

ACCESSORIES & EQUIPMENT

LIN Communication System (Diagnostic Codes & Circuit Tests) - Sienna

LIN COMMUNICATION SYSTEM

DTC B1206: P/W MASTER SWITCH COMMUNICATION STOP

DESCRIPTION

This DTC is stored when LIN communication between the multiplex network master switch assembly and main body ECU stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B1206	No communication between the multiplex network master switch assembly and main body ECU for 10 seconds or more.	• Multiplex network master switch assembly • Main body ECU • Harness or connector • Instrument panel junction block assembly

WIRING DIAGRAM

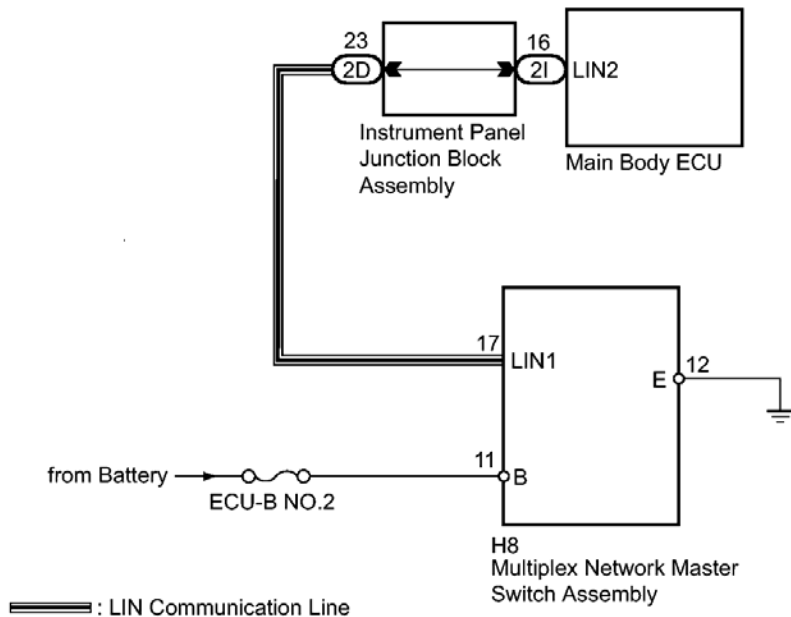


Fig. 1: P/W Master Switch Circuit Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When using the Techstream with the ignition switch off to troubleshoot:
 Connect the Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

DTC B2325 is stored when the communication between the multiplex network master switch assembly and main body ECU stops.

PROCEDURE

1. CLEAR DTC

- a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

2. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B1206 is output	A
DTC B1206 and B2325 are output	B

HINT:

When both B1206 and B2325 are output at the same time, troubleshoot B2325 first.

B --> See step 8

A: Go to next step

3. CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY - MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY)

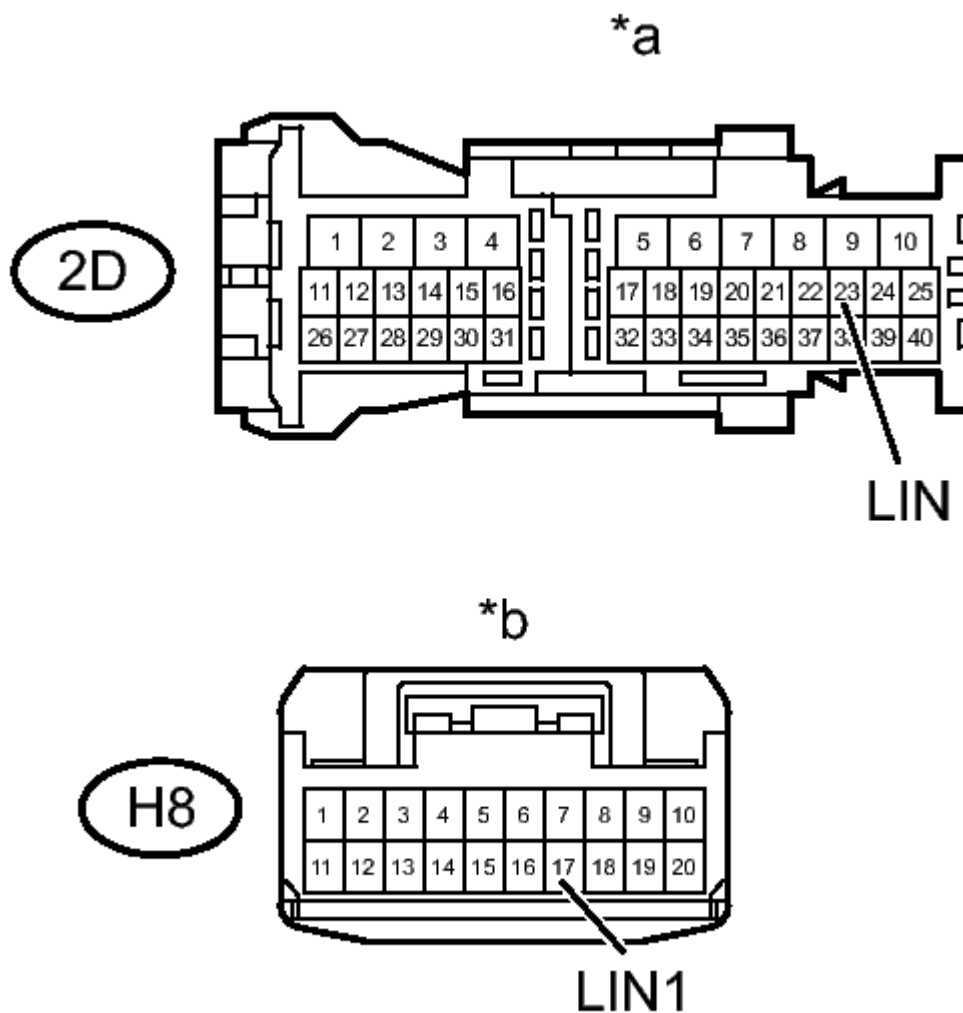


Fig. 2: Checking Harness And Connector (Instrument Panel Junction Block Assembly - Multiplex Network Master Switch Assembly)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the 2D instrument panel junction block assembly connector.
- b. Disconnect the H8 multiplex network master switch assembly connector.
- c. Measure the resistance and voltage according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2D-23 (LIN) - H8-17 (LIN1)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
H8-17 (LIN1) - Body ground	Always	10 kohms or higher

Standard Voltage

Tester Connection	Condition	Specified Condition
H8-17 (LIN1) - Body ground	Always	Below 0.5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Instrument Panel Junction Block Assembly)
*b	Front view of wire harness connector (to Multiplex Network Master Switch Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY - BATTERY AND BODY GROUND)**

- a. Disconnect the H8 multiplex network master switch assembly connector.

*a

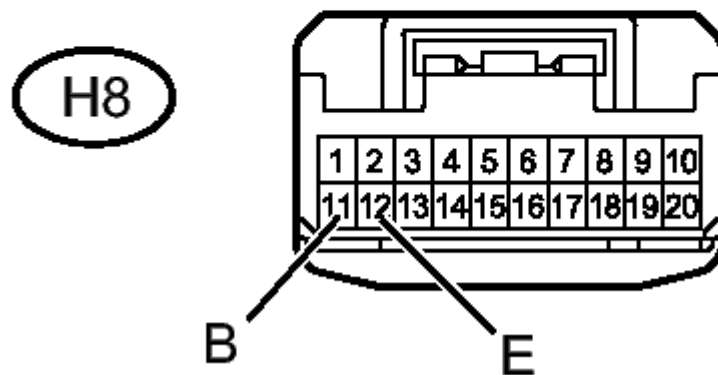


Fig. 3: Checking Harness And Connector (Multiplex Network Master Switch Assembly - Battery And Body Ground)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance

Tester Connection	Condition	Specified Condition
H8-12 (E) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Condition	Specified Condition
H8-11 (B) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

	Front view of wire harness connector
*a	(to Multiplex Network Master Switch Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

- Replace the multiplex network master switch assembly with a normally functioning part. Refer to **REMOVAL** .
- Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

6. CHECK FOR DTC

- Recheck for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B1206 is not output	A
DTC B1206 is output	B

B --> See step 7

A --> END (MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY MALFUNCTION)

7. INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

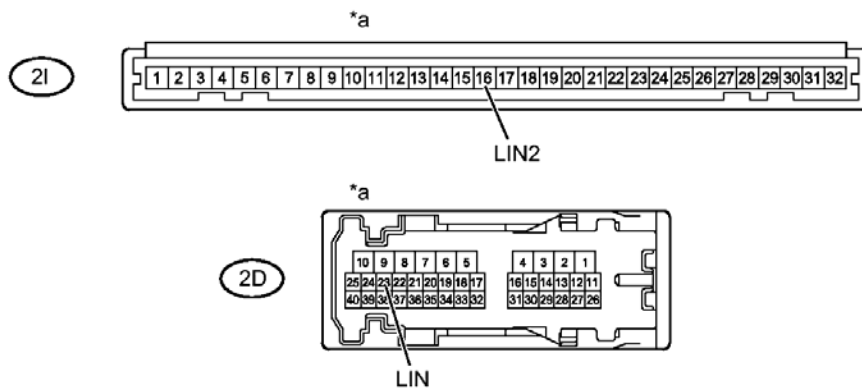


Fig. 4: Inspecting Instrument Panel Junction Block Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

	Component without harness connected	
*a	(Instrument Panel Junction Block Assembly)	--

- Remove the Instrument Panel junction block Assembly. Refer to **REMOVAL** .
- Remove the main body ECU from the Instrument Panel junction block Assembly. Refer to **REMOVAL** .
- Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2D-23 (LIN) - 2I-16 (LIN2)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
2D-23 (LIN) -	Always	10 kohms

Body ground		or higher
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NG --> See step 9

OK --> See step 10

8. **GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART**
9. **REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY. Refer to REMOVAL**
10. **REPLACE MAIN BODY ECU. Refer to REMOVAL**

DTC B124D: LOST COMMUNICATION WITH AFS LIN

DESCRIPTION

The DTC is stored when the main body ECU detects malfunctions in the LIN communication system.

DTC No.	DTC Detection Condition	Trouble Area
B124D	Malfunction in LIN communication system	• Inner rear view mirror assembly • Harness or connector • AFS ECU (headlight swivel computer assembly)

WIRING DIAGRAM

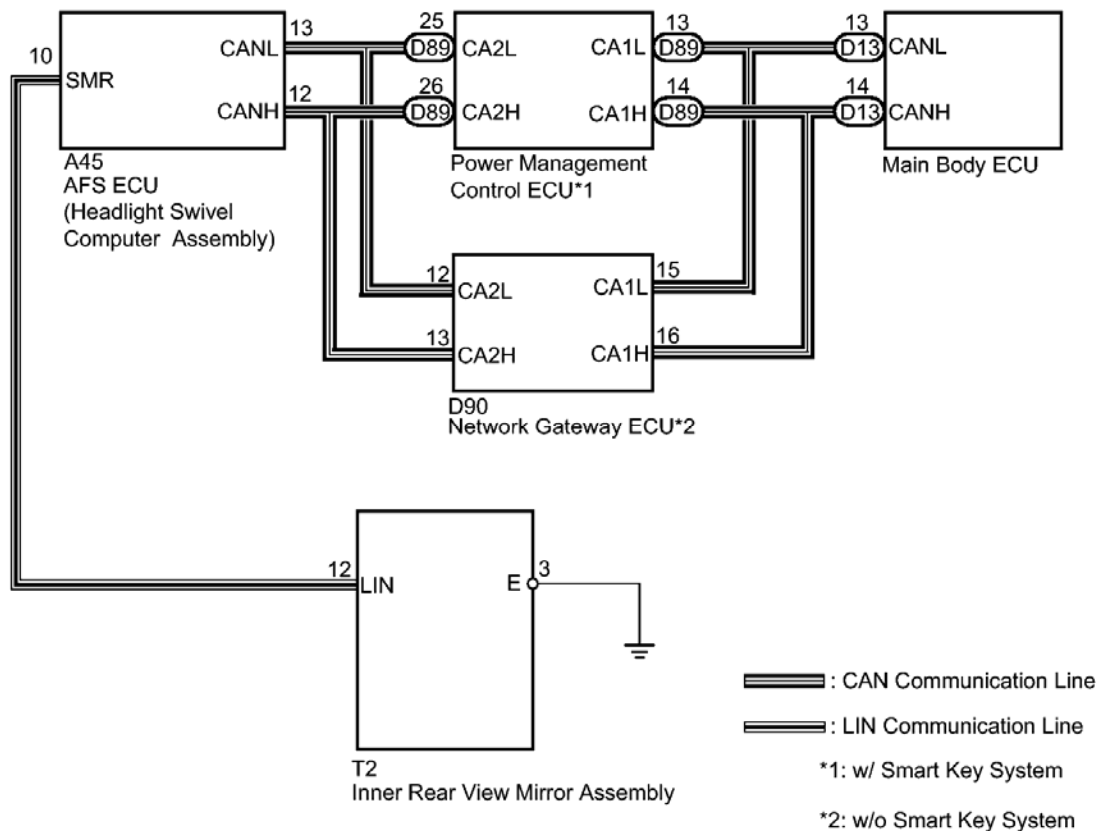


Fig. 5: AFS LIN Circuit Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- First perform the communication function inspections in How to Proceed with Troubleshooting to confirm that there are no CAN communication malfunctions before troubleshooting this symptom.
- When using the Techstream with the ignition switch off to troubleshoot: Connect the Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. CLEAR DTC

- a. Clear the DTC. Refer to **DTC CHECK / CLEAR**.

NEXT: Go to next step

2. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B124D is output	A
DTC B124D is not output	B

B --> See step 6

A: Go to next step

3. CHECK HARNESS AND CONNECTOR (AFS ECU (HEADLIGHT SWIVEL COMPUTER ASSEMBLY) - INNER REAR VIEW MIRROR ASSEMBLY)

- a. Disconnect the A45 AFS ECU (headlight swivel computer assembly) connector.

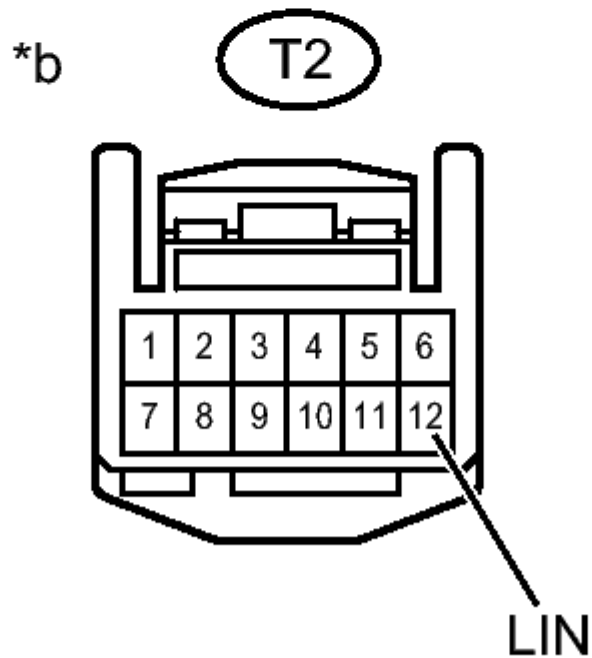
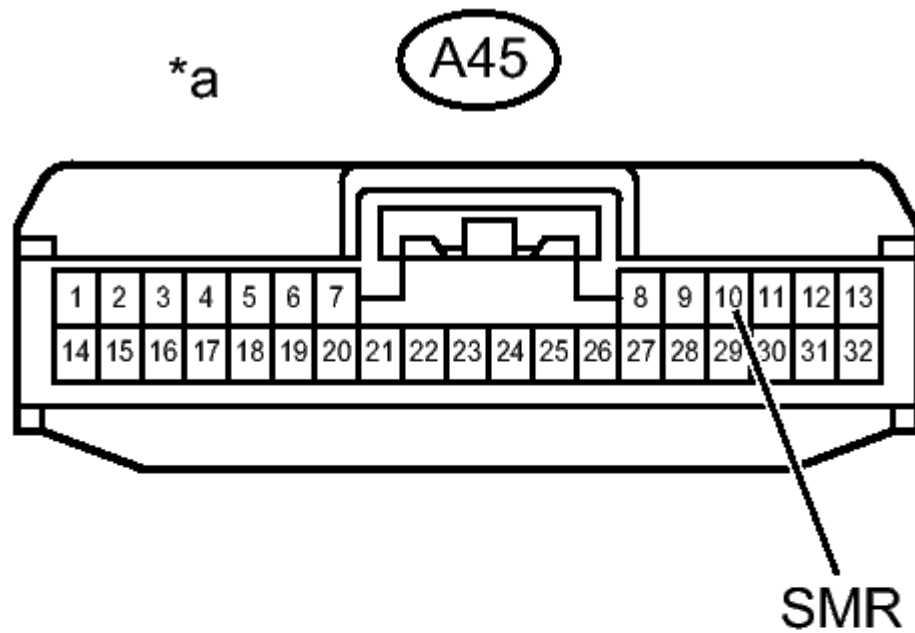


Fig. 6: Checking Harness And Connector (AFS ECU (Headlight Swivel Computer Assembly) - Inner Rear View Mirror Assembly)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Disconnect the T2 inner rear view mirror assembly connector.

- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
A45-10 (SMR) - T2-12 (LIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
T2-12 (LIN) - Body ground	Always	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to AFS ECU (Headlight Swivel Computer Assembly))
*b	Front view of wire harness connector (to Inner Rear View Mirror Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. INSPECT AFS ECU (HEADLIGHT SWIVEL ECU ASSEMBLY)

- a. Reconnect the A45 AFS ECU (headlight swivel computer assembly) connector.

- b. Connect an oscilloscope to the T2 inner rear view mirror assembly connector.

*a

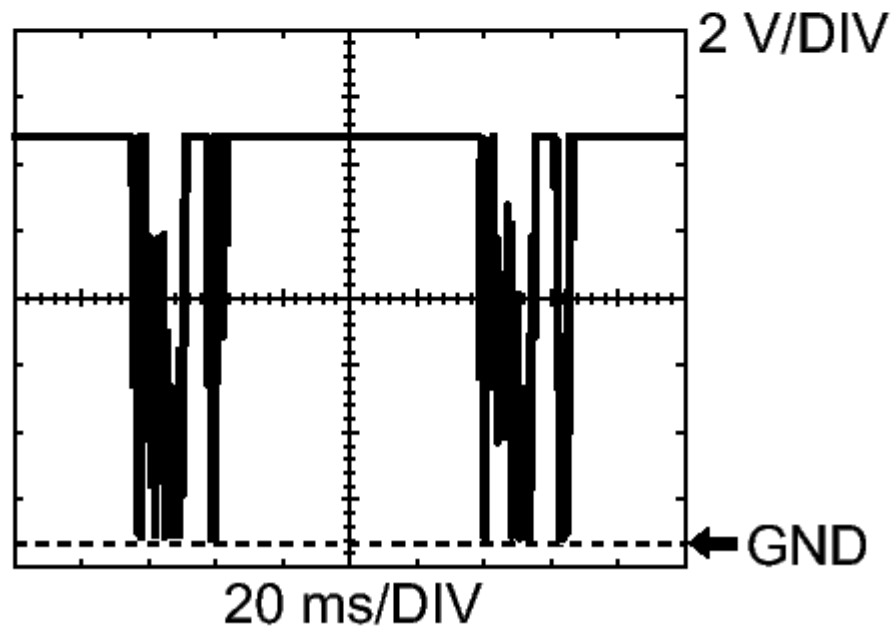
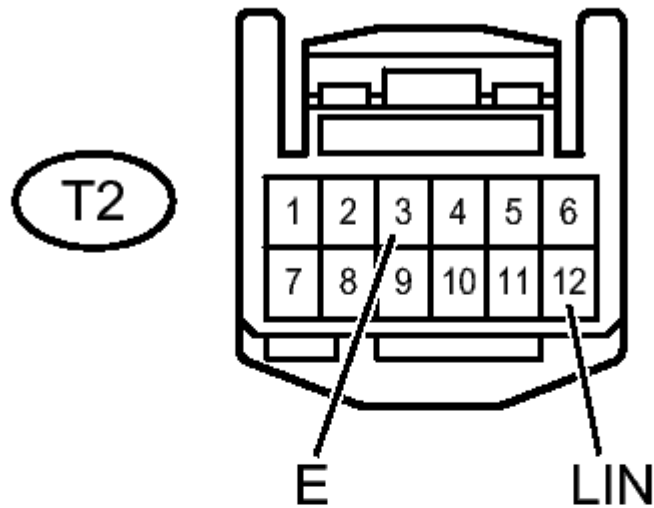


Fig. 7: Inspecting AFS ECU with Waveform Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Check the waveform.

