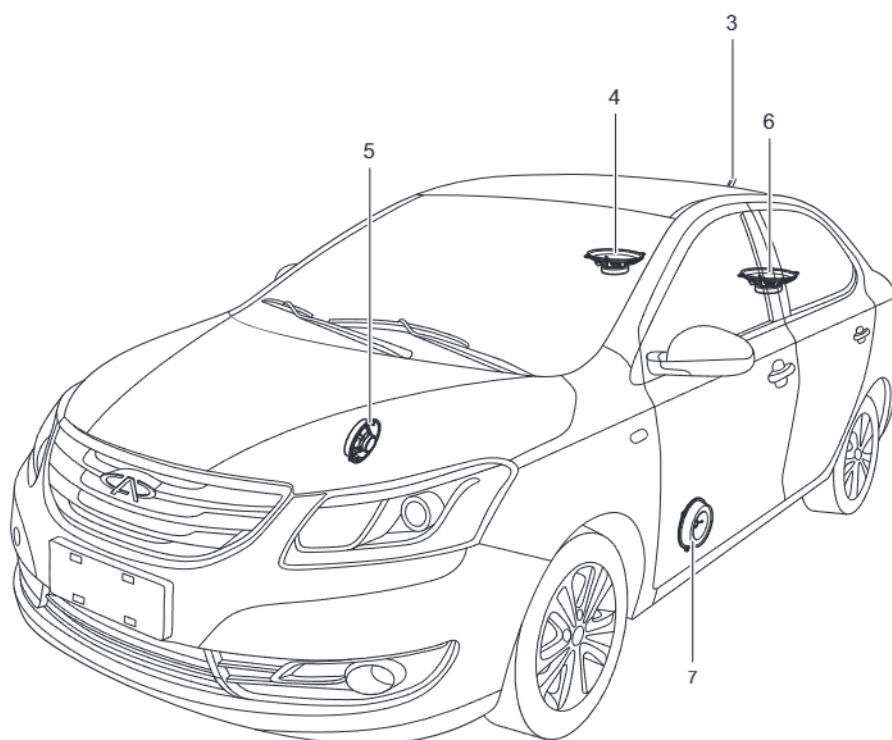
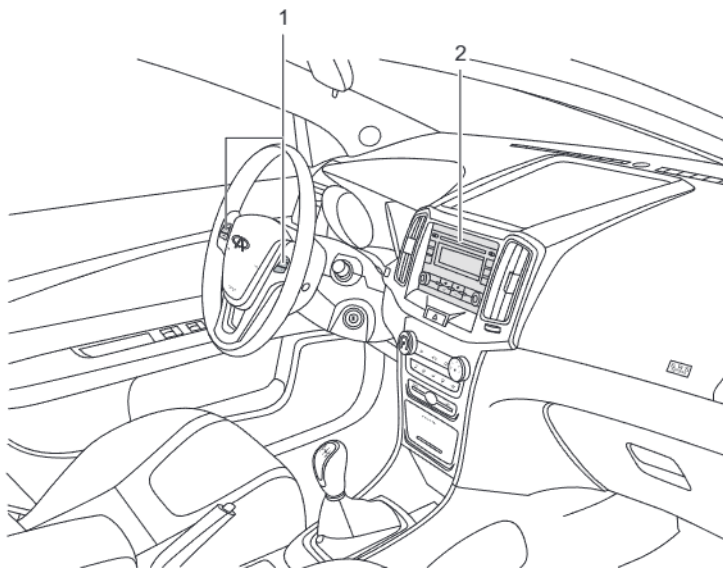


AUDIO SYSTEM

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GENERAL INFORMATION

Description



RA19370010

1 - Steering Wheel Quick Button (if equipped)	2 - Single Disc CD Player/Electrical Modulation Radio Receiver + USB Assembly
3 - Antenna Assembly (w/ Antenna Amplifier)	4 - Rear Right Speaker
5 - Front Right Speaker	6 - Rear Left Speaker
7 - Front Left Speaker	

The audio system mainly indicates radio receiver assembly. The primary function of the radio receiver assembly is to receive the frequency modulation and amplitude modulation broadcast signals sent from the broadcast station, and convert the broadcast signal into audio signal.

The radio receiver assembly consists of amplitude modulation tuner (AM) that receives amplitude modulation broadcast signal and frequency modulation tuner (FM) that receives frequency modulation broadcast signal.

This model uses two types of radio receiver assemblies: single disc CD player + USB assembly and electrical modulation radio receiver + USB assembly. The single disc CD player + USB assembly provides with radio receiver function and single disc CD playing function.

4-speaker is equipped for this model. The 4-speaker consists of 2 front speakers and 2 rear speakers.

Operation

Essentially, the radio receiver is a tuner. The radio receiver demodulates the radio frequency signal received from the antenna, and outputs the low power audio signal, which is amplified by the inner amplifier circuit and converted into original sound.

