Manuals+ — User Manuals Simplified.

INTERMOTIVE A-UIM301-B Upfitter Interface Module User Guide

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INTERMOTIVE A-UIM301-B Upfitter Interface Module

Upfitter Interface Module®

The following list represents firmware v5.19

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- 2013-2015 Interceptors (Utility), 2015-2017 Expedition, 2014-2017 F53/F59, 2011-2017 F650-F750
- B-UIM502-B 2015-2018 Ford F150, 2016-2020 Interceptor (Utility Only), 2016-2020 Explorer,
- 2017-2022 F250-F600, 2018-2020 Expedition, 2020-2023 Ford Transit***, 2021-2023 Ford E-Van, 2021-2023 F650/F750
  G-UIM502-B 2021-2023 Ford F150, 2022-2023 Ford Transit*** 2022 Expedition
- H-UIM502-B 2023 Ford F250-F600
- A-UIM515-B 2015-2019 Ford Transit and 2016-2017 Escape*
- A-UIM601-B/BA** 2008-2020 Chevy Express/GM Savana, 2014-2020 Tahoe, 2014-2021 Silverado/Sierra, 2022-2023
- Silverado/Sierra 2500-3500 Keyed, 2015-2021 Suburban/Yukon, 2020-2022 International CV
- G-UIM601-B 2021-2023 Chevy Tahoe, 2021 Chevy Suburban/Yukon, 2022 Silverado/Sierra 1500,
- 2024 Silverado/Sierra 1500-3500
- H-UIM601-B 2022-2023 Chevy Silverado/Sierra 2500-3500 PTS
- A-UIM701-B 2015-2017 Dodge Charger
- C-UIM701-B 2018-2020 Dodge Charger
- A-UIM750-B 2013-2017 1500-5500 RAM Trucks
- E-UIM750-B 2018-2021 1500-5500 RAM Trucks
- A-UIM752-B 2014-2019 RAM ProMaster
- C-UIM752-B 2020-2022 RAM ProMaster
- A-UIM760-B 2016-2017 Dodge Durango
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For vehicles with the OEM gateway connector located behind the glove box (White OBDII connector), use the G-UIM502-B. For vehicles with the gateway located below the lower left dash panel (with a Black OBDII connector), use the B-UIM502-B.

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

- Vehicle data is limited
- BA does not include doors, locks, and light data

Introduction

The Upfitter 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. Specific data is vehicle-dependent, and by running the UIM Programming Utility software (free download from www.intermotive.net), available information on a particular chassis can easily be determined. An upfitter harness provides eight programmable outputs, using the UIM Programming Utility. The Programmer allows logical combinations (AND, OR, =, >, <) of various vehicle data to control an output. 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). This could drive a high-temperature dash indicator. Another output could be programmed to drive a warning buzzer/lamp when the vehicle speed exceeds some limit, such as 70mph. Electric doors can be disabled unless certain safety conditions are met and so on. A clutch pump may be disabled if RPM rises too high. There are also

two general purpose inputs that can be used as part of the programmable logic. A LIN communication feature is available on equipped modules marked "UIMLxxx-B".

UIM Programming Utility Instructions
(used for configuring the 8 programmable outputs)

Requirements

- Java Runtime Environment must be installed on your computer prior to running this utility. Most PCs already have Java installed. The most recent version can be obtained for free at **http://java.com/en/download/manual.jsp**.
- The UIM Programming Utility. This is a free Intermotive software program that can be downloaded onto your PC. The files are available from the download page at www.intermotive.net. It is recommended that an "InterMotive" folder be created to store the files.
- USB to Serial cable (part# S-H37A1) is included in an "A-IPU" kit and is a one-time purchase. This kit is required for all programming and is recommended to be kept in a central location.

Computer Installation

Ensure the proper driver is installed for the USB to Serial download cable. This driver can be found at:
http://www.ftdichip.com/Drivers/VCP.htm.

1. To install the programming utility, unzip the UIM Programming Utility folder to your local hard drive.
2. Create a shortcut on the desktop if necessary, but do not separate the UIM Programming Utility.exe file from the rxtxSerial.dll file!
3. Plug in the USB cable (Part# S-Hh37A1) prior to starting the application.
4. Double-click the UIM Programming Utility.exe file to launch.
5. This screen will come up.
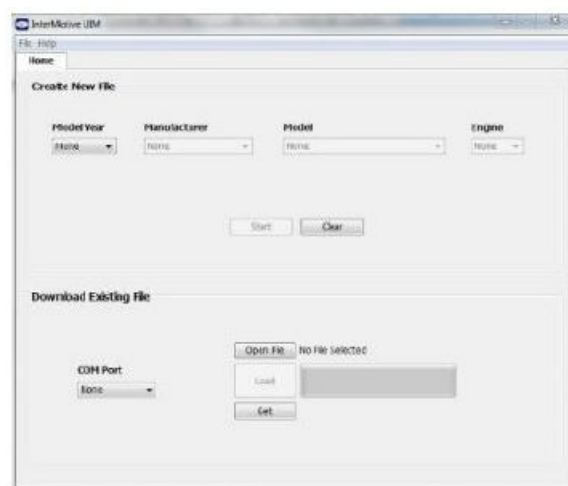
If the program does not launch, close all applications and reinstall the Java Runtime Environment and the UIM Programming Utility.

Setting the UIM Programming Utility Pin Configurations
To view a video on tips for configuring the module, go to **www.Intermotive.net**.

1. Under the "vehicle" tab, select the model year, manufacturer, model, and engine size of the vehicle the UIM will be installed in.
2. Click the "Start" button.
3. This screen will come up.
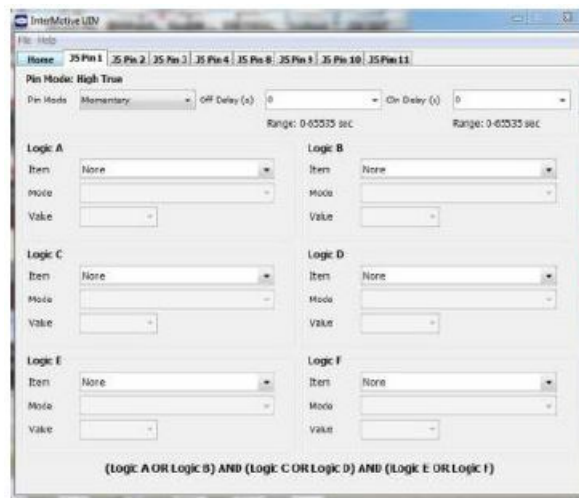
4. Configure each pin as desired. See the following page for more information. Press the Enter button after each entry.

   Note: CTO (Clean Tach Out) can only be programmed on pin 11. 2.2 Hz per MPH can only be programmed on pin 9.
5. Select "Save Configuration" under the "File" tab.
6. Enter a configuration name (Max. 16 characters) and click "OK".
7. Review the configuration summary and click "Save Configuration".
8. Enter a filename and choose a location that will be easy to locate.
9. Under the "File" menu, select "Save Configuration Summary".
10. Double-click the .imc file previously configured.
11. Enter the Company Name, phone number, and notes and click the 'OK' button. Note: Enter the vehicle model year, model, and engine in the notes section.
12. Enter a file name and click the 'Save' button.
13. Click the 'Open File' button.
14. Right-click on summary and select 'Print'.
15. Cut the printed label and place it in the bag attached to the 12-pin connector.

Pin Mode Settings — UIM Application Software
The outputs can be set for various modes, as described below. Momentary mode is the most commonly used, where an output is 'active' only when the proper conditions have been met.
Momentary: Output follows the condition set but with a turn-on delay, and a turn-off delay. Setting 'On Delay' and 'Off Delay' to zero causes the output pin to simply "follow" the condition set being true (ON) and false (OFF).

Latching: This mode will latch an output pin ON, starting 'On Delay' seconds after the conditions are met, and will keep it ON even after the conditions are no longer true. It will then latch the output OFF, following 'Off Delay' seconds after the conditions are met again. Think of it as toggle on—toggle off. The simplest use would be when using a momentary button as the only input condition and setting the Delays to zero. Thus a load could be turned on by pushing a momentary button and turned back off by pushing the button a second time.

Time Hold: The output pin goes ON after the conditions become true, and stays ON for the selected 'On Time', regardless of the conditions. Time is Not Applicable.

Time Delay: Output is turned ON after the selected 'delay' time after the conditions are met. It stays on for selected 'On time', regardless of input conditions.

Flashing—Momentary: Used for creating a flashing output. When conditions are met, output flashes. When conditions are no longer met, flashing stops. Flashing ON and OFF times (duty cycle) are controlled by entering the following values.


Flashing – Latching: Same as above, except flashing will continue after conditions are no longer true, and will stop when conditions become true again—toggle ON, toggle OFF. Duty cycle is controlled by the ON and OFF times.