OK

Tester Connection	Switch Condition	Specified Condition
T2-12 (LIN) - T2-3 (E)	Ignition switch ON	Correct waveform is as shown

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Inner Rear View Mirror Assembly)
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NG --> See step 7

OK --> See step 5

5. **REPLACE AFS ECU (HEADLIGHT SWIVEL ECU ASSEMBLY).** Refer to **REMOVAL**
6. **USE SIMULATION METHOD TO CHECK.** Refer to **HOW TO PROCEED WITH TROUBLESHOOTING**
7. **REPLACE INNER REAR VIEW MIRROR ASSEMBLY.** Refer to **REMOVAL**

DTC B2287: LIN COMMUNICATION MASTER MALFUNCTION; DTC B278C: LOST COMMUNICATION WITH POWER SOURCE CONTROL

DESCRIPTION

- DTC 2287 is stored when there is an open or short circuit or an ECU communication malfunction between the certification ECU (smart key ECU) and power management control ECU.
- DTC 278C is stored when LIN communication between the certification ECU and power management control ECU stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2287	There is an open or short circuit or an ECU communication malfunction between the certification ECU (smart	• Power management control ECU • Certification ECU (smart key ECU)

	key ECU) and power management control ECU.	• Harness or connector
B278C	No communication between the certification ECU (smart key ECU) and power management control ECU for more than 10 seconds.	• Power management control ECU • Certification ECU (smart key ECU) • Harness or connector

WIRING DIAGRAM

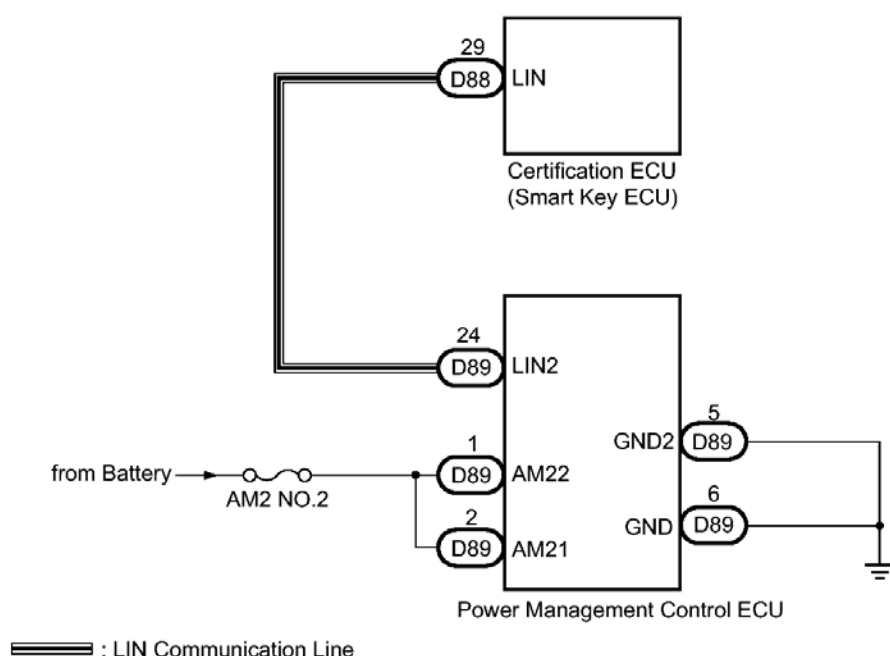


Fig. 8: Power Management Control ECU Circuit Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- If the certification ECU (smart key ECU) is replaced, register the key.
- When using the Techstream to troubleshoot with the engine switch off:

Connect the Techstream to the DLC3, and turn the courtesy switch on and off at 1.5-second intervals until communication between the Techstream and vehicle begins.

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. CLEAR DTC

- Clear DTCs. Refer to DTC CHECK / CLEAR .

NEXT: Go to next step

2. CHECK FOR DTC

- Check for DTCs. Refer to DTC CHECK / CLEAR .

RESULT

Result	Proceed to
B2287 or B278C are output	A
B2287 or B278C and B2785 are output	B

HINT:

When both B2287 or B278C and B2785 are output at the same time, troubleshoot B2785 first.

B --> See step 8

A: Go to next step

3. CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - POWER MANAGEMENT CONTROL ECU)

- Disconnect the D88 certification ECU (smart key ECU) and D89 power management control ECU connectors.

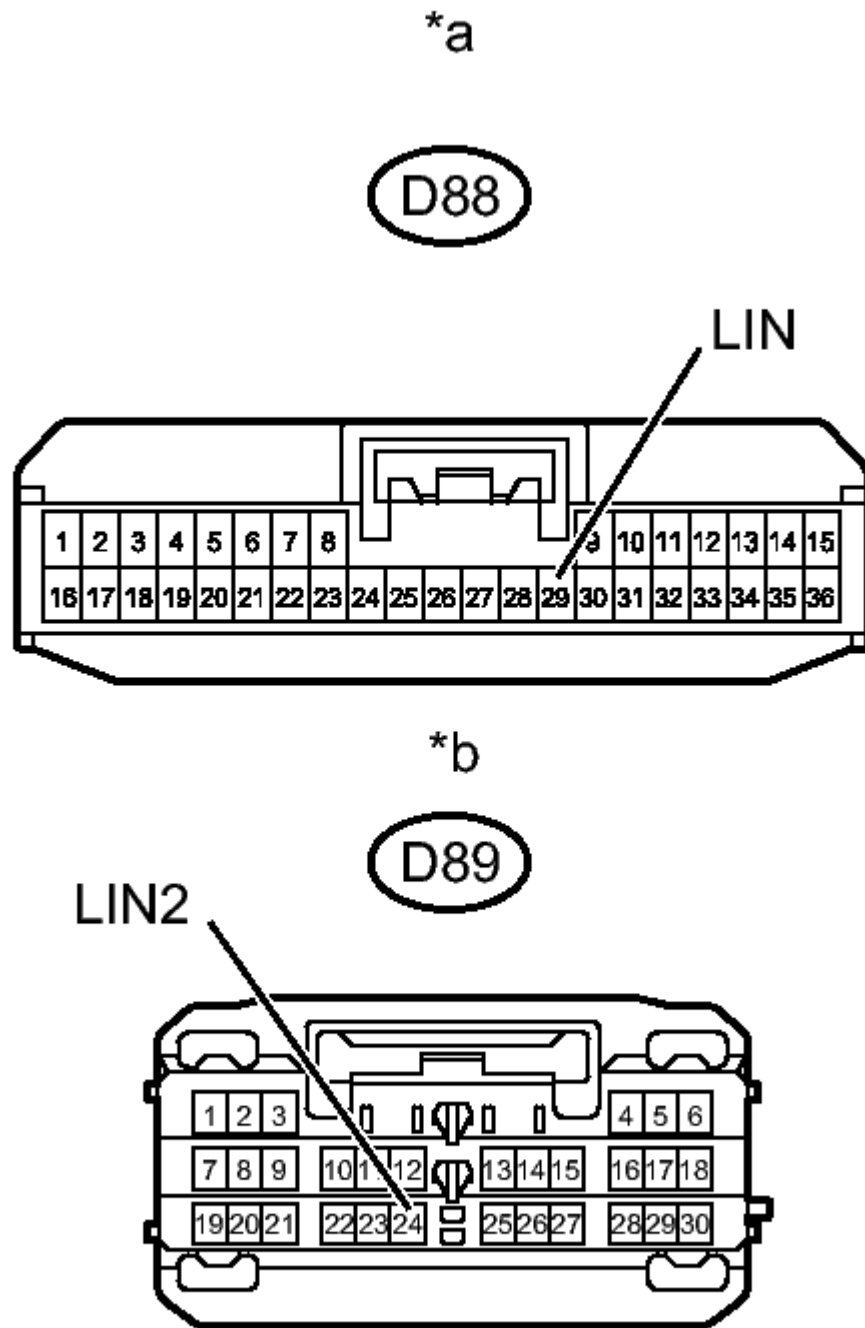


Fig. 9: Checking Harness And Connector (Certification ECU - Power Management Control ECU)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D88-29 (LIN) - D89-24 (LIN2)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D88-29 (LIN) - Body ground	Always	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Certification ECU (Smart Key ECU))
*b	Front view of wire harness connector (to Power Management Control ECU)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (POWER MANAGEMENT CONTROL ECU - BATTERY AND BODY GROUND)**
 - a. Disconnect the D89 power management control ECU connector.

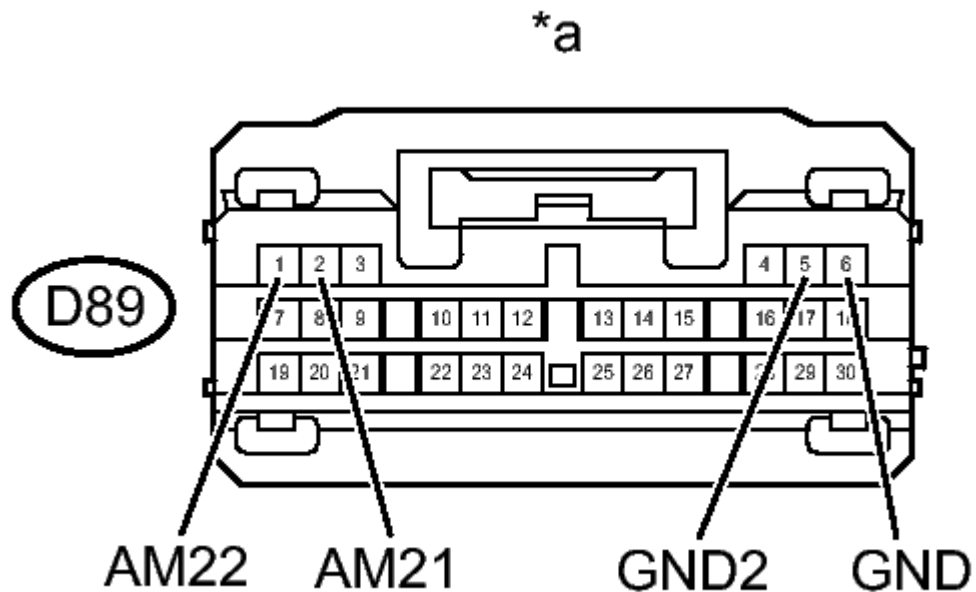


Fig. 10: Checking Harness And Connector (Power Management Control ECU - Battery And Body Ground)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance and voltage according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D89-5 (GND2) - Body ground	Always	Below 1 ohms
D89-6 (GND) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Condition	Specified Condition
D89-1 (AM22) - Body	Always	11 to 14 V

ground		
D89-2 (AM21) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Management ECU)
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NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. REPLACE POWER MANAGEMENT CONTROL ECU

- Replace the power management control ECU with a normally functioning part. Refer to **REMOVAL** .
- Clear the DTC. Refer to **DTC CHECK / CLEAR**

NEXT: Go to next step

6. CHECK FOR DTC

- Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
B2287 or B278C are output	A
B2287 or B278C and B2785 are output	B

B --> See step 7

A --> END (POWER MANAGEMENT CONTROL ECU IS MALFUNCTIONING)

- 7. REPLACE CERTIFICATION ECU (SMART KEY ECU). Refer to REMOVAL**
- 8. GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART**

DTC B2321: DRIVER SIDE DOOR ECU COMMUNICATION STOP

DESCRIPTION

This DTC is stored when LIN communication between the front power window regulator motor LH and main body ECU stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2321	No communication between the front power window regulator motor LH and main body ECU for 10 seconds or more.	• Front power window regulator motor assembly LH • Main body ECU • Instrument panel junction block assembly • Harness or connector

WIRING DIAGRAM

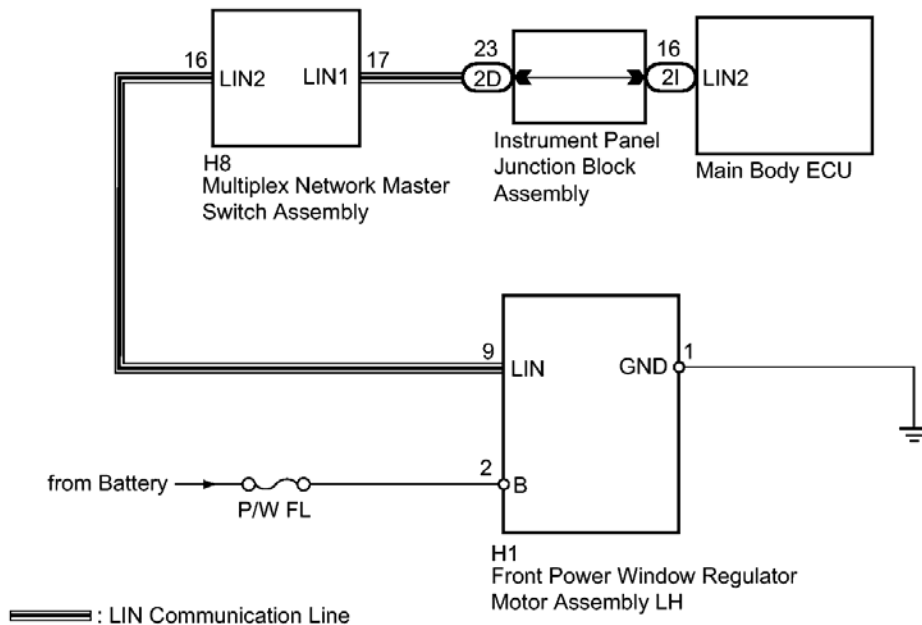


Fig. 11: Driver Side Door ECU Circuit Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When using the Techstream with the ignition switch off to troubleshoot:
 Connect the Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

DTC B2325 is stored when the communication between the front power window regulator motor assembly LH and main body ECU stops.

PROCEDURE

1. **CLEAR DTC**

- a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

2. **CHECK FOR DTC**

- a. Recheck for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2321 is output	A
DTC B2321 and B1206 are output	B
DTC B2321, B1206 and/or B2325 are output	

HINT:

- When both B1206 and B2321 are output at the same time, troubleshoot B1206 first.
- When both B1206 and B2325 are output at the same time, troubleshoot B2325 first.

B --> See step 7

A: Go to next step

3. **CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY - FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)**

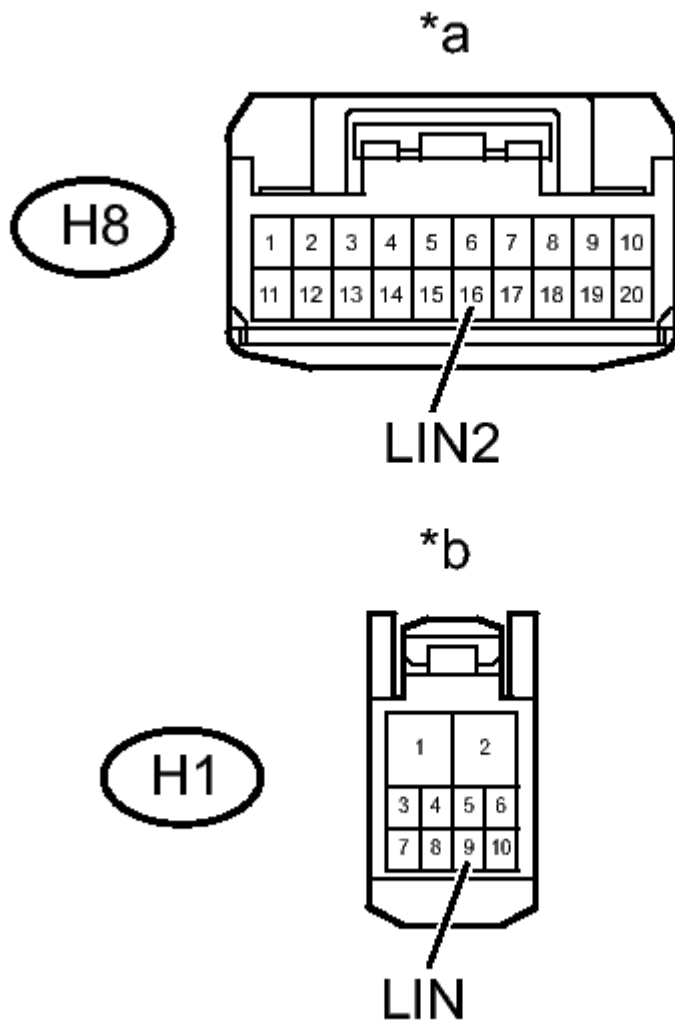


Fig. 12: Checking Harness And Connector (Multiplex Network Master Switch Assembly - Front Power Window Regulator Motor Assembly LH)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the H8 multiplex network master switch assembly connector.
- b. Disconnect the H1 front door window regulator motor assembly LH connector.
- c. Measure the resistance and voltage according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
H8-16 (LIN2) - H1-9 (LIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
H1-9 (LIN) - Body ground	Always	10 kohms or higher

Standard Voltage

Tester Connection	Condition	Specified Condition
H1-9 (LIN) - Body ground	Always	Below 0.5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Multiplex Network Master Switch Assembly)
*b	Front view of wire harness connector (to Front Power Window Regulator Motor Assembly LH)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR MOTOR

ASSEMBLY LH - BATTERY AND BODY GROUND)

- a. Disconnect the H1 power window regulator motor assembly LH connector.

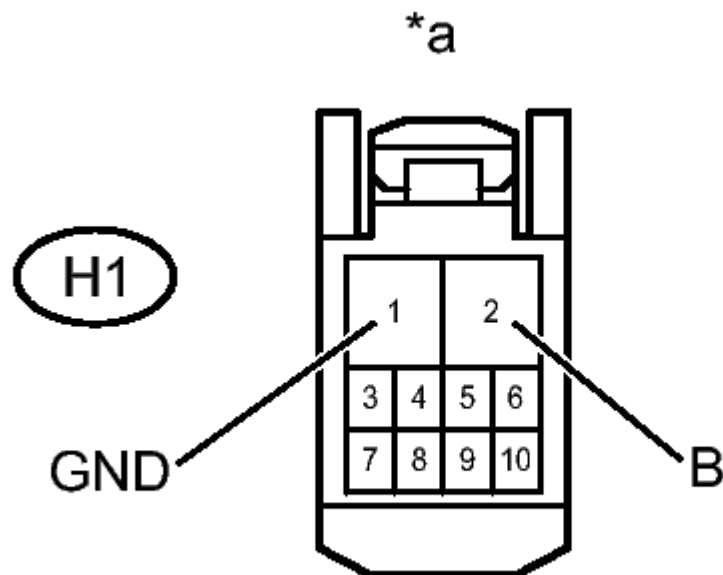


Fig. 13: Checking Harness And Connector (Power Window Regulator Motor Assembly LH - Battery And Body Ground)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance

Tester Connection	Condition	Specified Condition
H1-1 (GND) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Condition	Specified Condition
H1-2 (B) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Front Power Window Regulator Motor Assembly LH)
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NG --> **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK: Go to next step

5. REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

- Temporarily replace the front power window regulator motor assembly LH with a new or normally functioning one. Refer to **REMOVAL** .
- Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

6. CHECK FOR DTC

- Recheck for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2321 is not output	A
DTC B2321 is output	B

B --> See step 8

A --> END (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH IS MALFUNCTIONING)

7. GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to **DIAGNOSTIC TROUBLE CODE**

CHART

8. REPLACE MAIN BODY ECU. Refer to REMOVAL

DTC B2322: FRONT PASSENGER SIDE DOOR ECU COMMUNICATION STOP

DESCRIPTION

This DTC is stored when LIN communication between the front power window regulator motor assembly RH and main body ECU stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2322	No communication between the front power window regulator motor assembly RH and main body ECU for 10 seconds or more.	• Front power window regulator motor assembly RH • Main body ECU • Harness or connector • Instrument panel junction block assembly

WIRING DIAGRAM

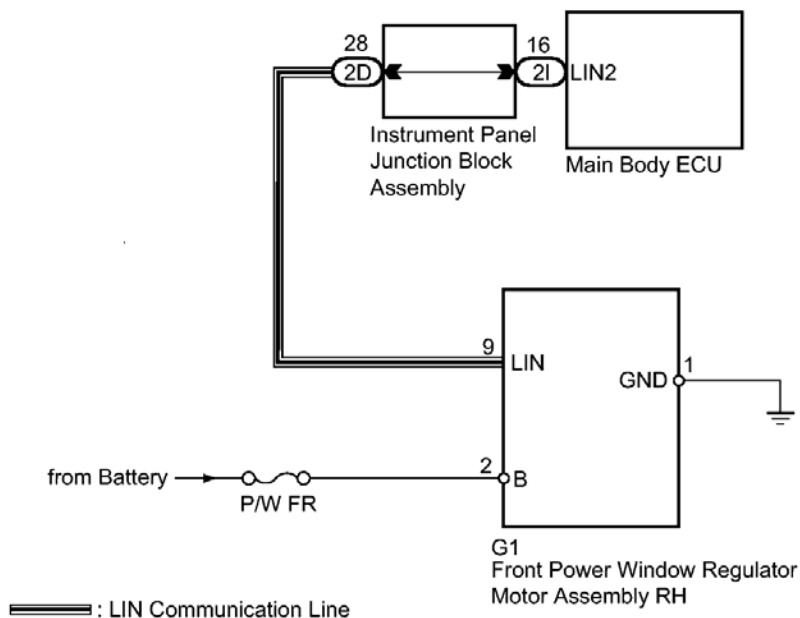


Fig. 14: Front Passenger Side Door ECU Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When using the Techstream with the ignition switch off to troubleshoot:

Connect the Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

DTC B2325 is stored when the communication between the front power window regulator motor RH and main body ECU stops.

PROCEDURE

1. CLEAR DTC

- a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

2. CHECK FOR DTC

- a. Recheck for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2322 is output	A
DTC B2322 and B2325 are output	B

HINT:

When both B2322 and B2325 are output at the same time, troubleshoot B2325 first.

