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2003 FORD Explorer OEM Service and Repair Workshop Manual

Go to manual page

- IPMA (image processing module A)

BR1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- CHECK the vehicle service history for recent service actions related to this module.
- Connect the diagnostic tool.
- Ignition ON.
- Using the diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs).
- Wait 10 seconds.
- Using the diagnostic scan tool, carry out the IPMA (image processing module A) self-test.

Is DTC U3000:89 retrieved?

Yes	GO to BR2

No	The system is operating correctly at this time.

BR2 RECHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition OFF.
- Remove power from the IPMA (image processing module A) .
- Wait 5 to 15 minuets.
- Re-power the IPMA (image processing module A) .
- Ignition ON.
- Using the diagnostic scan tool, carry out the IPMA (image processing module A) self-test.

Is DTC U3000:89 retrieved?

Yes	INSTALL a new IPMA (image processing module A) . REFER to: Image Processing Module A (IPMA) (419-07 Lane Keeping System, Removal and Installation).

No	The system is operating correctly at this time.

PINPOINT TEST BS : A IPMA (IMAGE PROCESSING MODULE A) DOES NOT COMMUNICATE WITH THE DIAGNOSTIC SCAN TOOL

PINPOINT TEST BU : THE LANE KEEPING AID OR LANE KEEPING ALERT PROVIDES EARLY FEEDBACK ON ONE SIDE OF THE LANE AND LATE FEEDBACK ON THE OTHER SIDE OF THE LANE

Normal Operation and Fault Conditions

REFER to: Lane Keeping System - System Operation and Component Description(419-07 Lane Keeping System, Description and Operation).

Possible Sources

- Dirty or cracked windshield
- Interior rear view mirror
- IPMA (image processing module A)

BU1 CHECK WINDSHIELD FOR DIRT AND CRACK

- Inspect the windshield in front of the camera for dirt and crack.

Is an observable concern present?

Yes	CLEAN the dirty area. If windshield is found cracked, INSTALL new as necessary. REFER to: Fixed Glass (501-11 Glass, Frames and Mechanisms, General Procedures).
No	GO to BU2

BU2 CHECK FOR FORWARD WINDSHIELD CAMERA FITMENT

- Inspect forward windshield camera for proper installation.

Is an observable concern present?

Yes	REINSTALL forward windshield camera properly.
No	GO to BU3

BU3 CHECK IPMA (IMAGE PROCESSING MODULE A) CAMERA ALIGNMENT

- Perform the IPMA (image processing module A) camera alignment.

Is an observable concern present?

REFER to: Lane Keeping System - System Operation and Component Description(419-07 Lane Keeping System, Description and Operation).

Possible Sources

- Temporary over temperature condition

BW1 VERIFY THE CUSTOMER CONCERN

- Remove the vehicle from direct sunlight, recheck after 10 minutes.

Is the concern is still present?

Yes	DIAGNOSE camera alignment Diagnostic Codes (DTCs). REFER to the IPMA DTC Chart in this section.
No	The system is operating correctly at this time.

PINPOINT TEST BX : IPMA (IMAGE PROCESSING MODULE A) CAMERA LOW VISIBILITY CLEAN SCREEN MESSAGE IN THE IPC (INSTRUMENT PANEL CLUSTER)

Normal Operation and Fault Conditions

REFER to: Lane Keeping System - System Operation and Component Description(419-07 Lane Keeping System, Description and Operation).

Possible Sources

- Dirty or cracked windshield
- Dirt or debris in between the camera and the windshield
- Camera windshield defrost heater

BX1 CHECK WINDSHIELD FOR DIRT AND CRACK

Possible Sources

- MyKey® in use

BY1 VERIFY THE CUSTOMER CONCERN

- Perform the road test to verify the concern.

Is an observable concern present?

Yes	When MyKey® in use, the lane keeping aid and lane keeping alert will not turn off.
No	The system is operating correctly at this time.

PINPOINT TEST BZ : U2400:00

NOTE

Make sure that the software and the calibration database are up to date.

Normal Operation and Fault Conditions

REFER to: Lane Keeping System - System Operation and Component Description(419-07 Lane Keeping System, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
IPMA (image processing module A) U2400:00	Ethernet Failure With Gateway Module A (GWM): No Sub Type Information	This continuous memory DTC (diagnostic trouble code) can set in IPMA (image processing module A) when no data message information is received from the GWM (gateway module A) .