Desktop Programming the UIM
The InterMotive "A-IPU" kit is sold separately and allows programming the UIM on your desktop. It consists of a 12VDC wall adapter and download cable and works with the UIM programming software utility.
Note: Do not have the UIM Programming Utility opened until instructed to do so.
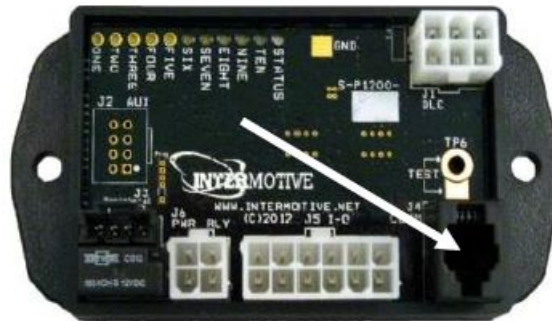
J4 COMM Port

1. Plug the Module Desktop Power/Ground Supply inverter into a 120V AC power source.
2. Locate the 6-pin Female connector on the module but do not connect the AC adapter to the UIM module until indicated in the following steps.
3. Plug the phone jack end of the download cable into the J4 COMM port of the UIM module and the USB end into your PC.

Loading Configuration file into the UIM

Open the UIM Programming Utility. Under the "Download" tab on the UIM Programming Utility, choose the COM Port the USB cable is connected to.

Note: This can be determined on Windows 7 by right-clicking on 'Computer' and selecting 'Properties.' From this window click on 'Device Manager.' In the Device Manager window, expand the 'Ports' menu and the download cable will display as 'USB Serial Port (COM#).'

Click the 'Open File' button.

1. Open the UIM*.ims or configuration file to load on the UIMxxx-B module. (This file must already be loaded on the computer).
2. Click the load button on the computer screen. "Waiting" will come up next to the progress bar. This means the program is waiting for the download cable to be plugged into the UIM module.
3. Plug in the 6 pin connector of the power adapter into the UIMxxx-B module. The progress bar on the computer screen will display status as the configuration loads and takes approximately 2 seconds or less. Configuration is loaded once the screen says "DONE" and programming is complete.
4. To verify that the correct data was loaded into the module, disconnect the 6 pin connector from the module and press the 'Get' button on the screen. Plug in the 6 pin connector and the information will be displayed.
   To program another module with the same configuration file, start with step 2.

Installation Instructions

Disconnect the vehicle battery before proceeding with the 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.

UIM Module
Remove the lower dash panel below the steering column area and find a suitable location to mount the UIM 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 UIM Data Link harnesses vary from model to model, depending on which chassis the UIM is being installed.

1. Locate the vehicle's 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 UIM Data Link harness red connector. Ensure the connection is fully seated and secure with the supplied wire tie.
3. Mount the pass-through connector from the UIM Data Link Harness in the former location of the vehicle's OBDII connector.
4. Secure the UIM 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 UIM module. This will be done at a later step.
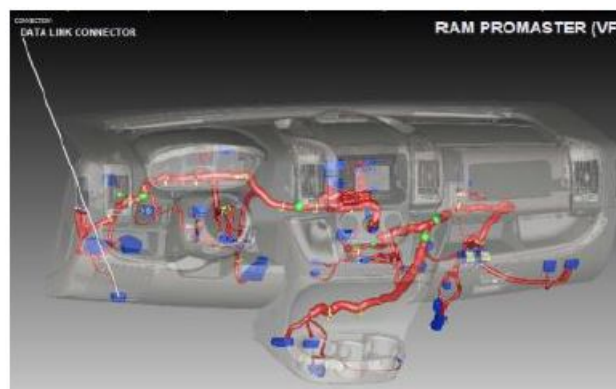
Gateway Plug and Play Harness (B-UIM502-B)

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 the Gateway harness.
5. Secure the BOM Gateway harness so that it does not hang below the lower dash panel.
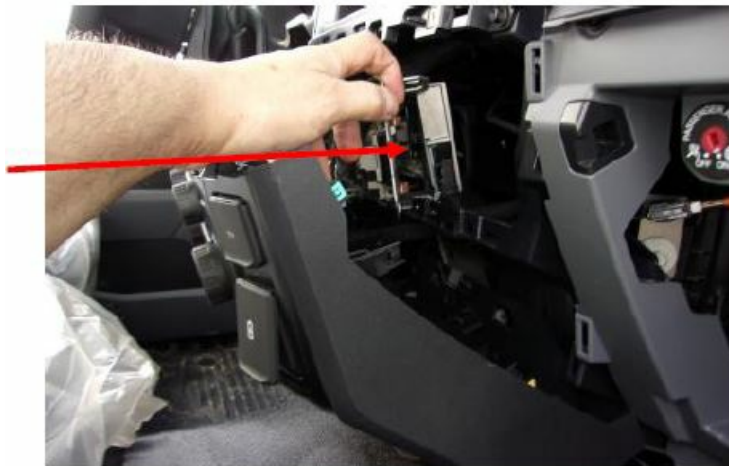
Gateway Module
Gateway Harness
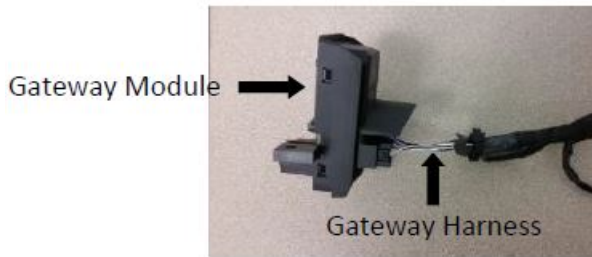
InterMotive Plug and Play Gateway Harness

Data Link Harness (H-UIM502-B)

Data Link Harness Installation
The 2023 Ford Super Duty has an OEM Gateway module located on the other side of the SYNC 4 module, which is behind the center console. Follow the steps below to access it:

1. Remove the RH instrument panel trim using a trim removal tool. The trim starts at the ignition switch and ends at the silver clip. The glove compartment can be opened to better access the back side of the trim.

2. Using a trim removal tool, pop out the upper right corner of the lower steering column close-out panel. Position it away from the centre stack.
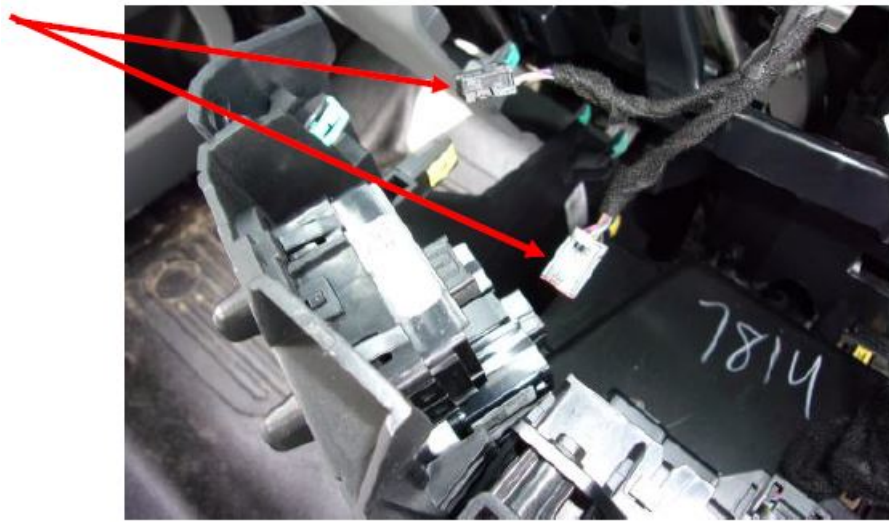
3. Remove the 4 bolts (Size: 7mm) located at the top of the centre stack.

4. Release the clips on both sides of the centre stack using a trim removal tool. Position the centre stack away from the mounting points.

5. Disconnect the 2 connectors behind the centre stack.

6. Detach the push-mount cable tie from the bracket and position the cable out of the way.
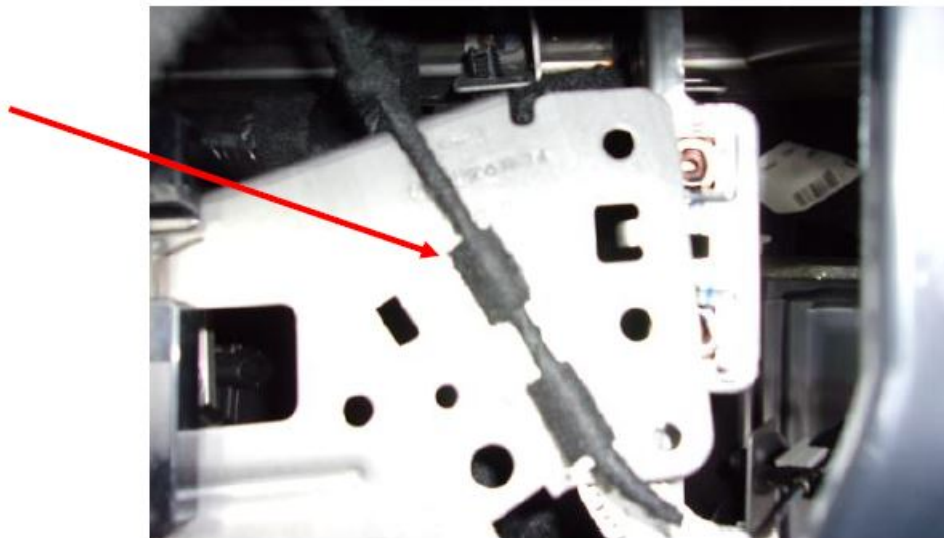
7. Remove the 4 bolts (Size: 7mm) and position the bracket away from the mounting points to access the Gateway Module. The Gateway Module is located behind the bracket.