B --> See step 8

A: Go to next step

3. **CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY - FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)**

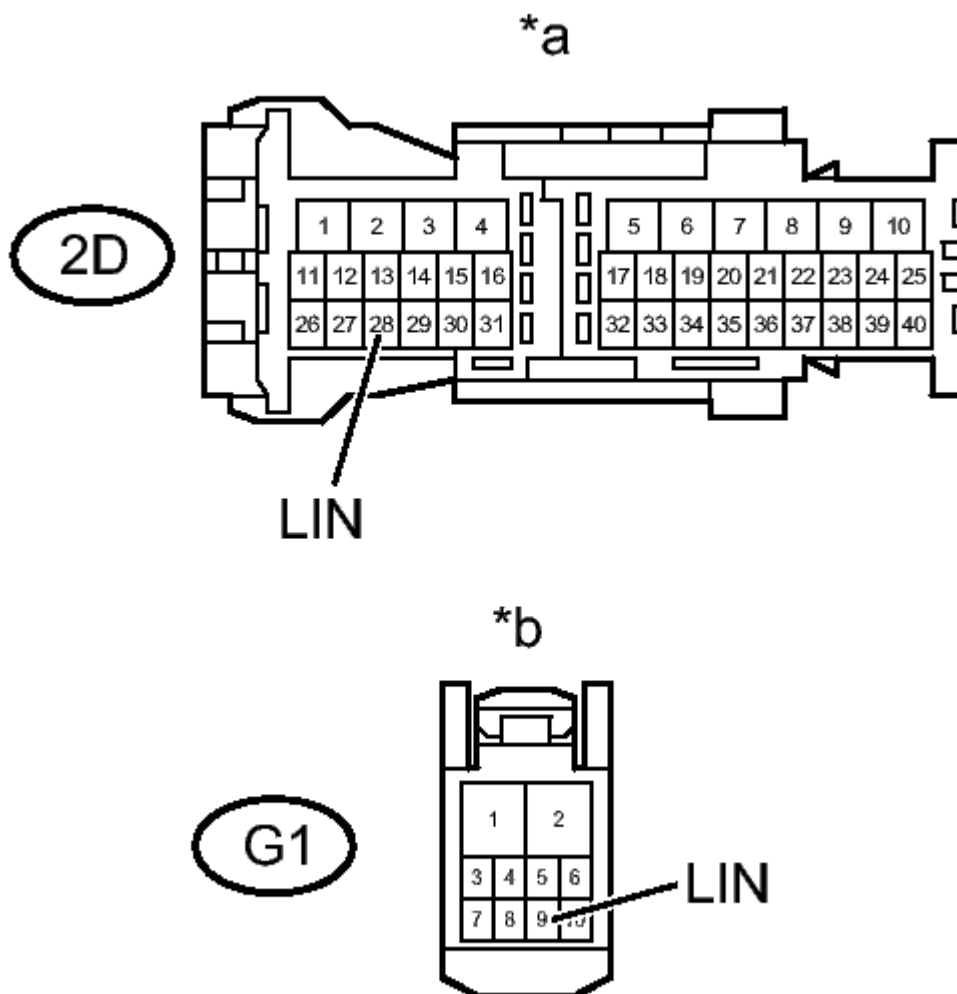


Fig. 15: Checking Harness And Connector (Instrument Panel Junction Block Assembly - Front Power Window Regulator Motor Assembly RH)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Disconnect the 2D instrument panel junction block assembly connector.
- Disconnect the G1 front power window regulator motor assembly RH connector.
- Measure the resistance and voltage according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2D-28 (LIN) - G1-9 (LIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
G1-9 (LIN) - Body ground	Always	10 kohms or higher

Standard Voltage

Tester Connection	Condition	Specified Condition
G1-9 (LIN) - Body ground	Always	Below 0.5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Instrument Panel Junction Block Assembly)
*b	Front view of wire harness connector (to Front Power Window Regulator Motor Assembly RH)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH - BATTERY AND BODY GROUND)**

- a. Disconnect the G1 front power window regulator motor assembly RH connector.

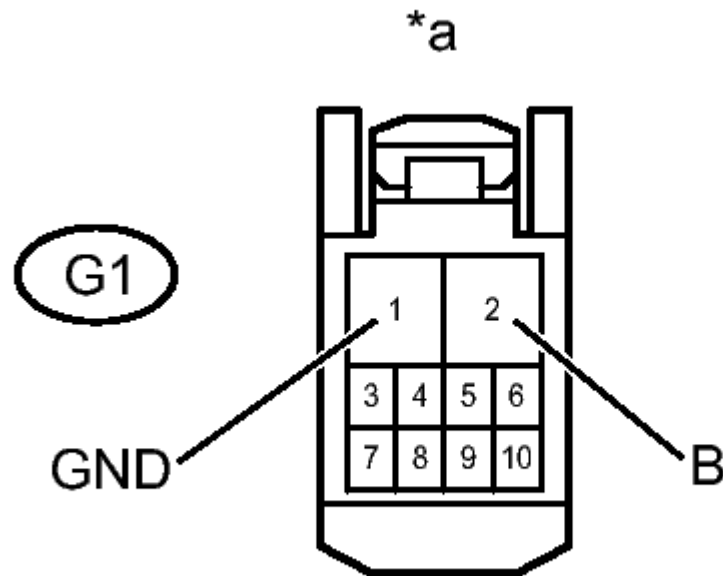


Fig. 16: Checking Harness And Connector (Front Power Window Regulator Motor Assembly RH - Battery And Body Ground)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance

Tester Connection	Condition	Specified Condition
G1-1 (GND) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester	Condition	Specified
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Connection		Condition
G1-2 (B) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Front Power Window Regulator Motor Assembly RH)
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NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

- Temporarily replace the front power window regulator motor assembly RH with a new or normally functioning one. Refer to **REMOVAL** .
- Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

6. CHECK FOR DTC

- Recheck for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2322 is not output	A
DTC B2322 is output	B

B --> See step 7

A --> END (FRONT WINDOW REGULATOR MOTOR ASSEMBLY RH IS MALFUNCTIONING)

7. INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

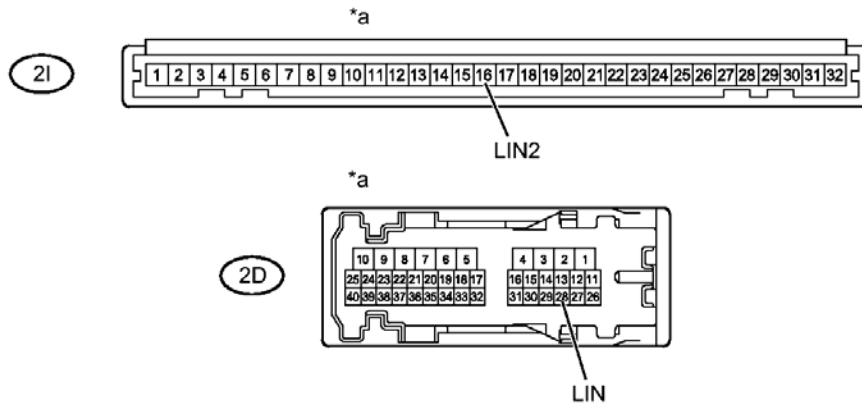


Fig. 17: Inspecting Instrument Panel Junction Block Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

Component without harness connected	
*a (Instrument Panel Junction Block Assembly)	--

- Remove the instrument panel junction block assembly. Refer to **REMOVAL**.
- Remove the main body ECU from the instrument panel junction block assembly. Refer to **REMOVAL**.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2D-28 (LIN) - 2I-16 (LIN2)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
2D-28 (LIN) - Body ground)	Always	10 kohms or higher

NG --> See step 9

OK --> See step 10

8. **GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART**
9. **REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY. Refer to REMOVAL**
10. **REPLACE MAIN BODY ECU. Refer to REMOVAL**

DTC B2323: REAR DOOR RH ECU COMMUNICATION STOP

DESCRIPTION

This DTC is stored when LIN communication between the rear power window regulator motor assembly RH and main body ECU stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2323	No communication between the rear power window regulator motor assembly RH and main body ECU for 10 seconds or more.	• Rear power window regulator motor assembly RH • Main body ECU • Harness or connector • Instrument panel junction block assembly

WIRING DIAGRAM

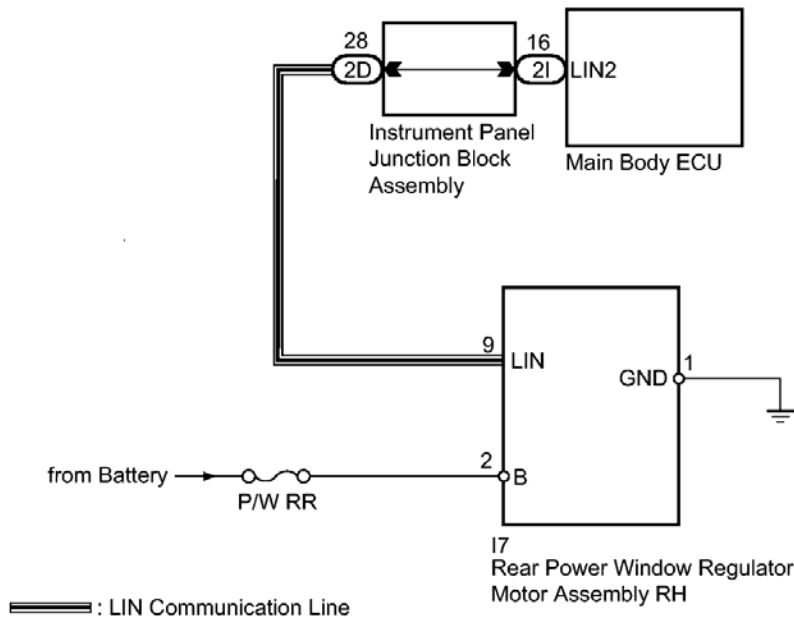


Fig. 18: Rear Door RH ECU Circuit Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When using the Techstream with the ignition switch off to troubleshoot:
 Connect the Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.
- Inspect the fuses for circuit related to this system before performing the following inspection procedure

HINT:

DTC B2325 is stored when the communication between the rear power window regulator motor assembly RH and main body ECU stops.

PROCEDURE

1. CLEAR DTC

- a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

2. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2323 is output	A
DTC B2323 and B2325 are output	B

HINT:

When both B2323 and B2325 are output at the same time, troubleshoot B2325 first.

B --> See step 8

A: Go to next step

3. CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY - REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)

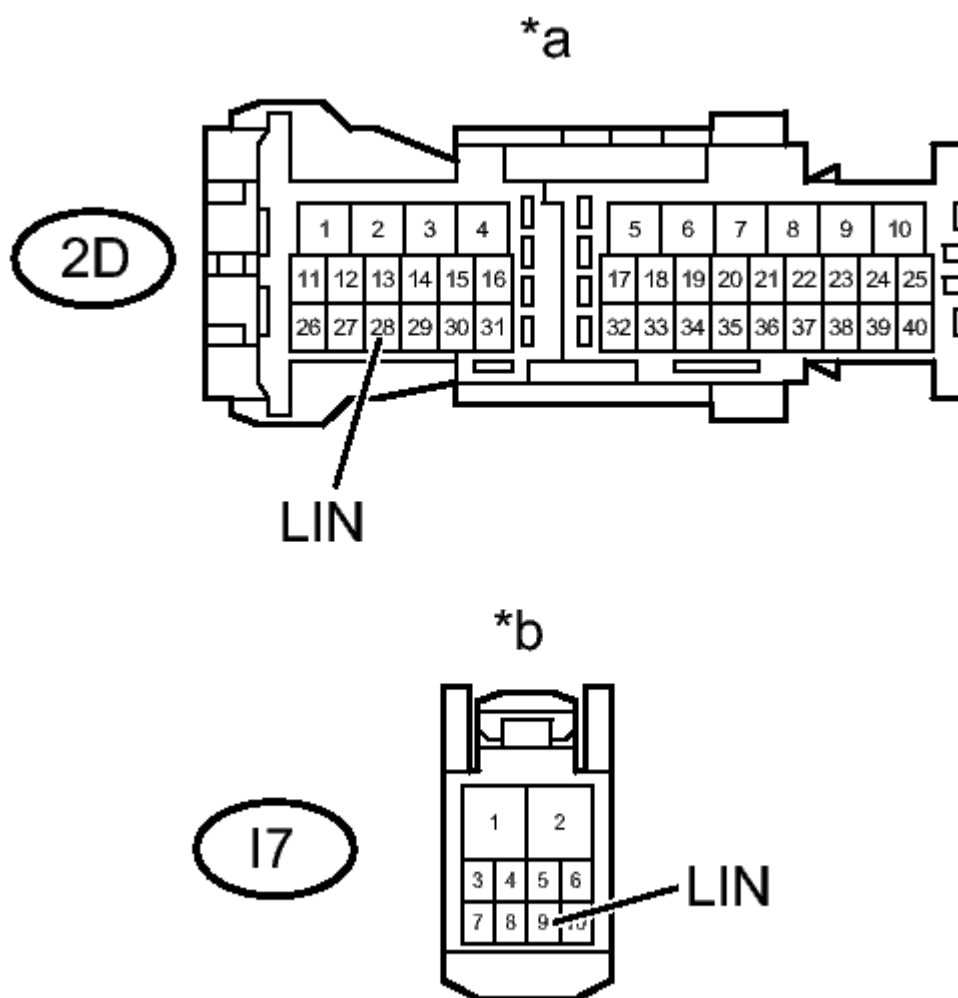


Fig. 19: Checking Harness And Connector (Instrument Panel Junction Block Assembly - Rear Power Window Regulator Motor Assembly RH)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the 2D instrument panel junction block assembly connector.
- b. Disconnect the I7 rear power window regulator motor assembly RH connector.
- c. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2D-28 (LIN) - I7-9 (LIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
I7-9 (LIN) - Body ground	Always	10 kohms or higher

Standard Voltage

Tester Connection	Condition	Specified Condition
I7-9 (LIN) - Body ground	Always	Below 0.5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Instrument Panel Junction Block Assembly)
*b	Front view of wire harness connector (to Rear Power Window Regulator Motor Assembly RH)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR MOTOR

ASSEMBLY RH - BATTERY AND BODY GROUND)

- a. Disconnect the I7 rear power window regulator motor assembly RH connector.

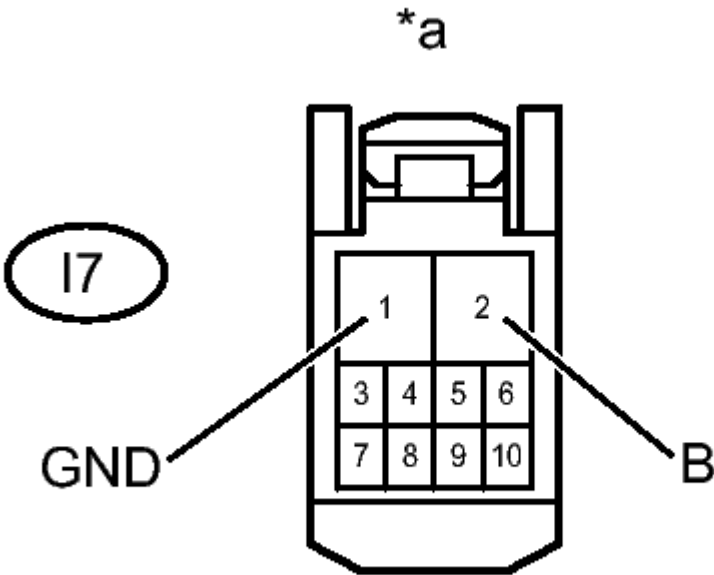


Fig. 20: Checking Harness And Connector (Rear Power Window Regulator Motor Assembly RH - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance

Tester Connection	Condition	Specified Condition
I7-1 (GND) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Condition	Specified Condition
I7-2 (B) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Rear Power Window Regulator Motor assembly RH)
----	--

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

- Temporarily replace the rear power window regulator motor assembly RH with a new or normally functioning one. Refer to **REMOVAL** .
- Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

6. CHECK FOR DTC

- Recheck for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2323 is not output	A
DTC B2323 is output	B

B --> See step 7

A --> END (REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH IS MALFUNCTIONING)

7. INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

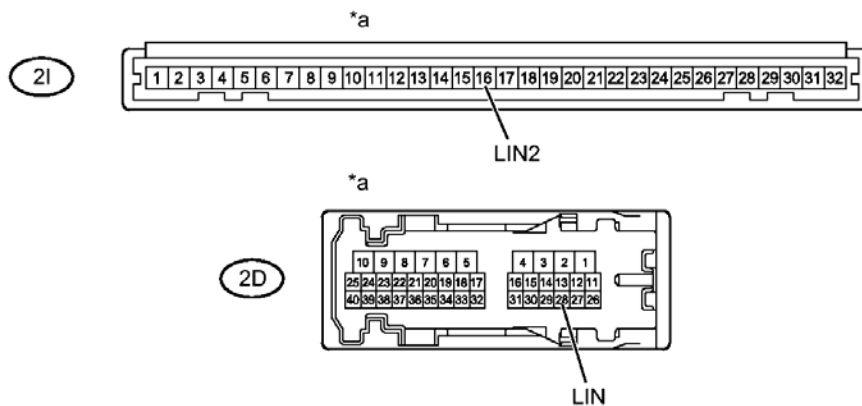


Fig. 21: Inspecting Instrument Panel Junction Block Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Instrument Panel Junction Block Assembly)
----	--

- Remove the instrument panel junction block assembly. Refer to **REMOVAL** .
- Remove the main body ECU from the instrument panel junction block assembly. Refer to **REMOVAL** .
- Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2D-28 (LIN) - 2I-16 (LIN2)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
2D-28 (LIN) -	Always	10 kohms

Body ground		or higher
----------------	--	-----------

NG --> REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

OK --> REPLACE MAIN BODY ECU

8. GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART

DTC B2324: REAR DOOR LH ECU COMMUNICATION STOP

DESCRIPTION

This DTC is stored when LIN communication between the rear power window regulator motor assembly LH and main body ECU stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2324	No communication between the rear power window regulator motor assembly LH and main body ECU for 10 seconds or more.	• Rear power window regulator motor assembly LH • Main body ECU • Harness or connector • Instrument panel junction block assembly

WIRING DIAGRAM

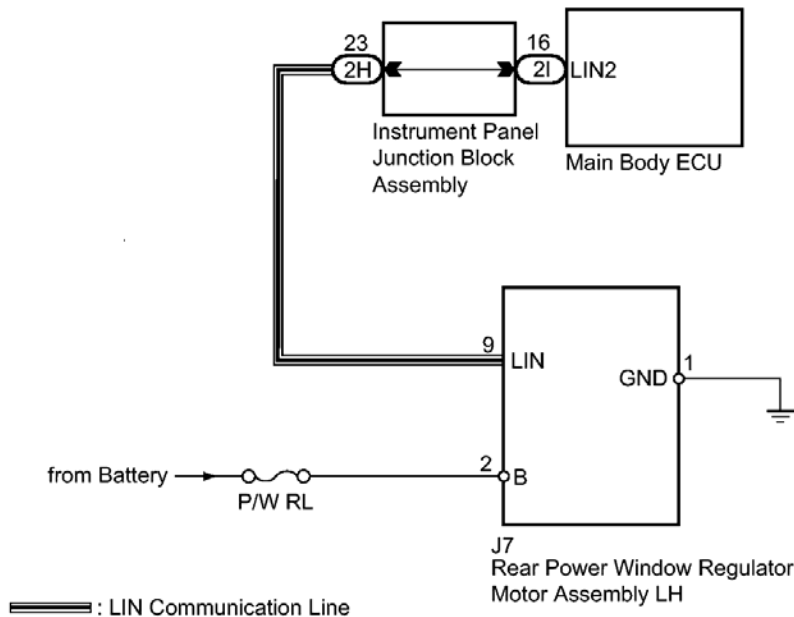


Fig. 22: Rear Door LH ECU Circuit Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When using the Techstream with the ignition switch off to troubleshoot:
 Connect the Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.
- Inspect the fuses for circuits related to this system before performing the following inspection procedure

HINT:

DTC B2325 is stored when the communication between the rear power window regulator motor LH and main body ECU stops.

PROCEDURE

1. CLEAR DTC

- a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

2. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2322 is output	A
DTC B2322 and B2325 are output	B

HINT:

When both B2322 and B2325 are output at the same time, troubleshoot B2325 first.

B --> See step 8

A: Go to next step

3. CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY - REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)

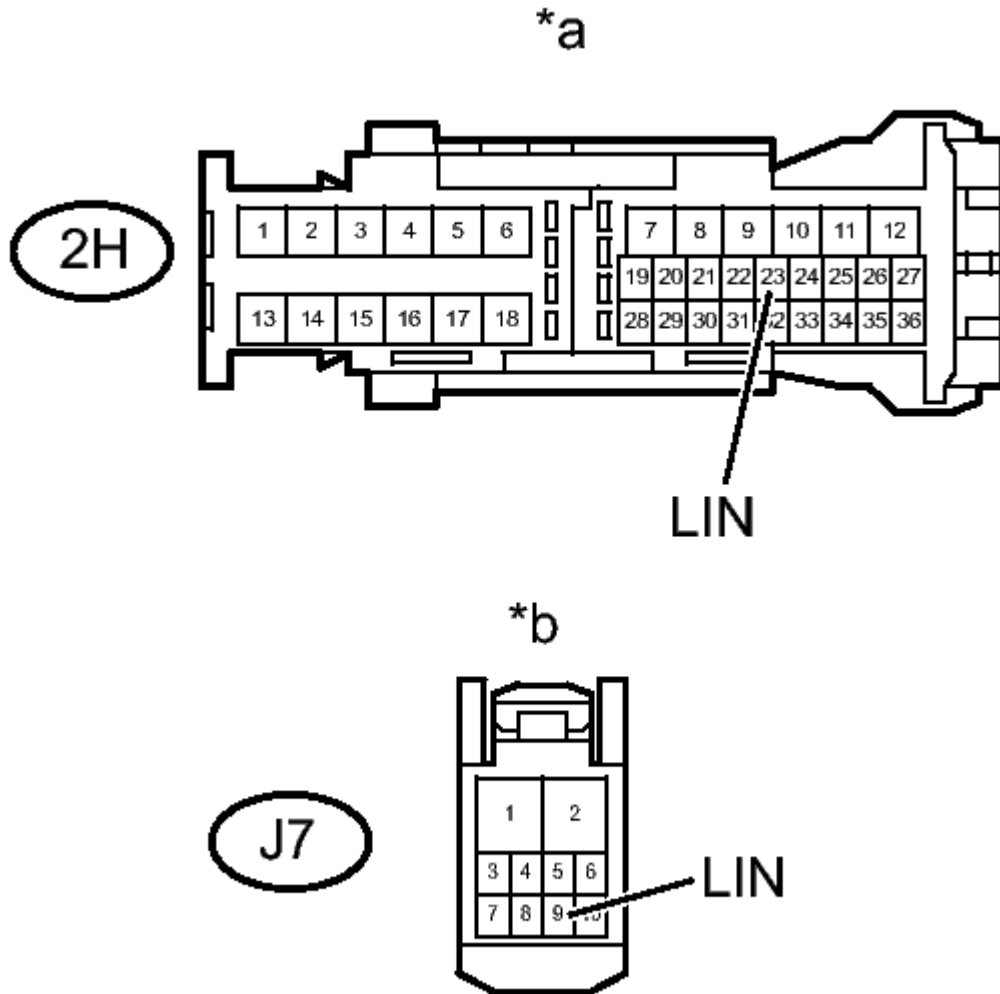


Fig. 23: Checking Harness And Connector (Instrument Panel Junction Block Assembly - Rear Power Window Regulator Motor Assembly LH)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Disconnect the 2H instrument panel junction block assembly connector.
- Disconnect the J7 rear power window regulator motor assembly LH connector.
- Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2H-23 (LIN) - J7-9 (LIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
J7-9 (LIN) - Body ground	Always	10 kohms or higher

Standard Voltage

Tester Connection	Condition	Specified Condition
J7-9 (LIN) - Body ground	Always	Below 0.5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Instrument Panel Junction Block Assembly)
*b	Front view of wire harness connector (to Rear Power Window Regulator Motor Assembly LH)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. CHECK HARNESS AND CONNECTOR (REAR POWER WINDOW REGULATOR MOTOR

ASSEMBLY LH - BATTERY AND BODY GROUND)

- a. Disconnect the J7 rear power window regulator motor assembly LH connector.

