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	(418-00C Ethernet Module Communications Network, Diagnosis and Testing).

No	Vehicle with VDM (vehicle dynamics control module) : GO to Q5 Vehicle without VDM (vehicle dynamics control module) : GO to Q7

Q5 PERFORM THE VDM (VEHICLE DYNAMICS CONTROL MODULE) SELF-TEST (VEHICLE IS EQUIPPED WITH VDM)

- Using a diagnostic scan tool, perform the VDM (vehicle dynamics control module) self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the Master DTC Chart.

No	GO to Q6

Q6 PERFORM THE VDM (VEHICLE DYNAMICS CONTROL MODULE) SELF-TEST (VEHICLE IS EQUIPPED WITH VDM) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the VDM (vehicle dynamics control module) Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, perform the continuous memory self-test.
- Check the VDM (vehicle dynamics control module) Diagnostic Trouble Codes (DTCs).

Is DTC (diagnostic trouble code) U0122:00 still present?

Yes	GO to Q7

No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.

Q7 CHECK FOR OTHER CAUSES OF COMMUNICATION NETWORK CONCERN

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new VDM (vehicle dynamics control module) .

No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST R : U0130:00

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) U0130:00	Lost Communication With Steering Effort Control Module: No Sub Type Information	Sets in continuous memory in the IPMA (image processing module A) if data messages received from the SCCM (steering column control module) through the GWM (gateway module A) are missing for 5 seconds or longer.

Possible Sources
- Communication concern
- GWM (gateway module A)
- SCCM (steering column control module)
- IPMA (image processing module A)

R1 VERIFY THE CUSTOMER CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	REFER to: Controller Area Network (CAN) Module Communications Network(418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing). REFER to: Ethernet Module Communications Network (418-00C Ethernet Module Communications Network, Diagnosis and Testing).
No	GO to R5

R5 PERFORM THE SCCM (STEERING COLUMN CONTROL MODULE) SELF-TEST

- Using a diagnostic scan tool, perform the SCCM (steering column control module) self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Steering Wheel and Column Electrical Components(211-05 Steering Wheel and Column Electrical Components, Diagnosis and Testing).
No	GO to R6

R6 RECHECK THE IPMA (IMAGE PROCESSING MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the IPMA (image processing module A) Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, perform the continuous memory self-test.
- Check the IPMA (image processing module A) Diagnostic Trouble Codes (DTCs).

Is DTC (diagnostic trouble code) U0130 still present?

Yes	GO to R7
No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.

Is the concern still present?

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, If no service articles address this concern, REFER to: Power Steering (211-02 Power Steering, Diagnosis and Testing).

No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST S : C0072:00

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) C0072:00	Brake Temperature Too High: No Sub Type Information	This DTC (diagnostic trouble code) sets when the IPMA (image processing module A) receives a brake over temperature message from the brake system.

Possible Sources

- IPMA (image processing module A) concern
- Brake system

S1 CHECK FOR THE BRAKE TEMPERATURE

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question.

Is DTC C0072:00 still present?

Yes	PERFORM the camera alignment using a diagnostic scan tool. REFER to: Lane Keeping System - System Operation and Component Description (419-07 Lane Keeping System, Description and Operation).

No	The repair is complete.

PINPOINT TEST U : C1001:97

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) C1001:97	Vision System Camera: Component Or System Operation Obstructed Or Blocked	This continuous memory and on-demand DTC (diagnostic trouble code) that sets in the IPMA (image processing module A) if IPMA (image processing module A) camera component or system operation obstructed or blocked the camera.

Possible Sources

- IPMA (image processing module A) camera concern

U1 CHECK FOR IPMA (IMAGE PROCESSING MODULE A) CAMERA COMPONENT OR SYSTEM OPERATION OBSTRUCTED OR BLOCKED

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question.

Is DTC C1001:97 still present?

Yes	CLEAN and INSPECT the windshield in front of the camera, remove any aftermarket stickers that may be blocking the view of the camera. REPAIR or REPLACE the windshield as necessary if damage is found.

