

# SECTION **AV**

## AUDIO, VISUAL & NAVIGATION SYSTEM

### CONTENTS

|                                                                                                  |    |  |
|--------------------------------------------------------------------------------------------------|----|--|
| <b>BASE AUDIO</b>                                                                                |    |  |
| <b>PRECAUTION</b> .....                                                                          | 5  |  |
| <b>PRECAUTIONS</b> .....                                                                         | 5  |  |
| Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" ..... | 5  |  |
| Precaution for Work .....                                                                        | 5  |  |
| <b>PREPARATION</b> .....                                                                         | 6  |  |
| <b>PREPARATION</b> .....                                                                         | 6  |  |
| Special Service Tools .....                                                                      | 6  |  |
| Commercial Service Tools .....                                                                   | 6  |  |
| <b>SYSTEM DESCRIPTION</b> .....                                                                  | 7  |  |
| <b>COMPONENT PARTS</b> .....                                                                     | 7  |  |
| Component Parts Location .....                                                                   | 7  |  |
| Audio unit .....                                                                                 | 7  |  |
| Speaker .....                                                                                    | 7  |  |
| Rod Antenna, Antenna Amp. and Antenna Feeder .....                                               | 8  |  |
| <b>SYSTEM</b> .....                                                                              | 10 |  |
| System Description .....                                                                         | 10 |  |
| <b>DIAGNOSIS SYSTEM (AUDIO UNIT)</b> .....                                                       | 11 |  |
| Diagnosis Description .....                                                                      | 11 |  |
| On Board Diagnosis Function .....                                                                | 11 |  |
| <b>ECU DIAGNOSIS INFORMATION</b> .....                                                           | 14 |  |
| <b>AUDIO UNIT</b> .....                                                                          | 14 |  |
| Reference Value .....                                                                            | 14 |  |
| <b>WIRING DIAGRAM</b> .....                                                                      | 16 |  |
| <b>BASE AUDIO</b> .....                                                                          | 16 |  |
| Wiring Diagram .....                                                                             | 16 |  |
| <b>BASIC INSPECTION</b> .....                                                                    | 23 |  |
| <b>DIAGNOSIS AND REPAIR WORKFLOW</b> .....                                                       | 23 |  |
| Work Flow .....                                                                                  | 23 |  |
| <b>DTC/CIRCUIT DIAGNOSIS</b> .....                                                               | 25 |  |
| <b>POWER SUPPLY AND GROUND CIRCUIT</b> ....                                                      | 25 |  |
| <b>AUDIO UNIT</b> .....                                                                          | 25 |  |
| AUDIO UNIT : Diagnosis Procedure .....                                                           | 25 |  |
| <b>FRONT DOOR SPEAKER</b> .....                                                                  | 26 |  |
| Diagnosis Procedure .....                                                                        | 26 |  |
| <b>REAR DOOR SPEAKER</b> .....                                                                   | 28 |  |
| Diagnosis Procedure .....                                                                        | 28 |  |
| <b>SYMPTOM DIAGNOSIS</b> .....                                                                   | 30 |  |
| <b>AUDIO SYSTEM</b> .....                                                                        | 30 |  |
| Symptom Table .....                                                                              | 30 |  |
| <b>NORMAL OPERATING CONDITION</b> .....                                                          | 32 |  |
| Description .....                                                                                | 32 |  |
| <b>REMOVAL AND INSTALLATION</b> .....                                                            | 33 |  |
| <b>AUDIO UNIT</b> .....                                                                          | 33 |  |
| Exploded View .....                                                                              | 33 |  |
| Removal and Installation .....                                                                   | 33 |  |
| <b>FRONT DOOR SPEAKER</b> .....                                                                  | 34 |  |
| Removal and Installation .....                                                                   | 34 |  |
| <b>REAR DOOR SPEAKER</b> .....                                                                   | 35 |  |
| Removal and Installation .....                                                                   | 35 |  |
| <b>ROD ANTENNA</b> .....                                                                         | 36 |  |
| Exploded View .....                                                                              | 36 |  |
| Removal and Installation .....                                                                   | 36 |  |
| <b>ANTENNA FEEDER</b> .....                                                                      | 37 |  |
| Feeder Layout .....                                                                              | 37 |  |
| <b>DISPLAY AUDIO</b>                                                                             |    |  |

|                                                                                                  |           |                                                     |           |
|--------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------|-----------|
| <b>PRECAUTION</b> .....                                                                          | <b>38</b> | <b>POWER SUPPLY AND GROUND CIRCUIT</b> ....         | <b>72</b> |
| <b>PRECAUTIONS</b> .....                                                                         | <b>38</b> | <b>AUDIO UNIT</b> .....                             | <b>72</b> |
| Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" ..... | 38        | AUDIO UNIT : Diagnosis Procedure .....              | 72        |
| Precaution for Trouble Diagnosis .....                                                           | 38        | <b>BLUETOOTH® CONTROL UNIT</b> .....                | <b>72</b> |
| Precaution for Harness Repair .....                                                              | 38        | BLUETOOTH® CONTROL UNIT : Diagnosis Procedure ..... | 72        |
| Precaution for Work .....                                                                        | 39        | <b>FRONT DOOR SPEAKER</b> .....                     | <b>74</b> |
| <b>PREPARATION</b> .....                                                                         | <b>40</b> | Diagnosis Procedure .....                           | 74        |
| <b>PREPARATION</b> .....                                                                         | <b>40</b> | <b>REAR DOOR SPEAKER</b> .....                      | <b>76</b> |
| Special Service Tools .....                                                                      | 40        | Diagnosis Procedure .....                           | 76        |
| Commercial Service Tools .....                                                                   | 40        | <b>BLUETOOTH® VOICE SIGNAL CIRCUIT</b> .....        | <b>78</b> |
| <b>SYSTEM DESCRIPTION</b> .....                                                                  | <b>41</b> | Diagnosis Procedure .....                           | 78        |
| <b>COMPONENT PARTS</b> .....                                                                     | <b>41</b> | <b>BLUETOOTH® CONTROL SIGNAL CIRCUIT..</b> ..       | <b>80</b> |
| Component Parts Location .....                                                                   | 41        | Diagnosis Procedure .....                           | 80        |
| Audio Unit .....                                                                                 | 42        | <b>REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT</b> .....  | <b>81</b> |
| Speaker .....                                                                                    | 42        | Diagnosis Procedure .....                           | 81        |
| USB Interface .....                                                                              | 42        | <b>MICROPHONE SIGNAL CIRCUIT</b> .....              | <b>83</b> |
| Bluetooth Control Unit .....                                                                     | 43        | Diagnosis Procedure .....                           | 83        |
| Bluetooth Antenna .....                                                                          | 43        | <b>STEERING SWITCH</b> .....                        | <b>85</b> |
| Steering Switch .....                                                                            | 43        | Diagnosis Procedure .....                           | 85        |
| Microphone .....                                                                                 | 43        | <b>USB CONNECTOR</b> .....                          | <b>87</b> |
| Rear View Camera .....                                                                           | 44        | Diagnosis Procedure .....                           | 87        |
| Rod Antenna, Antenna Amp. and Antenna Feeder .....                                               | 44        | <b>SYMPTOM DIAGNOSIS</b> .....                      | <b>88</b> |
| <b>SYSTEM</b> .....                                                                              | <b>46</b> | <b>AUDIO SYSTEM</b> .....                           | <b>88</b> |
| System Description .....                                                                         | 46        | Symptom Table .....                                 | 88        |
| <b>DIAGNOSIS SYSTEM (AUDIO UNIT)</b> .....                                                       | <b>48</b> | <b>NORMAL OPERATING CONDITION</b> .....             | <b>91</b> |
| Description .....                                                                                | 48        | Description .....                                   | 91        |
| On Board Diagnosis Function .....                                                                | 48        | <b>REMOVAL AND INSTALLATION</b> .....               | <b>93</b> |
| <b>DIAGNOSIS SYSTEM (BLUETOOTH® CONTROL UNIT)</b> .....                                          | <b>53</b> | <b>AUDIO UNIT</b> .....                             | <b>93</b> |
| Diagnosis Description .....                                                                      | 53        | Exploded View .....                                 | 93        |
| Work Flow .....                                                                                  | 53        | Removal and Installation .....                      | 93        |
| <b>ECU DIAGNOSIS INFORMATION</b> .....                                                           | <b>54</b> | <b>FRONT DOOR SPEAKER</b> .....                     | <b>94</b> |
| <b>AUDIO UNIT</b> .....                                                                          | <b>54</b> | Removal and Installation .....                      | 94        |
| Reference Value .....                                                                            | 54        | <b>REAR DOOR SPEAKER</b> .....                      | <b>95</b> |
| <b>BLUETOOTH® CONTROL UNIT</b> .....                                                             | <b>57</b> | Removal and Installation .....                      | 95        |
| Reference Value .....                                                                            | 57        | <b>USB INTERFACE</b> .....                          | <b>96</b> |
| <b>WIRING DIAGRAM</b> .....                                                                      | <b>59</b> | Removal and Installation .....                      | 96        |
| <b>DISPLAY AUDIO</b> .....                                                                       | <b>59</b> | <b>REAR VIEW CAMERA</b> .....                       | <b>97</b> |
| Wiring Diagram .....                                                                             | 59        | Removal and Installation .....                      | 97        |
| <b>BASIC INSPECTION</b> .....                                                                    | <b>70</b> | <b>BLUETOOTH® CONTROL UNIT</b> .....                | <b>98</b> |
| <b>DIAGNOSIS AND REPAIR WORKFLOW</b> .....                                                       | <b>70</b> | Removal and Installation .....                      | 98        |
| Work Flow .....                                                                                  | 70        | <b>BLUETOOTH® ANTENNA</b> .....                     | <b>99</b> |
| <b>DTC/CIRCUIT DIAGNOSIS</b> .....                                                               | <b>72</b> |                                                     |           |

|                                              |            |                                              |            |    |
|----------------------------------------------|------------|----------------------------------------------|------------|----|
| Removal and Installation .....               | 99         | <b>NAVIGATION SYSTEM .....</b>               | <b>121</b> |    |
| <b>STEERING SWITCH .....</b>                 | <b>100</b> | Wiring Diagram .....                         | 121        | A  |
| Removal and Installation .....               | 100        | <b>BASIC INSPECTION .....</b>                | <b>132</b> |    |
| <b>MICROPHONE .....</b>                      | <b>101</b> | <b>DIAGNOSIS AND REPAIR WORKFLOW .....</b>   | <b>132</b> | B  |
| Removal and Installation .....               | 101        | Work Flow .....                              | 132        |    |
| <b>ROD ANTENNA .....</b>                     | <b>102</b> | <b>INSPECTION AND ADJUSTMENT .....</b>       | <b>134</b> | C  |
| Exploded View .....                          | 102        | <b>ADDITIONAL SERVICE WHEN REPLACING AV</b>  |            |    |
| Removal and Installation .....               | 102        | <b>CONTROL UNIT .....</b>                    | <b>134</b> | D  |
| <b>ANTENNA FEEDER .....</b>                  | <b>103</b> | ADDITIONAL SERVICE WHEN REPLACING AV         |            |    |
| Feeder Layout .....                          | 103        | CONTROL UNIT : Description .....             | 134        |    |
| <b>NAVIGATION</b>                            |            | ADDITIONAL SERVICE WHEN REPLACING AV         |            |    |
| <b>PRECAUTION .....</b>                      | <b>104</b> | CONTROL UNIT : Work Procedure .....          | 134        | E  |
| <b>PRECAUTIONS .....</b>                     | <b>104</b> | <b>CONFIGURATION (AV CONTROL UNIT) .....</b> | <b>134</b> |    |
| Precaution for Supplemental Restraint System |            | CONFIGURATION (AV CONTROL UNIT) : De-        |            |    |
| (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-      |            | scription .....                              | 135        | F  |
| SIONER" .....                                | 104        | CONFIGURATION (AV CONTROL UNIT) : Work       |            |    |
| Precaution for Trouble Diagnosis .....       | 104        | Procedure .....                              | 135        |    |
| Precaution for Harness Repair .....          | 104        | CONFIGURATION (AV CONTROL UNIT) : Con-       |            | G  |
| Precaution for Work .....                    | 105        | figuration List .....                        | 136        |    |
| <b>PREPARATION .....</b>                     | <b>106</b> | <b>DTC/CIRCUIT DIAGNOSIS .....</b>           | <b>137</b> | H  |
| <b>PREPARATION .....</b>                     | <b>106</b> | <b>U1000 CAN COMM CIRCUIT .....</b>          | <b>137</b> |    |
| Special Service Tools .....                  | 106        | DTC Logic .....                              | 137        |    |
| Commercial Service Tools .....               | 106        | Diagnosis Procedure .....                    | 137        | I  |
| <b>SYSTEM DESCRIPTION .....</b>              | <b>107</b> | <b>U1010 CONTROL UNIT (CAN) .....</b>        | <b>138</b> |    |
| <b>COMPONENT PARTS .....</b>                 | <b>107</b> | DTC Logic .....                              | 138        | J  |
| Component Parts Location .....               | 107        | <b>U1217 AV CONTROL UNIT .....</b>           | <b>139</b> |    |
| AV Control Unit .....                        | 107        | DTC Logic .....                              | 139        |    |
| Speaker .....                                | 108        | <b>U1229 AV CONTROL UNIT .....</b>           | <b>140</b> | K  |
| USB Interface and AUX In Jack .....          | 108        | DTC Logic .....                              | 140        |    |
| Steering Switch .....                        | 109        | <b>U122F AV CONTROL UNIT .....</b>           | <b>141</b> | L  |
| Microphone .....                             | 109        | DTC Logic .....                              | 141        |    |
| Rear View Camera .....                       | 109        | <b>U1244 GPS ANTENNA .....</b>               | <b>142</b> | M  |
| Rod Antenna, Antenna Amp. and Antenna Feeder |            | DTC Logic .....                              | 142        |    |
| ..                                           | 109        | Diagnosis Procedure .....                    | 142        |    |
| GPS Antenna .....                            | 110        | <b>U1263 USB .....</b>                       | <b>143</b> | AV |
| SD Card .....                                | 110        | DTC Logic .....                              | 143        |    |
| <b>SYSTEM .....</b>                          | <b>111</b> | Diagnosis Procedure .....                    | 143        |    |
| System Description .....                     | 111        | <b>U1264 ANTENNA AMP. ....</b>               | <b>144</b> | O  |
| <b>DIAGNOSIS SYSTEM (AV CONTROL UNIT) ..</b> | <b>115</b> | DTC Logic .....                              | 144        |    |
| Description .....                            | 115        | Diagnosis Procedure .....                    | 144        |    |
| On Board Diagnosis Function .....            | 115        | <b>U12AA CONFIGURATION ERROR .....</b>       | <b>145</b> | P  |
| CONSULT Function .....                       | 116        | DTC Logic .....                              | 145        |    |
| <b>ECU DIAGNOSIS INFORMATION .....</b>       | <b>117</b> | Diagnosis Procedure .....                    | 145        |    |
| <b>AV CONTROL UNIT .....</b>                 | <b>117</b> | <b>U12AC AV CONTROL UNIT .....</b>           | <b>146</b> |    |
| Reference Value .....                        | 117        | DTC Logic .....                              | 146        |    |
| DTC Index .....                              | 120        | <b>U12AD AV CONTROL UNIT .....</b>           | <b>147</b> |    |
| <b>WIRING DIAGRAM .....</b>                  | <b>121</b> |                                              |            |    |

|                                                          |            |                                         |            |
|----------------------------------------------------------|------------|-----------------------------------------|------------|
| DTC Logic .....                                          | 147        | <b>SYMPTOM DIAGNOSIS .....</b>          | <b>166</b> |
| <b>U12AE AV CONTROL UNIT .....</b>                       | <b>148</b> | <b>MULTI AV SYSTEM .....</b>            | <b>166</b> |
| DTC Logic .....                                          | 148        | Symptom Table .....                     | 166        |
| <b>U12AF AV CONTROL UNIT .....</b>                       | <b>149</b> | <b>NORMAL OPERATING CONDITION .....</b> | <b>169</b> |
| DTC Logic .....                                          | 149        | Description .....                       | 169        |
| <b>U12B0 POWER SUPPLY VOLTAGE .....</b>                  | <b>150</b> | <b>REMOVAL AND INSTALLATION .....</b>   | <b>178</b> |
| DTC Logic .....                                          | 150        | <b>AV CONTROL UNIT .....</b>            | <b>178</b> |
| Diagnosis Procedure .....                                | 150        | Removal and Installation .....          | 178        |
| <b>U12B1 POWER SUPPLY VOLTAGE .....</b>                  | <b>151</b> | <b>FRONT DOOR SPEAKER .....</b>         | <b>179</b> |
| DTC Logic .....                                          | 151        | Removal and Installation .....          | 179        |
| Diagnosis Procedure .....                                | 151        | <b>REAR DOOR SPEAKER .....</b>          | <b>180</b> |
| <b>U1310 AV CONTROL UNIT .....</b>                       | <b>152</b> | Removal and Installation .....          | 180        |
| DTC Logic .....                                          | 152        | <b>USB INTERFACE .....</b>              | <b>181</b> |
| <b>POWER SUPPLY AND GROUND CIRCUIT ..</b>                | <b>153</b> | Removal and Installation .....          | 181        |
| <b>AV CONTROL UNIT .....</b>                             | <b>153</b> | <b>AUXILIARY INPUT JACK .....</b>       | <b>182</b> |
| AV CONTROL UNIT : Diagnosis Procedure .....              | 153        | Removal and Installation .....          | 182        |
| <b>FRONT DOOR SPEAKER .....</b>                          | <b>154</b> | <b>STEERING SWITCH .....</b>            | <b>183</b> |
| Diagnosis Procedure .....                                | 154        | Removal and Installation .....          | 183        |
| <b>REAR DOOR SPEAKER .....</b>                           | <b>156</b> | <b>MICROPHONE .....</b>                 | <b>184</b> |
| Diagnosis Procedure .....                                | 156        | Removal and Installation .....          | 184        |
| <b>REAR VIEW CAMERA IMAGE SIGNAL CIR-<br/>CUIT .....</b> | <b>158</b> | <b>REAR VIEW CAMERA .....</b>           | <b>185</b> |
| Diagnosis Procedure .....                                | 158        | Removal and Installation .....          | 185        |
| <b>MICROPHONE SIGNAL CIRCUIT .....</b>                   | <b>160</b> | <b>GPS ANTENNA .....</b>                | <b>186</b> |
| Diagnosis Procedure .....                                | 160        | Removal and Installation .....          | 186        |
| <b>STEERING SWITCH .....</b>                             | <b>162</b> | <b>ROD ANTENNA .....</b>                | <b>187</b> |
| Diagnosis Procedure .....                                | 162        | Exploded View .....                     | 187        |
| <b>USB CONNECTOR .....</b>                               | <b>164</b> | Removal and Installation .....          | 187        |
| Diagnosis Procedure .....                                | 164        | <b>ANTENNA FEEDER .....</b>             | <b>188</b> |
| <b>AUXILIARY INPUT JACK .....</b>                        | <b>165</b> | Feeder Layout .....                     | 188        |
| Diagnosis Procedure .....                                | 165        |                                         |            |

## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009640319

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

#### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### **WARNING:**

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

#### Precaution for Work

INFOID:000000009640320

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:
    - Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
    - Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
    - Then rub with a soft, dry cloth.
  - Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
  - For genuine leather seats, use a genuine leather seat cleaner.

# PREPARATION

< PREPARATION >

[BASE AUDIO]

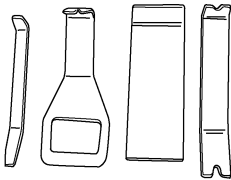
## PREPARATION

### PREPARATION

#### Special Service Tools

INFOID:000000009640321

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

| Tool number<br>(Kent-Moore No.)<br>Tool name                                                     | Description              |
|--------------------------------------------------------------------------------------------------|--------------------------|
| —<br>(J-46534)<br>Trim Tool Set                                                                  | Removing trim components |
| <br>AWJIA0483ZZ |                          |

#### Commercial Service Tools

INFOID:000000009640322

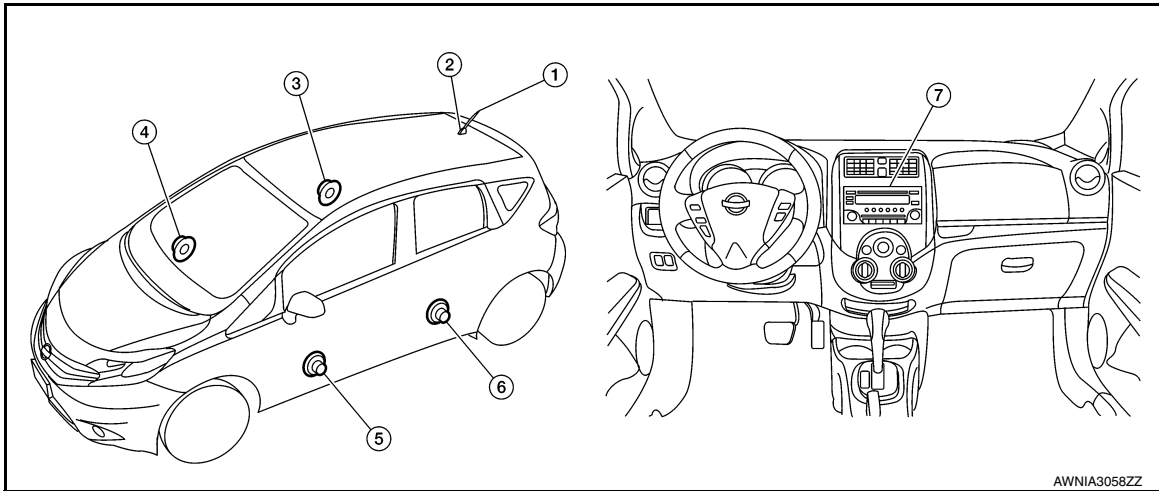
| Tool name                                                                                       | Description                      |
|-------------------------------------------------------------------------------------------------|----------------------------------|
| Power tool                                                                                      | Loosening nuts, screws and bolts |
| <br>PIIB1407E |                                  |

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:0000000009509282



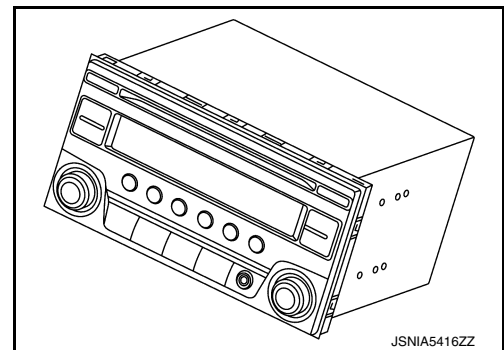
| No. | Component                   | Function                                                                        |
|-----|-----------------------------|---------------------------------------------------------------------------------|
| 1.  | Rod antenna                 | Refer to <a href="#">AV-8. "Rod Antenna, Antenna Amp. and Antenna Feeder"</a> . |
| 2.  | Antenna base (antenna amp.) |                                                                                 |
| 3.  | Rear door speaker RH        | Refer to <a href="#">AV-7. "Speaker"</a> .                                      |
| 4.  | Front door speaker RH       |                                                                                 |
| 5.  | Front door speaker LH       |                                                                                 |
| 6.  | Rear door speaker LH        | Refer to <a href="#">AV-7. "Audio unit"</a> .                                   |
| 7.  | Audio unit                  |                                                                                 |

#### Audio unit

INFOID:0000000009509278

#### DESCRIPTION

- AM/FM electronic tuner radio, CD player, and auxiliary input jack are integrated into the audio unit.
- The audio unit supports CD-R/CD-RW and provides the playback of MP3/WMA music files.



#### Speaker

INFOID:0000000009509279

#### FRONT DOOR SPEAKER

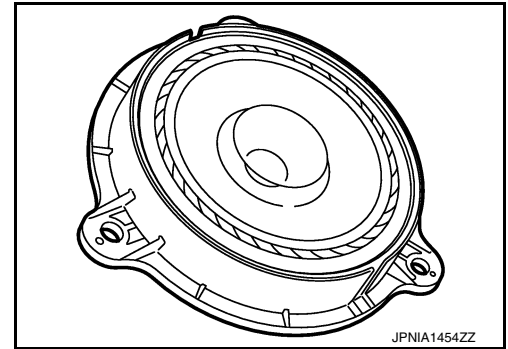
- 16.5 cm (6.5 in) speakers are installed in the bottom of the front doors.

## COMPONENT PARTS

### < SYSTEM DESCRIPTION >

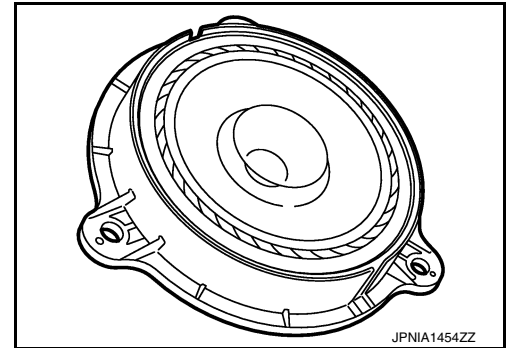
[BASE AUDIO]

- Sound signals are input from the audio unit to output high, mid and low range sounds.



