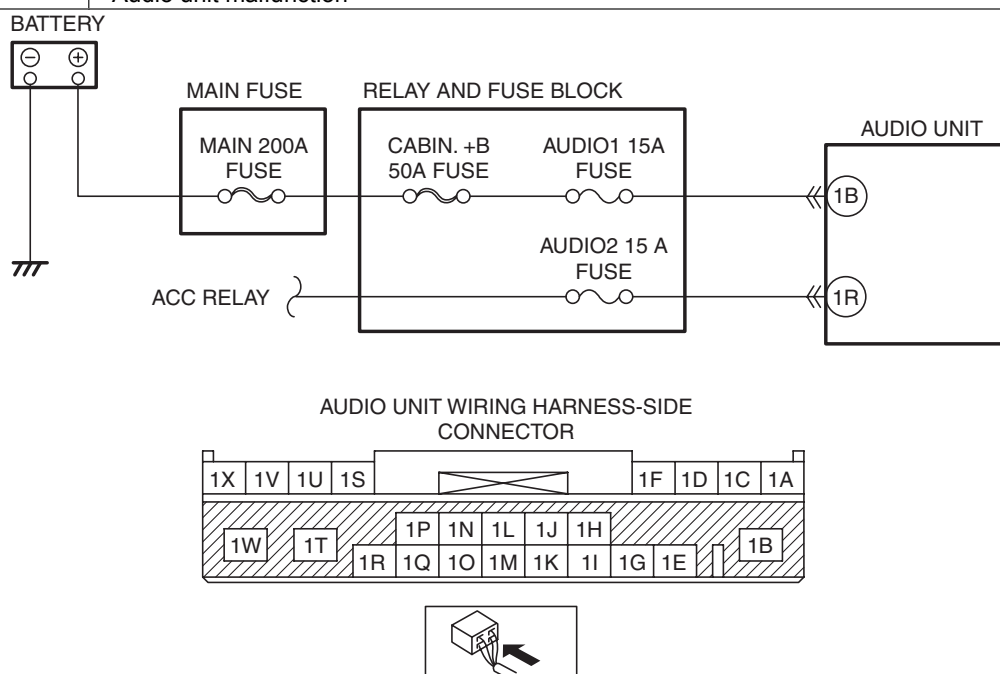


# DTC: U3003:16, 09:Er20 [AUDIO]

id0902f6441700

## Without i-stop System

Description	Voltage decrease input from battery
Detection condition	With the ignition switched to ACC or ON, the audio unit detects voltage from the battery of 10 V or less for 30 s or more.
Fail-safe function	—
Possible cause	<ul style="list-style-type: none"> <li>Battery malfunction</li> <li>Generator malfunction</li> <li>Audio unit connector or terminal malfunction</li> <li>Audio unit power supply circuit malfunction <ul style="list-style-type: none"> <li>Short to ground in the wiring harness between audio unit terminal 1B and battery (+) terminal.</li> <li>Short to ground in wiring harness between audio unit terminal 1R and ACC relay</li> <li>AUDIO1 15 A fuse malfunction</li> <li>AUDIO2 15 A fuse malfunction</li> <li>CABIN. +B 50 A fuse malfunction</li> <li>MAIN 200 A fuse malfunction</li> <li>Open circuit in wiring harness between audio unit terminal 1B and battery (+) terminal</li> <li>Open circuit in wiring harness between audio unit terminal 1R and ACC relay</li> </ul> </li> <li>Audio unit malfunction</li> </ul>