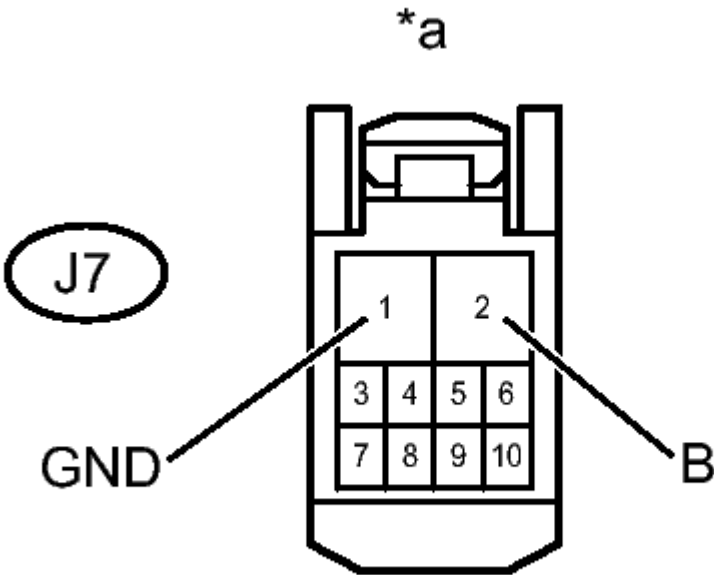


Fig. 24: Checking Harness And Connector (Rear Power Window Regulator Motor Assembly LH - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance

Tester Connection	Condition	Specified Condition
J7-1 (GND) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Condition	Specified Condition
J7-2 (B) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Rear Power Window Regulator Motor assembly LH)
----	--

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

- Temporarily replace the rear power window regulator motor assembly LH with a new or normally functioning one. Refer to **REMOVAL** .
- Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

6. CHECK FOR DTC

- Recheck for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2324 is not output	A
DTC B2324 is output	B

B --> See step 7

A --> END (REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH IS MALFUNCTIONING)

7. INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

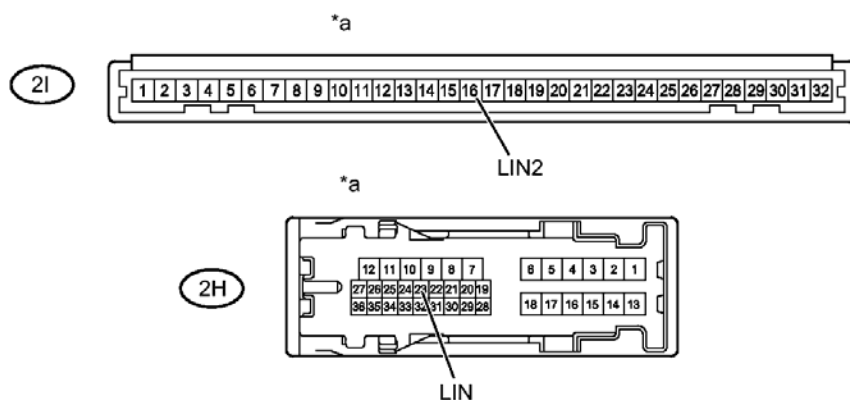


Fig. 25: Inspecting Instrument Panel Junction Block Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected	
	(Instrument Panel Junction Block Assembly)	

- Remove the instrument panel junction block assembly. Refer to **REMOVAL** .
- Remove the main body ECU from the instrument panel junction block assembly. Refer to **REMOVAL** .
- Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2H-23 (LIN) - J7-16 (LIN2)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
2H-23 (LIN) -	Always	10 kohms

Body ground		or higher
----------------	--	-----------

NG --> REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

OK --> REPLACE MAIN BODY ECU

8. GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART

DTC B2325: LIN COMMUNICATION BUS MALFUNCTION

DESCRIPTION

The main body ECU intermittently monitors the LIN communication bus between the components related to the door and sliding roof. DTC B2325 is stored when a malfunction in the LIN communication bus between the components related to the door and sliding roof is detected consecutively 3 times.

DTC Code	DTC Detection Condition	Trouble Area
B2325	The main body ECU detects a malfunction in the LIN communication bus between components related to the doors consecutively 3 times.	• Multiplex Network master switch assembly • Front power window regulator motor assembly LH • Front power window regulator motor assembly RH • Rear power window regulator motor assembly LH • Rear power window regulator motor assembly RH • Main body ECU • Harness or connector • Instrument panel junction block assembly

WIRING DIAGRAM

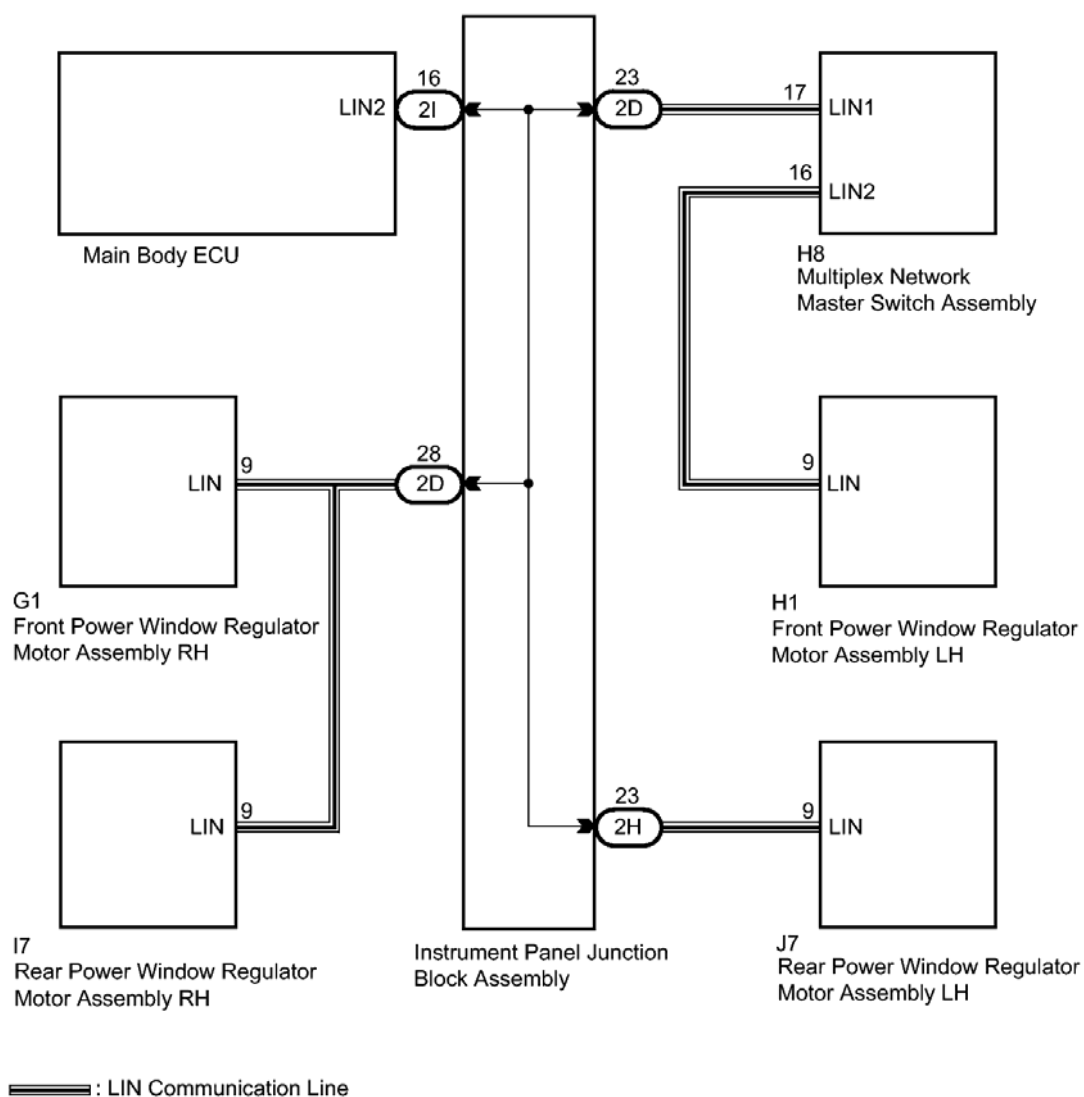


Fig. 26: LIN Communication Line Circuit Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: When using the Techstream with the ignition switch off to troubleshoot:

Connect the Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.

HINT:

When DTC B2325 and a LIN communication stop DTC are output simultaneously, first perform the troubleshooting for the LIN communication stop DTC. Then perform the troubleshooting for DTC B2325.

PROCEDURE

1. CLEAR DTC

- a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

2. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

B --> USE SIMULATION METHOD TO CHECK

A: Go to next step

3. CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY - FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)

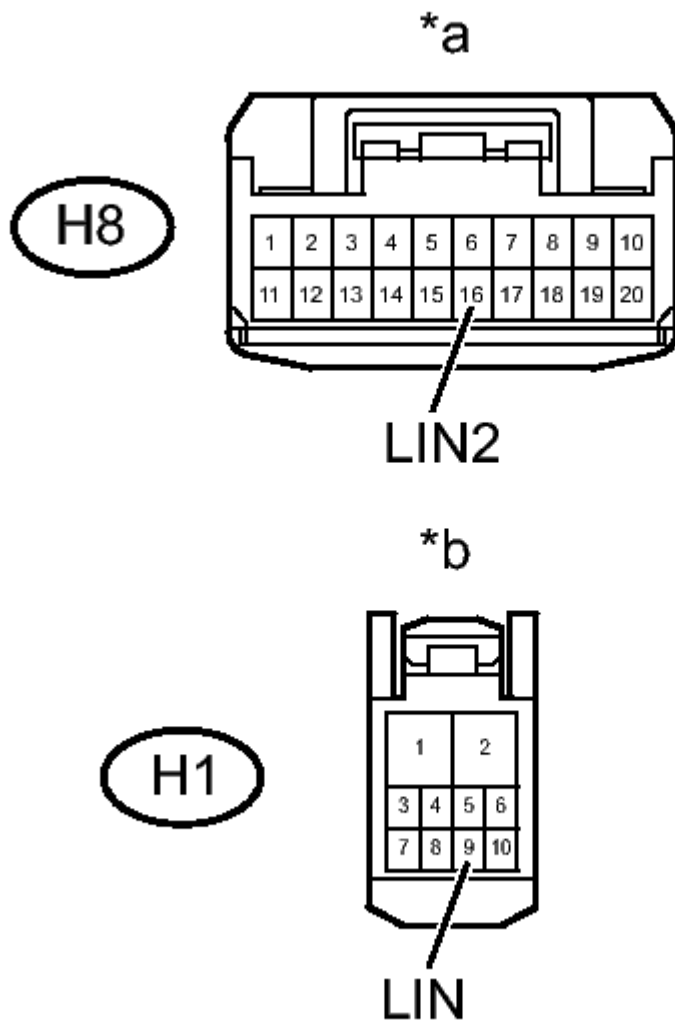


Fig. 27: Checking Harness And Connector (Multiplex Network Master Switch Assembly - Front Power Window Regulator Motor Assembly LH)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Disconnect the H8 multiplex network master switch assembly connector.
- Disconnect the H1 front power window regulator motor assembly LH connector.
- Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
H8-16 (LIN2) - H1-9 (LIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
H1-9 (LIN) - Body ground	Always	10 kohms or higher

Standard Voltage

Tester Connection	Condition	Specified Condition
H1-9 (LIN) - Body ground	Always	Below 0.5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Multiplex Network Master Switch Assembly)
*b	Front view of wire harness connector (to Front Power Window Regulator Motor Assembly LH)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK

ASSEMBLY - EACH ECU)

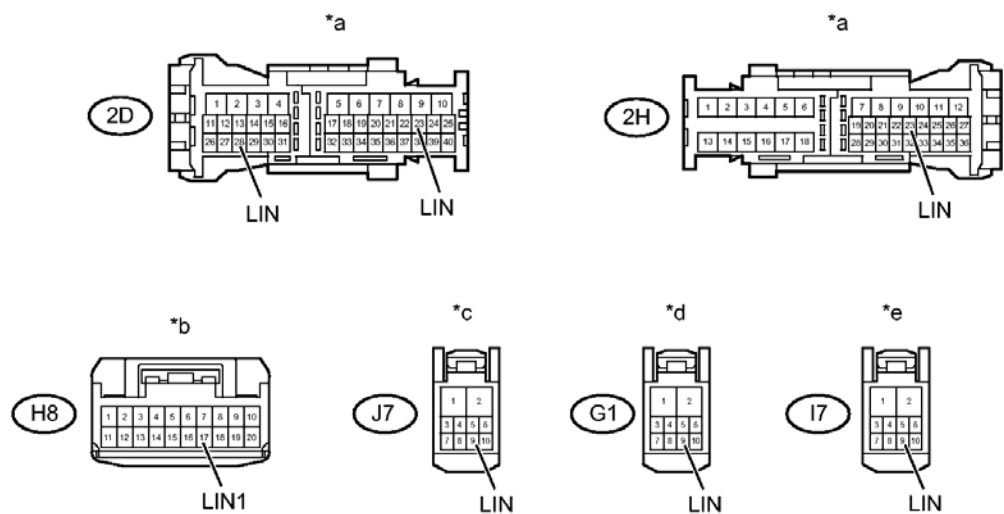


Fig. 28: Checking Harness And Connector (Instrument Panel Junction Block Assembly - Each ECU)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Instrument Panel Junction Block Assembly)	*b	Front view of wire harness connector (to Multiplex Network Master Switch Assembly)
*c	Front view of wire harness connector (to Rear Power Window Regulator Motor Assembly LH)	*d	Front view of wire harness connector (to Front Power Window Regulator Motor Assembly RH)

*e	Front view of wire harness connector (to Rear Power Window Regulator Motor Assembly RH)	-	-
----	---	---	---

- Disconnect the 2D and 2H instrument panel junction block assembly connectors.
- Disconnect the H8 multiplex network master switch assembly connector.
- Disconnect the J7 rear power window regulator motor assembly LH connector.
- Disconnect the G1 front power window regulator motor assembly RH connector.
- Disconnect the I7 rear power window regulator motor assembly RH connector.
- Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2D-23 (LIN) - H8-17 (LIN1)	Always	Below 1 ohms
2H-23 (LIN) - J7-9 (LIN)	Always	Below 1 ohms
2D-28 (LIN) - G1-9 (LIN)	Always	Below 1 ohms
2D-28 (LIN) - I7-9 (LIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
2D-23 (LIN) - Body ground	Always	10 kohms or higher

2H-23 (LIN) - Body ground	Always	10 kohms or higher
2D-28 (LIN) - Body ground	Always	10 kohms or higher

Standard Voltage

Tester Connection	Condition	Specified Condition
H8-17 (LIN1) - Body ground	Always	Below 0.5 V
J7-9 (LIN) - Body ground	Always	Below 0.5 V
G1-9 (LIN) - Body ground	Always	Below 0.5 V
I7-9 (LIN) - Body ground	Always	Below 0.5 V

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. **CLEAR DTC**

- Reconnect the 2D instrument panel junction block assembly connector.
- Disconnect the H8 multiplex network master switch assembly connector.
- Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

6. **CHECK FOR DTC**

- Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC	

B2325 is output	A
DTC B2325 is not output	B

B --> See step 16

A: Go to next step

7. CLEAR DTC

- Reconnect the H8 multiplex network master switch assembly connector.
- Disconnect the H1 front power window regulator motor assembly LH connector.
- Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

8. CHECK FOR DTC

- Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

B --> See step 18

A: Go to next step

9. CLEAR DTC

- Reconnect the H1 front power window regulator motor assembly LH connector.
- Disconnect the G1 front power window regulator motor assembly RH connector.
- Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

10. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

B --> See step 20

A: Go to next step

11. CLEAR DTC

- a. Reconnect the G1 front power window regulator motor assembly RH connector.
- b. Disconnect the I7 rear power window regulator motor assembly RH connector.
- c. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

12. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

B --> See step 24

A: Go to next step

13. CLEAR DTC

- Reconnect the I7 rear power window regulator motor assembly RH connector.
- Disconnect the J7 rear power window regulator motor assembly LH connector.
- Clear the DTC. Refer to **DTC CHECK / CLEAR**.

NEXT: Go to next step

14. CHECK FOR DTC

- Check for DTCs. Refer to **DTC CHECK / CLEAR**.

RESULT

Result	Proceed to
DTC B2325 is output	A
DTC B2325 is not output	B

B --> See step 22

A: Go to next step

15. INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

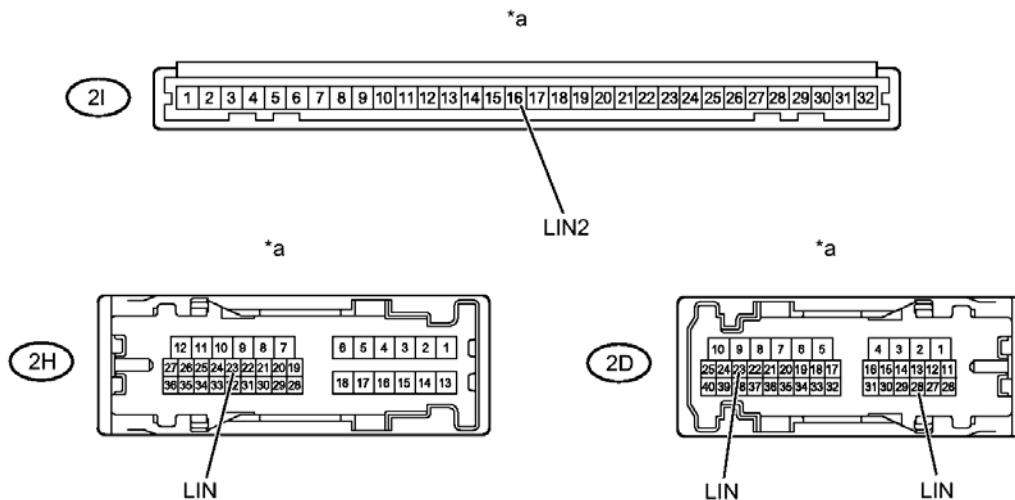


Fig. 29: Inspecting Instrument Panel Junction Block Assembly

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component	
	without	
	harness	
	connected	
	(Instrument Panel Junction Block Assembly)	--

- Remove the instrument panel junction block assembly. Refer to **REMOVAL** .
- Remove the main body ECU from the instrument panel junction block assembly. Refer to **REMOVAL** .
- Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2D-23 (LIN) - 2I-16 (LIN2)	Always	Below 1 ohms
2D-28 (LIN) - 2I-16 (LIN2)	Always	Below 1 ohms
2H-23 (LIN) - 2I-16 (LIN2)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
2D-23 (LIN) - Body ground	Always	10 kohms or higher
2D-28 (LIN) - Body ground	Always	10 kohms or higher
2H-23		

(LIN) - Body ground	Always	10 kohms or higher
---------------------------	--------	-----------------------

NG --> See step 27

OK --> See step 28

16. REPLACE MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

- Replace the multiplex network master switch assembly with a normally functioning part. Refer to **REMOVAL** .
- Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

17. RECONFIRM DTC OUTPUT

- Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2325 is not output	A
DTC B2325 is output	B

B --> See step 26

A --> END (MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY MALFUNCTION)

18. REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

- Replace the front power window regulator motor assembly LH with a normally functioning part. Refer to **REMOVAL** .
- Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

19. RECONFIRM DTC OUTPUT

- Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

--

Result	Proceed to
DTC B2325 is not output	A
DTC B2325 is output	B

B --> See step 26

A --> END (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH MALFUNCTION)

20. REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

- Replace the front power window regulator motor assembly RH with a normally functioning part. Refer to **REMOVAL** .
- Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

21. RECONFIRM DTC OUTPUT

- Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2325 is not output	A
DTC B2325 is output	B

B --> See step 26

A --> END (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH MALFUNCTION)

22. REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

- Replace the rear power window regulator motor assembly LH with a normally functioning part.

Refer to **REMOVAL** .

