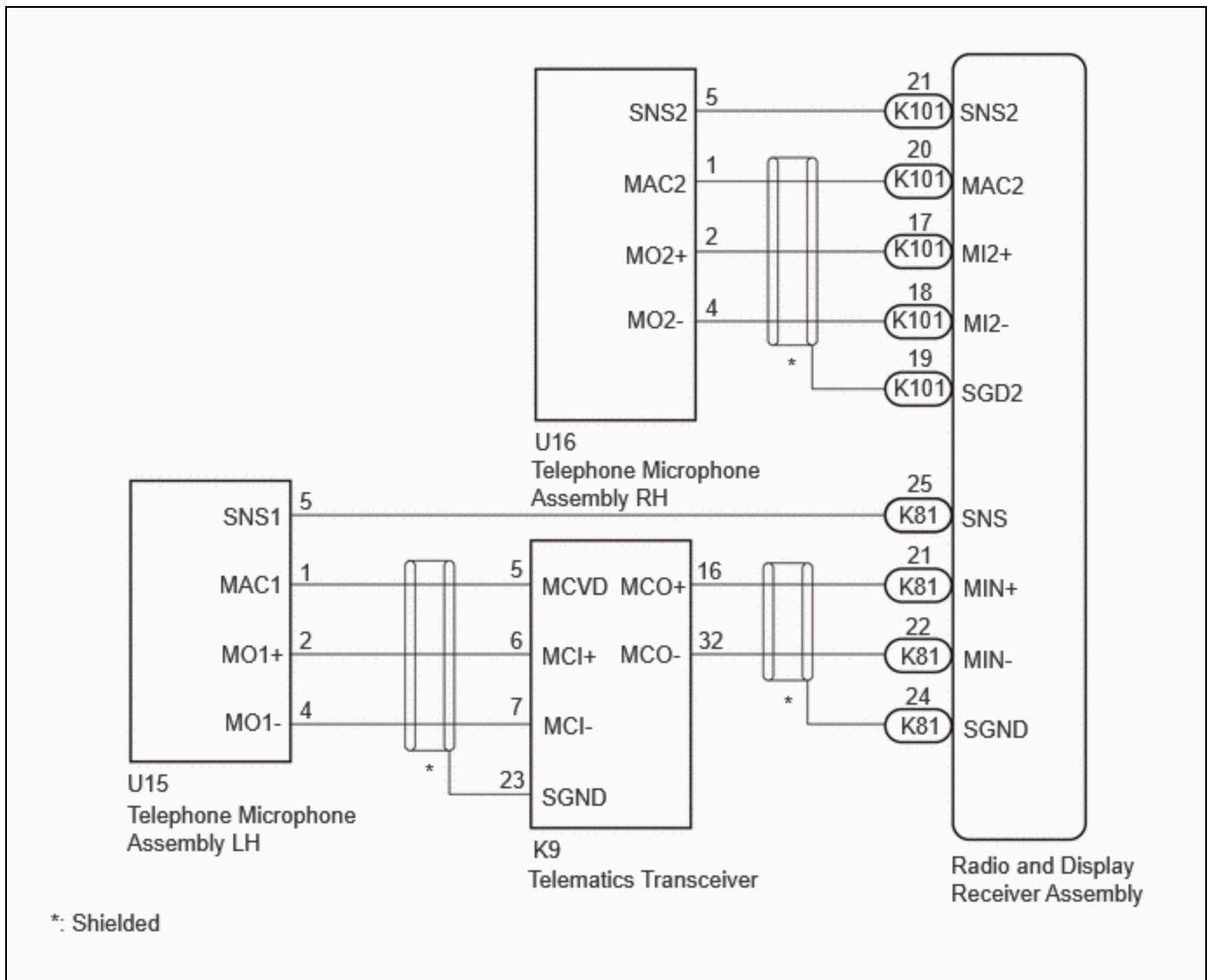


Last Modified: 12-04-2024	6.11:8.1.0	Doc ID: RM10000000291ZO
Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [12/2022 -]
Title: AUDIO / VIDEO: AUDIO AND VISUAL SYSTEM: Microphone Circuit; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