### REAR DOOR SPEAKER

- 16.5 cm (6.5 in) speakers are installed in the bottom of the rear doors.
- Sound signals are input from the audio unit to output high, mid and low range sounds.

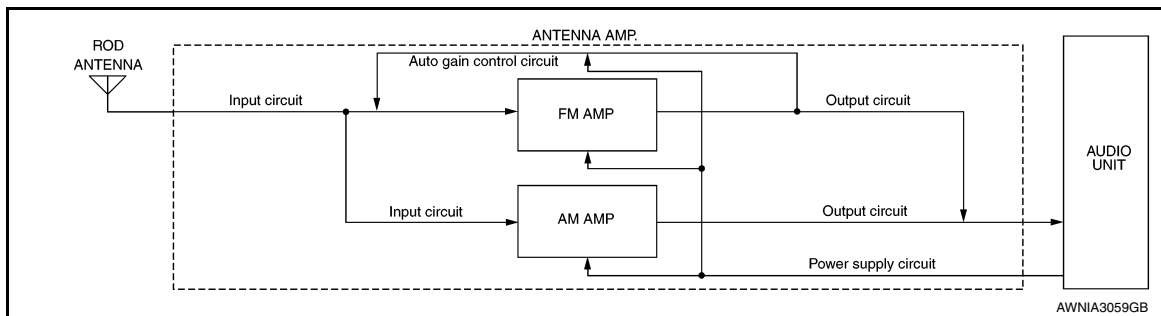


### Rod Antenna, Antenna Amp. and Antenna Feeder

INFOID:000000009509280

### RADIO ANTENNA

AM/FM radio rod antenna and antenna base is located on the rear of the roof. The antenna amp. is built into the antenna base.

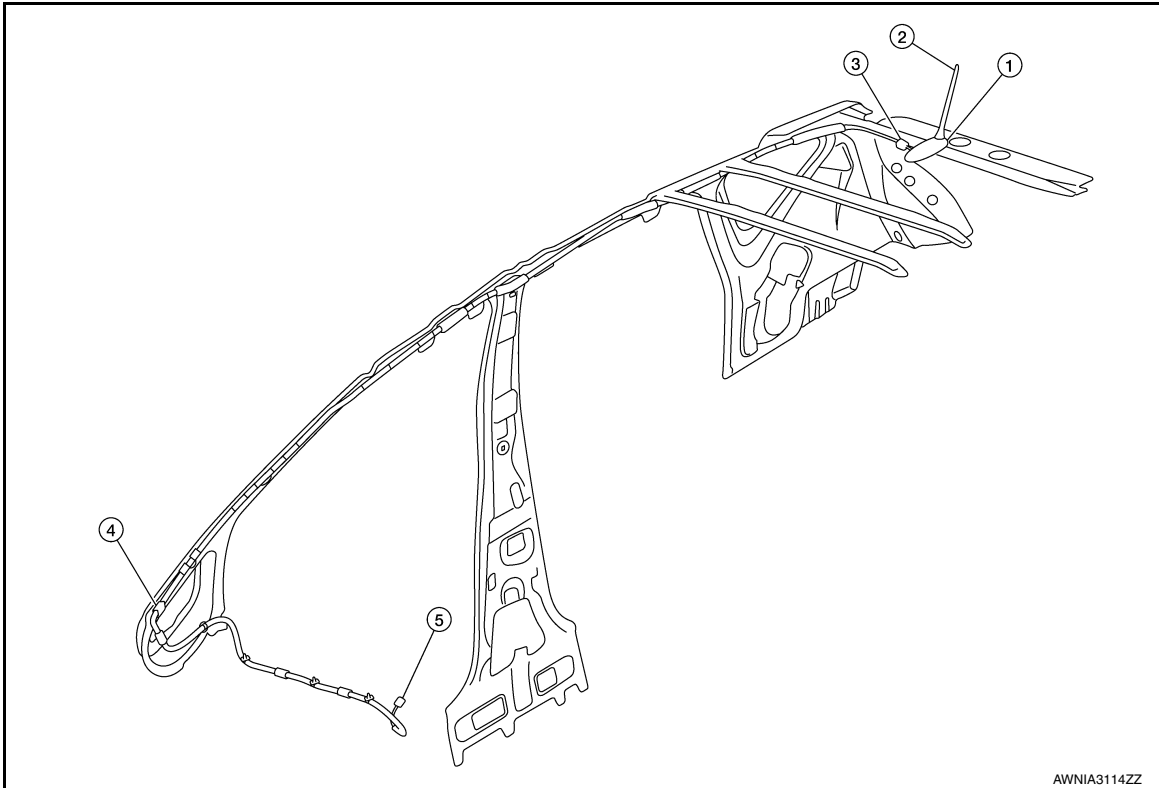


### ANTENNA FEEDER LAYOUT

## COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BASE AUDIO]



- |                                |                |         |
|--------------------------------|----------------|---------|
| 1. Antenna base (antenna amp.) | 2. Rod Antenna | 3. M351 |
| 4. M67, M350                   | 5. M106        |         |

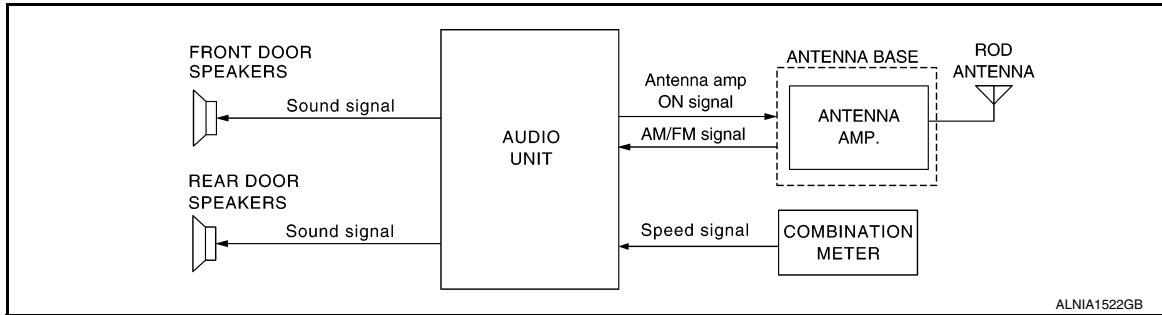
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
AV  
O  
P

## SYSTEM

### System Description

INFOID:000000009460105

### SYSTEM DIAGRAM



### AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Front door speakers
- Rear door speakers
- Antenna amp.
- Rod antenna

When the audio system is on, AM/FM signals received by the rod antenna are amplified by the antenna amp. and sent to the audio unit. The audio unit then sends audio signals to the front door speakers and rear door speakers.

Refer to Owner's Manual for audio system operating instructions.

### SPEED SENSITIVE VOLUME SYSTEM

Volume level of this system goes up and down automatically in proportion to the vehicle speed. The control level can be selected by the customer. Refer to Owner's Manual for operating instructions.

DIAGNOSIS SYSTEM (AUDIO UNIT)

Diagnosis Description

INFOID:000000009460106

The audio unit on board diagnosis performs the functions listed in the table below:

| Mode                       | Description                                                                                                                                                                       |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hardware/Software Versions | The following information is available for the audio unit: <ul style="list-style-type: none"><li>• hardware version.</li><li>• software version.</li><li>• EQ pin info.</li></ul> |
| Speaker Channel Check      | The connection of the speakers to the audio unit can be confirmed.                                                                                                                |
| Communication Diagnosis    | The AV communication (M-CAN) message history can be monitored.                                                                                                                    |

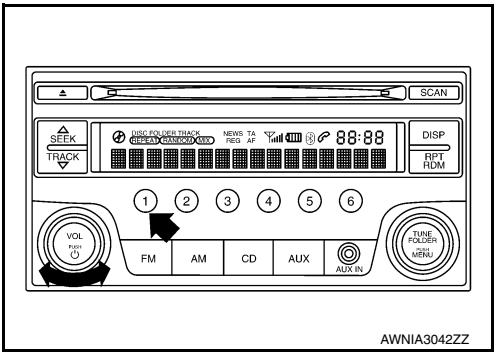
On Board Diagnosis Function

INFOID:000000009460107

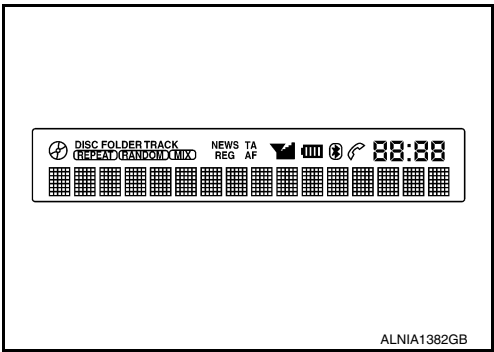
METHOD OF STARTING

Hardware/Software Versions and Speaker Channel Check

1. Turn the ignition ON.
2. Turn the audio system OFF.
3. While pressing the preset 1 button, turn the volume control dial clockwise or counterclockwise 30 clicks or more.



4. Initially, all display segments will be illuminated.



5. To exit hardware/software versions and speaker channel check, turn the ignition OFF.

Communication Diagnosis

1. Turn the ignition ON.
2. Turn the audio system OFF.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
AV  
O  
P

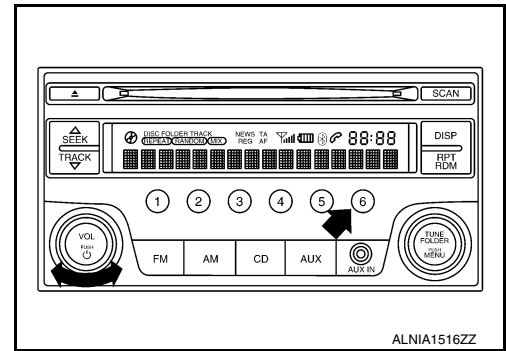
AV

# DIAGNOSIS SYSTEM (AUDIO UNIT)

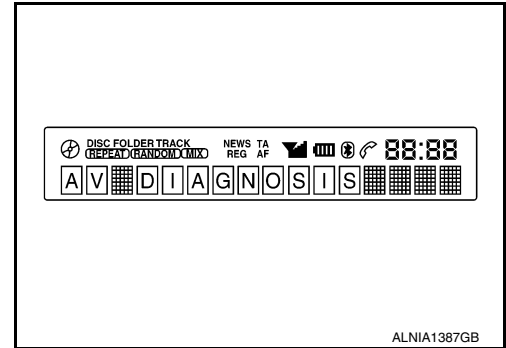
[BASE AUDIO]

## < SYSTEM DESCRIPTION >

- While pressing the preset 6 button, turn the volume control dial clockwise or counterclockwise 30 clicks or more.



- Initially, the communication diagnosis mode is displayed.

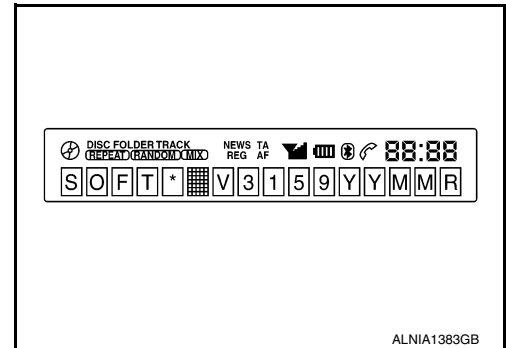


- To exit communication diagnosis, turn the ignition OFF.

## SELF DIAGNOSIS MODE

### Hardware/Software Versions

- Press the DISP button to enter versions display, and the audio head unit software version is displayed.



- With each additional press of the DISP button, the following information is available:

- HARD V##### (hardware version)
- EEP V##### (EEPROM version)
- @@@@ EQ1-4 # (EQ pin info)

If an EQ error is present, INVALID EQ is displayed

- Hold the DISP button down to return to all display segments screen.

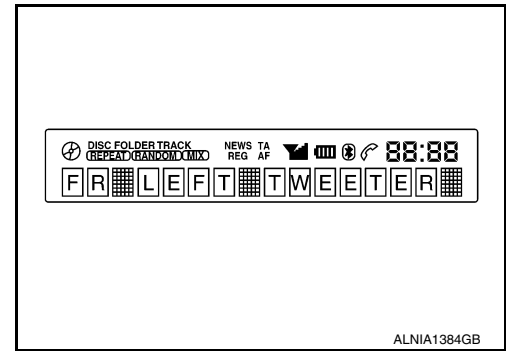
### Speaker Channel Check

# DIAGNOSIS SYSTEM (AUDIO UNIT)

## < SYSTEM DESCRIPTION >

[BASE AUDIO]

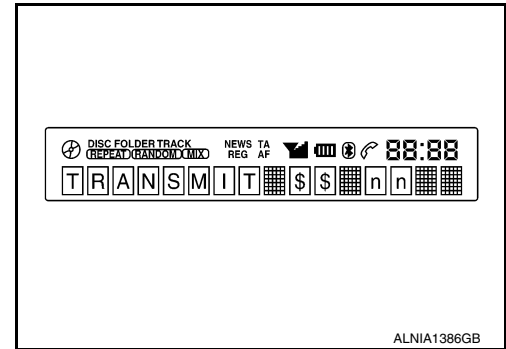
1. Press the RPT/DRM button to enter speaker channel check, and the front left tweeter (front tweeter LH) is displayed.



2. With each additional press of the RPT/DRM button, the following information is available:
  - FR RIGHT TWEETER (front tweeter RH)
  - FR RIGHT (front door speaker RH)
  - RR RIGHT (rear speaker RH)
  - RR LEFT (rear speaker LH)
  - FR LEFT (front door speaker LH)
3. Hold the RPT/DRM button down to return to all display segments screen.

### Communication Diagnosis

1. Press the DISP button, and the M-CAN message transmission error history screen is displayed.



2. Press the DISP button again, and the TEL \$ \$ n n (CMF message reception error history from M-CAN TEL) screen is displayed.
3. Press the DISP button again, and the TROUBLE DEL. (deletion of M-CAN message communication history) screen is displayed. To retain the M-CAN message communication history and return to the communication diagnosis mode screen, press the DISP button.
4. To proceed to the M-CAN message communication history deletion screen, press the SEEK/TRACK  $\Delta$  button. The REC DEL-NO? (selection of M-CAN message communication history deletion) screen is displayed. To cancel M-CAN message communication history deletion, wait 6 seconds and you will be returned to the TROUBLE DEL. (deletion of M-CAN message communication history) screen. To proceed with M-CAN message communication history deletion, press the SEEK/TRACK  $\Delta$  button again.
5. The REC DEL-YES?@ (selection of M-CAN message communication history deletion) screen is displayed. To cancel M-CAN message communication history deletion, press the SEEK/TRACK  $\nabla$  button and you will be returned to the REC DEL-NO? (selection of M-CAN message communication history deletion) screen. To proceed with M-CAN message communication history deletion, wait 6 seconds and the communication history deletion will be executed. After the communication history deletion has been executed, you will be returned to the TROUBLE DEL. (deletion of M-CAN message communication history) screen. To return to the communication diagnosis mode screen, press the DISP button.

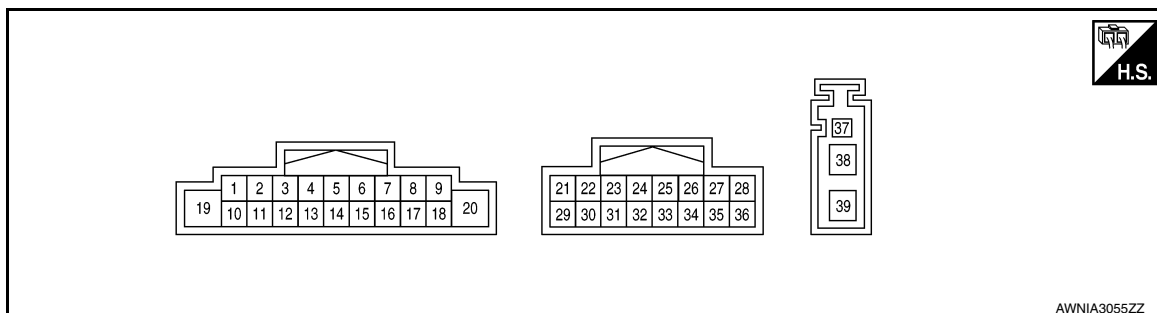
## ECU DIAGNOSIS INFORMATION

### AUDIO UNIT

#### Reference Value

INFOID:000000009460110

#### TERMINAL LAYOUT



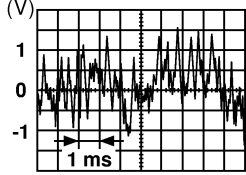
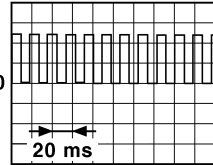
#### PHYSICAL VALUES

| Terminal<br>(Wire color) |           | Description                      |                  | Condition          |               | Reference value<br>(Approx.) |
|--------------------------|-----------|----------------------------------|------------------|--------------------|---------------|------------------------------|
| +                        | –         | Signal name                      | Input/<br>Output | Ignition<br>switch | Operation     |                              |
| 2<br>(GR)                | 3<br>(P)  | Sound signal front speaker<br>LH | Output           | ON                 | Sound output. | <p>SKIA0177E</p>             |
| 4<br>(W)                 | 5<br>(R)  | Sound signal rear speaker<br>LH  | Output           | ON                 | Sound output. | <p>SKIA0177E</p>             |
| 7<br>(W)                 | Ground    | ACC power supply                 | Input            | ACC                | —             | Battery voltage              |
| 9<br>(LG/R)              | Ground    | Illumination control signal      | Input            | ON                 | Headlamps ON. | Battery voltage              |
| 11<br>(O)                | 12<br>(V) | Sound signal front speaker<br>RH | Output           | ON                 | Sound output. | <p>SKIA0177E</p>             |

# AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO]

| Terminal<br>(Wire color) |           | Description                     |                  | Condition          |                                                 | Reference value<br>(Approx.)                                                        |
|--------------------------|-----------|---------------------------------|------------------|--------------------|-------------------------------------------------|-------------------------------------------------------------------------------------|
| +                        | —         | Signal name                     | Input/<br>Output | Ignition<br>switch | Operation                                       |                                                                                     |
| 13<br>(L)                | 14<br>(Y) | Sound signal rear speaker<br>RH | Output           | ON                 | Sound output.                                   |  |
| 18<br>(LG)               | Ground    | Vehicle speed signal            | Input            | ON                 | When vehicle speed is approx. 40 km/h (25 MPH). |  |
| 19<br>(Y)                | Ground    | Battery power supply            | Input            | OFF                | —                                               | Battery voltage                                                                     |
| 21<br>(B/W)              | Ground    | EQ1 Ground                      | —                | ON                 | —                                               | 0 V                                                                                 |
| 23<br>(B)                | Ground    | EQ3 Ground                      | —                | ON                 | —                                               | 0 V                                                                                 |
| 37<br>(B)                | Ground    | Antenna amp. ON signal          | Output           | ON                 | Audio unit ON, AM or FM selected.               | Battery voltage                                                                     |
| 38<br>(B)                | Ground    | AM/FM antenna signal            | Input            | ON                 | Audio unit ON, AM or FM selected.               | 5.0 V                                                                               |

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M

AV

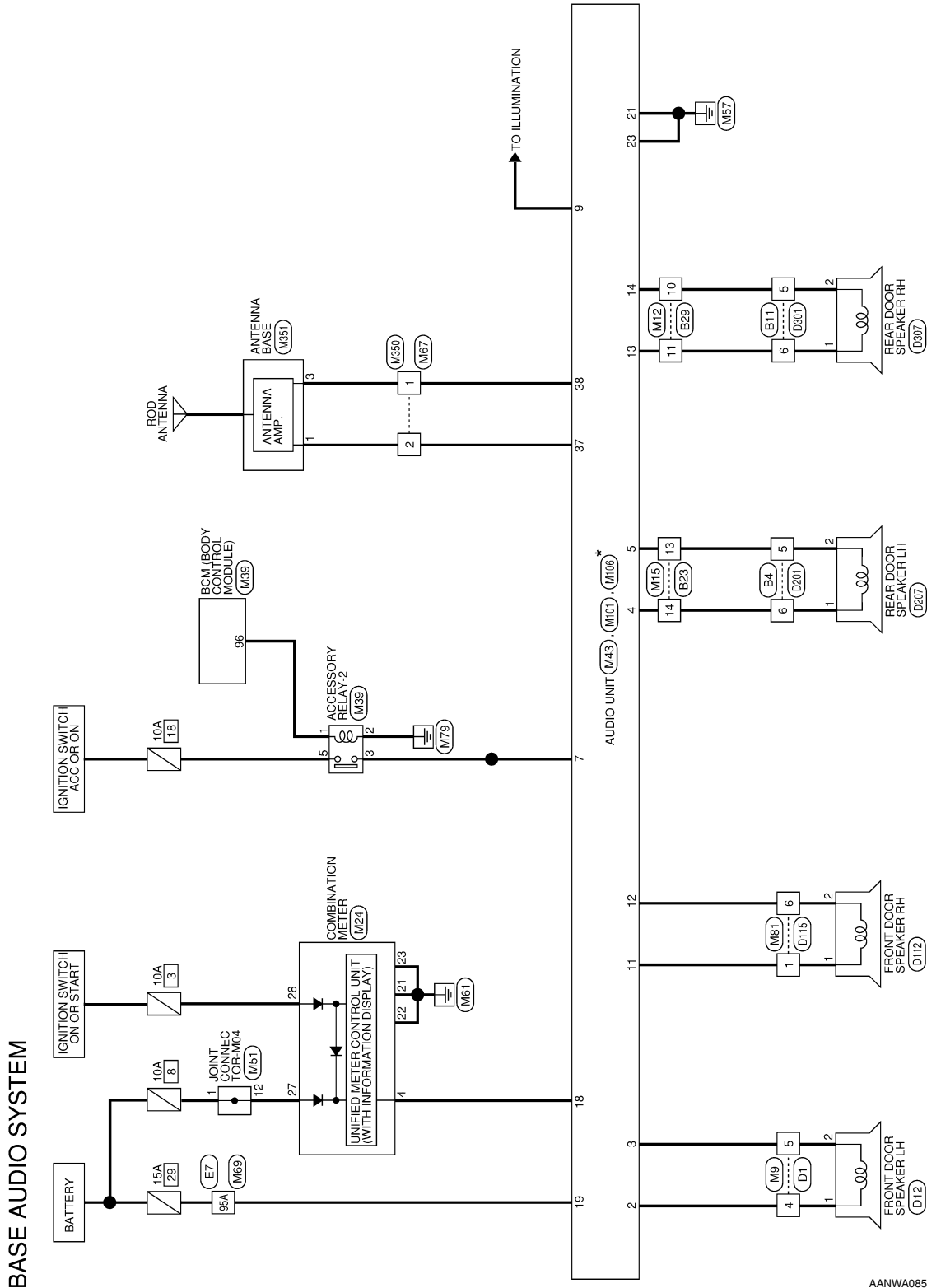
O  
P

# WIRING DIAGRAM

## BASE AUDIO

### Wiring Diagram

INFOID:000000009460112



\* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

AANWA0858GB

## BASE AUDIO SYSTEM CONNECTORS

|                 |              |
|-----------------|--------------|
| Connector No.   | M9           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

|   |   |   |   |    |    |    |
|---|---|---|---|----|----|----|
| 1 | 2 | 3 | 4 | 5  |    |    |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | GR            | —           |
| 5            | P             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M12          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

|    |    |    |    |    |    |    |   |   |
|----|----|----|----|----|----|----|---|---|
| 7  | 6  | 5  | 4  | 3  | 2  | 1  |   |   |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10           | Y             | —           |
| 11           | L             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M15          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

|    |    |    |    |    |    |    |   |   |
|----|----|----|----|----|----|----|---|---|
| 7  | 6  | 5  | 4  | 3  | 2  | 1  |   |   |
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 13           | R             | —           |
| 14           | W             | —           |

|                 |                   |
|-----------------|-------------------|
| Connector No.   | M24               |
| Connector Name  | COMBINATION METER |
| Connector Color | WHITE             |



|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9  | 8  | 7  | 6  | 5  | 4  | 3  | 2  | 1  |
| 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 |

| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 4            | LG            | 8P/R          |
| 21           | B             | GND (ILL)     |
| 22           | B             | GND (POWER)   |
| 23           | B             | GND (CIRCUIT) |
| 27           | R/W           | BAT           |
| 28           | GR            | IGN           |

|                 |                   |
|-----------------|-------------------|
| Connector No.   | M39               |
| Connector Name  | ACCESSORY RELAY-2 |
| Connector Color | BLUE              |



|   |   |
|---|---|
| 3 | 5 |
| 2 | 1 |

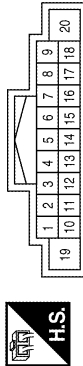
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | SB            | —           |
| 2            | B             | —           |
| 3            | L             | —           |
| 5            | O             | —           |

# BASE AUDIO

< WIRING DIAGRAM >

[BASE AUDIO]

