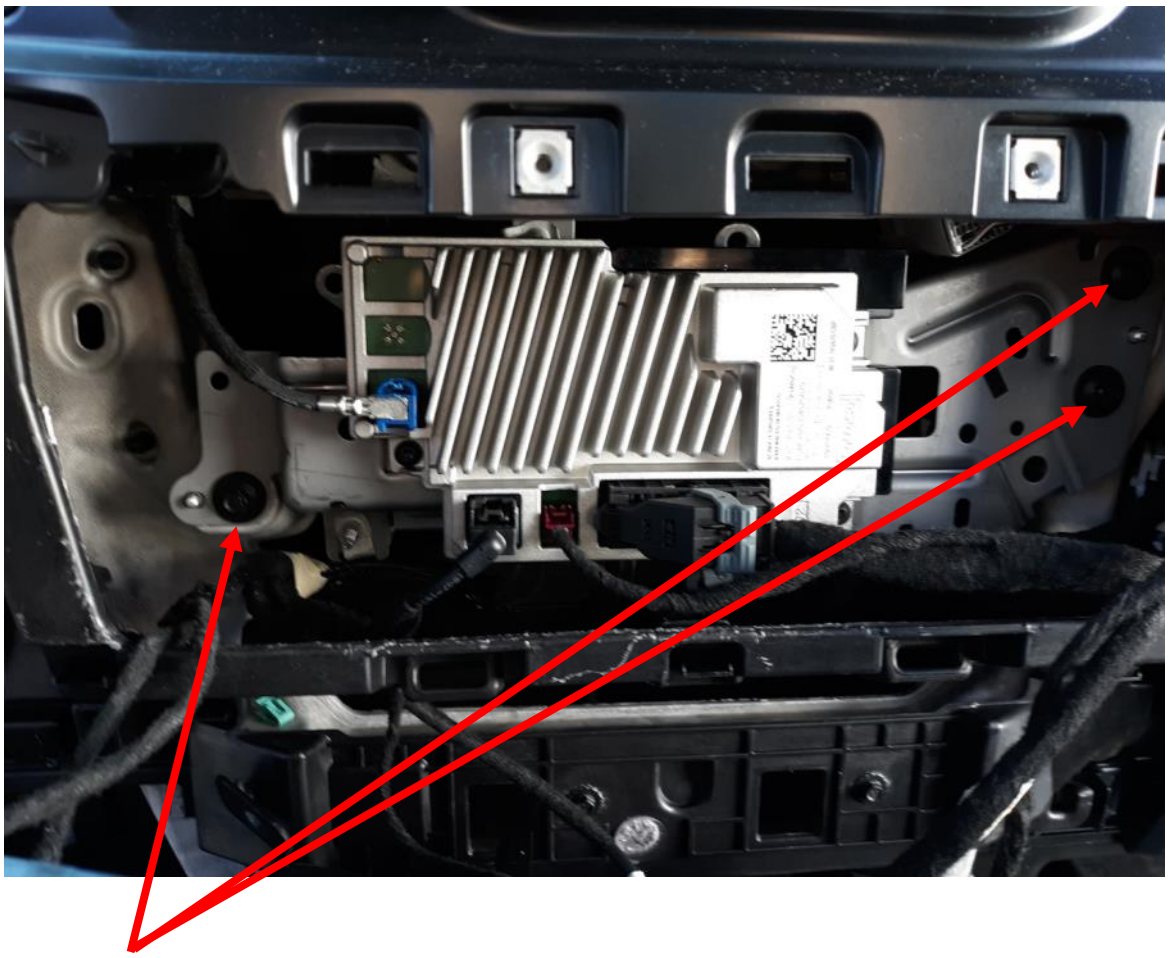
8. Remove the (4) 7mm screws from the lower centerstack trim panel.