37

Specifications

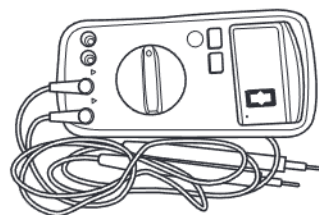
Torque Specifications

Description	Torque (N·m)
Single Disc CD Player + USB Fixing Screw	8 ± 1
Electrical Modulation Radio Receiver + USB Fixing Screw	8 ± 1
Front Speaker Fixing Screw	1.5 ± 0.5
Rear Speaker Fixing Screw	1.5 ± 0.5
Antenna Assembly Fixing Nut	5 ± 1
Steering Wheel Quick Button Cover Fixing Screw	1.5 ± 0.5
Steering Wheel Quick Button Fixing Screw	1 ± 0.5

Tool

General Tool

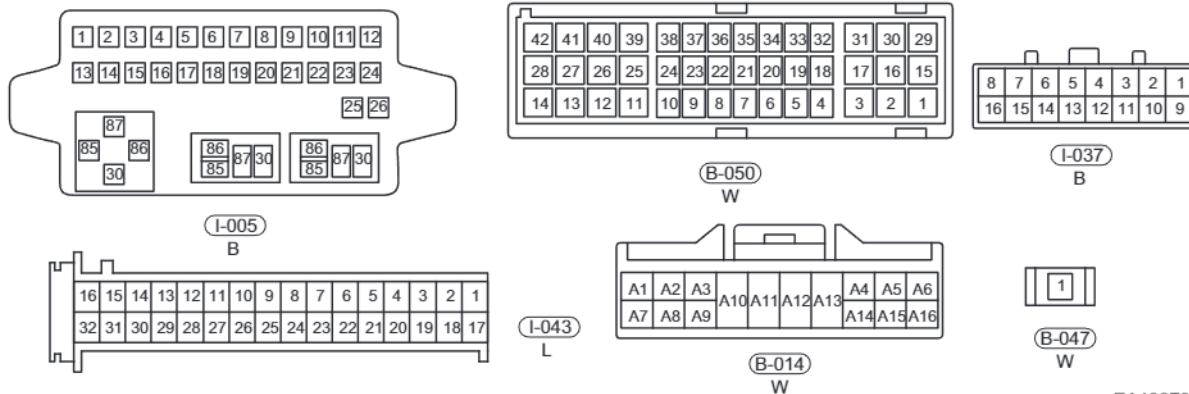
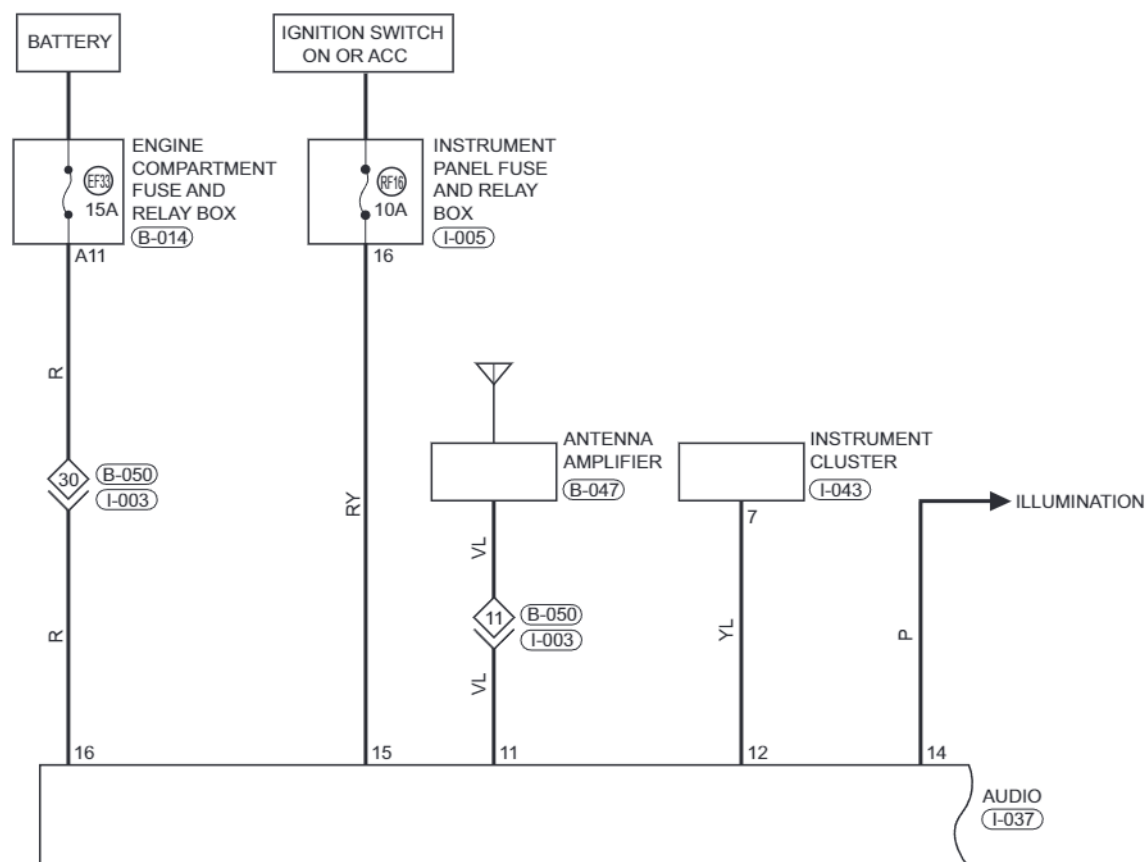
Digital Multimeter