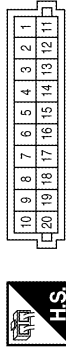
|                 |                                     |
|-----------------|-------------------------------------|
| Connector No.   | M43                                 |
| Connector Name  | AUDIO UNIT (WITH BASE AUDIO SYSTEM) |
| Connector Color | WHITE                               |



| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 1            | —             | —            |
| 2            | GR            | FR SP LH (+) |
| 3            | P             | FR SP LH (-) |
| 4            | W             | RR SP LH (+) |
| 5            | R             | RR SP LH (-) |
| 6            | —             | —            |

| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 7            | W             | ACC          |
| 8            | —             | —            |
| 9            | LG/R          | ILL (+)      |
| 10           | —             | —            |
| 11           | O             | FR SP RH (+) |
| 12           | V             | FR SP RH (-) |
| 13           | L             | RR SP RH (+) |
| 14           | Y             | RR SP RH (-) |
| 15           | —             | —            |
| 16           | —             | —            |
| 17           | —             | —            |
| 18           | LG            | SPEED SIGNAL |
| 19           | Y             | BAT          |
| 20           | —             | —            |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M51                 |
| Connector Name  | JOINT CONNECTOR-M04 |
| Connector Color | GRAY                |



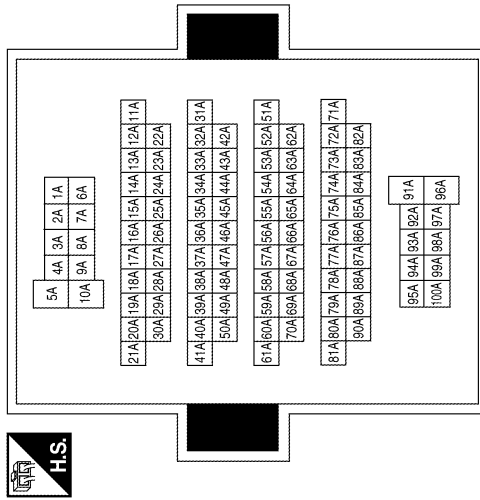
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | —           |
| 12           | R/W           | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M67          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | —           |
| 2            | B             | —           |

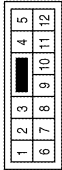
|                 |              |
|-----------------|--------------|
| Connector No.   | M69          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 95A          | Y             | —           |

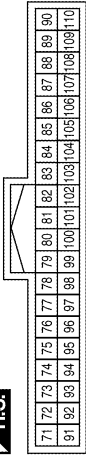
AAANIA1705GB

|                 |              |
|-----------------|--------------|
| Connector No.   | M81          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



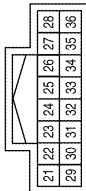
|              |               |             |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 1            | O             | -           |
| 6            | V             | -           |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M98                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE                     |



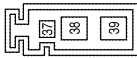
|              |               |                  |
|--------------|---------------|------------------|
| Terminal No. | Color of Wire | Signal Name      |
| 96           | SB            | ACC RELAY OUTPUT |

|                 |                                     |
|-----------------|-------------------------------------|
| Connector No.   | M101                                |
| Connector Name  | AUDIO UNIT (WITH BASE AUDIO SYSTEM) |
| Connector Color | WHITE                               |



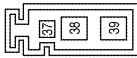
|              |               |             |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 21           | BW            | EQ1         |
| 22           | -             | -           |
| 23           | B             | EQ3         |
| 24           | -             | -           |
| 25           | -             | -           |
| 26           | -             | -           |
| 27           | -             | -           |

|                 |                                     |
|-----------------|-------------------------------------|
| Connector No.   | M106                                |
| Connector Name  | AUDIO UNIT (WITH BASE AUDIO SYSTEM) |
| Connector Color | GRAY                                |



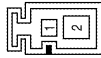
|              |               |             |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 28           | -             | -           |
| 29           | -             | -           |
| 30           | -             | -           |
| 31           | -             | -           |
| 32           | -             | -           |
| 33           | -             | -           |
| 34           | -             | -           |
| 35           | -             | -           |
| 36           | -             | -           |

|                 |                                     |
|-----------------|-------------------------------------|
| Connector No.   | M106                                |
| Connector Name  | AUDIO UNIT (WITH BASE AUDIO SYSTEM) |
| Connector Color | GRAY                                |



|              |               |                |
|--------------|---------------|----------------|
| Terminal No. | Color of Wire | Signal Name    |
| 37           | B             | ANT +B         |
| 38           | B             | ANTENNA SIGNAL |
| 39           | -             | -              |

|                 |              |
|-----------------|--------------|
| Connector No.   | M350         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |



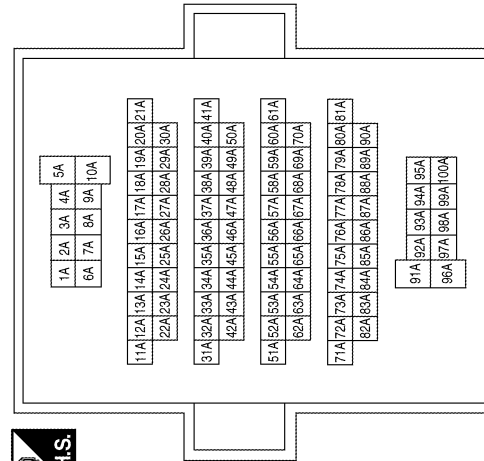
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | —           |
| 2            | B             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M351         |
| Connector Name  | ANTENNA BASE |
| Connector Color | GRAY         |



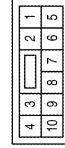
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | —           |
| 2            | —             | —           |
| 3            | B             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E7           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 95A          | LG            | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B11          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | GR            | —           |
| 6            | LG            | —           |

AANIA1707GB

|                 |              |
|-----------------|--------------|
| Connector No.   | D1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |   |   |
|----|----|----|---|---|
| 5  | 4  | 3  | 2 | 1 |
| 12 | 11 | 10 | 9 | 8 |
| 7  | 6  |    |   |   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | GR            | —           |
| 5            | P             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B29          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| 8  | 9  | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 |    |    |    |    |    |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10           | GR            | —           |
| 11           | LG            | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B23          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| 8  | 9  | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 |    |    |    |    |    |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 13           | R             | —           |
| 14           | W             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | D115         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |   |   |
|----|----|----|---|---|
| 5  | 4  | 3  | 2 | 1 |
| 12 | 11 | 10 | 9 | 8 |
| 7  | 6  |    |   |   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | —           |
| 6            | P             | —           |

|                 |                       |
|-----------------|-----------------------|
| Connector No.   | D112                  |
| Connector Name  | FRONT DOOR SPEAKER RH |
| Connector Color | WHITE                 |



|   |   |
|---|---|
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | —           |
| 2            | P             | —           |

|                 |                       |
|-----------------|-----------------------|
| Connector No.   | D12                   |
| Connector Name  | FRONT DOOR SPEAKER LH |
| Connector Color | WHITE                 |



|   |   |
|---|---|
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | —           |
| 2            | P             | —           |

AANIA1708GB

|                 |              |
|-----------------|--------------|
| Connector No.   | D301         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|   |    |   |   |
|---|----|---|---|
| 1 | 2  | 3 | 4 |
| 5 | 6  | 7 | 8 |
| 9 | 10 |   |   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | R             | —           |
| 6            | W             | —           |

|                 |                      |
|-----------------|----------------------|
| Connector No.   | D207                 |
| Connector Name  | REAR DOOR SPEAKER LH |
| Connector Color | WHITE                |



|   |   |
|---|---|
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | W             | —           |
| 2            | R             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | D201         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|   |    |   |   |
|---|----|---|---|
| 1 | 2  | 3 | 4 |
| 5 | 6  | 7 | 8 |
| 9 | 10 |   |   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | R             | —           |
| 6            | W             | —           |

|                 |                      |
|-----------------|----------------------|
| Connector No.   | D307                 |
| Connector Name  | REAR DOOR SPEAKER RH |
| Connector Color | WHITE                |



|   |   |
|---|---|
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | W             | —           |
| 2            | R             | —           |

AANIA1709GB

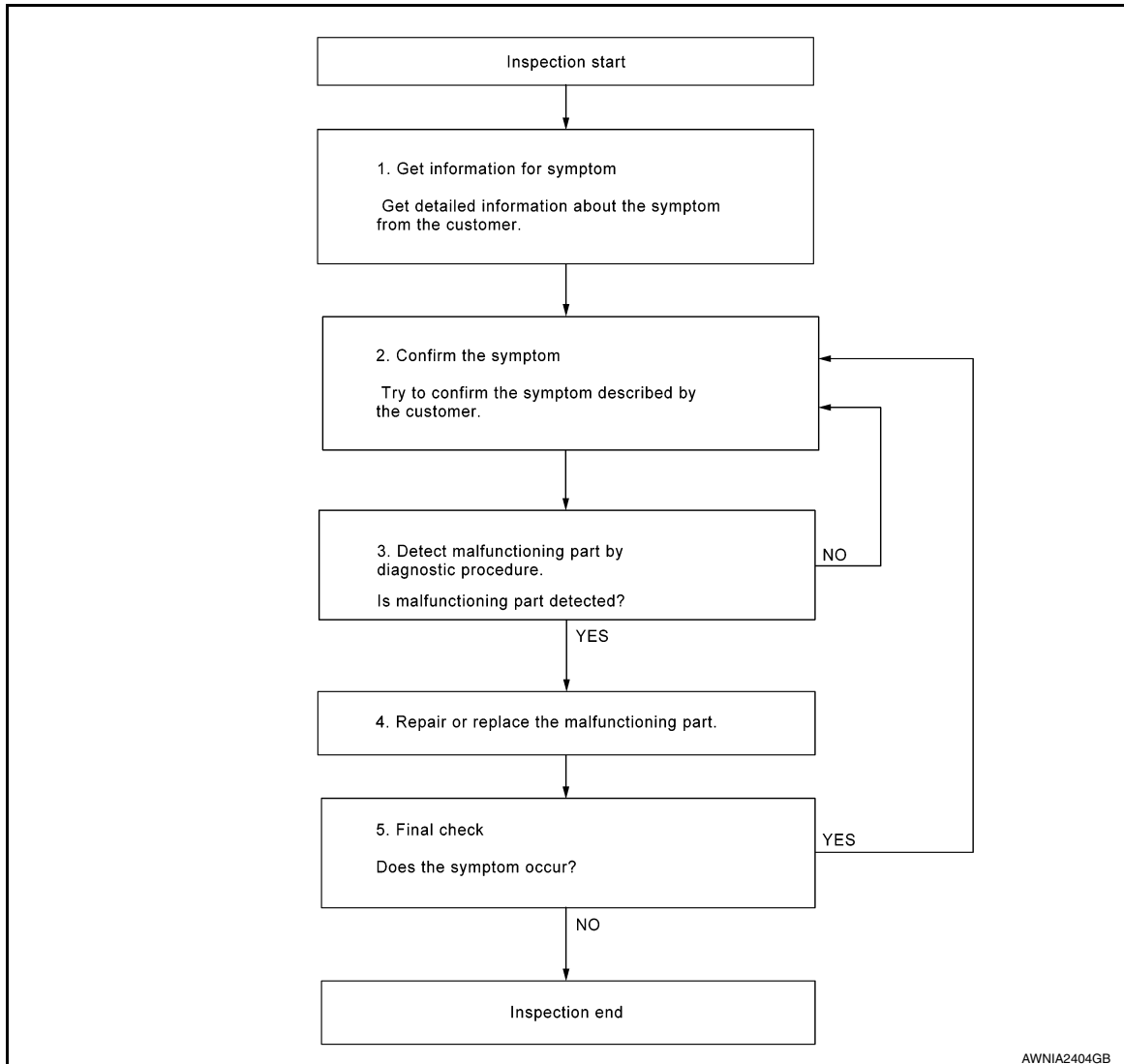
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000009460113

#### OVERALL SEQUENCE



#### DETAILED FLOW

##### 1.GET INFORMATION FOR SYMPTOM

Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

>> GO TO 2.

##### 2.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected. Refer to [AV-30. "Symptom Table"](#).

>> GO TO 3.

##### 3.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

## DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BASE AUDIO]

---

Is malfunctioning part detected?

YES >> GO TO 4.

NO >> GO TO 2.

### 4.REPAIR OR REPLACE THE MALFUNCTIONING PART

---

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnostic Procedure.

>> GO TO 5.

### 5.FINAL CHECK

---

Refer to confirmed symptom in step 2, and make sure that the symptom is not detected.

Was the repair confirmed?

YES >> Inspection End.

NO >> GO TO 2.

**DTC/CIRCUIT DIAGNOSIS****POWER SUPPLY AND GROUND CIRCUIT****AUDIO UNIT****AUDIO UNIT : Diagnosis Procedure**

INFOID:000000009460114

Regarding Wiring Diagram information, refer to [AV-16, "Wiring Diagram"](#).

**1.CHECK FUSE**

Check that the following fuses are not blown.

| Terminal No. | Signal name          | Fuse No. |
|--------------|----------------------|----------|
| 7            | ACC power supply     | 18 (10A) |
| 19           | Battery power supply | 29 (15A) |

**Are the fuses blown?**

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

**2.CHECK POWER SUPPLY CIRCUIT**

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M43.
3. Check voltage between audio unit connector M43 and ground.

| Audio unit |          | Ground | Condition            | Voltage<br>(Approx.) |
|------------|----------|--------|----------------------|----------------------|
| Connector  | Terminal |        |                      |                      |
| M43        | 7        | —      | Ignition switch: ON  | Battery voltage      |
|            | 19       |        | Ignition switch: OFF |                      |

**Is the inspection result normal?**

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

**3.CHECK GROUND CIRCUIT**

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M101.
3. Check continuity between audio unit connector M101 and ground.

| Audio unit |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M101       | 21       | —      | Yes        |
|            | 23       |        |            |

**Is the inspection result normal?**

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

## FRONT DOOR SPEAKER

### Diagnosis Procedure

INFOID:000000009460116

Regarding Wiring Diagram information, refer to [AV-16. "Wiring Diagram"](#).

### 1.CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

### 2.CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M43 and suspect front door speaker connector.
2. Check continuity between audio unit connector M43 and suspect front door speaker connector.

| Audio unit |          | Front door speaker |          | Continuity |
|------------|----------|--------------------|----------|------------|
| Connector  | Terminal | Connector          | Terminal |            |
| M43        | 2        | D12 (LH)           | 1        | Yes        |
|            | 3        |                    | 2        |            |
|            | 11       | D112 (RH)          | 1        |            |
|            | 12       |                    | 2        |            |

3. Check continuity between audio unit connector M43 and ground.

| Audio unit |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M43        | 2        | —      | No         |
|            | 3        |        |            |
|            | 11       |        |            |
|            | 12       |        |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3.CHECK FRONT DOOR SPEAKER SIGNAL

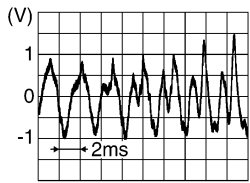
1. Connect audio unit connector M43 and suspect front door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M43.

| Audio unit connector M43 |          | Condition | Reference value |
|--------------------------|----------|-----------|-----------------|
| (+)                      | (-)      |           |                 |
| Terminal                 | Terminal |           |                 |

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

|    |    |                     |                                                                                     |
|----|----|---------------------|-------------------------------------------------------------------------------------|
| 2  | 3  | Audio signal output |  |
| 11 | 12 |                     |                                                                                     |

Is the inspection result normal?

- YES >> Replace front door speaker. Refer to [AV-34. "Removal and Installation"](#).
- NO >> Replace audio unit. Refer to [AV-33. "Removal and Installation"](#).

AV

## REAR DOOR SPEAKER

### Diagnosis Procedure

INFOID:000000009460118

Regarding Wiring Diagram information, refer to [AV-16. "Wiring Diagram"](#).

### 1.CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

### 2.CHECK REAR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M43 and suspect rear door speaker connector.
2. Check continuity between audio unit connector M43 and suspect rear door speaker connector.

| Audio unit |          | Rear door speaker |          | Continuity |
|------------|----------|-------------------|----------|------------|
| Connector  | Terminal | Connector         | Terminal |            |
| M43        | 4        | D207 (LH)         | 1        | Yes        |
|            | 5        |                   | 2        |            |
|            | 13       | D307 (RH)         | 1        |            |
|            | 14       |                   | 2        |            |

3. Check continuity between audio unit connector M43 and ground.

| Audio unit |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M43        | 4        | —      | No         |
|            | 5        |        |            |
|            | 13       |        |            |
|            | 14       |        |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3.CHECK REAR SPEAKER SIGNAL

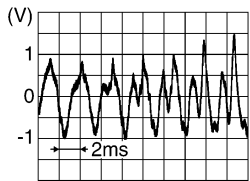
1. Connect audio unit connector M43 and suspect rear door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M43.

| Audio unit connector M43 |          | Condition | Reference value |
|--------------------------|----------|-----------|-----------------|
| (+)                      | (-)      |           |                 |
| Terminal                 | Terminal |           |                 |

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

|    |    |                     |                                                                                     |
|----|----|---------------------|-------------------------------------------------------------------------------------|
| 4  | 5  | Audio signal output |  |
| 13 | 14 |                     |                                                                                     |

Is the inspection result normal?

- YES >> Replace rear door speaker. Refer to [AV-35. "Removal and Installation"](#).
- NO >> Replace audio unit. Refer to [AV-33. "Removal and Installation"](#).

AV

## SYMPTOM DIAGNOSIS

### AUDIO SYSTEM

#### Symptom Table

INFOID:000000009460123

#### RELATED TO AUDIO

| Symptoms                                             | Check items                                                                                                                              | Probable malfunction location                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The disk cannot be removed.                          | Audio unit                                                                                                                               | Malfunction in audio unit.<br>Refer to <a href="#">AV-11, "On Board Diagnosis Function"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| No sound comes out or the level of the sound is low. | No sound from all speakers.                                                                                                              | <ul style="list-style-type: none"> <li>• Speaker circuit shorted to ground. Refer to <a href="#">AV-16, "Wiring Diagram"</a>.</li> <li>• Audio unit power supply and ground circuits malfunction. Refer to <a href="#">AV-25, "AUDIO UNIT : Diagnosis Procedure"</a>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                      | Only a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH) does not output sound. | <ul style="list-style-type: none"> <li>• Poor connector connection of speaker.</li> <li>• Sound signal circuit malfunction between audio unit and speaker. Refer to: <ul style="list-style-type: none"> <li>- <a href="#">AV-26, "Diagnosis Procedure"</a> (front door speaker).</li> <li>- <a href="#">AV-28, "Diagnosis Procedure"</a> (rear door speaker).</li> </ul> </li> <li>• Malfunction in speaker. Refer to: <ul style="list-style-type: none"> <li>- <a href="#">AV-34, "Removal and Installation"</a> (front door speaker).</li> <li>- <a href="#">AV-35, "Removal and Installation"</a> (rear door speaker).</li> </ul> </li> <li>• Malfunction in audio unit. Refer to <a href="#">AV-11, "On Board Diagnosis Function"</a>.</li> </ul>                                                                        |
| Noise is mixed with audio.                           | Noise comes out from all speakers.                                                                                                       | Malfunction in audio unit.<br>Refer to <a href="#">AV-11, "On Board Diagnosis Function"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                      | Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH).  | <ul style="list-style-type: none"> <li>• Poor connector connection of speaker.</li> <li>• Sound signal circuit malfunction between audio unit and speaker. Refer to: <ul style="list-style-type: none"> <li>- <a href="#">AV-26, "Diagnosis Procedure"</a> (front door speaker).</li> <li>- <a href="#">AV-28, "Diagnosis Procedure"</a> (rear door speaker).</li> </ul> </li> <li>• Malfunction in speaker.</li> <li>• Poor Installation of speaker (e.g. backlash and looseness). Refer to: <ul style="list-style-type: none"> <li>- <a href="#">AV-34, "Removal and Installation"</a> (front door speaker).</li> <li>- <a href="#">AV-35, "Removal and Installation"</a> (rear door speaker).</li> </ul> </li> <li>• Malfunction in audio unit. Refer to <a href="#">AV-11, "On Board Diagnosis Function"</a>.</li> </ul> |
|                                                      | Noise is mixed with radio only (when the vehicle hits a bump or while driving over bad roads)                                            | Poor connector connection of antenna or antenna feeder.<br>Refer to <a href="#">AV-37, "Feeder Layout"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

# AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

| Symptoms                              | Check items                                                                                                                                                                                                                                                                                    | Probable malfunction location                                                                                                                                                                                                                                              |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No radio reception or poor reception. | <ul style="list-style-type: none"> <li>Other audio sounds are normal.</li> <li>Any radio station cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).</li> </ul> | <ul style="list-style-type: none"> <li>Antenna amp. ON signal circuit malfunction.<br/>Refer to <a href="#">AV-14, "Reference Value"</a>.</li> <li>Poor connector connection of antenna or antenna feeder.<br/>Refer to <a href="#">AV-37, "Feeder Layout"</a>.</li> </ul> |
| Buzz/rattle sound from speaker        | The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the buzz/rattle.                                                                                                                                           | Refer to "SQUEAK AND RATTLE TROUBLE DIAGNOSIS" in the appropriate interior trim section.                                                                                                                                                                                   |

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

## NORMAL OPERATING CONDITION

### Description

INFOID:000000009460124

#### RELATED TO NOISE

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

The following noise results from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and determine the cause.

#### NOTE:

The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

#### Type of Noise and Possible Cause

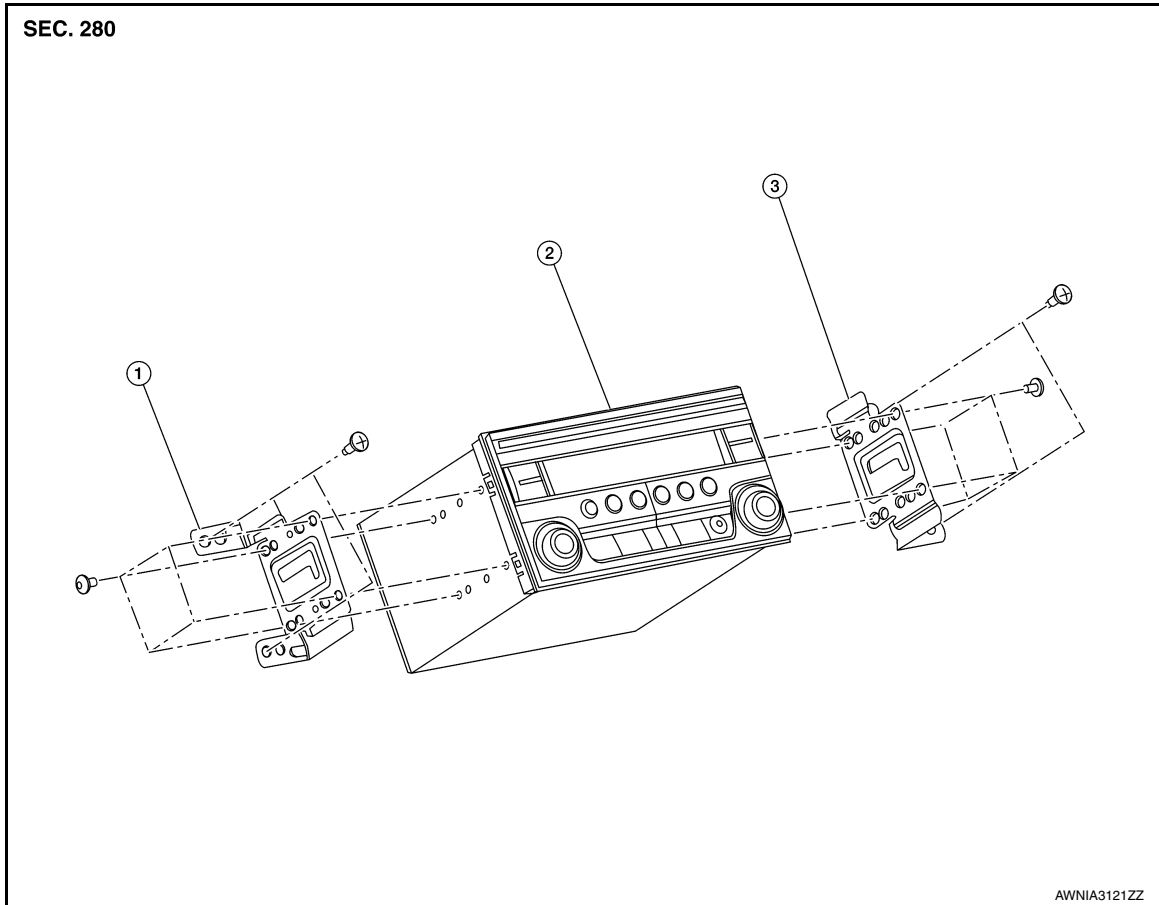
| Occurrence condition                                                                                                |                                                                                                     | Possible cause                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occurs only when engine is ON.                                                                                      | A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed. | <ul style="list-style-type: none"> <li>• Ignition components</li> </ul>                                                                                                            |
| The occurrence of the noise is linked with the operation of the fuel pump.                                          |                                                                                                     | <ul style="list-style-type: none"> <li>• Fuel pump condenser</li> </ul>                                                                                                            |
| Noise only occurs when various electrical components are operating.                                                 | A cracking or snapping sound occurs with the operation of various switches.                         | <ul style="list-style-type: none"> <li>• Relay malfunction, audio unit malfunction</li> </ul>                                                                                      |
|                                                                                                                     | The noise occurs when various motors are operating.                                                 | <ul style="list-style-type: none"> <li>• Motor case ground</li> <li>• Motor</li> </ul>                                                                                             |
| The noise occurs constantly, not just under certain conditions.                                                     |                                                                                                     | <ul style="list-style-type: none"> <li>• Rear defogger coil malfunction</li> <li>• Open circuit in printed heater</li> <li>• Poor ground of antenna feeder line</li> </ul>         |
| A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively. |                                                                                                     | <ul style="list-style-type: none"> <li>• Ground wire of body parts</li> <li>• Ground due to improper part installation</li> <li>• Wiring connections or a short circuit</li> </ul> |

# REMOVAL AND INSTALLATION

## AUDIO UNIT

### Exploded View

INFOID:000000009640309



1. Audio unit bracket (LH)

2. Audio unit

3. Audio unit bracket (RH)

## Removal and Installation

INFOID:000000009640310

### REMOVAL

1. Remove the negative battery cable. Refer to [PG-69, "Removal and Installation \(Battery\)"](#).
2. Remove cluster lid C. Refer to [IP-22, "Removal and Installation"](#).
3. Remove the audio unit screws.
4. Partially remove the audio unit to gain access to the harness connectors.
5. Disconnect the harness connectors from the audio unit and remove.
6. Remove the audio unit bracket screws from each side of the audio unit (if necessary).

