

Last Modified: 11-13-2015	6.6 C	Doc ID: RM0000036QC04IX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: B1206; P/W Master Switch Communication Stop; 2016 MY Tacoma [08/2015 -]		

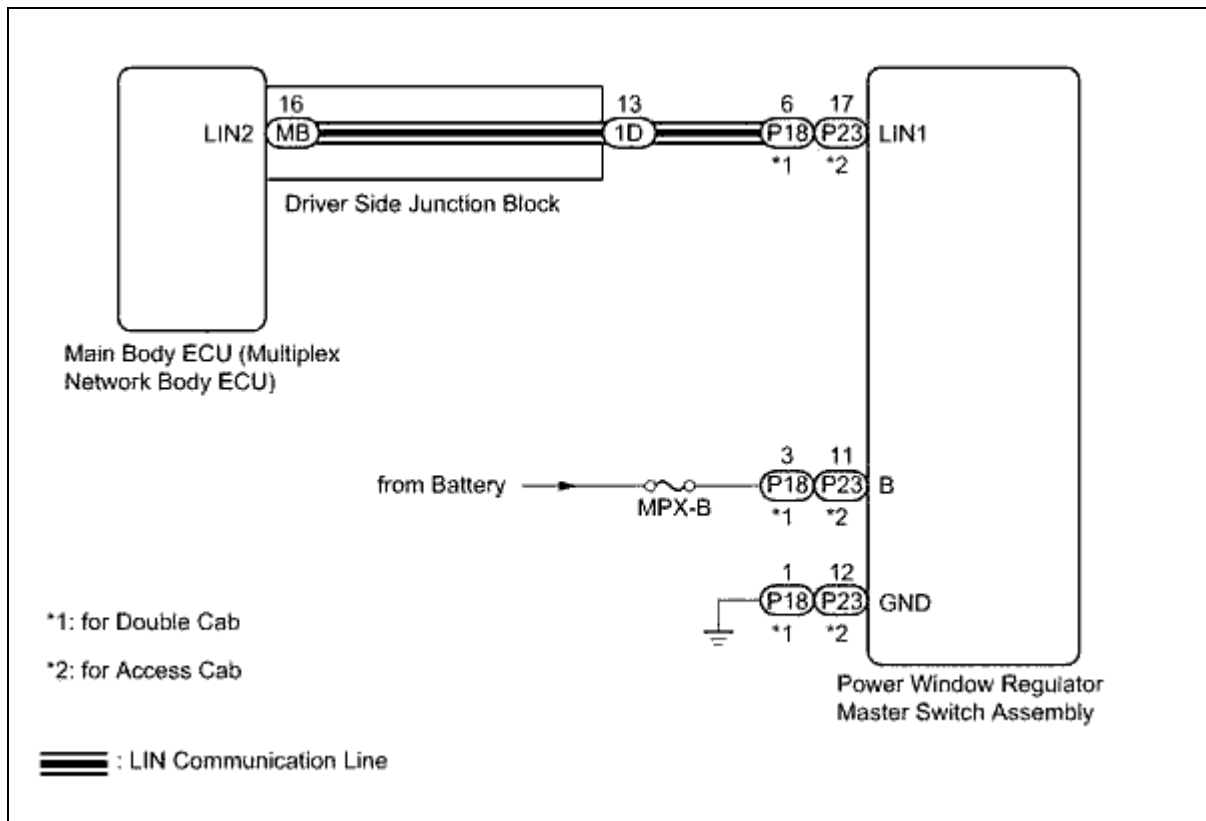
DTC	B1206	P/W Master Switch Communication Stop
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DESCRIPTION

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

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B1206	No communication between power window regulator master switch assembly and main body ECU (multiplex network body ECU) for 10 seconds or more.	• Power window regulator master switch assembly • Main body ECU (multiplex network body ECU) • Driver side junction block • Wire harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

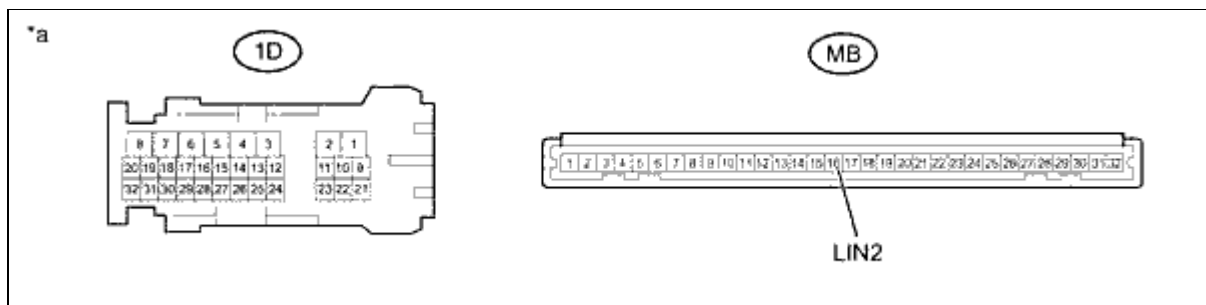
NOTICE:

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.
- If the main body ECU (multiplex network body ECU) is replaced, refer to Registration [INFO](#)

PROCEDURE

1. INSPECT DRIVER SIDE JUNCTION BLOCK

- Remove the driver side junction block [INFO](#).
- Remove the main body ECU (multiplex network body ECU) from the driver side junction block.
- Measure the resistance according to the value(s) in the table below.



Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1D-13 - MB-16 (LIN2)	Always	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Driver Side Junction Block)	-	-
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HINT:

This inspection is to check the LIN line in the driver side junction block that connects the wire harness to the built-in main body ECU (multiplex network body ECU).

NG  **REPLACE DRIVER SIDE JUNCTION BLOCK**

OK



2.	CHECK HARNESS AND CONNECTOR (DRIVER SIDE JUNCTION BLOCK - POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY)
----	---

(a) for Double Cab

- (1) Disconnect the 1D driver side junction block connector.
- (2) Disconnect the P18 power window regulator master switch assembly connector.
- (3) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1D-13 - P18-6 (LIN1)	Always	Below 1 Ω
1D-13 or P18-6 (LIN1) - Body ground	Always	10 k Ω or higher

(b) for Access Cab

- (1) Disconnect the 1D driver side junction block connector.
- (2) Disconnect the P23 power window regulator master switch assembly connector.
- (3) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1D-13 - P23-17 (LIN1)	Always	Below 1 Ω
1D-13 or P23-17 (LIN1) - Body ground	Always	10 k Ω or higher

OK



3.	CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR MASTER SWITCH - POWER SOURCE CIRCUIT)
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(a) for Double Cab

- (1) Disconnect the P18 power window regulator master switch assembly connector.
- (2) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P18-3 (B) - P18-1 (GND)	Always	11 to 14 V

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P18-1 (GND) - Body ground	Always	Below 1 Ω

(b) for Access Cab

- (1) Disconnect the P23 power window regulator master switch assembly connector.
- (2) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P23-11 (B) - P23-12 (GND)	Always	11 to 14 V

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P23-12 (GND) - Body ground	Always	Below 1 Ω

OK



4.	REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY
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(a) Replace the power window regulator master switch assembly.

NEXT



5.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Clear the DTCs  .

(b) Recheck for DTCs.

OK:

DTC B1206 is not output.

NG  **REPLACE MAIN BODY ECU (MULTIPLEX BODY ECU)**

OK  **END (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002XHN06KX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: B1273; Sliding Roof ECU Communication Stop; 2016 MY Tacoma [08/2015 -]		

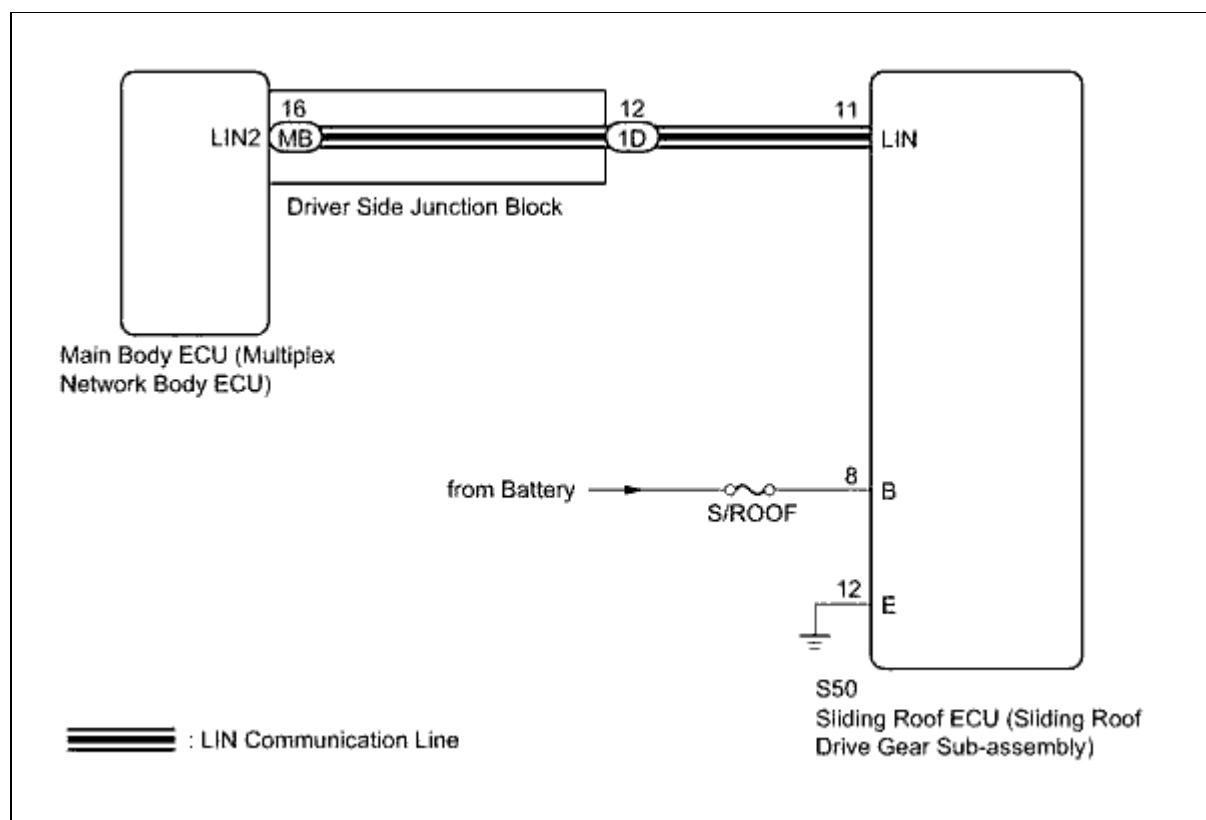
DTC	B1273	Sliding Roof ECU Communication Stop
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DESCRIPTION

This DTC is stored when LIN communication between the sliding roof ECU (sliding roof drive gear sub-assembly) and main body ECU (multiplex network body ECU) stops for 10 seconds or more.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B1273	No communication between sliding roof ECU (sliding roof drive gear sub-assembly) and main body ECU (multiplex network body ECU) for 10 seconds or more.	- Sliding roof ECU (sliding roof drive gear sub-assembly) - Main body ECU (multiplex network body ECU) - Driver side junction block - Wire harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

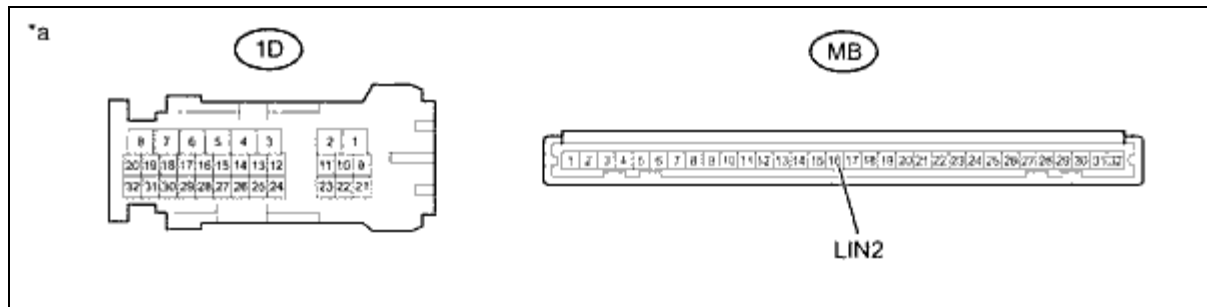
NOTICE:

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.
- If the main body ECU (multiplex network body ECU) is replaced, refer to Registration INFO
- When the sliding roof ECU (sliding roof drive gear sub-assembly) is replaced or removed and reinstalled, it requires initialization INFO.

