Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

2017 FORD F-150 Super Crew OEM Service and Repair Workshop Manual

Go to manual page

Broadcast Message	Originating Module	Message Purpose
Chime source	IPC (instrument panel cluster)	Used to command the all audio chimes on vehicles with touchscreen.

DDM (driver door module) Network Input Messages

Broadcast Message	Originating Module	Message Purpose
Cross traffic alert left status	IPMA (image processing module A)	Used to command the LH (left-hand) BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) on and off.
Side obstacle sensor status-left	IPMA (image processing module A)	Used to command the LH (left-hand) BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) on and off.
Side detect left illumination	IPMA (image processing module A)	Used to command the LH (left-hand) BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) on and off.

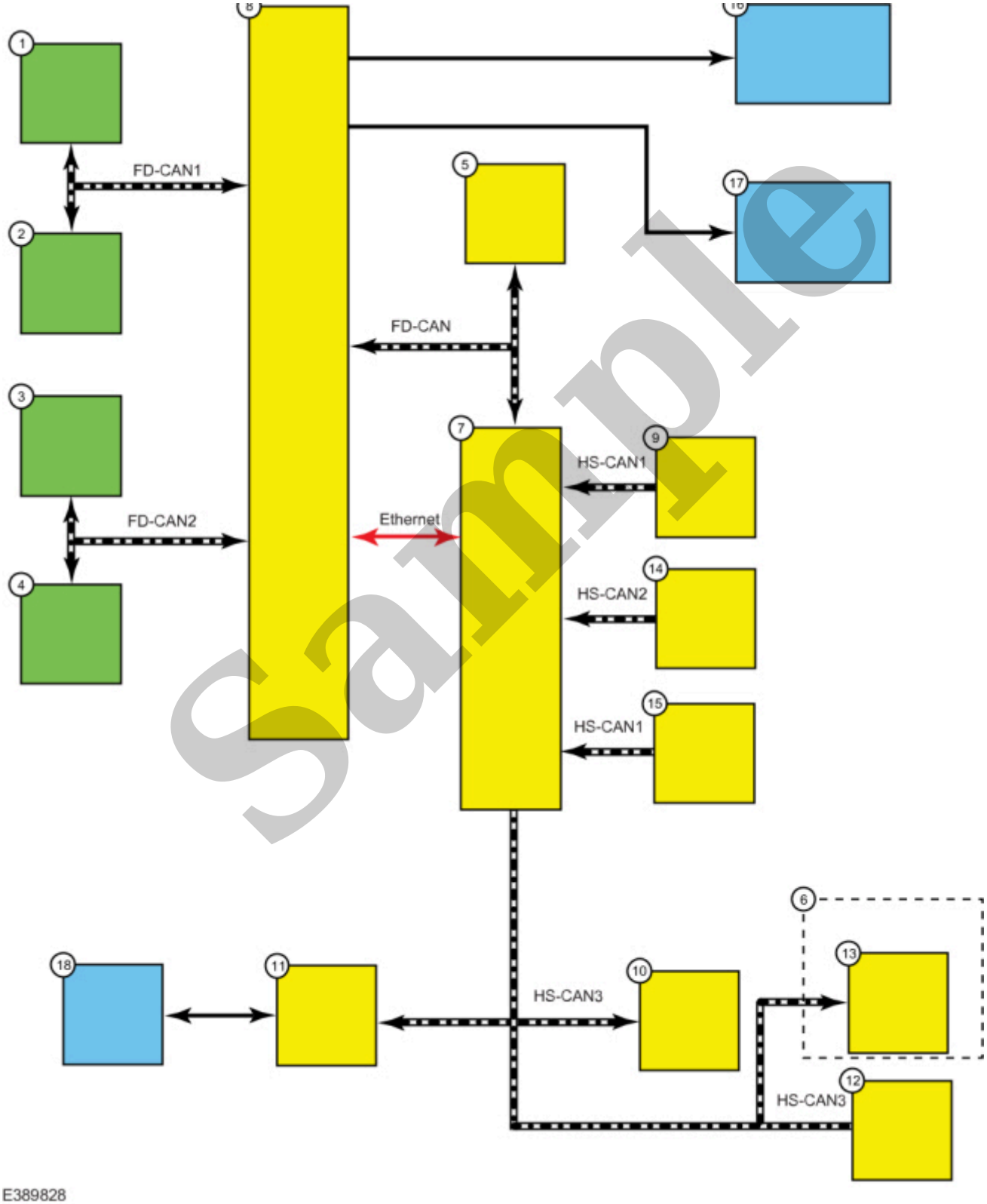
PDM (passenger door module) Network Input Messages