### INSTALLATION

Installation is in the reverse order of removal.

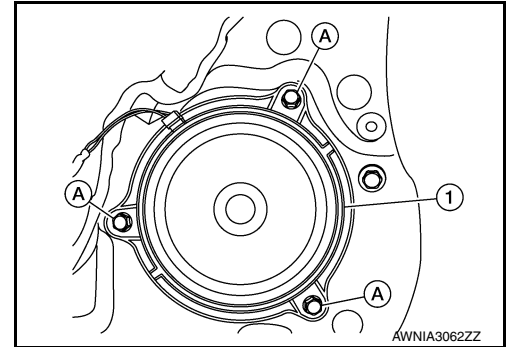
## FRONT DOOR SPEAKER

### Removal and Installation

INFOID:000000009640311

#### REMOVAL

1. Remove the front door finisher. Refer to [INT-15, "Removal and Installation"](#).
2. Disconnect the harness connector from front door speaker.
3. Remove the front door speaker screws (A).
4. Remove the front door speaker (1).



#### INSTALLATION

Installation is in the reverse order of removal.

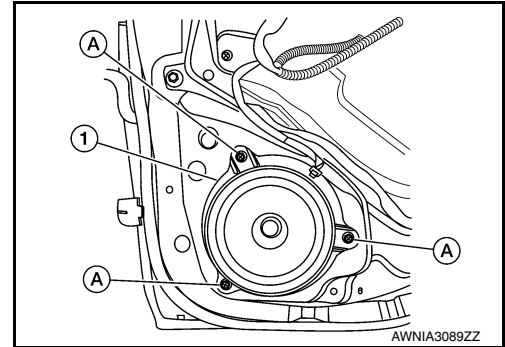
## REAR DOOR SPEAKER

### Removal and Installation

INFOID:000000009640312

#### REMOVAL

1. Remove the rear door finisher. Refer to [INT-17. "Removal and Installation"](#).
2. Disconnect the harness connector from the rear door speaker.
3. Remove the rear door speaker screws (A).
4. Remove the rear door speaker (1).



#### INSTALLATION

Installation is in the reverse order of removal.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

# ROD ANTENNA

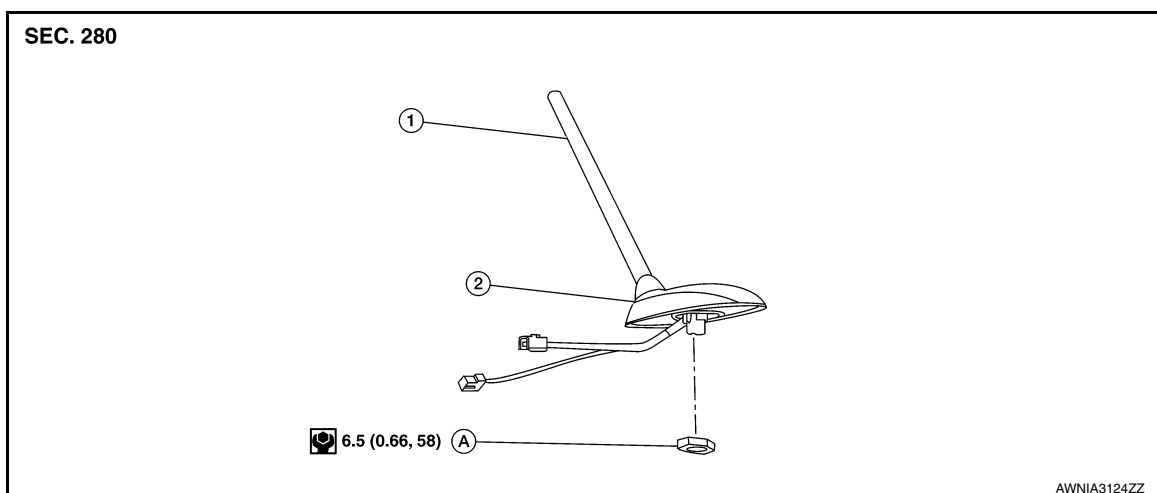
< REMOVAL AND INSTALLATION >

[BASE AUDIO]

## ROD ANTENNA

### Exploded View

INFOID:000000009667865



1. Antenna rod

2. Antenna base

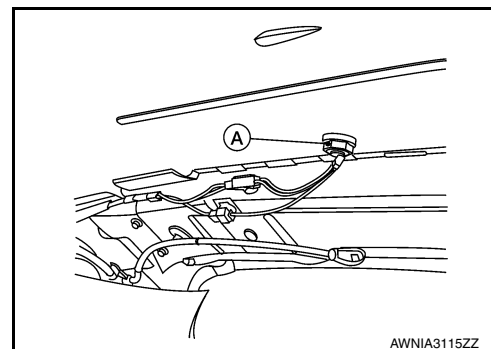
A. Antenna nut

### Removal and Installation

INFOID:000000009667866

#### REMOVAL

1. Lower the rear portion of the headlining. Refer to [INT-29, "Removal and Installation"](#).
2. Disconnect the harness connectors from the antenna (satellite radio model shown).
3. Remove the antenna nut (A) and remove the antenna.



#### INSTALLATION

Installation is in the reverse order of removal.

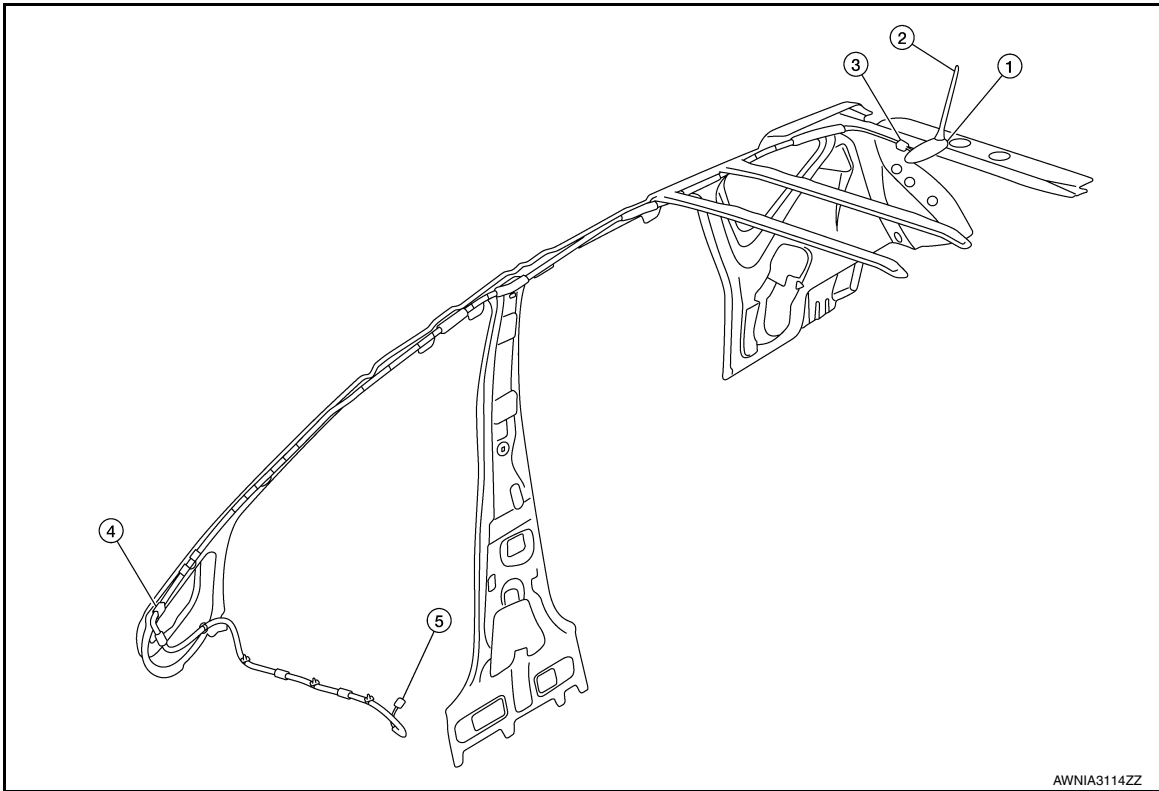
#### CAUTION:

If the antenna nut is tightened looser than the specified torque this will lower the sensitivity of the antenna. If the antenna nut is tightened tighter than the specified torque this will deform the roof panel.

## ANTENNA FEEDER

## Feeder Layout

INFOID:0000000009460134



- |                                |                |         |
|--------------------------------|----------------|---------|
| 1. Antenna base (antenna amp.) | 2. Rod Antenna | 3. M351 |
| 4. M67, M350                   | 5. M106        |         |

## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009640323

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

#### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

#### **WARNING:**

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

#### Precaution for Trouble Diagnosis

INFOID:000000009640324

#### AV COMMUNICATION SYSTEM

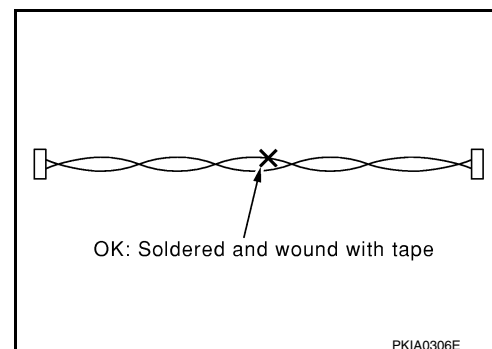
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

#### Precaution for Harness Repair

INFOID:000000009640325

#### AV COMMUNICATION SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]

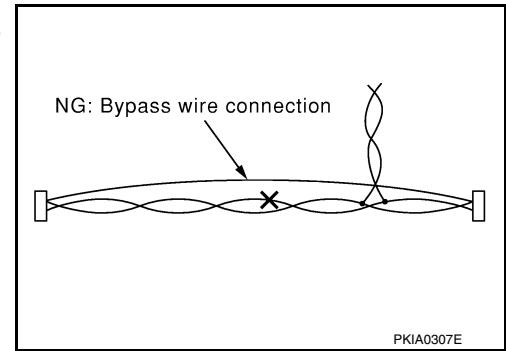


# PRECAUTIONS

## < PRECAUTION >

[DISPLAY AUDIO]

- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



## Precaution for Work

INFOID:000000009640326

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:
    - Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
    - Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
    - Then rub with a soft, dry cloth.
  - Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
  - For genuine leather seats, use a genuine leather seat cleaner.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

# PREPARATION

< PREPARATION >

[DISPLAY AUDIO]

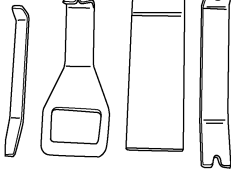
## PREPARATION

### PREPARATION

#### Special Service Tools

INFOID:000000009640327

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

| Tool number<br>(Kent-Moore No.)<br>Tool name                                                     | Description              |
|--------------------------------------------------------------------------------------------------|--------------------------|
| —<br>(J-46534)<br>Trim Tool Set                                                                  | Removing trim components |
| <br>AWJIA0483ZZ |                          |

#### Commercial Service Tools

INFOID:000000009640328

| Tool name                                                                                       | Description                      |
|-------------------------------------------------------------------------------------------------|----------------------------------|
| Power tool                                                                                      | Loosening nuts, screws and bolts |
| <br>PIIB1407E |                                  |

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

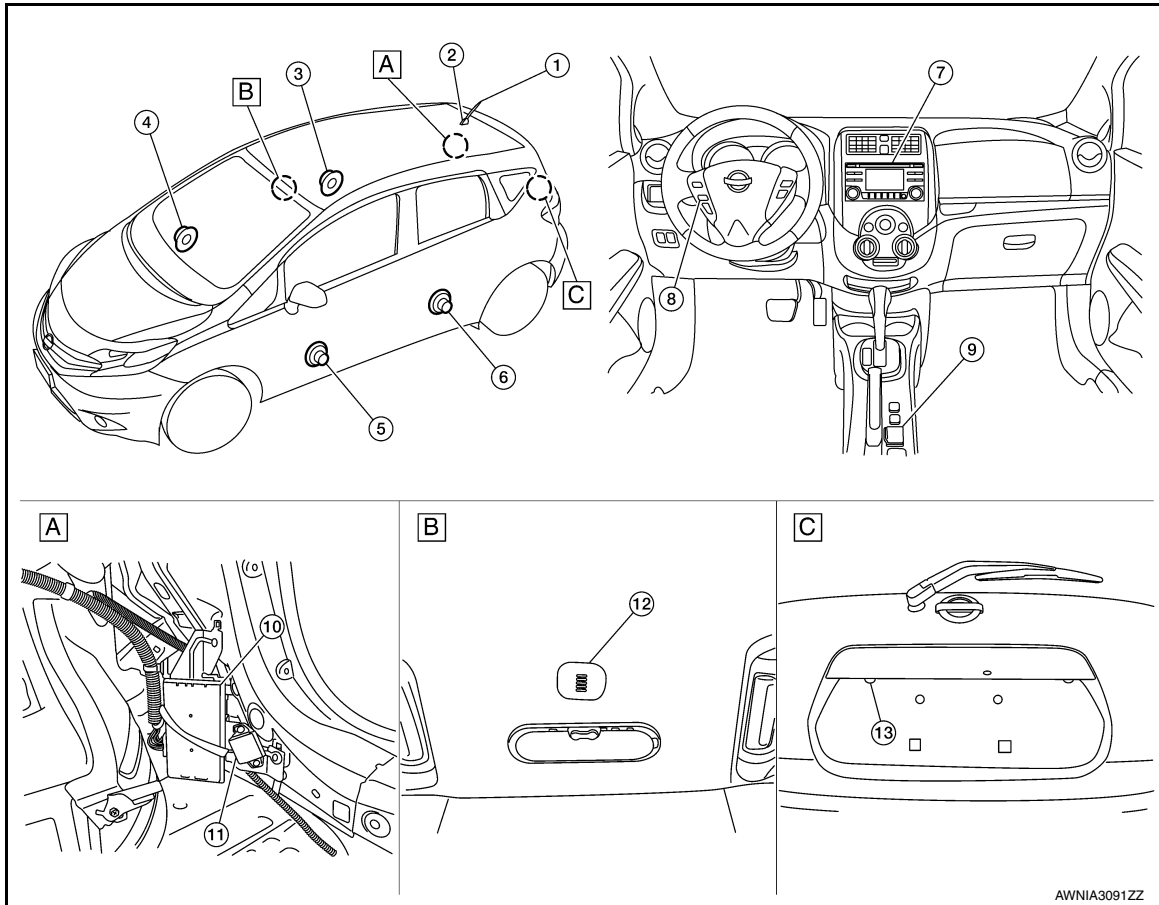
[DISPLAY AUDIO]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000009509283



A. Luggage side lower finisher (RH) removed

B. Front of headliner

C. Center of back door

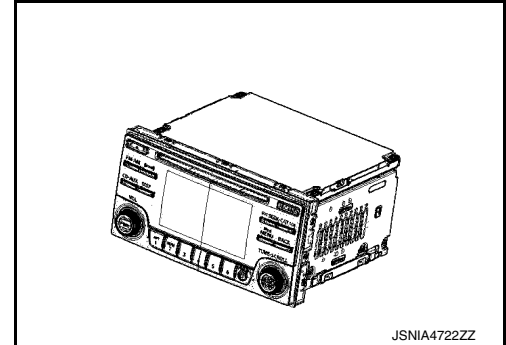
| No. | Component                             | Function                                                                         |
|-----|---------------------------------------|----------------------------------------------------------------------------------|
| 1.  | Rod antenna                           | Refer to <a href="#">AV-44, "Rod Antenna, Antenna Amp. and Antenna Feeder"</a> . |
| 2.  | Antenna base (antenna amp.)           |                                                                                  |
| 3.  | Rear door speaker RH                  |                                                                                  |
| 4.  | Front door speaker RH                 |                                                                                  |
| 5.  | Front door speaker LH                 |                                                                                  |
| 6.  | Rear door speaker LH                  | Refer to <a href="#">AV-42, "Speaker"</a> .                                      |
| 7.  | Audio unit                            | Refer to <a href="#">AV-42, "Audio Unit"</a> .                                   |
| 8.  | Steering wheel audio control switches | Refer to <a href="#">AV-43, "Steering Switch"</a> .                              |
| 9.  | USB interface                         | Refer to <a href="#">AV-42, "USB Interface"</a> .                                |
| 10. | Bluetooth® control unit               | Refer to <a href="#">AV-43, "Bluetooth Control Unit"</a> .                       |
| 11. | Bluetooth® antenna                    | Refer to <a href="#">AV-43, "Bluetooth Antenna"</a> .                            |
| 12. | Microphone                            | Refer to <a href="#">AV-43, "Microphone"</a> .                                   |
| 13. | Rear view camera                      | Refer to <a href="#">AV-44, "Rear View Camera"</a> .                             |

## Audio Unit

INFOID:000000009509284

### Description

- AM/FM electronic tuner radio, CD drive, auxiliary input jack, and camera controller are integrated into the audio unit.
- The display can show audio status and rear view monitor images.
- Music files stored in iPod®/USB memory can be played using the separate USB connector.

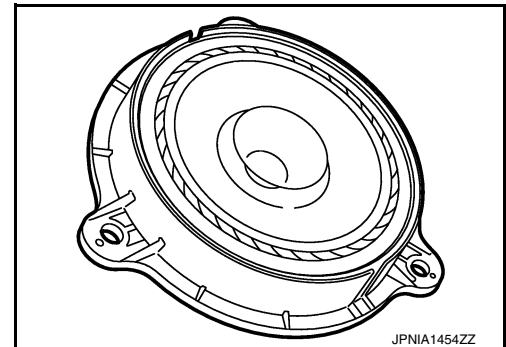


## Speaker

INFOID:000000009509285

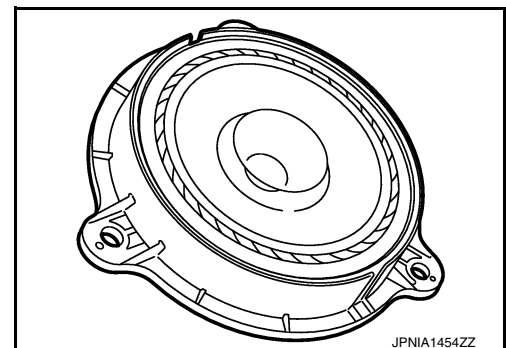
### FRONT DOOR SPEAKER

- 16.5 cm (6.5 in) speakers are installed in the bottom of the front doors.
- Sound signals are input from the audio unit to output high, mid and low range sounds.



### REAR DOOR SPEAKER

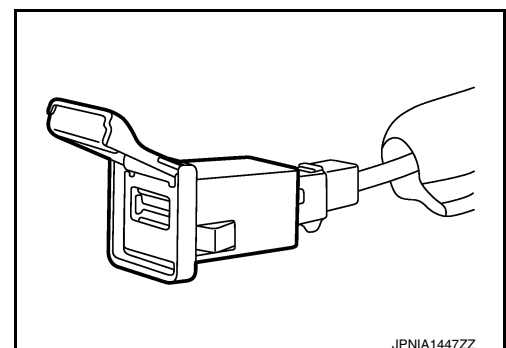
- 16.5 cm (6.5 in) speakers are installed in the bottom of the rear doors.
- Sound signals are input from the audio unit to output high, mid and low range sounds.



## USB Interface

INFOID:000000009509289

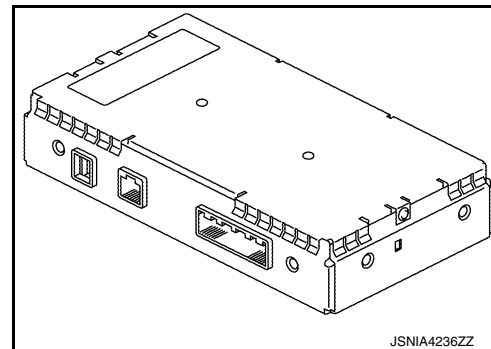
- USB Interface is installed in the console.
- iPod® and USB memory can be connected to the audio unit.



## Bluetooth Control Unit

INFOID:000000009509286

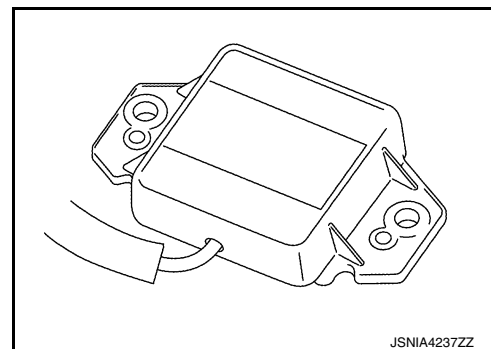
- Inputs the TEL voice signal from Bluetooth® antenna and outputs it to the audio unit
- Connected to the audio unit via AV communication.



## Bluetooth Antenna

INFOID:000000009509287

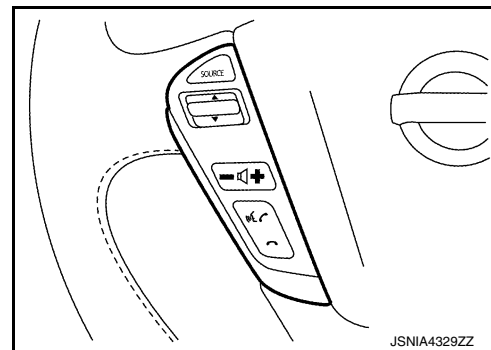
Receives the TEL voice signal from cellular phone and outputs it to the Bluetooth® control unit.



## Steering Switch

INFOID:000000009509290

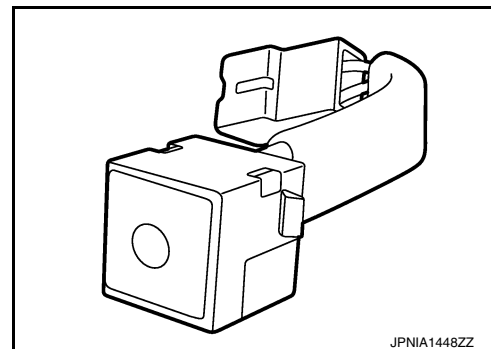
- Operations for audio and hands-free phone are possible.
- Switch is connected to the Bluetooth® control unit.



## Microphone

INFOID:000000009509288

- The microphone is installed in the roof in front of the map lamp assembly.
- Power is supplied from the Bluetooth® control unit.



A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

## COMPONENT PARTS

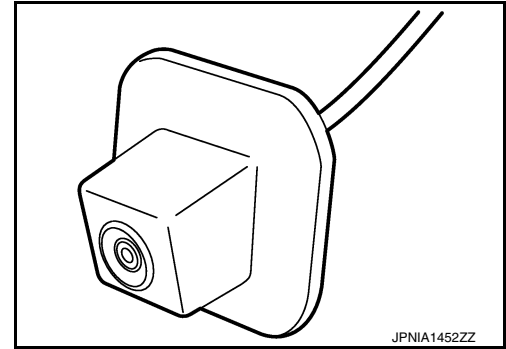
< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

### Rear View Camera

INFOID:000000009509293

- The rear view camera is installed to the back door finisher.
- Power is supplied from the audio unit.