RCH0000002

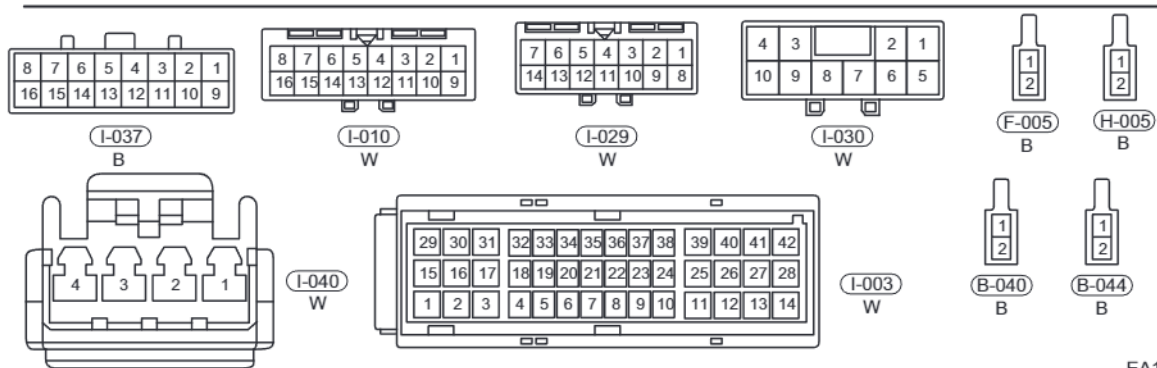
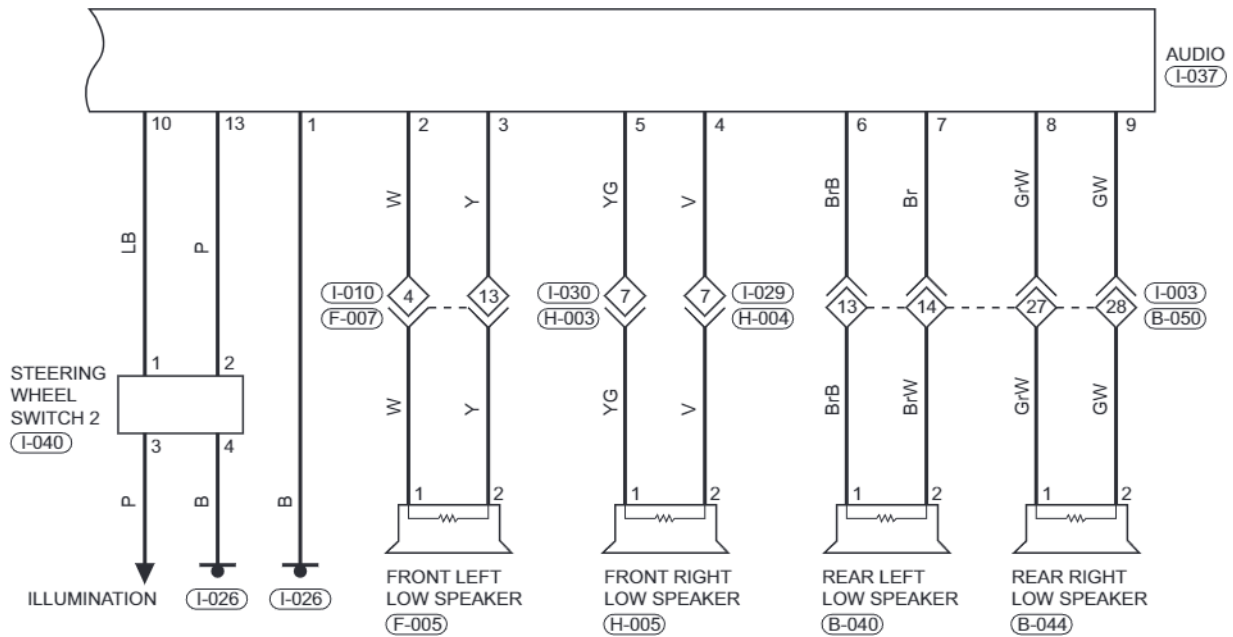
Circuit Diagram

Audio System (Page 1 of 2)



EA19370010

Audio System (Page 2 of 2)



EA19370020

Audio System Control Module Terminal List

Terminal No.	Terminal Name	Terminal Definition
1	GND	Power Ground
2	FL+	Front Left Speaker Audio Signal+
3	FL-	Front Left Speaker Audio Signal-
4	FR+	Front Right Speaker Audio Signal+
5	FR-	Front Right Speaker Audio Signal-
6	RL+	Rear Left Speaker Audio Signal+
7	RL-	Rear Left Speaker Audio Signal-
8	RR+	Rear Right Speaker Audio Signal+
9	RR-	Rear Right Speaker Audio Signal-
10	Steering Wheel Quick Button Power	Steering Wheel Quick Button Operation Power
11	AMP	Antenna Operation Power
12	Speed Signal	Vehicle Speed Signal
13	Steering Wheel Quick Button Signal	Steering Wheel Quick Button Signal
14	Backlight Signal	Backlight Adjustment Signal
15	ACC	Ignition Switch Power Supply
16	Power Supply	Battery Power Supply

DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use the table below to help determine the cause of the problem. Check each suspected area in sequence. Repair or replace the faulty components, or adjust them as necessary.

Symptom	Suspected Area	See page
Noise	Noise source (interference)	-
	Speaker (loose installation)	37-15
	Single disc CD player + USB assembly (malfunction)	37-11
	Electrical modulation radio receiver + USB assembly (malfunction)	37-13
Single disc CD player/Electrical modulation radio receiver + USB assembly does not operate	Fuse (blown)	49-28
	Single disc CD player/Electrical modulation radio receiver + USB operation panel (malfunction)	-
	Single disc CD player + USB assembly (malfunction)	37-11
	Electrical modulation radio receiver + USB assembly (malfunction)	37-13
	Wire harness and connector (malfunction)	-
Speaker does not sound	Fuse (blown)	49-28
	Speaker (malfunction)	37-15
	Single disc CD player + USB assembly (malfunction)	-
	Electrical modulation radio receiver + USB assembly (malfunction)	37-11
	Single disc CD player/Electrical modulation radio receiver + USB assembly (malfunction)	37-13
	Wire harness and connector (malfunction)	-