PROCEDURE

1. INSPECT DRIVER SIDE JUNCTION BLOCK

- (a) Remove the driver side junction block INFO.
- (b) Remove the main body ECU (multiplex network body ECU) from the driver side junction block.
- (c) Measure the resistance according to the value(s) in the table below.



Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1D-12 - MB-16 (LIN2)	Always	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Driver Side Junction Block)	-	-
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HINT:

This inspection is to check the LIN line in the driver side junction block that connects the wire harness to the built-in main body ECU (multiplex network body ECU).

NG ▶ REPLACE DRIVER SIDE JUNCTION BLOCK

OK



2. CHECK HARNESS AND CONNECTOR (DRIVER SIDE JUNCTION BLOCK - SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY))

- (a) Disconnect the 1D driver side junction block connector.
- (b) Disconnect the S50 sliding roof ECU (sliding roof drive gear sub-assembly) connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1D-12 - S50-11 (LIN)	Always	Below 1 Ω
1D-12 or S50-11 (LIN) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



3.	CHECK HARNESS AND CONNECTOR (SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY) - POWER SOURCE CIRCUIT)
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- (a) Disconnect the S50 sliding roof ECU (sliding roof drive gear sub-assembly) connector.
- (b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
S50-8 (B) - S50-12 (E)	Always	11 to 14 V

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
S50-12 (E) - Body ground	Always	Below 1 Ω

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



4.	REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)
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(a) Replace the sliding roof ECU (sliding roof drive gear sub-assembly)  .

NEXT



5.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Clear the DTCs  .

(b) Recheck for DTCs.

OK:

DTC B1273 is not output.

NG  **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

OK  **END (SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY WAS DEFECTIVE))**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002XHZ07RX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: B2321; Driver Side Door ECU Communication Stop; 2016 MY Tacoma [08/2015 -]		

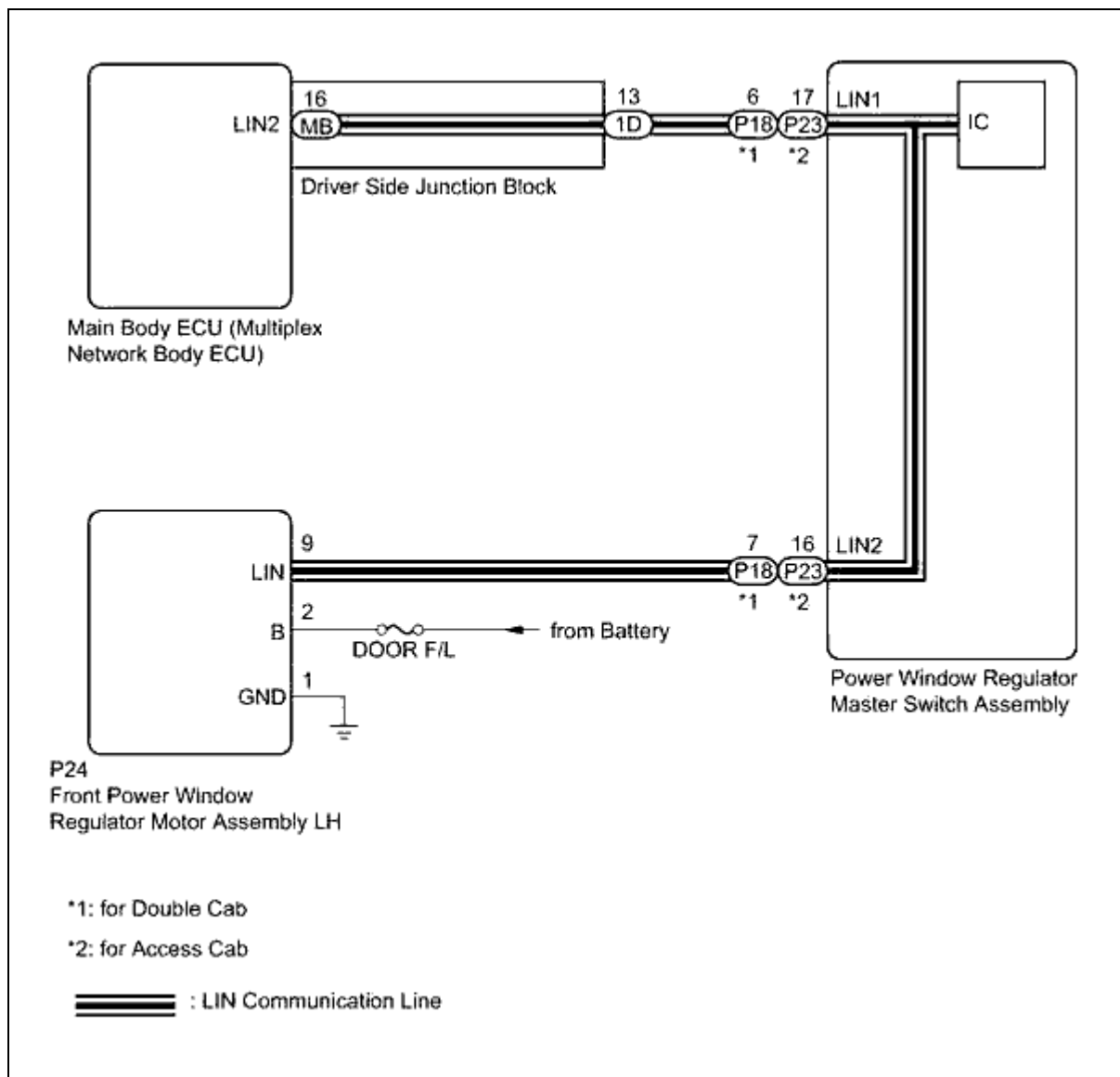
DTC	B2321	Driver Side Door ECU Communication Stop
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DESCRIPTION

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

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2321	No communication between front power window regulator motor assembly LH and main body ECU (multiplex network body ECU) for 10 seconds or more.	• Front power window regulator motor assembly LH • Main body ECU (multiplex network body ECU) • Power window regulator master switch assembly • Wire harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.
- If the main body ECU (multiplex network body ECU) is replaced, refer to Registration [INFO](#)
- When a power window regulator motor assembly is replaced or removed and reinstalled, it requires initialization [INFO](#).

PROCEDURE

1.	CHECK DTC OUTPUT
----	-------------------------

(a) Clear the DTCs [INFO](#).

(b) Recheck for DTCs.

RESULT	PROCEED TO
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RESULT	PROCEED TO
Only DTC B2321 is output.	A
DTC B1206 and B2321 are output simultaneously.	B

HINT:

When DTC B1206 and B2321 are output simultaneously, perform troubleshooting for DTC B1206 first.

B ► **GO TO DTC B1206**

A

2.	CHECK HARNESS AND CONNECTOR (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY - FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)
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(a) for Double Cab

- (1) Disconnect the P18 power window regulator master switch assembly connector.
- (2) Disconnect the P24 front power window regulator motor assembly LH connector.
- (3) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P18-7 (LIN2) - P24-9 (LIN)	Always	Below 1 Ω
P18-7 (LIN2) or P24-9 (LIN) - Body ground	Always	10 k Ω or higher

(b) for Access Cab

- (1) Disconnect the P23 power window regulator master switch assembly connector.
- (2) Disconnect the P24 front power window regulator motor assembly LH connector.
- (3) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P23-16 (LIN2) - P24-9 (LIN)	Always	Below 1 Ω
P23-16 (LIN2) or P24-9 (LIN) - Body ground	Always	10 k Ω or higher

NG ► **REPAIR OR REPLACE HARNESS OR CONNECTOR**

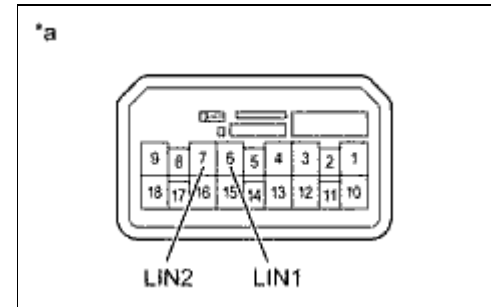
OK



3. INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

(a) for Double Cab

- (1) Remove the power window regulator master switch assembly.



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

Standard Resistance:

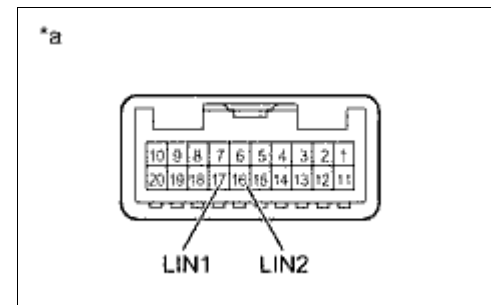
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
6 (LIN1) - 7 (LIN2)	Always	Below 1 Ω

Text in Illustration

*a Component without harness connected
(Power Window Regulator Master Switch Assembly)

(b) for Access Cab

- (1) Remove the power window regulator master switch assembly.



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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
17 (LIN1) - 16 (LIN2)	Always	Below 1 Ω

Text in Illustration

*a Component without harness connected

NG  **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

OK



4.

CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH - POWER SOURCE CIRCUIT)

(a) Disconnect the P24 front power window regulator motor assembly LH connector.

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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P24-2 (B) - Body ground	Always	11 to 14 V

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P24-1 (GND) - Body ground	Always	Below 1 Ω

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



5.

REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH

(a) Replace the front power window regulator motor assembly LH.

NEXT



6.

CHECK DTC OUTPUT

(a) Clear the DTCs  .

(b) Check for DTCs.

OK:

DTC B2321 is not output.

NG  **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

OK  **END (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH) WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM0000036QD050X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: B2322; Front Passenger Side Door ECU Communication Stop; 2016 MY Tacoma [08/2015 -]		

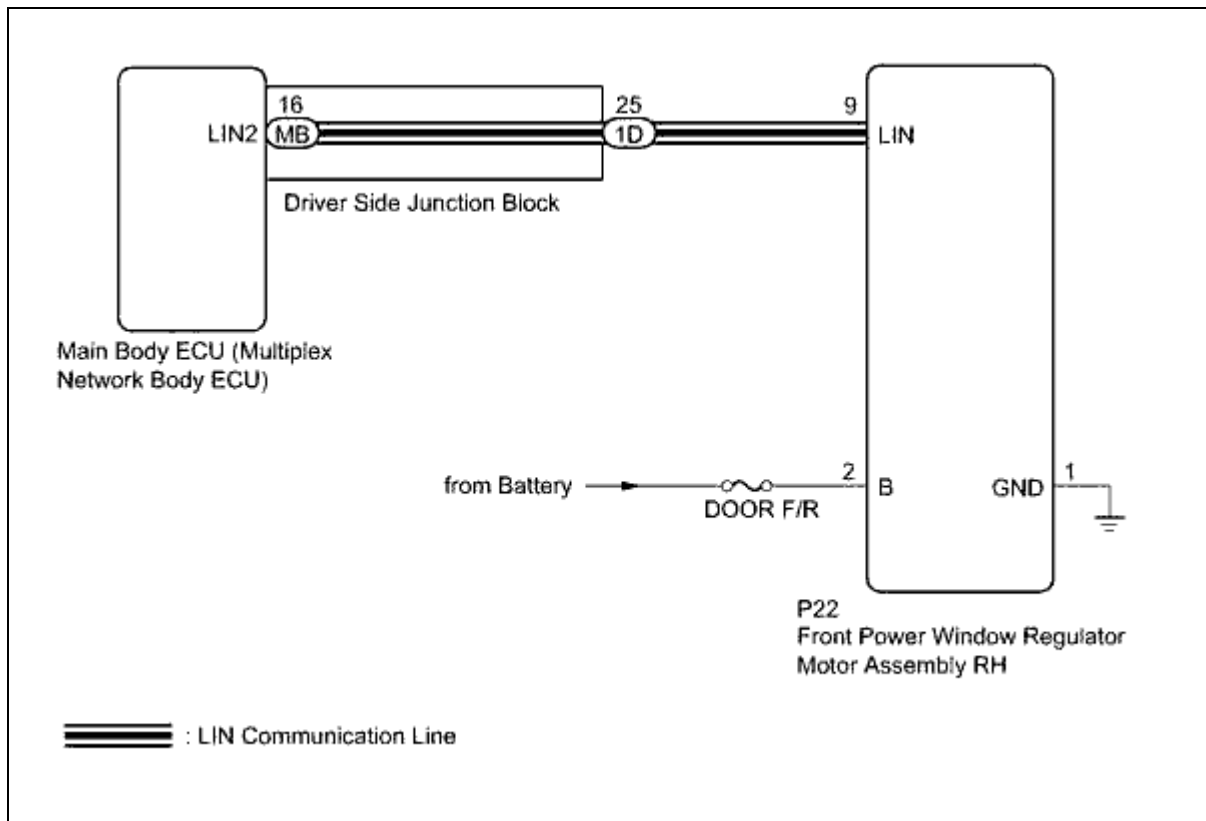
DTC	B2322	Front Passenger Side Door ECU Communication Stop
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DESCRIPTION

