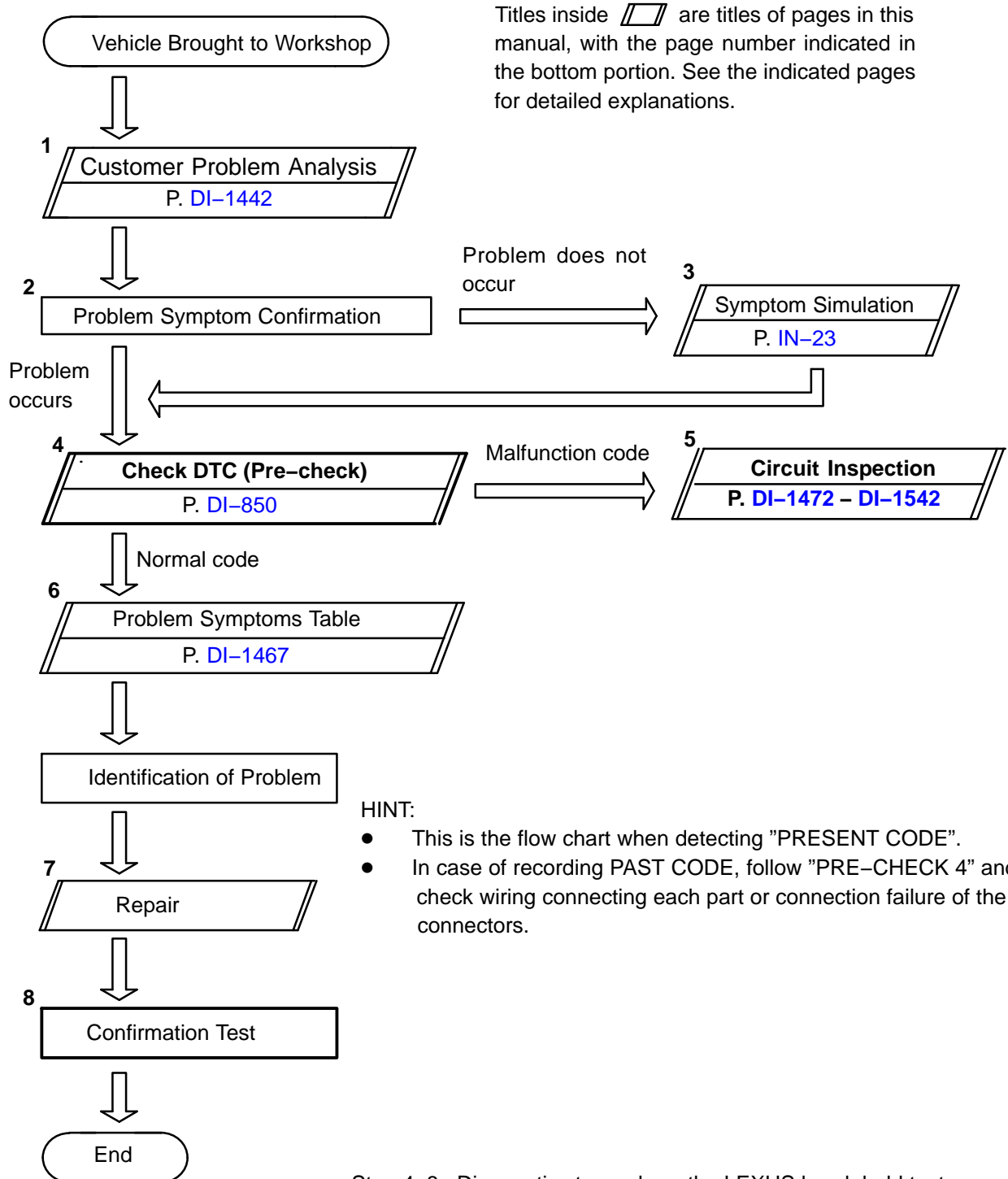


GATEWAY SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

DIBOS-02

Perform troubleshooting in accordance with the procedure on the following page.



CUSTOMER PROBLEM ANALYSIS CHECK

GATEWAY SYSTEM Check Sheet

Inspector's name: _____

Customer's Name		Registration No.	
		Registration Year	
		Frame No.	
Date Vehicle Brought in	/ /	Odometer Reading	km Mile

Date Problem First Occurred	/ /
Frequency Problem Occurs	<input type="checkbox"/> Constant <input type="checkbox"/> Sometimes (times per day, month) <input type="checkbox"/> Once only
Weather Conditions When Problem Occurred	Weather <input type="checkbox"/> Fine <input type="checkbox"/> Cloudy <input type="checkbox"/> Rainy <input type="checkbox"/> Snowy <input type="checkbox"/> Various/Others
	Outdoor Temperature <input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold (Approx. °F (°C))

DTC Check	1st Time	<input type="checkbox"/> Normal Code <input type="checkbox"/> Malfunction Code (Code)
	2nd Time	<input type="checkbox"/> Normal Code <input type="checkbox"/> Malfunction Code (Code)

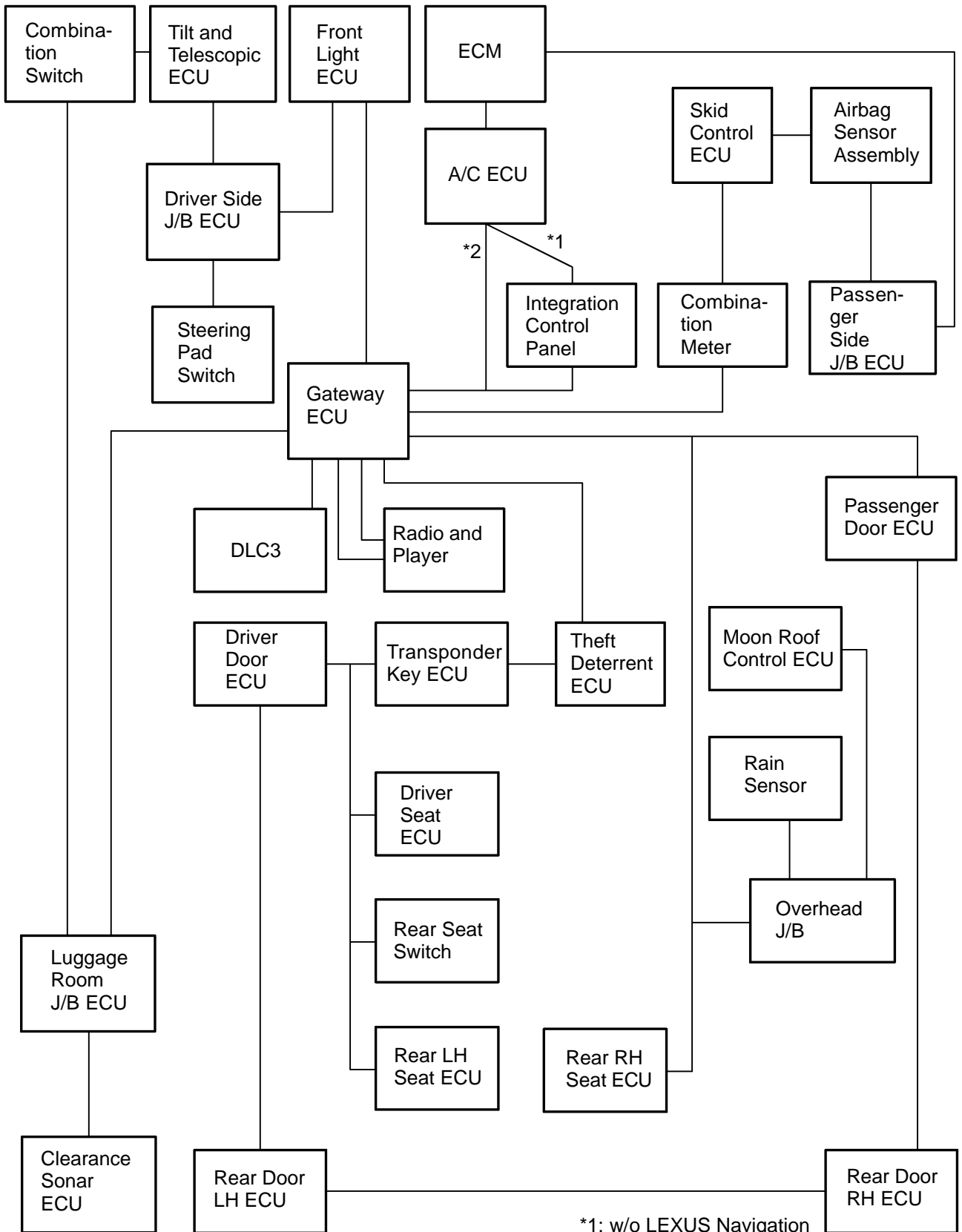
PRE-CHECK

1. DIAGNOSIS SYSTEM

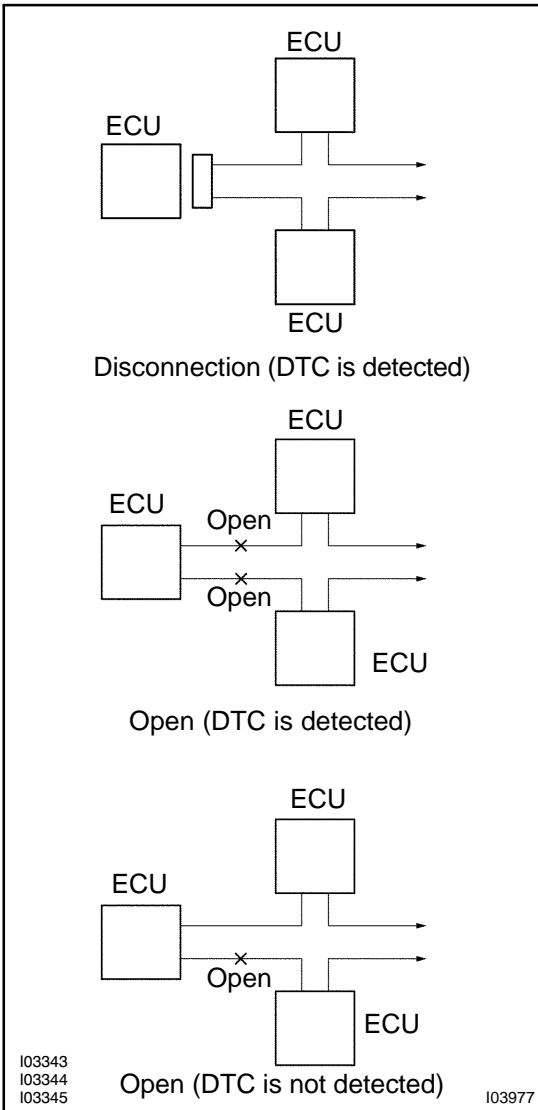
- (a) As shown in the following diagram, ECUs of this vehicle are connected each other by communication buses through which various signals are transmitted. These communication buses are diagnosed by the gateway ECU. When the gateway ECU detects a communication error between ECUs, or B+ short or GND short of a communication bus, a DTC is output and memorized. The gateway ECU cannot diagnose accurately unless it can function normally. Therefore, first confirm the normal condition by performing a "BASIC INSPECTION" described later and then, troubleshoot against each DTC. This multiplex communication (gateway) system consists of 3 BEANs (Body Electrical Area Networks): the door system communication bus; the instrument panel system communication bus and the light system communication bus and AVC-LAN (Audio Visual Communication-Local Area Network) communication bus related to the audio and navigation system. (Dealer option (cellular mobile phone, etc.) communication network can be added to the above.)