Symptom	Suspected Area	See page
Radio broadcast signal cannot be received (poor reception)	Single disc CD player + USB assembly (malfunction)	37-11
	Electrical modulation radio receiver + USB assembly (malfunction)	37-13
	Optional equipment (interference)	-
	Single disc CD player + USB assembly (malfunction)	37-11
	Electrical modulation radio receiver + USB assembly (malfunction)	37-13
	Antenna assembly (w/ antenna amplifier) (malfunction)	37-19
	Antenna wire harness and connector (malfunction)	-
CD cannot be ejected	CD (malfunction)	-
	Single disc CD player + USB operation panel (malfunction)	-
	Single disc CD player + USB assembly (malfunction)	37-11
CD cannot be inserted or CD is ejected right after insertion	CD (dirty)	-
	CD insertion direction (incorrect)	-
	CD (malfunction)	-
	Single disc CD player + USB assembly (malfunction)	37-11
Sound quality is bad only when CD is played (volume is too low)	CD (malfunction)	-
	Single disc CD player + USB assembly (malfunction)	37-11

HINT:

When checking the general malfunctions of audio system, perform inspection at spacious area nearby free of obstacles.

ON-VEHICLE SERVICE

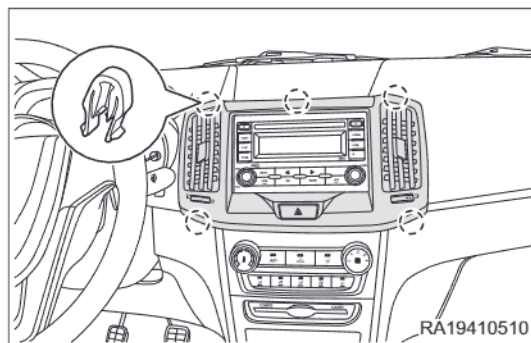
Single Disc CD Player + USB Assembly

Removal

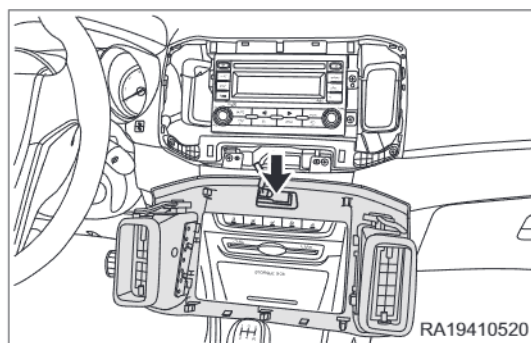
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing the single disc CD player + USB assembly.
- Appropriate force should be applied when removing the single disc CD player + USB assembly, and avoid operating roughly.
- Try to prevent the interior from being scratched when removing the single disc CD player + USB assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the center control panel assembly.
 - a. Using a screwdriver wrapped with protective tape, pry the fixing clips on the center control panel assembly.



- b. Disconnect the hazard warning light switch connector (arrow) and remove the center control panel assembly.

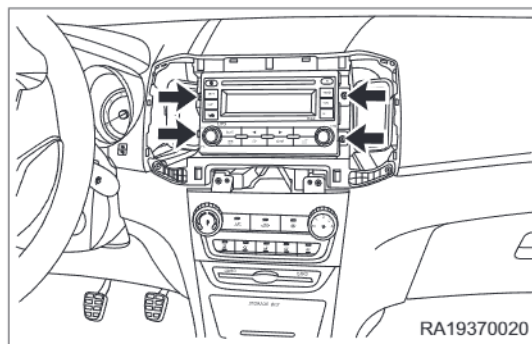


4. Remove the single disc CD player + USB assembly.

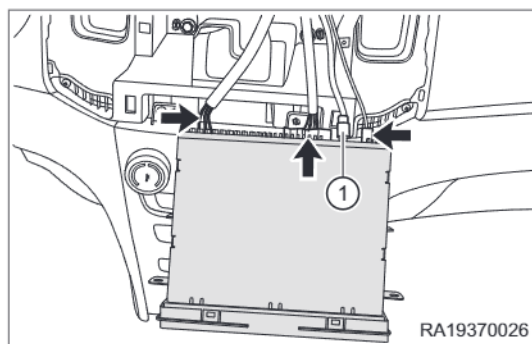
CAUTION

- Handle and operate carefully to prevent the components from being scratched or damaged when removing the single disc CD player + USB assembly.

- a. Remove 4 fixing screws (arrow) from the single disc CD player + USB assembly.
(Tightening torque: 8 ± 1 N·m)



- b. Disconnect the connectors (arrow) and antenna (1) from the single disc CD player + USB assembly, and remove the single disc CD player + USB assembly.



37

Inspection

1. Check the single disc CD player + USB assembly connectors and terminals for deformation or damage. Replace them if necessary.
2. Check the antenna and connectors for damage. Replace them if necessary.
3. Check the single disc CD player + USB assembly house for deformation or damage. Replace it if necessary.

Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to avoid damaging other components when installing the single disc CD player + USB assembly.
- Be sure to tighten the fixing screws to the specified torque when installing the single disc CD player + USB assembly.
- Install each connector in place when installing the single disc CD player + USB assembly.
- Check if the single disc CD player + USB assembly operates normally after installation.