## Diagnostic Procedure

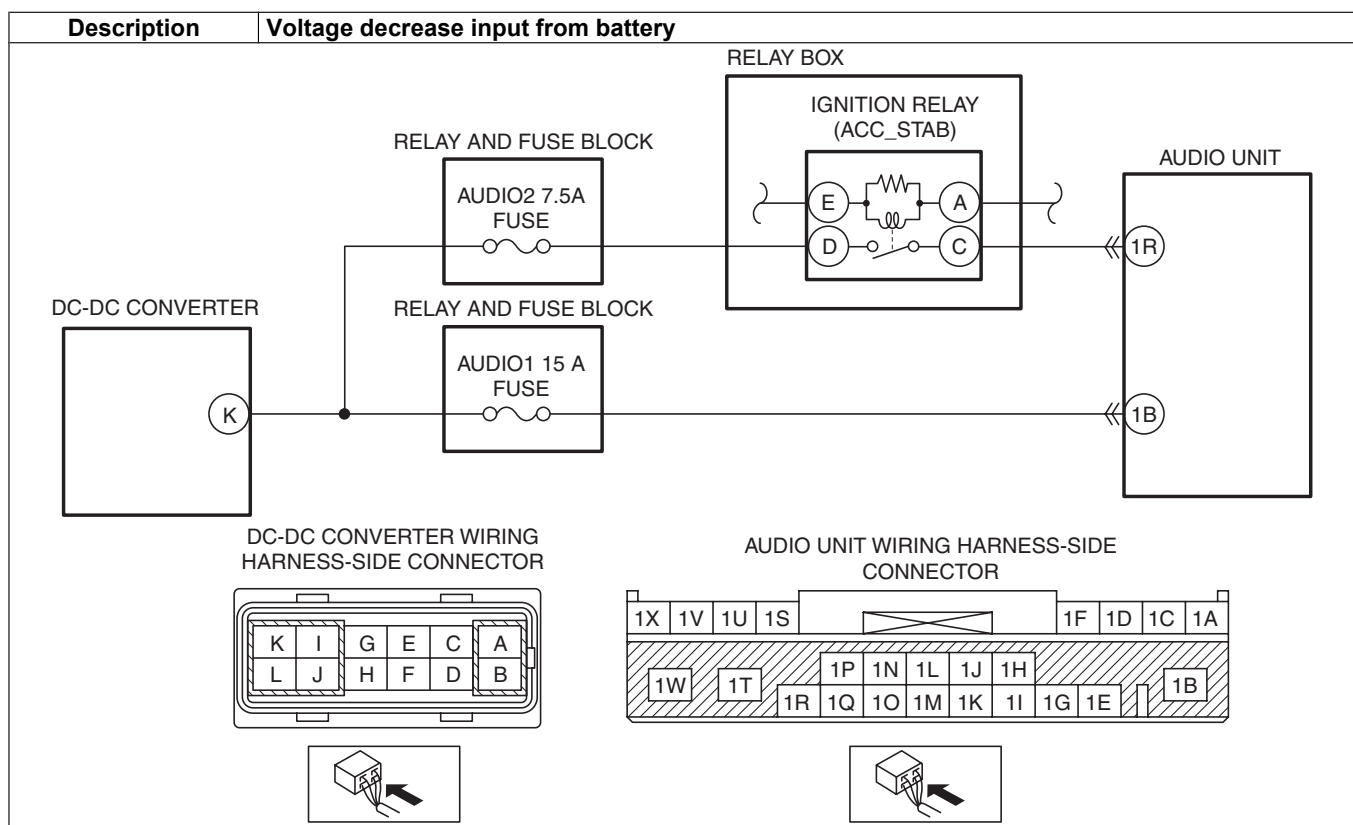
Step	Inspection	Action
1	<b>VERIFY PCM DTCs</b> <ul style="list-style-type: none"> <li>Perform the DTC inspection for the PCM using the M-MDS. (See FOREWORD [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (L.H.D.)].) (See FOREWORD [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (R.H.D.)].)</li> <li>Is the DTC displayed?</li> </ul>	Yes Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No Go to the next step.
2	<b>INSPECT BATTERY</b> <ul style="list-style-type: none"> <li>Inspect the battery. (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].)</li> <li>Is there any malfunctioning part?</li> </ul>	Yes Recharge or replace the battery, then go to Step 8. (See BATTERY RECHARGING [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No Go to the next step.