The gateway ECU forward data between BEANs and between a BEAN and AVC-LAN and transmits data between ECUs.

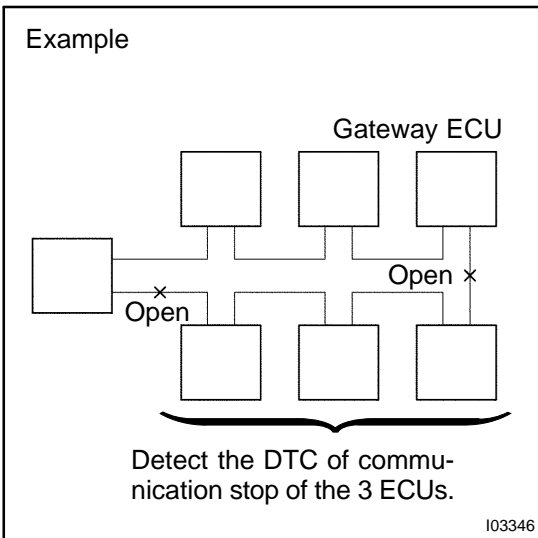
Connection between each terminal and bus



*1: w/o LEXUS Navigation System
 *2: w/ LEXUS Navigation System



(b) If DTC of ECU communication stop is output, connectors may be disconnected, or communication buses may be open at 2 points. It will not become abnormal with only 1 communication bus open.



(c) If 2 communication buses are open at the position as shown in the illustration, DTC of ECU communication stop between those 2 buses is output.

2. BASIC INSPECTION**Inspect Gateway ECU.**

- | | |
|----------|--|
| 1 | Check that the DTC can be read from Gateway ECU using LEXUS hand-held tester. |
|----------|--|

OK**Go to step 3 "DTC check".****NG**

- | | |
|----------|--|
| 2 | Check the gateway ECU power source circuit. |
|----------|--|

PREPARATION:

Disconnect the gateway ECU connector.

CHECK:

Check voltage terminal BATT and GND.

OK:**Voltage: 10 – 14 V****CHECK:**

Check continuity terminal GND, CG and body ground.

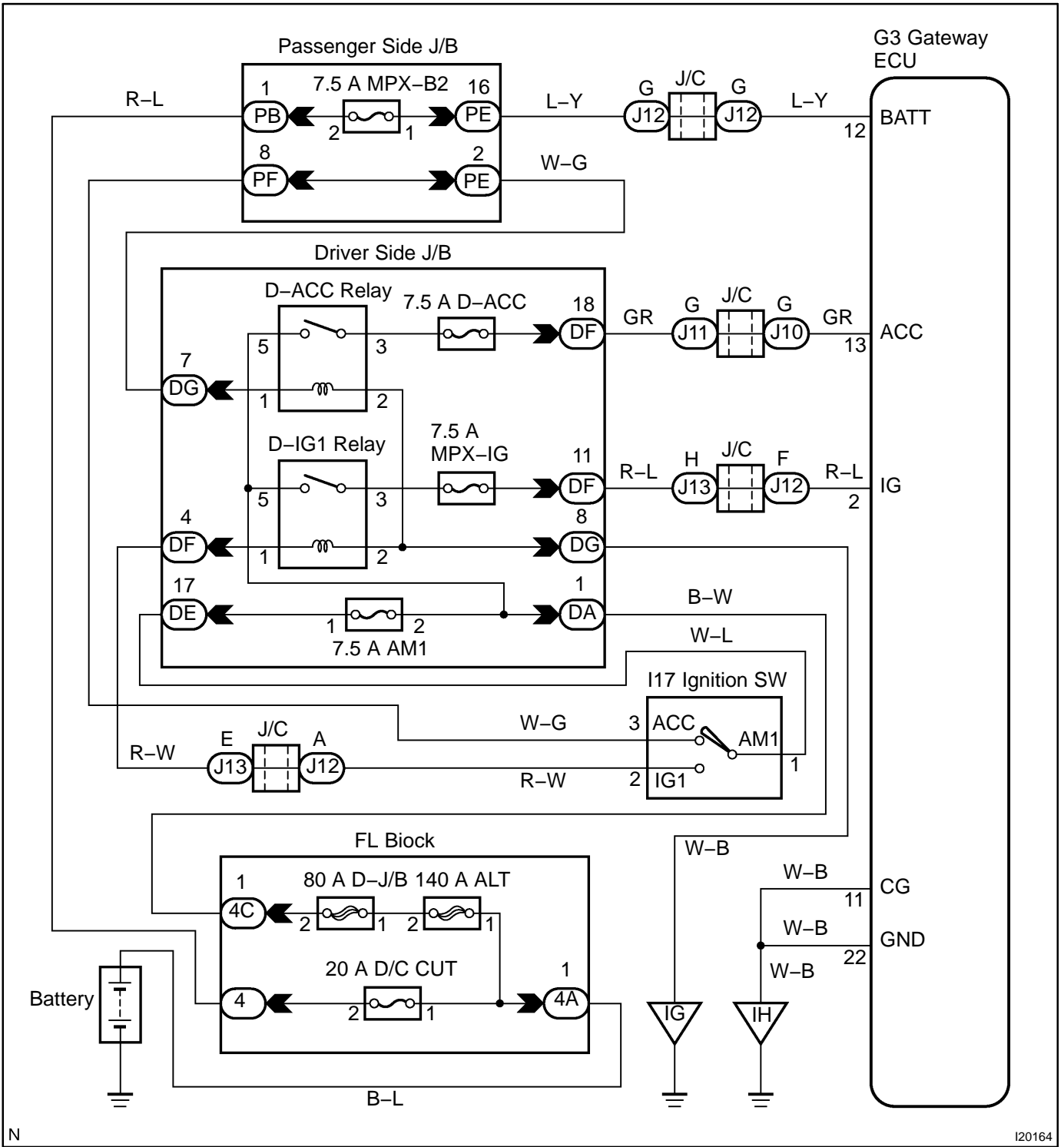
OK:**Continuity****PREPARATION:**

Turn the ignition switch ON.

CHECK:

Check voltage terminal IG, ACC and GND.

OK:**Voltage: 10 – 14 V**



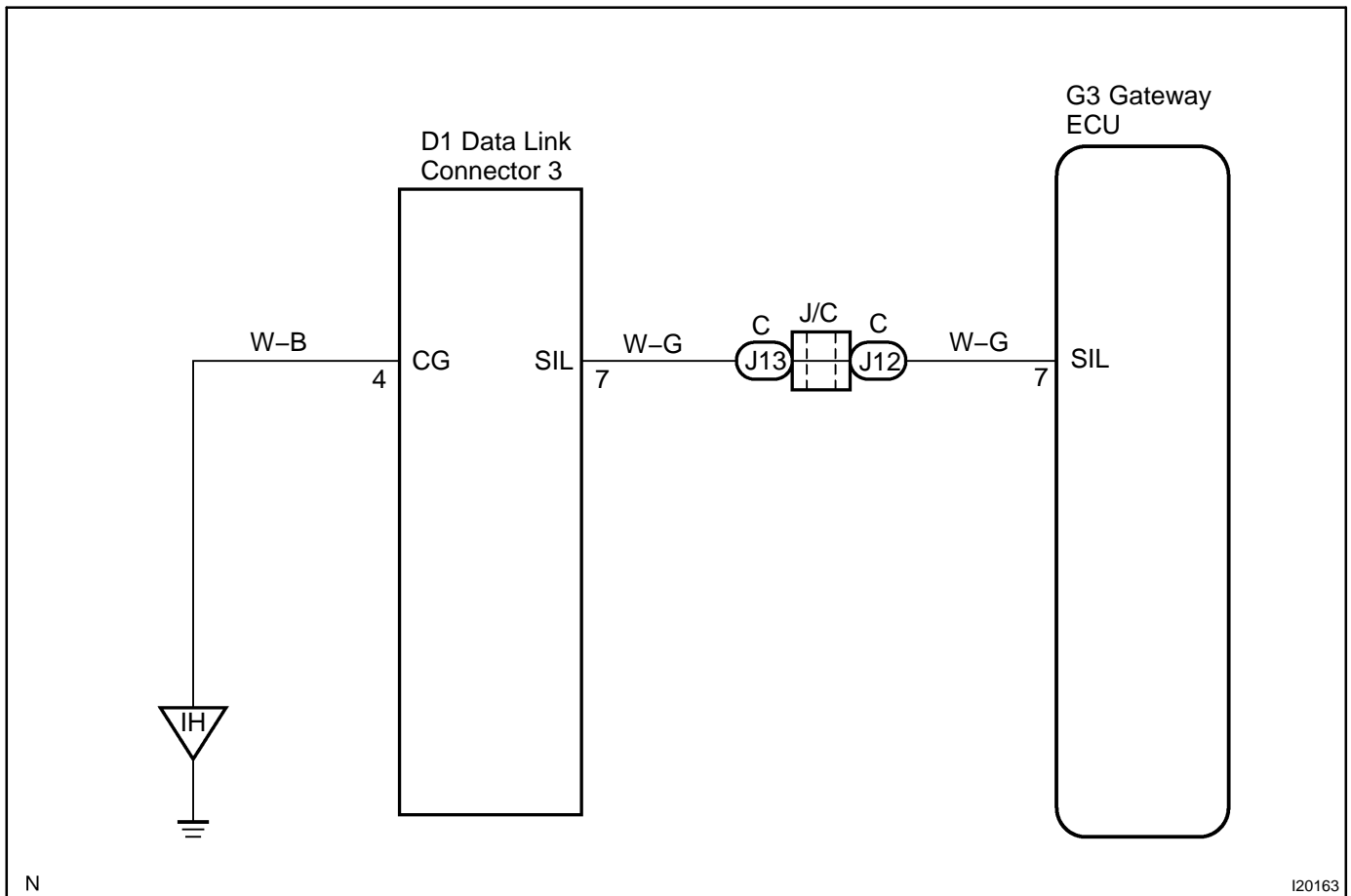
N

I20164

NG Replace or repair wire harness or connector.