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) U0401:82	Invalid Data Received from ECM/PCM A: Alive/Sequence Counter Incorrect/Not Updated	This continuous memory DTC (diagnostic trouble code) can set in IPMA (image processing module A) due to a fault in the PCM (powertrain control module) or an input sequence counter incorrect or not updated.
IPMA (image processing module A) U0401:83	Invalid Data Received from ECM/PCM A: Value Of Signal Protection Calculation Incorrect	This continuous memory DTC (diagnostic trouble code) can set in IPMA (image processing module A) due to a fault in the PCM (powertrain control module) or value of signal protection calculation incorrect.
IPMA (image processing module A) U0401:86	Invalid Data Received from ECM/PCM A: Signal Invalid	This continuous memory DTC (diagnostic trouble code) can set in IPMA (image processing module A) due to a fault in the PCM (powertrain control module) or an invalid input from the PCM (powertrain control module) .

Possible Sources

- PCM (powertrain control module) concern

W1 CHECK FOR PCM (POWERTRAIN CONTROL MODULE) SIGNAL

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question.

Is DTC U0401:82, U0401:83 or U0401:86 still present?

Yes	RETRIEVE and FOLLOW non-network Diagnostic Trouble Codes (DTCs) from the PCM (powertrain control module) : REFER to: Electronic Engine Controls (303-14A Electronic Engine Controls - 2.7L EcoBoost (238kW/324PS), Diagnosis and Testing). REFER to: Electronic Engine Controls (303-14B Electronic Engine Controls - 3.3L Duratec-V6, Diagnosis and Testing).

Yes	RETRIEVE and FOLLOW non-network Diagnostic Trouble Codes (DTCs) from the GSM (gear shift module) . REFER to: External Controls - Vehicles With: Column Shift (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing). REFER to: External Controls - Vehicles With: Column Shift (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing). REFER to: External Controls - Vehicles With: Column Shift (307-05C Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80 MHT, Diagnosis and Testing). REFER to: External Controls - Vehicles With: Console Shift (307-05C Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80 MHT, Diagnosis and Testing).

No	DIAGNOSE the observable symptom.

PINPOINT TEST Y : U0416:86

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) U0416:86	Invalid Data Received From Vehicle Dynamics Control Module: Signal Invalid	This continuous memory DTC (diagnostic trouble code) sets in IPMA (image processing module A) due to a fault in the VDM (vehicle dynamics control module) or an invalid input to the IPMA (image processing module A) .

Possible Sources
- VDM (vehicle dynamics control module) concern

Y1 CHECK FOR VEHICLE DYNAMICS CONTROL MODULE SIGNAL

Possible Sources

- Steering effort control module concern
- SCCM (steering column control module) concern

Z1 CHECK FOR STEERING COLUMN CONTROL MODULE SIGNAL

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question.

Is DTC U0419:86 still present?

Yes	RETRIEVE and REPAIR all non-network Diagnostic Trouble Codes (DTCs) in the other modules on the network REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components, Diagnosis and Testing).

No	The repair is complete.

PINPOINT TEST AA : U0420:86

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) U0420:86	Invalid Data Received from Power Steering Control Module 'A': Signal Invalid	This continuous memory DTC (diagnostic trouble code) can set in IPMA (image processing module A) due to a fault in the PSCM (power steering control module) or an invalid input from the PSCM (power steering control module) .

Possible Sources

- PSCM (power steering control module) concern

AA1 CHECK FOR STEERING COLUMN CONTROL MODULE SIGNAL

	REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).
No	DIAGNOSE the observable symptom.

PINPOINT TEST AC : U0429:86

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) U0429:86	Invalid Data Received From Steering Column Control Module: Signal Invalid	This continuous memory DTC (diagnostic trouble code) can set in IPMA (image processing module A) due to a fault in the SCCM (steering column control module) or an invalid input from the SCCM (steering column control module)

Possible Sources

- SCCM (steering column control module) concern

AC1 CHECK FOR SCCM (STEERING COLUMN CONTROL MODULE) SIGNAL

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question.

Is DTC U0429:86 still present?

Yes	RETRIEVE and FOLLOW non-network Diagnostic Trouble Codes (DTCs) from the SCCM (steering column control module) REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components, Diagnosis and Testing).