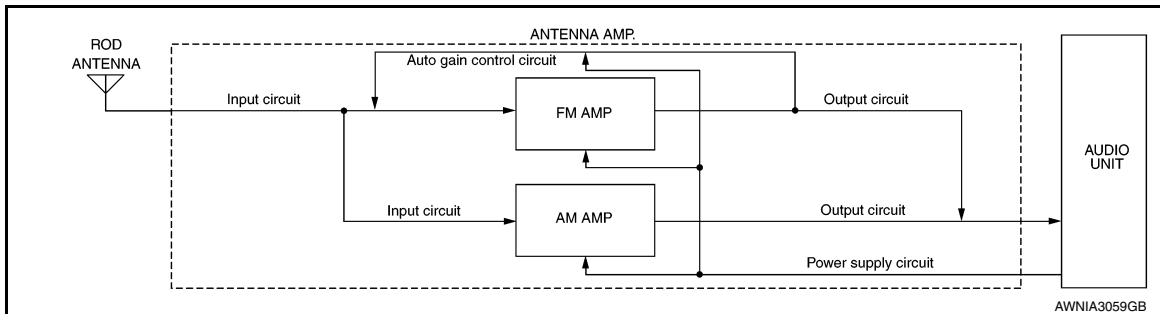


### Rod Antenna, Antenna Amp. and Antenna Feeder

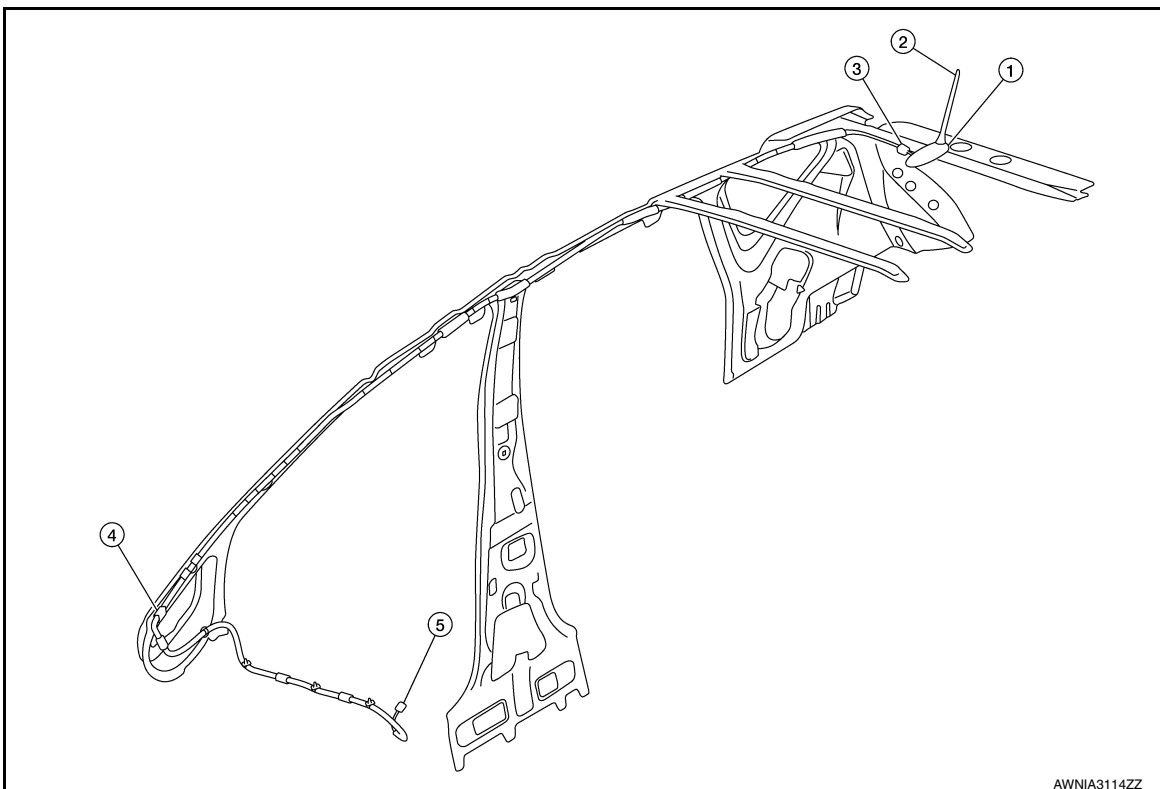
INFOID:000000009509291

#### RADIO ANTENNA

AM/FM radio rod antenna and antenna base is located on the rear of the roof. The antenna amp. is built into the antenna base.



#### ANTENNA FEEDER LAYOUT



COMPONENT PARTS

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

- |                                |                |         |   |
|--------------------------------|----------------|---------|---|
| 1. Antenna base (antenna amp.) | 2. Rod Antenna | 3. M351 | A |
| 4. M67, M350                   | 5. M108        |         |   |

B

C

D

E

F

G

H

I

J

K

L

M

AV

O

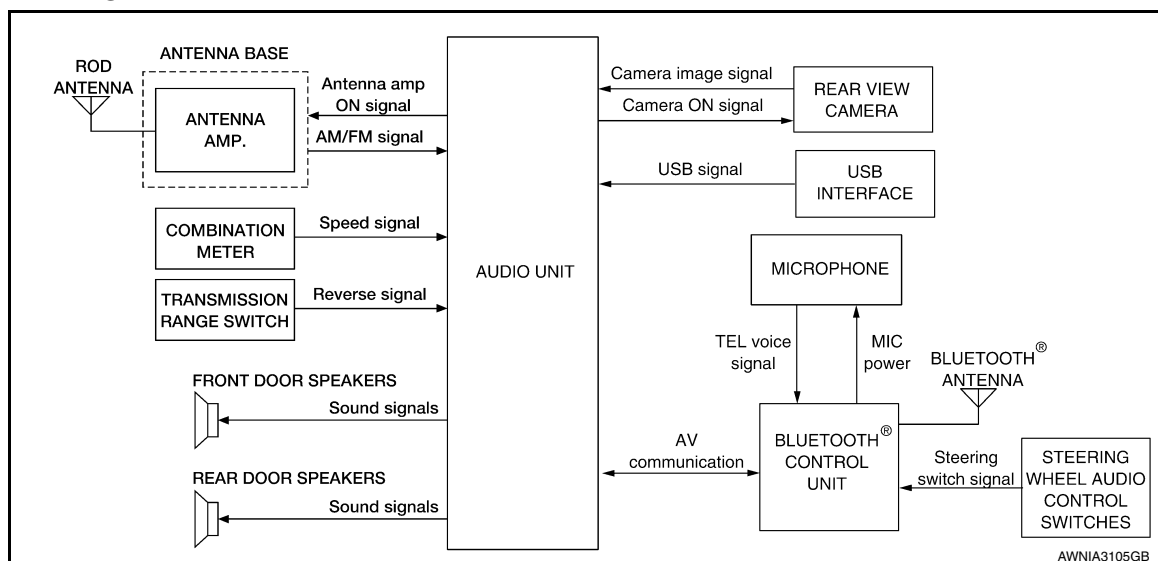
P

## SYSTEM

## System Description

INFOID:000000009460150

## SYSTEM DIAGRAM



## AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Front door speakers
- Rear door speakers
- Steering switches
- USB interface
- Antenna amp.
- Rod antenna

When the audio system is on, AM/FM signals received by the rod antenna are amplified by the antenna amp. and sent to the audio unit. The audio unit then sends audio signals to the front door speakers and rear door speakers.

Refer to Owner's Manual for audio system operating instructions.

## HANDS-FREE PHONE SYSTEM

## System Operation

**NOTE:**

Cellular telephones must have their wireless connection set up (paired) before using the Bluetooth® telephone system.

The Bluetooth® telephone system allows users who have a Bluetooth® cellular telephone to make a wireless connection between their cellular telephone and the Bluetooth® control unit. Hands-free cellular telephone calls can be sent and received. Some Bluetooth® cellular telephones may not be recognized by the Bluetooth® control unit. When a cellular telephone or the Bluetooth® control unit is replaced, the telephone must be paired with the Bluetooth® control unit. Different cellular telephones may have different pairing procedures, refer to the cellular telephone operating manual.

Refer to the Owner's Manual for Bluetooth® telephone system operating instructions.

## Bluetooth® Control Unit

When the ignition switch is turned to ACC or ON, the Bluetooth® control unit will power up. During power up, the Bluetooth® control unit is initialized and performs various self-checks. Initialization may take up to 20 seconds. If a phone is present in the vehicle and paired with the Bluetooth® control unit, Nissan Voice Recognition will then become active. Bluetooth® telephone functions can be turned off using the Nissan Voice Recognition system.

Steering Switches

When buttons on the steering switches are pushed, the resistance in steering wheel audio control switch circuit changes, depending on which button is pushed. The Bluetooth® control unit uses this signal to perform various functions while navigating through the voice recognition system.

The following functions can be performed using the steering switches:

- Initiate self-diagnosis of the Bluetooth® telephone system
- Start a voice recognition session
- Answer and end telephone calls
- Adjust the volume of calls

Microphone

The microphone is located in the roof console assembly. The microphone sends a signal to the Bluetooth® control unit. The microphone can be actively tested during self-diagnosis.

Audio Unit

The audio unit receives signals from the Bluetooth® control unit and sends audio signals to the speakers.

SPEED SENSITIVE VOLUME SYSTEM

Volume level of this system goes up and down automatically in proportion to the vehicle speed. The control level can be selected by the customer. Refer to Owner's Manual for operating instructions.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

# DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

## DIAGNOSIS SYSTEM (AUDIO UNIT)

### Description

INFOID:000000009460151

The audio unit on board diagnosis performs the functions listed in the table below:

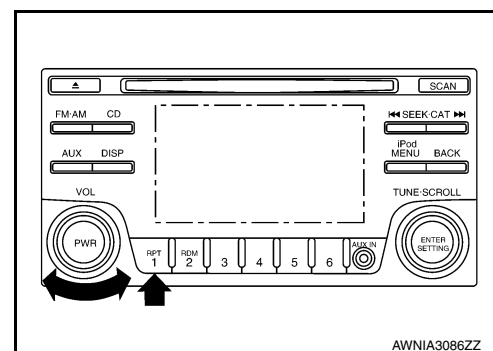
| Mode                        |                            | Description                                                                                                                                                                                                |
|-----------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Self Diagnosis              |                            | <ul style="list-style-type: none"><li>• Audio unit diagnosis.</li><li>• Diagnoses the connections across system components.</li></ul>                                                                      |
| Confirmation/<br>Adjustment | Display Diagnosis          | The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display.                                                         |
|                             | Vehicle Signals            | Diagnosis of signals can be performed for vehicle speed, lights, reverse, EQ pin, destination and camera type.                                                                                             |
|                             | Speaker Test               | The connection of a speaker can be confirmed by test tone.                                                                                                                                                 |
|                             | Error History              | The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed. |
|                             | Camera System              | Displayed but not used.                                                                                                                                                                                    |
|                             | AV COMM Diagnosis          | The communication condition of each unit of display audio system can be monitored.                                                                                                                         |
|                             | Delete Unit Connection Log | Erase the connection history of unit and error history.                                                                                                                                                    |
|                             | Initialize Setting         | Initializes the audio unit memory.                                                                                                                                                                         |

### On Board Diagnosis Function

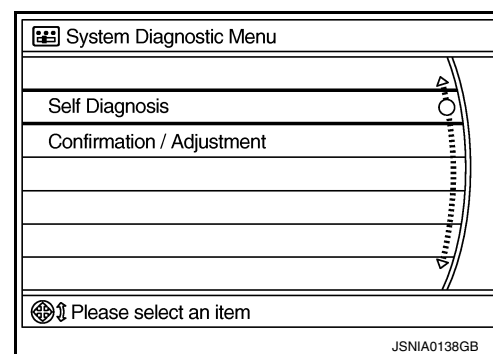
INFOID:000000009460152

#### METHOD OF STARTING

1. Turn the ignition ON.
2. Turn the audio system OFF.
3. While pressing the preset 1 button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. Shifting from current screen to previous screen is performed by pressing BACK button.



4. The trouble diagnosis initial screen is displayed, and Self Diagnosis or Confirmation/Adjustment can be selected.



#### SELF DIAGNOSIS MODE

Audio Unit Self Diagnosis

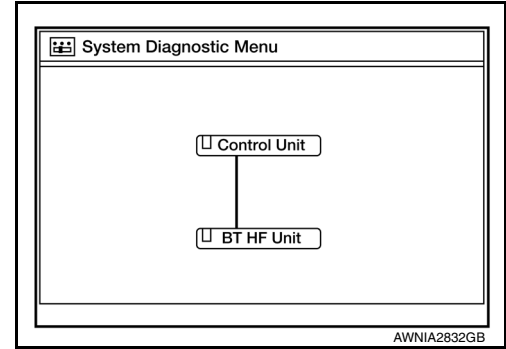
1. Select Self Diagnosis.

# DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

2. Self diagnosis screen is displayed. The bar graph visible in center of screen indicates progress of self diagnosis.
3. Diagnosis results are displayed after the self diagnosis is completed. The unit names and the connection lines are color coded according to the diagnostic results.

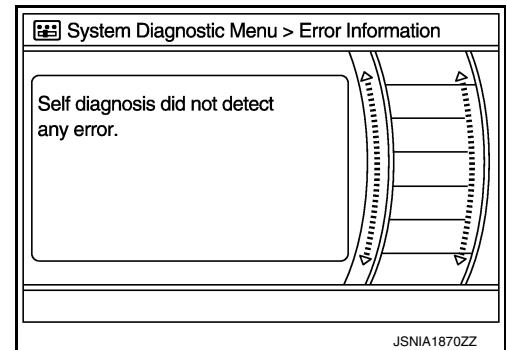


| Diagnosis results             | Unit  | Connection line |
|-------------------------------|-------|-----------------|
| Normal                        | Green | Green           |
| Connection malfunction        | Gray  | Yellow          |
| Unit malfunction <sup>1</sup> | Red   | Green           |

1: Control unit (audio unit) is displayed in red.

- Replace audio unit if Self Diagnosis did not run because control unit malfunction is indicated. The symptom is audio unit internal error. Refer to [AV-93, "Removal and Installation"](#).
- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.

4. Comments of self diagnosis results can be viewed in the diagnosis result screen.



## Audio Unit Self Diagnosis Results

| Only Unit Part Is Displayed In Red |                                                                         |                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Screen switch                      | Description                                                             | Possible cause                                                                                                                                                                                                                                                                                                                               |
| Control unit                       | Malfunction is detected in audio unit power supply and ground circuits. | <ul style="list-style-type: none"> <li>• Audio unit power supply or ground circuits. Refer to <a href="#">AV-72, "AUDIO UNIT : Diagnosis Procedure"</a>.</li> <li>• If no malfunction is detected in audio unit power supply and ground circuits, replace audio unit. Refer to <a href="#">AV-93, "Removal and Installation"</a>.</li> </ul> |

# DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

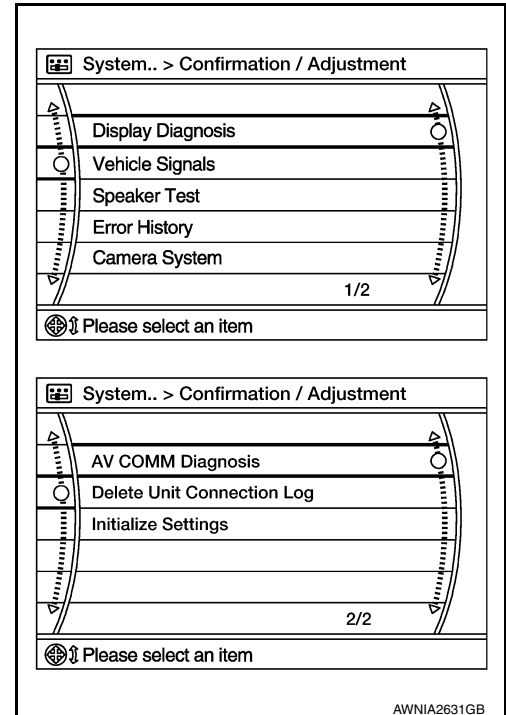
[DISPLAY AUDIO]

A Connecting Cable Between Units Is Displayed In Yellow

| Area with yellow connection lines | Description                                                                                                                                                                                                                                                                                        | Possible cause                                                                                                                                                                                                                                                                     |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control unit ↔ BT HF Unit         | <p>When one of the following is detected:</p> <ul style="list-style-type: none"> <li>malfunction is detected in Bluetooth® control unit power supply and ground circuits.</li> <li>malfunction is detected in AV communication circuits between audio unit and Bluetooth® control unit.</li> </ul> | <ul style="list-style-type: none"> <li>Bluetooth® control unit power supply or ground circuits.<br/>Refer to <a href="#">AV-72. "BLUETOOTH® CONTROL UNIT : Diagnosis Procedure"</a>.</li> <li>AV communication circuits between audio unit and Bluetooth® control unit.</li> </ul> |

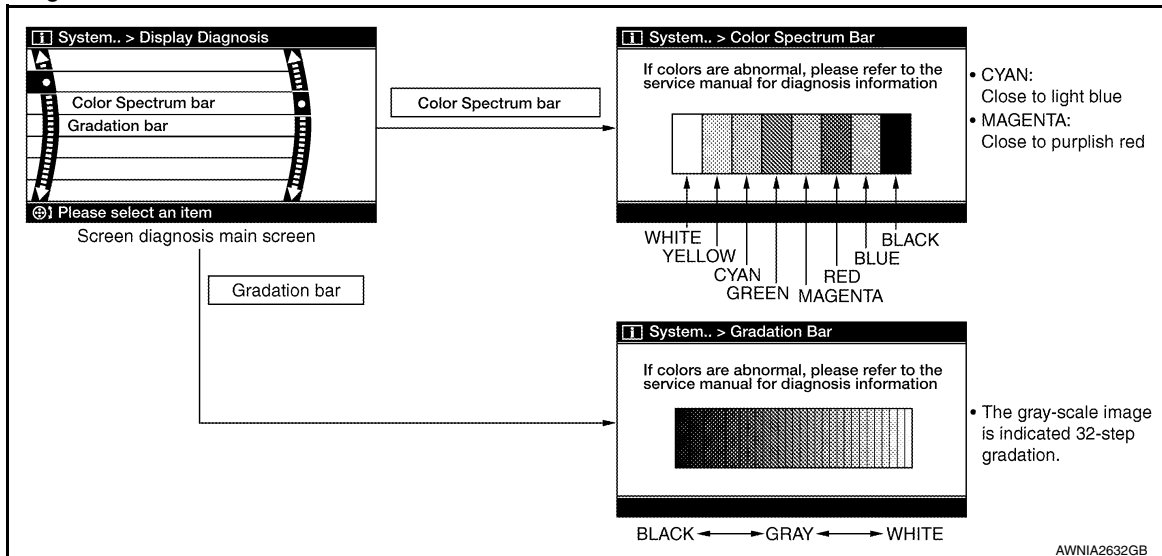
## Audio Unit Confirmation/Adjustment

- Select Confirmation/Adjustment.
- Select each switch on the Confirmation/Adjustment screen to display the relevant trouble diagnosis screen. Press the BACK switch to return to the initial Confirmation/Adjustment screen.



AWNIA2631GB

## Display Diagnosis



AWNIA2632GB

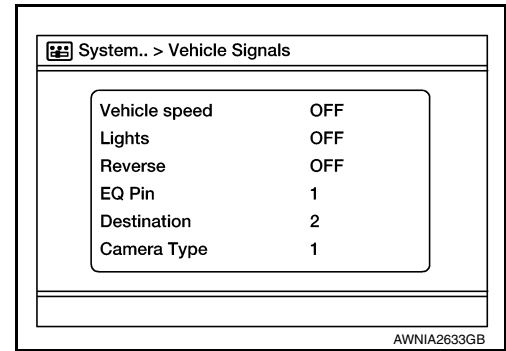
## Vehicle Signals

# DIAGNOSIS SYSTEM (AUDIO UNIT)

## < SYSTEM DESCRIPTION >

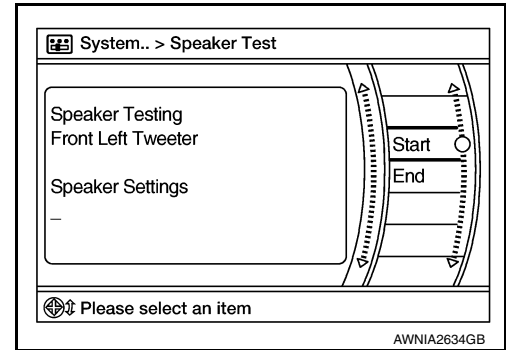
[DISPLAY AUDIO]

A comparison check can be made of each actual vehicle signal and the signals recognized by the system.



### Speaker Test

Select Speaker Test to display the Speaker Diagnosis screen. Press Start to generate a test tone in a speaker. Press Start again to generate a test tone in the next speaker. Press End to stop the test tones.



### Error History

The self diagnosis results are judged depending on whether any error occurs from when Self Diagnosis is selected until the self diagnosis results are displayed.

However, the diagnosis results are judged normal if an error has occurred before the ignition switch is turned ON and then no error has occurred until the self diagnosis start. Check the Error Record to detect any error that may have occurred before the self diagnosis start because of this situation.

The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

#### Count up method A

- The counter is set to 40 if an error occurs. 1 is subtracted from the counter if the condition is normal at a next ignition ON cycle.
- The counter lower limit is 1. The counter can be reset (no error record display) with the Delete log switch.

#### Count up method B

- The counter increases by 1 if an error occurs when ignition switch is ON. The counter will not decrease even if the condition is normal at the next ignition ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. The counter can be reset (no error record display) with the Delete log switch.

| Display type of occurrence frequency | Error history display item               |
|--------------------------------------|------------------------------------------|
| Count up method A                    | AV communication line, control unit (AV) |
| Count up method B                    | Other than the above                     |

### Error item

Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

# DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

| Error item        | Description                                                                                                                                                                                                                                                                                 | Possible cause                                                                                                                                                                                                                                                                     |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CONTROL UNIT (AV) | AV communication circuit initial diagnosis malfunction is detected.                                                                                                                                                                                                                         | Replace the audio unit if the malfunction occurs constantly.<br>Refer to <a href="#">AV-93, "Removal and Installation"</a>                                                                                                                                                         |
| AV COMM CIRCUIT   | When one of the following is detected: <ul style="list-style-type: none"> <li>malfunction is detected in Bluetooth® control unit power supply and ground circuits.</li> <li>malfunction is detected in AV communication circuits between audio unit and Bluetooth® control unit.</li> </ul> | <ul style="list-style-type: none"> <li>Bluetooth® control unit power supply or ground circuits.<br/>Refer to <a href="#">AV-72, "BLUETOOTH® CONTROL UNIT : Diagnosis Procedure"</a>.</li> <li>AV communication circuits between audio unit and Bluetooth® control unit.</li> </ul> |

## AV COMM Diagnosis

- Displays the communication status between audio unit (master unit) and Bluetooth® control unit.
- The error counter displays OK if any malfunction was not detected in the past and displays 0 if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if Reset is pressed.

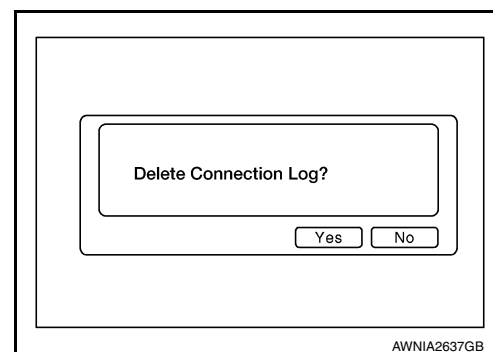
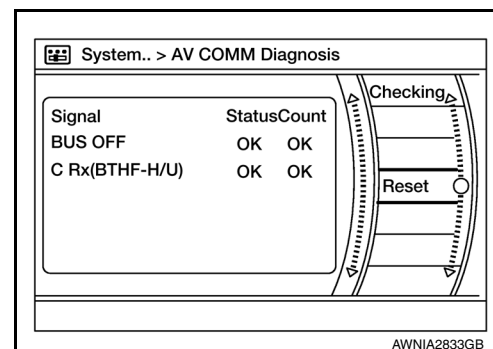
| Items          | Status (Current) | Counter (Past) |
|----------------|------------------|----------------|
| BUS OFF        | OK / ???         | OK / 0 – 39    |
| C Rx(BTHF-H/U) | OK / ???         | OK / 0 – 39    |

### NOTE:

“???” indicates UNKWN.

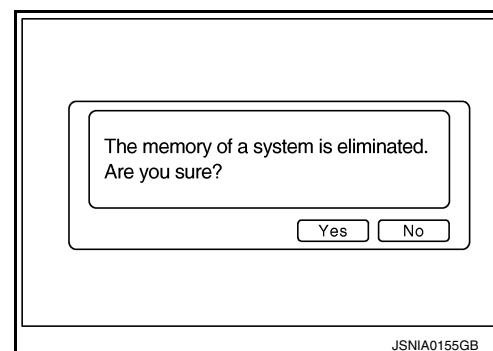
## Delete Unit Connection Log

Deletes any unit connection records and error records from the audio unit memory (clears the records of the unit that has been removed).



## Initialize Settings

Deletes data stored from the audio unit.