8. Disconnect the Gateway Connector by pressing down on the tab and pulling the connector away from the module.

9. Install the Datalink Harness between the Gateway Module and the disconnected Gateway Connector.

10. Run the 6-pin connector of the datalink harness to the mounting location of the UIM502 module
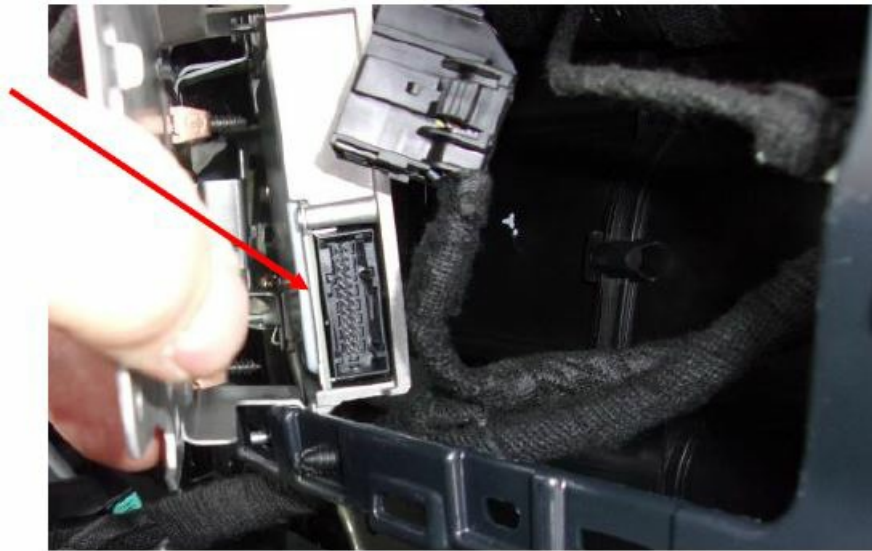11. After the Datalink Harness is installed, reverse the installation procedure to reassemble.

Plug and Play Harness (E-UIM750-B)

1. Locate the vehicle OBDII Data Link Connector. It's a White 16-pin connector around the area above the driver's 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 UIM kit includes a Data Link harness (see picture). Plug the red connector from the UIM 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 UIM 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-UIM750-B module.

5. Locate the STAR connector bank in the location shown (next to the Park Brake).
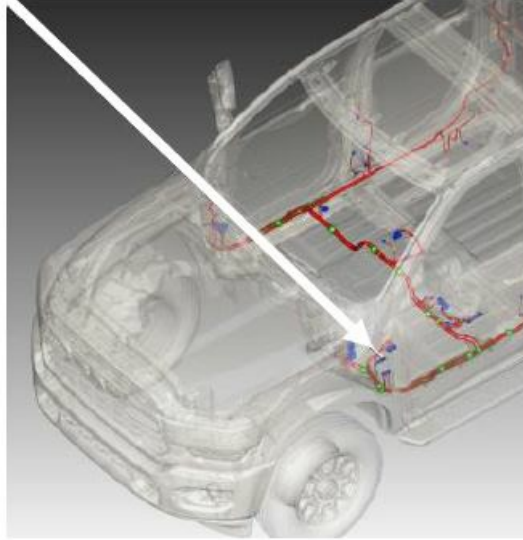
6. There are multiple banks of Star connectors. One of the banks has a White base and the other has a Black base.

7. Plug the 2-pin E-UIM750-B connector with Yellow and Brown wires into one of the unused ports with the Black base.

8. Plug the 2-pin E-UIM750-B connector with Green and Blue wires into one of the unused ports with the White base.
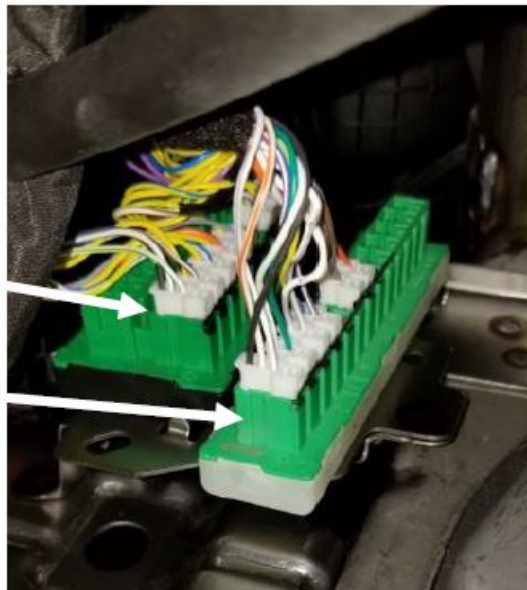
Data Link Harness (C-UIM760-B)

The 2018-present Durango has a "Gateway" module located in the underdash in the front passenger area (see Figure 1). The C-UIM data link harnesses T's into an 8-pin and 12-pin connector on this gateway module.
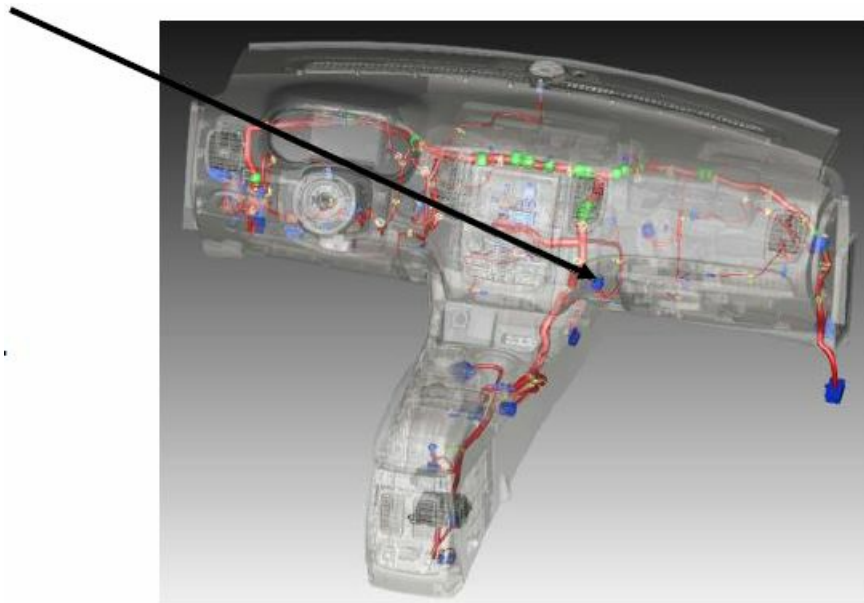
Figure 1

Follow the steps below to access the Gateway module.

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

Figure 2

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-UIM760-B Data Link harness. Plug the OEM 12-pin and 8-pin connectors into the mating connectors on the C-UIM760-B Data Link connector.
5. Plug the free end of the Data Link harness into the mating 6-pin connector on the C-UIM760-B module.

Data Link Harness (C-UIM701-B)

1. Remove the lower dash panel below the steering column.
2. Locate the vehicle's Gateway module located next to the BCM and above the Parking Brake.
3. 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-UIM701-B Data Link harness. Plug the OEM 12-pin and 8-pin connectors into the mating connectors on the C-UIM701-B Data Link harness.
4. Plug the free end of the Data Link harness into the mating 6-pin connector on the C-UIM701-B module.
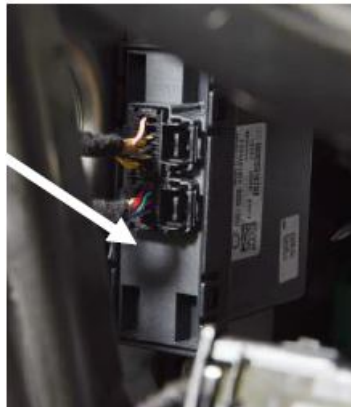
Data Link Harness (C-UIM750-B)
The 2018 Ram 1500 has a "Gateway" module located behind the OEM Radio. The C-UIM data link harnesses T's into an 8-pin and 12-pin connector on this gateway module.