Possible Sources

- IPMA (image processing module A)
- GWM (gateway module A)

BZ1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE IPMA (IMAGE PROCESSING MODULE A) SELF-TEST

Image Processing Module A (IPMA) Camera

419-07 Lane Keeping System	***2022 F-150***
Removal and Installation	***Procedure revision date: 10/2/2020***

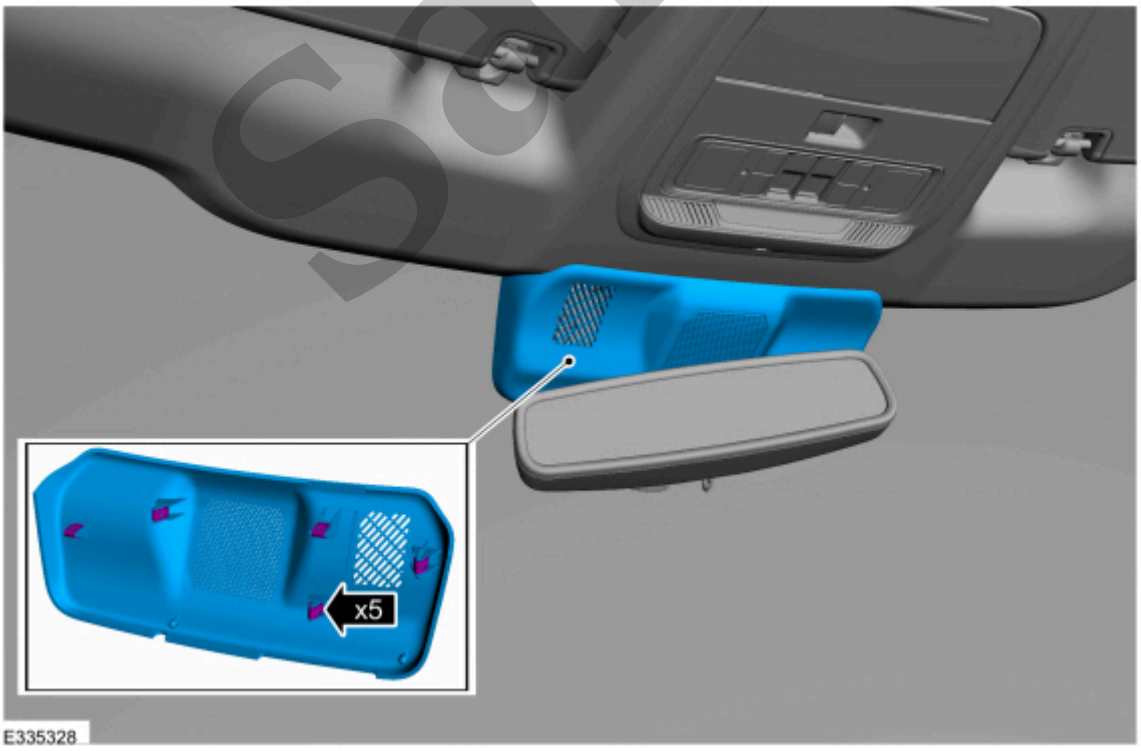
Image Processing Module A (IPMA) Camera

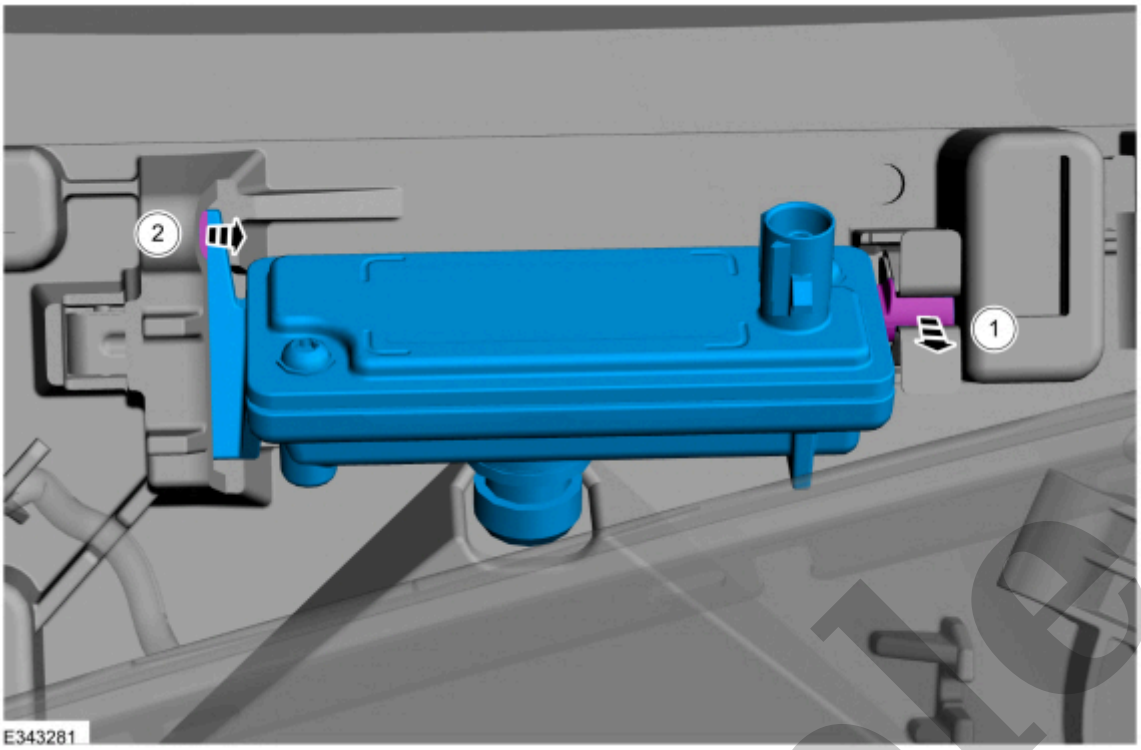
Removal

NOTE