Step	Inspection	Action
3	<b>INSPECT GENERATOR</b> <ul style="list-style-type: none"> <li>Inspect the generator. (See GENERATOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)</li> <li>Is there any malfunctioning part?</li> </ul>	Yes Replace the generator, then go to Step 8. (See GENERATOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No Go to the next step.
4	<b>INSPECT AUDIO UNIT CONNECTOR CONDITION</b> <ul style="list-style-type: none"> <li>Switch the ignition off (LOCK).</li> <li>Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].)</li> <li>Disconnect the audio unit connector.</li> <li>Inspect the connector engagement and connection condition and inspect the terminals for damage, deformation, corrosion, or disconnection.</li> <li>Is there any malfunctioning part?</li> </ul>	Yes Repair or replace the connector, then go to Step 8.
		No Go to the next step.
5	<b>INSPECT POWER SUPPLY CIRCUIT OF AUDIO UNIT FOR MALFUNCTION</b> <ul style="list-style-type: none"> <li>Verify that the following audio unit connectors are disconnected.</li> <li>Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].)</li> <li>Switch the ignition to ACC (engine off).</li> <li>Measure the voltage at the following terminals (vehicle wiring harness side). <ul style="list-style-type: none"> <li>Audio unit terminal 1B</li> <li>Audio unit terminal 1R</li> </ul> </li> <li>Is the voltage B+?</li> </ul>	Yes Go to Step 8.
		No <ul style="list-style-type: none"> <li>Terminal 1B voltage is not B+ <ul style="list-style-type: none"> <li>Go to Step 7.</li> </ul> </li> <li>Terminal 1R voltage is not B+ <ul style="list-style-type: none"> <li>Go to the next step.</li> </ul> </li> </ul>
6	<b>INSPECT AUDIO UNIT POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT OR SHORT TO GROUND</b> <ul style="list-style-type: none"> <li>Switch the ignition off (LOCK).</li> <li>Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].)</li> <li>Inspect the AUDIO2 15 A fuse.</li> <li>Is there any malfunctioning part?</li> </ul>	Yes <ul style="list-style-type: none"> <li>If a fuse is burnt out: <ul style="list-style-type: none"> <li>Repair or replace the wiring harness which is shorted to ground.</li> <li>Replace the malfunctioning fuse.</li> </ul> </li> <li>If a fuse is damaged: <ul style="list-style-type: none"> <li>Replace the malfunctioning fuse.</li> </ul> </li> </ul>
		No Repair or replace the wiring harness which is shorted to ground, then go to Step 8.
7	<b>INSPECT AUDIO UNIT POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT OR SHORT TO GROUND</b> <ul style="list-style-type: none"> <li>Switch the ignition off (LOCK).</li> <li>Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].)</li> <li>Inspect the CABIN. +B 50 A fuse, AUDIO1 15A fuse and MAIN 200 A fuse.</li> <li>Is there any malfunctioning part?</li> </ul>	Yes <ul style="list-style-type: none"> <li>If a fuse is burnt out: <ul style="list-style-type: none"> <li>Repair or replace the wiring harness which is shorted to ground.</li> <li>Replace the malfunctioning fuse.</li> </ul> </li> <li>If a fuse is damaged: <ul style="list-style-type: none"> <li>Replace the malfunctioning fuse.</li> </ul> </li> </ul>
		No Repair or replace the wiring harness which has a short to ground, then go to the next step.

Step	Inspection	Action
8	<b>VERIFY THAT REPAIRS HAVE BEEN COMPLETED</b> <ul style="list-style-type: none"> <li>• Switch the ignition off (LOCK).</li> <li>• Reconnect all the disconnected connectors.</li> <li>• Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].)</li> <li>• Clear the audio unit DTCs. (See CLEARING DTC [AUDIO].)</li> <li>• Perform the audio unit DTC inspection. (See DTC INSPECTION [AUDIO].)</li> <li>• Is the same DTC displayed?</li> </ul>	Yes Return to Step 1 and inspect for other possible causes. If the malfunction recurs, replace the audio unit, then go to the next step. (See AUDIO UNIT REMOVAL/INSTALLATION.)
		No Go to the next step.
9	<b>VERIFY IF OTHER DTCs DISPLAYED</b> <ul style="list-style-type: none"> <li>• Verify if other DTCs are displayed.</li> <li>• Are any other DTCs displayed?</li> </ul>	Yes Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [AUDIO].)
		No DTC troubleshooting completed.

### With i-stop System

Description	Voltage decrease input from battery
Detection condition	With the ignition switched to ACC or ON, the audio unit detects voltage from the battery of 10 V or less for 30 s or more.
Fail-safe function	—
Possible cause	<ul style="list-style-type: none"> <li>• Battery malfunction</li> <li>• Generator malfunction</li> <li>• Audio unit connector or terminal malfunction</li> <li>• Audio unit power supply circuit malfunction <ul style="list-style-type: none"> <li>— Short to ground in wiring harness between AUDIO1 15A fuse and audio unit terminal 1B</li> <li>— AUDIO1 15 A fuse malfunction</li> <li>— AUDIO2 7.5 A fuse malfunction</li> <li>— Open circuit between audio unit terminal 1R and ignition relay (ACC_STAB) terminal C</li> </ul> </li> <li>• Ignition relay (ACC_STAB) malfunction</li> <li>• DC-DC converter connector terminal malfunction</li> <li>• Open circuit in wiring harness between DC-DC converter terminal K and ignition relay terminal D</li> <li>• Short to ground in wiring harness between DC-DC converter terminal K and audio unit terminal 1B</li> <li>• Open circuit in wiring harness between DC-DC converter terminal K and audio unit terminal 1B</li> <li>• DC-DC converter malfunction</li> <li>• Audio unit malfunction</li> </ul>