Follow the steps below to access the Gateway module.

1. Remove the upper (1) centre bezel tray liner.
2. If equipped with the 115 V power outlet (4), remove the lower right (3) centre bezel tray liner.

3. Remove the two fasteners (1) to the upper tray.

4. If equipped with the 115 V power outlet (2), remove the fastener (1) inside the lower right tray above the outlet.

5. Using a trim removal tool, disengage the retainer clips (2) that secure the instrument panel centre bezel to the instrument panel.

6. Disconnect the wire harness connectors (1) and remove the centre bezel from the vehicle.
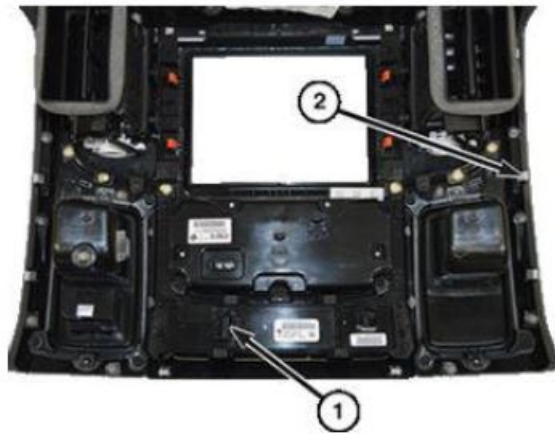
7. Remove the four fasteners (1) securing the Radio Receiver Module (RRM) (2) to the instrument panel.

8. Pull the RRM out far enough to access the back of the RRM.
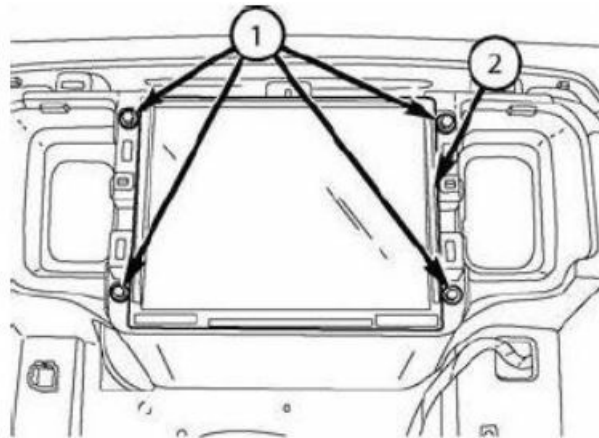
9. Disconnect the antennas (2), and electrical connector (1).

10. If equipped, disconnect the USB connector (3).

11. Remove the RRM from the instrument panel.
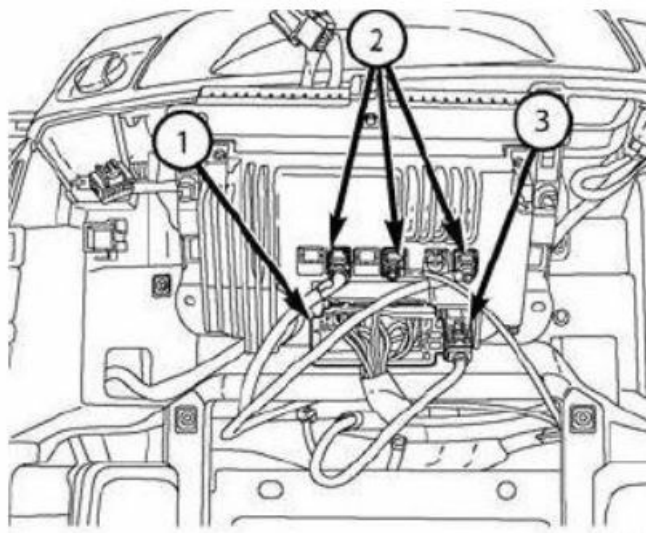
12. Remove the 2 bolts.
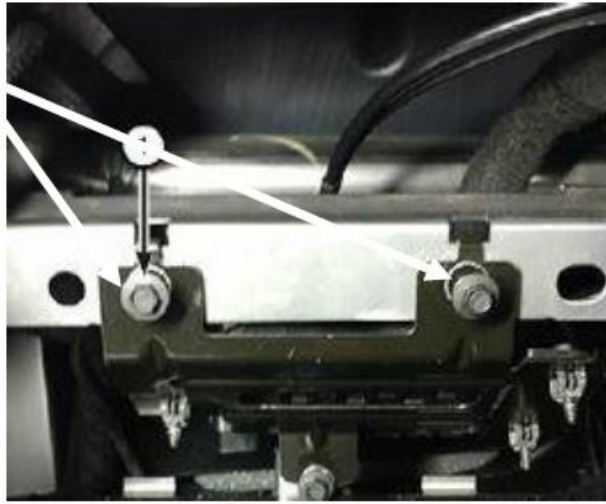
13. Disconnect the Gateway Module wire harness connectors.

14. Remove the Gateway Module from the vehicle.
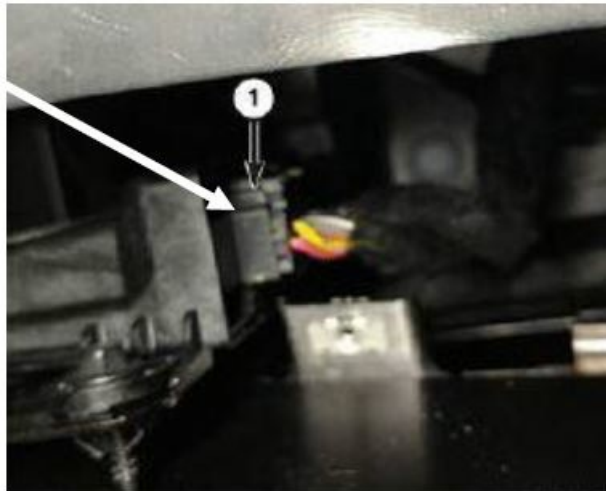
15. Plug in the 12-pin and 8-pin connectors from the Intermotive C-UIM750-B Data Link harness. Plug the OEM 12-pin and 8-pin connectors into the mating connectors on the C-UIM750-B Data Link connector.

16. Plug the free end of the Data Link harness into the mating 6-pin connector on the C-UIM750-B module.

Data Link Harness (G-UIM502-B*) *2021 Ford F-150

1. Remove the upper centre stack bezel using a plastic trim tool. There are 8 clips securing it to the dash.
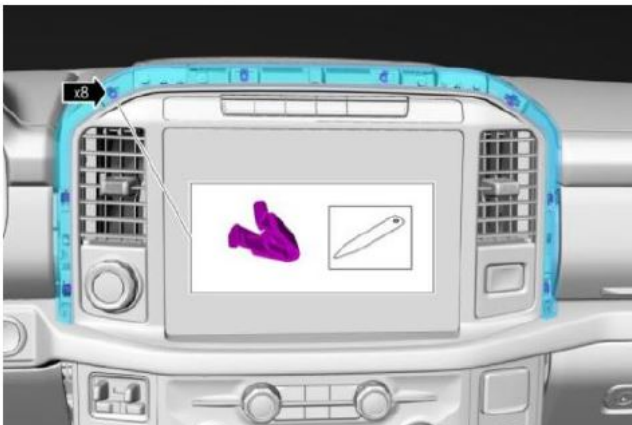
2. Remove the instrument centre trim panel using a plastic trim tool. There are 14 clips security it to the dash.
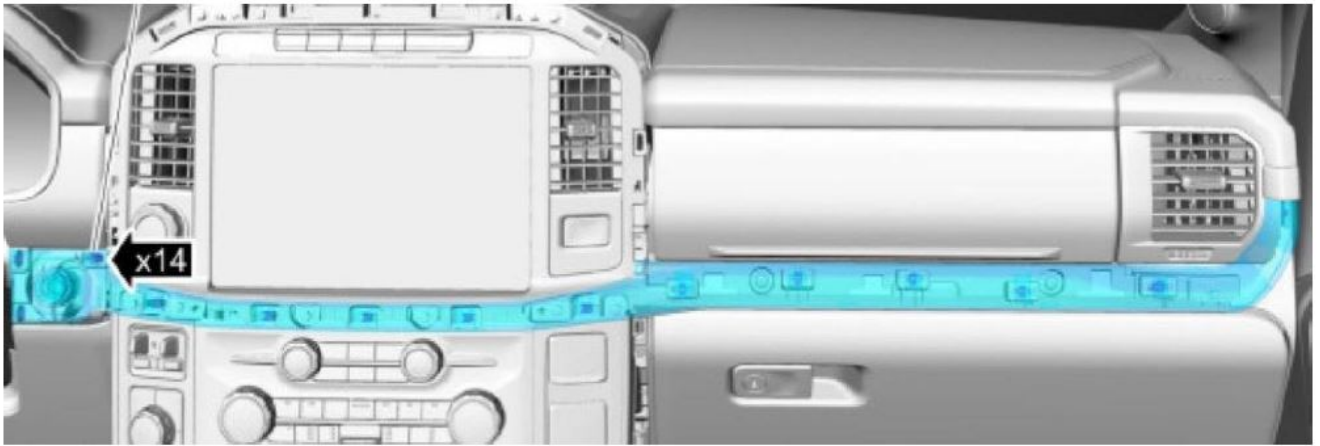
3. Grasp the lower trim panel below the steering column and pull down. Unscrew the 2, 7mm screws and remove them. Remove the remainder of the lower steering column panel using a plastic trim removal tool. There are 7 clips securing it to the dash.