Installation Instructions (Continued)

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

10. Grab the centerstack trim panel and set it on the floor. There is no reason to disconnect any of the connectors.

11. Locate the module below the radio and remove the connectors from the module.



12. Remove the (3) 8mm screws from the module located below the radio.

Installation Instructions (Continued)

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

14. Locate the **Yellow/Orange** wire in position 4, the **Blue** wire in position 7, the **Blue/Orange** wire in position 17, and the **White** wire in position 20 on the back of the 26-pin connector.

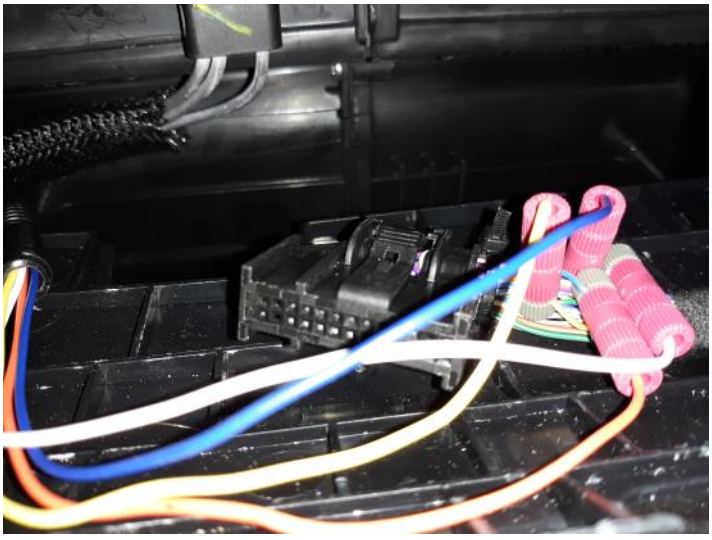
Installation Instructions (Continued)

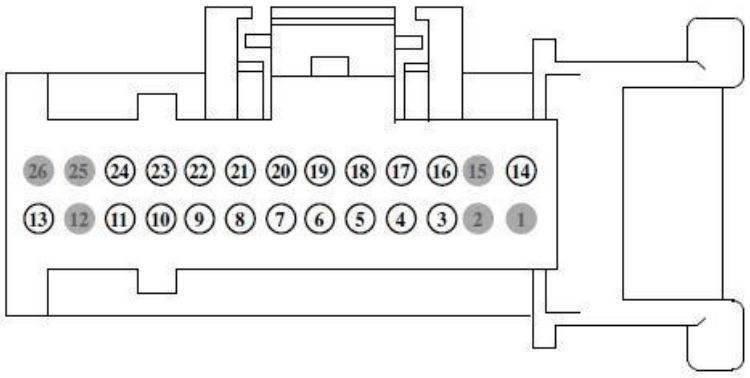
15. Unscrew the Grey cap on the end of the included Red Posi-Tap and install it on the **Yellow/Orange** wire (position 4) on the 26 pin-connector. Screw the rest of the connector onto the cap (not too tight). Unscrew the other end of the Posi-Tap connector, locate the stripped **Yellow** wire from the Intermotive harness, and insert it through the hole in the Posi-Tap so the wire end is even with the 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.

16. Unscrew the Grey cap on the end of the included Red Posi-Tap and install it on the **Blue** wire (position 7) on the 26 pin-connector. Screw the rest of the connector onto the cap (not too tight). Unscrew the other end of the Posi-Tap connector, locate the stripped **Blue** wire from the Intermotive harness, and insert it through the hole in the Posi-Tap so the wire end is even with the 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.

17. Unscrew the Grey cap on the end of the included Red Posi-Tap and install it on the **Blue/Orange** wire (position 17) on the 26 pin-connector. Screw the rest of the connector onto the cap (not too tight). Unscrew the other end of the Posi-Tap connector, locate the stripped **Orange** wire from the Intermotive harness, and insert it through the hole in the Posi-Tap so the wire end is even with the 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.