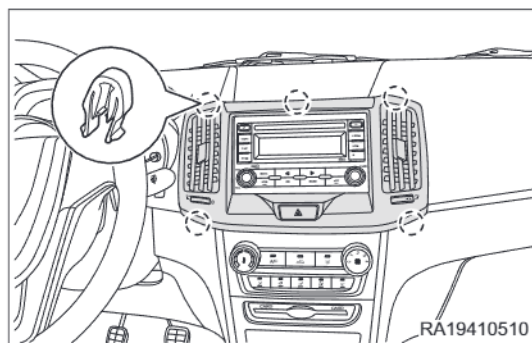
Electrical Modulation Radio Receiver + USB Assembly

Removal

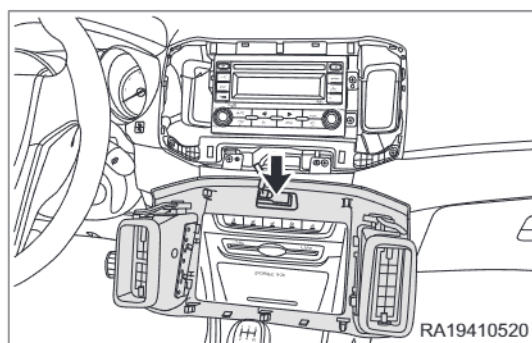
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing the electrical modulation radio receiver + USB assembly.
- Appropriate force should be applied when removing the electrical modulation radio receiver + USB assembly, and avoid operating roughly.
- Try to prevent the interior from being scratched when removing the electrical modulation radio receiver + USB assembly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the center control panel assembly.
 - a. Using a screwdriver wrapped with protective tape, pry the fixing clips on the center control panel assembly.



- b. Disconnect the hazard warning light switch connector (arrow) and remove the center control panel assembly.

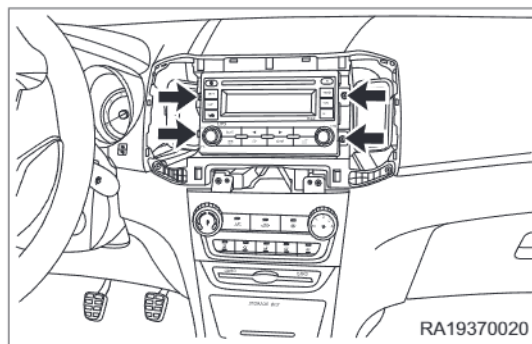


4. Remove the electrical modulation radio receiver + USB assembly.

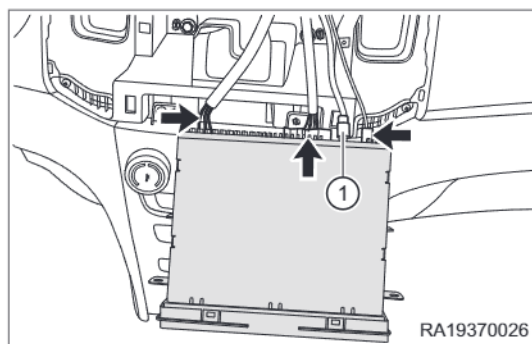
CAUTION

- Handle and operate carefully to prevent the components from being scratched or damaged when removing the electrical modulation radio receiver + USB assembly.

- a. Remove 4 fixing screws (arrow) from the electrical modulation radio receiver + USB assembly.
(Tightening torque: 8 ± 1 N·m)



- b. Disconnect the connectors (arrow) and antenna (1) from the electrical modulation radio receiver + USB assembly, and remove the electrical modulation radio receiver + USB assembly.



37

Inspection

1. Check the electrical modulation radio receiver + USB assembly connectors and terminals for deformation or damage. Replace them if necessary.
2. Check the antenna and connectors for damage. Replace them if necessary.
3. Check the electrical modulation radio receiver + USB assembly house for deformation or damage. Replace it if necessary.

Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to avoid damaging other components when installing the electrical modulation radio receiver + USB assembly.
- Be sure to tighten the fixing screws to the specified torque when installing the electrical modulation radio receiver + USB assembly.
- Install each connector in place when installing the electrical modulation radio receiver + USB assembly.
- Check if the electrical modulation radio receiver + USB operates normally after installation.

Front Speaker

Removal

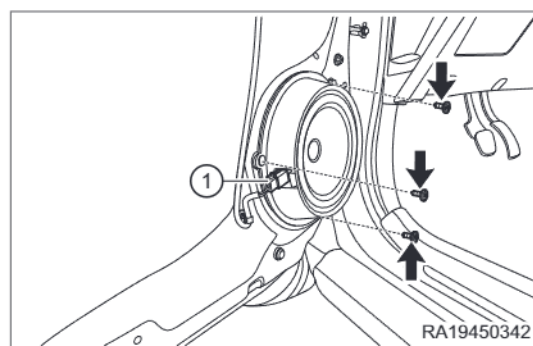
HINT:

- Use the same procedures for the right side and left side.
 - The procedures listed below are for the left side.
1. Turn off all the electrical equipment and ignition switch.
 2. Disconnect the negative battery cable.
 3. Remove the front left door inner protector assembly (See page 45-19).
 4. Remove the front left speaker.

CAUTION

- Never touch the cone paper and other components of front left speaker during removal; otherwise, it will affect the sound effect or damage the front left speaker.

- a. Disconnect the front left speaker connector (1).
- b. Remove 3 fixing screws (arrow) from the front left speaker.
(Tightening torque: $1.5 \pm 0.5 \text{ N}\cdot\text{m}$)



- c. Remove the front left speaker.

Inspection

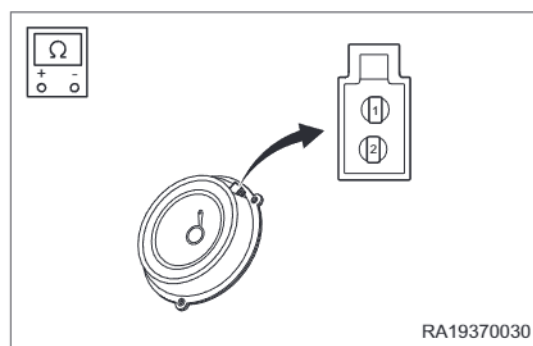
1. Check the front speaker assembly.
 - a. Using a digital multimeter, measure the resistance of front speaker according to the table below.