## DIAGNOSIS SYSTEM (BLUETOOTH® CONTROL UNIT)

### Diagnosis Description

INFOID:000000009460153

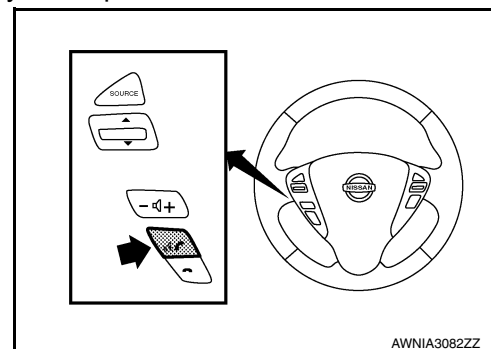
The Bluetooth® control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

### Bluetooth® CONTROL UNIT INITIALIZATION CHECKS

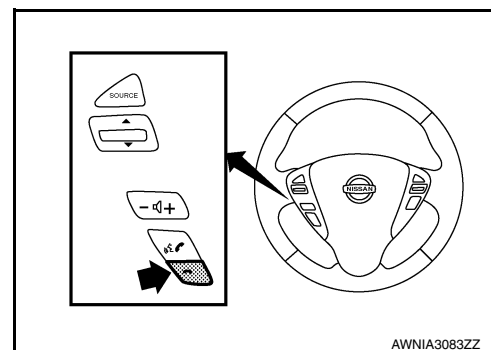
- Internal control unit failure
- Bluetooth® antenna connection open or shorted
- Steering wheel audio control switches [☞ (PHONE/SEND), ☜ (PHONE/END)] stuck closed
- Vehicle speed pulse count
- Microphone connection test (with playback to operator)
- Bluetooth® inquiry check

### OPERATION PROCEDURE

1. Turn ignition switch to ACC or ON.
2. Wait for the Bluetooth® system to complete initialization. This may take up to 20 seconds.
3. Press and hold the steering wheel audio control switch ☞ (PHONE/SEND) button for at least 5 seconds. The Bluetooth® system will begin to play a verbal prompt.



4. While the prompt is playing, press and hold the steering wheel audio control switch ☜ (PHONE/END) button until you hear the "Diagnostics mode" prompt. The Bluetooth® system will sound a 5-second beep.
5. While the beep is sounding, press and hold the steering wheel audio control switch ☜ (PHONE/END) button again until you hear prompts.
6. The Bluetooth® system has now entered into the diagnostic mode. Results of the diagnostic checks will be verbalized to the technician. Refer to [AV-53, "Work Flow"](#).
7. After the failure records are reported, an interactive microphone test will be performed. Follow the voice prompt. If the microphone test fails, refer to [AV-53, "Work Flow"](#).



### Work Flow

INFOID:000000009460154

| Failure Message                                | Action                                                                                                                                                                                                            |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| "Internal failure"                             | Replace Bluetooth® control unit. Refer to <a href="#">AV-98, "Removal and Installation"</a> .                                                                                                                     |
| "Bluetooth® antenna open"                      | <ol style="list-style-type: none"> <li>1. Inspect harness connection.</li> <li>2. Replace Bluetooth® antenna. Refer to <a href="#">AV-99, "Removal and Installation"</a>.</li> </ol>                              |
| "Bluetooth® antenna shorted"                   |                                                                                                                                                                                                                   |
| "Phone/Send for Hands Free System is stuck"    | Check steering wheel audio control switches. Refer to <a href="#">AV-85, "Diagnosis Procedure"</a> .                                                                                                              |
| "Phone/End for the Hands Free System is stuck" |                                                                                                                                                                                                                   |
| "Microphone test" (failed interactive test)    | <ol style="list-style-type: none"> <li>1. Inspect harness between Bluetooth® control unit and microphone.</li> <li>2. Replace microphone. Refer to <a href="#">AV-101, "Removal and Installation"</a>.</li> </ol> |

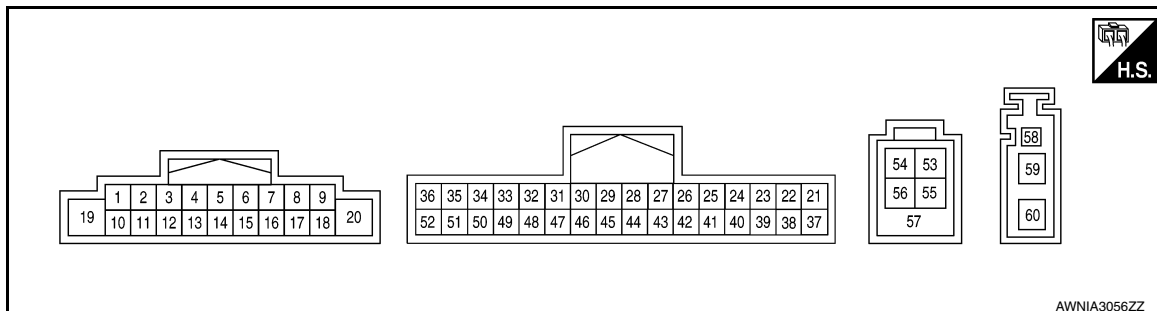
## ECU DIAGNOSIS INFORMATION

### AUDIO UNIT

#### Reference Value

INFOID:000000009460155

#### TERMINAL LAYOUT



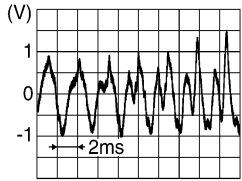
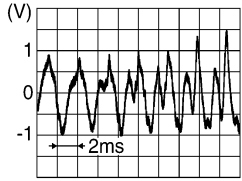
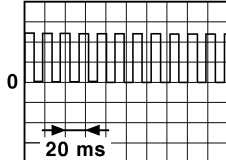
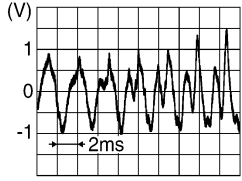
#### PHYSICAL VALUES

| Terminal<br>(Wire color) |            | Description                           |                  | Condition          |                     | Reference value<br>(Approx.) |
|--------------------------|------------|---------------------------------------|------------------|--------------------|---------------------|------------------------------|
| +                        | –          | Signal name                           | Input/<br>Output | Ignition<br>switch | Operation           |                              |
| 2<br>(GR)                | 3<br>(P)   | Sound signal front door<br>speaker LH | Output           | ON                 | Sound output        | <p>SKIB3609E</p>             |
| 4<br>(W)                 | 5<br>(R)   | Sound signal rear door<br>speaker LH  | Output           | ON                 | Sound output        | <p>SKIB3609E</p>             |
| 6<br>(BR)                | 15<br>(GR) | Steering switch signal A              | Input            | ON                 | Press SOURCE switch | 0V                           |
|                          |            |                                       |                  |                    | Press △ switch      | 1.0V                         |
|                          |            |                                       |                  |                    | Press ▽ switch      | 2.0V                         |
|                          |            |                                       |                  |                    | Press ↙ ↘ switch    | 3.0V                         |
|                          |            |                                       |                  |                    | Except above        | 5.0V                         |
| 7<br>(W)                 | Ground     | ACC power supply                      | Input            | ACC                | —                   | Battery voltage              |
| 9<br>(LG/R)              | Ground     | Illumination control signal           | Input            | ON                 | Headlamps ON        | Battery voltage              |

# AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

| Terminal<br>(Wire color) |            | Description                           |                  | Condition          |                                                     | Reference value<br>(Approx.)                                                                         |
|--------------------------|------------|---------------------------------------|------------------|--------------------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------|
| +                        | —          | Signal name                           | Input/<br>Output | Ignition<br>switch | Operation                                           |                                                                                                      |
| 11<br>(O)                | 12<br>(V)  | Sound signal front door<br>speaker RH | Output           | ON                 | Sound output                                        | <br>SKIB3609E     |
| 13<br>(L)                | 14<br>(Y)  | Sound signal rear door<br>speaker RH  | Output           | ON                 | Sound output                                        | <br>SKIB3609E     |
| 16<br>(V)                | 15<br>(GR) | Steering switch signal B              | Input            | ON                 | Press  switch                                       | 0V                                                                                                   |
|                          |            |                                       |                  |                    | Press  switch                                       | 1.0V                                                                                                 |
|                          |            |                                       |                  |                    | Press  switch                                       | 2.0V                                                                                                 |
|                          |            |                                       |                  |                    | Except above                                        | 5.0V                                                                                                 |
| 18<br>(LG)               | Ground     | Vehicle speed signal                  | Input            | ON                 | When vehicle speed is ap-<br>prox. 40 km/h (25 MPH) | <br>JSNIA0012GB |
| 19<br>(Y)                | Ground     | Battery power supply                  | Input            | OFF                | —                                                   | Battery voltage                                                                                      |
| 20<br>(B/W)              | Ground     | Ground                                | —                | ON                 | —                                                   | 0 V                                                                                                  |
| 25<br>(G)                | 24<br>(R)  | TEL voice signal                      | Input            | ON                 | During voice guide output<br>with  switch pressed.  | <br>SKIB3609E   |
| 26<br>(Shield)           | —          | TEL voice signal shield               | —                | —                  | —                                                   | —                                                                                                    |
| 31<br>(SB)               | —          | AV communication (H)                  | Input/<br>Output | —                  | —                                                   | —                                                                                                    |
| 32<br>(LG)               | —          | AV communication (L)                  | Input/<br>Output | —                  | —                                                   | —                                                                                                    |
| 33<br>(B)                | Ground     | Camera ground                         | —                | ON                 | —                                                   | 0 V                                                                                                  |
| 34<br>(L)                | Ground     | Camera power supply                   | Output           | ON                 | Camera image displayed                              | 6.0 V                                                                                                |
|                          |            |                                       |                  |                    | Except for above                                    | 0 V                                                                                                  |

A

B

C

D

E

F

G

H

I

J

K

L

M

AV

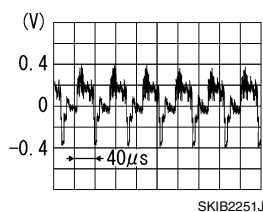
O

P

# AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

| Terminal<br>(Wire color) |                | Description            |                  | Condition          |                                                       | Reference value<br>(Approx.)                                                        |
|--------------------------|----------------|------------------------|------------------|--------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------|
| +                        | —              | Signal name            | Input/<br>Output | Ignition<br>switch | Operation                                             |                                                                                     |
| 35<br>(Y)                | 36<br>(Shield) | Camera image signal    | Input            | ON                 | Camera image displayed                                |  |
| 44<br>(B)                | Ground         | Camera detection       | —                | ON                 | —                                                     | 0 V                                                                                 |
| 46<br>(B)                | Ground         | EQ02 Ground            | —                | ON                 | —                                                     | 0 V                                                                                 |
| 48<br>(B/W)              | Ground         | EQ04 Ground            | —                | ON                 | —                                                     | 0 V                                                                                 |
| 50<br>(Y)                | Ground         | Reverse signal         | Input            | ON                 | Selector lever in R (re-verse)                        | Battery voltage                                                                     |
|                          |                |                        |                  |                    | Selector lever in any position other than R (reverse) | 0 V                                                                                 |
| 53<br>(W)                | —              | V BUS signal           | —                | —                  | —                                                     | —                                                                                   |
| 54<br>(G)                | —              | USB ground             | —                | —                  | —                                                     | —                                                                                   |
| 55<br>(L)                | —              | USB D+ signal          | —                | —                  | —                                                     | —                                                                                   |
| 56<br>(R)                | —              | USB D– signal          | —                | —                  | —                                                     | —                                                                                   |
| 57<br>(Shield)           | —              | USB shield             | —                | —                  | —                                                     | —                                                                                   |
| 58<br>(B)                | Ground         | Antenna amp. ON signal | Output           | ON                 | Audio unit ON, FM-AM selected.                        | Battery voltage                                                                     |
| 59<br>(B)                | Ground         | AM/FM antenna signal   | Input            | ON                 | Audio unit ON, FM-AM selected.                        | 5.0 V                                                                               |

# BLUETOOTH® CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

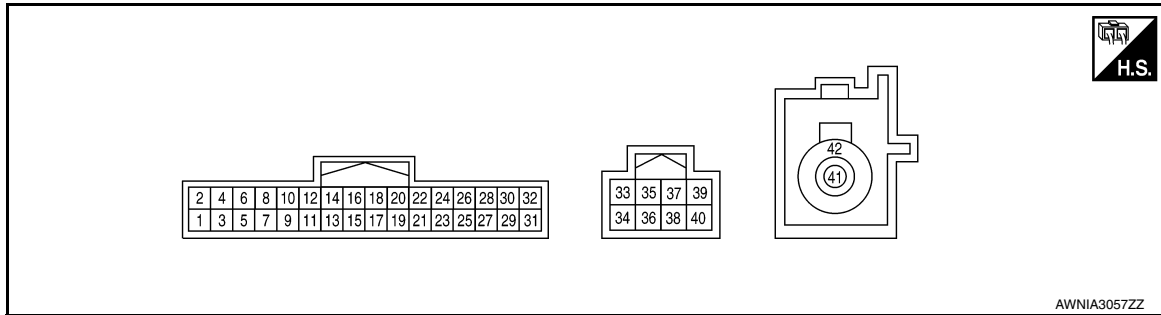
[DISPLAY AUDIO]

## BLUETOOTH® CONTROL UNIT

### Reference Value

INFOID:000000009460156

### TERMINAL LAYOUT



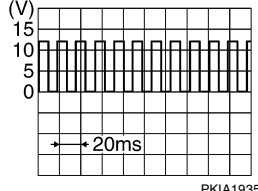
### PHYSICAL VALUES

| Terminal<br>(wire color) |               | Description   |                  | Condition          |                                               | Reference value<br>(Approx.) |
|--------------------------|---------------|---------------|------------------|--------------------|-----------------------------------------------|------------------------------|
| +                        | –             | Signal name   | Input/<br>output | Ignition<br>switch | Operation                                     |                              |
| 1<br>(Y/G)               | Ground        | Battery power | Input            | OFF                | –                                             | Battery voltage              |
| 2<br>(L/Y)               | Ground        | ACC power     | Input            | ACC                | –                                             | Battery voltage              |
| 3<br>(O)                 | Ground        | IGN power     | Input            | ON                 | –                                             | Battery voltage              |
| 4<br>(B)                 | Ground        | Ground        | –                | ON                 | –                                             | 0V                           |
| 7<br>(P)                 | 8<br>(Shield) | MIC in signal | Input            | –                  | –                                             | –                            |
| 9<br>(W)                 | 10<br>(B)     | Audio out     | Output           | ACC<br>or<br>ON    | Bluetooth® control unit<br>sends audio signal | <br>SKIB3609E                |
| 12<br>(R)                | 14<br>(G)     | LAD IN 1      | Input            | ON                 | Press SOURCE switch                           | 0V                           |
|                          |               |               |                  |                    | Press Δ switch                                | 1.0V                         |
|                          |               |               |                  |                    | Press ▽ switch                                | 2.0V                         |
|                          |               |               |                  |                    | Press ↶ ↷ switch                              | 3.0V                         |
|                          |               |               |                  |                    | Except above                                  | 5.0V                         |
| 13<br>(P)                | 14<br>(G)     | LAD IN 2      | Input            | ON                 | Press – 🔊 switch                              | 0V                           |
|                          |               |               |                  |                    | Press 🔊+ switch                               | 1.0V                         |
|                          |               |               |                  |                    | Press 🔊 switch                                | 2.0V                         |
|                          |               |               |                  |                    | Except above                                  | 5.0V                         |

# BLUETOOTH® CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

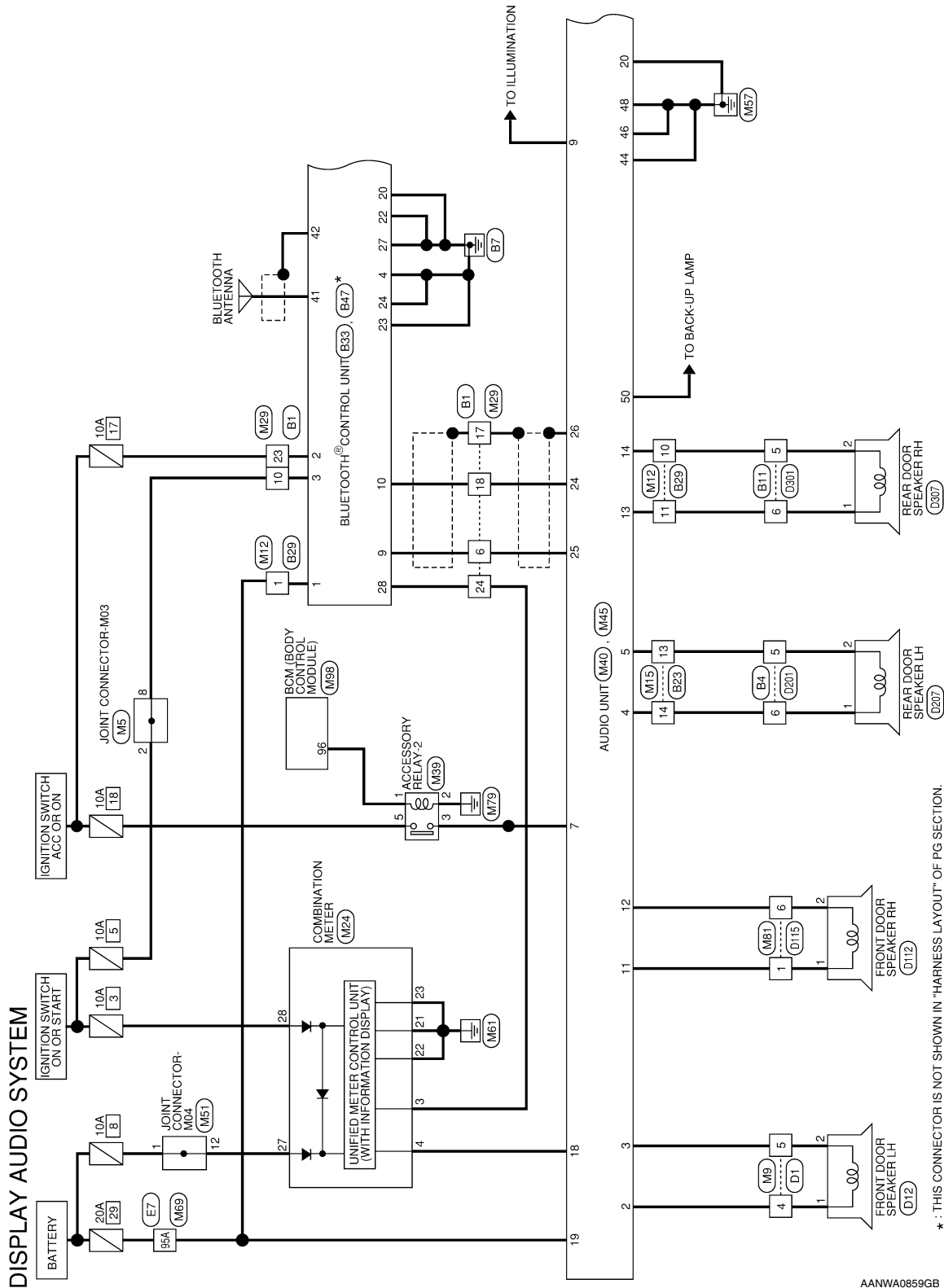
| Terminal<br>(wire color) |            | Description                    |                  | Condition          |                                                | Reference value<br>(Approx.)                                                          |
|--------------------------|------------|--------------------------------|------------------|--------------------|------------------------------------------------|---------------------------------------------------------------------------------------|
| +                        | –          | Signal name                    | Input/<br>output | Ignition<br>switch | Operation                                      |                                                                                       |
| 17<br>(BR)               | 19<br>(GR) | LAD OUT 1                      | Output           | ON                 | Press SOURCE switch                            | 0V                                                                                    |
|                          |            |                                |                  |                    | Press $\Delta$ switch                          | 1.0V                                                                                  |
|                          |            |                                |                  |                    | Press $\nabla$ switch                          | 2.0V                                                                                  |
|                          |            |                                |                  |                    | Press $\swarrow$ $\searrow$ switch             | 3.0V                                                                                  |
|                          |            |                                |                  |                    | Except above                                   | 5.0V                                                                                  |
| 18<br>(V)                | 19<br>(GR) | LAD OUT 2                      | Output           | ON                 | Press $-$ $\square$ switch                     | 0V                                                                                    |
|                          |            |                                |                  |                    | Press $\square$ $+$ switch                     | 1.0V                                                                                  |
|                          |            |                                |                  |                    | Press $\curvearrowright$ switch                | 2.0V                                                                                  |
|                          |            |                                |                  |                    | Except above                                   | 5.0V                                                                                  |
| 20<br>(B)                | Ground     | CONT1 Ground                   | –                | ON                 | –                                              | 0V                                                                                    |
| 22<br>(B)                | Ground     | CONT3 Ground                   | –                | ON                 | –                                              | 0V                                                                                    |
| 23<br>(B)                | Ground     | CONT4 Ground                   | –                | ON                 | –                                              | 0V                                                                                    |
| 24<br>(B)                | Ground     | CONT5 Ground                   | –                | ON                 | –                                              | 0V                                                                                    |
| 27<br>(B)                | Ground     | CONT6 Ground                   | –                | ON                 | –                                              | 0V                                                                                    |
| 28<br>(Y)                | Ground     | Vehicle speed signal (2-pulse) | Input            | ON                 | When vehicle speed is approx. 40 km/h (25 MPH) |  |
| 29<br>(L)                | Ground     | Microphone power               | Output           | ON                 | –                                              | 5V                                                                                    |
| 33<br>(SB)               | –          | AV communication (H)           | –                | –                  | –                                              | —                                                                                     |
| 34<br>(LG)               | –          | AV communication (L)           | –                | –                  | –                                              | —                                                                                     |
| 37<br>(LG)               | –          | AV communication jumper (H)    | –                | –                  | –                                              | —                                                                                     |
| 38<br>(LG)               | –          | AV communication jumper (H)    | –                | –                  | –                                              | —                                                                                     |
| 39<br>(SB)               | –          | AV communication jumper (L)    | –                | –                  | –                                              | —                                                                                     |
| 40<br>(SB)               | –          | AV communication jumper (L)    | –                | –                  | –                                              | —                                                                                     |
| 41<br>(B)                | –          | Bluetooth® antenna             | –                | –                  | –                                              | —                                                                                     |
| 42<br>(Shield)           | –          | Shield                         | –                | –                  | –                                              | —                                                                                     |

WIRING DIAGRAM

DISPLAY AUDIO

Wiring Diagram

INFOID:000000009460157



\* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

AANWA0859GB

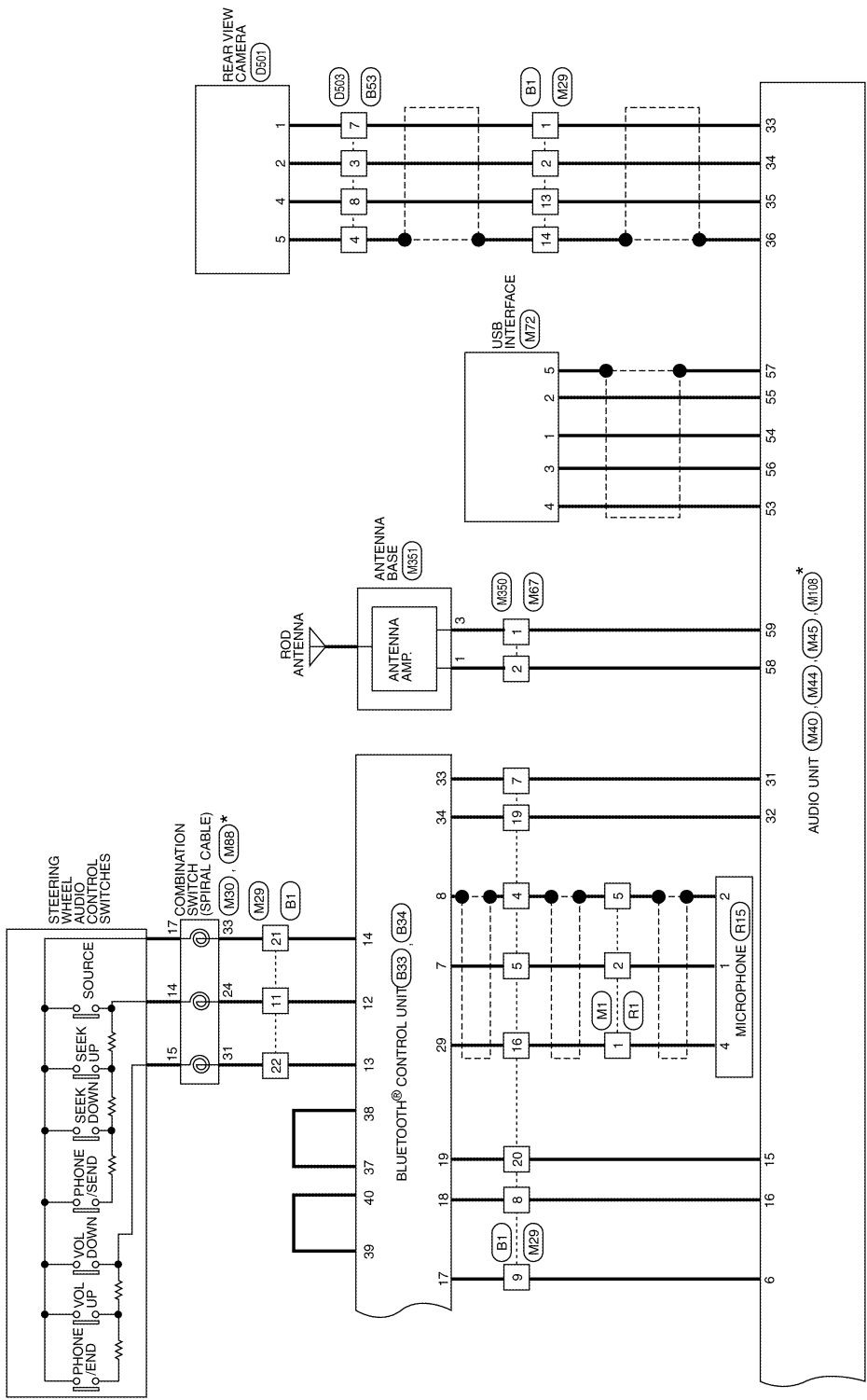
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
P

AV

# DISPLAY AUDIO

< WIRING DIAGRAM >

[DISPLAY AUDIO]

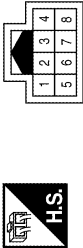


\* : THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT" OF PG SECTION.