4. Remove the 7 mm screw from the instrument panel lower trim panel.
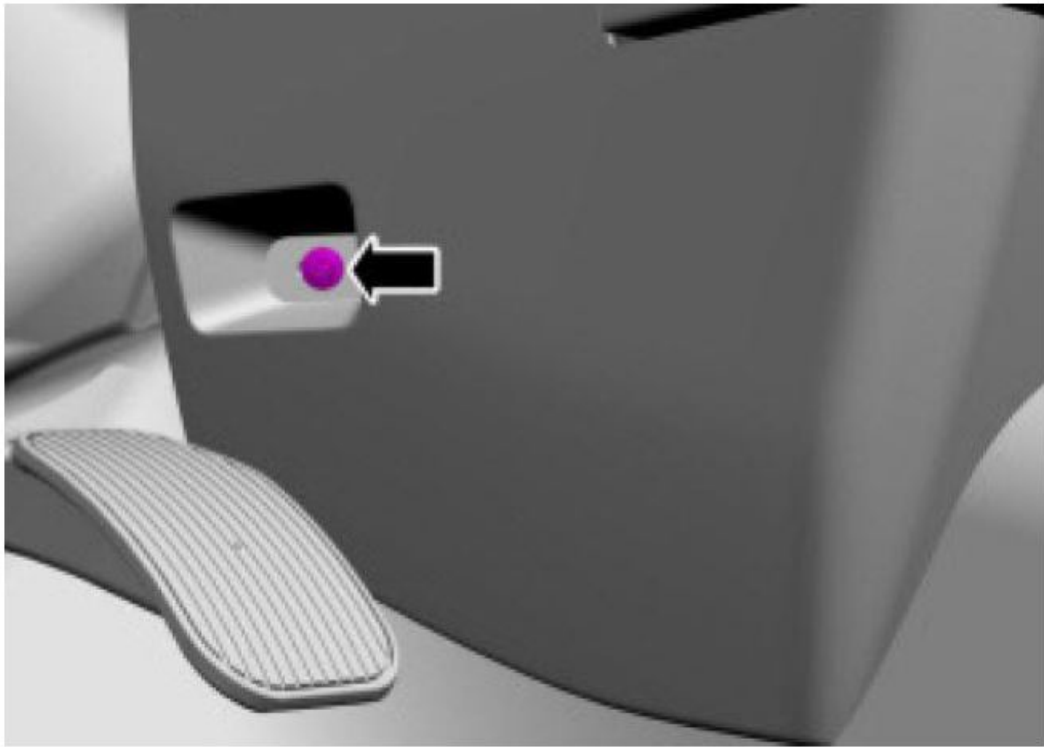
5. Remove the (3) pin-type retainers from the fabric trim panel located below the glovebox and remove the trim panel.
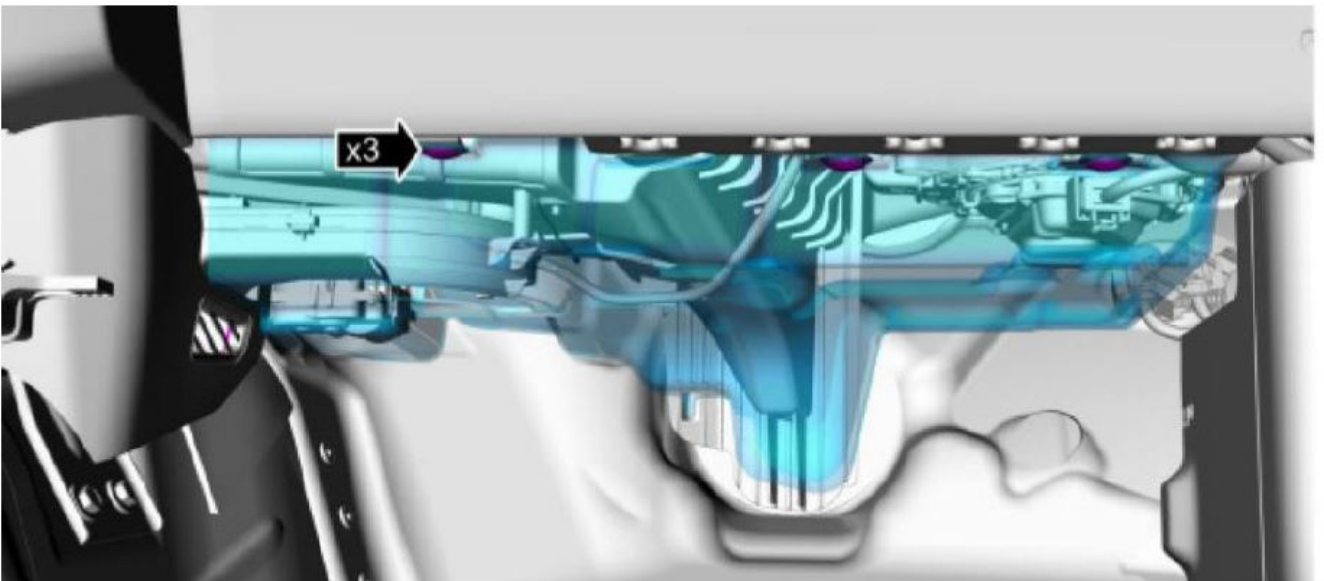
6. Remove the instrument panel lower trim panel using a plastic trim removal tool. There are 6 clips securing it to the dash.

E331478
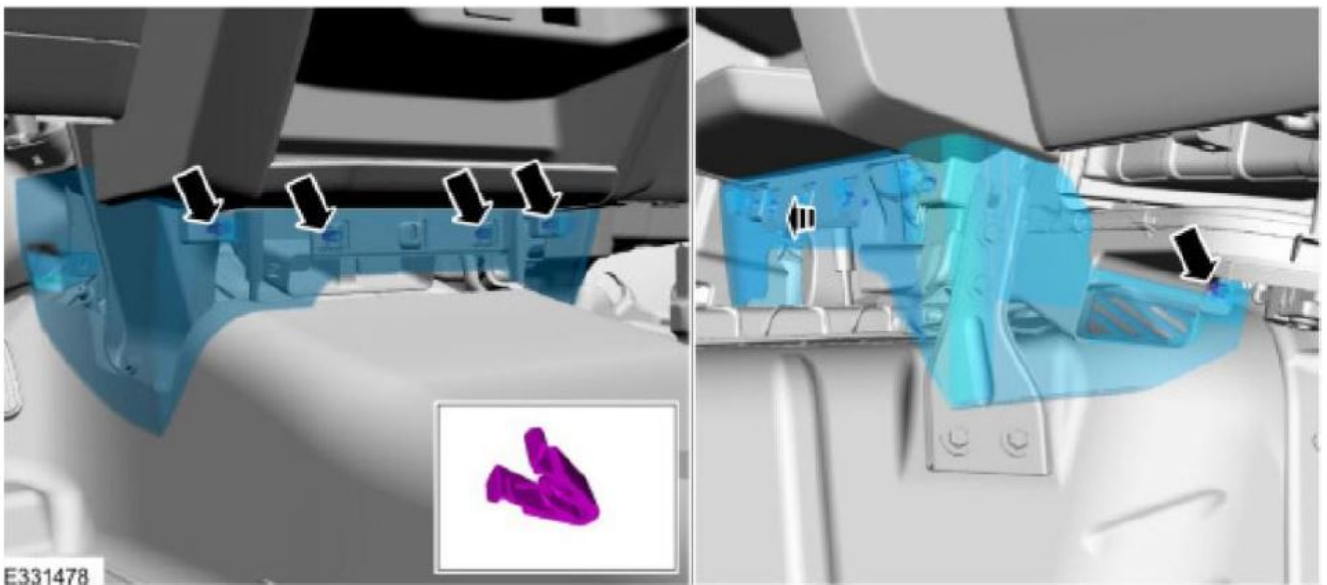
7. Remove the left and right lower centre stack trim panels. They each have 5 clips securing it to the dash.
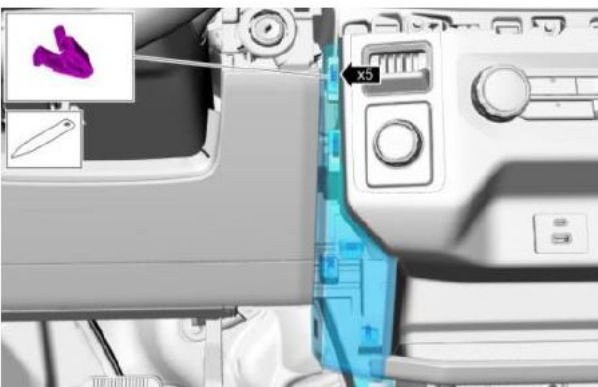
8. Remove the (4) 7 mm screws from the lower centre stack trim panel.