## Diagnostic Procedure

Step	Inspection	Action
1	<b>VERIFY PCM DTCs</b> <ul style="list-style-type: none"> <li>Perform the DTC inspection for the PCM using the M-MDS. (See FOREWORD [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (L.H.D.)].) (See FOREWORD [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (R.H.D.)].) (See FOREWORD [SKYACTIV-D 2.2 (L.H.D.)].) (See FOREWORD [SKYACTIV-D 2.2 (R.H.D.)].)</li> <li>Is the DTC displayed?</li> </ul>	<p>Yes: Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DTC TABLE [SKYACTIV-D 2.2].)</p> <p>No: Go to the next step.</p>
2	<b>INSPECT BATTERY</b> <ul style="list-style-type: none"> <li>Inspect the battery. (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY INSPECTION [SKYACTIV-D 2.2].)</li> <li>Is there any malfunctioning part?</li> </ul>	<p>Yes: Recharge or replace the battery, then go to Step 14. (See BATTERY RECHARGING [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY RECHARGING [SKYACTIV-D 2.2].) (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)</p> <p>No: Go to the next step.</p>
3	<b>INSPECT GENERATOR</b> <ul style="list-style-type: none"> <li>Inspect the generator. (See GENERATOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See GENERATOR INSPECTION [SKYACTIV-D 2.2].)</li> <li>Is there any malfunctioning part?</li> </ul>	<p>Yes: Replace the generator, then go to Step 14. (See GENERATOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See GENERATOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)</p> <p>No: Go to the next step.</p>

Step	Inspection	Action
4	<b>INSPECT AUDIO UNIT CONNECTOR CONDITION</b> <ul style="list-style-type: none"> <li>• Switch the ignition off (LOCK).</li> <li>• Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)</li> <li>• Disconnect the audio unit connector.</li> <li>• Inspect the connector engagement and connection condition and inspect the terminals for damage, deformation, corrosion, or disconnection.</li> <li>• Is there any malfunctioning part?</li> </ul>	Yes Repair or replace the connector, then go to Step 14.
		No Go to the next step.
5	<b>INSPECT POWER SUPPLY CIRCUIT OF AUDIO UNIT FOR MALFUNCTION</b> <ul style="list-style-type: none"> <li>• Verify that the following audio unit connectors are disconnected.</li> <li>• Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)</li> <li>• Switch the ignition to ACC (engine off).</li> <li>• Measure the voltage at the following terminals (vehicle wiring harness side). <ul style="list-style-type: none"> <li>— Audio unit terminal 1B</li> <li>— Audio unit terminal 1R</li> </ul> </li> <li>• Is the voltage B+?</li> </ul>	Yes Go to Step 14.
		No <b>Terminal 1B voltage is not B+</b> <ul style="list-style-type: none"> <li>• Go to Step 10.</li> </ul> <b>Terminal 1R voltage is not B+</b> <ul style="list-style-type: none"> <li>• Go to Step 7.</li> </ul>
6	<b>INSPECT AUDIO UNIT POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT OR SHORT TO GROUND</b> <ul style="list-style-type: none"> <li>• Switch the ignition off (LOCK).</li> <li>• Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)</li> <li>• Inspect the AUDIO1 15 A fuse.</li> <li>• Is there any malfunctioning part?</li> </ul>	Yes <ul style="list-style-type: none"> <li>• If a fuse is burnt out: <ul style="list-style-type: none"> <li>— Repair or replace the wiring harness which is shorted to ground.</li> <li>— Replace the malfunctioning fuse.</li> </ul> </li> <li>• If a fuse is damaged: <ul style="list-style-type: none"> <li>— Replace the malfunctioning fuse.</li> </ul> </li> </ul>
		No Repair or replace the wiring harness which is shorted to ground, then go to Step 14.
7	<b>INSPECT AUDIO UNIT POWER SUPPLY CIRCUIT FOR OPEN CIRCUIT OR SHORT TO GROUND</b> <ul style="list-style-type: none"> <li>• Switch the ignition off (LOCK).</li> <li>• Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)</li> <li>• Inspect the AUDIO2 7.5 A fuse.</li> <li>• Is there any malfunctioning part?</li> </ul>	Yes <ul style="list-style-type: none"> <li>• If a fuse is burnt out: <ul style="list-style-type: none"> <li>— Repair or replace the wiring harness which is shorted to ground.</li> <li>— Replace the malfunctioning fuse.</li> </ul> </li> <li>• If a fuse is damaged: <ul style="list-style-type: none"> <li>— Replace the malfunctioning fuse.</li> </ul> </li> </ul>
		No Repair or replace the wiring harness which is shorted to ground, then go to Step 14.