AANWA0860GB

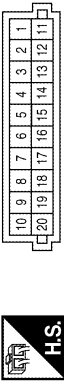
DISPLAY AUDIO SYSTEM CONNECTORS

|                 |              |
|-----------------|--------------|
| Connector No.   | M1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



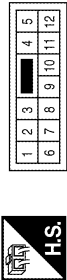
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | -           |
| 2            | P             | -           |
| 5            | SHIELD        | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M5                  |
| Connector Name  | JOINT CONNECTOR-M03 |
| Connector Color | BROWN               |



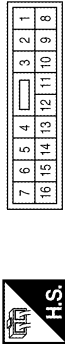
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2            | O             | -           |
| 8            | O             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M9           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



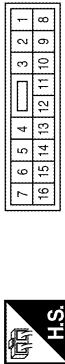
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | GR            | -           |
| 5            | P             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M12          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



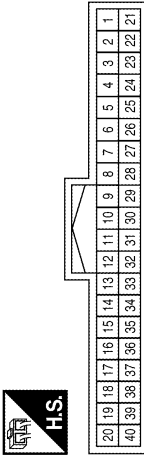
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | Y             | -           |
| 10           | Y             | -           |
| 11           | L             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M15          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 13           | R             | -           |
| 14           | W             | -           |

|                 |                   |
|-----------------|-------------------|
| Connector No.   | M24               |
| Connector Name  | COMBINATION METER |
| Connector Color | WHITE             |



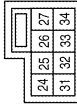
| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 3            | SB            | 2P/R          |
| 4            | LG            | 8P/R          |
| 21           | B             | GND (ILL)     |
| 22           | B             | GND (POWER)   |
| 23           | B             | GND (CIRCUIT) |
| 27           | RW            | BAT           |
| 28           | GR            | IGN           |

# DISPLAY AUDIO

< WIRING DIAGRAM >

[DISPLAY AUDIO]

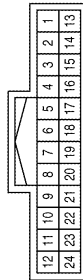
|                 |                                      |
|-----------------|--------------------------------------|
| Connector No.   | M30                                  |
| Connector Name  | COMBINATION SWITCH<br>(SPIRAL CABLE) |
| Connector Color | GRAY                                 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 24           | LG            | STRG SW A   |
| 31           | R             | STRG SW B   |
| 33           | L             | STRG SW GND |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 9            | BR            | -           |
| 10           | O             | -           |
| 11           | LG            | -           |
| 13           | Y             | -           |
| 14           | SHIELD        | -           |
| 16           | L             | -           |
| 17           | SHIELD        | -           |
| 18           | R             | -           |
| 19           | LG            | -           |
| 20           | GR            | -           |
| 21           | L             | -           |
| 22           | R             | -           |
| 23           | L             | -           |
| 24           | SB            | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M29          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |
| 2            | L             | -           |
| 4            | SHIELD        | -           |
| 5            | P             | -           |
| 6            | G             | -           |
| 7            | SB            | -           |
| 8            | V             | -           |

|                 |                   |
|-----------------|-------------------|
| Connector No.   | M39               |
| Connector Name  | ACCESSORY RELAY-2 |
| Connector Color | BLUE              |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | SB            | -           |
| 2            | B             | -           |
| 3            | L             | -           |
| 5            | O             | -           |

AANIA1711GB

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 43           | —             | —           |
| 44           | B             | CAMERA DET  |
| 45           | —             | —           |
| 46           | B             | EQ02        |
| 47           | —             | —           |
| 48           | BW            | EQ04        |
| 49           | —             | —           |
| 50           | Y             | REVERSE SIG |
| 51           | —             | —           |
| 52           | —             | —           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 28           | —             | —           |
| 29           | —             | —           |
| 30           | —             | —           |
| 31           | SB            | M-CAN-H     |
| 32           | LG            | M-CAN-L     |
| 33           | B             | CAMERA GND  |
| 34           | L             | CAMERA 6.2V |
| 35           | Y             | COMPOSITE+  |
| 36           | SHIELD        | COMPOSITE-  |
| 37           | —             | —           |
| 38           | —             | —           |
| 39           | —             | —           |
| 40           | —             | —           |
| 41           | —             | —           |
| 42           | —             | —           |

| Connector No.   | M40                                    |
|-----------------|----------------------------------------|
| Connector Name  | AUDIO UNIT (WITH DISPLAY AUDIO SYSTEM) |
| Connector Color | WHITE                                  |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 21           | —             | —           |
| 22           | —             | —           |
| 23           | —             | —           |
| 24           | R             | —           |
| 25           | G             | —           |
| 26           | SHIELD        | —           |
| 27           | —             | —           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 21           | —             | —           |
| 22           | —             | —           |
| 23           | —             | —           |
| 24           | R             | —           |
| 25           | G             | —           |
| 26           | SHIELD        | —           |
| 27           | —             | —           |

| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 8            | —             | —            |
| 9            | LG/R          | ILL (+)      |
| 10           | —             | —            |
| 11           | O             | FR RH SP (+) |
| 12           | V             | FR RH SP (-) |
| 13           | L             | RR RH SP (+) |
| 14           | Y             | RR RH SP (-) |
| 15           | GR            | STRG SW GND  |
| 16           | V             | STRG SW B    |
| 17           | —             | —            |
| 18           | LG            | SPEED        |
| 19           | Y             | BAT          |
| 20           | BW            | GND          |

| Connector No.   | M45                                    |
|-----------------|----------------------------------------|
| Connector Name  | AUDIO UNIT (WITH DISPLAY AUDIO SYSTEM) |
| Connector Color | WHITE                                  |

| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 1            | —             | —            |
| 2            | GR            | FR LH SP (+) |
| 3            | P             | FR LH SP (-) |
| 4            | W             | RR LH SP (+) |
| 5            | R             | RR LH SP (-) |
| 6            | BR            | STRG SW A    |
| 7            | W             | ACC          |

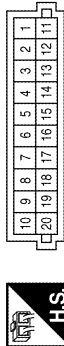
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 53           | W             | V BUS       |
| 54           | G             | USB GND     |
| 55           | L             | USB D+      |
| 56           | R             | USB D-      |
| 57           | SHIELD        | SHIELD      |

| Connector No.   | M44                                    |
|-----------------|----------------------------------------|
| Connector Name  | AUDIO UNIT (WITH DISPLAY AUDIO SYSTEM) |
| Connector Color | GRAY                                   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 53           | W             | V BUS       |
| 54           | G             | USB GND     |
| 55           | L             | USB D+      |
| 56           | R             | USB D-      |
| 57           | SHIELD        | SHIELD      |

AAANIA1712GB

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M51                 |
| Connector Name  | JOINT CONNECTOR-M04 |
| Connector Color | GRAY                |



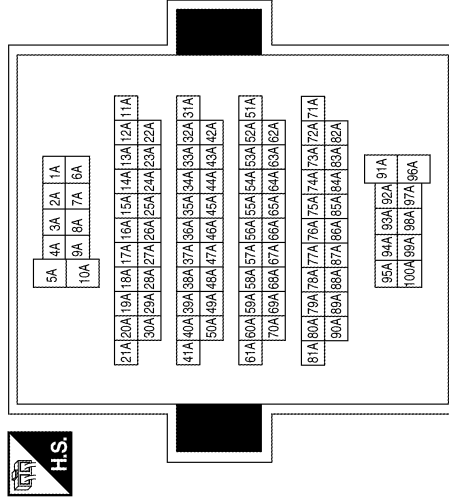
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | —           |
| 12           | R/W           | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M67          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |



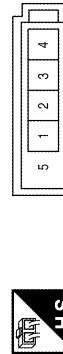
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | —           |
| 2            | B             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M69          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



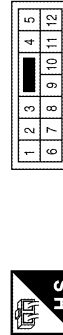
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 95A          | Y             | —           |

|                 |               |
|-----------------|---------------|
| Connector No.   | M72           |
| Connector Name  | USB INTERFACE |
| Connector Color | GRAY          |



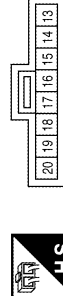
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | G             | —           |
| 2            | L             | —           |
| 3            | R             | —           |
| 4            | W             | —           |
| 5            | SHIELD        | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M81          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | O             | —           |
| 6            | V             | —           |

|                 |                                   |
|-----------------|-----------------------------------|
| Connector No.   | M88                               |
| Connector Name  | COMBINATION SWITCH (SPIRAL CABLE) |
| Connector Color | GRAY                              |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 14           | W             | REMOTE A    |
| 15           | L             | REMOTE B    |
| 17           | BR            | GND         |

DISPLAY AUDIO

< WIRING DIAGRAM >

[DISPLAY AUDIO]

|                 |              |
|-----------------|--------------|
| Connector No.   | M350         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |



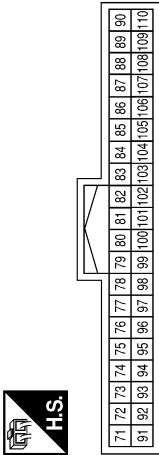
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |
| 2            | B             | -           |

|                 |                                        |
|-----------------|----------------------------------------|
| Connector No.   | M108                                   |
| Connector Name  | AUDIO UNIT (WITH DISPLAY AUDIO SYSTEM) |
| Connector Color | GRAY                                   |



| Terminal No. | Color of Wire | Signal Name    |
|--------------|---------------|----------------|
| 58           | B             | ANT +B         |
| 59           | B             | ANTENNA SIGNAL |
| 60           | -             | -              |

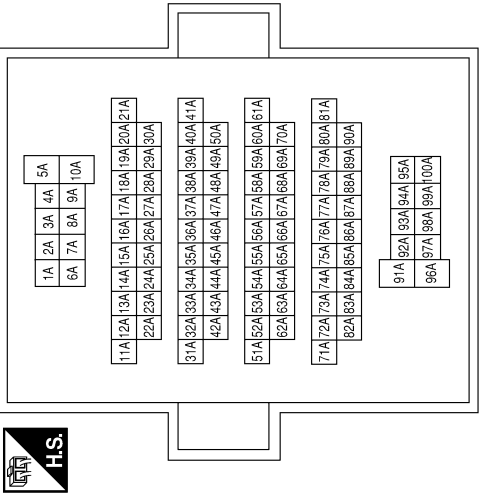
|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M98                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE                     |



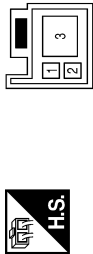
| Terminal No. | Color of Wire | Signal Name      |
|--------------|---------------|------------------|
| 96           | SB            | ACC RELAY OUTPUT |

|               |     |
|---------------|-----|
| Terminal No.  | 95A |
| Color of Wire | LG  |
| Signal Name   | -   |

|                 |              |
|-----------------|--------------|
| Connector No.   | E7           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|                 |              |
|-----------------|--------------|
| Connector No.   | M351         |
| Connector Name  | ANTENNA BASE |
| Connector Color | GRAY         |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |
| 2            | -             | -           |
| 3            | B             | -           |

AANIA1714GB

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
AV  
O  
P

AV

# DISPLAY AUDIO

< WIRING DIAGRAM >

[DISPLAY AUDIO]

|                 |              |
|-----------------|--------------|
| Connector No.   | B4           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

|    |   |   |   |
|----|---|---|---|
| 4  | 3 | 2 | 1 |
| 10 | 9 | 8 | 7 |
| 6  | 5 |   |   |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | R             | —           |
| 6            | W             | —           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 11           | R             | —           |
| 13           | Y             | —           |
| 14           | B             | —           |
| 16           | L             | —           |
| 17           | SHIELD        | —           |
| 18           | B             | —           |
| 19           | LG            | —           |
| 20           | GR            | —           |
| 21           | G             | —           |
| 22           | P             | —           |
| 23           | LY            | —           |
| 24           | Y             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

|    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | —           |
| 2            | G             | —           |
| 4            | SHIELD        | —           |
| 5            | P             | —           |
| 6            | W             | —           |
| 7            | SB            | —           |
| 8            | V             | —           |
| 9            | BR            | —           |
| 10           | O             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B29          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

|    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| 8  | 9  | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 |    |    |    |    |    |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | Y/G           | —           |
| 10           | GR            | —           |
| 11           | LG            | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B23          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

|    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| 8  | 9  | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 |    |    |    |    |    |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 13           | R             | —           |
| 14           | W             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B11          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

|    |   |   |   |
|----|---|---|---|
| 4  | 3 | 2 | 1 |
| 10 | 9 | 8 | 7 |
| 6  | 5 |   |   |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | GR            | —           |
| 6            | LG            | —           |

AANIA1715GB

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 21           | —             | —           |
| 22           | B             | CONT 3      |
| 23           | B             | CONT 4      |
| 24           | B             | CONT 3      |
| 25           | —             | —           |
| 26           | —             | —           |
| 27           | B             | CONT 6      |
| 28           | Y             | IGN         |
| 29           | L             | MIC POWER   |
| 30           | —             | —           |
| 31           | —             | —           |
| 32           | —             | —           |

| Terminal No. | Color of Wire | Signal Name        |
|--------------|---------------|--------------------|
| 7            | P             | MIC IN+            |
| 8            | SHIELD        | MIC IN- (GND)      |
| 9            | W             | AUDIO OUT +        |
| 10           | B             | AUDIO OUT -        |
| 11           | —             | —                  |
| 12           | R             | LADDER IN 1        |
| 13           | P             | LADDER IN 2        |
| 14           | G             | LADDER IN 3        |
| 15           | —             | —                  |
| 16           | —             | —                  |
| 17           | BR            | LADDER OUT 1       |
| 18           | V             | LADDER OUT 2       |
| 19           | GR            | LADDER OUT 3 (GND) |
| 20           | B             | CONT 1             |

|                 |                            |
|-----------------|----------------------------|
| Connector No.   | B33                        |
| Connector Name  | BLUETOOTH®<br>CONTROL UNIT |
| Connector Color | WHITE                      |

|   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |
|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 |
| 1 | 3 | 5 | 7 | 9  | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 | 27 | 29 | 31 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | Y/G           | +B          |
| 2            | L/Y           | ACC         |
| 3            | O             | IGN         |
| 4            | B             | GND         |
| 5            | —             | —           |
| 6            | —             | —           |

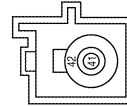
|                 |              |
|-----------------|--------------|
| Connector No.   | B53          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |

|   |   |   |   |
|---|---|---|---|
| 4 | 3 | 2 | 1 |
| 8 | 7 | 6 | 5 |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | G             | —           |
| 4            | B             | —           |
| 7            | L             | —           |
| 8            | Y             | —           |

|                 |                            |
|-----------------|----------------------------|
| Connector No.   | B47                        |
| Connector Name  | BLUETOOTH®<br>CONTROL UNIT |
| Connector Color | GRAY                       |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 41           | B             | BT ANTENNA  |
| 42           | SHIELD        | BT SHIELD   |

|                 |                            |
|-----------------|----------------------------|
| Connector No.   | B34                        |
| Connector Name  | BLUETOOTH®<br>CONTROL UNIT |
| Connector Color | WHITE                      |

|    |    |    |    |
|----|----|----|----|
| 33 | 35 | 37 | 39 |
| 34 | 36 | 38 | 40 |



| Terminal No. | Color of Wire | Signal Name  |
|--------------|---------------|--------------|
| 33           | SB            | CAN H1       |
| 34           | LG            | CAN L1       |
| 35           | —             | —            |
| 36           | —             | —            |
| 37           | LG            | CAN JUMPER 1 |
| 38           | LG            | CAN H2       |
| 39           | SB            | CAN JUMPER 2 |
| 40           | SB            | CAN L1       |

AA9IA1716GB

|                 |              |
|-----------------|--------------|
| Connector No.   | D1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |   |   |   |   |
|----|----|----|---|---|---|---|
| 5  | 4  |    | 3 | 2 | 1 |   |
| 12 | 11 | 10 | 9 | 8 | 7 | 6 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | GR            | —           |
| 5            | P             | —           |

|                 |            |
|-----------------|------------|
| Connector No.   | R15        |
| Connector Name  | MICROPHONE |
| Connector Color | WHITE      |



|   |   |   |   |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | P             | SIG         |
| 2            | SHIELD        | GND         |
| 3            | —             | —           |
| 4            | L             | VCC         |

|                 |              |
|-----------------|--------------|
| Connector No.   | R1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|   |   |   |   |
|---|---|---|---|
| 4 | 3 | 2 | 1 |
| 8 | 7 | 6 | 5 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | —           |
| 2            | P             | —           |
| 5            | SHIELD        | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | D115         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |             |   |   |   |   |
|----|----|-------------|---|---|---|---|
| 5  | 4  | <div></div> | 3 | 2 | 1 |   |
| 12 | 11 | 10          | 9 | 8 | 7 | 6 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | —           |
| 6            | P             | —           |

|                 |                       |
|-----------------|-----------------------|
| Connector No.   | D112                  |
| Connector Name  | FRONT DOOR SPEAKER RH |
| Connector Color | WHITE                 |



|   |   |
|---|---|
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | —           |
| 2            | P             | —           |

|                 |                       |
|-----------------|-----------------------|
| Connector No.   | D12                   |
| Connector Name  | FRONT DOOR SPEAKER LH |
| Connector Color | WHITE                 |



|   |   |
|---|---|
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | —           |
| 2            | P             | —           |

AANIA1717GB

|                 |              |
|-----------------|--------------|
| Connector No.   | D301         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|   |    |   |   |
|---|----|---|---|
| 1 | 2  | 3 | 4 |
| 5 | 6  | 7 | 8 |
| 9 | 10 |   |   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | R             | —           |
| 6            | W             | —           |

|                 |                      |
|-----------------|----------------------|
| Connector No.   | D207                 |
| Connector Name  | REAR DOOR SPEAKER LH |
| Connector Color | WHITE                |



|   |   |
|---|---|
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | W             | —           |
| 2            | R             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | D201         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|   |    |   |   |
|---|----|---|---|
| 1 | 2  | 3 | 4 |
| 5 | 6  | 7 | 8 |
| 9 | 10 |   |   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | R             | —           |
| 6            | W             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | D503         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|   |   |   |   |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | G             | —           |
| 4            | B             | —           |
| 7            | L             | —           |
| 8            | Y             | —           |

|                 |                  |
|-----------------|------------------|
| Connector No.   | D501             |
| Connector Name  | REAR VIEW CAMERA |
| Connector Color | BLACK            |



|   |   |   |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | —           |
| 2            | G             | —           |
| 3            | —             | —           |
| 4            | Y             | —           |
| 5            | B             | —           |
| 6            | —             | —           |

|                 |                      |
|-----------------|----------------------|
| Connector No.   | D307                 |
| Connector Name  | REAR DOOR SPEAKER RH |
| Connector Color | WHITE                |



|   |   |
|---|---|
| 2 | 1 |
|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | W             | —           |
| 2            | R             | —           |

AANIA1718GB

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
AV  
O  
P

AV

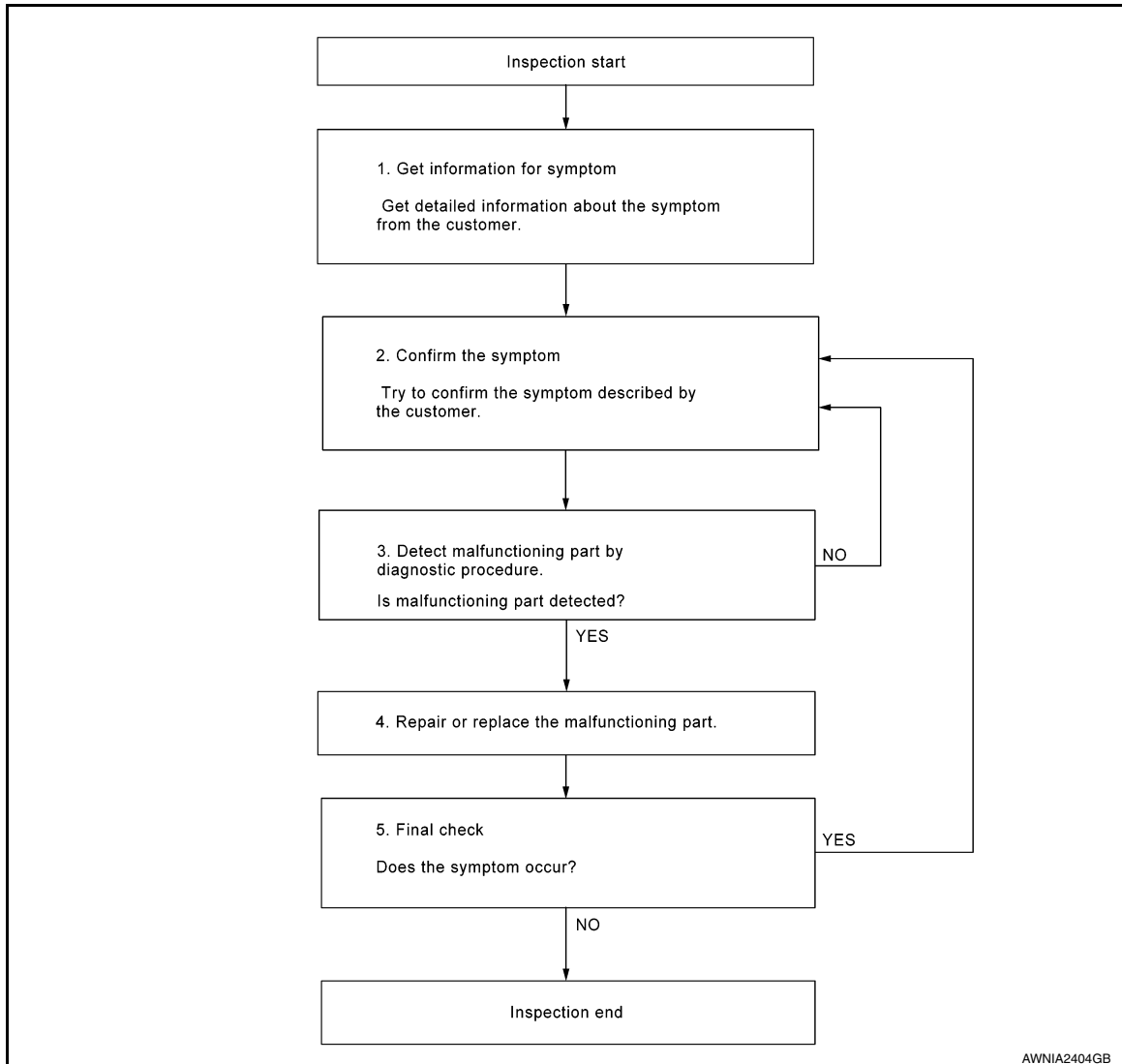
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000009460158

#### OVERALL SEQUENCE



#### DETAILED FLOW

##### 1.GET INFORMATION FOR SYMPTOM

Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

>> GO TO 2.

##### 2.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected. Refer to [AV-88. "Symptom Table"](#).

>> GO TO 3.

##### 3.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[DISPLAY AUDIO]

Is malfunctioning part detected?

YES >> GO TO 4.

NO >> GO TO 2.

## 4.REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnostic Procedure.

>> GO TO 5.

## 5.FINAL CHECK

Refer to confirmed symptom in step 2, and make sure that the symptom is not detected.

Was the repair confirmed?

YES >> Inspection End.

NO >> GO TO 2.

A

B

C

D

E

F

G

H

I

J

K

L

M

AV

O

P

**DTC/CIRCUIT DIAGNOSIS****POWER SUPPLY AND GROUND CIRCUIT****AUDIO UNIT****AUDIO UNIT : Diagnosis Procedure**

INFOID:000000009460159

Regarding Wiring Diagram information, refer to [AV-59, "Wiring Diagram"](#).