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

10. Grab the centre stack 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.
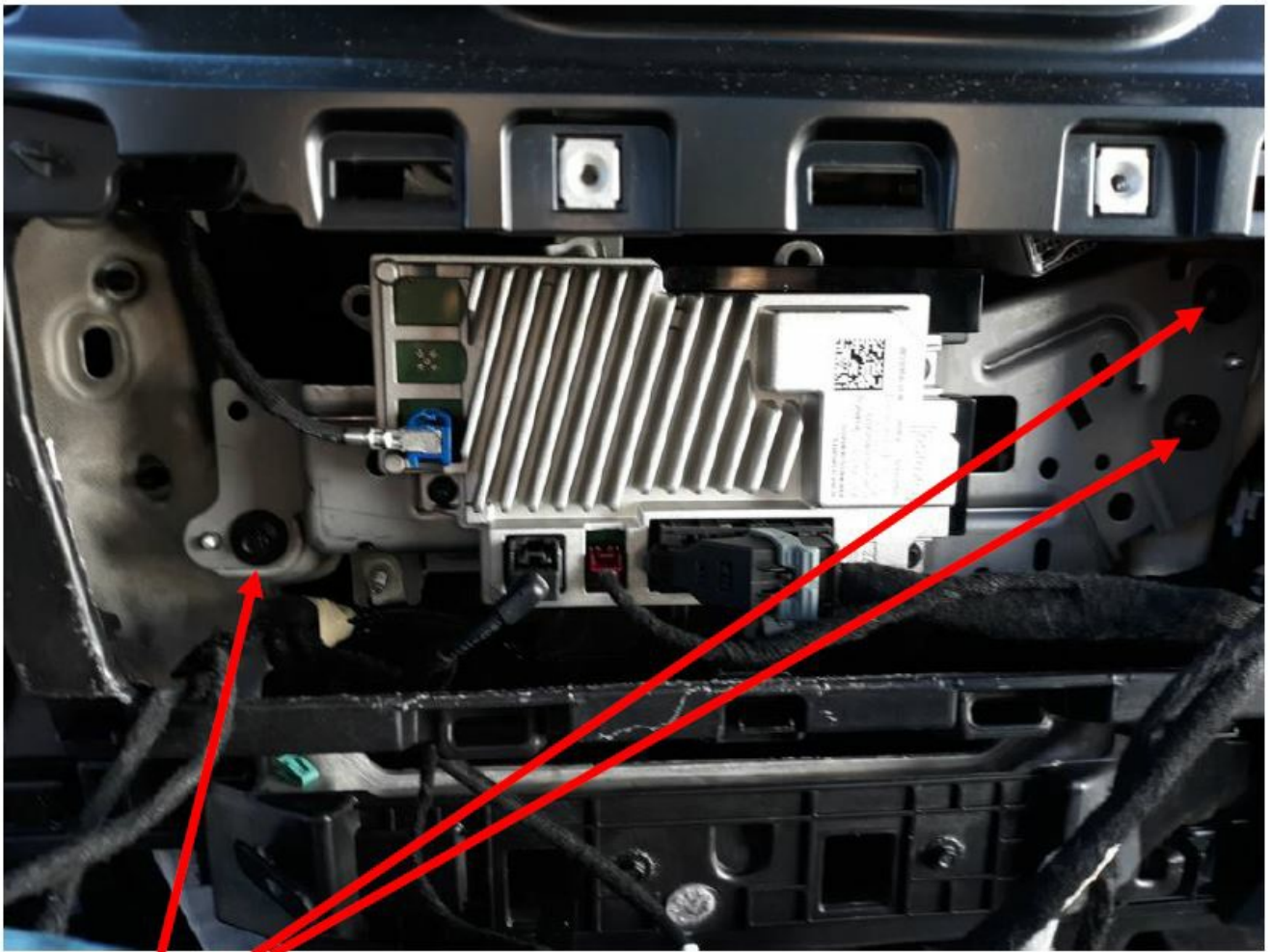
12. Remove the (3) 8 mm screws from the module located below the radio.
13. Locate the 26-pin connector and disconnect it from the Gateway Module. Plug the 26-pin connector into the mating connector on the Intermotive harness. Plug the Male connector from the Intermotive harness into the mating connector at the OEM Gateway module.

14. Reverse the instructions to reassemble the vehicle.
15. Plug the free end of the Data Link harness into the mating 6-pin connector on the G-UIM502-B module.

Data Link Harness G-UIM502-B* *2022 Ford Transit

1. Locate the vehicles Gateway Module. It will be mounted behind the glove compartment.
2. Press the tabs inward on the sides of the glove compartment and fully lower it.
3. Remove the 3 nuts securing the Gateway module to the vehicle.
4. Remove the 26-pin connector from the side of the Gateway module and plug into the mating connector on the G-UIM502-B harness.
5. Plug the male 26-pin connector from the G-UIM502-B harness into the Gateway module.
6. Reinstall the Gateway module and the glove compartment.
7. Plug the free end of the Data Link harness into the mating 6-pin connector on the G-UIM502-B module.
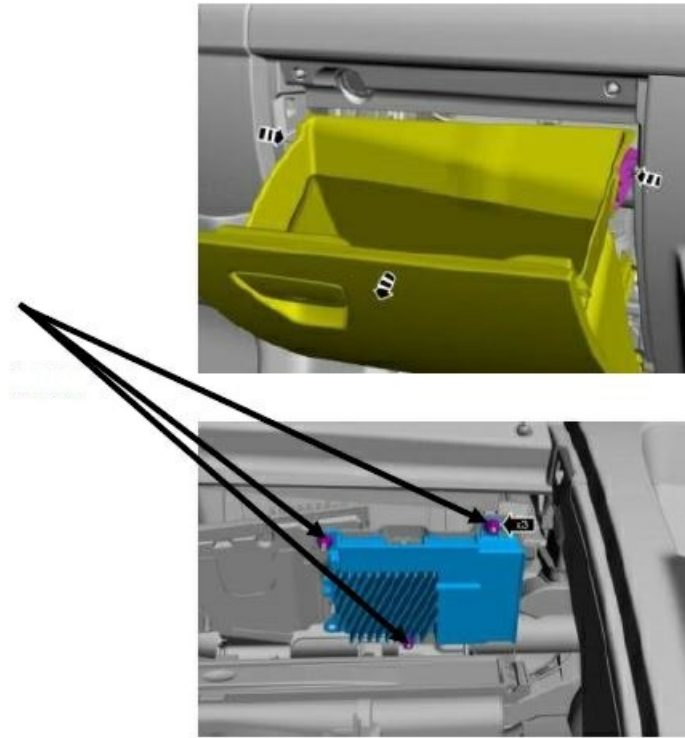
Data Link Harness (G-UIM601-B)

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.

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-UIM601-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 UIM-B module.

Data Link Harness H-UIM601-B

Signal Wire Color 30W OEM Gateway Connection

- Power Red -> X1 Pin 1 Red/Violet
- SW CAN Orange -> X1 Pin 26 Green/white
- CAN H Yellow -> X2 Pin 4 Blue/White
- Ground Black Connect to Ground
- CAN L Brown -> X2 Pin 5 White/Blue

The Black wire must be securely connected to ground, e.g. the blue Body Control Module connector, X2 Pin 2.

Gateway Module X1

Front of Connector

Gateway Module X2
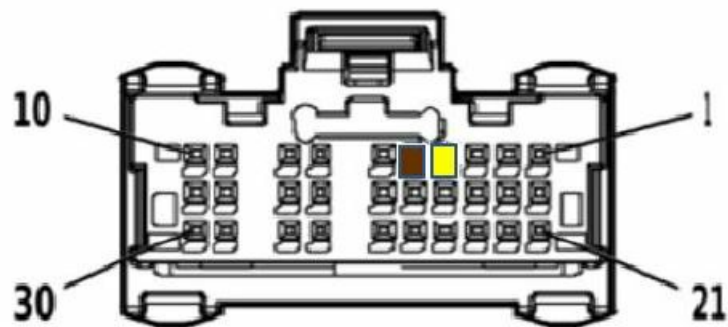
Front of Connector

Data Link Harness C-UIM752-B

The Promaster has an OEM Gateway module located behind the glovebox. Follow the steps below to access it:

1. Open the glovebox door.
2. Locate the 2 release tabs on the inside of the glovebox (one on the left and one on the right) and drop the door into the full down position.
3. Locate the two fasteners securing the glovebox assembly to the vehicle and remove them.
4. Locate the 4 fasteners on the outside of the glovebox assembly and remove them.
5. Remove the glove box assembly.