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

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2322	No communication between front power window regulator motor assembly RH and main body ECU (multiplex network body ECU) for 10 seconds or more.	• Front power window regulator motor assembly RH • Main body ECU (multiplex network body ECU) • Driver side junction block • Wire harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

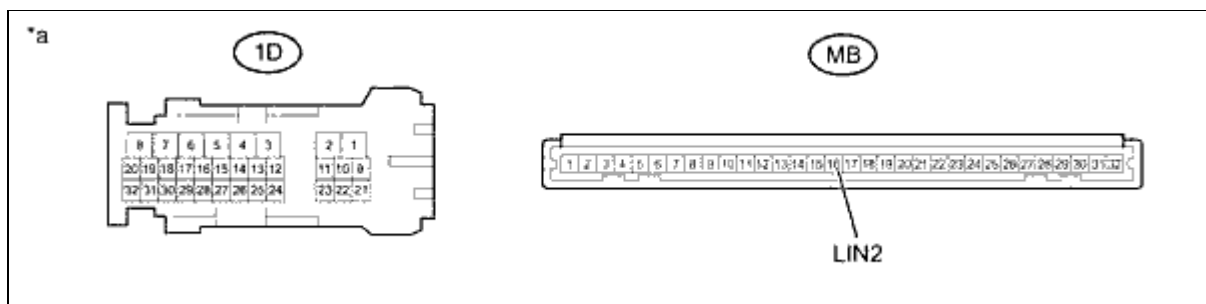
NOTICE:

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.
- If the main body ECU (multiplex network body ECU) is replaced, refer to Registration [INFO](#)
- When a power window regulator motor assembly is replaced or removed and reinstalled, it requires initialization [INFO](#).

PROCEDURE

1. INSPECT DRIVER SIDE JUNCTION BLOCK

- Remove the driver side junction block [INFO](#).
- Remove the main body ECU (multiplex network body ECU) from the driver side junction block.
- Measure the resistance according to the value(s) in the table below.



Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1D-25 - MB-16 (LIN2)	Always	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Driver Side Junction Block)	-	-
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HINT:

This inspection is to check the LIN line in the driver side junction block that connects the wire harness to the built-in main body ECU (multiplex network body ECU).

NG  **REPLACE DRIVER SIDE JUNCTION BLOCK**

OK



2.	CHECK HARNESS AND CONNECTOR (DRIVER SIDE JUNCTION BLOCK - FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)
----	--

- (a) Disconnect the 1D driver side junction block connector.
- (b) Disconnect the P22 front power window regulator motor assembly RH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1D-25 - P22-9 (LIN)	Always	Below 1 Ω
1D-25 or P22-9 (LIN) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



3.	CHECK HARNESS AND CONNECTOR (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH - POWER SOURCE CIRCUIT)
----	--

- (a) Disconnect the P22 front power window regulator motor assembly RH connector.
- (b) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P22-2 (B) - P22-1 (GND)	Always	11 to 14 V

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P22-1 (GND) - Body ground	Always	Below 1 Ω

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



4.	REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH
-----------	---

(a) Replace the front power window regulator motor assembly RH.

NEXT



5.	CHECK DTC OUTPUT
-----------	-------------------------

(a) Clear the DTCs  .

(b) Check for DTCs.

OK:

DTC B2322 is not output.

NG  **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

OK  **END (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002XHY08IX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: B2325; LIN Communication Bus Malfunction; 2016 MY Tacoma [08/2015 -]		

DTC	B2325	LIN Communication Bus Malfunction
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DESCRIPTION

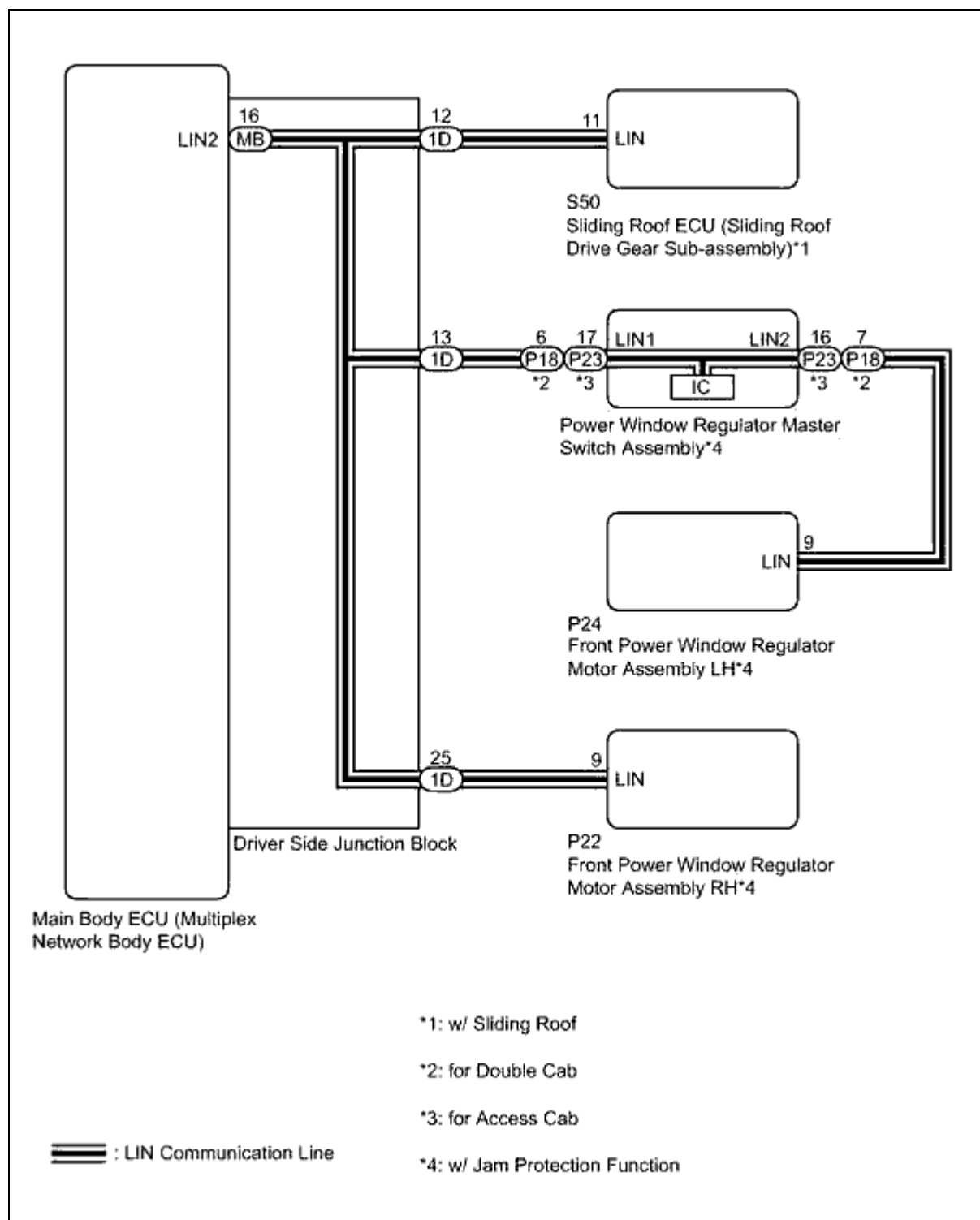
The main body ECU (multiplex network body ECU) monitors communication between all the ECUs connected to the door bus lines. When the main body ECU (multiplex network body ECU) detects errors in communication with all the ECUs connected to the door bus lines at 2.6-second intervals and 3 times in a row, DTC B2325 will be stored.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2325	Main body ECU (multiplex network body ECU) detects errors in communication with the ECUs connected to the door bus lines 3 times in a row.	• Front power window regulator motor assembly LH*1 • Front power window regulator motor assembly RH*1 • Power window regulator master switch assembly*1 • Sliding roof ECU (sliding roof drive gear sub-assembly)*2 • Main body ECU (multiplex network body ECU) • Driver side junction block • Wire harness or connector

*1: w/ Jam Protection Function

*2: w/ Sliding Roof

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- When the sliding roof ECU (sliding roof drive gear sub-assembly) is replaced or removed and reinstalled, it requires initialization [INFO](#).
- If the main body ECU (multiplex network body ECU) is replaced, refer to Registration [INFO](#).
- When a power window regulator motor assembly is replaced or removed and reinstalled, it requires initialization [INFO](#).

PROCEDURE

1.	SYSTEM CHECK
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(a) Check the vehicle specification.

Result

RESULT	PROCEED TO
w/ Jam Protection Function	A
w/o Jam Protection Function	B

NG  **GO TO STEP 4**

OK



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

(a) for Double Cab

- (1) Disconnect the P18 power window regulator master switch assembly connector.
- (2) Disconnect the P24 front power window regulator motor assembly LH connector.
- (3) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P18-7 (LIN2) - P24-9 (LIN)	Always	Below 1 Ω
P18-7 (LIN2) or P24-9 (LIN) - Body ground	Always	10 k Ω or higher

(b) for Access Cab

- (1) Disconnect the P23 power window regulator master switch assembly connector.
- (2) Disconnect the P24 front power window regulator motor assembly LH connector.
- (3) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P23-16 (LIN2) - P24-9 (LIN)	Always	Below 1 Ω

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
P23-16 (LIN2) or P24-9 (LIN) - Body ground	Always	10 kΩ or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

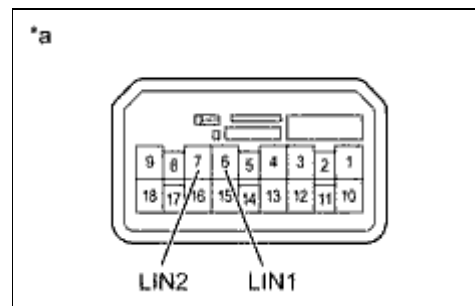
OK



3.	INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY
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(a) for Double Cab

- (1) Remove the power window regulator master switch assembly.



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

Standard Resistance:

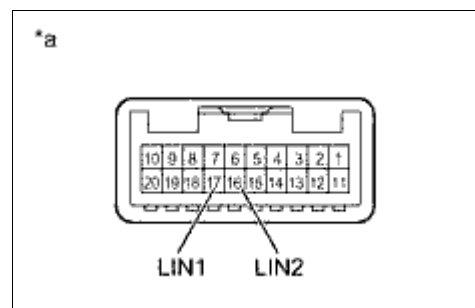
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
6 (LIN1) - 7 (LIN2)	Always	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Power Window Regulator Master Switch Assembly)
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(b) for Access Cab

- (1) Remove the power window regulator master switch assembly.



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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
17 (LIN1) - 16 (LIN2)	Always	Below 1 Ω

Text in Illustration

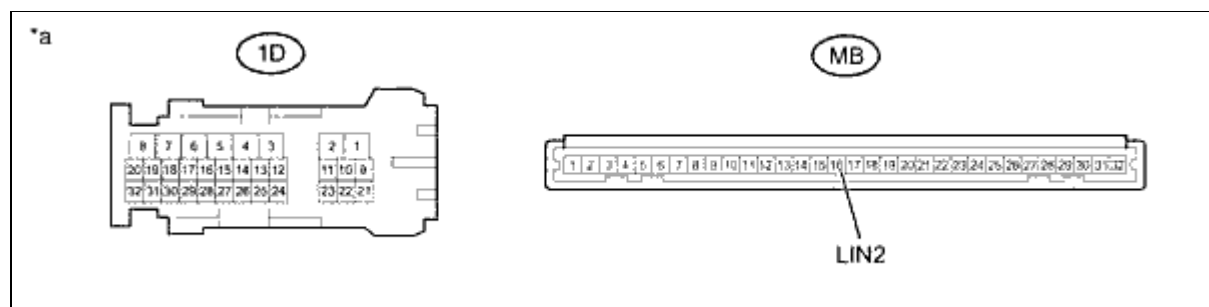
*a	Component without harness connected (Power Window Regulator Master Switch Assembly)
----	--

NG  **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

OK

4.	INSPECT DRIVER SIDE JUNCTION BLOCK
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- (a) Remove the driver side junction block  .
- (b) Remove the main body ECU (multiplex network body ECU) from the driver side junction block.
- (c) Measure the resistance according to the value(s) in the table below.



Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1D-12 - MB-16 (LIN2)*1	Always	Below 1 Ω
1D-13 - MB-16 (LIN2)*2	Always	Below 1 Ω
1D-25 - MB-16 (LIN2)*2	Always	Below 1 Ω

*1: w/ Sliding Roof

*2: w/ Jam Protection Function

Text in Illustration

*a	Component without harness connected	-	-
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HINT:

This inspection is to check the LIN line in the driver side junction block that connects the wire harness to the built-in main body ECU (multiplex network body ECU).

NG  **REPLACE DRIVER SIDE JUNCTION BLOCK**

OK



5. CHECK HARNESS AND CONNECTOR (DRIVER SIDE JUNCTION BLOCK - EACH ECU)

- (a) Disconnect the P22 front power window regulator motor assembly RH connector.*1
- (b) Disconnect the P18*2 or P23*3 power window regulator master switch assembly connector.*1
- (c) Disconnect the S50 sliding roof ECU (sliding roof drive gear sub-assembly) connector.*4
- (d) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
1D-25 - P22-9 (LIN)*1	Always	Below 1 Ω
1D-13 - P18-6 (LIN1)*1*2	Always	Below 1 Ω
1D-13 - P23-17 (LIN1)*1*3	Always	Below 1 Ω
1D-12 - S50-11 (LIN)*4	Always	Below 1 Ω
1D-25 - Body ground*1	Always	10 k Ω or higher
1D-13 - Body ground*1	Always	10 k Ω or higher
1D-12 - Body ground*4	Always	10 k Ω or higher

*1: w/ Jam Protection Function

*2: for Double Cab

*3: for Access Cab

*4: w/ Sliding Roof

RESULT	PROCEED TO
OK (w/ Jam Protection Function)	A
OK (w/o Jam Protection Function)	B
NG	C

B  **GO TO STEP 9**

A
▼

6.	CHECK DTC OUTPUT (POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY)
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- (a) Reconnect the P24 front power window regulator motor assembly LH connector.
- (b) Reconnect the P22 front power window regulator motor assembly RH connector.
- (c) Reconnect the S50 sliding roof ECU (sliding roof drive gear sub-assembly) connector.*1
- (d) Reconnect the 1D driver side junction block connector.
- (e) Clear the DTCs INFO .
- (f) After 10 seconds have elapsed, check if the trouble occurs again.
- (g) Check for DTCs again.

*1: w/ Sliding Roof

RESULT	PROCEED TO
DTC B2325 is output	A
DTC B2325 is not output	B

B ▶ REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY

A
▼

7.	CHECK DTC OUTPUT (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH)
-----------	--

- (a) Reconnect the P18*1 or P23*2 power window regulator master switch assembly connector.
- (b) Disconnect the P24 front power window regulator motor assembly LH connector.
- (c) Clear the DTCs INFO .
- (d) After 10 seconds have elapsed, check if the trouble occurs again.
- (e) Check for DTCs again.

*1: for Double Cab

*2: for Access Cab

RESULT	PROCEED TO
DTC B2325 is output	A
DTC B2325 is not output	B

B ▶ **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH**

A



8.	CHECK DTC OUTPUT (FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH)
-----------	--

- (a) Reconnect the P24 front power window regulator motor assembly LH connector.
- (b) Disconnect the P22 front power window regulator motor assembly RH connector.
- (c) Clear the DTCs  .
- (d) After 10 seconds have elapsed, check if the trouble occurs again.
- (e) Check for DTCs again.

RESULT	PROCEED TO
DTC B2325 is output (w/ Sliding Roof)	A
DTC B2325 is output (w/o Sliding Roof)	B
DTC B2325 is not output	C

B ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**

C ▶ **REPLACE FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH**

A



9.	CHECK DTC OUTPUT (SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY))
-----------	---

- (a) Reconnect the P22 front power window regulator motor assembly RH connector.*1
- (b) Disconnect the S50 sliding roof ECU (sliding roof drive gear sub-assembly) connector.
- (c) Clear the DTCs  .
- (d) After 10 seconds have elapsed, check if the trouble occurs again.
- (e) Check for DTCs again.

*1: w/ Jam Protection Function

RESULT	PROCEED TO
DTC B2325 is output	A
DTC B2325 is not output	B

B  **REPLACE SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY)**

A  **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002XHV0AUX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: B2785; Communication Malfunction between ECUs Connected by LIN; 2016 MY Tacoma [08/2015 -]		

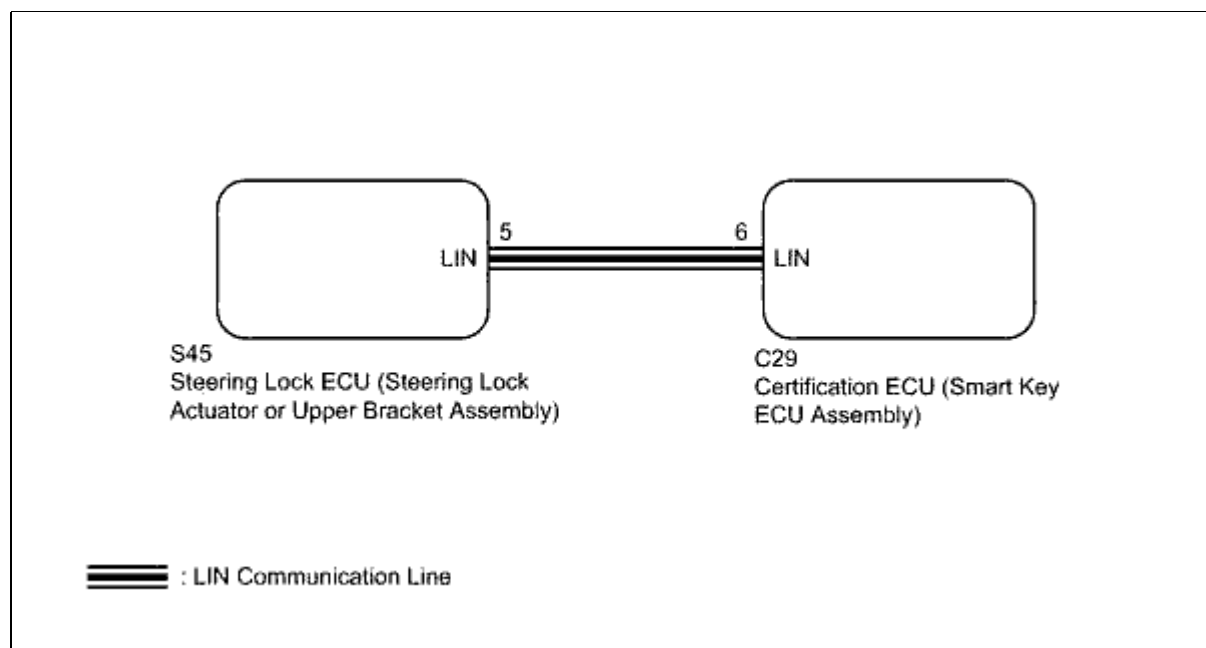
DTC	B2785	Communication Malfunction between ECUs Connected by LIN
------------	--------------	--

DESCRIPTION

The certification ECU (smart key ECU assembly) monitors communication between all the ECUs connected to the certification bus lines. When the certification ECU (smart key ECU assembly) detects errors in communication with all the ECUs connected to the certification bus lines at a set interval and 3 times in a row, DTC B2785 will be stored.

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2785	- Errors in LIN communication between ECUs or an open or short in communication lines - LIN communication from the certification ECU (smart key ECU assembly) detects errors in communication 3 times in a row.	- Certification ECU (smart key ECU assembly) - Steering lock ECU (steering lock actuator or upper bracket assembly) - Wire harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- If the certification ECU (smart key ECU assembly) is replaced, register the keys [INFO](#) .

- If the steering lock ECU (steering lock actuator or upper bracket assembly) is replaced, register the ECU code **INFO** .
- When using the Techstream with the vehicle ignition switch off, connect the Techstream to the vehicle and turn a courtesy light switch on and off at intervals of 1.5 seconds or less until communication between the Techstream and the vehicle begins. Then select the vehicle type under manual mode and enter the following menus: Body Electrical / Smart Access. While using the Techstream, periodically turn a courtesy light switch on and off at intervals of 1.5 seconds or less to maintain communication between the Techstream and the vehicle.

PROCEDURE

1.	CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) - STEERING LOCK ECU (STEERING LOCK ACTUATOR OR UPPER BRACKET ASSEMBLY))
----	--

- (a) Disconnect the C29 certification ECU (smart key ECU assembly) connector.
- (b) Disconnect the S45 steering lock ECU (steering lock actuator or upper bracket assembly) connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C29-6 (LIN) - S45-5 (LIN)	Always	Below 1 Ω
C29-6 (LIN) or S45-5 (LIN) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



2.	CHECK DTC OUTPUT (STEERING LOCK ECU (STEERING LOCK ACTUATOR OR UPPER BRACKET ASSEMBLY))
----	--

- (a) Reconnect the C29 certification ECU (smart key ECU assembly) connector.
- (b) Clear the DTCs **INFO** .
- (c) Recheck for DTCs.

RESULT	PROCEED TO
DTC B2785 is output	A
DTC B2785 is not output	B

B  **REPLACE STEERING LOCK ECU (STEERING LOCK**

ACTUATOR OR UPPER BRACKET ASSEMBLY)

A

▶ REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002XHX075X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: B2786; No Response from Steering Lock ECU; 2016 MY Tacoma [08/2015 -]		

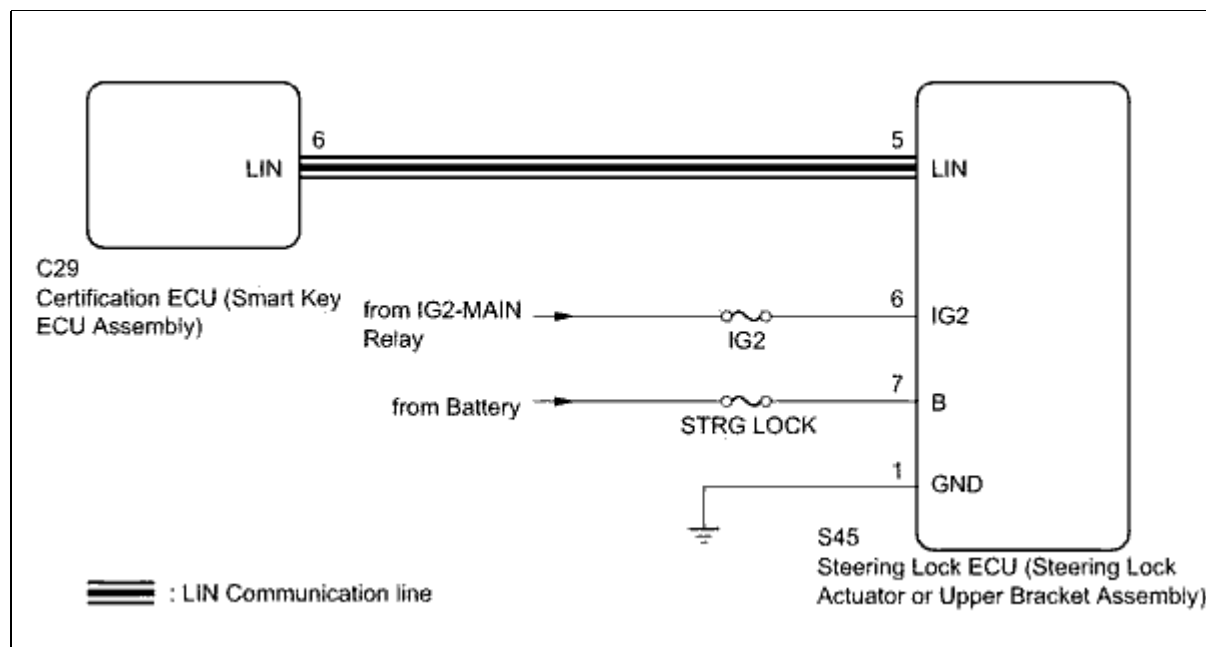
DTC	B2786	No Response from Steering Lock ECU
------------	--------------	---

DESCRIPTION

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

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B2786	No communication between steering lock ECU (steering lock actuator or upper bracket assembly) and certification ECU (smart key ECU assembly) for 10 seconds or more.	- Steering lock ECU (steering lock actuator or upper bracket assembly) - Certification ECU (smart key ECU assembly) - Wire harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

NOTICE:

- Inspect the fuses for circuits related to this system before performing the following inspection procedure.
- If the certification ECU (smart key ECU assembly) is replaced, register the keys [INFO](#).
- If the steering lock ECU (steering lock actuator or upper bracket assembly) is replaced, register the ECU

code **INFO** .