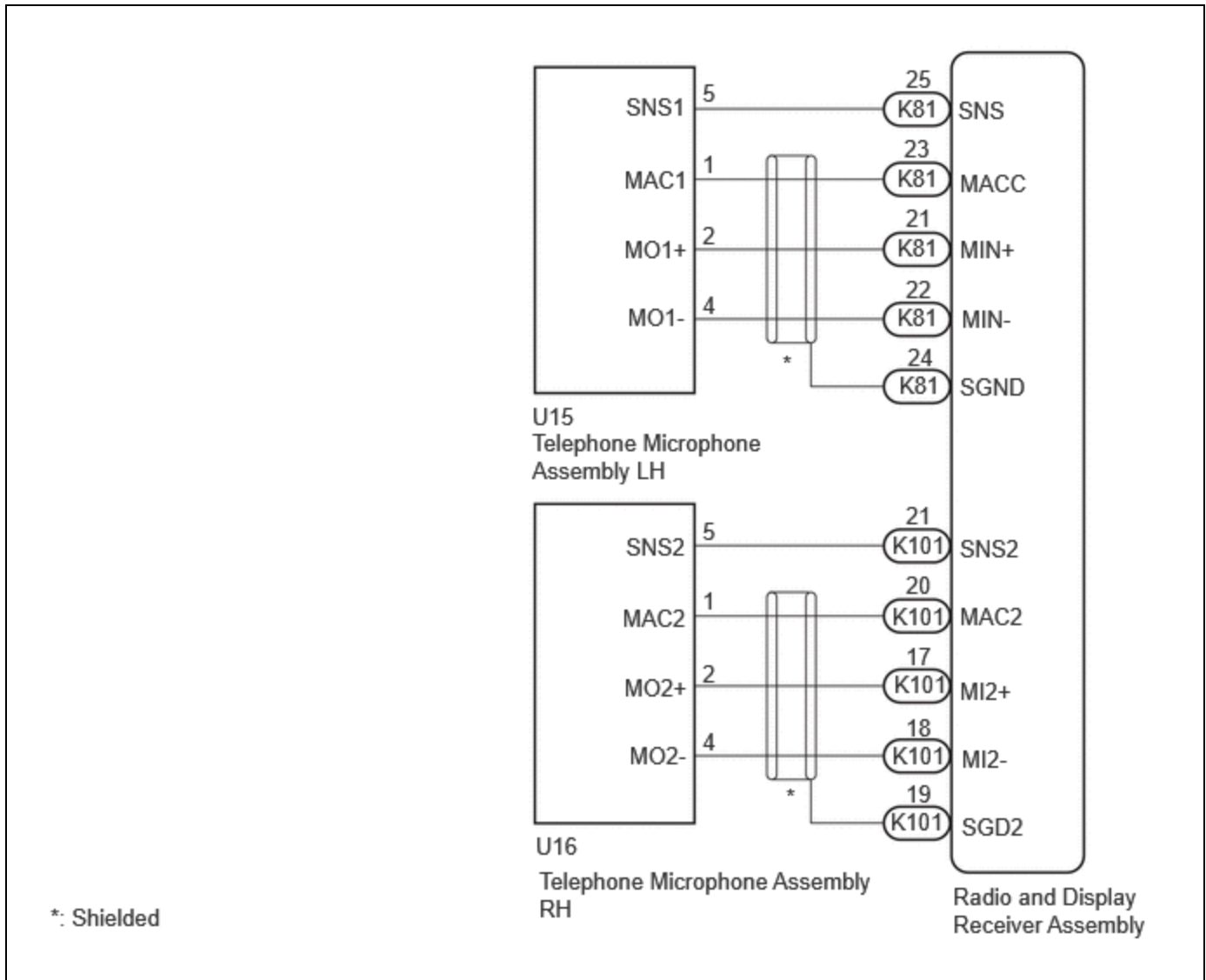
Microphone Circuit

WIRING DIAGRAM

w/ DCM (Telematics Transceiver)



w/o DCM (Telematics Transceiver)



CAUTION / NOTICE / HINT

NOTICE:

- When replacing the telematics transceiver, make sure to replace it with a new one (w/ Telematics Transceiver for LEXUS Connected Services or LEXUS Connect).
- Depending on the parts that are replaced during vehicle inspection or maintenance, performing initialization, registration or calibration may be needed.

[Click here](#) INFO

PROCEDURE

1.	CHECK MODEL
-----------	--------------------

RESULT	PROCEED TO
w/ Telematics Transceiver	A

RESULT	PROCEED TO
w/o Telematics Transceiver	B

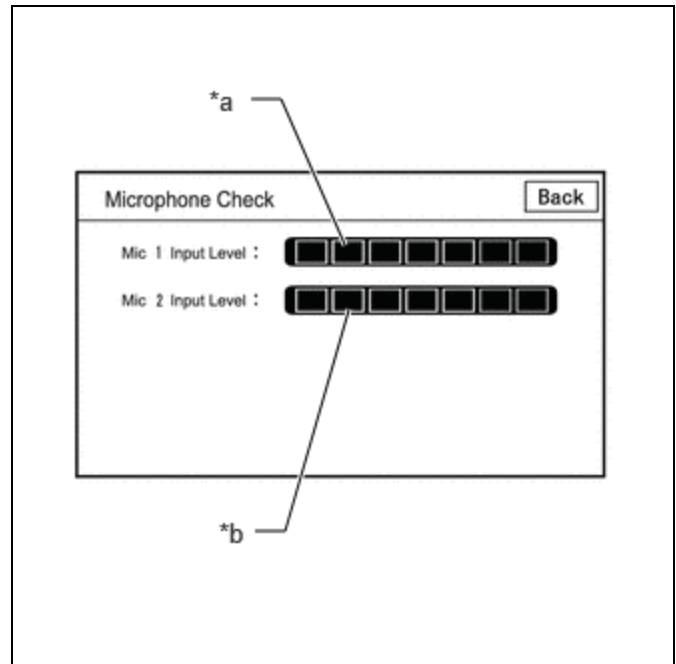
B **GO TO STEP 15**

A

2.	CHECK MICROPHONE
-----------	-------------------------

(a) Enter diagnostic mode.

Click here



*a	Mic 1 Input Level
*b	Mic 2 Input Level

(b) Select "Function Check/Setting" from the "Service Menu" screen.

(c) Select "Microphone Check" from the "Function Check/Setting I" screen.