6. The Gateway module is located behind the glove box assembly as shown in the picture.

7. 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-UIM752-B Data Link harness. Plug the OEM 12-pin and 8-pin connectors into the mating connectors on the C-UIM752-B Data Link harness.

8. Plug the free end of the 6-pin Data Link harness into the mating 6-pin connector on the 4 foot extension harness (S-H94AX-04). Plug the other end of the extension harness into the mating 6-pin connector on the C-UIM752-B module.
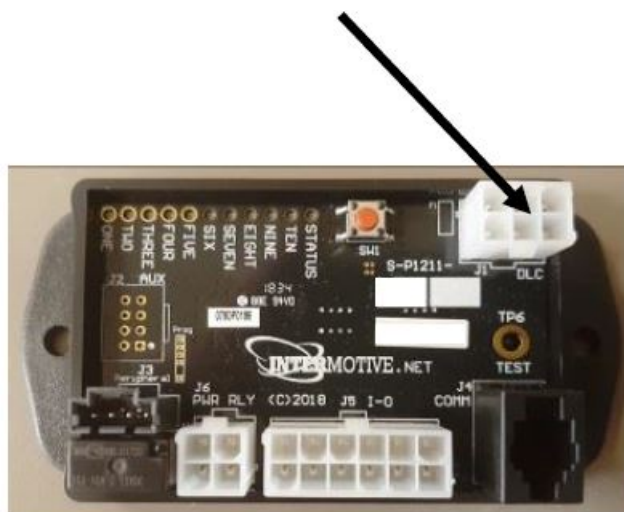
12-Pin UIM Connector Pin-Out Definition
This connector contains the UIM's 8 output pins. Each output is rated at 1/2A and is intended to drive relay coils or other low current loads. Note that Pin 1 of the eight outputs is active high (12V) while the rest are active low (ground). Note: when driving relays, a diode-protected type must be used. InterMotive recommends DigiKey

#PB682-ND Relay.

The 8 outputs are defined as follows:

- Pin #1 (Purple wire) Configurable Output, Active High*
- Pin #2 (Green wire) Configurable Output, Active Low
- Pin #3 (White wire) Configurable Output, Active Low
- Pin #4 (Gray wire) Configurable Output, Active Low
- Pins #5-6 are no-connects
- Pin #7 (Red wire) fixed jumper to pin 12
- Pin #8 (Brown wire) Configurable Output, Active Low
- Pin #9 (Orange wire) Configurable Output, Active Low
- Pin #10 (Blue wire) Configurable Output, Active Low
- Pin #11 (Yellow wire) Configurable Output, Active Low
- Pin #12 (Red wire) fixed jumper to pin 7

12 Pin I/O

12	11	10	9	8	7
6	5	4	3	2	1
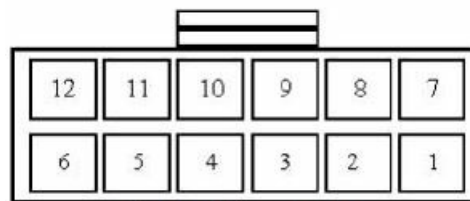
Back of Connector

Connect the desired outputs to vehicle equipment as needed. Tape up unused leads. When connecting to relays, use relays with appropriate kick-back suppression, such as Digikey #PB682-ND. Unsuppressed relays will induce very high voltage spikes throughout modern vehicles sensitive computer electronics and should not be used, per Ford, GM, SAE, etc.

The default configuration for the 8 outputs are as follows:

- Pin #1 (Purple wire) Trans Range=Reverse
- Pin #2 (Green wire) Vehicle Speed >65
- Pin #3 (White wire) Engine Coolant Temp>230
- Pin #4 (Gray wire) Service Brake = Applied
- Pin #8 (Brown wire) Engine Running = True
- Pin #9 (Orange wire) VSS — 2.2Hz/MPH
- Pin #10 (Blue wire) Trans Range = Park
- Pin #11 (Yellow wire) Clean Tach Out, 0-12V pulsed

CTO = ((RPM/2)*#Cyl) = pulses per minute. E.G. 600rpm = 2400 (8 cylinders)

4-Pin Input Connector Definition

This 4 pin connector contains the UIM's 2 discrete wire inputs. These are both active low inputs which means external devices must pull these inputs to ground. These inputs have their own internal pull up resistors so they can be left floating when not used or not active. These inputs can be used as part of the programmable logic to configure the output pins.

- Pin #1 – (Blue/White stripe) Input 1, Active low
- Pin #2 – Not Used
- Pin #3 – (Green/White stripe) Input 2, Active low
- Pin #4 – Not Used

Connect inputs as needed. Tape up unused input wires.

Back of Connector   4 Pin I/O
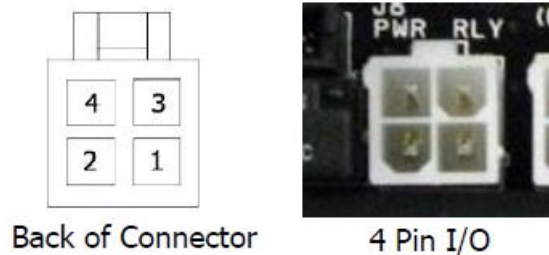
LIN Feature (if equipped)

- Revision 2.1 LIN is a low cost serial communications method used extensively in the automotive industry. UIM modules equipped with the LIN feature will be marked "UIMLxxx-B". This option will allow 3rd party equipment to request vehicle data from the UIM over the LIN communications interface using the provided LIN cable. Example: A police, fire or ambulance lights/siren system could automatically turn on the emergency lights if it sees the vehicle acceleration rate over some threshold (emergency mode). UIM LIN can also be used to provide real-time vehicle data to 3rd party Telematics devices transmitting to a command center.
- To request an Intermotive UIM LIN Protocol description sheet please contact your UIM supplier.

Reconnect the vehicle battery

Initial Installation Power-Up

When the UIM 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.

UIM Module Mounting

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

UIM Post Installation Testing

1. Turn the ignition ON to wake up and initialize the UIM module.
2. With the conditions met, ensure that all desired outputs are responding correctly per their programmed condition set (e.g., default condition of output 5 goes low when engine is running).
   The UIM 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 Red "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).
The on-board LED's will light when a corresponding load is active:

- LED1 = Output #1
- LED2 = Output #2
- LED3 = Output #3
- LED4 = Output #4
- LED5 = Output #5
- LED6 = Output #6
- LED7 = Output #7
- LED8 = Output #8
- LED9 = Input #1
- LED10 = Input #2

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

- LED1 = Transmission
- LED2 = RPM
- LED3 = VSS (vehicle speed sensor)
- LED4 = Park Brake
- LED5 = Service Brake
- LED6 = APP (accelerator pedal position)
- LED7 = Key Position
- LED8 = TFT (transmission fluid temperature)
- LED9 = ECT (engine coolant temperature)
- LED10 = AAT (ambient air temperature)

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

- LED1 = FL (fuel level)
- LED2 = MIL (malfunction indicator lamp)

- LED3 = ABS
- LED4 = AC
- LED5 = Rear Door
- LED6 = Driver Front Door
- LED7 = Passenger Front Door
- LED8 = Driver Rear Door
- LED9 = Passenger Rear Door
- LED10 = Turn Signal

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

- LED1 = ParkLamp
- LED2 = LowBeam
- LED3 = HiBeam
- LED4 = DRL
- LED5 = All Lock
- LED6 = All Unlock
- LED7 = Driver Door Unlock
- LED8 = Driver Seat
- LED9 = Passenger Seat
- LED10 = Driver Belt

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

- LED1 = Passenger Belt
- LED2 = EOP (engine oil pressure)
- LED3 = Mute
- LED4 = Hazard
- LED5 = Light
- LED6 = Brake Torque
- LED7 = Engine Torque
- LED8 = Odometer
- LED9 = Not Used
- LED10 = VIN PnR Active