OK

3 Check wire harness between gateway ECU and DLC3.



HINT:

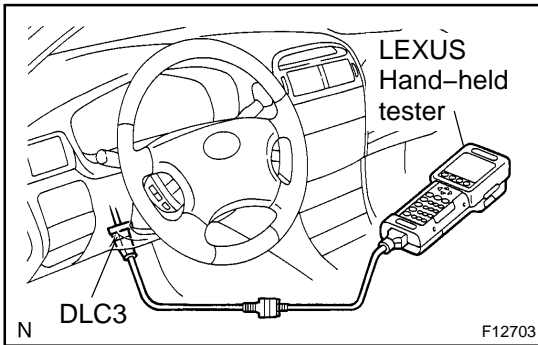
If there is a failure on SIL line, LEXUS hand-held tester cannot communicate with ECM or Airbag sensor assembly also.

NG

Replace or repair wire harness or connector.

OK

Replace the gateway ECU.



3. DTC CHECK (Using LEXUS hand-held tester)

- (a) Prepare a LEXUS hand-held tester.
- (b) Connect the LEXUS hand-held tester to DLC3.
- (c) Turn the ignition switch ON and switch the LEXUS hand-held tester main switch ON.
- (d) Use the LEXUS hand-held tester to check the DTCs, and note them down. (For opening instructions, see the LEXUS hand-held tester's instruction book.)
- (e) See page [DI-1450](#) to confirm the details of the DTCs.

4. PRESENT CODE & PAST CODE

GATEWAY ECU has the following two kinds of DTC. Described as follows are each explanation and dealing method of its DTC.

(1) PRESENT CODE:

While any failure is continuously occurring, DTC is displayed as "PRESENT CODE".

In this case, proceed the diagnosis procedure in the CIRCUIT INSPECTION.

(2) PAST CODE:

In the case that no failure is occurred at present despite that the customer has experienced failure, this is not recorded as "PRESENT CODE". However, GATEWAY ECU, in some cases, can record the failures caused by momentary disconnection or occasional failure as "PAST CODE*". This is set as a help for diagnostic operations.

As this diagnostic inspection with the PAST CODE as well, basically this is diagnostic operation using each DTC. However, no failure is occurred at present, therefore, it is hard to consider the cause as the related part failure, so check wiring connecting each part or connection failure of the connectors thoroughly.

*: DTC to detect as "PAST CODE" is all the DTC in the DTC CHART.

5. DTC CLEARANCE

- PRESENT CODE:
DTC will be cleared when the trouble output as DTC is recovered normally.
- PAST CODE:
Clear it using the LEXUS hand-held tester.

DIAGNOSTIC TROUBLE CODE CHART

If a malfunction code is displayed during DTC check, check the circuit corresponding to the code in the table below (Proceed to the page given for the circuit).

DTC No. (See Page)	Detection Item	Trouble Area
B1211 (DI-1472)	Driver door ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Driver door ECU
B1212 (DI-1474)	Passenger door ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Passenger door ECU
B1213 (DI-1476)	Tilt and telescopic ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Tilt and telescopic ECU
B1214 B1215 (DI-1478)	Door system communication bus malfunction (+B short) Door system communication bus malfunction (GND short)	<ul style="list-style-type: none"> • Wire harness • ECU (Door system bus)
B1216 (DI-1484)	Rear right door ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Rear door RH ECU
B1217 (DI-1486)	Rear left door ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Rear door LH ECU
*B1219 (DI-1488)	Rear seat switch communication stop	<ul style="list-style-type: none"> • Wire harness • Rear seat switch
B1248 (DI-1490)	AVC-LAN communication impossible	<ul style="list-style-type: none"> • Wire harness • ECU (AVC-LAN system bus)
B1261 (DI-1492)	Engine ECU communication stop	<ul style="list-style-type: none"> • Wire harness • ECM
B1262 (DI-1494)	A/C ECU communication stop	<ul style="list-style-type: none"> • Wire harness • A/C ECU
B1263 (DI-1496)	Luggage room junction block ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Luggage room junction block ECU
B1266 B1267 (DI-1498)	Instrument panel system communication bus malfunction (+B short) Instrument panel system communication bus malfunction (GND short)	<ul style="list-style-type: none"> • Wire harness • ECU (Instrument system bus)
B1269 (DI-1503)	Theft deterrent ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Theft deterrent ECU
B1271 (DI-1505)	Combination meter ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Combination meter ECU
*B1272 (DI-1507)	Power seat ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Driver seat ECU
*B1273 (DI-1509)	Sliding roof ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Moon roof control ECU
*B1275 (DI-1511)	Accessory bus buffer communication stop	<ul style="list-style-type: none"> • Wire harness • Accessory bus buffer ECU
*B1277 (DI-1513)	Center cluster integration panel communication stop	<ul style="list-style-type: none"> • Wire harness • Center cluster integration panel
B1278 (DI-1515)	Combination switch ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Combination switch ECU
*B1279 (DI-1517)	Rain sensor communication stop	<ul style="list-style-type: none"> • Wire harness • Rain sensor
B1281 (DI-1519)	Airbag ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Airbag sensor assembly

DIAGNOSTICS – GATEWAY SYSTEM

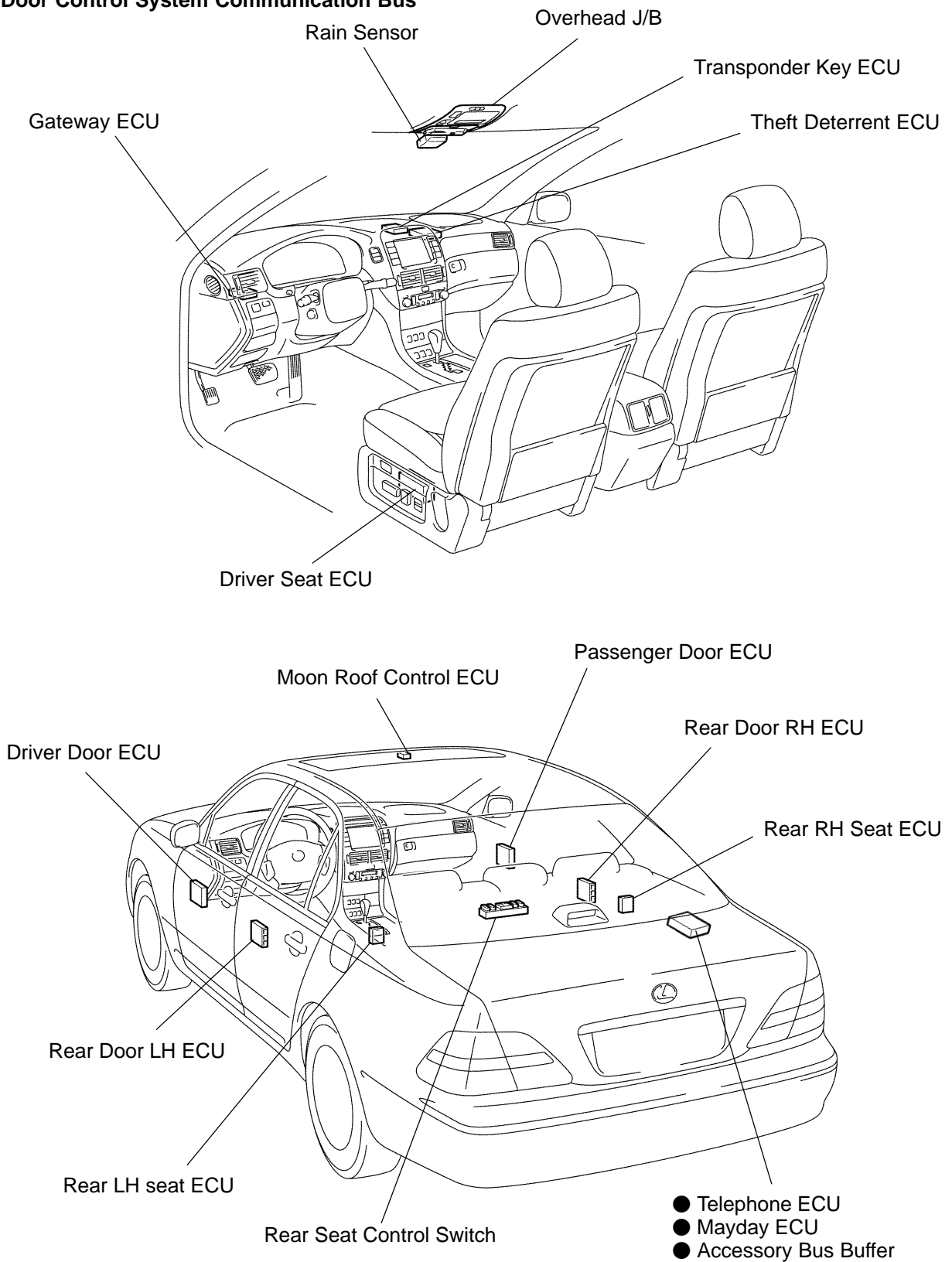
B1282 (DI-1521)	Skid control ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Skid control ECU
B1283 (DI-1523)	Driver side junction block ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Driver side junction block ECU
B1284 (DI-1525)	Passenger side junction block ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Passenger side junction block ECU
B1285 (DI-1527)	Steering pad switch communication stop	<ul style="list-style-type: none"> • Wire harness • Steering pad switch
B1291 B1292 (DI-1529)	Light control system communication bus malfunction (+B short)	<ul style="list-style-type: none"> • Wire harness • ECU (Light control system bus)
	Light control system communication bus malfunction (GND short)	
B1294 (DI-1534)	Immobiliser ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Transponder key ECU
B1296 (DI-1536)	Front light ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Front light ECU
*B1297 (DI-1538)	Clearance sonar ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Clearance sonar ECU
*B1298 (DI-1540)	Rear right seat ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Rear RH seat ECU
*B1299 (DI-1542)	Rear left seat ECU communication stop	<ul style="list-style-type: none"> • Wire harness • Rear LH seat ECU