Step	Inspection	Action	
8	<b>VERIFY MALFUNCTION IN POWER SUPPLY CIRCUIT OF AUDIO UNIT</b> <ul style="list-style-type: none"> <li>• Verify that the following audio unit connectors are disconnected.</li> <li>• Measure the voltage at ignition relay coil (ACC_STAB) terminal D (vehicle wiring harness side).</li> <li>• Is the voltage B+?</li> </ul>	Yes	Go to the next step.
		No	Go to Step 10.
9	<b>Inspect ignition relay (ACC_STAB).</b> <ul style="list-style-type: none"> <li>• Switch the ignition off (LOCK).</li> <li>• Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)</li> <li>• Remove the ignition relay (ACC_STAB). (See RELAY LOCATION.)</li> <li>• Inspect ignition relay (ACC_STAB). (See RELAY INSPECTION.)</li> <li>• Is there any malfunctioning part?</li> </ul>	Yes	Repair or replace the ignition relay (ACC_STAB), then go to Step 14.
		No	Go to the next step.
10	<b>INSPECT DC-DC CONVERTER CONNECTOR AND TERMINAL CONDITION</b> <ul style="list-style-type: none"> <li>• Switch the ignition off (LOCK).</li> <li>• Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)</li> <li>• Disconnect the DC-DC converter connector.</li> <li>• Inspect the connector engagement and connection condition and inspect the terminals for damage, deformation, corrosion, or disconnection.</li> <li>• Is there any malfunctioning part?</li> </ul>	Yes	Repair or replace the connector, then go to Step 14.
		No	Go to the next step.
11	<b>INSPECT WIRING HARNESS FOR SHORT TO GROUND BETWEEN DC-DC CONVERTER AND IGNITION RELAY</b> <ul style="list-style-type: none"> <li>• Verify that the DC-DC connector is disconnected.</li> <li>• Inspect for continuity between ignition relay (ACC_STAB) and terminal D (vehicle wiring harness side) and body ground.</li> <li>• Is there continuity?</li> </ul>	Yes	Repair or replace the wiring harness which is shorted to ground, then go to Step 14.
		No	Go to the next step.
12	<b>INSPECT FOR OPEN CIRCUIT IN WIRING HARNESS BETWEEN DC-DC CONVERTER AND IGNITION RELAY</b> <ul style="list-style-type: none"> <li>• Verify that the DC-DC connector is disconnected.</li> <li>• Inspect for continuity in the wiring harness between the ignition relay (ACC_STAB) terminal D (vehicle wiring harness side) and the DC-DC converter terminal K (vehicle wiring harness side).</li> <li>• Is there continuity?</li> </ul>	Yes	Connect the DC-DC connector and go to the next step.
		No	Repair or replace the wiring harness which has an open circuit, then go to Step 14.

Step	Inspection	Action
13	<b>INSPECT DC-DC CONVERTER</b> <ul style="list-style-type: none"> <li>Inspect the DC-DC converter. (See DC-DC CONVERTER INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DC-DC CONVERTER INSPECTION [SKYACTIV-D 2.2].)</li> <li>Is there any malfunctioning part?</li> </ul>	Yes Repair or replace the DC-DC converter and go to the next step. (See DC-DC CONVERTER REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DC-DC CONVERTER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
		No Go to the next step.
14	<b>VERIFY THAT REPAIRS HAVE BEEN COMPLETED</b> <ul style="list-style-type: none"> <li>Switch the ignition off (LOCK).</li> <li>Reconnect all the disconnected connectors.</li> <li>Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].)</li> <li>Clear the audio unit DTCs. (See CLEARING DTC [AUDIO].)</li> <li>Perform the audio unit DTC inspection. (See DTC INSPECTION [AUDIO].)</li> <li>Is the same DTC displayed?</li> </ul>	Yes Return to Step 1 and inspect for other possible causes. If the malfunction recurs, replace the audio unit, then go to the next step. (See AUDIO UNIT REMOVAL/INSTALLATION.)
		No Go to the next step.
15	<b>VERIFY IF OTHER DTCs DISPLAYED</b> <ul style="list-style-type: none"> <li>Verify if other DTCs are displayed.</li> <li>Are any other DTCs displayed?</li> </ul>	Yes Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [AUDIO].)
		No DTC troubleshooting completed.