- b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

23. RECONFIRM DTC OUTPUT

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2325 is not output	A
DTC B2325 is output	B

B --> See step 26

A --> END (REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH MALFUNCTION)

24. REPLACE REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

- a. Replace the rear power window regulator motor assembly RH with a normally functioning part.
Refer to **REMOVAL** .
- b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

25. RECONFIRM DTC OUTPUT

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2325 is not output	A
DTC B2325 is	B

output

B --> See step 26

A --> END (REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH MALFUNCTION)

26. INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

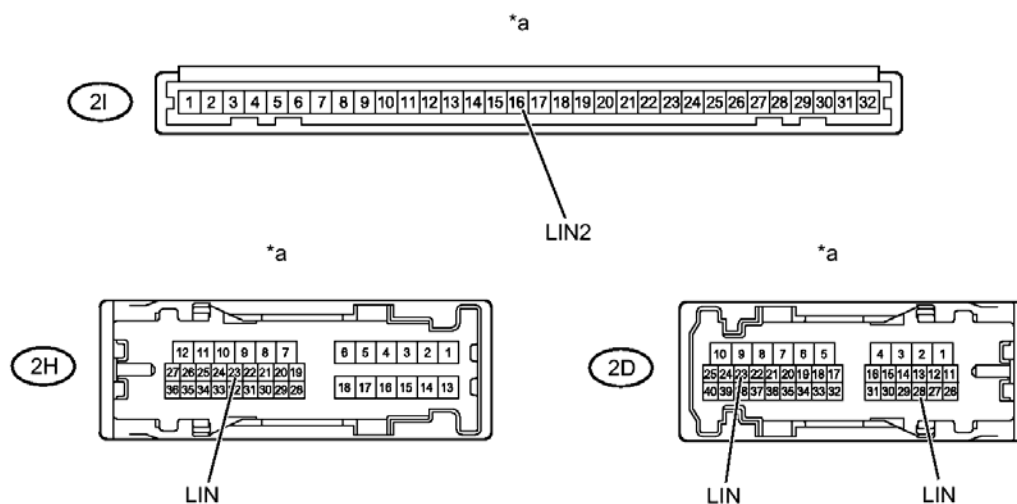


Fig. 30: Inspecting Instrument Panel Junction Block Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

Component without harness connected	
*a (Instrument Panel Junction Block Assembly)	--

- Remove the instrument panel junction block assembly. Refer to **REMOVAL**.
- Remove the main body ECU from the instrument panel junction block assembly. Refer to **REMOVAL**.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
2D-23 (LIN) - 2I-16 (LIN2)	Always	Below 1 ohms
2D-28 (LIN) - 2I-16 (LIN2)	Always	Below 1 ohms
2H-23 (LIN) - 2I-16 (LIN2)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
2D-23 (LIN) - Body ground	Always	10 kohms or higher
2D-28 (LIN) - Body ground	Always	10 kohms or higher
2H-23 (LIN) - Body ground	Always	10 kohms or higher

NG --> See step 29

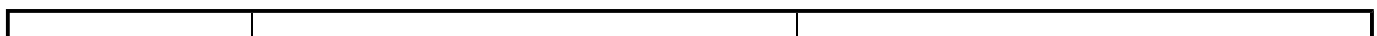
OK --> See step 30

27. **REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY. Refer to REMOVAL**
28. **REPLACE MAIN BODY ECU. Refer to REMOVAL**
29. **REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY. Refer to REMOVAL**
30. **REPLACE MAIN BODY ECU. Refer to REMOVAL**

DTC B2432: LOST COMMUNICATION WITH AUTOMATIC HIGH BEAM SENSOR

DESCRIPTION

The DTC is stored when the AFS ECU (headlight swivel computer assembly) detects malfunctions in the LIN communication system.



DTC Code	DTC Detection Condition	Trouble Area
B2432	Malfunction in LIN communication system	• Inner rear view mirror assembly • Harness or connector • AFS ECU (headlight swivel computer assembly)

WIRING DIAGRAM

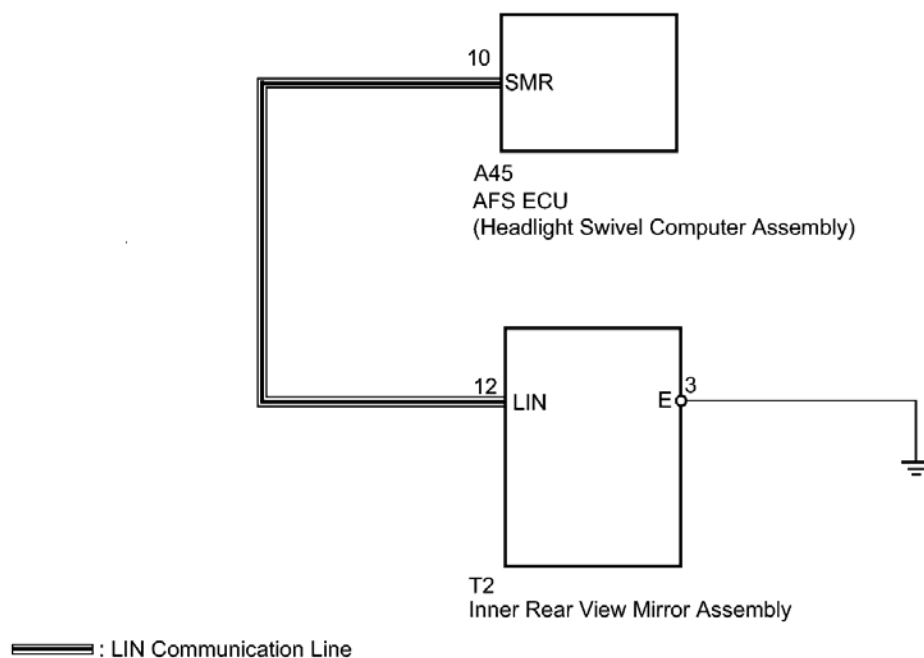


Fig. 31: Automatic High Beam Sensor Circuit Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

WARNING: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. CLEAR DTC

- Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

2. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2432 is output	A
DTC B2432 and B124D are output	B
No DTCs output	C

HINT:

When both B2432 and B124D are output at the same time, troubleshoot B124D first.

B --> See step 8

C --> See step 5

A: Go to next step

3. CHECK HARNESS AND CONNECTOR (AFS ECU (HEADLIGHT SWIVEL COMPUTER ASSEMBLY) - INNER REAR VIEW MIRROR ASSEMBLY)

- a. Disconnect the A45 AFS ECU (headlight swivel computer assembly) connector

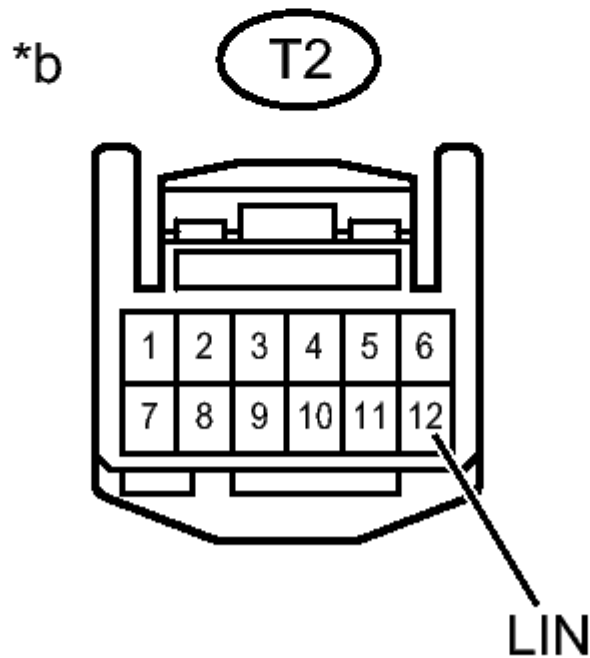
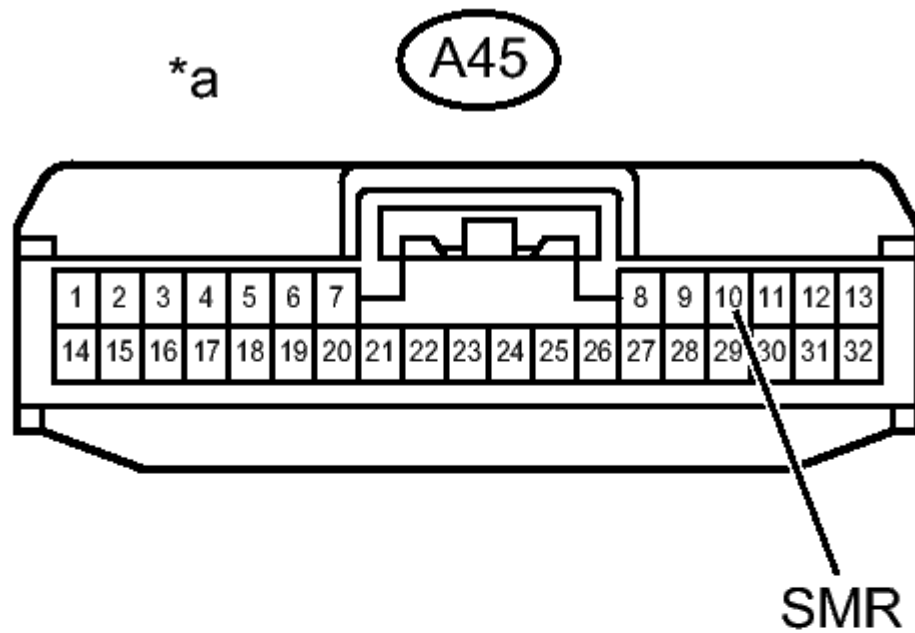


Fig. 32: Checking Harness And Connector (AFS ECU (Headlight Swivel Computer Assembly) - Inner Rear View Mirror Assembly)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Disconnect the T2 inner rear view mirror assembly connector.

- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
A45-10 (SMR) - T2-12 (LIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
T2-12 (LIN) - Body ground	Always	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to AFS ECU (Headlight Swivel Computer Assembly))
*b	Front view of wire harness connector (to Inner Rear View Mirror Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. INSPECT AFS ECU (HEADLIGHT SWIVEL ECU ASSEMBLY)

- a. Reconnect the A45 AFS ECU (headlight swivel computer assembly) connector.

- b. Connect an oscilloscope to the T2 inner rear view mirror assembly connector.
- c. Check the waveform.

*a

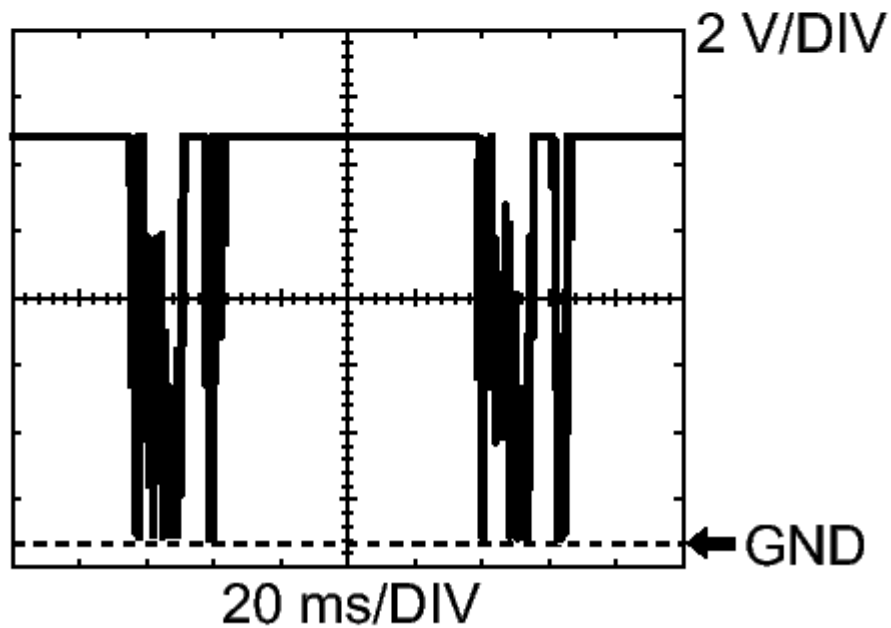
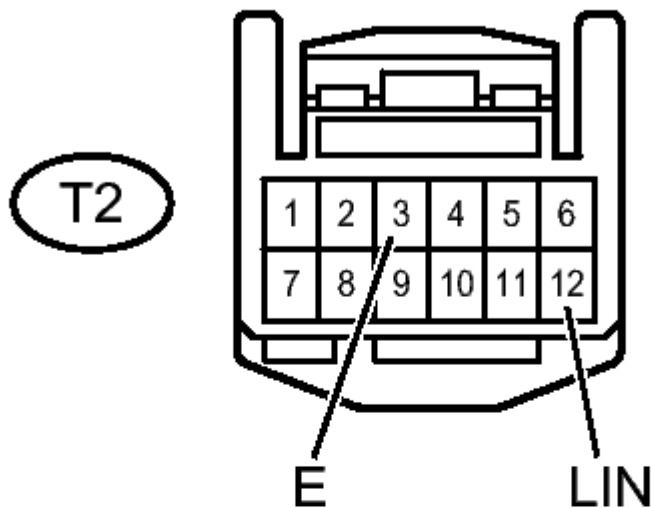


Fig. 33: Inspecting AFS ECU with Waveform Graph
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Tester Connection	Switch Condition	Specified Condition
T2-12 (LIN) - T2-3 (E)	Ignition switch ON	Correct waveform is as shown

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Inner Rear View Mirror Assembly)
----	---

NG --> See step 6

OK --> See step 7

5. **USE SIMULATION METHOD TO CHECK.** Refer to HOW TO PROCEED WITH TROUBLESHOOTING
6. **REPLACE AFS ECU (HEADLIGHT SWIVEL ECU ASSEMBLY).** Refer to REMOVAL
7. **REPLACE INNER REAR VIEW MIRROR ASSEMBLY.** Refer to REMOVAL
8. **GO TO DIAGNOSTIC TROUBLE CODE CHART.** Refer to DIAGNOSTIC TROUBLE CODE CHART

DTC B2785: COMMUNICATION MALFUNCTION BETWEEN ECUS CONNECTED BY LIN

DESCRIPTION

The certification ECU (smart key ECU) intermittently monitors the LIN communication bus between the components related to certification. DTC B2785 is stored when a malfunction in the LIN communication bus between the components related to certification is detected continuously 3 times.

DTC Code	DTC Detection Condition	Trouble Area
B2785	The certification ECU (smart key ECU) detects a malfunction in the LIN communication bus between components related to certification continuously 3 times.	• Certification ECU (smart key ECU) • Steering lock actuator assembly (steering lock ECU) • Harness and connector • Power management control ECU

WIRING DIAGRAM

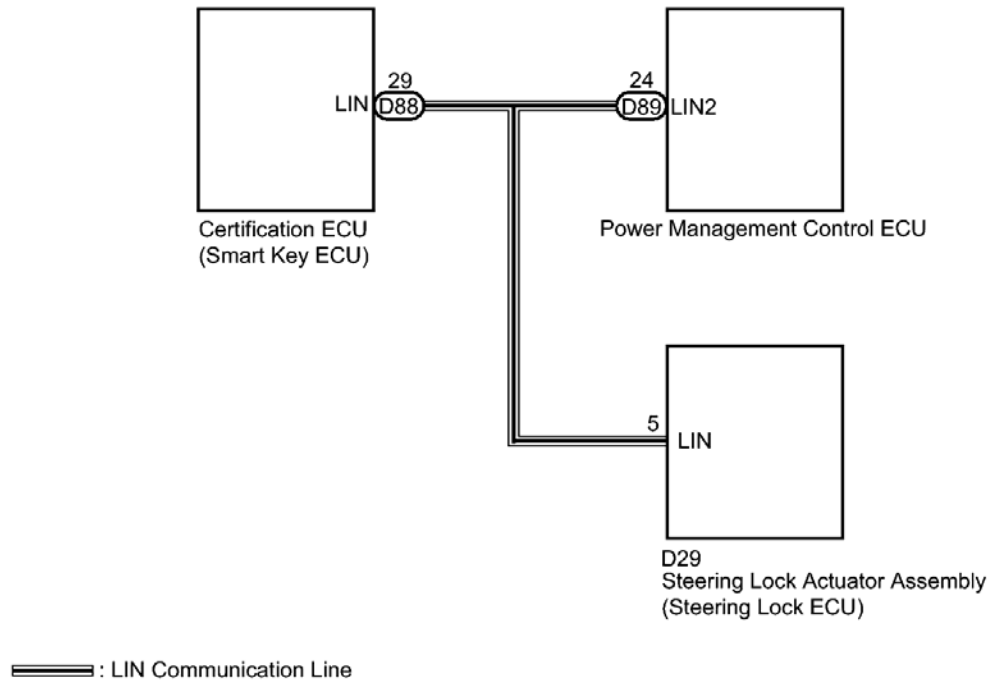


Fig. 34: LIN & ECU Communication Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: When using the Techstream with the ignition switch off to troubleshoot:

Connect Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU (SMART KEY ECU) - EACH ECU)

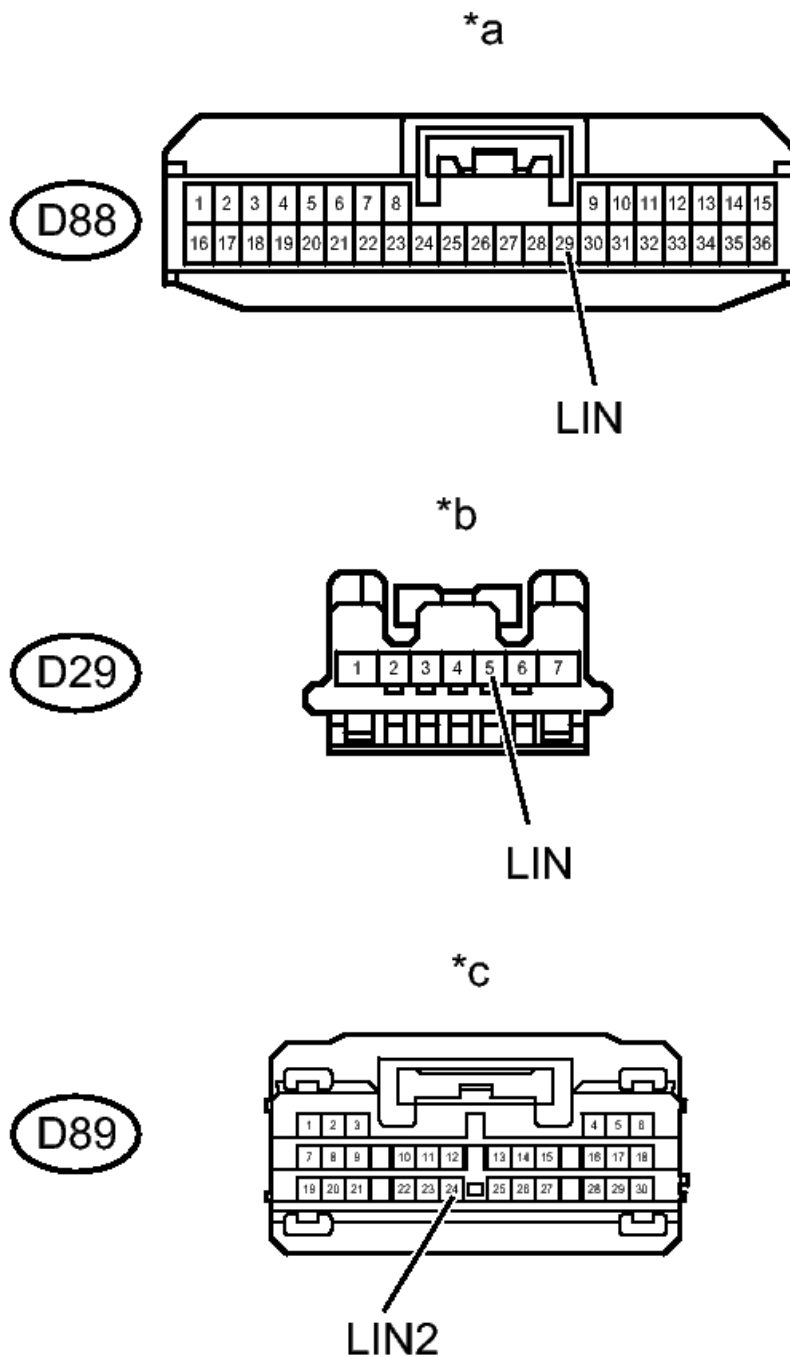


Fig. 35: Checking Harness And Connector (Certification ECU (Smart Key ECU) - Each ECU)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the D88 certification ECU (smart key ECU) connector.
- b. Disconnect the D29 steering lock actuator assembly (steering lock ECU) connector.

- c. Disconnect the D89 power management control ECU connector.
- d. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D88-29 (LIN) - D29-5 (LIN)	Always	Below 1 ohms
D88-29 (LIN) - D89-24 (LIN2)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D88-29 (LIN) - Body ground	Always	10 kohms or higher

Standard Voltage

Tester Connection	Condition	Specified Condition
D88-29 (LIN) - Body ground	Always	Below 0.5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Certification ECU (Smart Key ECU))
	Front view of wire

*b	harness connector (to Steering Lock Actuator Assembly (Steering lock ECU))
*c	Front view of wire harness connector (to Power Management Control ECU)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. CHECK FOR DTC

- Clear the DTC. Refer to **DTC CHECK / CLEAR** .
- Reconnect the D88 certification ECU (smart key ECU) and D89 steering lock actuator assembly (steering lock ECU) connectors.
- Check for DTCs.

RESULT

Result	Proceed to
DTC B2785 is output	A
DTC B2785 is not output	B

B --> See step 4

A: Go to next step

3. CHECK FOR DTC

- Clear the DTC. Refer to **DTC CHECK / CLEAR** .

- b. Reconnect the D89 power management control ECU connector.
- c. Disconnect the D29 steering lock actuator assembly (steering lock ECU) connector.
- d. Check for DTCs.

RESULT

Result	Proceed to
DTC B2785 is output	A
DTC B2785 is not output	B

B --> See step 6

A --> See step 8

4. REPLACE POWER MANAGEMENT CONTROL ECU

- a. Temporarily replace the power management control ECU with a new or normally functioning one.
- b. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

5. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2785 is not output	A
DTC B2785 is output	B

B --> See step 8

A --> END (POWER MANAGEMENT CONTROL ECU IS MALFUNCTIONING)

6. REPLACE STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)

- a. Temporarily replace the steering lock actuator assembly (steering lock ECU) with a new or normally functioning one. Refer to **REMOVAL** .
- b. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

7. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2785 is not output	A
DTC B2785 is output	B

B --> See step 8

A --> END (STEERING LOCK ACTUATOR ASSEMBLY IS MALFUNCTIONING)

8. REPLACE CERTIFICATION ECU (SMART KEY ECU). Refer to REMOVAL

DTC B2786: NO RESPONSE FROM STEERING LOCK ECU

DESCRIPTION

This DTC is stored when LIN communication between the certification ECU (smart key ECU assembly) and steering lock actuator (steering lock ECU) stops for 10 seconds or more.