HINT:

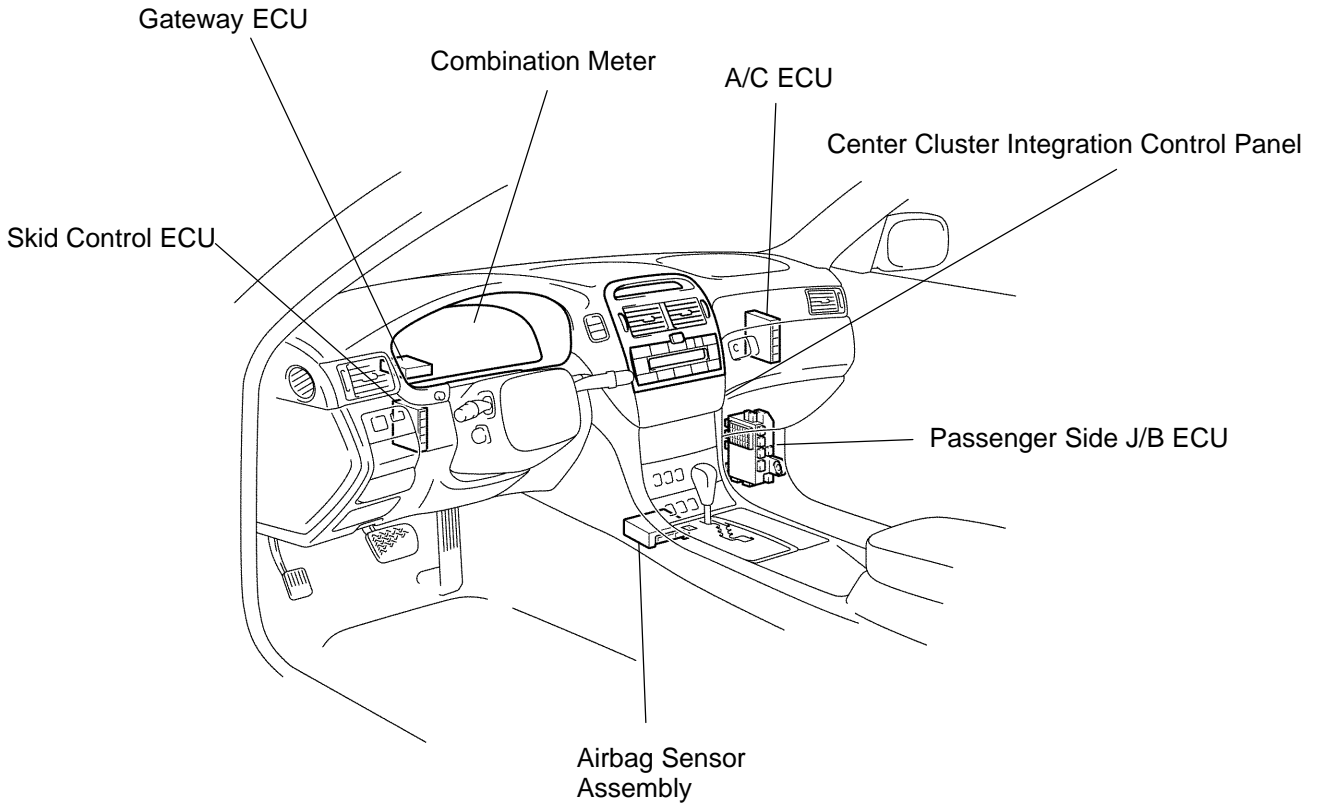
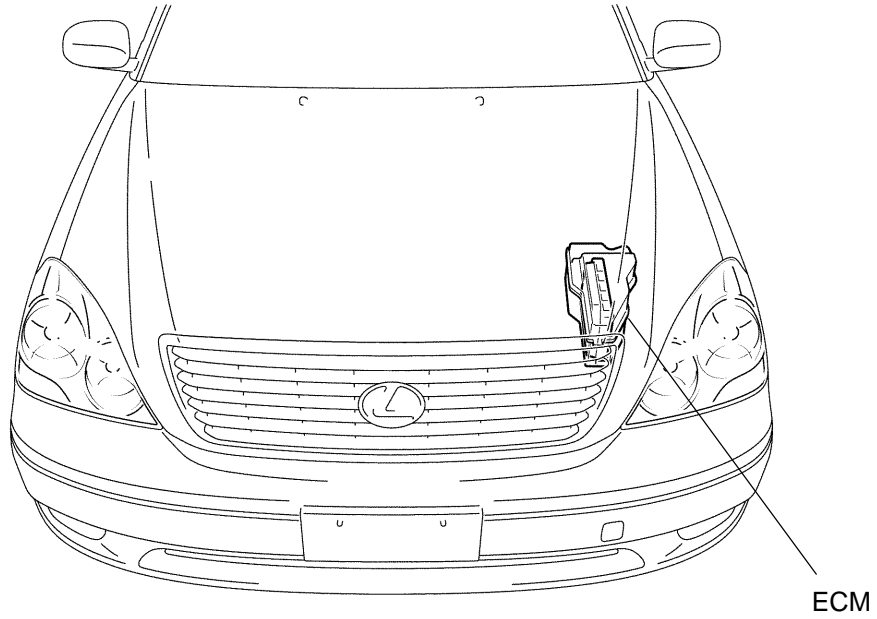
- *: Optional setting
- When DTC of "+B or GND short malfunction of communication bus (such as B1214, B1215 etc.)" and "communication stop (such as B1211, B1212 etc.)" is detected simultaneously, please repair DTC of "+B or GND short malfunction of communication bus first.

PARTS LOCATION

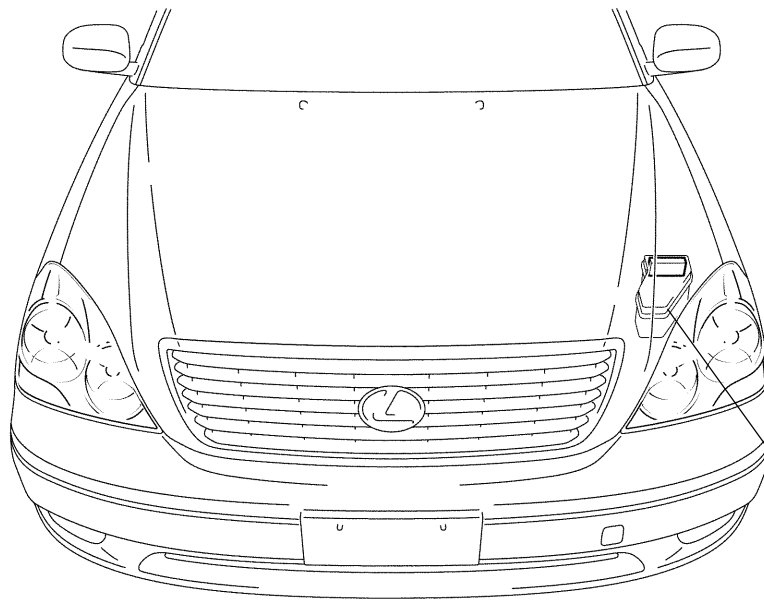
● Door Control System Communication Bus



● Instrument Panel System Communication Bus



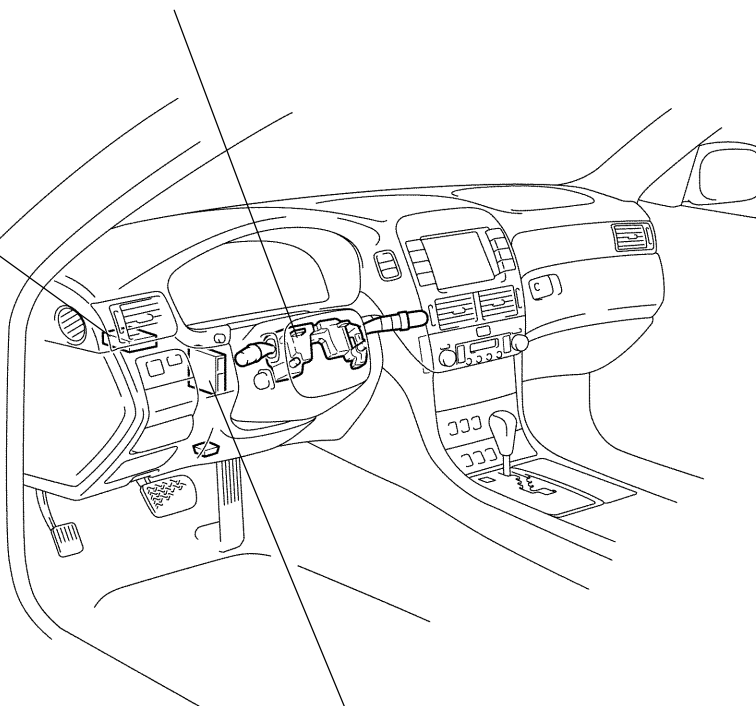
● Light Control System Communication Bus-1



