CODE 3

Installation and Operation Instructions
MATRIX® Compatible OBDII Interface
Ford 16+ PIU Gateway

IMPORTANT! Read all instructions before installing and using. Installer: This manual must be delivered to the end user.

⚠ **WARNING!**
Failure to install or use this product according to manufacturer's recommendations may result in property damage, serious injury, and/or death to those you are seeking to protect!

Do not install and/or operate this safety product unless you have read and understood the safety information contained in this manual.

1. Proper installation combined with operator training in the use, care, and maintenance of emergency warning devices are essential to ensure the safety of emergency personnel and the public.
2. Emergency warning devices often require high electrical voltages and/or currents. Exercise caution when working with live electrical connections.
3. This product must be properly grounded. Inadequate grounding and/or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.
4. Proper placement and installation is vital to the performance of this warning device. Install this product so that output performance of the system is maximized and the controls are placed within convenient reach of the operator so that they can operate the system without losing eye contact with the roadway.
5. It is the responsibility of the vehicle operator to ensure daily that all features of this product work correctly. In use, the vehicle operator should ensure the projection of the warning signal is not blocked by vehicle components (i.e., open trunks or compartment doors), people, vehicles or other obstructions.
6. The use of this or any other warning device does not ensure all drivers can or will observe or react to an emergency warning signal. Never take the right-of-way for granted. It is the vehicle operator's responsibility to be sure they can proceed safely before entering an intersection, drive against traffic, respond at a high rate of speed, or walk on or around traffic lanes.
7. This equipment is intended for use by authorized personnel only. The user is responsible for understanding and obeying all laws regarding emergency warning devices. Therefore, the user should check all applicable city, state, and federal laws and regulations. The manufacturer assumes no liability for any loss resulting from the use of this warning device.

Unpacking and Pre-Installation:

Carefully remove the product from its packaging. Examine the unit for transit damage and locate all parts as detailed in the Kit Contents table below. If damage is found or parts are missing, contact the transit company or Code 3 customer support. Do not use damaged or broken parts.

This device is a Matrix® compatible interface between the OEM CAN network and the Code 3 Matrix® system. It allows the user to configure system operations that respond to OEM data.

Kit Contents Table
OBDII Device – Matrix® Compatible
OBDII Harness

Installation and Mounting:

Before proceeding with installation, plan all wiring and cable routing.

> ⚠️ **CAUTION!**
> **When drilling into any vehicle surface, make sure that the area is free from any electrical wires, fuel lines, vehicle upholstery, etc. that could be damaged.**
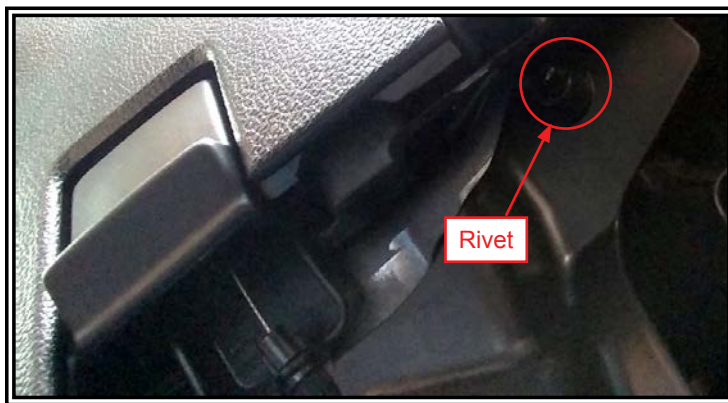
Step 1. Locate the Ford Gateway module under the steering wheel as shown in FIGURE 1.