- When using the Techstream with the vehicle ignition switch off, connect the Techstream to the vehicle and turn a courtesy light switch on and off at intervals of 1.5 seconds or less until communication between the Techstream and the vehicle begins. Then select the vehicle type under manual mode and enter the following menus: Body Electrical / Smart Access. While using the Techstream, periodically turn a courtesy light switch on and off at intervals of 1.5 seconds or less to maintain communication between the Techstream and the vehicle.

PROCEDURE

1. CHECK DTC OUTPUT

(a) Clear the DTCs **INFO** .

(b) Recheck for DTCs.

RESULT	PROCEED TO
Only B2786 is output	A
DTC B2786 and B2785 are output simultaneously	B

HINT:

When DTC B2786 and B2785 are output simultaneously, perform troubleshooting for DTC B2785 first.

B  **GO TO DTC B2785**

A



2. CHECK HARNESS AND CONNECTOR (STEERING LOCK ECU (STEERING LOCK ACTUATOR OR UPPER BRACKET ASSEMBLY) - POWER SOURCE CIRCUIT)

(a) Disconnect the S45 steering lock ECU (steering lock actuator or upper bracket assembly) connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
S45-1 (GND) - Body ground	Always	Below 1 Ω

Standard Voltage:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
S45-7 (B) - Body ground	Always	11 to 14 V
S45-6 (IG2) - Body ground	Ignition switch ON	11 to 14 V

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



3.	CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) - STEERING LOCK ECU (STEERING LOCK ACTUATOR OR UPPER BRACKET ASSEMBLY))
-----------	--

- (a) Disconnect the C29 certification ECU (smart key ECU assembly) connector.
- (b) Disconnect the S45 steering lock ECU (steering lock actuator or upper bracket assembly) connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
C29-6 (LIN) - S45-5 (LIN)	Always	Below 1 Ω
C29-6 (LIN) or S45-5 (LIN) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



4.	REPLACE STEERING LOCK ECU (STEERING LOCK ACTUATOR OR UPPER BRACKET ASSEMBLY)
-----------	---

- (a) Replace the steering lock ECU (steering lock actuator or upper bracket assembly)  .

NEXT



5.	CHECK DTC OUTPUT
-----------	-------------------------

- (a) Clear the DTCs  .
- (b) Recheck for DTCs.

OK:

DTC B2786 is not output.

NG ► **REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)**

OK ► **END (STEERING LOCK ECU (STEERING LOCK ACTUATOR OR UPPER BRACKET ASSEMBLY) WAS DEFECTIVE)**



Last Modified: 11-13-2015	6.6 C	Doc ID: RM000002S8G05AX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: B278C; Lost Communication with Power Source Control; 2016 MY Tacoma [08/2015 -]		

DTC	B278C	Lost Communication with Power Source Control
------------	--------------	---

DESCRIPTION

DTC NO.	DTC DETECTION CONDITION	TROUBLE AREA
B278C	An internal malfunction occurs in the certification ECU (smart key ECU assembly)	Certification ECU (smart key ECU assembly)

INSPECTION PROCEDURE

NOTICE:

- When using the Techstream with the vehicle ignition switch off, connect the Techstream to the vehicle and turn a courtesy light switch on and off at intervals of 1.5 seconds or less until communication between the Techstream and the vehicle begins. Then select the vehicle type under manual mode and enter the following menus: Body Electrical / Smart Access. While using the Techstream, periodically turn a courtesy light switch on and off at intervals of 1.5 seconds or less to maintain communication between the Techstream and the vehicle.
- If the certification ECU (smart key ECU assembly) is replaced, register the keys [INFO](#).

PROCEDURE

1.	CLEAR DTC
-----------	------------------

(a) Clear the DTCs [INFO](#).

NEXT

2.	CHECK FOR DTC
-----------	----------------------

(a) Check for DTCs [INFO](#).

OK:

DTC B278C is not output.

NG  **REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)**

OK ► USE SIMULATION METHOD TO CHECK



Last Modified: 11-13-2015	6.6 U	Doc ID: RM000002XHU05RX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: DATA LIST / ACTIVE TEST; 2016 MY Tacoma [08/2015 -]		

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the Techstream to read the Data List allows the 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.

NOTICE:

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.
- Read the Data List according to the display on the Techstream.

Main Body

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Communication D-Door Motor*1	Connection status between front power window regulator motor assembly LH and main body ECU (multiplex network body ECU)/OK or STOP	OK: Connected STOP: Not Connected	DTC is output if an error occurs in LIN communication.
Communication P-Door Motor*1	Connection status between front power window regulator motor assembly RH and main body ECU (multiplex network body ECU)/OK or STOP	OK: Connected STOP: Not Connected	DTC is output if an error occurs in LIN communication.
Communication Slide Roof*2	Connection status between sliding roof ECU (sliding roof drive gear sub-assembly) and main body ECU (multiplex network body ECU)/OK or STOP	OK: Connected STOP: Not Connected	DTC is output if an error occurs in LIN communication.
Communication Master SW*1	Connection status between power window regulator master switch assembly and main body ECU (multiplex network body ECU)/OK or STOP	OK: Connected STOP: Not Connected	DTC is output if an error occurs in LIN communication.

*1: w/ Jam Protection Function

*2: w/ Sliding Roof



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000000UZIP0AOX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: DIAGNOSIS SYSTEM; 2016 MY Tacoma [08/2015 -]		

DIAGNOSIS SYSTEM

1. DESCRIPTION

The main body ECU (multiplex network body ECU) and certification ECU (smart key ECU assembly) control the LIN communication system. LIN communication system data and Diagnostic Trouble Codes (DTCs) can be read through the Data Link Connector 3 (DLC3).

When the system seems to be malfunctioning, use the Techstream to check for malfunctions and perform repairs.

2. CHECK DLC3

- (a) Check the DLC3 .

3. INSPECT BATTERY VOLTAGE

- (a) Measure the battery voltage.

Standard voltage:

11 to 14 V

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



Last Modified: 11-13-2015	6.6 S	Doc ID: RM000002XHJ06KX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: DIAGNOSTIC TROUBLE CODE CHART; 2016 MY Tacoma [08/2015 -]		

DIAGNOSTIC TROUBLE CODE CHART

Main Body ECU (Multiplex Network Body ECU)

DTC CODE	DETECTION ITEM	SEE PAGE
B1206	P/W Master Switch Communication Stop	INFO
B1273	Sliding Roof ECU Communication Stop	INFO
B2321	Driver Side Door ECU Communication Stop	INFO
B2322	Front Passenger Side Door ECU Communication Stop	INFO
B2325	LIN Communication Bus Malfunction	INFO

Certification ECU (Smart Key ECU Assembly)

DTC CODE	DETECTION ITEM	SEE PAGE
B2785	Communication Malfunction between ECUs Connected by LIN	INFO
B2786	No Response from Steering Lock ECU	INFO
B278C	Lost Communication with Power Source Control	INFO



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000002XHS06QX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: DTC CHECK / CLEAR; 2016 MY Tacoma [08/2015 -]		

DTC CHECK / CLEAR

1. CHECK DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Smart Access or Main Body / Trouble Codes.
- (e) Check the details of the DTC(s)  .

2. CLEAR DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Smart Access or Main Body / Trouble Codes.
- (e) Clear the DTC(s).



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000002XHI08RX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING; 2016 MY Tacoma [08/2015 -]		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the LIN communication system.
- *: Use the Techstream.

1.	VEHICLE BROUGHT TO WORKSHOP
-----------	------------------------------------

NEXT



2.	CUSTOMER PROBLEM ANALYSIS
-----------	----------------------------------

- In troubleshooting, confirm that the problem symptoms have been accurately identified. Preconceptions should be discarded in order to make an accurate judgment. To clearly understand what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time the malfunction occurred.
- Gather as much information as possible for reference. Past problems that seem unrelated may also help in some cases.
- The following 5 items are important points in problem analysis:

What	Vehicle model, system name
When	Date, time, occurrence frequency
Where	Road conditions
Under what conditions?	Driving conditions, weather conditions
How did it happen?	Problem symptoms

NEXT



3.	INSPECT BATTERY VOLTAGE
-----------	--------------------------------

(a) Measure the battery voltage.

Standard voltage:

11 to 14 V

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

NEXT



4.	CHECK 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 [INFO](#) .

RESULT	PROCEED TO
DTC is not output	A
DTC is output	B

B **GO TO DIAGNOSTIC TROUBLE CODE CHART**

A



5.	OVERALL ANALYSIS AND TROUBLESHOOTING*
----	--

(a) Terminals of ECU [INFO](#)

(b) Data List / Active Test [INFO](#)