(d) Speak into each microphone assembly and check the microphone input level gauge display.

OK:

The microphone input levels of the gauge change in accordance with the voice.

RESULT	PROCEED TO
Microphone input levels change for microphone 1 and 2	A

RESULT	PROCEED TO
Microphone input level does not change for microphone 1	B
Microphone input level does not change for microphone 2	C

A ▶ REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY

C ▶ GO TO STEP 6

B



3.	CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - TELEPHONE MICROPHONE ASSEMBLY RH)
-----------	---

- (a) Disconnect the K101 radio and display receiver assembly connector.
- (b) Disconnect the U16 telephone microphone assembly RH connector
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



[Click Location & Routing\(K101,U16\)](#)

[Click Connector\(K101\)](#)

[Click Connector\(U16\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K101-17 (MI2+) - U16-2 (MO2+)	Always	Below 1 Ω
K101-18 (MI2-) - U16-4 (MO2-)	Always	Below 1 Ω
K101-20 (MAC2) - U16-1 (MAC2)	Always	Below 1 Ω
K101-21 (SNS2) - U16-5 (SNS2)	Always	Below 1 Ω
K101-17 (MI2+) or U16-2 (MO2+) - Body ground	Always	10 kΩ or higher
K101-18 (MI2-) or U16-4 (MO2-) - Body ground	Always	10 kΩ or higher
K101-20 (MAC2) or U16-1 (MAC2) - Body ground	Always	10 kΩ or higher
K101-21 (SNS2) or U16-5 (SNS2) - Body ground	Always	10 kΩ or higher

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK



4. CHECK RADIO AND DISPLAY RECEIVER ASSEMBLY (MAC2, MI2-)

(a) With the K101 radio and display receiver assembly connector connected, disconnect the U16 telephone microphone assembly RH connector.

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

Standard Resistance:



[Click Location & Routing\(U16\)](#)

[Click Connector\(U16\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
U16-4(MO2-) - Body ground	Always	Below 1 Ω

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

Standard Voltage:



[Click Location & Routing\(U16\)](#)

[Click Connector\(U16\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
U16-1(MAC2) - Body ground	IG ON	7.5 to 8.5 V

NG **REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY**

OK



5. CHECK TELEPHONE MICROPHONE ASSEMBLY RH (OUTPUT TO RADIO AND DISPLAY RECEIVER ASSEMBLY)

(a) Using an oscilloscope, measure the waveform according to the condition(s) in the table below.

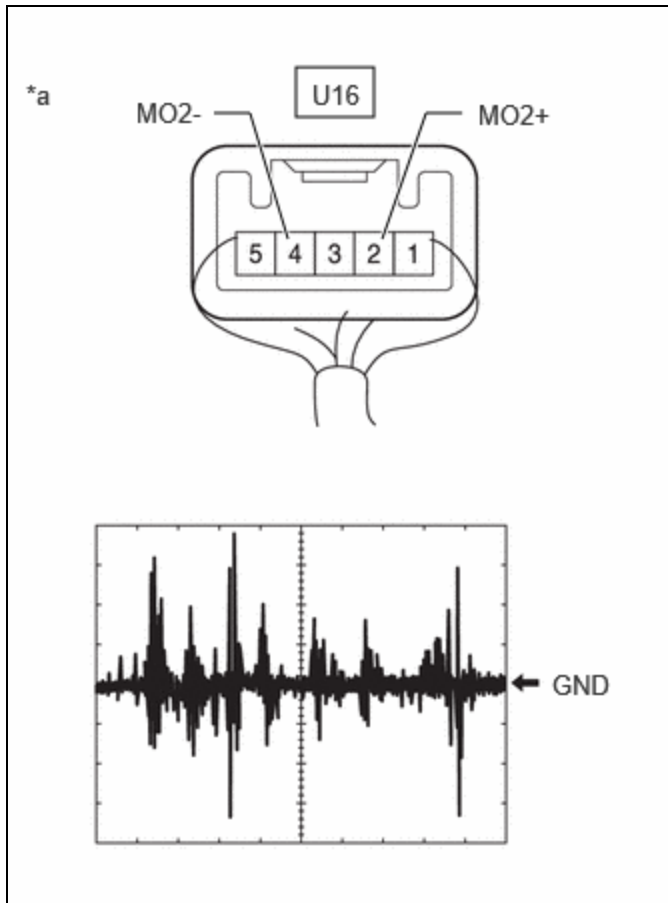
ITEM	CONDITION
Tester Connection	U16-2 (MO2+) - U16-4 (MO2-)

ITEM	CONDITION
Tool setting	50 mV/DIV., 500 ms/DIV.
Vehicle condition	<ol style="list-style-type: none"> Turn the ignition switch to ON Sound is input to the telephone microphone assembly when the user is closer than 125 mm from the microphone case LH sound holes.

OK:
The waveform is similar to that shown in the illustration.

HINT:

- The oscilloscope waveform shown in the illustration is an example for reference only.
- In order to ensure that a consistent sound level is input to the microphone, use a digital voice recorder, etc., to play back sound in the same location with respect to the microphone.