Standard Resistance

Multimeter Connection	Condition	Specified Condition
Terminal 1 - Terminal 2	Always	Approximately 4Ω

If the result is not as specified, replace the front speaker assembly.

2. Check the front speaker cone paper for damage or deformation. Replace it if necessary.
3. Check the front speaker connector for damage and the terminals for bend or poor connection. Replace it if necessary.



Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to avoid damaging other components when installing the front speaker.
- Be sure to tighten the fixing screws to the specified torque when installing the front speaker.
- Install the connector in place when installing the front speaker.
- Check if the front speaker operates normally after installation.

Rear Speaker

Removal

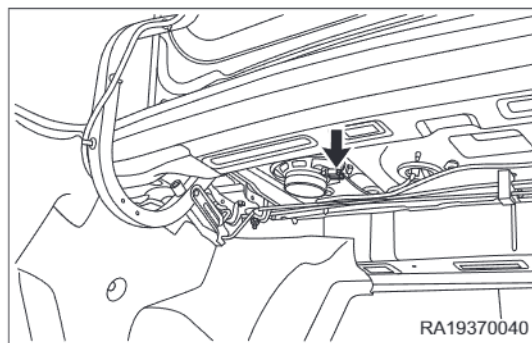
HINT:

- Use the same procedures for the right side and left side.
- The procedures listed below are for the left side.

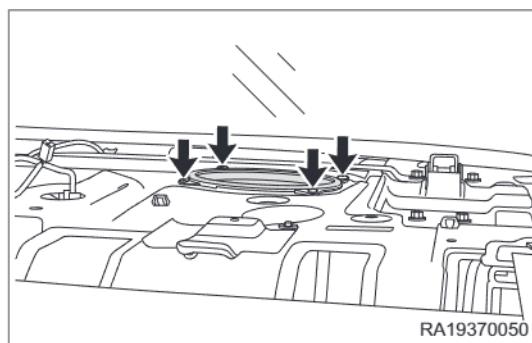
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing the rear speaker.
- Appropriate force should be applied when removing the rear speaker, and avoid operating roughly.
- Never touch the cone paper and other components of the rear speaker during removal; otherwise, it will affect the sound effect or damage the rear speaker.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the tonneau cover assembly (See page 47-34).
4. Remove the rear left speaker.
 - a. Disconnect the rear left speaker connector (arrow).



- b. Remove 4 fixing screws (arrow) from the rear left speaker.
(Tightening torque: $1.5 \pm 0.5 \text{ N}\cdot\text{m}$)



- c. Remove the rear left speaker.

Inspection

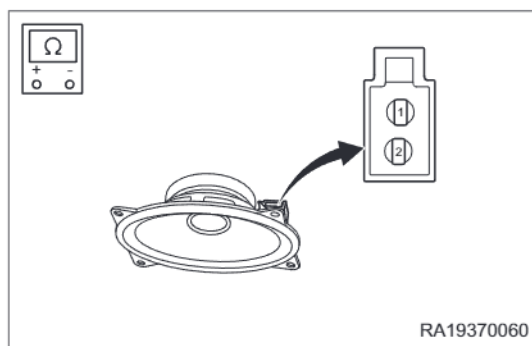
1. Check the rear speaker assembly.
 - a. Using a digital multimeter, measure the resistance of rear speaker according to the table below.

Standard Resistance

Multimeter Connection	Condition	Specified Condition
Terminal 1 - Terminal 2	Always	Approximately 5.6 Ω

If the result is not as specified, replace the rear speaker assembly.

2. Check the rear speaker cone paper for damage or deformation. Replace it if necessary.
3. Check the rear speaker connector for damage and the terminals for bend or poor connection. Replace it if necessary.



Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to avoid damaging other components when installing the rear speaker.
- Be sure to tighten the fixing screws to the specified torque when installing the rear speaker.
- Install the connector in place when installing the rear speaker.
- Check if the rear speaker operates normally after installation.

Antenna Assembly (w/ Antenna Amplifier)

Removal

CAUTION

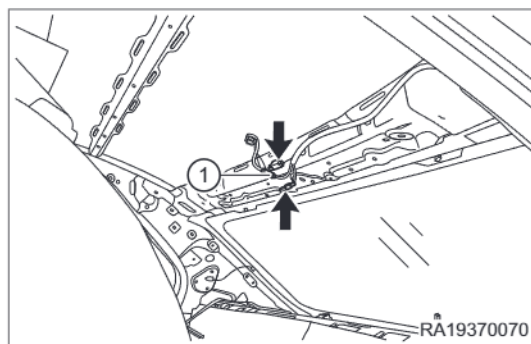
- Make sure to wear safety equipment to prevent accidents when removing the antenna assembly.
- Appropriate force should be applied when removing the antenna assembly, and avoid operating roughly.

1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the roof assembly ([See page 47-28](#)).

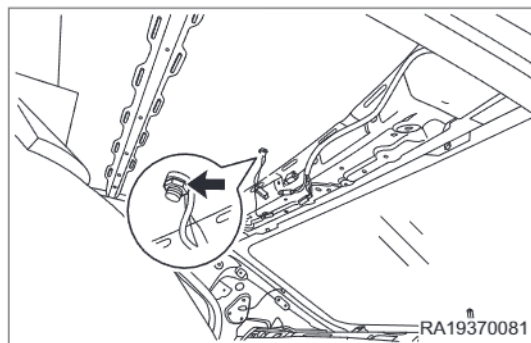
CAUTION

- It is not necessary to completely remove the roof assembly when removing it, but it is necessary to lower the rear of roof assembly so that the radio antenna assembly can be removed.