NEXT



6.	REPAIR OR REPLACE
----	--------------------------

NEXT



7.	CONFIRMATION TEST
----	--------------------------

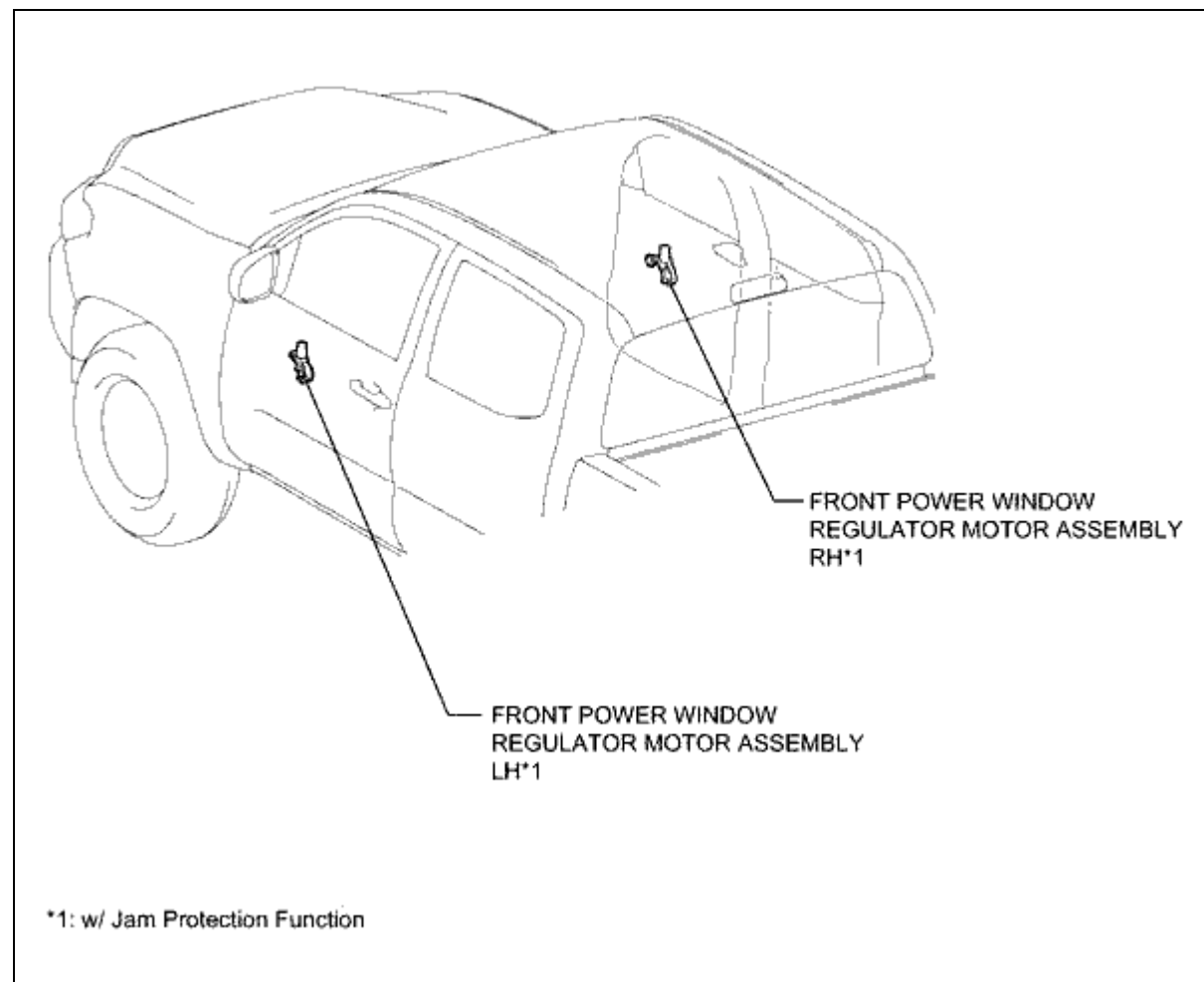
NEXT **END**



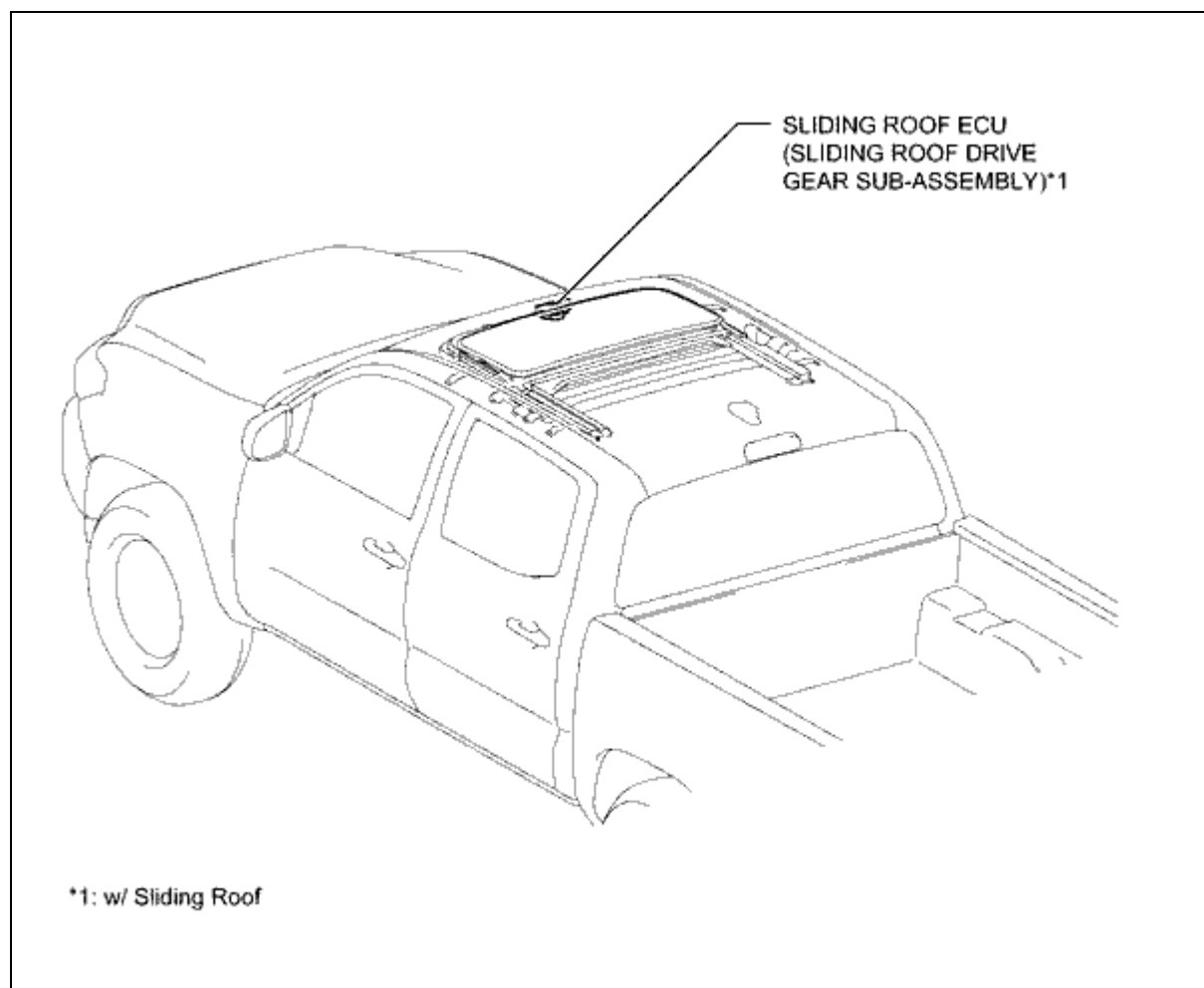
Last Modified: 11-13-2015	6.6 R	Doc ID: RM000002XHK062X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: PARTS LOCATION; 2016 MY Tacoma [08/2015 -]		

PARTS LOCATION

ILLUSTRATION

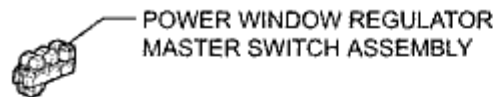


ILLUSTRATION

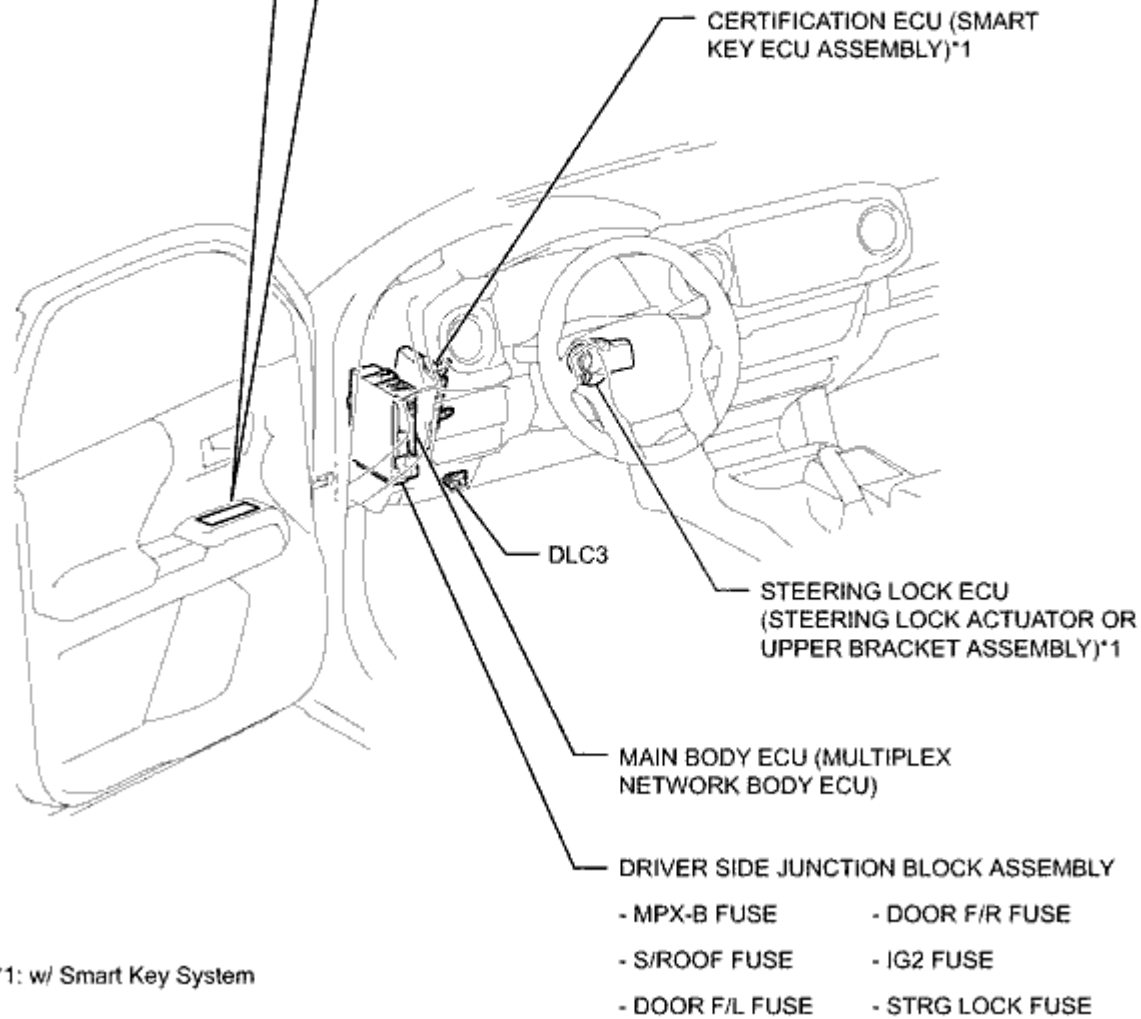
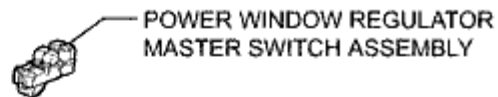


ILLUSTRATION

for Double Cab:



for Access Cab:



Last Modified: 11-13-2015	6.6 L	Doc ID: RM000005VMO000X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: PRECAUTION; 2016 MY Tacoma [08/2015 -]		

PRECAUTION

1. EXPRESSIONS OF IGNITION SWITCH

HINT:

The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this section.

EXPRESSION	IGNITION SWITCH (POSITION)	ENGINE SWITCH (CONDITION)
Ignition Switch off	LOCK	off (Lock)
Ignition Switch ACC	ACC	On (ACC)
Ignition Switch ON	ON	On (IG)
Engine Start	START	On (Start)



Last Modified: 11-13-2015	6.6 D	Doc ID: RM000002XHQ06WX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: SYSTEM DESCRIPTION; 2016 MY Tacoma [08/2015 -]		

SYSTEM DESCRIPTION

1. LIN COMMUNICATION SYSTEM DESCRIPTION

The LIN communication system is used for communication between the components in the tables below. If communication cannot be performed through LIN communication because of an open in the communication lines or other reasons, the master control ECU of the relevant system will store a DTC. Refer to the table below about the communication bus lines and connected components.

HINT:

- Each component has a fail-safe function which activates to maintain the minimum performance of the system and protect the system.
- In the following table, "o" indicates that the function applies, and "-" indicates that it does not.

Door Bus Lines

COMPONENT	MASTER CONTROL	LIN COMMUNICATION DTC OUTPUT FUNCTION
Main Body ECU (Multiplex Network Body ECU)	o	o
Front Power Window Regulator Motor Assembly LH*1	-	-
Front Power Window Regulator Motor Assembly RH*1	-	-
Power Window Regulator Master Switch Assembly*1	-	-
Sliding Roof ECU (Sliding Roof Drive Gear Sub-assembly)*2	-	-

*1: w/ Jam Protection Function

*2: w/ Sliding Roof

Certification Bus Lines (w/ Smart Key System)