*a Component with harness connected (Telephone microphone assembly RH)

RESULT	PROCEED TO
A waveform synchronized with voice signals is output	A
A waveform synchronized with voice signals is not output	B

A ▶ REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY

B ▶ REPLACE TELEPHONE MICROPHONE ASSEMBLY RH



6. CHECK TELEMATICS TRANSCEIVER (MICROPHONE POWER SOURCE AND BODY GROUND)

HINT:

Measure the connector of the telematics transceiver while it is connected.

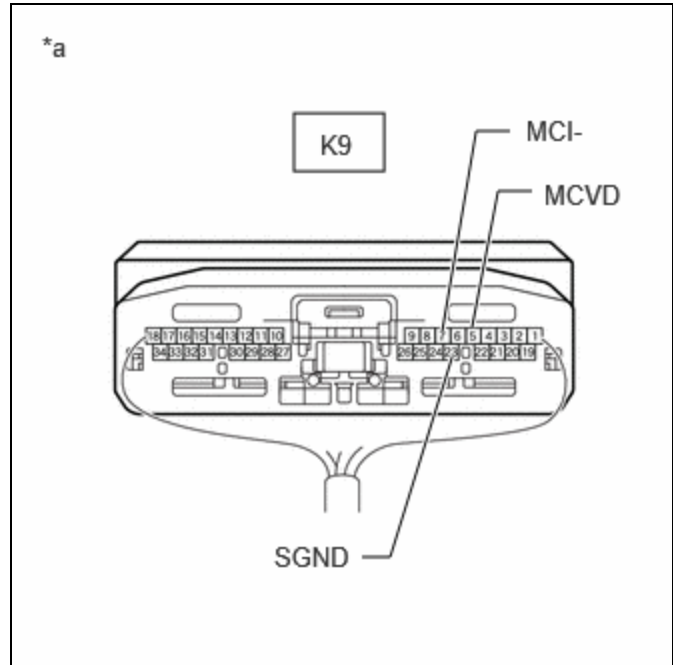
(a) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



[Click Location & Routing\(K9\).](#)

[Click Connector\(K9\).](#)



*a Component with harness connected (Telematics transceiver)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K9-7(MCI-) - Body ground	Always	Below 1 Ω
K9-23(SGND) - Body ground	Always	Below 1 Ω

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

Standard Voltage:



[Click Location & Routing\(K9\).](#)

[Click Connector\(K9\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K9-5(MCVD) - Body ground	IG ON	7.5 to 8.5 V

NG **GO TO STEP 13**

OK



7.	CHECK TELEMATICS TRANSCEIVER (OUTPUT TO RADIO AND DISPLAY RECEIVER ASSEMBLY)
-----------	---

HINT:

Measure the connector of the telematics transceiver while it is connected.

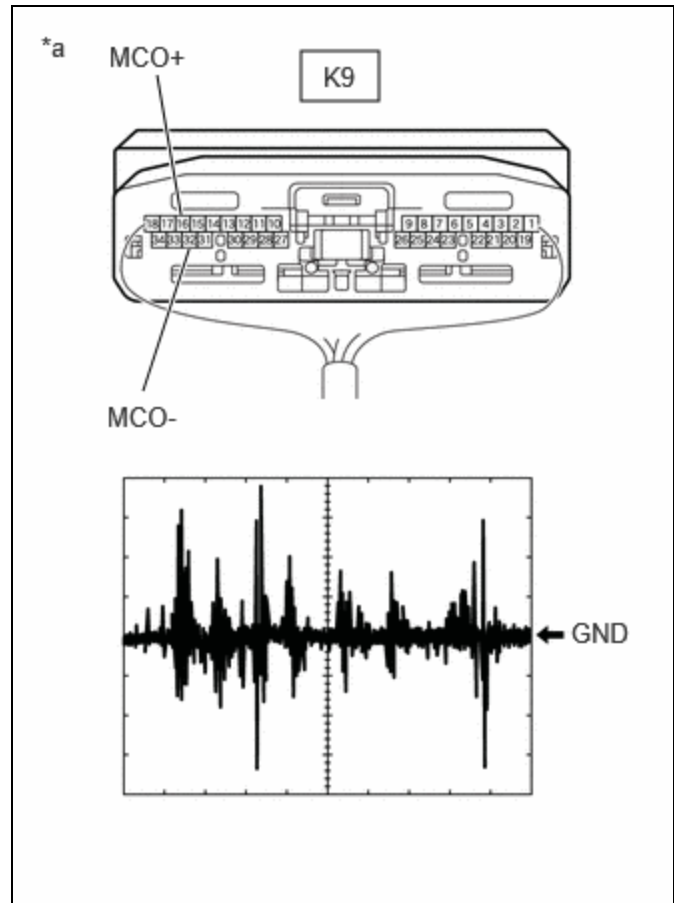
(a) Using an oscilloscope, measure the waveform according to the condition(s) in the table below.

ITEM	CONDITION
Tester Connection	K9-16 (MCO+) - K9-32 (MCO-)
Tool setting	50 mV/DIV, 500 ms/DIV
Vehicle condition	1. Turn the ignition switch to ON 2. Sound is input to the telephone microphone assembly when the user is closer than 125 mm from the microphone case RH sound holes.

OK:
The waveform is similar to that shown in the illustration.

HINT:

- The oscilloscope waveform shown in the illustration is an example for reference only.
- In order to ensure that a consistent sound level is input to the microphone, use a digital voice recorder, etc., to play back sound in the same location with respect to the microphone.