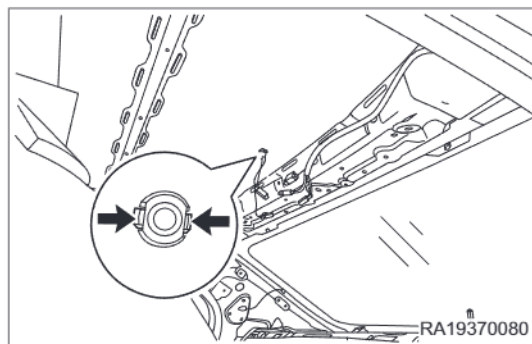
4. Remove the antenna assembly (w/ antenna amplifier).
 - a. Disconnect the antenna (1) and connectors (arrow) from the antenna assembly.



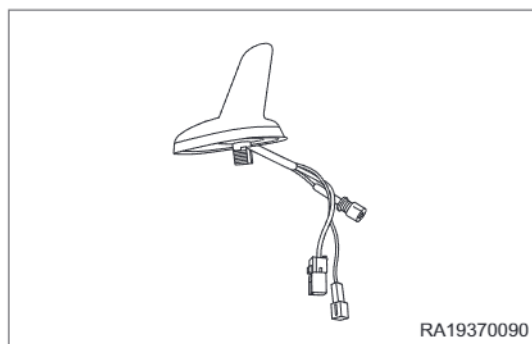
- b. Remove the fixing nut (arrow) from the antenna assembly.
(Tightening torque: 5 ± 1 N·m)



- c. Detach the attachment parts (arrow) between antenna assembly and body.



- d. Remove the antenna assembly from the roof.



37 Inspection

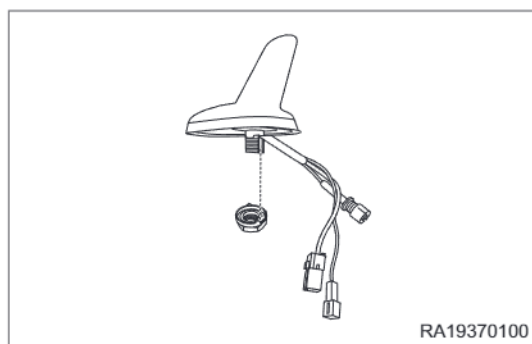
1. Check the antenna assembly.
 - a. Check the antenna assembly for wear, cracks, deformation or damage. Replace it if necessary.
 - b. Check the antenna assembly for looseness or disengagement. Replace it if necessary.
 - c. Check the terminals on antenna connector for deformation or bent. Replace it if necessary.

Installation

Installation is in the reverse order of removal.

HINT:

When installing the antenna assembly, align the boss at the end of antenna assembly and the groove on the fixing nut, and then firmly install the antenna assembly as shown in the illustration.



CAUTION

- Operate carefully to avoid damaging other components when installing the antenna assembly.
- Always insert the dowel pin into the body positioning hole and set it in place when installing the antenna assembly.
- Be sure to tighten the fixing nuts to the specified torque when installing the antenna assembly.
- Install each connector and antenna in place when installing the antenna assembly.
- Check if the audio system operates normally after installing the antenna assembly.

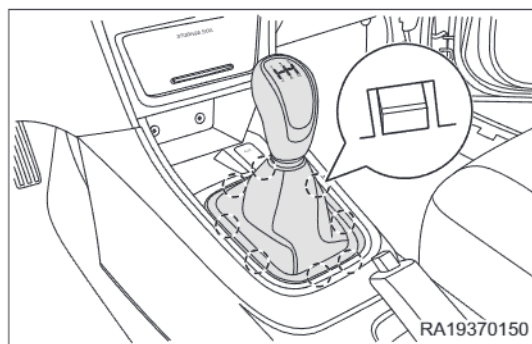
AUX/USB Interface

Removal

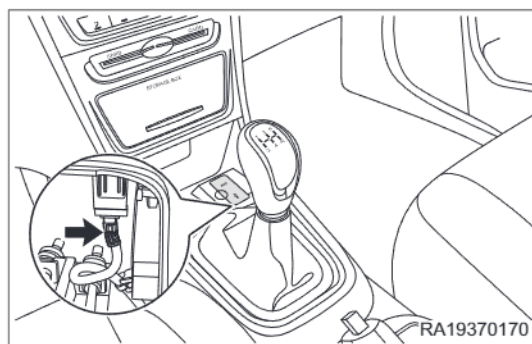
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing the AUX/USB interface.
- Appropriate force should be applied when removing the AUX/USB interface, and avoid operating roughly.

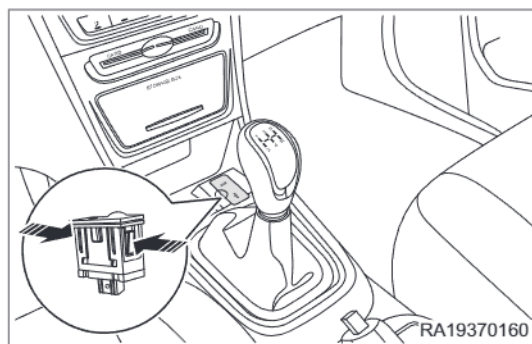
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Loosen the shift lever boot assembly.
 - a. Using a screwdriver wrapped with protective tape, pry the clips on shift lever boot assembly, and loosen the shift lever boot assembly.



4. Remove the AUX/USB interface.
 - a. Disconnect the AUX/USB interface connector (arrow).



- b. Press and hold the clip on AUX/USB interface in the direction of arrow as shown in the illustration and remove the AUX/USB interface.



Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to avoid damaging other components when installing the AUX/USB interface.
- Install the connector in place when installing the AUX/USB interface.