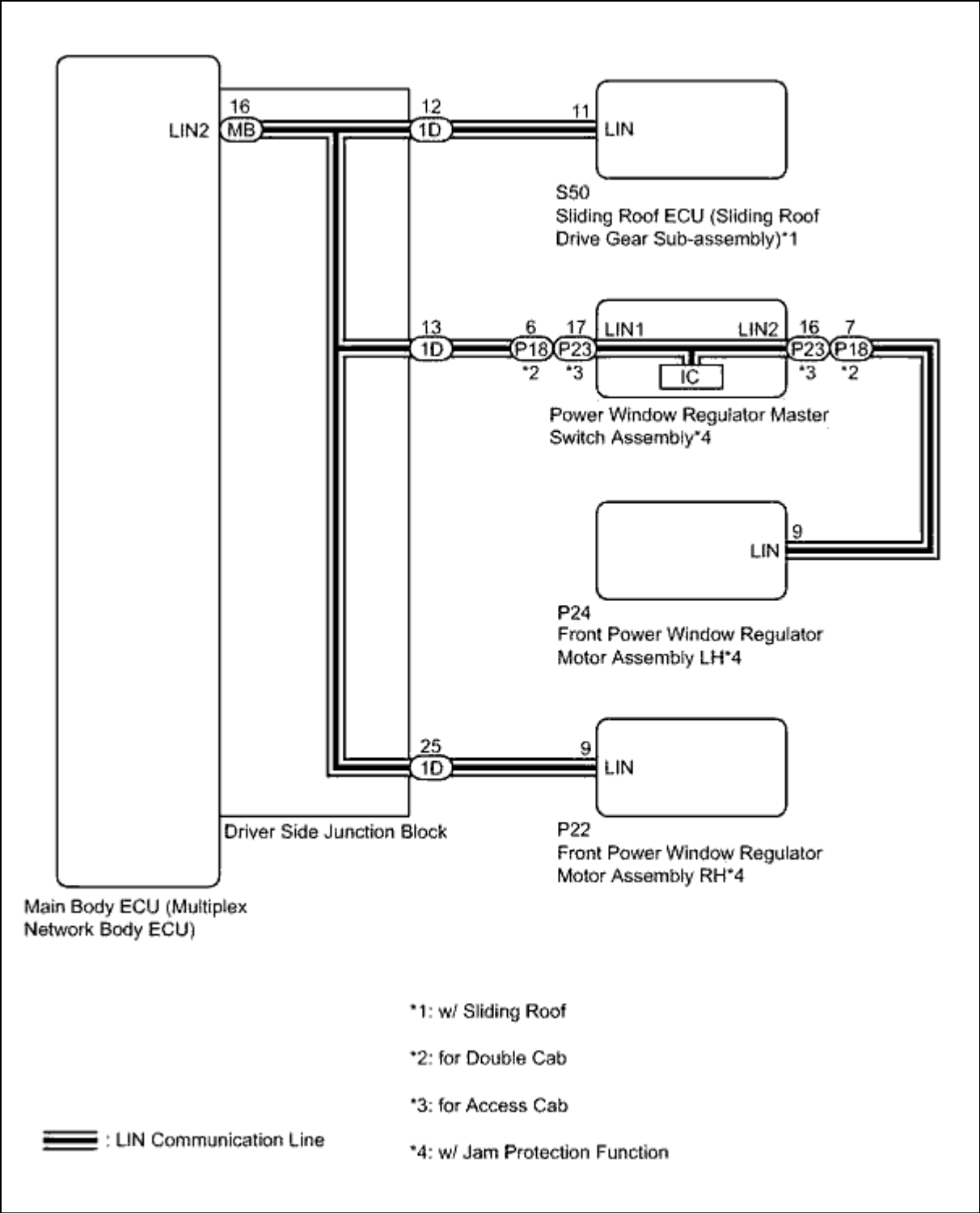
COMPONENT	MASTER CONTROL	LIN COMMUNICATION DTC OUTPUT FUNCTION
Certification ECU (Smart Key ECU Assembly)	o	o
Steering Lock ECU (Steering Lock Actuator or Upper Bracket Assembly)	-	-



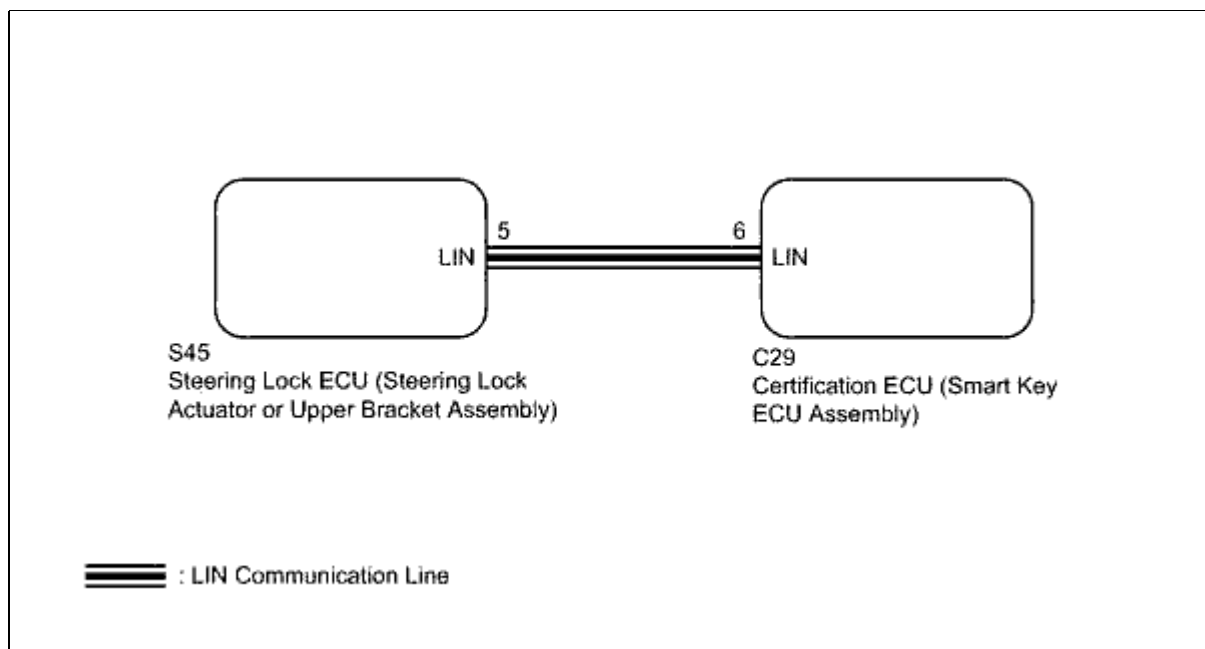
Last Modified: 11-13-2015	6.6 U	Doc ID: RM000002XHT071X
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: SYSTEM DIAGRAM; 2016 MY Tacoma [08/2015 -]		

SYSTEM DIAGRAM

1. DOOR BUS LINES



2. CERTIFICATION BUS LINES (w/ Smart Key System)

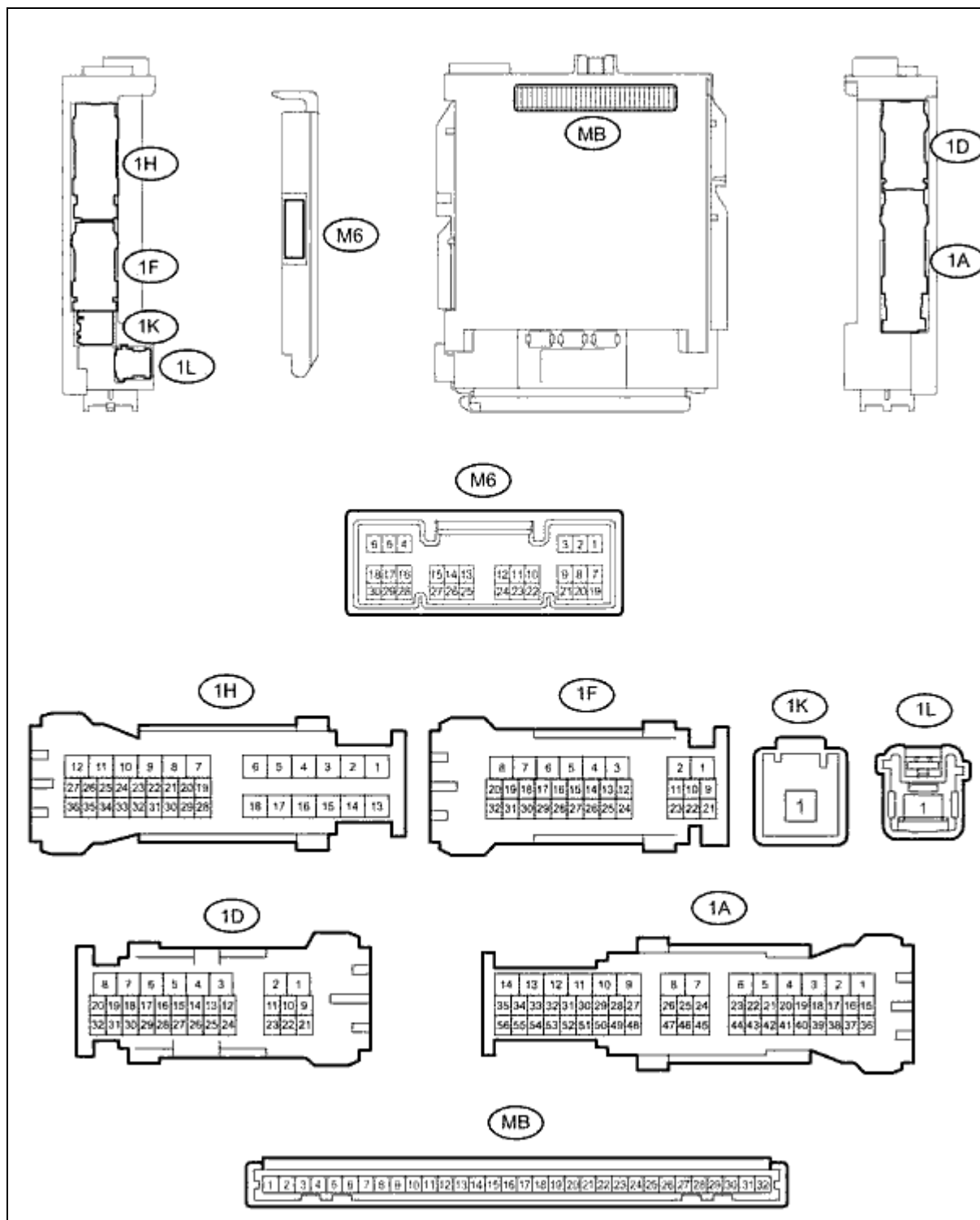


Last Modified: 11-13-2015	6.6 U	Doc ID: RM000002XHL07BX
Model Year Start: 2016	Model: Tacoma	Prod Date Range: [08/2015 -]
Title: MULTIPLEX COMMUNICATION: LIN COMMUNICATION SYSTEM: TERMINALS OF ECU; 2016 MY Tacoma [08/2015 -]		

TERMINALS OF ECU

1. CHECK MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)

(a) Disconnect the 1D and 1F driver side junction block connectors.



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

HINT:

Measure the values on the wire harness side with the connectors disconnected.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
1F-15 (BECU) - Body ground	R - Body ground	Battery power supply	Always	11 to 14 V

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
1D-5 (GND1) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

(c) Reconnect the 1D and 1F driver side junction block connectors.

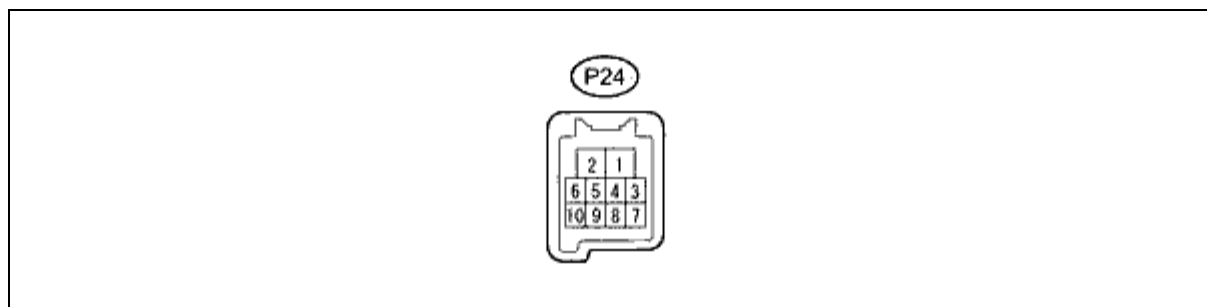
(d) Check for pulses according to the value(s) in the table below.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
1D-12 (LIN2) - 1D-5 (GND1)	V - W-B	LIN communication line	Ignition switch ON	Pulse generation
1D-13 (LIN2) - 1D-5 (GND1)	V - W-B	LIN communication line	Ignition switch ON	Pulse generation
1D-25 (LIN2) - 1D-5 (GND1)	V - W-B	LIN communication line	Ignition switch ON	Pulse generation

If the result is not as specified, the main body ECU (multiplex network body ECU) or driver side junction block may be malfunctioning.

2. CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY LH (w/ Jam Protection Function)

(a) Disconnect the P24 front power window regulator motor assembly LH connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P24-2 (B) - P24-1 (GND)	R - W-B	Battery power supply	Always	11 to 14 V
P24-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

(c) Reconnect the P24 front power window regulator motor assembly LH connector.