18. Unscrew the Grey cap on the end of the included Red Posi-Tap and install it on the **White** wire (position 20) on the 26 pin-connector. Screw the rest of the connector onto the cap (not too tight). Unscrew the other end of the Posi-Tap connector, locate the stripped **White** wire from the Intermotive harness, and insert it through the hole in the Posi-Tap so the wire end is even with the 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.





19. Plug the 26-pin connector back into the Gateway module.

Installation Instructions (Continued)

20. Locate the White 16-pin OBDII connector located under the dash near the Service Brake. Remove the OEM connector from the metal mount by pressing on the 2 tabs on each side of the connector.

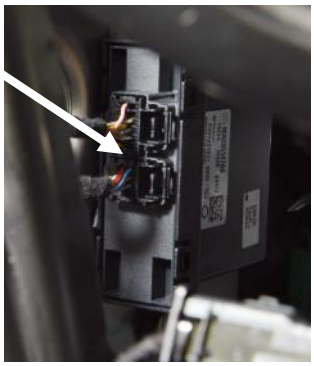
21. Plug the Red connector from the SOS Data Link harness into the vehicle's White OBDII connector. Ensure the connection is fully seated and secure with the supplied wire tie.

22. Mount the White pass through connector from the SOS module in the former location of the vehicle's OEM OBDII connector.

23. Plug the 6-pin connector into the mating connector on the SOS module.

Installation Instructions (Continued)

Data Link Harness (C-FIM701-B)



1. Locate the vehicle's Gateway module located next to the BCM and above the Parking Brake.
2. Remove the 12-pin and 8-pin connectors from the Gateway module and plug in the 12-pin and 8-pin connectors from the Intermotive C-FIM701-B Data Link harness. Plug the OEM 12-pin and 8-pin connectors into the mating connectors on the C-FIM701-B Data Link harness.
3. Plug the free end of the Data Link harness into the mating 6-pin connector on the C-FIM701-B module.

Data Link Harness (C-FIM760-A)

The 2018+ Durango has a "Gateway" module connected to the OBDII connector. The module is located in the underdash in the front passenger area (see Figure 1). The C-FIM data link harness T's into an 8-pin and 12-pin connector on this gateway module.

Follow the steps below to access the Gateway module.