Engine Room No.2 J/B
● Front Light ECU

Combination Switch

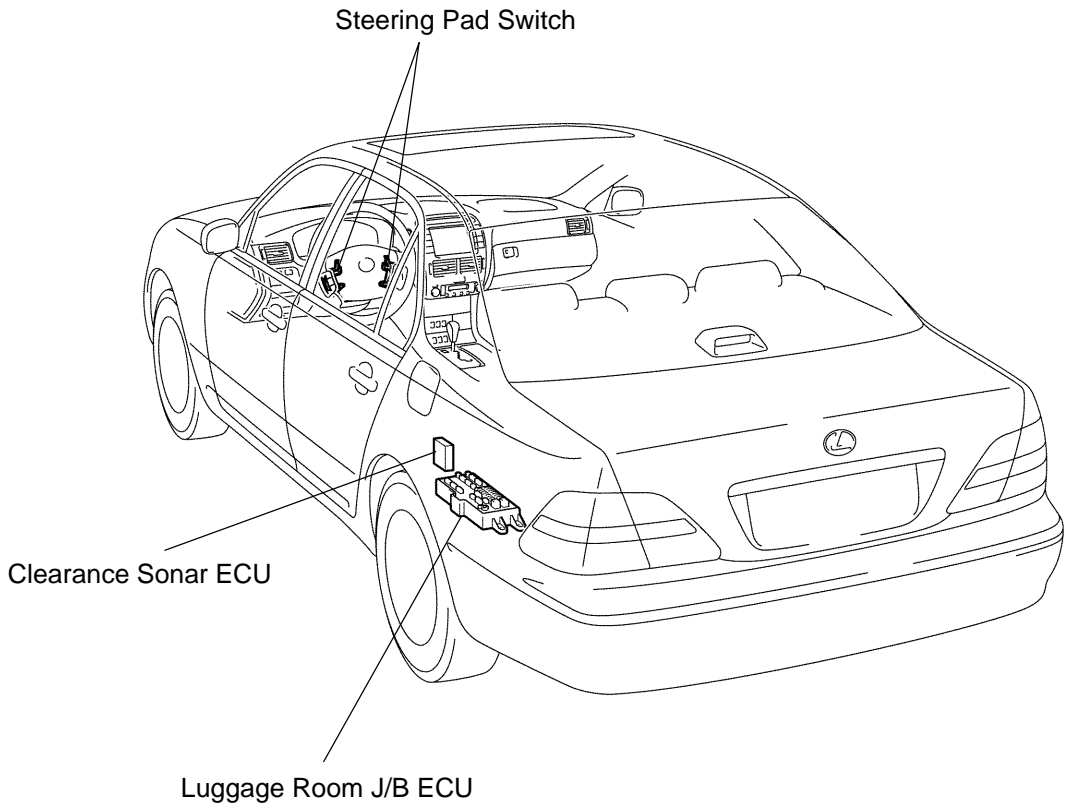
Gateway ECU



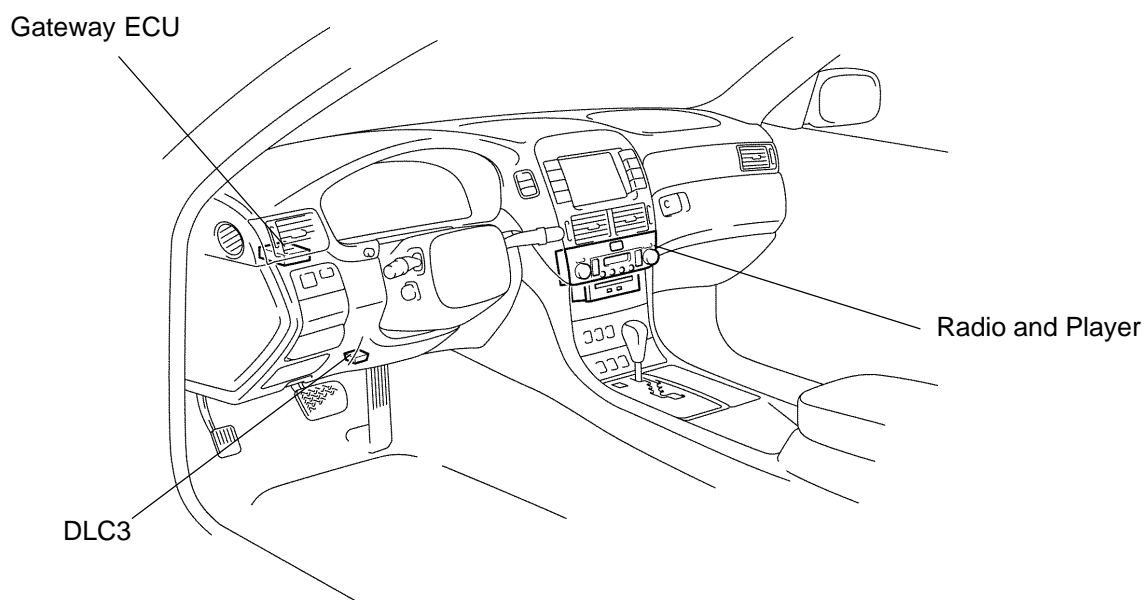
Driver Side J/B ECU

Tilt and Telescopic ECU

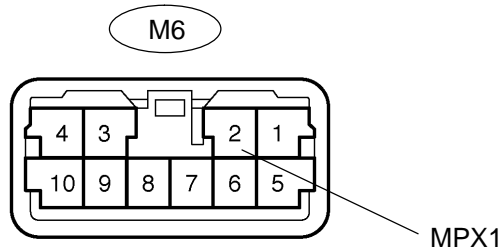
● Light Control System Communication Bus-2