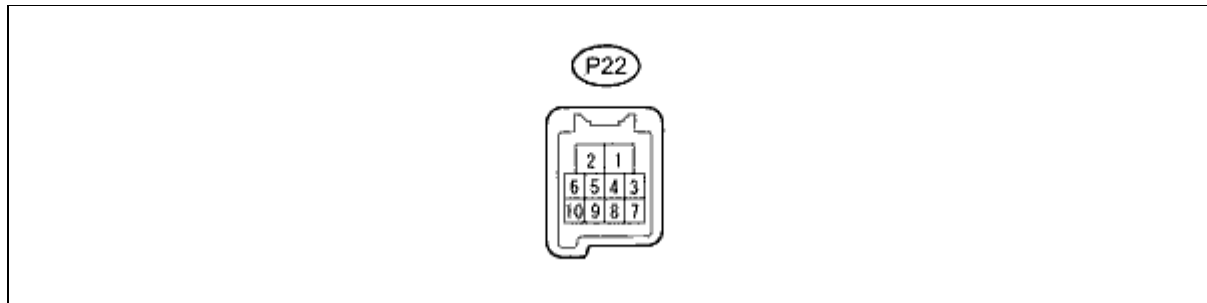
(d) Check for pulses according to the value(s) in the table below.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P24-9 (LIN) - P24-1 (GND)	GR - W-B	LIN communication line	Ignition switch ON	Pulse generation

If the result is not as specified, the front power window regulator motor assembly LH may be malfunctioning.

3. CHECK FRONT POWER WINDOW REGULATOR MOTOR ASSEMBLY RH (w/ Jam Protection Function)

(a) Disconnect the P22 front power window regulator motor assembly RH connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P22-2 (B) - P22-1 (GND)	W - W-B	Battery power supply	Always	11 to 14 V
P22-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

(c) Reconnect the P22 front power window regulator motor assembly RH connector.

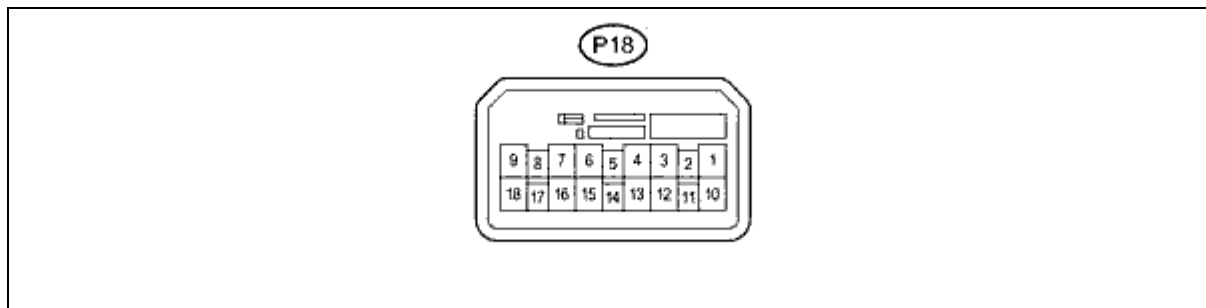
(d) Check for pulses according to the value(s) in the table below.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P22-9 (LIN) - P22-1 (GND)	V - W-B	LIN communication line	Ignition switch ON	Pulse generation

If the result is not as specified, the front power window regulator motor assembly RH may be malfunctioning.

4. CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (for Double Cab with Jam Protection Function)

(a) Disconnect the P18 power window regulator master switch assembly connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P18-3 (B) - P18-1 (GND)	R - W-B	Battery power supply	Always	11 to 14 V
P18-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

(c) Reconnect the P18 power window regulator master switch assembly connector.

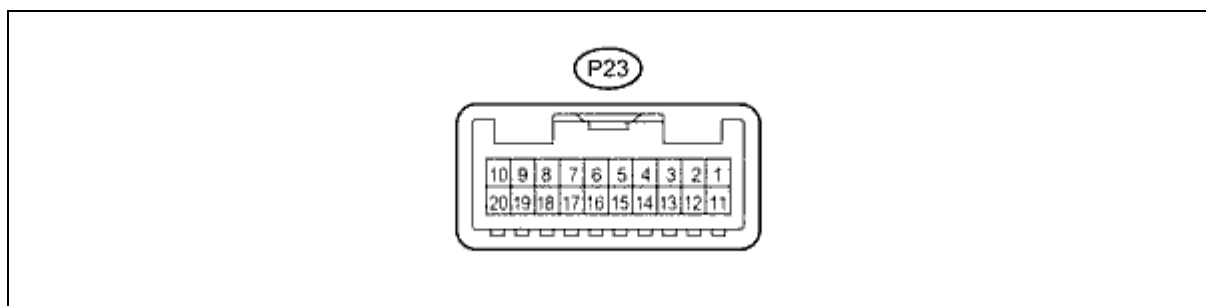
(d) Check for pulses according to the value(s) in the table below.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P18-6 (LIN1) - P18-1 (GND)	V - W-B	LIN communication line	Ignition switch ON	Pulse generation
P18-7 (LIN2) - P18-1 (GND)	GR - W-B	LIN communication line	Ignition switch ON	Pulse generation

If the result is not as specified, the power window regulator master switch assembly may be malfunctioning.

5. CHECK POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (for Access Cab with Jam Protection Function)

(a) Disconnect the P23 power window regulator master switch assembly connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P23-11 (B) - P23-12 (GND)	R - W-B	Battery power supply	Always	11 to 14 V
P23-12 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

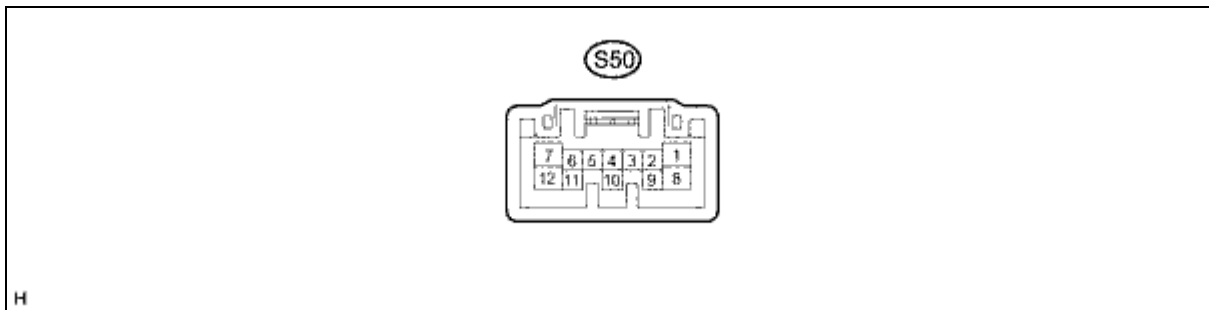
- (c) Reconnect the P23 power window regulator master switch assembly connector.
- (d) Check for pulses according to the value(s) in the table below.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
P23-17 (LIN1) - P23-12 (GND)	V - W-B	LIN communication line	Ignition switch ON	Pulse generation
P23-16 (LIN2) - P23-12 (GND)	GR - W-B	LIN communication line	Ignition switch ON	Pulse generation

If the result is not as specified, the power window regulator master switch assembly may be malfunctioning.

6. CHECK SLIDING ROOF ECU (SLIDING ROOF DRIVE GEAR SUB-ASSEMBLY) (w/ Sliding Roof)

- (a) Disconnect the S50 sliding roof ECU (sliding roof drive gear sub-assembly) connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
S50-8 (B) - S50-12 (E)	W - W-B	Battery power supply	Always	11 to 14 V
S50-12 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

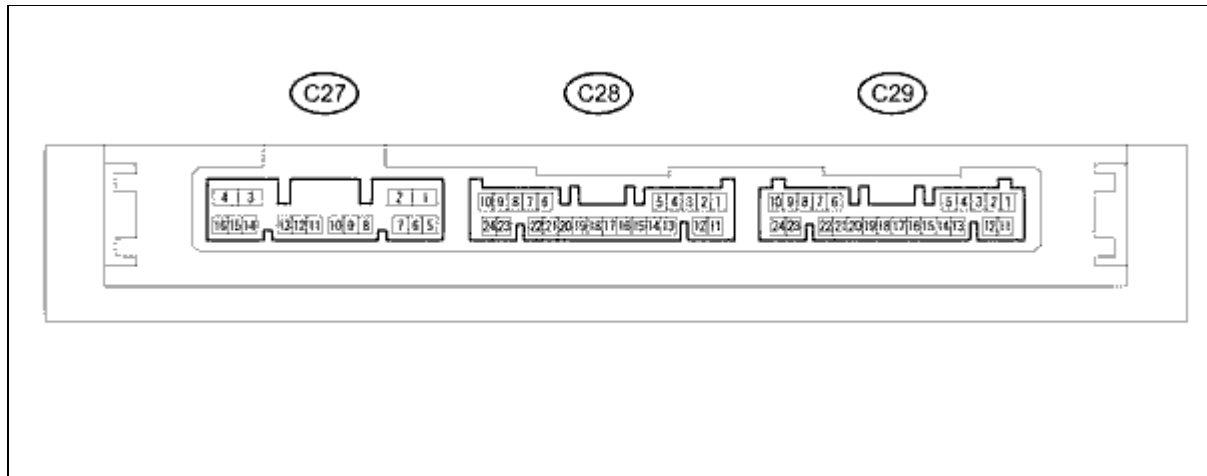
- (c) Reconnect the S50 sliding roof ECU (sliding roof drive gear sub-assembly) connector.
- (d) Check for pulses according to the value(s) in the table below.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
S50-11 (LIN) - S50-12 (E)	V - W-B	LIN communication line	Ignition switch ON	Pulse generation

If the result is not as specified, the sliding roof ECU (sliding roof drive gear sub-assembly) may be malfunctioning.

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

(a) Disconnect the C29 certification ECU (smart key ECU assembly) connector.



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

HINT:

Measure the values on the wire harness side with the connector disconnected.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
C29-10 (+B) - C29-11 (E)	P - W-B	Battery power supply	Always	11 to 14 V
C29-11 (E) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω

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

(c) Reconnect the C29 certification ECU (smart key ECU assembly) connector.

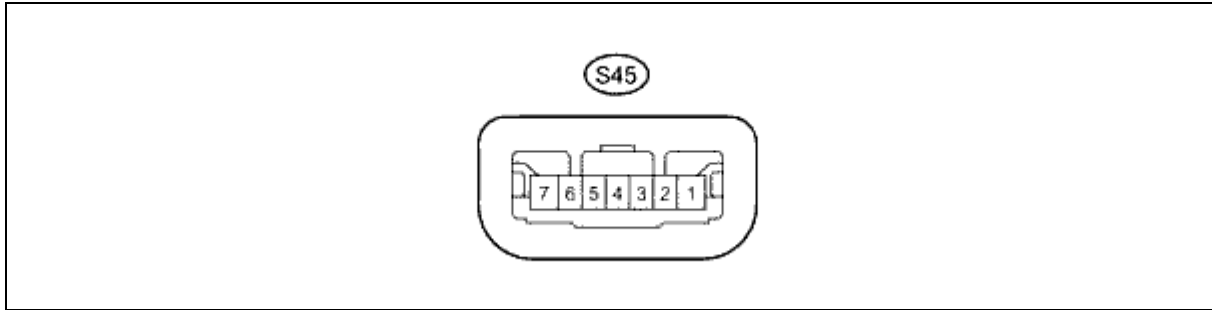
(d) Measure the voltage and check for pulses according to the value(s) in the table below.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
C29-6 (LIN) - C29-11 (E)	L - W-B	LIN communication line	Ignition switch ON	Pulse generation

If the result is not as specified, the certification ECU (smart key ECU assembly) may be malfunctioning.

8. CHECK STEERING LOCK ECU (STEERING LOCK ACTUATOR OR UPPER BRACKET ASSEMBLY) (w/ Smart Key System)

(a) Disconnect the S45 steering lock ECU (steering lock actuator or upper bracket assembly) connector.



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

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
S45-1 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
S45-7 (B) - S45-1 (GND)	R - W-B	Battery power supply	Always	11 to 14 V

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

(c) Reconnect the S45 steering lock ECU (steering lock actuator or upper bracket assembly) connector.

(d) Measure the voltage and check for pulses according to the value(s) in the table below.

TESTER CONNECTION	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
S45-5 (LIN) - S45-1 (GND)	L - W-B	LIN communication line	Ignition switch ON	Pulse generation

If the result is not as specified, the steering lock ECU (steering lock actuator or upper bracket assembly) may be malfunctioning.