*a Component with harness connected (DCM (Telematics transceiver))

RESULT	PROCEED TO
A waveform synchronized with voice signals is output	A
A waveform synchronized with voice signals is not output	B

B ► GO TO STEP 9

A



8.	CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - TELEMATICS TRANSCEIVER)
-----------	---

(a) Disconnect the K81 radio and display receiver assembly connector.

(b) Disconnect the K9 Telematics transceiver connector.

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

Standard Resistance:



[Click Location & Routing\(K81,K9\)](#)

[Click Connector\(K81\)](#)

[Click Connector\(K9\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K81-21 (MIN+) - K9-16 (MCO+)	Always	Below 1 Ω
K81-22 (MIN-) - K9-32 (MCO-)	Always	Below 1 Ω
K81-21 (MIN+) or K9-16 (MCO+) - Body ground	Always	10 k Ω or higher
K81-22 (MIN-) or K9-32 (MCO-) - Body ground	Always	10 k Ω or higher

OK ► REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

9.	CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - TELEMATICS TRANSCEIVER)
-----------	---

(a) Disconnect the K81 radio and display receiver assembly connector.

(b) Disconnect the K9 Telematics transceiver connector.

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

Standard Resistance:



[Click Location & Routing\(K81,K9\)](#)

[Click Connector\(K81\)](#)

[Click Connector\(K9\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K81-21 (MIN+) - K9-16(MCO+)	Always	Below 1 Ω
K81-22 (MIN-) - K9-32 (MCO-)	Always	Below 1 Ω
K81-21 (MIN+) or K9-16 (MCO+) - Body ground	Always	10 k Ω or higher
K81-22 (MIN-) or K9-32 (MCO-) - Body ground	Always	10 k Ω or higher

NG ► REPAIR OR REPLACE HARNESS OR CONNECTOR

OK**10.****CHECK HARNESS AND CONNECTOR (TELEMATICS TRANSCEIVER - TELEPHONE MICROPHONE ASSEMBLY LH)**

- (a) Disconnect the K9 Telematics transceiver connector.
- (b) Disconnect the U15 telephone microphone assembly LH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:

[Click Location & Routing\(K9,U15\).](#)[Click Connector\(K9\).](#)[Click Connector\(U15\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K9-5 (MCVD) - U15-1 (MAC1)	Always	Below 1 Ω
K9-6 (MCI+) - U15-2 (MO1+)	Always	Below 1 Ω
K9-7 (MCI-) - U15-4 (MO1-)	Always	Below 1 Ω
K9-5 (MCVD) or U15-1(MAC1) - Body ground	Always	10 k Ω or higher
K9-6(MCI+) or U15-2 (MO1+) - Body ground	Always	10 k Ω or higher
K9-7 (MCI-) or U15-4 (MO1-) - Body ground	Always	10 k Ω or higher

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR****OK****11.****CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - TELEPHONE MICROPHONE ASSEMBLY LH)**

- (a) Disconnect the K81 radio and display receiver assembly connector.
- (b) Disconnect the U15 telephone microphone assembly LH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



[Click Location & Routing\(K81,U15\).](#)

[Click Connector\(K81\).](#)

[Click Connector\(U15\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K81-25 (SNS) - U15-5 (SNS1)	Always	Below 1 Ω
K81-25 (SNS) or U15-5 (SNS1) - Body ground	Always	10 k Ω or higher

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



12.	CHECK TELEPHONE MICROPHONE ASSEMBLY LH (OUTPUT TO TELEMATICS TRANSCEIVER)
------------	--

(a) Using an oscilloscope, measure the waveform according to the condition(s) in the table below.

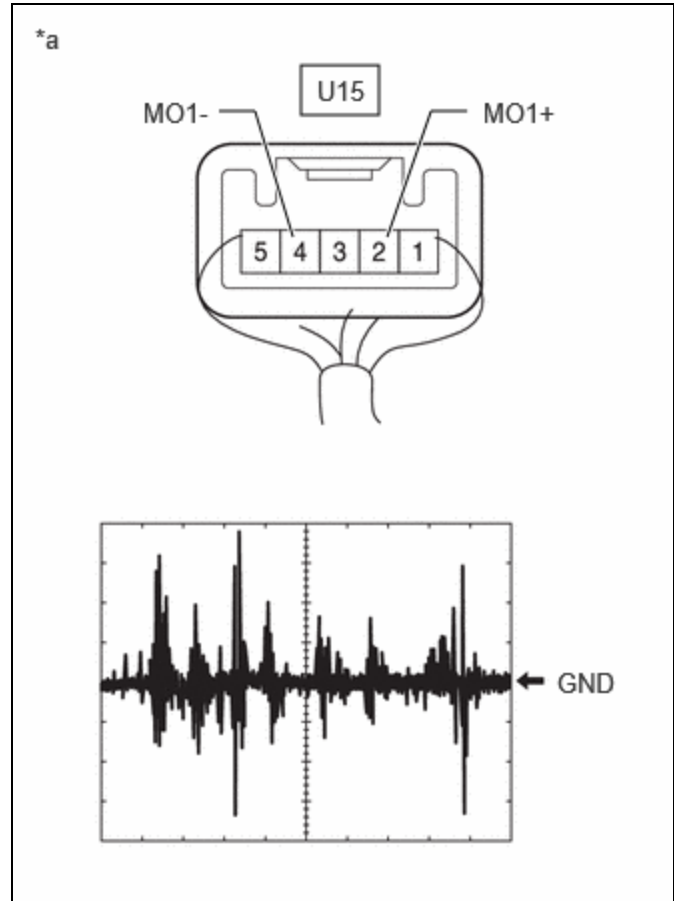
ITEM	CONDITION
Tester Connection	U15-2 (MO1+) - U15-4 (MO1-)
Tool setting	50 mV/DIV, 500 ms/DIV
Vehicle condition	<ol style="list-style-type: none"> 1. Turn the ignition switch to ON 2. Sound is input to the telephone microphone assembly when the user is closer than 125 mm from the microphone case RH sound holes.