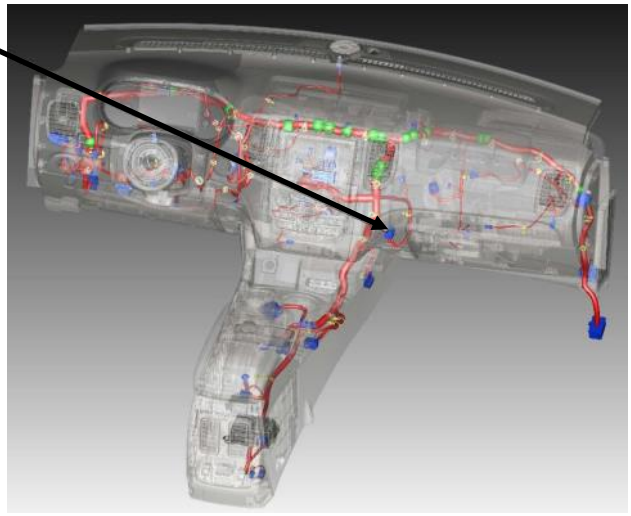


Figure 1

1. Remove the two trim pieces shown in Figure 2.

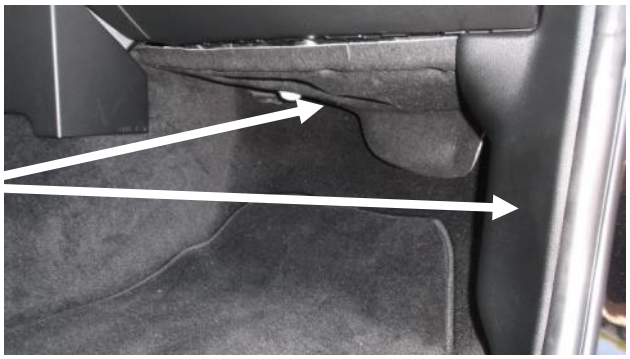
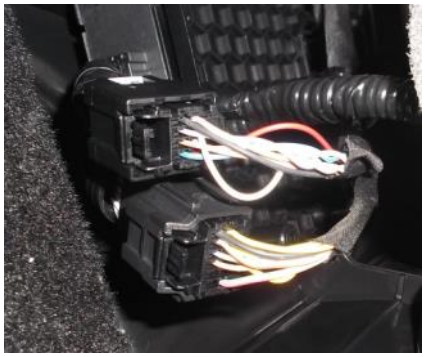


Figure 2

Installation Instructions (Continued)

2. Locate the Gateway module in the location shown in Figure 1.
3. Remove the OEM 12 and 8-pin connectors from the Gateway module.



4. Plug in the 12-pin and 8-pin connectors from the Intermotive C-FIM760-A Data Link harness. Plug the OEM 12-pin and 8-pin connectors into the mating connectors on the C-FIM760-A Data Link connector.
5. Plug the free end of the Data Link harness into the mating 6-pin connector on the C-FIM760-A module.

LIN Feature:

Revision 2.1 LIN is a low cost serial communications method used extensively in the automotive industry. This feature allows the Feniex Industries systems to request vehicle data from the module over the LIN communications interface.

To request an Intermotive FIM LIN Protocol description sheet please contact your FIM supplier.

Reconnect the vehicle battery

Initial Installation Power-Up

When the FIM module is first plugged in, it attempts to acquire the vehicles VIN to interpret vehicle data on the OBD network. The key must be in the Run position for network traffic to be present (engine off is OK).

1. Turn the ignition switch to the Run position.
2. Plug the 6 pin data link connector into the module

- If the module LEDs "scroll" , then it has NOT acquired a recognized VIN. The chassis may be a new Model Year which the module does not recognize, or the chassis has an unrecognized engine. Ensure your chassis is listed at the top of page one of these instructions. Contact Intermotive Tech Support for assistance.
- If no LEDs come on when the module is plugged in and powered up, it is working properly. Proceed to post installation testing.

FIM Module Mounting

Ensure all the harnesses are properly connected and routed, and are not hanging below the dash area. Mount the FIM module using screws or double sided tape. Reinstall the lower dash panel.

FIM Post Installation Testing

1. Turn the ignition ON to wake up and initialize the FIM module.
2. Ensure the LIN master system is able to request and receive vehicle data over the LIN interface. With the conditions met, ensure the virtual outputs are responding correctly per their programmed condition set (e.g., default condition of output 5 goes low when engine is running).

The FIM is properly installed only if it passes the above tests. If any irregular operational issues persist, recheck the condition set configuration. Contact InterMotive at 530-823-1048 for technical assistance.

Diagnostics

To enter diagnostic mode, momentarily press the Red "Test" button on the module with the ignition on. There are six 'pages' of diagnostic data. Each time the "Test" button is momentarily pressed the module will advance to the next 'page'. The Status LED will flash the page number (e.g. the Status LED will flash 5 times when in 'page' 5).