- AVC-LAN Communication Bus (Radio and Player)
- DLC3

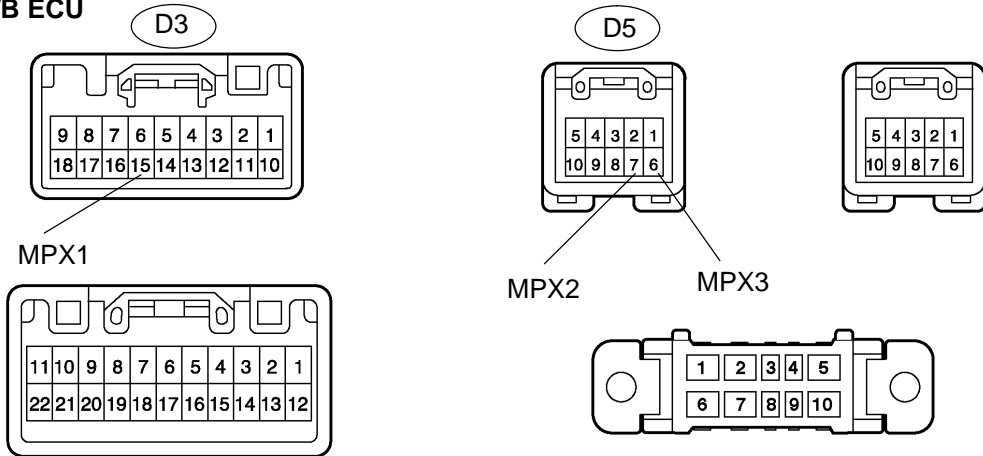


● Moon Roof Control ECU



I04611

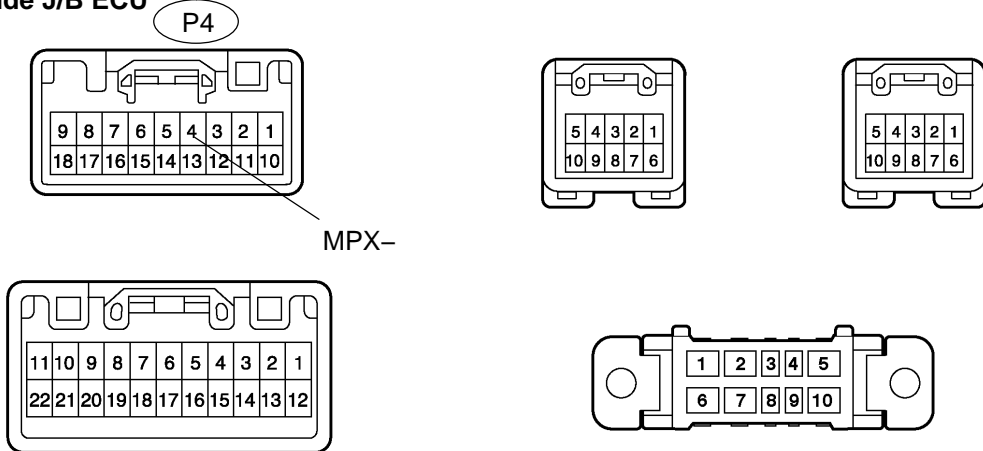
● Driver side J/B ECU



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I20436

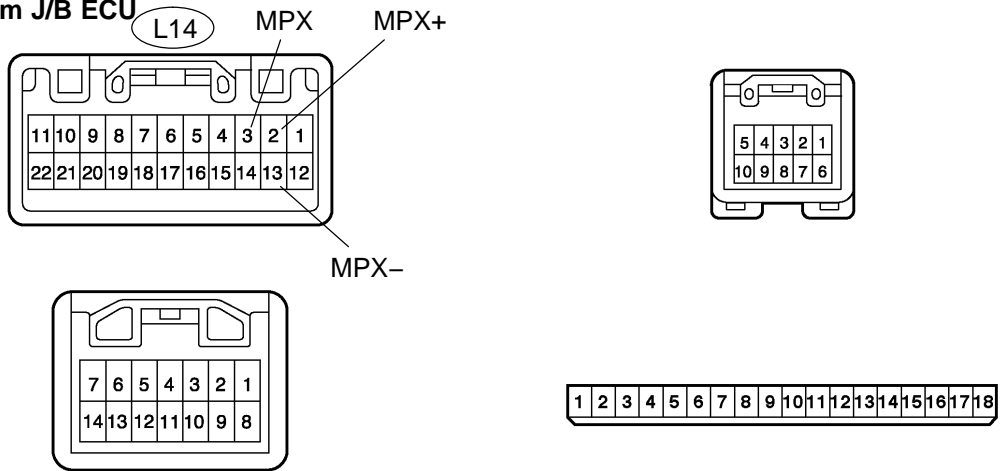
● Passenger Side J/B ECU



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I20436

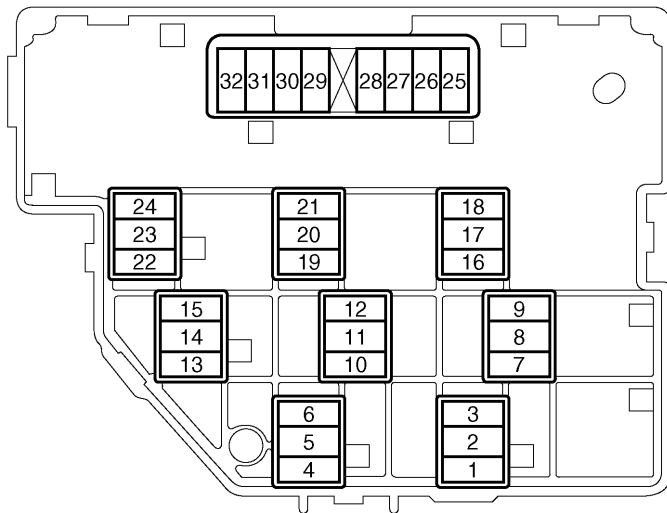
● Luggage Room J/B ECU



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I20437

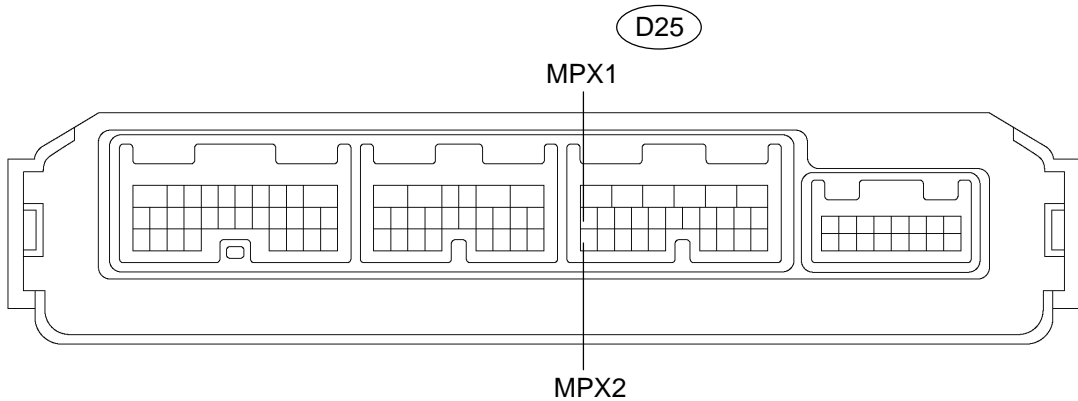
● Front Light ECU



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I20200

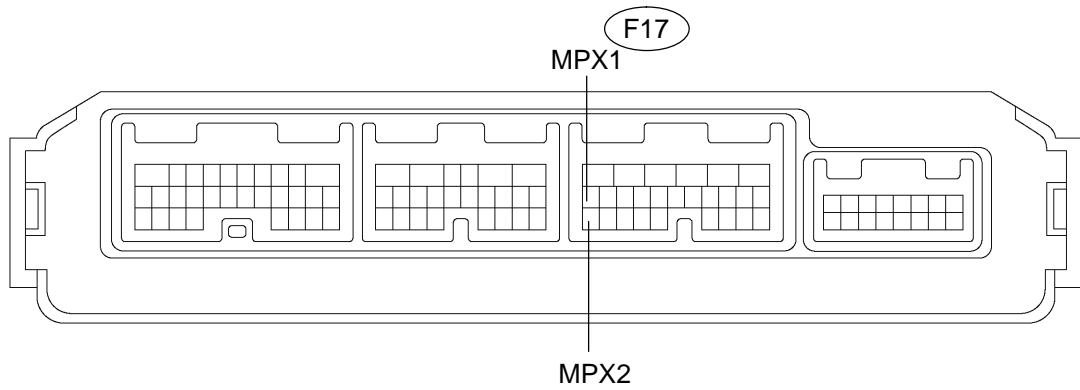
● Driver Door ECU



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I19947

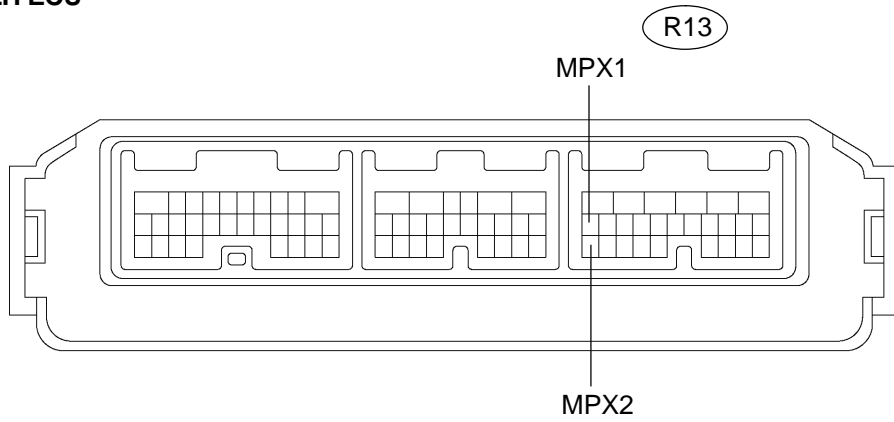
● Passenger Door ECU



N

119947

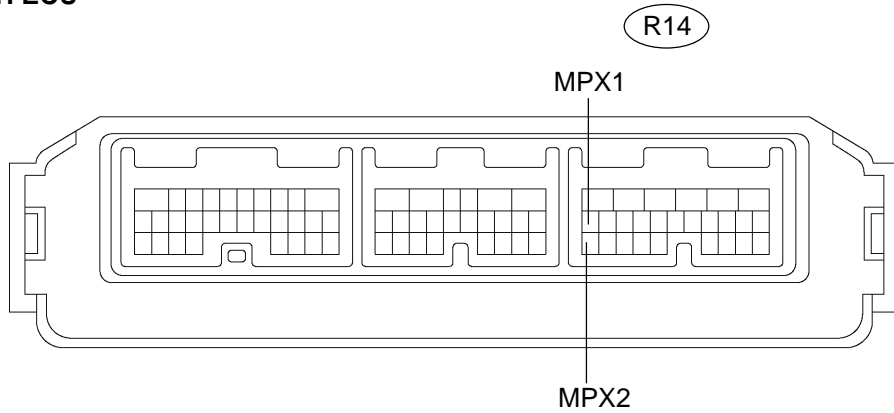
● Rear Door LH ECU



N

120097

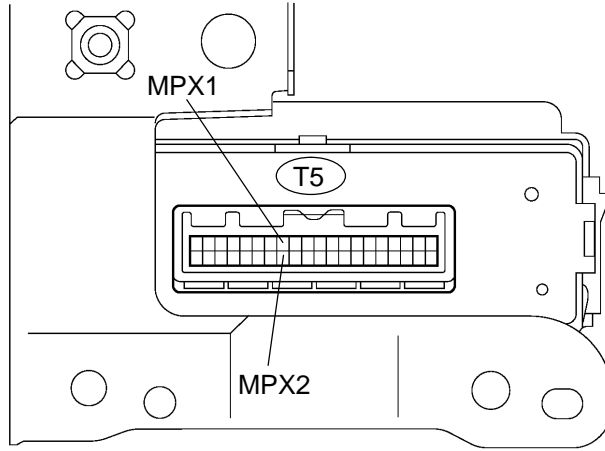
● Rear Door RH ECU



N

120097

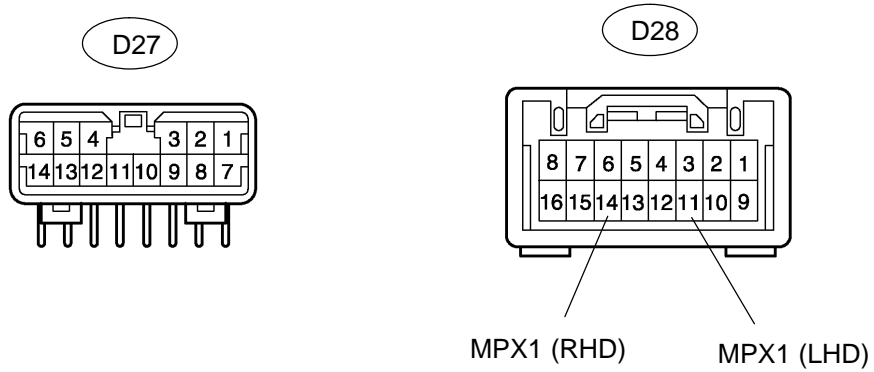
● Theft Deterrent ECU