OK:

The waveform is similar to that shown in the illustration.

HINT:

- The oscilloscope waveform shown in the illustration is an example for reference only.
- In order to ensure that a consistent sound level is input to the microphone, use a digital voice recorder, etc., to play back sound in the same location with respect to the microphone.



*a Component with harness connected (Telephone microphone assembly LH)

RESULT	PROCEED TO
A waveform synchronized with voice signals is output	A
A waveform synchronized with voice signals is not output	B

A ▶ REPLACE DCM (TELEMATICS TRANSCEIVER)

B ▶ REPLACE TELEPHONE MICROPHONE ASSEMBLY LH INFO

13.	CHECK HARNESS AND CONNECTOR (TELEMATICS TRANSCEIVER - TELEPHONE MICROPHONE ASSEMBLY LH)
------------	--

- (a) Disconnect the K9 Telematics transceiver connector.
- (b) Disconnect the U15 telephone microphone assembly LH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



- [Click Location & Routing\(K9,U15\).](#)
- [Click Connector\(K9\).](#)
- [Click Connector\(U15\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K9-5 (MCVD) - U15-1 (MAC1)	Always	Below 1 Ω
K9-6 (MCI+) - U15-2 (MO1+)	Always	Below 1 Ω
K9-7 (MCI-) - U15-4 (MO1-)	Always	Below 1 Ω
K9-5 (MCVD) or U15-1 (MAC1) - Body ground	Always	10 kΩ or higher
K9-6 (MCI+) or U15-2 (MO1+) - Body ground	Always	10 kΩ or higher
K9-7 (MCI-) or U15-4 (MO1-) - Body ground	Always	10 kΩ or higher

NG ▶ REPAIR OR REPLACE HARNESS OR CONNECTOR

OK
▼

14.	CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - TELEMATICS TRANSCEIVER)
------------	---

- (a) Disconnect the K81 radio and display receiver assembly connector.
- (b) Disconnect the K9 telematics transceiver connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



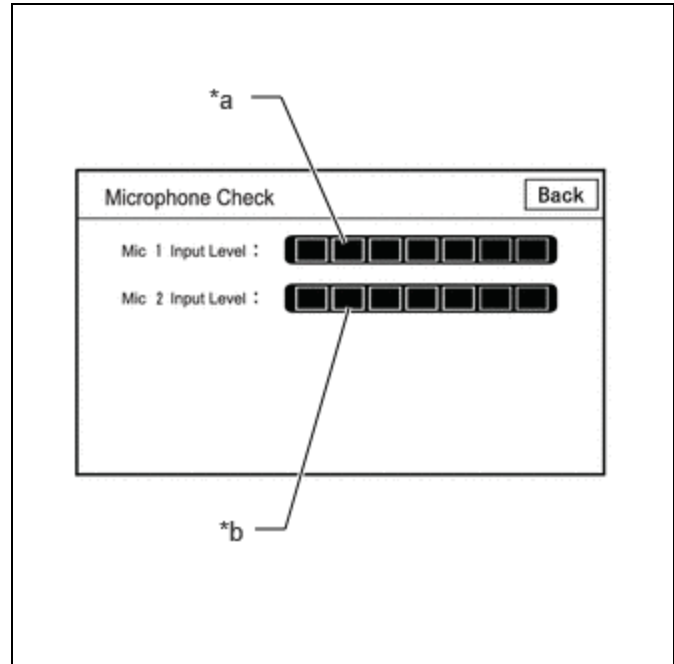
- [Click Location & Routing\(K81,K9\).](#)
- [Click Connector\(K81\).](#)
- [Click Connector\(K9\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K81-21 (MIN+) - K9-16 (MCO+)	Always	Below 1 Ω
K81-22 (MIN-) - K9-32 (MCO-)	Always	Below 1 Ω
K81-21 (MIN+) or K9-16 (MCO+) - Body ground	Always	10 kΩ or higher
K81-22 (MIN-) or K9-32 (MCO-) - Body ground	Always	10 kΩ or higher


OK ▶ REPLACE DCM (TELEMATICS TRANSCEIVER)

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

15. CHECK MICROPHONE



(a) Enter diagnostic mode.

Click here 

*a	Mic 1 Input Level
*b	Mic 2 Input Level

- (b) Select "Function Check/Setting" from the "Service Menu" screen.
- (c) Select "Microphone Check" from the "Function Check/Setting I" screen.
- (d) Speak into each microphone assembly and check the microphone input level gauge display.
 OK:
 The microphone input levels of the gauge change in accordance with the voice.