Page 1

The on-board LED's will light when a corresponding load is active:

LED1 = Virtual Output #1
LED2 = Virtual Output #2
LED3 = Virtual Output #3
LED4 = Virtual Output #4

Page 2

The on-board LED's will light when corresponding vehicle data is detected:

Page 2

LED1 = Transmission
LED2 = RPM
LED3 = VSS (vehicle speed sensor)
LED4 = Park Brake

Page 3

LED1 = Service Brake
LED2 = APP (accelerator pedal position)
LED3 = Key Position
LED4 = TFT (transmission fluid temperature)

Page 4

LED1 = ECT (engine coolant temperature)
LED2 = AAT (ambient air temperature)
LED3 = FL (fuel level)
LED4 = MIL (malfunction indicator lamp)

Diagnostics (Continued)

Page 5

The on-board LED's will light when corresponding vehicle data is detected:

LED1 = ABS
LED2 = AC
LED3 = Rear Door
LED4 = Driver Front Door

Page 6

LED1 = Passenger Front Door
LED2 = Driver Rear Door
LED3 = Passenger Rear Door
LED4 = Turn Signal

Page 7

The on-board LED's will light when corresponding vehicle data is detected:

LED1 = ParkLamp
LED2 = LowBeam
LED3 = HiBeam
LED4 = DRL

Page 8

LED1 = All Lock
LED2 = All Unlock
LED3 = Driver Door Unlock
LED4 = Driver Seat

Page 9

The on-board LED's will light when corresponding vehicle data is detected:

LED1 = Passenger Seat
LED2 = Driver Belt
LED3 = Passenger Belt
LED4 = EOP (Engine Oil Pressure)

Page 10

LED1 = Mute
LED2 = Hazard
LED3 = Light
LED4 = Brake Torque

Page 11

LED1 = Engine Torque
LED2 = Odometer
LED3 = Not Used
LED4 = VIN PnR Active

Diagnostics (Continued)

Page 6

Output Trouble Codes

The FIM module does not provide physical outputs, so some of this diagnostic information is not applicable. If there is an issue with one of the FIM/UIM outputs, the status LED will flash a two digit code while in diagnostic mode, page 6. A 1-1 code means everything is working properly. The first digit flashed will correspond to the output number and the second digit will indicate the specific problem. The second digit can be:

- 2 - Output fault N/A for FIM module
- 3 - Invalid data (The data associated with the output is invalid)
- 4 - Data timed out (The data associated with the output has timed out)
- 5 - Unsupported data (The data associated with the output is not supported on the current vehicle)

Scrolling LED's may indicate one of the following errors:

- LED's scrolling sequentially one at a time indicates that an invalid or incomplete VIN was captured.
- LED's scrolling from the middle outward indicates a configuration error. This can be the result of configuring the FIM for one chassis, but installing it in a different chassis.

FIM Operation

Opening vehicle doors, pushing Service Brake, inserting a key into the ignition, or turning the key ON, are all activities which will wake up the vehicle's CAN networks, and will also wake up and initialize the FIM module. The FIM module will send a Slave LIN wakeup request over the LIN bus when it wakes up.