DTC Code	DTC Detection Condition	Trouble Area
B2786	Periodic transmission from the steering lock ECU stops for 10 seconds or more.	- Steering lock actuator assembly (steering lock ECU) - Certification ECU (smart key ECU) - Harness or connector

WIRING DIAGRAM

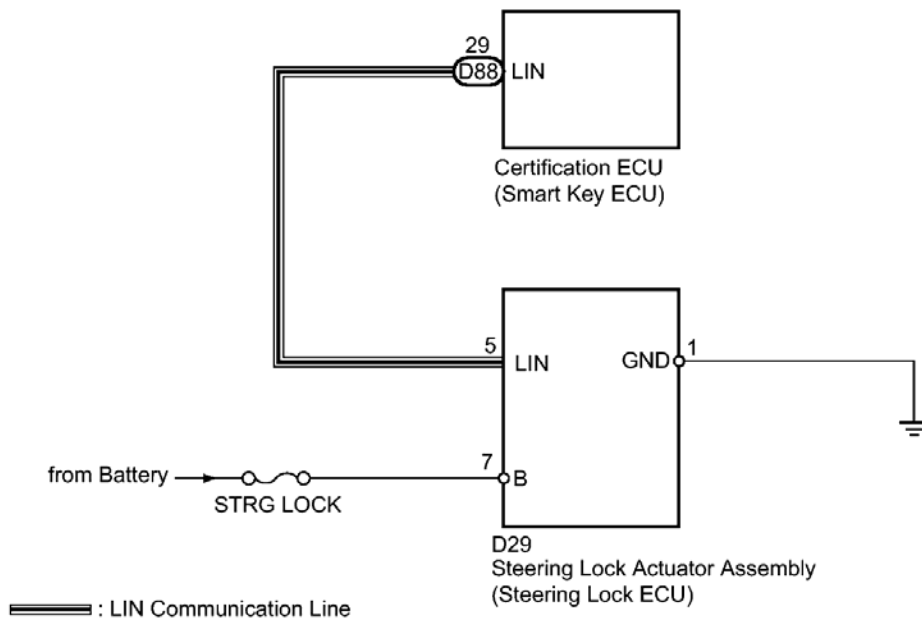


Fig. 36: Steering Lock ECU Circuit Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When using the Techstream with the ignition switch off to troubleshoot:
 Connect the Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.
- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

HINT:

DTC B2785 is stored when the communication between the steering lock actuator assembly (steering lock ECU) and certification ECU (smart key ECU) stops.

PROCEDURE

1. CLEAR DTC

- a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

2. CHECK FOR DTC

- a. Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2786 is output	A
B2786 and B2785 are output	B

HINT:

When both B2786 and B2785 are output at the same time, troubleshoot B2785 first.

B --> See step 7

A: Go to next step

3. CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU - STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU))

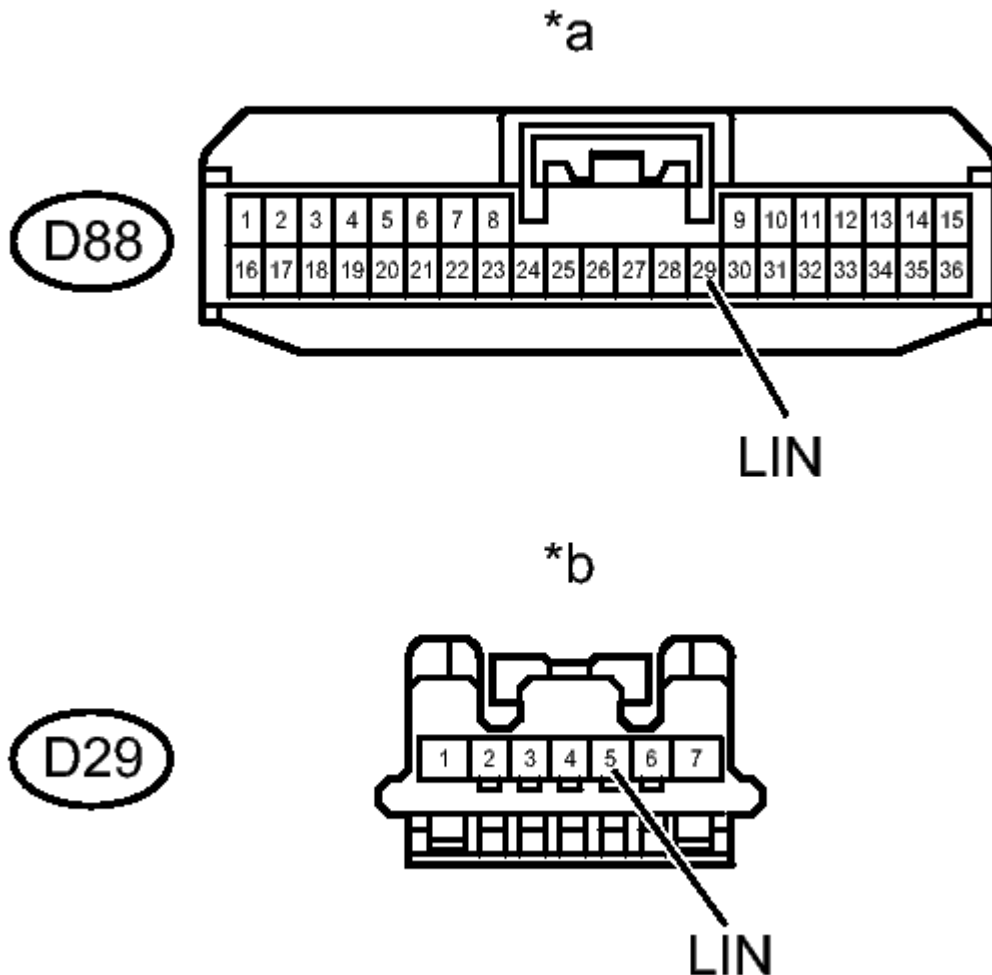


Fig. 37: Checking Harness And Connector (Certification ECU - Steering Lock Actuator Assembly (Steering Lock ECU))

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the D88 certification ECU and D29 steering lock actuator assembly (steering lock ECU) connectors.
- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D88-29 (LIN) - D29-5 (LIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D88-29 (LIN) - Body ground	Always	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Certification ECU)
*b	Front view of wire harness connector (to Steering Lock Actuator Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU) - BATTERY VOLTAGE AND BODY GROUND)**
 - a. Disconnect the D29 steering lock actuator assembly (steering lock ECU) connector.

*a

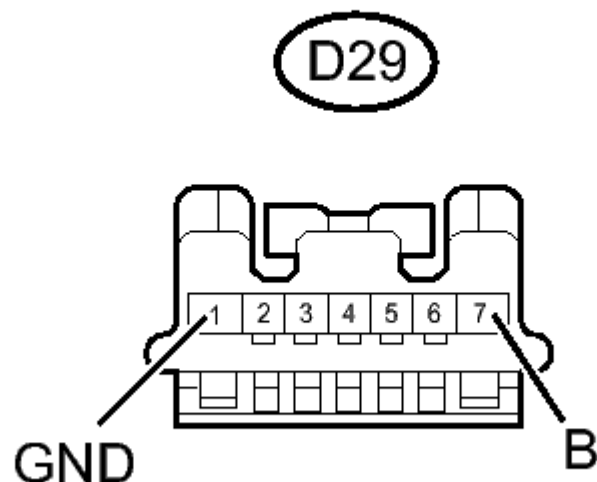


Fig. 38: Checking Harness And Connector (Steering Lock Actuator Assembly (Steering Lock ECU) - Battery Voltage And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D29-1 (GND) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Condition	Specified Condition
D29-7 (B) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION

Front view of

*a	wire harness connector (to Steering Lock Actuator Assembly)
----	--

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. REPLACE STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU)

- Temporarily replace the steering lock actuator assembly with a new or normally functioning one. Refer to **REMOVAL** .
- Clear the DTC. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

6. CHECK FOR DTC

- Check for DTCs. Refer to **DTC CHECK / CLEAR** .

RESULT

Result	Proceed to
DTC B2786 is not output	A
DTC B2786 is output	B

B --> See step 8

A --> END (STEERING LOCK ACTUATOR ASSEMBLY (STEERING LOCK ECU) IS MALFUNCTIONING)

- GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART**
- REPLACE CERTIFICATION ECU (SMART KEY ECU). Refer to REMOVAL**

CIRCUIT TESTS

LIN Communication Circuit

DESCRIPTION

When a switch of the air conditioning control assembly or air conditioning control assembly No. 2 are operated, the air conditioning control assembly or air conditioning control assembly No. 2 uses LIN communication to communicate with air conditioning amplifier assembly. If a switch of the air conditioning control assembly or air conditioning control assembly No. 2 does not operate properly, a problem with the LIN communication between the air conditioning control assembly or air conditioning control assembly No. 2 and air conditioning control amplifier may be causing the malfunction.

WIRING DIAGRAM

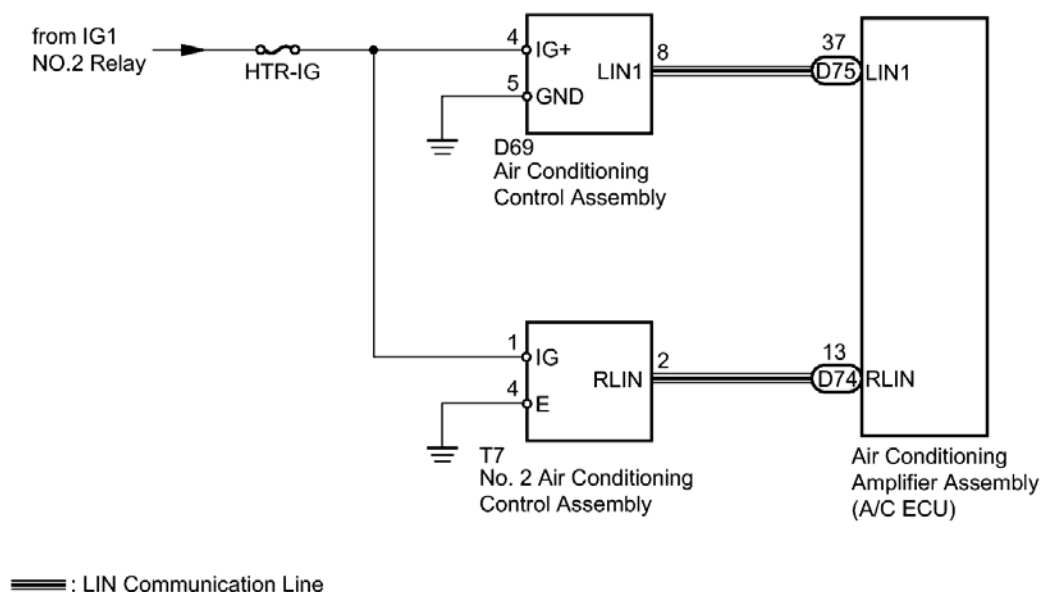


Fig. 39: LIN Communication Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

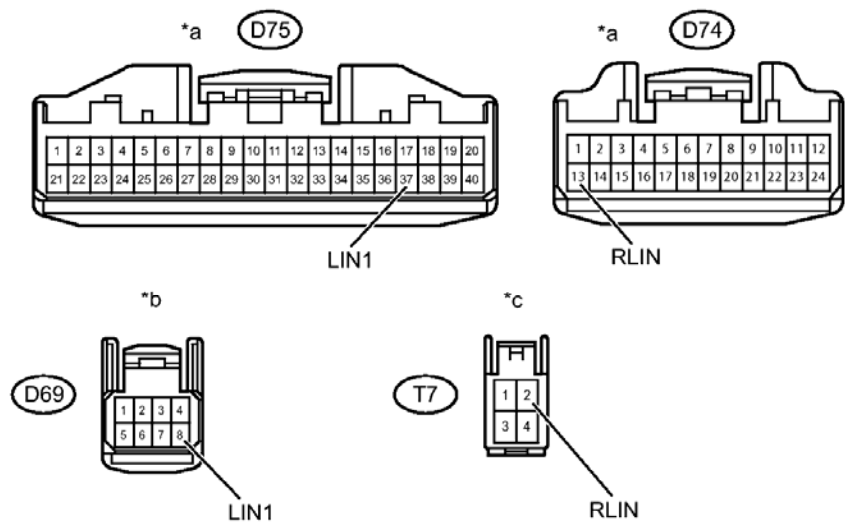
- When using the Techstream with the ignition switch off to troubleshoot:

Connect the Techstream to the vehicle, and turn a courtesy switch on and off at 1.5 second intervals until communication between the Techstream and vehicle begins.

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (AIR CONDITIONING AMPLIFIER ASSEMBLY (A/C ECU) - EACH ECU)



*d

Fig. 40: Checking Harness And Connector (Air Conditioning Amplifier Assembly (A/C ECU) - Each ECU)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Air Conditioning Amplifier Assembly (A/C ECU))	*b	Front view of wire harness connector (to Air Conditioning Control Assembly)
*c	Front view of wire harness connector (to No. 2 Air Conditioning Control Assembly)	-	-

- a. Disconnect the D75 and D74 air conditioning amplifier assembly (A/C ECU) connectors.

- b. Disconnect the D69 air conditioning control assembly connector.
- c. Disconnect the T7 No. 2 air conditioning control assembly connector.
- d. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D75-37 (LIN1) - D69-8 (LIN1)	Always	Below 1 ohms
D74-13 (RLIN) - T7-2 (RLIN)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D75-37 (LIN1) - Body ground	Always	10 kohms or higher
D74-13 (RLIN) - Body ground	Always	10 kohms or higher

Standard Voltage

Tester Connection	Condition	Specified Condition
D75-37 (LIN1) - Body ground	Always	Below 1 V
D74-13 (RLIN) - Body ground	Always	Below 1 V

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. CHECK HARNESS AND CONNECTOR (AIR CONDITIONING CONTROL ASSEMBLY NO. 2 - BATTERY AND BODY GROUND)

- a. Disconnect the T7 No. 2 air conditioning control assembly connector.

*a

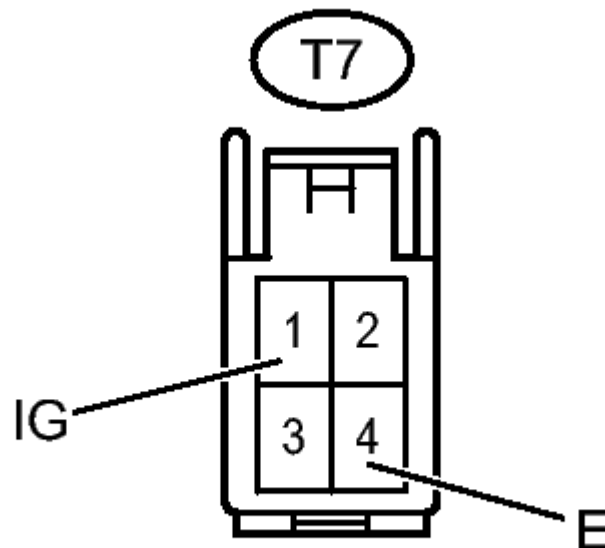


Fig. 41: Checking Harness And Connector (Air Conditioning Control Assembly No. 2 - Battery And Body Ground)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance and voltage according to the value(s) in the tables below.

Standard Resistance

Tester Connection	Condition	Specified Condition
T7-4 (E) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
T7-1 (IG) - Body	Ignition switch	11 to 14 V

ground	ON	
--------	----	--

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to No. 2 Air Conditioning Control Assembly)
----	--

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. REPLACE NO. 2 AIR CONDITIONING CONTROL ASSEMBLY

- a. Temporarily replace the No. 2 air conditioning control assembly with a new or normally functioning one. Refer to **REMOVAL** .
- b. Check that the No. 2 air conditioning control assembly function is normal.

OK

No. 2 Air conditioning control assembly function is normal.

NG --> See step 4

OK --> END (AIR CONDITIONING CONTROL ASSEMBLY NO. 2 IS MALFUNCTIONING)

4. CHECK HARNESS AND CONNECTOR (AIR CONDITIONING CONTROL ASSEMBLY - BATTERY AND BODY GROUND)

- a. Disconnect the D69 air conditioning control assembly connector.

*a

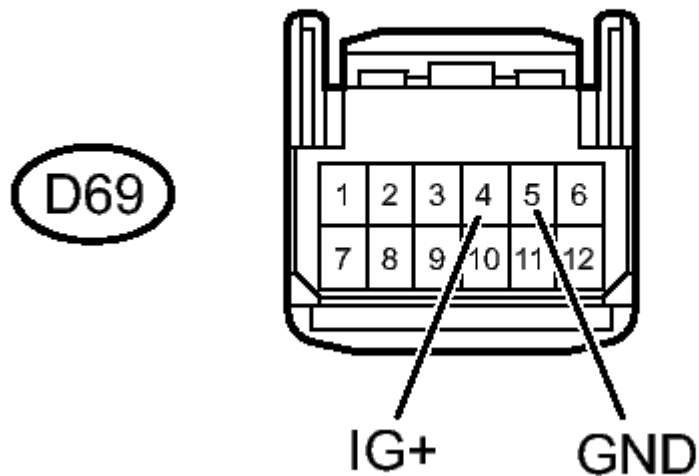


Fig. 42: Checking Harness And Connector (Air Conditioning Control Assembly - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the resistance and voltage according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D69-5 (GND) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D69-4 (IG+) - Body ground	Ignition switch ON	11 to 14 V

TEXT IN ILLUSTRATION

Front view

	of wire harness connector
*a	(to Air Conditioning Control Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. REPLACE AIR CONDITIONING CONTROL ASSEMBLY

- a. Temporarily replace the air conditioning control assembly with a new or normally functioning one. Refer to **REMOVAL** .
- b. Check that the front air conditioning control assembly function is normal.

OK

Front air conditioning control assembly function is normal.

NG --> See step 6

OK --> END (AIR CONDITIONING CONTROL ASSEMBLY IS MALFUNCTIONING)

6. REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY (A/C ECU). Refer to **REMOVAL**

ACCESSORIES & EQUIPMENT

LIN Communication System (Diagnostics - Introduction) - Sienna

LIN COMMUNICATION SYSTEM

PRECAUTION

PRECAUTION

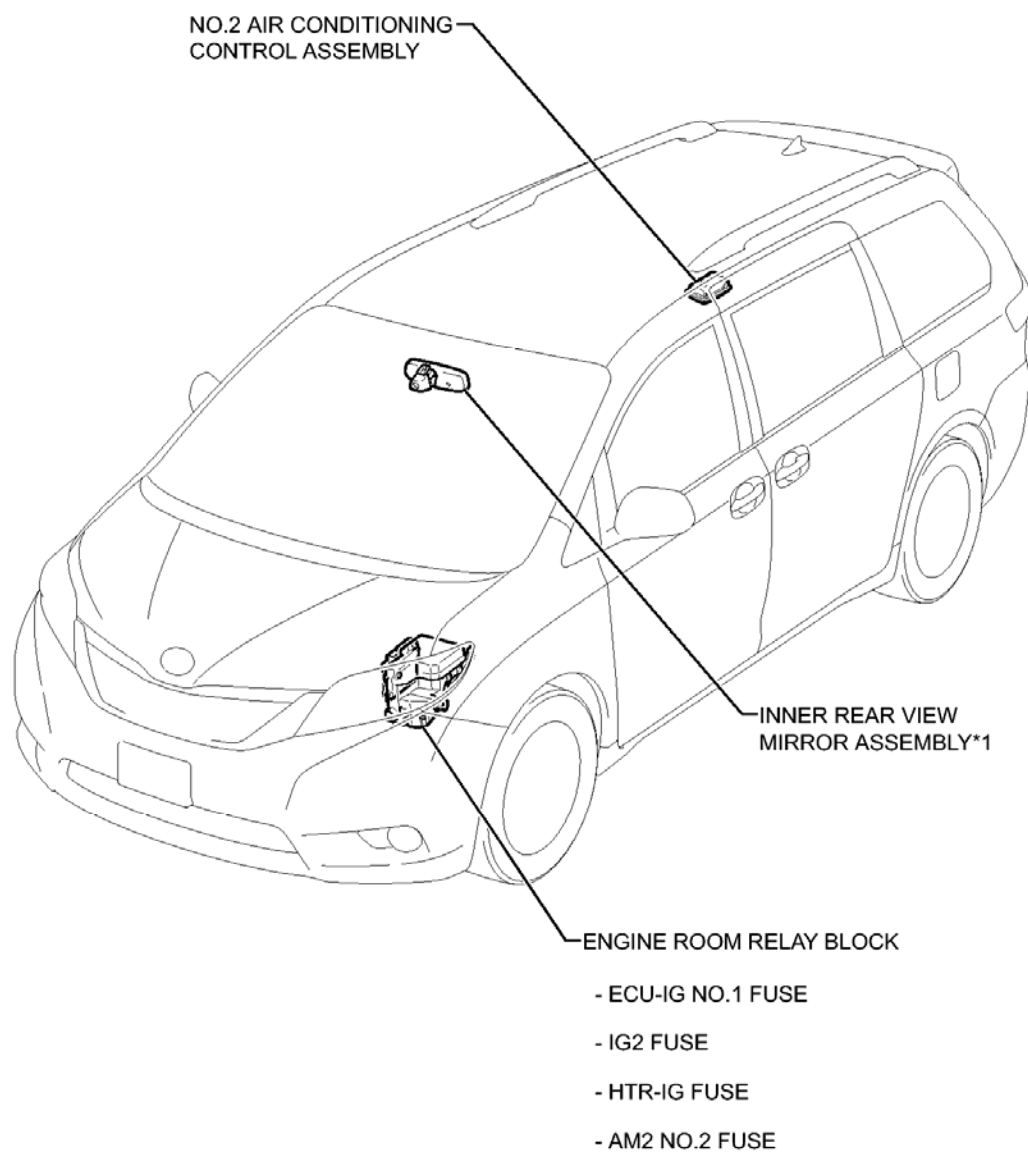
1. IGNITION SWITCH EXPRESSION

- a. The type of ignition switch used on this model differs according to the specification of the vehicle. The expressions listed in the table below are used in this information.