Broadcast Message	Originating Module	Message Purpose
Cross traffic alert right status	IPMA (image processing module A)	Used to command the RH (right-hand) BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) on and off.
Side obstacle sensor status-right	IPMA (image processing module A)	Used to command the RH (right-hand) BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) on and off.
Side detect right illumination	IPMA (image processing module A)	Used to command the RH (right-hand) BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) on and off.

IPMA (image processing module A) Network Input Messages

Vehicle speed	PCM (powertrain control module)	The vehicle speed input is used to turn the BLIS (blind spot information system) ® on above 10 km/h (6 mph).

System Diagram - Vehicle Without DDM/PDM



IPC (instrument panel cluster) Network Input Messages

Broadcast Message	Originating Module	Message Purpose
BLIS trailer tow left status	IPMA (image processing module A)	Used to communicate the operating status of the SODL (side obstacle detection control module LH) and to command the BLIS (blind spot information system) ®.
BLIS trailer tow right status	IPMA (image processing module A)	Used to communicate the operating status of the SODR (side obstacle detection control module RH) and to command the BLIS (blind spot information system) ®.
Cross traffic alert left status	IPMA (image processing module A)	Used to command the CTA (cross traffic alert) audio chime and the BLIS (blind spot information system) ® RTT (reconfigurable telltale) .
Cross traffic alert right status	IPMA (image processing module A)	
Side obstacle sensor status - left	IPMA (image processing module A)	Used to communicate the operating status of the SODL (side obstacle detection control module LH) and to command the CTA (cross traffic alert) message center displays.
Side obstacle sensor status - right	IPMA (image processing module A)	Used to communicate the operating status of the SODR (side obstacle detection control module RH) and to command the CTA (cross traffic alert) message center displays.

ACM (audio front control module) Network Input Messages

Broadcast Message	Originating Module	Message Purpose
Chime source	IPC (instrument panel cluster)	Used to command the all audio chimes on without touchscreen.

DSP (audio digital signal processing module) Network Input Messages

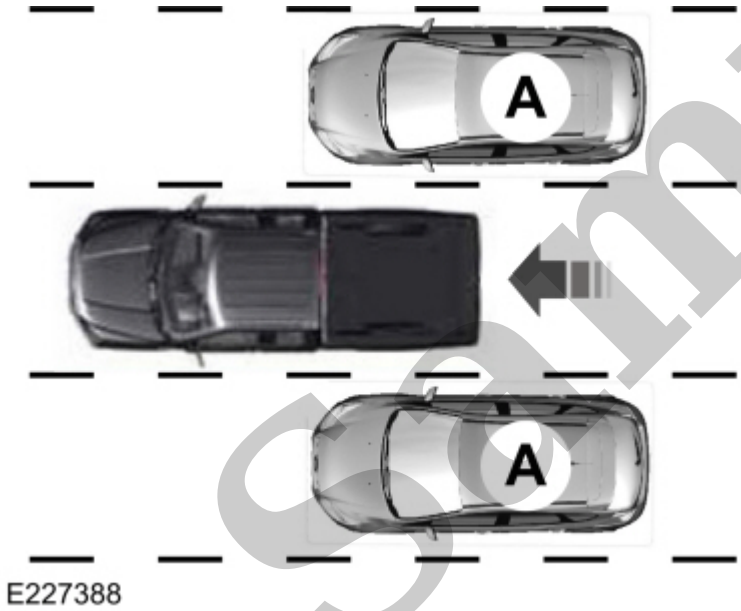
Vehicle speed	PCM (powertrain control module)	The vehicle speed input is used to turn the BLIS (blind spot information system) ® on above 10 km/h (6 mph).

BLIS (blind spot information system) ®

NOTE

If a trailer is electrically connected to the vehicle, the BLIS (blind spot information system) ® is disabled. To activate BLIS (blind spot information system) ® with trailer tow, with a trailer connected to the vehicle, the trailer must be selected or the trailer information must be entered using the information and entertainment display unit.