Steering Wheel Quick Button (if equipped)

Removal

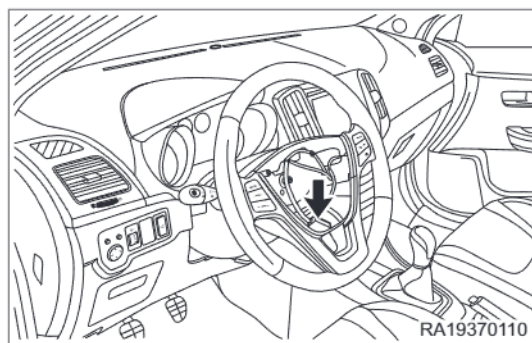
WARNING

- Be sure to read the precautions for SRS airbag before removing the steering wheel quick button ([See page 30-3](#)).

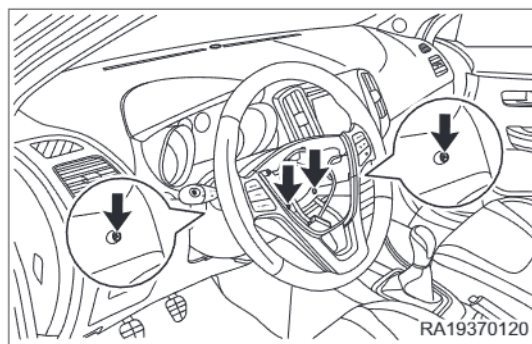
CAUTION

- Make sure to wear safety equipment to prevent accidents when removing the steering wheel quick button.
- Operate carefully to avoid damage to the clip on steering wheel quick button when removing the steering wheel quick button.

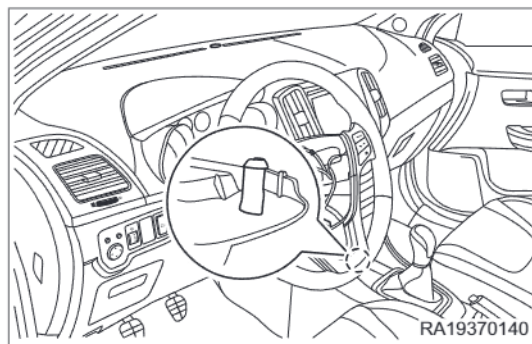
1. Turn off all the electrical equipment and ignition switch.
2. Disconnect the negative battery cable.
3. Remove the driver airbag ([See page 30-41](#)).
4. Remove the steering wheel quick button cover.
 - a. Disconnect the steering wheel quick button connector (arrow).



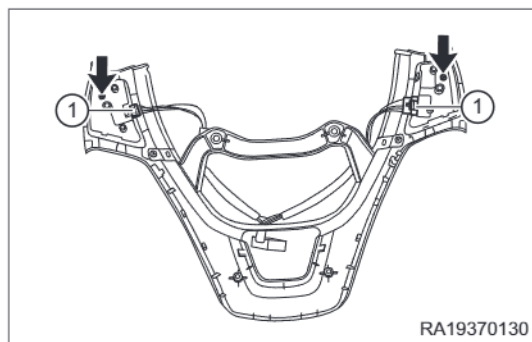
- b. Remove 4 fixing screws (arrow) from the steering wheel quick button cover. (Tightening torque: $1.5 \pm 0.5 \text{ N}\cdot\text{m}$)



- c. Using a screwdriver wrapped with protective tape, pry the clip on steering wheel quick button cover, and remove the steering wheel quick button cover.



5. Remove the steering wheel quick button.
 - a. Disconnect the steering wheel quick button connectors (1).
 - b. Remove 2 fixing screws (arrow) from the steering wheel quick button, and remove the steering wheel quick button.
(Tightening torque: $1 \pm 0.5 \text{ N}\cdot\text{m}$)



37

Inspection

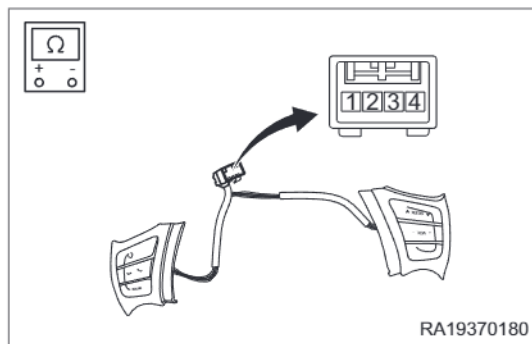
1. Check the steering wheel quick button.
 - a. Using a digital multimeter, measure the resistance of steering wheel quick button according to the table below.

Standard Resistance

Multimeter Connection	Switch Condition	Specified Condition
Terminal 1 - Terminal 2	MUTE	Approximately 0.1 k Ω
Terminal 1 - Terminal 2	SEEK $\vee$	Approximately 0.4 k Ω
Terminal 1 - Terminal 2	SEEK $\wedge$	Approximately 0.79 k Ω
Terminal 1 - Terminal 2	VOL-	Approximately 1.26 k Ω
Terminal 1 - Terminal 2	VOL+	Approximately 1.88 k Ω
Terminal 1 - Terminal 2	MODE	Approximately 2.79 k Ω

If the result is not as specified, replace the steering wheel quick button.

2. Check the steering wheel quick button for damage. Replace it if necessary.
3. Check the steering wheel quick button connector for damage or poor terminal connection. Replace it if necessary.



4. Check for continuity of the wire harness between steering wheel quick button connector and audio unit (radio receiver assembly). Replace it if necessary.

Installation

Installation is in the reverse order of removal.

CAUTION

- Operate carefully to avoid damaging other components when installing the steering wheel quick button.
- Install each connector in place when installing the steering wheel quick button.
- Tighten the fixing screws to the specified torque when installing the steering wheel quick button.