Output Trouble Codes
If there is an issue with one of the 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 (overcurrent or overvoltage)
- 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)
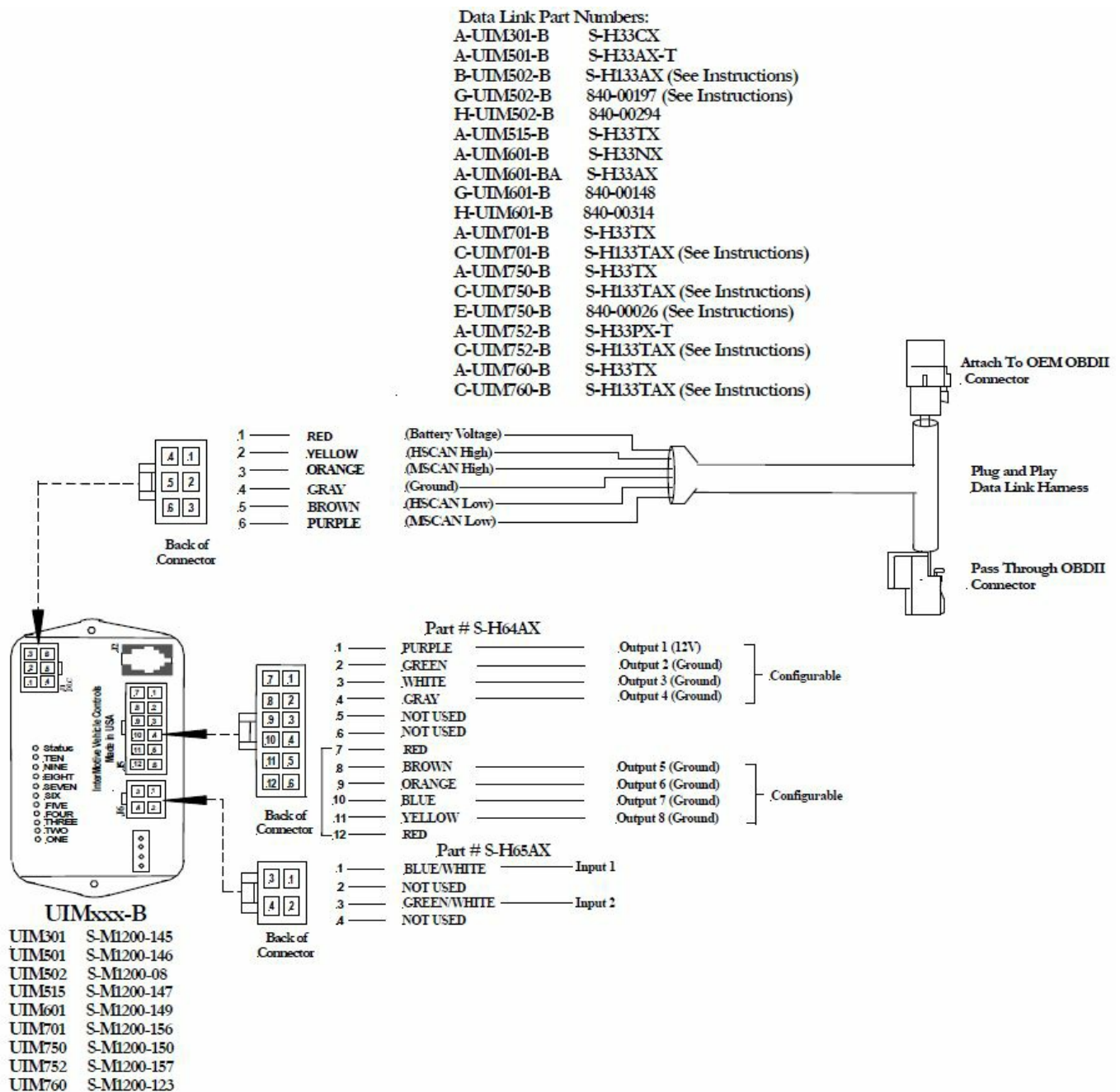
Scrolling LED's may indicate one of the following errors

- 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 UIM for one chassis, but installing it in a different chassis.

UIM Operation

Turning the vehicle ignition ON will wake up and initialize the UIM module. Outputs are controlled based on the module's configuration created using the Intermotive UIM Programming Utility program.

When the key is turned OFF, the UIM module will go into a low power sleep mode and it's outputs will shut off. This may take up to five minutes, 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.

Data Link Part Numbers:

A-UIM301-B	S-H33CX
A-UIM501-B	S-H33AX-T
B-UIM502-B	S-H133AX (See Instructions)
G-UIM502-B	840-00197 (See Instructions)
H-UIM502-B	840-00294
A-UIM515-B	S-H33TX
A-UIM601-B	S-H33NX
A-UIM601-BA	S-H33AX
G-UIM601-B	840-00148
H-UIM601-B	840-00314
A-UIM701-B	S-H33TX
C-UIM701-B	S-H133TAX (See Instructions)
A-UIM750-B	S-H33TX
C-UIM750-B	S-H133TAX (See Instructions)
E-UIM750-B	840-00026 (See Instructions)
A-UIM752-B	S-H33PX-T
C-UIM752-B	S-H133TAX (See Instructions)
A-UIM760-B	S-H33TX
C-UIM760-B	S-H133TAX (See Instructions)

Attach To OEM OBDII Connector

Plug and Play Data Link Harness

Pass Through OBDII Connector

Back of Connector

1	RED	(Battery Voltage)
2	YELLOW	(HSCAN High)
3	ORANGE	(MSCAN High)
4	GRAY	(Ground)
5	BROWN	(HSCAN Low)
6	PURPLE	(MSCAN Low)

Part # S-H64AX

1	PURPLE	Output 1 (12V)
2	GREEN	Output 2 (Ground)
3	WHITE	Output 3 (Ground)
4	GRAY	Output 4 (Ground)
5	NOT USED	
6	NOT USED	
7	RED	
8	BROWN	Output 5 (Ground)
9	ORANGE	Output 6 (Ground)
10	BLUE	Output 7 (Ground)
11	YELLOW	Output 8 (Ground)
12	RED	

Configurable

Part # S-H65AX

1	BLUE/WHITE	Input 1
2	NOT USED	
3	GREEN/WHITE	Input 2
4	NOT USED	

Back of Connector

Intermotive Vehicle Control Made in USA

Status
TEN
NINE
EIGHT
SEVEN
SIX
FIVE
FOUR
THREE
TWO
ONE

UIMxxx-B

UIM301	S-M1200-145
UIM501	S-M1200-146
UIM502	S-M1200-08
UIM515	S-M1200-147
UIM601	S-M1200-149
UIM701	S-M1200-156
UIM750	S-M1200-150
UIM752	S-M1200-157
UIM760	S-M1200-123

Data Link Part Numbers:

UIM501-B	S-H33AX-T
UIM502-B	S-H133AX (See Instructions)
UIM515-B	S-H33TX
UIM601-B	S-H33NX
UIM601-BA	S-H33AX
UIM701-B	S-H33TX
UIM750-B	S-H33TX
C-UIM750-B	S-H133TAX (See Instructions)

Attach To OEM OBDII Connector

Plug and Play Data Link Harness

Pass Through OBDII Connector

Back of Connector

1	RED	(Battery Voltage)
2	YELLOW	(HSCAN High)
3	ORANGE	(MSCAN High)
4	GRAY	(Ground)
5	BROWN	(HSCAN Low)
6	PURPLE	(MSCAN Low)

InterMotive Vehicle Controls
Made in USA

Status
TEN
NINE
EIGHT
SEVEN
SIX
FIVE
FOUR
THREE
TWO
ONE

UIMLxxx-B

UIM501	S-M1200-108
UIM502	S-M1200-103
UIM515	S-M1200-107
UIM601	S-M1200-106
UIM701	S-M1200-105
UIM750	S-M1200-104

Part # S-H64AX

1	PURPLE	Output 1 (12V)
2	GREEN	Output 2 (Ground)
3	WHITE	Output 3 (Ground)
4	GRAY	Output 4 (Ground)
5	NOT USED	
6	NOT USED	
7	RED	
8	BROWN	Output 5 (Ground)
9	ORANGE	Output 6 (Ground)
10	BLUE	Output 7 (Ground)
11	YELLOW	Output 8 (Ground)
12	RED	

Configurable (Output 1–4)
Configurable (Output 5–8)

Back of Connector

Part # S-H65AX

1	BLUE/WHITE	Input 1
2	NOT USED	
3	GREEN/WHITE	Input 2
4	NOT USED	

Back of Connector

Part # S-H32JX

1	BLACK	GROUND
2	NOT USED	
3	WHITE	LIN
4	NOT USED	

Back of Connector

CONTACT

- Submit product registration at **www.intermotive.net**.
- If the UIM 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.

InterMotive Inc

- 12840 Earhart Ave
- Auburn, CA 95602
- Phone: (530) 823-1048
- Fax: (530) 823-1516
- **www.intermotive.net**.
- **products@intermotive.net**.
- UIM-B-102323-INS

Documents / Resources

INTERMOTIVE A-UIM301-B Upfitter Interface Module [pdf] User Guide
A-UIM301-B Upfitter Interface Module, A-UIM301-B, Upfitter Interface Module, Interface Module

References

- **java.com/en/download/manual.jsp**
- **VCP Drivers - FTDI**
- **User Manual**