Expression	Ignition Switch (position)	Engine Switch (condition)
Ignition Switch off	LOCK	Off
Ignition Switch to ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	Start

PARTS LOCATION

ILLUSTRATION



*1: HID Headlight System

Fig. 1: Identifying LIN Communication System Components Location (1 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

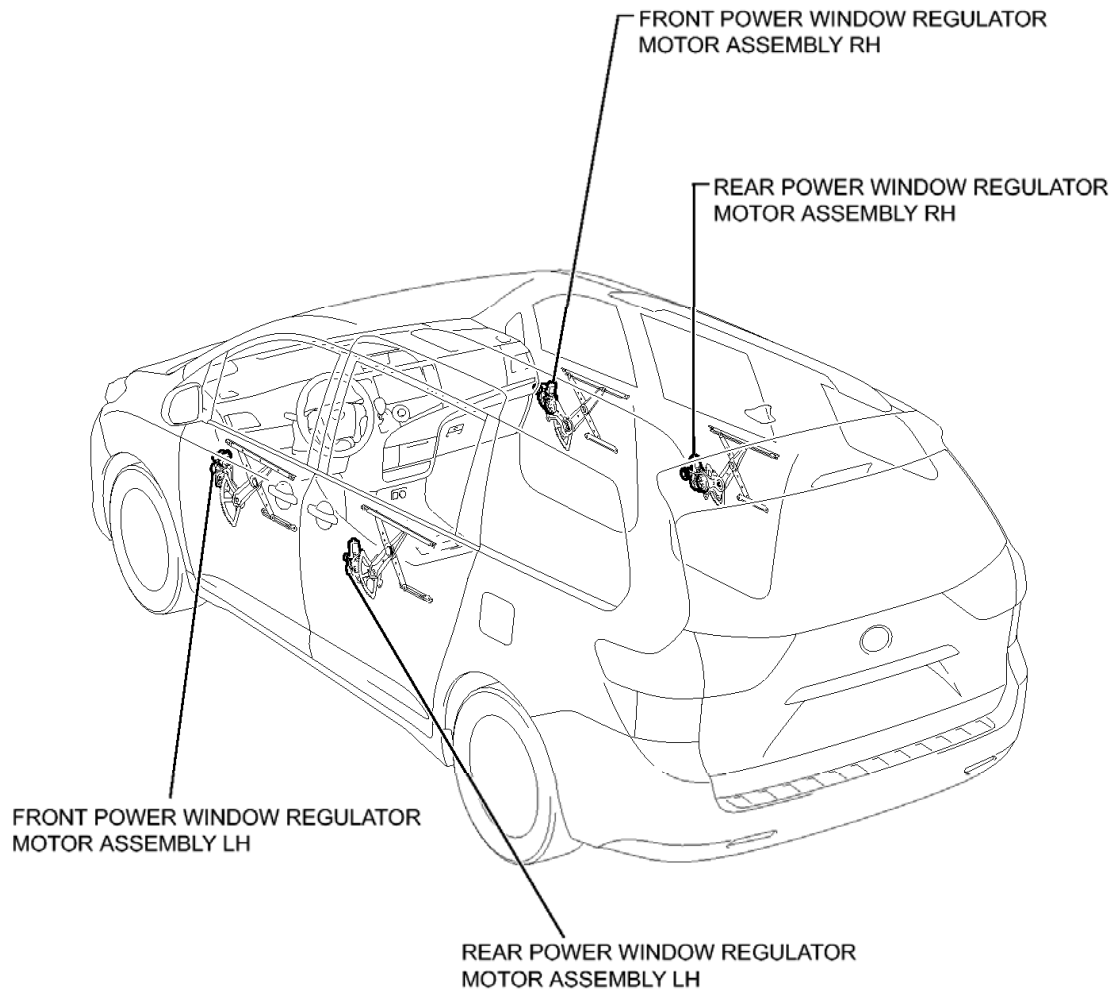


Fig. 2: Identifying LIN Communication System Components Location (2 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

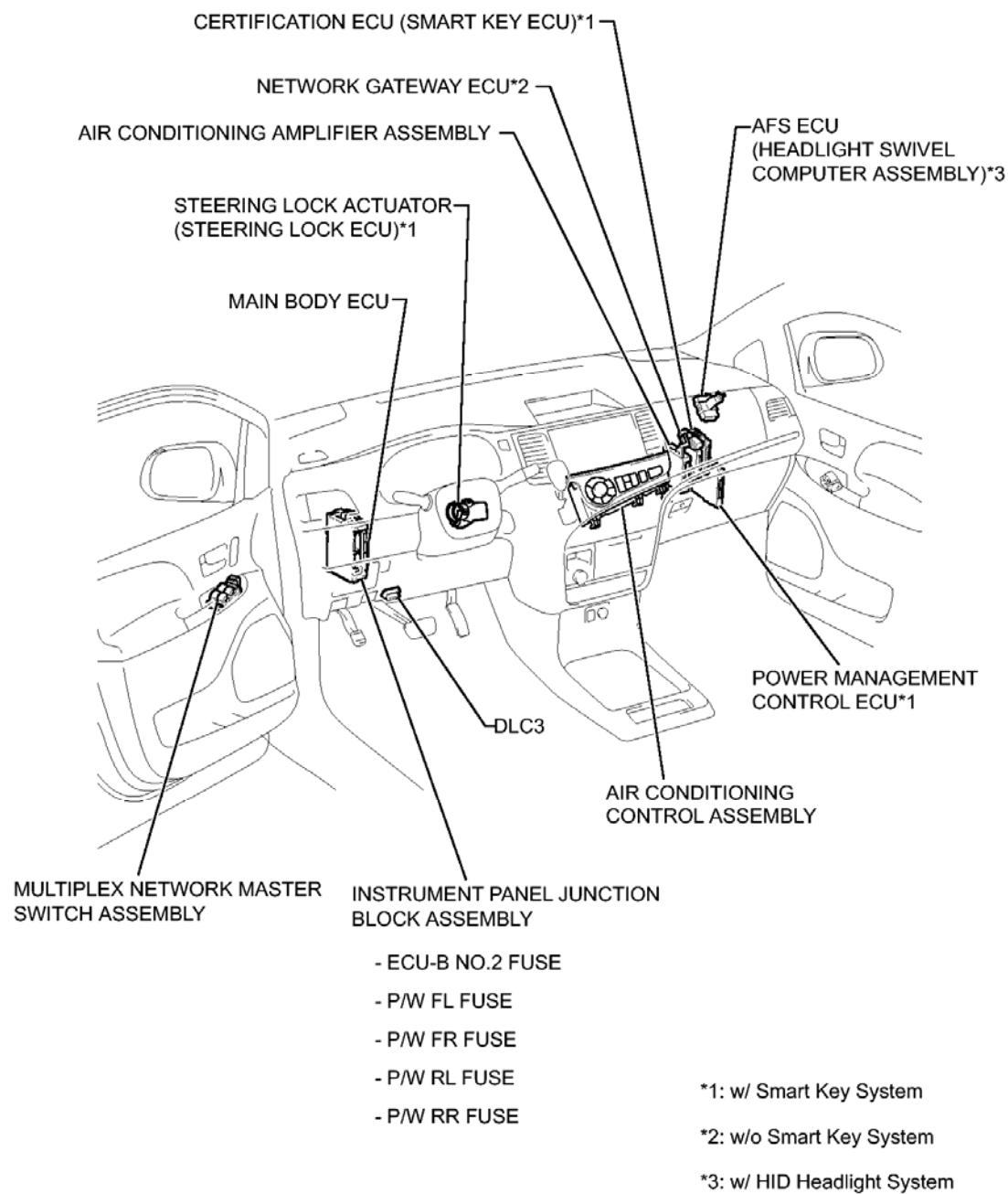


Fig. 3: Identifying LIN Communication System Components Location (3 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DIAGRAM

SYSTEM DIAGRAM

LIN Communication Bus between Components Related to Window:

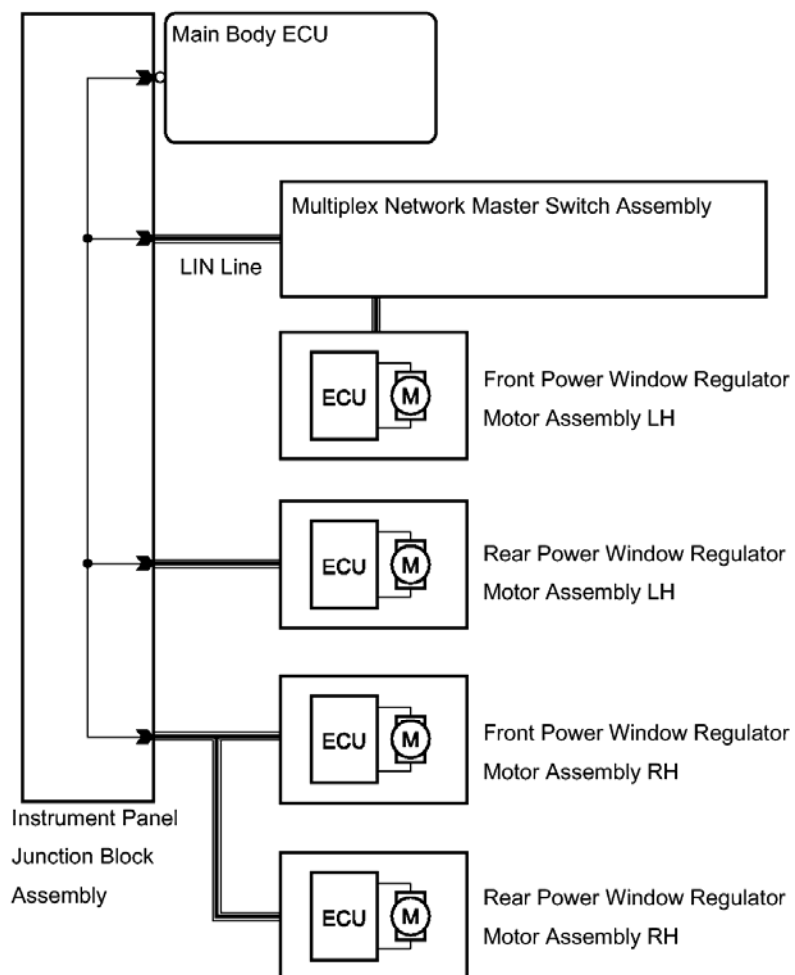


Fig. 4: LIN Communication System - System Diagram (1 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

LIN Communication Bus between Components Related to Certification ECU *1:

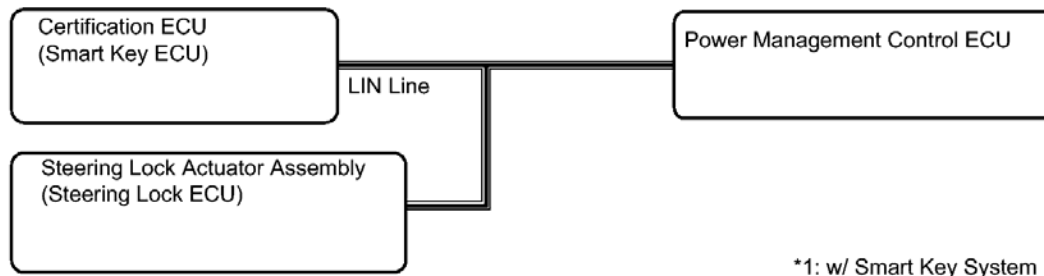


Fig. 5: LIN Communication System - System Diagram (2 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

LIN Communication Bus between Components Related to Air Conditioning:

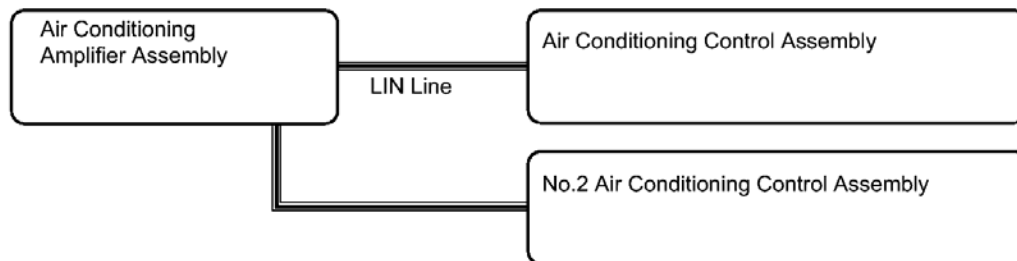


Fig. 6: LIN Communication System - System Diagram (3 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

LIN Communication Bus between Components Related to AFS Sensor *1:

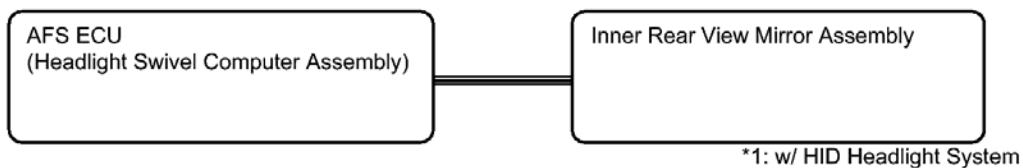


Fig. 7: LIN Communication System - System Diagram (4 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DESCRIPTION

SYSTEM DESCRIPTION

1. LIN COMMUNICATION SYSTEM DESCRIPTION

The LIN communication system is used for communication between the components listed below. Each part of the LIN communication system has a component as a control master.

a. Window Components that Use LIN Communication Bus:

1. Main Body ECU*
2. Multiplex Network Master Switch Assembly
3. Front Power Window Regulator Motor Assembly LH
4. Front Power Window Regulator Motor Assembly RH
5. Rear Power Window Regulator Motor Assembly LH
6. Rear Power Window Regulator Motor Assembly RH

HINT:

*: Control Master

b. Certification Components that Use LIN Communication Bus (w/ Smart Key System):

1. Certification ECU (Smart Key ECU)*
2. Power Management Control ECU*
3. Steering Lock Actuator Assembly

HINT:

*: Control Master

c. Air Conditioning Components that Use LIN Communication Bus:

1. Air Conditioning Amplifier Assembly*
2. Air Conditioning Control Assembly
3. No. 2 Air Conditioning Control Assembly

HINT:

*: Control Master

d. Lighting Components that Use LIN Communication Bus (w/ HID Headlight System):

1. AFS ECU (Headlight Swivel Computer Assembly)*
2. Inner Rear View Mirror Assembly

HINT:

*: Control Master

2. LIN COMMUNICATION SYSTEM DTC

The control master components shown below store LIN communication system DTCs when there is a

malfunction in the LIN communication. If LIN communication stops, the control master of that part of the LIN communication system stores DTCs.

- a. Main Body ECU
- b. Certification ECU (Smart Key ECU)
- c. Air Conditioning Amplifier Assembly
- d. AFS ECU (Headlight Swivel Computer Assembly)

HOW TO PROCEED WITH TROUBLESHOOTING

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use these procedures to troubleshoot the LIN communication system.
- *: Use the Techstream.

1. VEHICLE BROUGHT TO WORKSHOP

NEXT: Go to next step

2. INSPECT BATTERY VOLTAGE

Standard voltage

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT: Go to next step

3. INSPECT COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

- a. Using the Techstream, inspect the CAN communication function to ensure there are no malfunctions in the communication system. Refer to **DTC CHECK / CLEAR**.

RESULT

Result	Proceed to
No DTCs output	A
DTCs output	B

B --> GO TO CAN COMMUNICATION SYSTEM. Refer to DIAGNOSTIC TROUBLE CODE CHART

A: Go to next step

4. INSPECT COMMUNICATION FUNCTION OF LIN COMMUNICATION SYSTEM*

- a. Using the Techstream, inspect the LIN communication function to ensure there are no malfunctions in the communication system.

RESULT

Result	Proceed to
No DTCs output	A
DTCs output	B

B --> GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART

A: Go to next step

5. PROBLEM SYMPTOMS TABLE

- a. Refer to PROBLEM SYMPTOMS TABLE.

RESULT

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B --> GO TO step 7

A: Go to next step

6. OVERALL ANALYSIS AND TROUBLESHOOTING*

- a. Data List / Active Test. Refer to DATA LIST / ACTIVE TEST
- b. Terminals of ECU. Refer to TERMINALS OF ECU

NEXT: Go to next step

7. ADJUST, REPAIR OR REPLACE

NEXT --> END

PROBLEM SYMPTOMS TABLE

PROBLEM SYMPTOMS TABLE

HINT:

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

LIN COMMUNICATION SYSTEM

Symptom	Suspected Area	See
Air conditioning LIN communication malfunction	LIN communication line	Refer to <u>LIN Communication Circuit</u>
	Air conditioning control assembly	Refer to <u>LIN Communication Circuit</u>
	No. 2 Air conditioning control assembly	Refer to <u>LIN Communication Circuit</u>
	Air conditioning amplifier assembly	Refer to <u>LIN Communication Circuit</u>

TERMINALS OF ECU

TERMINALS OF ECU

1. CHECK MAIN BODY ECU AND INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

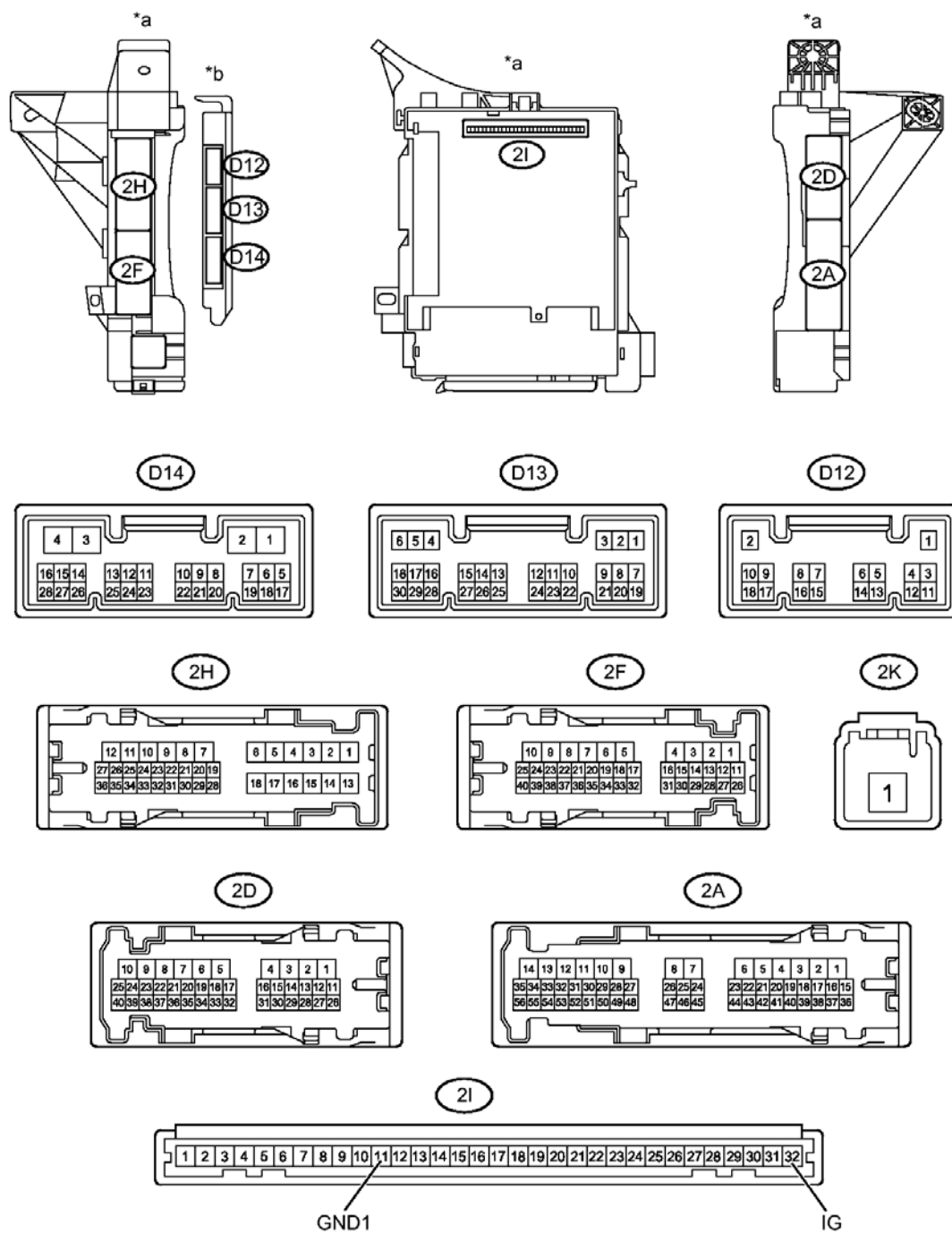


Fig. 8: ECU Connector Terminal Identification - Main Body ECU & I/P Junction Block
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

Component without harness connected	Component without harness
--	---------------------------------

*a	(Instrument Panel Junction Block Assembly)	*b	connected (Main Body ECU)

- a. Check main body ECU.
 1. Turn the ignition switch off.
 2. Remove the main body ECU from the instrument panel junction block assembly. Refer to **REMOVAL**.
 3. Measure the resistance and voltage according to the value(s) in the table below.

HINT:

The instrument panel junction block assembly connectors must all be connected.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
2I-32 (IG) - Body ground	-	IG power supply	Ignition switch ON	11 to 14 V
2I-11 (GND1) - Body ground	-	Ground	Always	Below 1 ohms

- b. Check instrument panel junction block assembly.

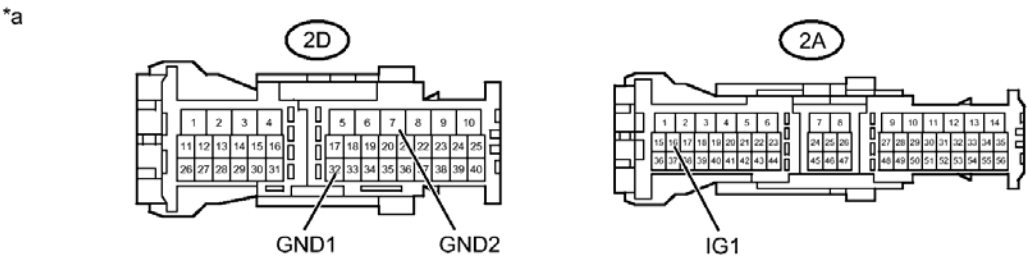


Fig. 9: Instrument Panel Junction Block Assembly Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

Front view of wire

*a	harness connector (to Instrument Panel Junction Block Assembly)	--
----	--	----

1. Disconnect the 2D and 2A instrument panel junction block assembly connectors.
2. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
2D-32 (GND1) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
2D-7 (GND2) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
2A-16 (IG1) - Body ground	Y - Body ground	IG power supply	Ignition switch ON	11 to 14 V

HINT:

If the result is not as specified, there may be a malfunction on the harness side.