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I20093

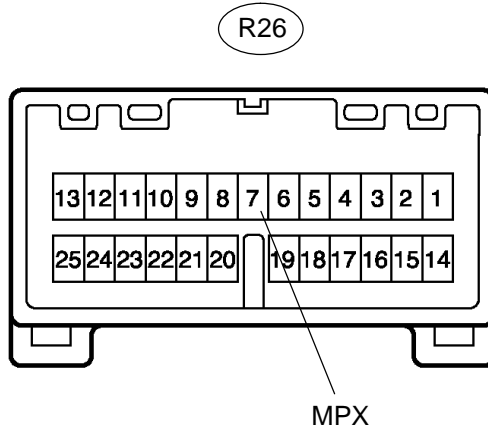
● Driver Seat ECU



T

I20417

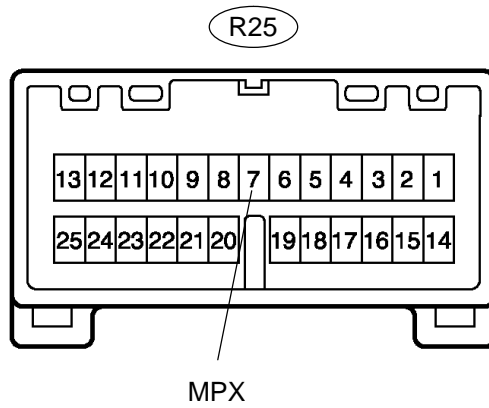
● Rear RH Seat ECU



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I20398

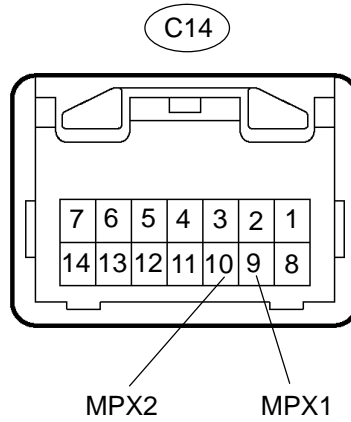
● Rear LH Seat ECU



T

I20398

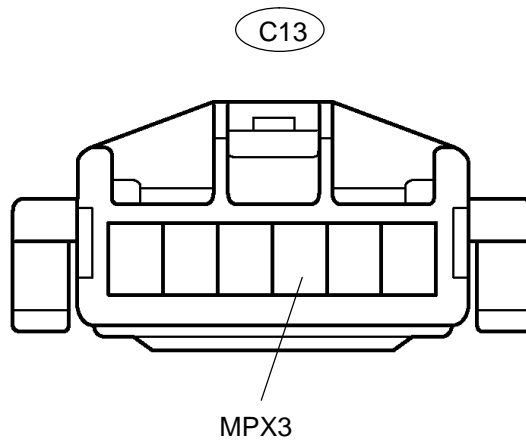
● Combination Switch



N

I13684

● Steering Pad Switch

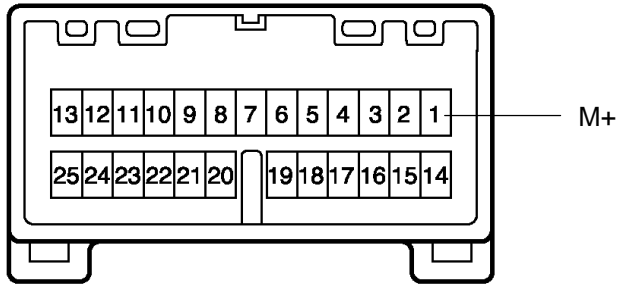


T

I20412

● Clearance Soner ECU

C17

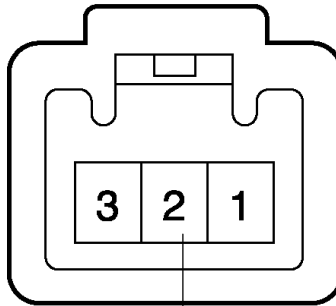


T

I20398

● Rain Sensor

R6

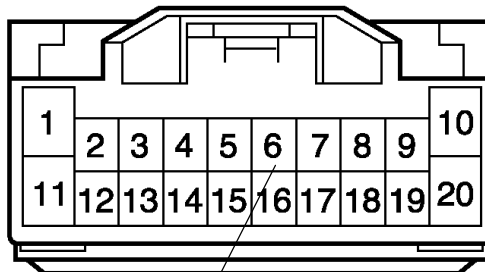


T

I20409

● Rear Seat Switch

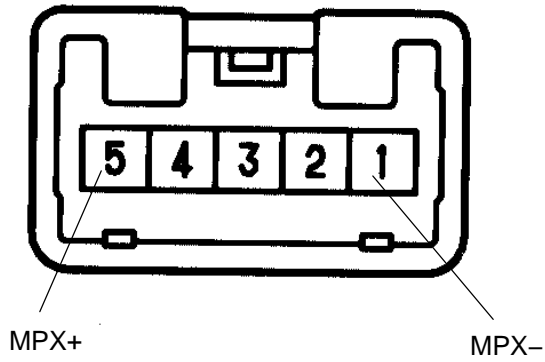
R27



T

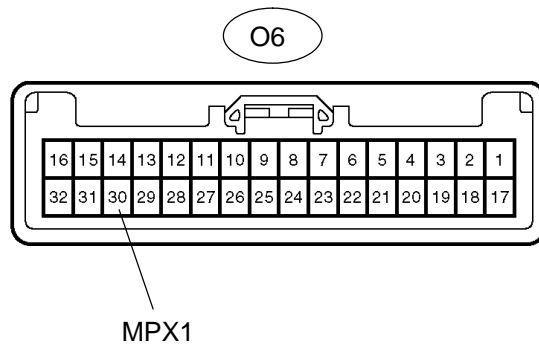
I20394

● Accessory Bus Buffer



I22446

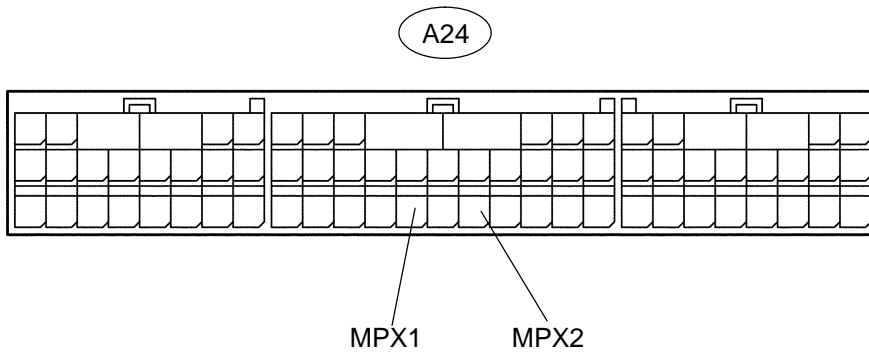
● Overhead J/B



N

I20778

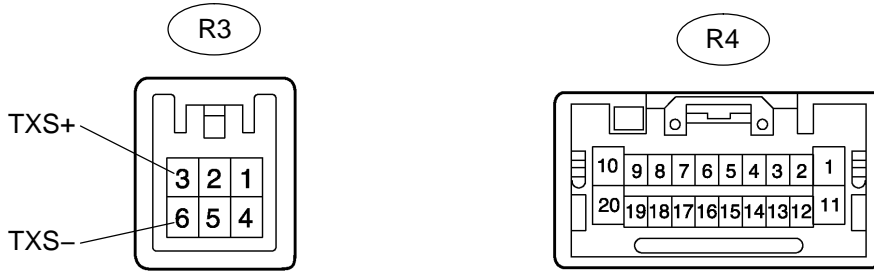
● Airbag Sensor Assembly



P

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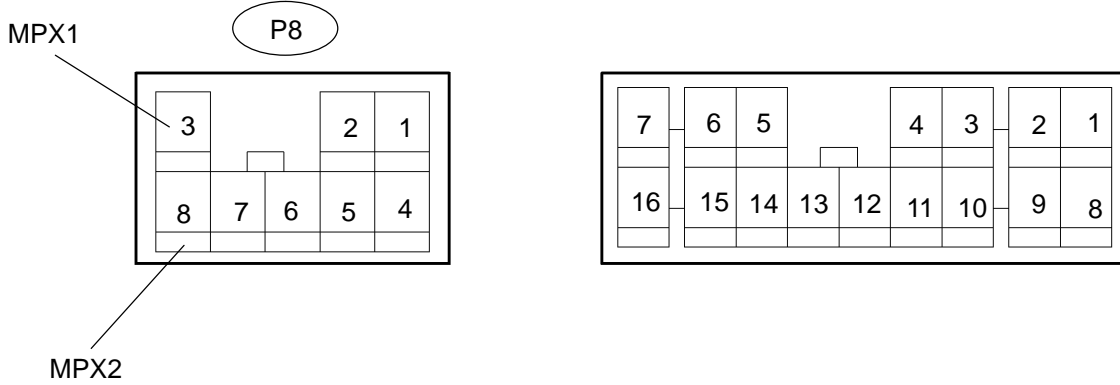
● Radio and Player