Step 2. Pull the OEM panel under the steering wheel down and away from the push in rivet as shown in FIGURE 2.
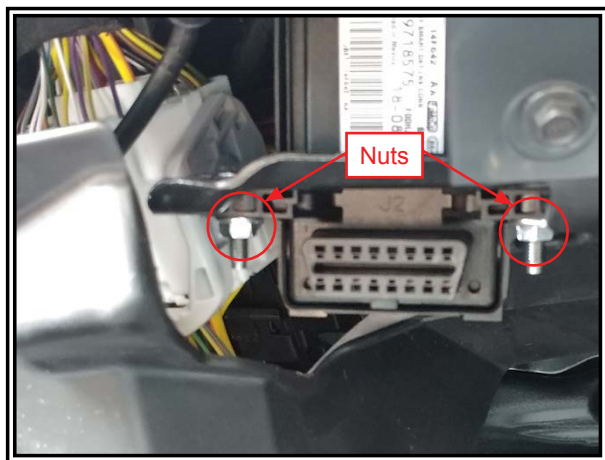
Step 3. Record the OEM torque value applied to existing hardware that holds the Gateway module in place (this will be needed in Step 7). Remove the two (2) 8mm nuts shown in FIGURE 3.

Figure 1

Figure 2

Figure 3

Step 4. Pull the Gateway Module out from under the dash. Disconnect the OEM connector from the back as shown in FIGURE 4.
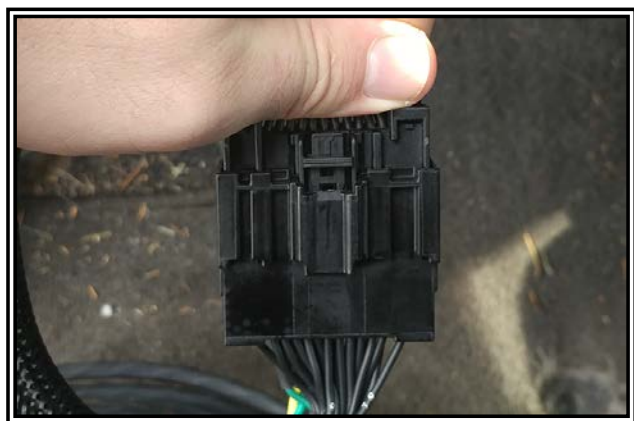
Note: The vehicle's dash will not operate while the Gateway module is removed.

Step 5. Connect the OEM connector from Step 5 to the open port on the OBDII Harness as shown in FIGURE 5.

Step 6. Connect the OBDII Harness connector that matches the OEM connector from Step 6 into the back of the Gateway module as shown in FIGURE 6.
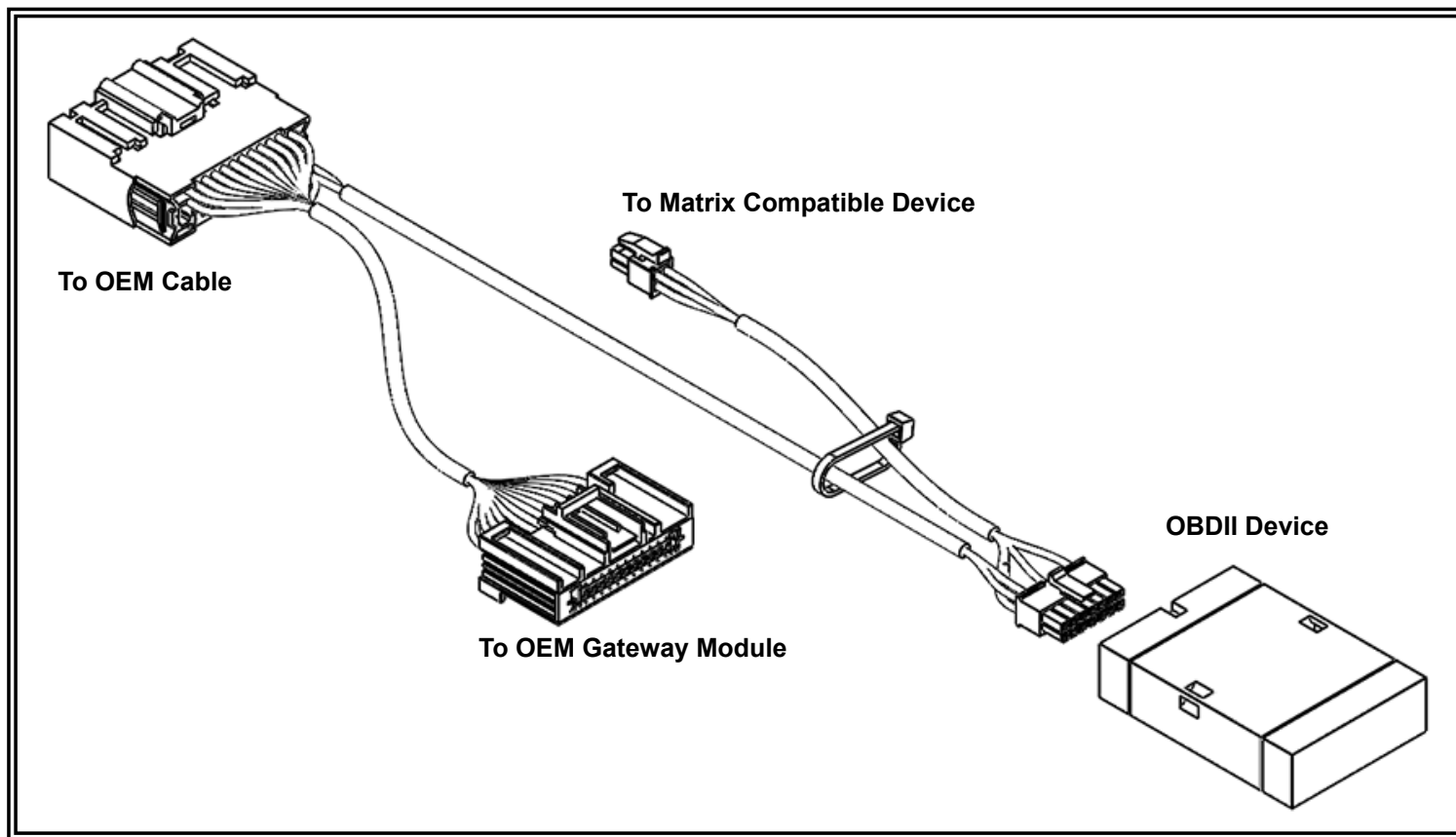