2. CHECK MULTIPLEX NETWORK MASTER SWITCH ASSEMBLY

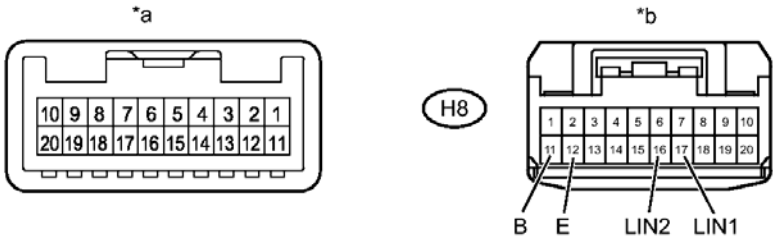


Fig. 10: Instrument Panel Junction Block Assembly Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

	Component without harness connected	Front view of wire harness connector
*a	(Multiplex Network Master Switch Assembly)	*b (to Multiplex Network Master Switch Assembly)

- a. Check the multiplex network master switch assembly.
 1. Turn the ignition switch off.
 2. Disconnect the H8 multiplex network master switch assembly connector.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
H8-11 (B) - Body ground	W - Body ground	Battery power supply	Always	11 to 14 V
H8-12 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnect the H8 multiplex network master switch assembly connector.
5. Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
H8-16 (LIN2) - Body ground	L - Body ground	LIN communication line	Ignition switch ON	Pulse generation
H8-17 (LIN1) -	G - Body	LIN communication	Ignition switch	Pulse

Body ground	ground	line	ON	generation
----------------	--------	------	----	------------

HINT:

If the result is not as specified, the multiplex network master switch assembly may have a malfunction.

3. CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH



Fig. 11: Front Power Window Regulator Motor Assembly LH Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Front Power Window Regulator Motor Assembly LH)	*b	Front view of wire harness connector (to Front Power Window Regulator Motor Assembly LH)
----	--	----	--

- a. Check the front power window regulator motor assembly LH.
 1. Turn the ignition switch off.
 2. Disconnect the H1 front power window regulator motor assembly LH connector.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
H1-2 (B) - Body ground	G - Body ground	Battery power supply	Always	11 to 14 V

H1-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
-----------------------------------	-------------------------	--------	--------	-----------------

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnect the H1 front power window regulator motor assembly LH connector.
5. Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
H1-9 (LIN) - Body ground	L - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, the front power window regulator motor assembly LH may have a malfunction.

4. CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH



Fig. 12: Front Power Window Regulator Motor Assembly RH Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Front Power Window	*b	Front view of wire harness connector (to Front Power
----	---	----	--

Regulator Motor Assembly RH)	Window Regulator Motor Assembly RH)
---------------------------------------	---

- a. Check the front power window regulator assembly RH.
 1. Turn the ignition switch off.
 2. Disconnect the G1 front power window regulator motor assembly RH connector.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
G1-2 (B) - Body ground	G - Body ground	Battery power supply	Always	11 to 14 V
G1-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnect the G1 front power window regulator motor assembly RH connector.
5. Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
G1-9 (LIN) - Body ground	GR - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, the front power window regulator motor assembly RH may have a malfunction.

5. CHECK REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

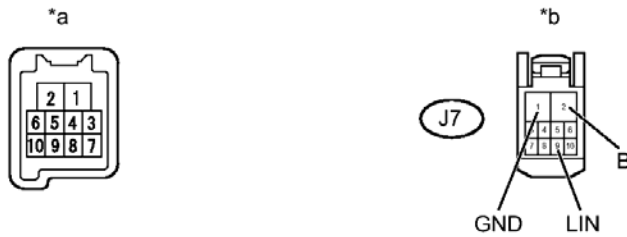


Fig. 13: Rear Power Window Regulator Motor Assembly LH Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Rear Power Window Regulator Motor Assembly LH)	*b	Front view of wire harness connector (to Rear Power Window Regulator Motor Assembly LH)
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- a. Check the rear power window regulator motor assembly LH.
 1. Turn the ignition switch off.
 2. Disconnect the J7 rear power window regulator motor assembly LH connector.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J7-2 (B) - Body ground	GR - Body ground	Battery power supply	Always	11 to 14 V
J7-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnect the J7 rear power window regulator motor assembly LH connector.

5. Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
J7-9 (LIN) - Body ground	Y - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, the rear power window regulator motor assembly LH may have a malfunction.

6. CHECK REAR POWER WINDOW REGULATOR MOTOR ASSEMBLY RH

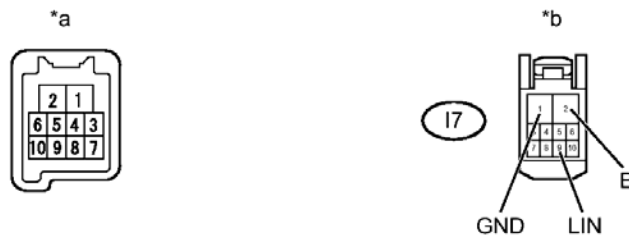


Fig. 14: Rear Power Window Regulator Motor Assembly RH Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Rear Power Window Regulator Motor Assembly RH)	*b	Front view of wire harness connector (to Rear Power Window Regulator Motor Assembly RH)
----	---	----	---

- a. Check the rear power window regulator motor assembly RH.
 1. Turn the ignition switch off.
 2. Disconnect the I7 rear power window regulator motor assembly RH connector.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I7-2 (B) - Body ground	R - Body ground	Battery power supply	Always	11 to 14 V
I7-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

- Reconnect the I7 rear power window regulator motor assembly RH connector.
- Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
I7-9 (LIN) - Body ground	Y - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, the rear power window regulator motor assembly RH may have a malfunction.

7. CHECK AFS ECU (HEADLIGHT SWIVEL COMPUTER ASSEMBLY) (w/ HID Headlight System)

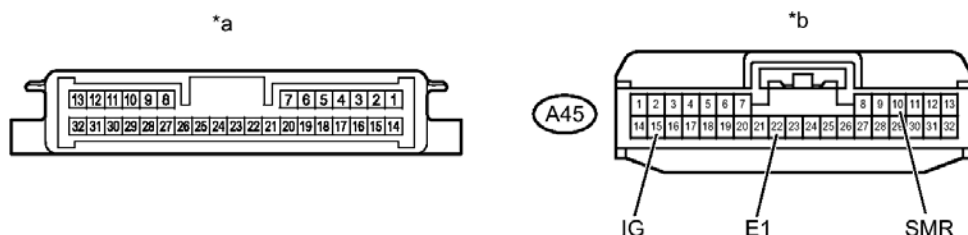


Fig. 15: AFS ECU (Headlight Swivel Computer Assembly) Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (AFS ECU (headlight swivel computer assembly))	*b	Front view of wire harness connector (to AFS ECU (headlight swivel computer assembly))
----	--	----	--

- a. Check the AFS ECU (headlight swivel computer assembly).
 1. Turn the ignition switch off.
 2. Disconnect the A45 AFS ECU connector.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
A45-15 (IG) - Body ground	G - Body ground	IG power supply	Ignition switch ON	11 to 14 V
A45-22 (E1) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnected the A45 AFS ECU (headlight swivel computer assembly) connector.
5. Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
A45-10 (SMR) - Body ground	V - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, AFS ECU (headlight swivel computer assembly) may have a malfunction.

8. CHECK CERTIFICATION ECU (SMART KEY ECU) (w/ Smart Key System)

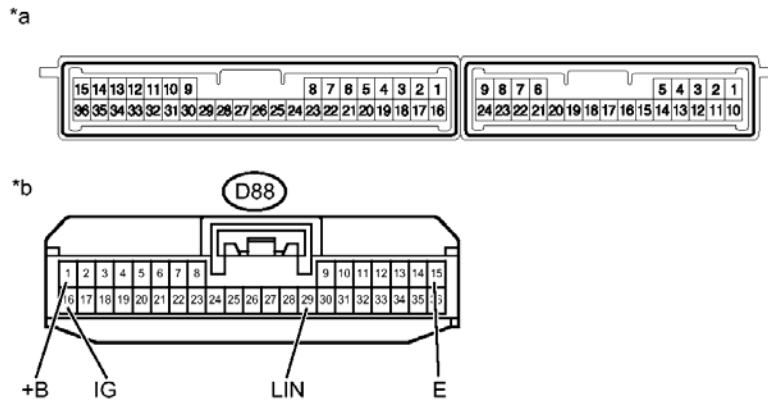


Fig. 16: Certification ECU (Smart Key ECU) Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Certification ECU (Smart Key ECU))	*b	Front view of wire harness connector (to Certification ECU (Smart Key ECU))
----	---	----	---

- a. Check the certification ECU (smart key ECU).
 1. Turn the ignition switch off.
 2. Disconnect the D88 certification ECU (smart key ECU) connector.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
D88-1 (+B) - Body ground	G - Body ground	Battery power supply	Always	11 to 14 V
D88-16 (IG) - Body	B - Body ground	IG power supply	Ignition switch ON	11 to 14 V

ground				
D88-15 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

- Reconnect the D88 certification ECU (smart key ECU) connector.
- Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Ignition Condition	Specified Condition
D88-29 (LIN) - Body ground	Y - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, the certification ECU (smart key ECU) may have a malfunction.

9. CHECK POWER MANAGEMENT CONTROL ECU

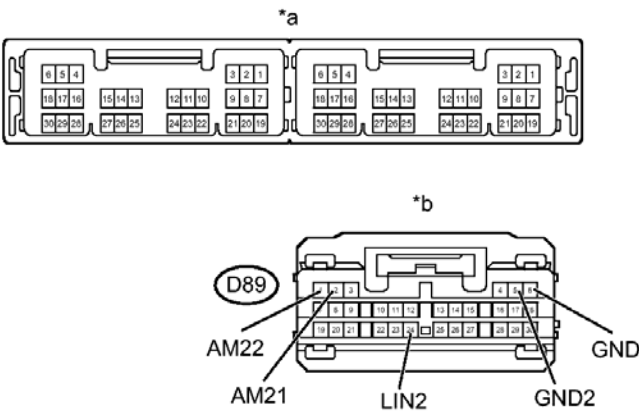


Fig. 17: Power Management Control ECU Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

	Component	Front view
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*a	without harness connected (Power Management Control ECU)	*b	of wire harness connector (to Power Management Control ECU)
----	--	----	---

- a. Check the power management Control ECU.
 1. Turn the ignition switch off.
 2. Disconnect the D89 power management control ECU connector.
 3. Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
D89-1 (AM22) - Body ground	R - Body ground	Battery power supply	Always	11 to 14 V
D89-2 (AM21) - Body ground	R - Body ground	Battery power supply	Always	11 to 14 V
D89-5 (GND2) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
D89-6 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnect the D89 power management control ECU connector.
5. Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
D89-24 (LIN2) -	BR -	LIN	Ignition	Pulse

Body ground	Body ground	communication line	switch ON	generation
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HINT:

If the result is not as specified, the power management control ECU may have a malfunction.

10. CHECK STEERING LOCK ACTUATOR ASSEMBLY



Fig. 18: Steering Lock Actuator Assembly Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Steering Lock Actuator Assembly)	*b	Front view of wire harness connector (to Steering Lock Actuator Assembly)
----	--	----	--

- Check the steering lock actuator assembly.
 - Turn the ignition switch off.
 - Disconnect the D29 steering lock actuator assembly connector.
 - Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
D29-7 (B) - Body ground	R - Body ground	Battery power supply	Always	11 to 14 V
D29-6	B -			

(IG2) - Body ground	Body ground	IG power supply	Always	11 to 14 V
D29-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnect the D29 steering lock actuator assembly connector.
5. Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
D29-5 (LIN) - Body ground	Y - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, the steering lock actuator assembly may have a malfunction.

11. CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY (A/C ECU)

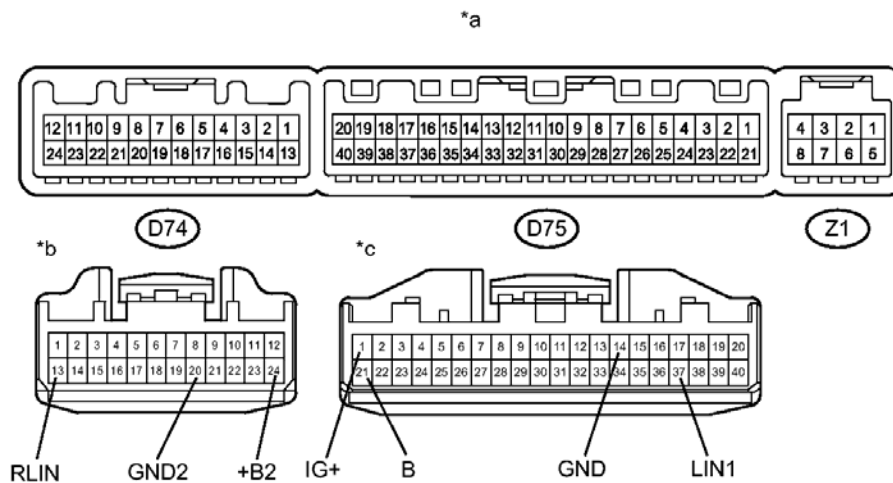


Fig. 19: Air Conditioning Amplifier Assembly Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Air Conditioning Amplifier Assembly)	*b	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)
*b	Front view of wire harness connector (to Air Conditioning Amplifier Assembly)	-	-

- a. Check the air conditioning amplifier assembly.
 1. Turn the ignition switch off.
 2. Disconnect the D75 and D74 air conditioning amplifier assembly connectors.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
D75-1 (IG+) - Body ground	R - Body ground	IG power supply	Ignition switch off	Below 1 V
D75-21 (B) - Body ground	P - Body ground	Battery power supply	Always	11 to 14 V
D74-24 (+B2) - Body ground	P - Body ground	Battery power supply	Always	11 to 14 V
D75-14 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
D74-20				

(GND2) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
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HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnect the D75 and D74 air conditioning amplifier assembly connectors.
5. Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
D75-37 (LIN1) - Body ground	LG - Body ground	LIN communication line	Ignition switch ON	Pulse generation
D74-13 (RLIN) - Body ground	L - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, the air conditioning amplifier assembly may have a malfunction.

12. CHECK AIR CONDITIONING CONTROL ASSEMBLY

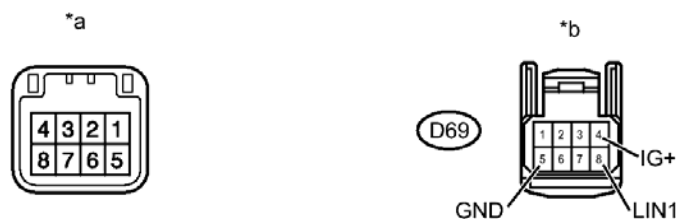


Fig. 20: Air Conditioning Control Assembly Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

Component without harness connected	Front view of wire harness connector
--	---

*a	(Air Conditioning Control Assembly)	*b	(to Air Conditioning Control Assembly)
----	-------------------------------------	----	--

- a. Check the air conditioning control assembly.
 1. Turn the ignition switch off.
 2. Disconnect the D69 air conditioning control assembly connector.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
D69-4 (IG+) - Body ground	R - Body ground	IG power supply	Ignition switch ON	11 to 14 V
D69-5 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnect the D69 air conditioning control assembly connector.
5. Measure the pulse according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Switch Condition	Specified Condition
D69-8 (LIN1) - Body ground	LG - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, the air conditioning control assembly may have a malfunction.

13. CHECK NO. 2 AIR CONDITIONING CONTROL ASSEMBLY



Fig. 21: No. 2 Air Conditioning Control Assembly Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (No. 2 Air Conditioning Control Assembly)	*b	Front view of wire harness connector (to No. 2 Air Conditioning Control Assembly)
----	---	----	---

- a. Check No. 2 air conditioning control assembly.
 1. Turn the ignition switch off.
 2. Disconnect the T7 No. 2 air conditioning control assembly connector.
 3. Measure the resistance and voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
T7-1 (IG) - Body ground	R - Body ground	IG power supply	Ignition switch ON	11 to 14 V
T7-4 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms

HINT:

If the result is not as specified, there may be a malfunction on the wire harness side.

4. Reconnect the T7 No. 2 air conditioning control assembly connector.
5. Measure the pulse according to the value(s) in the table below.

Terminal No.	Wiring Color	Terminal Description	Switch Condition	Specified Condition
--------------	--------------	----------------------	------------------	---------------------

(Symbol)				
T7-2 (RLIN) - Body ground	L - Body ground	LIN communication line	Ignition switch ON	Pulse generation

HINT:

If the result is not as specified, the No. 2 air conditioning control assembly may have a malfunction.

DTC CHECK / CLEAR

DTC CHECK / CLEAR

1. CHECK DTC

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / (desired system) / Trouble Codes.
- Read the DTCs.

2. CLEAR DTC

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / (desired system) / Trouble Codes.
- Clear the DTCs.

DATA LIST / ACTIVE TEST

DATA LIST / ACTIVE TEST

1. READ DATA LIST

HINT:

Using the Techstream to read the Data List allows values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTE: In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Data List / All Data.
- According to the display on the Techstream, read the Data List.

MAIN BODY

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
Communication D-Door Motor	Connection status between power window regulator motor assembly (for front LH) and main body ECU / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
Communication P-Door Motor	Connection status between power window regulator motor assembly (for front RH) and main body ECU / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
Communication RR-Door Motor	Connection status between power window regulator motor assembly (for rear RH) and main body ECU / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
	Connection status between power window		When there

Communication RL-Door Motor	regulator motor assembly (for rear LH) and main body ECU / OK or STOP	OK: Connection STOP: No connection	is a malfunction, a DTC is stored.
Communication Master SW	Connection status between power window ECU (multiplex network master switch assembly) and main body ECU / OK or STOP	OK: Connection STOP: No connection	When there is a malfunction, a DTC is stored.
The Number of DTC	Number of trouble codes / Min.: 0, Max.: 255	Number of DTCs	-

SMART KEY

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
IG(Lin)	State of IG signal from LIN communication recognized by steering lock actuator assembly/ON or OFF	ON: Ignition switch ON OFF: Ignition switch off	The display is the same as IG2.

DIAGNOSTIC TROUBLE CODE CHART

DIAGNOSTIC TROUBLE CODE CHART

HINT:

- If a trouble code is output during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the appropriate information below.

DTC Code	Detection Item	Trouble Area	See
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B1206	P/W Master Switch Communication Stop	- Main body ECU - Instrument panel junction block assembly - Multiplex network master switch assembly - Harness or connector	Refer to <u>DTC B1206: P/W Master Switch Communication Stop</u>
B124D*1	Lost Communication with AFS LIN	- Inner rear view mirror assembly - Harness or connector - AFS ECU (Headlight swivel computer assembly)	Refer to <u>DTC B124D: Lost Communication with AFS LIN</u>
B2287*2	LIN Communication Master Malfunction	- Power management control ECU - Certification ECU (Smart key ECU) - Harness or connector	Refer to <u>DTC B2287: LIN Communication Master Malfunction; DTC B278C: Lost Communication with Power Source Control</u>
B2321	Driver Side Door ECU Communication Stop	- Main body ECU - Instrument panel junction block assembly - Front power window regulator motor assembly - LH	Refer to <u>DTC B2321: Driver Side Door ECU Communication Stop</u>

		- Harness or connector	
B2322	Front Passenger Side Door ECU Communication Stop	- Main body ECU - Instrument panel junction block assembly - Front power window regulator motor assembly RH - Harness or connector	Refer to <u>DTC B2322: Front Passenger Side Door ECU Communication Stop</u>
B2323	Rear Door RH ECU Communication Stop	- Main body ECU - Instrument panel junction block assembly - Rear power window regulator motor assembly RH - Harness or connector	Refer to <u>DTC B2323: Rear Door RH ECU Communication Stop</u>
B2324	Rear Door LH ECU Communication Stop	- Main body ECU - Instrument panel junction block assembly - Rear power window regulator motor assembly	Refer to <u>DTC B2324: Rear Door LH ECU Communication Stop</u>

		LH - Harness or connector	
B2325	LIN Communication Bus Malfunction	- Main body ECU - Instrument panel junction block assembly - Multiplex network master switch assembly - Front power window regulator motor assembly LH - Front power window regulator motor assembly RH - Rear power window regulator motor assembly LH - Rear power window regulator motor assembly RH - Harness or connector	Refer to <u>DTC B2325: LIN Communication Bus Malfunction</u>
		- Inner rear view mirror assembly	

B2432*1	Lost Communication with Automatic High Beam Sensor	- Harness or connector - AFS ECU (Headlight swivel computer assembly)	Refer to <u>DTC B2432: Lost Communication with Automatic High Beam Sensor</u>
B2785*2	Communication Malfunction between ECUs Connected by LIN	- Certification ECU (Smart key ECU) - Steering lock actuator assembly (Steering lock ECU) - Power management control ECU - Harness or connector	Refer to <u>DTC B2785: Communication Malfunction between ECUs Connected by LIN</u>
B2786*2	No Response from Steering Lock ECU	- Certification ECU (Smart key ECU) - Steering lock actuator assembly (Steering lock ECU) - Harness or connector	Refer to <u>DTC B2786: No Response from Steering Lock ECU</u>
B278C*2	Lost Communication with Power Source Control	- Power management control ECU - Certification ECU (Smart key ECU) - Harness or connector	Refer to <u>DTC B2287: LIN Communication Master Malfunction; DTC B278C: Lost Communication with Power Source Control</u>

*1: w/ HID Headlight System

*2: w/ Smart Key System