The BLIS (blind spot information system) ® provides alerts to the driver when the vehicle is in a forward gear and the vehicle speeds is greater than 10 km/h (6 mph).



The BLIS (blind spot information system) ® can trigger an alert for vehicles that enter the blind zone from the rear, front, or merge into the blind zone from the side. The exterior mirror BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) illuminates in the right and/or left exterior mirror when a target is present. For vehicles that pass through the blind zone quickly, typically less than 2 seconds, the BLIS (blind spot information system) ® may not trigger an alert.

If a turn signal is active while BLIS (blind spot information system) ® has detected a target in the blind zone, the BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) flashes rapidly. When the turn signal is off, the BLIS (blind spot information system) ® target warnings are a constant LED (light emitting diode) illumination.

functions will turn off.

The BLIS (blind spot information system) ® with Trailer Tow can be turned off through the information and entertainment display unit. If the BLIS (blind spot information system) ® is turned off, then the BLIS (blind spot information system) ® with Trailer Tow automatically turns off.

The following steps should be performed when setting up a trailer through the information and entertainment display unit:

- Select the type of trailer: conventional, 5th wheel or gooseneck. If 5th wheel or gooseneck is selected then BLIS (blind spot information system) ® and CTA (cross traffic alert) functions will turn off.
- Select whether or not the width of the new trailer is less than or equal to 2.6 m (8.5 ft).
- Enter the length of the new trailer. The length is measured between the trailer ball hitch and the back of the trailer. BLIS (blind spot information system) ® with Trailer Tow should turn on and CTA (cross traffic alert) turn off. However, if the trailer length is entered as 3 feet, then CTA (cross traffic alert) remain on (3 feet length is reserved for bike racks and cargo racks).

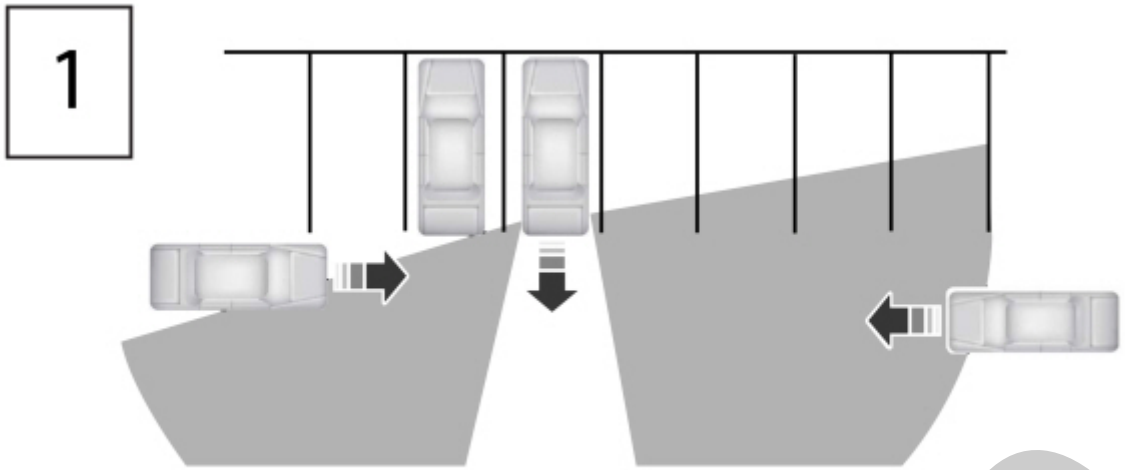
When the trailer is first connected a message appear in the information and entertainment display unit that says “Trailer connected”. When connecting to a four pin trailer connector the brake pedal must be depressed immediately afterwards in order to get the “Trailer connected” message. If a preset trailer exists in the information and entertainment display unit then BLIS (blind spot information system) ® with Trailer Tow automatically receives preset trailer information. If the trailer just connected is not the preset trailer, then select the correct trailer from the information and entertainment display unit menu or add a new trailer with the correct dimensions. If there are no preset trailers in the information and entertainment display unit, then the information and entertainment display unit automatically request trailer information. If at this point the driver exits the information and entertainment display unit menus, then BLIS (blind spot information system) ® and CTA (cross traffic alert) automatically turn off. Otherwise, the driver must add new trailer information through the information and entertainment display unit.