Removal steps in this procedure may contain installation details.

1. Remove the rain sensor cover.





Click here to learn about symbols, color coding, and icons used in this manual.

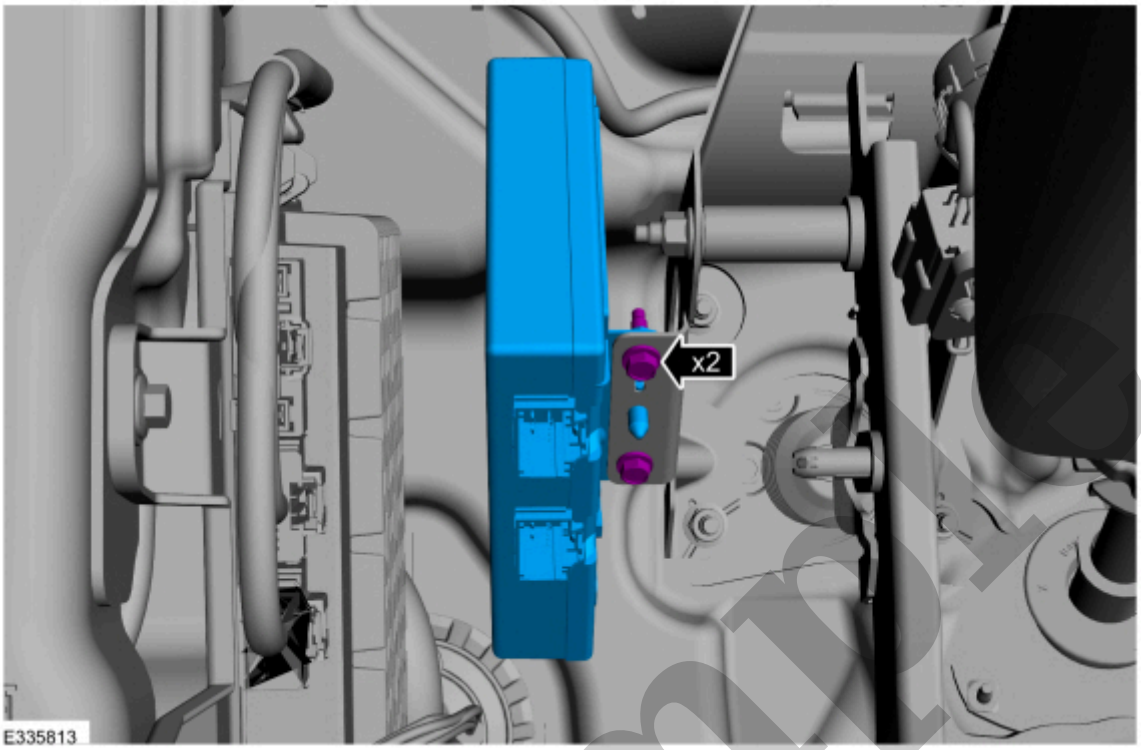
Installation

1. To install, reverse the removal procedure.
2. If a new IPMA (image processing module A) camera has been installed, carry out the camera alignment using a scan tool.

Click here to learn about symbols, color coding, and icons used in this manual.