RESULT	PROCEED TO
Microphone input levels change for microphone 1 and 2	A
Microphone input level does not change for microphone 1	B
Microphone input level does not change for microphone 2	C

A  **REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY**

C  **GO TO STEP 19**

B



16. CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - TELEPHONE MICROPHONE ASSEMBLY RH)

- (a) Disconnect the K101 radio and display receiver assembly connector.
- (b) Disconnect the U16 telephone microphone assembly RH connector.
- (c) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



[Click Location & Routing\(K101,U16\)](#)

[Click Connector\(K101\)](#)

[Click Connector\(U16\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K101-17 (MI2+) - U16-2 (MO2+)	Always	Below 1 Ω
K101-18 (MI2-) - U16-4 (MO2-)	Always	Below 1 Ω
K101-20 (MAC2) - U16-1 (MAC2)	Always	Below 1 Ω
K101-21 (SNS2) - U16-5 (SNS2)	Always	Below 1 Ω
K101-17 (MI2+) or U16-2 (MO2+) - Body ground	Always	10 kΩ or higher
K101-18 (MI2-) or U16-4 (MO2-) - Body ground	Always	10 kΩ or higher
K101-20 (MAC2) or U16-1 (MAC2) - Body ground	Always	10 kΩ or higher
K101-21 (SNS2) or U16-5 (SNS2) - Body ground	Always	10 kΩ or higher

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



17. INSPECT RADIO AND DISPLAY RECEIVER ASSEMBLY (MO2, MI2-)

- (a) With the K101 radio and display receiver assembly connector connected, disconnect the U16 telephone microphone assembly RH connector.
- (b) Measure the resistance according to the value(s) in the table below.

Standard Resistance:



[Click Location & Routing\(U16\)](#)

[Click Connector\(U16\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
U16-4 (MO2-) - Body ground	Always	Below 1 Ω

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

Standard Voltage:



[Click Location & Routing\(U16\)](#)

[Click Connector\(U16\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
U16-1 (MAC2) - Body ground	IG ON	7.5 to 8.5 V

NG **REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY**

OK



18.	INSPECT TELEPHONE MICROPHONE ASSEMBLY RH (OUTPUT TO RADIO AND DISPLAY RECEIVER ASSEMBLY)
------------	---

(a) Using an oscilloscope, measure the waveform according to the condition(s) in the table below.

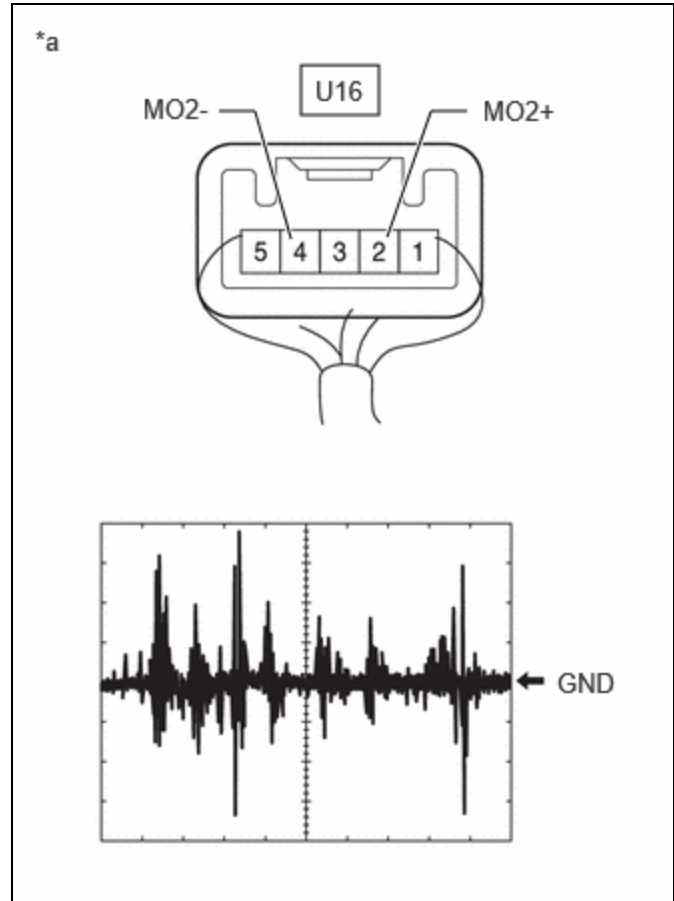
ITEM	CONDITION
Tester Connection	U16-2(MO2+) - U16-4(MO2-)
Tool setting	50 mV/DIV., 500 ms/DIV.
Vehicle condition	<ol style="list-style-type: none"> 1. Turn the ignition switch to ON 2. Sound is input to the telephone microphone assembly when the user is closer than 125 mm from the microphone case LH sound holes.

OK:

The waveform is similar to that shown in the illustration.

HINT:

- The oscilloscope waveform shown in the illustration is an example for reference only.
- In order to ensure that a consistent sound level is input to the microphone, use a digital voice recorder, etc., to play back sound in the same location with respect to the microphone.