False alerts are possible with a truck and trailer operating with BLIS (blind spot information system) ® with Trailer Tow. If the ignition is cycled, the BLIS (blind spot information system) ® with Trailer Tow continues to function using the last trailer selected.

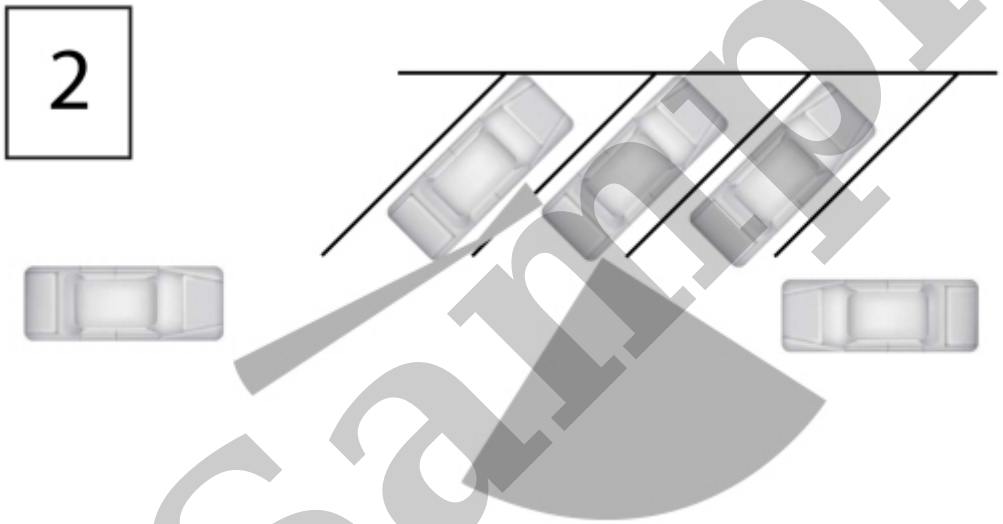
The BLIS (blind spot information system) ® with Trailer Tow is designed to work with any trailer whose front width is 2.6 m (8.5 ft) or less and the total length from the trailer hitch ball to the rear of the trailer is 10 m (33 ft) or less. Different trailers may cause a slight change in performance as outlined below.

- Large box trailers may cause false alerts to trigger when driving next to buildings or near parked cars.
- A false alert may also occur while making a 90-degree turns.
- Trailers that are 2.6 m (8.5 ft) wide at the front and have a total length greater than 6 m (20 ft) may have delayed alerts from passing vehicles when the vehicle is passing at high speed.

CTA (cross traffic alert) detection zones:



E191859



E191860

Missed targets occur when a target is present and the LED (light emitting diode) does not illuminate. Missed targets up to 1% (1 out of 100 targets) is considered normal operation.

Circumstances that cause missed alerts are:

- Debris build-up or damage to the rear lamp assemblies
- Certain maneuvering of the vehicles entering and exiting the detection zone
- Vehicles passing through the detection zone at high rates of speed
- When several vehicles forming a convoy pass through the detection zone

Exterior Mirror Indication - Vehicle With DDM/PDM

When the BLIS (blind spot information system) ®, the BLIS (blind spot information system) ® With Trailer Tow (if equipped) or CTA (cross traffic alert) system is active and an object is detected by the SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH) , the BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) command message is sent from the SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH) to the IPMA (image processing module A) . The DDM (driver door module) and PDM (passenger door module) supply voltage and ground to illuminate their respective exterior mirror BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) based on messages received from the SODL (side obstacle detection control module LH) and SODR (side obstacle detection control module RH) .

Each time the vehicle is started, the IPMA (image processing module A) communicates with DDM (driver door module) and PDM (passenger door module) to illuminate the exterior mirror BLIS (blind spot information system) ®/ CTA (cross traffic alert) Light Emitting Diodes (LEDs) for approximately 3 seconds, indicating the BLIS (blind spot information system) ® and CTA (cross traffic alert) system is operational.