T

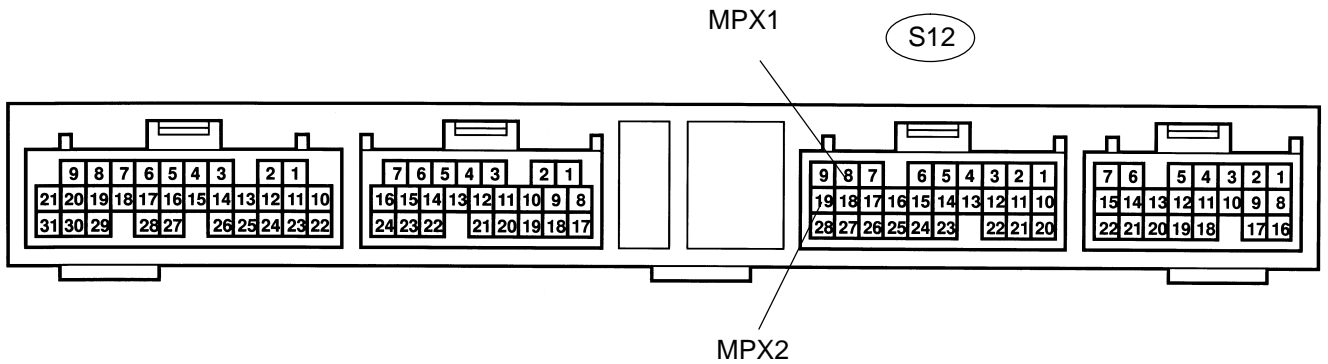
I20415

● Tilt and Telescopic ECU



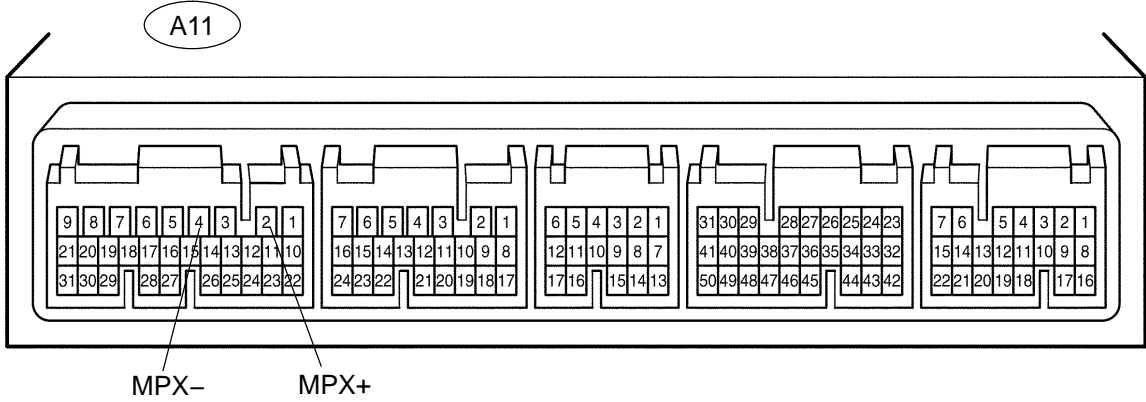
F05341

● Skid Control ECU



F02094

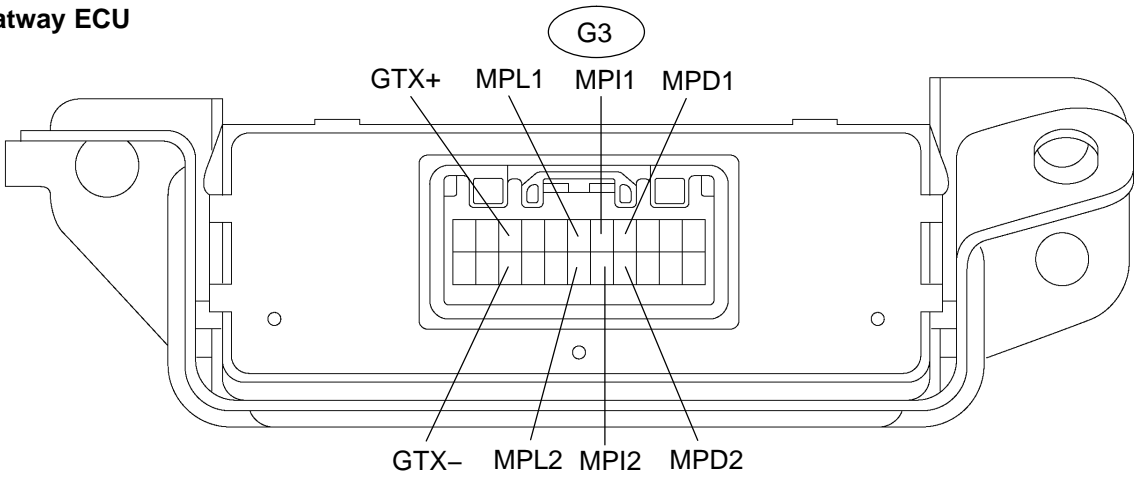
● A/C ECU



P

I20955

● Gateway ECU



N

I20094

PROBLEM SYMPTOMS TABLE

HINT:

Related systems are mentioned in (– system).

LIGHTING SYSTEM:

System	Refer to system	See page
Automatic light control system (Headlight is normal)	Driver side J/B control system (Luggage room J/B control system) (Combination meter system) (Front light control system) (LEXUS navigation system)	DI-1044 – – – –
Back-up light system	Driver side J/B control system (Luggage room J/B control system) (Automatic transmission system)	DI-1044 – –
Front fog light system (Headlight is normal)	Driver side J/B control system (Combination switch control system) (Front light control system)	DI-1044 – –
Front parking light	Driver side J/B control system (Front light control system)	DI-1044 –
Front clearance light	Driver side J/B control system (Front light control system)	DI-1044 –
Headlight beam level control system (Headlight is normal)	Passenger side J/B control system (Combination meter system)	DI-1103 –
Headlight system (Hi beam or Flash)	Driver side J/B control system (Combination switch control system) (Front light control system)	DI-1044 – –
Headlight system (Low beam)	Driver side J/B control system (Combination switch control system)	DI-1044 –
License plate light	Driver side J/B control system (Luggage room J/B control system)	DI-1044 –
Light auto turn off system (Headlight is normal)	Driver side J/B control system (Engine immobiliser system) (Front light control system) (Driver door control system) (Theft deterrent system)	DI-1044 – – – –
Side marker light	Driver side J/B control system (Front light control system)	DI-1044 –
Stop light system	Driver side J/B control system (Luggage room J/B control system)	DI-1044 –
Taillight system	Driver side J/B system (Combination switch control system) (Luggage room J/B control system)	DI-1044 – –
Turn signal and hazard warning system	Driver side J/B control system (Combination switch control system) (Luggage room J/B control system)	DI-1044 – –

ILLUMINATION SYSTEM:

System	Refer to system	See page
Buckle illumination	Driver side J/B control system (Driver belt) Passenger side J/B control system (Passenger belt) Luggage room J/B control system (Rear belt)	DI-1044 DI-1103 DI-1140
Door courtesy light	Passenger door control system (Driver door control system) (Rear left door control system) (Rear right door control system)	DI-1287 – – –
Illumination system (Switch illuminations, combination meter illumination)	Driver side J/B control system	DI-1044 –
Illuminated entry system (Illumination is normal)	Driver side J/B control system Passenger side J/B control system (Driver door control system) (Passenger door control system) (Rear left door control system) (Rear right door control system)	DI-1044 DI-1103 – – – –
Illumination and interior light system (Vanity light, interior light, front personal light, step light, ignition key illumination)	Passenger side J/B control system	DI-1103
Outer step light does not light up (in outer mirror)	Passenger side J/B ECU (Driver door control system) (Passenger door control system)	DI-1103 – –
Luggage compartment light	Luggage room J/B control system	DI-1140

WINDOW, DOOR LOCK AND SECURITY SYSTEM:

System	Refer to system	See page
Door lock system	Theft deterrent system (Driver door control system (Driver side)) (Passenger door control system (Passenger side)) (Rear left door control system (Rear left side)) (Rear right door control system (Rear right side))	DI-858 – – – –
Door lock system (Key confinement prevention function)	Theft deterrent system (Engine immobiliser system) (Driver door control system (Driver side)) (Passenger door control system (Passenger side)) (Rear left door control system (Rear left side)) (Rear right door control system (Rear right side))	DI-858 – – – – –
Door closer system	Driver door control system (Driver side) Passenger door control system (Passenger side) Rear left door control system (Rear left side) Rear right door control system (Rear right side)	DI-1222 DI-1287 DI-1346 DI-1393
Engine immobiliser system	Engine immobiliser system (Engine system)	DI-944 –
Luggage compartment door opener system	Luggage room J/B control system (Driver side J/B control system) (Theft deterrent system)	DI-1140 – –
Luggage compartment door closer system	Luggage room J/B control system Driver side J/B control system (Theft deterrent system)	DI-1140 DI-1044 –
Power window control system	Driver door control system (Passenger door control system) (Rear left door control system) (Rear right door control system)	DI-1222 – – –

Theft deterrent system (Door lock system is normal)	Theft deterrent system (Driver side J/B control system) (Luggage room J/B control system) (Driver door control system) (Passenger door control system)	DI-858 – – – –
Wireless door lock control system (Door lock system is normal)	Theft deterrent system (Luggage room J/B control system) (Moon roof system) (Driver door control system) (Passenger door control system) (Rear left door control system) (Rear right door control system)	DI-858 – – – – – –

DRIVER INFORMATION SYSTEMS:

System	Refer to system	See page
Combination meter (Gauge, Warning light, Indicator light, Buzzer)	Combination meter system	DI-971
Clock	A/C system (Combination meter system)	DI-1788 –
Multi information Display	Combination meter system (Steering pad switch system)	DI-971 –
Key remainder warning system	Combination meter system (Engine immobiliser system) (Driver door control system) (Passenger door control system) (Rear left door control system) (Rear right door control system)	DI-971 – – – – –
LEXUS park assist system	LEXUS park assist system Rain sensor system	DI-1754 DI-1022
LEXUS navigation system	LEXUS navigation system (Steering pad switch system) (Passenger side J/B control system)	DI-1593 – –
Seat belt warning system	Combination meter system (Driver side J/B control system) (Passenger side J/B control system)	DI-971 – –
Driving position memory system	Power seat control system (Driver door control system) (Engine system)	DI-784 – –

MIRROR SYSTEM:

System	Refer to system	See page
Automatic glare-resistant EC mirror system	Driver door control system (Passenger door control system)	DI-1222 –
Remote control mirror system	Driver door control system (Driver side J/B control system) (Passenger door control system) (Engine system)	DI-1222 – – –
Retract mirror system	Driver door control system (Driver side J/B control system) (Passenger door control system) (Engine system)	DI-1222 – – –
Mirror heater system	Driver door control system (Passenger door control system) (A/C system)	DI-1222 – –

SEAT AND SEAT BELT SYSTEM:

System	Refer to system	See page
Driver's power seat system	Power seat control system	DI-784
Rear passenger's power seat system	Rear seat switch system Rear right seat control system Rear left seat control system (Luggage room J/B control system)	DI-848 DI-826 DI-803 –
Seat heater system (Rear)	Rear seat switch system Seat heater system	DI-848 BE-139
Vibration seat system	Rear right seat control system Rear left seat control system	DI-826 DI-803
Power shoulder belt anchorage system	Driver door control system (Passenger door control system) (Driver side J/B control system) (Passenger side J/B control system)	DI-1222 – – –
Driving position memory system	Power seat control system (Tilt and telescopic steering system)	DI-784 –

AIR CONDITIONING SYSTEM:

System	Refer to system	See page
Air conditioning system	Air conditioning system (Engine system)	DI-1788 –
Rear air conditioning system	Air conditioning system (Engine system) (Luggage room J/B control system)	DI-1788 – –

OTHER SYSTEMS:

System	Refer to system	See page
Cellular mobile telephone	LEXUS navigation system (Steering pad switch system)	DI-1593 –
Cruise control system	Cruise control system	DI-895
Fuel lid opener system	Driver side J/B control system (Luggage room J/B control system)	DI-1044 –
Fuel cut system when colliding	Engine system (SRS system)	DI-1 –
Headlight cleaner system	Driver side J/B control system	DI-1044
Horn system	Front light control system	DI-1193
Adaptive laser cruise control system	Cruise control system (Combination meter system) (Combination switch control system) (Rain sensor system) (ABS and VSC system)	DI-895 – – – –
Radio and player system	Audio system (Steering pad switch system)	DI-1544 –
Rear sunshade system	(Passenger side J/B control system) (Luggage room J/B control system)	– –
Rear window defogger system	Air conditioning system	DI-1788

DIAGNOSTICS – GATEWAY SYSTEM

Wiper and washer system	Driver side J/B control system Front light control system (Combination switch control system) (Passenger side J/B control system) (Engine system) (Combination switch control system)	DI-1044 DI-1193 – – – –
Wiper and washer system (Automatic wiper system)	Passenger side J/B control system Rain sensor system (Combination switch) (Engine system)	DI-1103 DI-1022 – –
LEXUS link system	LEXUS link system	DI-1788