Figure 4

Figure 5

Figure 6

Step 7. Tuck and secure the Gateway Adapter and any excess cabling under the dash up and away from vehicle controls (e.g. pedals). The remaining, unused OBDII Harness connectors will be routed back to the OBDII Device and another Matrix® compatible device. See FIGURE 7 for further details.

Step 8. Place Gateway module back into position and secure with the two (2) nuts removed in Step 3. Torque to original OEM torque value recorded from Step 3.

Step 9. Replace the OEM panel under the steering wheel.

Warning: Ensure that the vehicle dash resumes normal operations once the Gateway module has been reinstalled in the OEM location. Do not attempt to operate vehicle before checking dash operation.

To Matrix Compatible Device

To OEM Cable

OBDII Device

To OEM Gateway Module

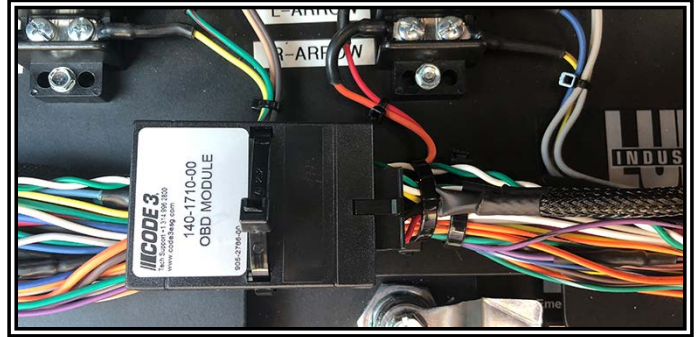**Figure 7**

Wiring Instructions:

> **Notes:**
> 1. Larger wires and tight connections will provide longer service life for components. For high current wires it is highly recommended that terminal blocks or soldered connections be used with shrink tubing to protect the connections. Do not use insulation displacement connectors (e.g., 3M Scotchlock type connectors).
> 2. Route wiring using grommets and sealant when passing through compartment walls. Minimize the number of splices to reduce voltage drop. All wiring should conform to the minimum wire size and other recommendations of the manufacturer and be protected from moving parts and hot surfaces. Looms, grommets, cable ties, and similar installation hardware should be used to anchor and protect all wiring.
> 3. Fuses or circuit breakers should be located as close to the power takeoff points as possible and properly sized to protect the wiring and devices.
> 4. Particular attention should be paid to the location and method of making electrical connections and splices to protect these points from corrosion and loss of conductivity.
> 5. Ground termination should only be made to substantial chassis components, preferably directly to the vehicle battery.
> 6. Circuit breakers are very sensitive to high temperatures and will "false trip" when mounted in hot environments or operated close to their capacity.