*a Component with harness connected (Telephone microphone assembly RH)

RESULT	PROCEED TO
A waveform synchronized with voice signals is output	A
A waveform synchronized with voice signals is not output	B

A ▶ REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY

B ▶ REPLACE TELEPHONE MICROPHONE ASSEMBLY RH



19.	CHECK HARNESS AND CONNECTOR (RADIO AND DISPLAY RECEIVER ASSEMBLY - TELEPHONE MICROPHONE ASSEMBLY LH)
------------	---

(a) Disconnect the K81 radio and display receiver assembly connector.

(b) Disconnect the U15 telephone microphone assembly LH connector.

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

Standard Resistance:



[Click Location & Routing\(K81,U15\).](#)

[Click Connector\(K81\)](#)

[Click Connector\(U15\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K81-21(MIN+) - U15-2(MO1+)	Always	Below 1 Ω
K81-22(MIN-) - U15-4(MO1-)	Always	Below 1 Ω
K81-23(MACC) - U15-1(MAC1)	Always	Below 1 Ω
K81-25(SNS) - U15-5(SNS1)	Always	Below 1 Ω
K81-21(MIN+) or U15-2(MO1+) - Body ground	Always	10 k Ω or higher
K81-22(MIN-) or U15-4(MO1-) - Body ground	Always	10 k Ω or higher
K81-23(MACC) or U15-1(MAC1) - Body ground	Always	10 k Ω or higher
K81-25(SNS) or U15-5(SNS1) - Body ground	Always	10 k Ω or higher

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



20.	INSPECT RADIO AND DISPLAY RECEIVER ASSEMBLY (MACC, MIN-)
------------	---

(a) With the K81 radio and display receiver assembly connector connected, disconnect the U15 telephone microphone assembly LH connector.

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

Standard Resistance:



[Click Location & Routing\(U15\).](#)

[Click Connector\(U15\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
U15-4 (MO1-) - Body ground	Always	Below 1 Ω

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

Standard Voltage:



[Click Location & Routing\(U15\)](#)

[Click Connector\(U15\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
U15-1(MAC1) - Body ground	IG ON	7.5 to 8.5 V

NG ▶ REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY

OK



21.	INSPECT TELEPHONE MICROPHONE ASSEMBLY LH (OUTPUT TO RADIO AND DISPLAY RECEIVER ASSEMBLY)
------------	---

(a) Using an oscilloscope, measure the waveform according to the condition(s) in the table below.

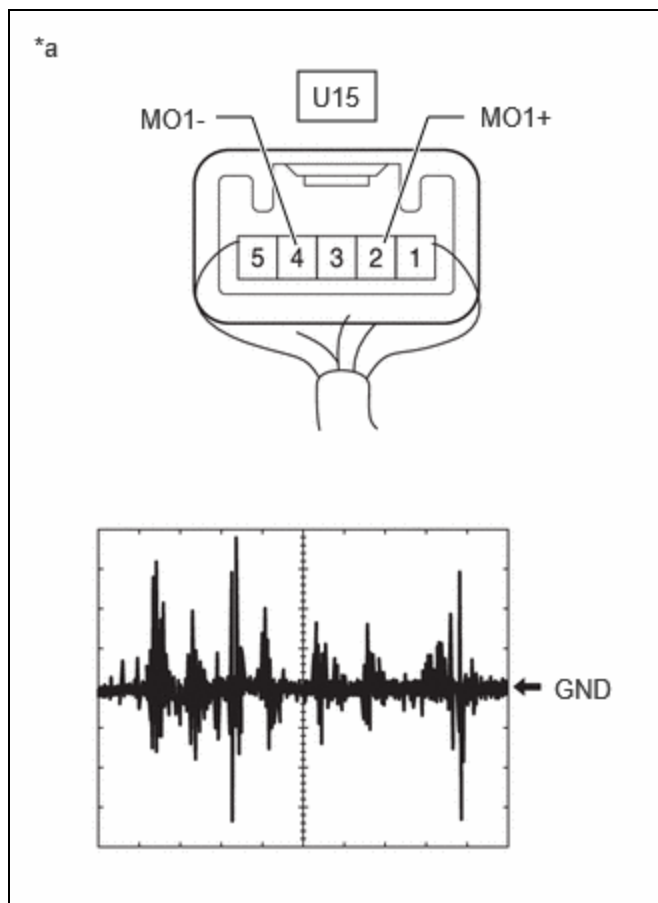
ITEM	CONDITION
Tester Connection	U15-2(MO1+) - U15-4(MO1-)
Tool setting	50 mV/DIV., 500 ms/DIV.
Vehicle condition	1. Turn the ignition switch to ON 2. Sound is input to the telephone microphone assembly when the user is closer than 125 mm from the microphone case RH sound holes.

OK:

The waveform is similar to that shown in the illustration.

HINT:

- The oscilloscope waveform shown in the illustration is an example for reference only.
- In order to ensure that a consistent sound level is input to the microphone, use a digital voice recorder, etc., to play back sound in the same location with respect to the microphone.



*a Component with harness connected (Telephone microphone assembly LH)

RESULT	PROCEED TO
A waveform synchronized with voice signals is output	A
A waveform synchronized with voice signals is not output	B

A ► **REPLACE RADIO AND DISPLAY RECEIVER ASSEMBLY**

B ► **REPLACE TELEPHONE MICROPHONE ASSEMBLY RH**

INFO