If a BLIS (blind spot information system) ® or CTA (cross traffic alert) system fault is present, the exterior mirror BLIS (blind spot information system) ®/ CTA (cross traffic alert) CTA (cross traffic alert) Light Emitting Diodes (LEDs) remains off, the IPC (instrument panel cluster) BLIS (blind spot information system) ® RTT (reconfigurable telltale) illuminates and a message center warning displays BLIND SPOT SYSTEM FAULT.

Exterior Mirror Indication - Vehicle Without DDM/PDM

When the BLIS (blind spot information system) ®, the BLIS (blind spot information system) ® With Trailer Tow (if equipped) or CTA (cross traffic alert) system is active and an object is detected by the SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH) , the BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) command message is sent from the SODL (side obstacle detection control module LH) or SODR (side obstacle detection control module RH) to the IPMA (image processing module A) . The IPMA (image processing module A) supply voltage to illuminate exterior mirror BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) based on messages received from the SODL (side obstacle detection control module LH) and SODR (side obstacle detection control module RH) .

Blockage sensing becomes active after the wipers are activated.

NOTE

A blocked state is not a system fault. A blocked state is a normal mode of operation under blocked conditions.

An excessive build-up of materials on the rear lamp assemblies, such as mud or snow, can cause the BLIS (blind spot information system) ® or CTA (cross traffic alert) system functionality to degrade. Heavy rain can have the same affect on the system. If a blocked state is detected, the SODL (side obstacle detection control module LH) and SODR (side obstacle detection control module RH) blockage sensing senses the performance degradation and enters the SODL (side obstacle detection control module LH) and SODR (side obstacle detection control module RH) into a blocked state. The performance degradation means alerting late on targets or additional missed targets. Upon entering a blocked state, the IPMA (image processing module A) send a status message over the ethernet to the GWM (gateway module A) . The GWM (gateway module A) then sends the status message to the IPC (instrument panel cluster) on the HS-CAN3 (high-speed controller area network 3) . The message center displays BLIND SPOT NOT AVAILABLE SENSOR BLOCKED or CROSS TRAFFIC NOT AVAILABLE SENSOR BLOCKED and the LH (left-hand) and RH (right-hand) exterior mirror BLIS (blind spot information system) ®/ CTA (cross traffic alert) Light Emitting Diodes (LEDs) illuminate.

The message center warning can be cleared by the driver, but the amber BLIS (blind spot information system) ® off RTT (reconfigurable telltale) in the IPC (instrument panel cluster) remains illuminated. A blocked state will self-clear when blockage sensing senses performance has returned to normal operation. The ignition can also be cycled off to clear the blocked state. If the blockage is still present after the ignition cycle, or after some drive time the system detects again that it is blocked, the blocked sensor message is displayed again in the message center and the amber BLIS (blind spot information system) ® off IPC (instrument panel cluster) RTT (reconfigurable telltale) is illuminated again.

Due to the nature of radar technology, it is possible to get a blocked sensor warning without the radar sensor being blocked. This is rare and is known as a false blockage warning. A false blocked condition either self-clears or clears after an ignition cycle.

Component Description

SODL (side obstacle detection control module LH) / SODR (side obstacle detection control module RH)

The SODL (side obstacle detection control module LH) and SODR (side obstacle detection control module RH) are radar based sensors that are located into the rear lamp assemblies. These sensors detect targets for the BLIS (blind spot information system) ® and CTA (cross traffic alert) system. The SODL (side obstacle detection control module LH) and SODR (side obstacle detection control module RH) communicate with the IPMA (image processing module A) through a private CAN (controller area network) bus.

Trouble Codes (DTCs) for the BLIS (blind spot information system) ® or CTA (cross traffic alert) system when a concern exists. The DDM (driver door module) and PDM (passenger door module) communicate through the MS-CAN (medium speed-controller area network) .

The DDM (driver door module) and PDM (passenger door module) require PMI (programmable module installation) when replaced.

Refer to: Module Configuration - System Operation and Component Description

(418-01A Module Configuration, Description and Operation).

Refer to: Module Configuration - System Operation and Component Description

(418-01B Module Configuration - Vehicles With: Over-the-Air (OTA) Programming, Description and Operation).

BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode)

The BLIS (blind spot information system) ®/ CTA (cross traffic alert) LED (light emitting diode) is integral to the LH (left-hand) and RH (right-hand) exterior mirror glass.