Caution: Disconnect the battery before wiring up the product to prevent accidental shorting, arcing, and/or electrical shock.

Step 1. Route the remaining, unused OBDII Harness connectors to the location where the OBDII Device will be mounted. The OBDII Device must be mounted near another Matrix® compatible device with a 4 Pin AUX connector. Confirm that the cable length is sufficient to reach both required locations. See Figure 7 for further details.

Step 2. Connect the OBDII Device to the 14 Pin connector on the OBDII Harness. Secure the device away from moving parts. See Figure 8.

Step 3. Connect the 4 Pin connector of the OBDII Harness to a Matrix® compatible device, which may be the central node of the system (e.g. Serial Interface Box or Z3 Serial Siren).

Figure 8

The OBDII interface is designed to interact with other Matrix® compatible products out of the box using default settings. However, device operation can be further configured using the Matrix® Configurator.

OBD Signal - Default Functions	
Input	**Function**
Driver Side Door Open	Driver Side Cut
Passenger Side Door Open	Passenger Side Cut
Rear Hatch Door Open	Rear Cut
High Beams = ON	Pri: Hyper Yelp 1, Sec: Low Freq Yelp
Left Turn Signal = ON	Arrowstik Left - Building Slow
Right Turn Signal = ON	Arrowstik Right - Building Slow
Brake Pedal Engaged	Rear Steady Red
Key Position = ON	N/A
Transmission Position = PARK	Park Kill
Transmission Position = REVERSE	N/A

Troubleshooting:

All products are thoroughly tested prior to shipment. However, should you encounter a problem during installation or during the life of the product, follow the guide below for troubleshooting and repair information. If the problem cannot be rectified using the solutions given below, additional information may be obtained from the manufacturer - contact details are at the end of this document.

Problem	Possible Cause(s)	Comments / Response
Vehicle dash not functional	Improper connection under dash	Verify that the harness connection is properly seated at the back of the Gateway module
OBDII Device not functional	Improper connection between the OBDII Device and the Matrix® network	Verify that all harness connections to and from the OBDII Device are properly seated and secure
	Matrix® network is inactive (sleep mode)	An ignition input is required to bring the Matrix network out of a sleep state, if the timeout period has already expired. Refer to the user manual for your particular Matrix central node (e.g. SIB or Z3X Siren, etc) for more information on how to wakeup the network with an ignition input

Notes:

Warranty:

Manufacturer Limited Warranty Policy:

Manufacturer warrants that on the date of purchase this product will conform to Manufacturer's specifications for this product (which are available from the Manufacturer upon request). This Limited Warranty extends for Sixty (60) months from the date of purchase.

DAMAGE TO PARTS OR PRODUCTS RESULTING FROM TAMPERING, ACCIDENT, ABUSE, MISUSE, NEGLIGENCE, UNAPPROVED MODIFICATIONS, FIRE OR OTHER HAZARD; IMPROPER INSTALLATION OR OPERATION; OR NOT BEING MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE PROCEDURES SET FORTH IN MANUFACTURER'S INSTALLATION AND OPERATING INSTRUCTIONS VOIDS THIS LIMITED WARRANTY.

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This Limited Warranty defines specific legal rights. You may have other legal rights which vary from jurisdiction to jurisdiction. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages.

Product Returns:

If a product must be returned for repair or replacement*, please contact our factory to obtain a Return Goods Authorization Number (RGA number) before you ship the product to Code 3®, Inc. Write the RGA number clearly on the package near the mailing label. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

*Code 3®, Inc. reserves the right to repair or replace at its discretion. Code 3®, Inc. assumes no responsibility or liability for expenses incurred for the removal and /or reinstallation of products requiring service and/or repair.; nor for the packaging, handling, and shipping: nor for the handling of products returned to sender after the service has been rendered.

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