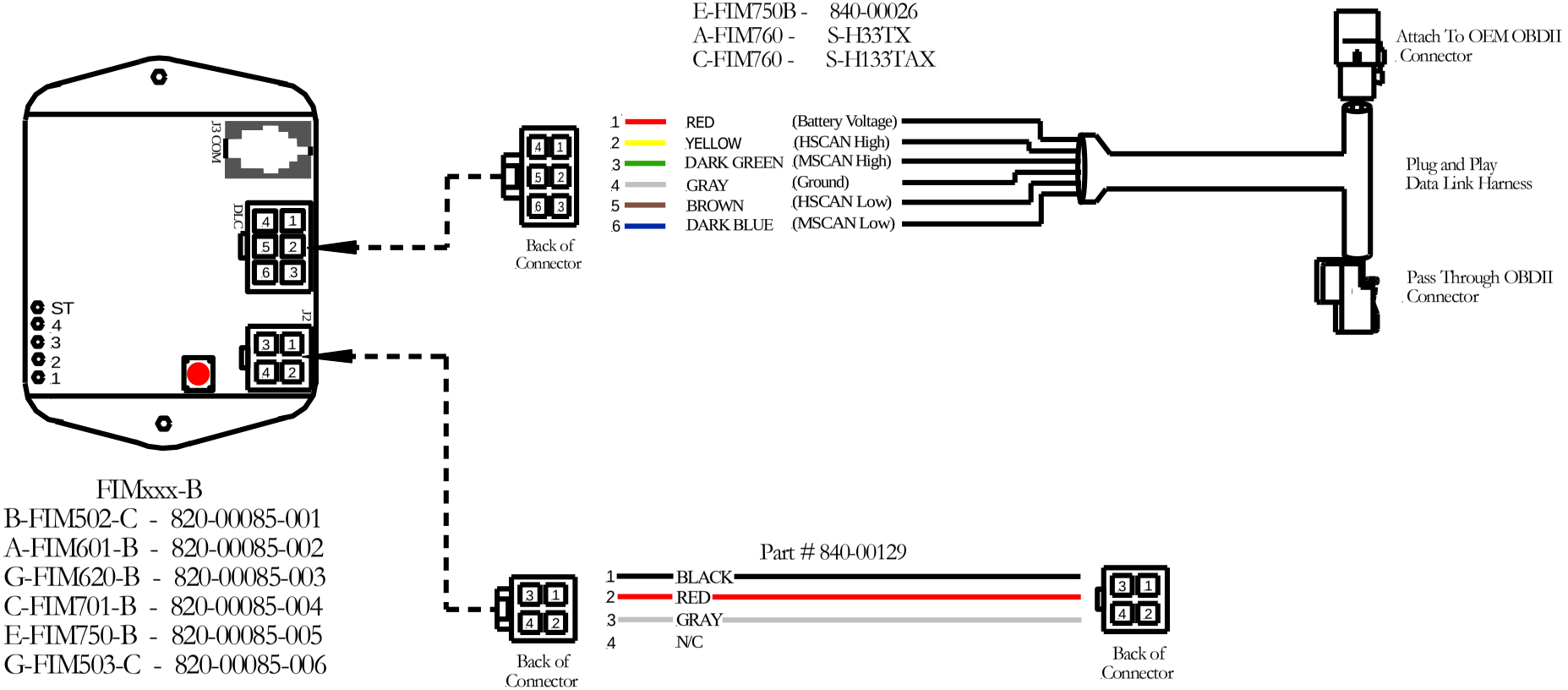
When the vehicle key is turned OFF, the FIM module will go into a low power sleep mode after traffic on the vehicles CAN networks has ceased. This may take up to five minutes or more, and the Diagnostic LED's (if active) on the module will go out once in sleep mode. Other vehicle activity such as opening doors, inserting key in the ignition, etc. may delay sleep mode.

Inducing vehicle CAN sleep mode can usually be accelerated after key off by opening/closing the drivers door, and using the fob to lock all doors. Some vehicles will indicate sleep mode by shutting off instrument cluster lights, etc.

FIM module sleep mode quiescent current is typically under 2mA.

Data Link Part Numbers:

A-FIM501 - S-H33AX-T
B-FIM502 - S-H133HX
G-FIM503C- 840-00147 (See Instructions)
B-FIM536- S-H133AX
A-FIM515 - S-H33TX
A-FIM601B - S-H33NX
G-FIM403B- 840-00144 (See Instructions)
A-FIM701 - S-H33TX
C-FIM701- S-H133TAX
A-FIM750 - S-H33TX
E-FIM750B - 840-00026
A-FIM760 - S-H33TX
C-FIM760 - S-H133TAX



FIMxxx-B
B-FIM502-C - 820-00085-001
A-FIM601-B - 820-00085-002
G-FIM620-B - 820-00085-003
C-FIM701-B - 820-00085-004
E-FIM750-B - 820-00085-005
G-FIM503-C - 820-00085-006

Submit product registration at www.intermotive.net

If the FIM fails any step in the Post Installation Test, review the installation instructions and the loaded configuration by running the Graphical User Interface application. If necessary, call InterMotive Technical Support at (530) 823-1048.