3. Remove the bolts and trailer tow lighting module.

   Torque : 106 lb.in (12 Nm)



Click here to learn about symbols, color coding, and icons used in this manual.

4. Disconnect the IPMA (image processing module A) electrical connectors.

Installation

All vehicles

1. To install, reverse the removal procedure.
2. If a new IPMA (image processing module A) has been installed, using a diagnostic scan tool, complete the PMI (programmable module installation) process for the IPMA (image processing module A) following the on-screen instructions.
3. **NOTE**

   When a new IPMA (image processing module A) is installed, a camera alignment DTC (diagnostic trouble code) is stored until the IPMA (image processing module A) camera alignment is successfully completed.

   IPMA camera alignment is required for the lane keeping alert and lane keeping aid to function correctly. The procedure is initiated using the diagnostic scan tool and requires about 10 minutes of driving above 64 km/h (40 mph) on a flat, straight road with highly visible lane markings to complete IPMA camera alignment is required for the lane keeping alert and lane keeping aid to function correctly.
4. Using a diagnostic scan tool, perform the camera initialization procedure.

   Refer to: Parking Aid Camera Initialization(413-13B Parking Aid - Vehicles With: Parking Aid Camera, General Procedures).

Vehicles equipped with digital cameras

5. Carry out the 360 degree camera alignment.

   Refer to: 360 Degree View Camera Alignment(413-13B Parking Aid - Vehicles With: Parking Aid Camera, General Procedures).

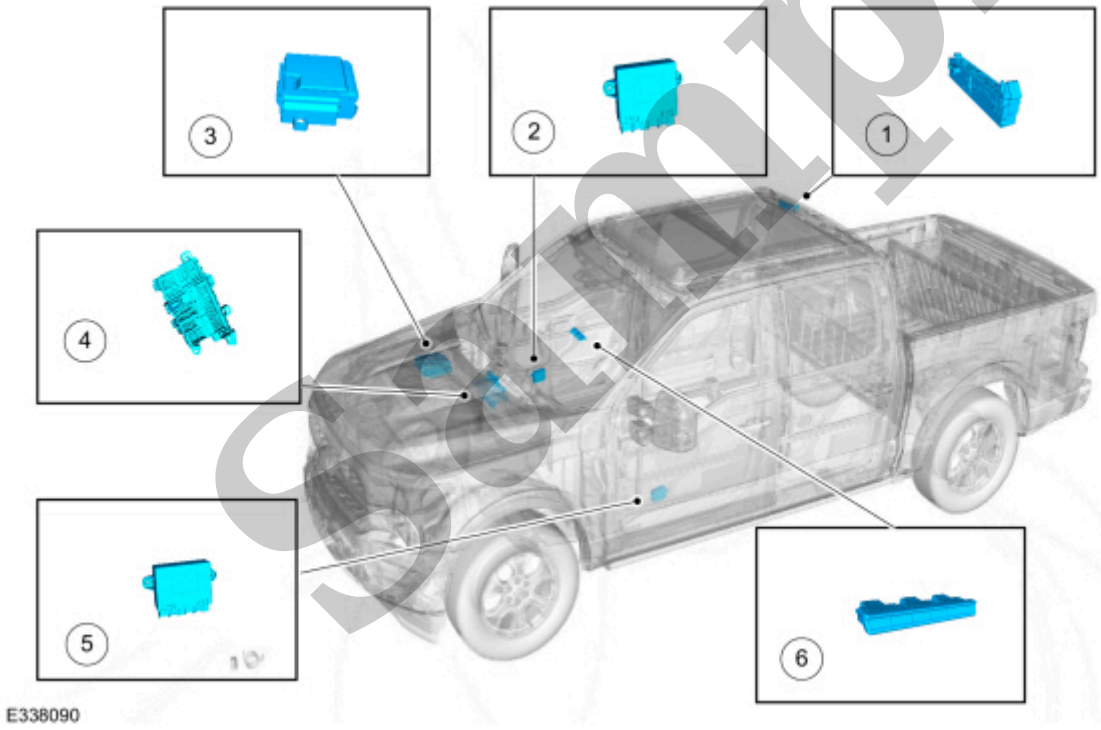
All vehicles

6. Carry out the pro trailer backup assist alignment using the scan tool.

Module Controlled Functions - Component Location

419-10 Multifunction Electronic Modules	***2022 F-150***
Description and Operation	***Procedure revision date: 07/8/2020***

Module Controlled Functions - Component Location



Item	Description
1	RTM (radio transceiver module)
2	PDM (passenger door module)