**1.CHECK FUSE**

Check that the following fuses are not blown.

| Terminal No. | Signal name          | Fuse No. |
|--------------|----------------------|----------|
| 7            | ACC power supply     | 18 (10A) |
| 19           | Battery power supply | 29 (15A) |

**Are the fuses blown?**

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

**2.CHECK POWER SUPPLY CIRCUIT**

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M45.
3. Check voltage between audio unit connector M45 and ground.

| Audio unit |          | Ground | Condition            | Voltage<br>(Approx.) |
|------------|----------|--------|----------------------|----------------------|
| Connector  | Terminal |        |                      |                      |
| M45        | 7        | —      | Ignition switch: ON  | Battery voltage      |
|            | 19       |        | Ignition switch: OFF |                      |

**Is the inspection result normal?**

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

**3.CHECK GROUND CIRCUIT**

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M40.
3. Check continuity between audio unit connectors and ground.

| Audio unit |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M45        | 20       | —      | Yes        |
| M40        | 44       |        |            |
|            | 46       |        |            |
|            | 48       |        |            |

**Is the inspection result normal?**

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

**BLUETOOTH® CONTROL UNIT****BLUETOOTH® CONTROL UNIT : Diagnosis Procedure**

INFOID:000000009460160

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

Regarding Wiring Diagram information, refer to [AV-59. "Wiring Diagram"](#).

## 1.CHECK FUSE

Check that the following fuses are not blown.

| Terminal No. | Signal name          | Fuse No. |
|--------------|----------------------|----------|
| 1            | Battery power supply | 29 (15A) |
| 2            | ACC power supply     | 17 (10A) |
| 3            | Ignition signal      | 5 (10A)  |

Are the fuses blown?

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

## 2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect Bluetooth® control unit connector B33.
3. Check voltage between Bluetooth® control unit connector B33 and ground.

| Bluetooth® control unit |          | Ground | Condition            | Voltage (Approx.) |
|-------------------------|----------|--------|----------------------|-------------------|
| Connector               | Terminal |        |                      |                   |
| B33                     | 1        | —      | Ignition switch: OFF | Battery voltage   |
|                         | 2        |        | Ignition switch: ACC |                   |
|                         | 3        |        | Ignition switch: ON  |                   |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

## 3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between Bluetooth® control unit connector B33 and ground.

| Bluetooth® control unit |          | Ground | Continuity |
|-------------------------|----------|--------|------------|
| Connector               | Terminal |        |            |
| B33                     | 4        | —      | Yes        |
|                         | 20       |        |            |
|                         | 22       |        |            |
|                         | 23       |        |            |
|                         | 24       |        |            |
|                         | 27       |        |            |

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

## FRONT DOOR SPEAKER

### Diagnosis Procedure

INFOID:000000009460161

Regarding Wiring Diagram information, refer to [AV-59. "Wiring Diagram"](#).

### 1.CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

### 2.CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M45 and suspect front door speaker connector.
2. Check continuity between audio unit connector M45 and suspect front door speaker connector.

| Audio unit |          | Front door speaker |          | Continuity |
|------------|----------|--------------------|----------|------------|
| Connector  | Terminal | Connector          | Terminal |            |
| M45        | 2        | D12 (LH)           | 1        | Yes        |
|            | 3        |                    | 2        |            |
|            | 11       | D112 (RH)          | 1        |            |
|            | 12       |                    | 2        |            |

3. Check continuity between audio unit connector M45 and ground.

| Audio unit |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M45        | 2        | —      | No         |
|            | 3        |        |            |
|            | 11       |        |            |
|            | 12       |        |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3.CHECK FRONT DOOR SPEAKER SIGNAL

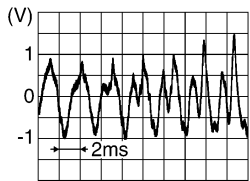
1. Connect audio unit connector M45 and suspect front door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M45.

| Audio unit connector M45 |          | Condition | Reference value |
|--------------------------|----------|-----------|-----------------|
| (+)                      | (-)      |           |                 |
| Terminal                 | Terminal |           |                 |

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

|    |    |                     |                                                                                     |
|----|----|---------------------|-------------------------------------------------------------------------------------|
| 2  | 3  | Audio signal output |  |
| 11 | 12 |                     |                                                                                     |

Is the inspection result normal?

- YES >> Replace front door speaker. Refer to [AV-94. "Removal and Installation"](#).
- NO >> Replace audio unit. Refer to [AV-93. "Removal and Installation"](#).

AV

# REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## REAR DOOR SPEAKER

### Diagnosis Procedure

INFOID:000000009460163

Regarding Wiring Diagram information, refer to [AV-59. "Wiring Diagram"](#).

### 1.CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

### 2.CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M45 and suspect rear door speaker connector.
2. Check continuity between audio unit connector M45 and suspect rear door speaker connector.

| Audio unit |          | Rear speaker |          | Continuity |
|------------|----------|--------------|----------|------------|
| Connector  | Terminal | Connector    | Terminal |            |
| M45        | 4        | D207 (LH)    | 1        | Yes        |
|            | 5        |              | 2        |            |
|            | 13       | D307 (RH)    | 1        |            |
|            | 14       |              | 2        |            |

3. Check continuity between audio unit connector M45 and ground.

| Audio unit |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M45        | 4        | —      | No         |
|            | 5        |        |            |
|            | 13       |        |            |
|            | 14       |        |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3.CHECK REAR DOOR SPEAKER SIGNAL

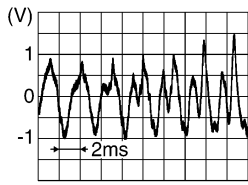
1. Connect audio unit connector M45 and suspect rear door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M45.

| Audio unit connector M45 |          | Condition | Reference value |
|--------------------------|----------|-----------|-----------------|
| (+)                      | (-)      |           |                 |
| Terminal                 | Terminal |           |                 |

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

|    |    |                     |                                                                                                  |
|----|----|---------------------|--------------------------------------------------------------------------------------------------|
| 4  | 5  | Audio signal output | <br>SKIB3609E |
| 13 | 14 |                     |                                                                                                  |

Is the inspection result normal?

- YES >> Replace rear door speaker. Refer to [AV-95. "Removal and Installation"](#).
- NO >> Replace audio unit. Refer to [AV-93. "Removal and Installation"](#).

AV

O

P

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M

## BLUETOOTH® VOICE SIGNAL CIRCUIT

### Diagnosis Procedure

INFOID:000000009460164

Regarding Wiring Diagram information, refer to [AV-59. "Wiring Diagram"](#).

### 1. CHECK BLUETOOTH® VOICE SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M40 and Bluetooth® control unit connector B33.
3. Check continuity between audio unit connector M40 and Bluetooth® control unit connector B33.

| Audio unit |          | Bluetooth® control unit |          | Continuity |
|------------|----------|-------------------------|----------|------------|
| Connector  | Terminal | Connector               | Terminal |            |
| M40        | 25       | B33                     | 9        | Yes        |

4. Check continuity between audio unit connector M40 and ground.

| Audio unit |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M40        | 25       | —      | No         |

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

### 2. CHECK BLUETOOTH® VOICE SIGNAL GROUND CIRCUIT CONTINUITY

Check continuity between audio unit connector M40 and Bluetooth® control unit connector B33.

| Audio unit |          | Bluetooth® control unit |          | Continuity |
|------------|----------|-------------------------|----------|------------|
| Connector  | Terminal | Connector               | Terminal |            |
| M40        | 24       | B33                     | 10       | Yes        |

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

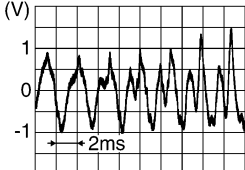
### 3. CHECK BLUETOOTH® VOICE SIGNAL

1. Connect audio unit connector M40 and Bluetooth® control unit connector B33.
2. Turn ignition switch to ACC.
3. Press  switch.
4. Check signal between the terminals of audio unit connector M40.

BLUETOOTH® VOICE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

| Audio unit connector M40 |          | Condition                                           | Reference value                                                                                                                                                                                                                                                                |
|--------------------------|----------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (+)                      | (-)      |                                                     |                                                                                                                                                                                                                                                                                |
| Terminal                 | Terminal |                                                     |                                                                                                                                                                                                                                                                                |
| 25                       | 24       | During voice guide output with<br>⏏ switch pressed. |  <div>                         (V)                         <div>1</div> <div>0</div> <div>-1</div> </div> <div>                         2ms                     </div> <div>SKIB3609E</div> |

Is the inspection result normal?

- YES >> Replace Bluetooth® control unit. Refer to [AV-98, "Removal and Installation"](#).
- NO >> Replace audio unit. Refer to [AV-93, "Removal and Installation"](#).

AV

# BLUETOOTH® CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## BLUETOOTH® CONTROL SIGNAL CIRCUIT

### Diagnosis Procedure

INFOID:000000009460165

Regarding Wiring Diagram information, refer to [AV-59. "Wiring Diagram"](#).

### 1. CHECK CONTROL SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect Bluetooth® control unit connector B33.
3. Check continuity between Bluetooth® control unit connector B33 and ground.

| Bluetooth® control unit |           | Ground | Continuity |
|-------------------------|-----------|--------|------------|
| Connector               | Terminals |        |            |
| B33                     | 20        | —      | Yes        |
|                         | 22        |        |            |
|                         | 23        |        |            |
|                         | 24        |        |            |
|                         | 27        |        |            |

Is the inspection result normal?

- YES >> Replace Bluetooth® control unit. Refer to [AV-98. "Removal and Installation"](#).  
NO >> Repair or replace harness or connectors.

# REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

### Diagnosis Procedure

INFOID:000000009592936

Regarding Wiring Diagram information, refer to [AV-59, "Wiring Diagram"](#).

### 1. CHECK REVERSE INPUT SIGNAL

1. Turn ignition switch ON.
2. Shift the selector lever to R (reverse).
3. Check voltage between audio unit connector M40 and ground.

| Audio unit |          | Ground | Condition                     | Voltage (Approx.) |
|------------|----------|--------|-------------------------------|-------------------|
| (+)        |          | (-)    |                               |                   |
| Connector  | Terminal |        |                               |                   |
| M40        | 50       | —      | Selector lever in R (reverse) | Battery Voltage   |

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

### 2. CHECK CAMERA POWER SUPPLY CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M40 and rear view camera connector.
3. Check continuity between audio unit connector M40 and rear view camera connector D501.

| Audio unit |          | Rear view camera |          | Continuity |
|------------|----------|------------------|----------|------------|
| Connector  | Terminal | Connector        | Terminal |            |
| M40        | 34       | D501             | 2        | Yes        |

4. Check continuity between audio unit connector M40 and ground.

| Audio unit |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M40        | 34       |        | No         |

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3. CHECK CAMERA POWER SUPPLY VOLTAGE

1. Connect audio unit connector M40 and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R (reverse).
4. Check voltage between audio unit connector M40 and ground.

| Audio unit |          | Ground | Condition                 | Voltage (Approx.) |
|------------|----------|--------|---------------------------|-------------------|
| (+)        |          | (-)    |                           |                   |
| Connector  | Terminal |        |                           |                   |
| M40        | 34       | —      | Selector lever is in "R". | 6.0 V             |

Is inspection result normal?

YES >> GO TO 4.

NO >> Replace audio unit. Refer to [AV-93, "Removal and Installation"](#).

# REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## 4.CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M40 and rear view camera connector.
3. Check continuity between audio unit connector M40 and rear view camera connector D501.

| Audio unit |          | Rear view camera |          | Continuity |
|------------|----------|------------------|----------|------------|
| Connector  | Terminal | Connector        | Terminal |            |
| M40        | 35       | D501             | 4        | Yes        |

4. Check continuity between audio unit connector M40 and ground.

| Audio unit |          | Ground | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M40        | 35       |        | No         |

Is inspection result normal?

- YES >> GO TO 5.  
 NO >> Repair or replace harness or connectors.

## 5.CHECK CAMERA GROUND CIRCUIT CONTINUITY

Check continuity between audio unit connector M40 and rear view camera connector D501.

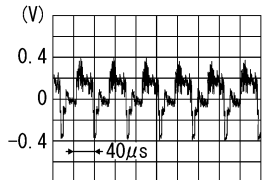
| Audio unit |          | Rear view camera |          | Continuity |
|------------|----------|------------------|----------|------------|
| Connector  | Terminal | Connector        | Terminal |            |
| M40        | 33       | D501             | 1        | Yes        |

Is inspection result normal?

- YES >> GO TO 6.  
 NO >> Repair or replace harness or connectors.

## 6.CHECK CAMERA IMAGE SIGNAL

1. Connect audio unit connector M40 and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R (reverse).
4. Check signal between audio unit connector M40 and ground.

| Audio unit |          | Ground | Condition               | Reference value                                                                                        |
|------------|----------|--------|-------------------------|--------------------------------------------------------------------------------------------------------|
| (+) (V)    |          | (-)    |                         |                                                                                                        |
| Connector  | Terminal |        |                         |                                                                                                        |
| M40        | 35       | —      | Camera image displayed. |  <p>SKIB2251J</p> |

Is inspection result normal?

- YES >> Replace audio unit. Refer to [AV-93, "Removal and Installation"](#).  
 NO >> Replace rear view camera. Refer to [AV-97, "Removal and Installation"](#).

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## MICROPHONE SIGNAL CIRCUIT

### Diagnosis Procedure

INFOID:000000009460166

Regarding Wiring Diagram information, refer to [AV-59. "Wiring Diagram"](#).

### 1.CHECK HARNESS BETWEEN BLUETOOTH® CONTROL UNIT AND MICROPHONE

1. Turn ignition switch OFF.
2. Disconnect Bluetooth® control unit connector B33 and microphone connector R15.
3. Check continuity between Bluetooth® control unit connector B33 and microphone connector R15.

| Bluetooth® control unit |          | Microphone |          | Continuity |
|-------------------------|----------|------------|----------|------------|
| Connector               | Terminal | Connector  | Terminal |            |
| B33                     | 7        | R15        | 1        | Yes        |
|                         | 8        |            | 2        |            |
|                         | 29       |            | 4        |            |

4. Check continuity between Bluetooth® control unit connector B33 and ground.

| Bluetooth® control unit |          | Ground | Continuity |
|-------------------------|----------|--------|------------|
| Connector               | Terminal |        |            |
| B33                     | 7        | —      | No         |
|                         | 29       |        |            |

Are continuity results as specified?

YES >> GO TO 2.

NO >> Repair harness or connectors.

### 2.CHECK MICROPHONE POWER SUPPLY

1. Connect Bluetooth® control unit connector B33 and microphone connector R15.
2. Turn ignition switch ON.
3. Check voltage between microphone connector R15 and ground.

| Microphone |          | Ground | Voltage<br>(Approx.) |
|------------|----------|--------|----------------------|
| (+) (V)    |          | (-)    |                      |
| Connector  | Terminal |        |                      |
| R15        | 4        | —      | 5V                   |

Is the voltage reading as specified?

YES >> GO TO 3.

NO >> Replace Bluetooth® control unit. Refer to [AV-98. "Removal and Installation"](#).

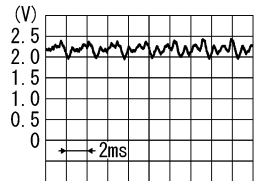
### 3.CHECK MICROPHONE SIGNAL

Check signal between terminals of Bluetooth® control unit connector B33.

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

| Bluetooth® control unit connector B33 |          | Condition              | Reference value                                                                                      |
|---------------------------------------|----------|------------------------|------------------------------------------------------------------------------------------------------|
| (+)                                   | (-)      |                        |                                                                                                      |
| Terminal                              | Terminal |                        |                                                                                                      |
| 7                                     | 8        | Speak into microphone. |  <p>PKIB5037J</p> |

Were voltage readings as specified?

- YES >> Replace Bluetooth® control unit. Refer to [AV-98. "Removal and Installation"](#).  
 NO >> Replace microphone. Refer to [AV-101. "Removal and Installation"](#).

# STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## STEERING SWITCH

### Diagnosis Procedure

INFOID:000000009460167

Regarding Wiring Diagram information, refer to [AV-59, "Wiring Diagram"](#).

### 1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch connector M88.
3. Check resistance between the terminals of combination switch connector M88.

| Combination switch connector M88 |          | Condition                                                                                            | Resistance Ω<br>(Approx.) |
|----------------------------------|----------|------------------------------------------------------------------------------------------------------|---------------------------|
| Terminal                         | Terminal |                                                                                                      |                           |
| 14                               | 17       | Depress SOURCE switch.                                                                               | 1                         |
|                                  |          | Depress △ switch.                                                                                    | 121                       |
|                                  |          | Depress ▽ switch.                                                                                    | 321                       |
|                                  |          | Depress  switch.    | 723                       |
| 15                               |          | Depress -  switch.  | 1                         |
|                                  |          | Depress  + switch. | 121                       |
|                                  |          | Depress  switch.  | 321                       |

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to [AV-100, "Removal and Installation"](#).

### 2. CHECK HARNESS BETWEEN BLUETOOTH® CONTROL UNIT AND COMBINATION SWITCH

1. Disconnect Bluetooth® control unit connector B33 and combination switch connector M30.
2. Check continuity between Bluetooth® control unit connector B33 and combination switch connector M30.

| Bluetooth® control unit |          | Combination switch |          | Continuity |
|-------------------------|----------|--------------------|----------|------------|
| Connector               | Terminal | Connector          | Terminal |            |
| B33                     | 12       | M30                | 24       | Yes        |
|                         | 13       |                    | 31       |            |
|                         | 14       |                    | 33       |            |

3. Check continuity between Bluetooth® control unit connector B33 and ground.

| Bluetooth® control unit |          | Ground | Continuity |
|-------------------------|----------|--------|------------|
| Connector               | Terminal |        |            |
| B33                     | 12       | —      | No         |
|                         | 13       |        |            |
|                         | 14       |        |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

## STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

### 3.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M88 and M30.

| Combination switch |          |           |          | Continuity |
|--------------------|----------|-----------|----------|------------|
| Connector          | Terminal | Connector | Terminal |            |
| M88                | 14       | M30       | 24       | Yes        |
|                    | 15       |           | 31       |            |
|                    | 17       |           | 33       |            |

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace spiral cable. Refer to [SR-15, "Removal and Installation"](#).

### 4.CHECK HARNESS BETWEEN BLUETOOTH® CONTROL UNIT AND AUDIO UNIT

1. Disconnect audio unit connector M45.
2. Check continuity between Bluetooth® control unit connector B33 and audio unit connector M45.

| Bluetooth® control unit |          | Audio unit |          | Continuity |
|-------------------------|----------|------------|----------|------------|
| Connector               | Terminal | Connector  | Terminal |            |
| B33                     | 17       | M45        | 6        | Yes        |
|                         | 18       |            | 16       |            |
|                         | 19       |            | 15       |            |

3. Check continuity between Bluetooth® control unit connector B33 and ground.

| Bluetooth® control unit |          | Ground | Continuity |
|-------------------------|----------|--------|------------|
| Connector               | Terminal |        |            |
| B33                     | 17       | —      | No         |
|                         | 18       |        |            |
|                         | 19       |        |            |

Is the inspection result normal?

YES >> Replace audio unit. Refer to [AV-93, "Removal and Installation"](#).

NO >> Repair or replace harness or connectors.

## USB CONNECTOR

### Diagnosis Procedure

INFOID:000000009460168

Regarding Wiring Diagram information, refer to [AV-59, "Wiring Diagram"](#).

#### 1. CHECK USB INTERFACE HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M44 and USB interface connector M72.
3. Check continuity between audio unit connector M44 and USB interface connector M72.

| Audio unit |          | USB interface |          | Continuity |
|------------|----------|---------------|----------|------------|
| Connector  | Terminal | Connector     | Terminal |            |
| M44        | 53       | M72           | 4        | Yes        |
|            | 54       |               | 1        |            |
|            | 55       |               | 2        |            |
|            | 56       |               | 3        |            |
|            | 57       |               | 5        |            |

4. Check continuity between audio unit connector M44 and ground.

| Audio unit |          | —      | Continuity |
|------------|----------|--------|------------|
| Connector  | Terminal |        |            |
| M44        | 53       | Ground | No         |
|            | 55       |        |            |

Is the inspection result normal?

- YES >> Replace the USB interface. Refer to [AV-96, "Removal and Installation"](#).  
 NO >> Repair or replace harness or connectors.

## SYMPTOM DIAGNOSIS

### AUDIO SYSTEM

#### Symptom Table

INFOID:000000009460169

#### RELATED TO AUDIO

| Symptoms                                             | Check items                                                                                                                              | Probable malfunction location                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The disk cannot be removed.                          | Audio unit                                                                                                                               | Malfunction in audio unit.<br>Refer to <a href="#">AV-48, "On Board Diagnosis Function"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| No sound comes out or the level of the sound is low. | No sound from all speakers.                                                                                                              | <ul style="list-style-type: none"> <li>Speaker circuit shorted to ground. Refer to <a href="#">AV-59, "Wiring Diagram"</a>.</li> <li>Audio unit power supply and ground circuits malfunction. Refer to <a href="#">AV-72, "AUDIO UNIT : Diagnosis Procedure"</a>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                      | Only a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH) does not output sound. | <ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between audio unit and speaker. Refer to: <ul style="list-style-type: none"> <li><a href="#">AV-74, "Diagnosis Procedure"</a> (front door speaker).</li> <li><a href="#">AV-76, "Diagnosis Procedure"</a> (rear door speaker).</li> </ul> </li> <li>Malfunction in speaker. Refer to: <ul style="list-style-type: none"> <li><a href="#">AV-94, "Removal and Installation"</a> (front door speaker).</li> <li><a href="#">AV-95, "Removal and Installation"</a> (rear door speaker).</li> </ul> </li> <li>Malfunction in audio unit. Refer to <a href="#">AV-48, "On Board Diagnosis Function"</a>.</li> </ul>                                                                      |
| Noise is mixed with audio.                           | Noise comes out from all speakers.                                                                                                       | Malfunction in audio unit.<br>Refer to <a href="#">AV-48, "On Board Diagnosis Function"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                      | Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH).  | <ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between audio unit and speaker. Refer to: <ul style="list-style-type: none"> <li><a href="#">AV-74, "Diagnosis Procedure"</a> (front door speaker).</li> <li><a href="#">AV-76, "Diagnosis Procedure"</a> (rear door speaker).</li> </ul> </li> <li>Malfunction in speaker.</li> <li>Poor Installation of speaker (e.g. backlash and looseness). Refer to: <ul style="list-style-type: none"> <li><a href="#">AV-94, "Removal and Installation"</a> (front door speaker).</li> <li><a href="#">AV-95, "Removal and Installation"</a> (rear door speaker).</li> </ul> </li> <li>Malfunction in audio unit. Refer to <a href="#">AV-48, "On Board Diagnosis Function"</a>.</li> </ul> |
|                                                      | Noise is mixed with radio only (when the vehicle hits a bump or while driving over bad roads)                                            | Poor connector connection of antenna or antenna feeder.<br>Refer to <a href="#">AV-103, "Feeder Layout"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

# AUDIO SYSTEM

## < SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

| Symptoms                              | Check items                                                                                                                                                                                                                                                                                    | Probable malfunction location                                                                                                                                                                                                                                       |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No radio reception or poor reception. | <ul style="list-style-type: none"> <li>Other audio sounds are normal.</li> <li>Any radio station cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).</li> </ul> | <ul style="list-style-type: none"> <li>Antenna amp. ON signal circuit malfunction. Refer to <a href="#">AV-54, "Reference Value"</a>.</li> <li>Poor connector connection of antenna or antenna feeder. Refer to <a href="#">AV-103, "Feeder Layout"</a>.</li> </ul> |
| Buzz/rattle sound from speaker        | The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the buzz/rattle.                                                                                                                                           | Refer to "SQUEAK AND RATTLE TROUBLE DIAGNOSIS" in the appropriate interior trim section.                                                                                                                                                                            |

## RELATED TO HANDS-FREE PHONE

- Before performing diagnosis, confirm that the cellular phone being used by the customer is compatible with the vehicle.
- It is possible that a malfunction is occurring due to a version change of the phone even though the phone is a compatible type. This can be confirmed by changing the cellular phone to another compatible type, and check that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

### Check Compatibility

- Make sure the customer's Bluetooth® related concern is understood.
- Verify the customer's concern.  
**NOTE:**  
The customer's phone may be required, depending upon their concern.
- Write down the customer's phone brand, model and service provider.  
**NOTE:**  
It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
- Go to "www.nissanusa.com/bluetooth/".
  - Using the website's search engine, find out if the customer's phone is on the approved list.
  - If the customer's phone is NOT on the approved list:  
Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.
  - If the feature related to the customer's concern shows as "N" (not compatible):  
Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features".
  - If the feature related to the customer's concern shows as "Y" (compatible):  
Perform diagnosis as per the following table.

| Symptoms                                                                                               | Check items                                                                                                                                                                                                                                                             | Probable malfunction location                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Does not recognize cellular phone connection (no connection is displayed on the display at the guide). | Repeat the registration of cellular phone.                                                                                                                                                                                                                              | Malfunction in audio unit.<br>Replace audio unit. Refer to <a href="#">AV-93, "Removal and Installation"</a> .<br><br>Microphone signal circuit malfunction.<br>Refer to <a href="#">AV-83, "Diagnosis Procedure"</a> . |
| Hands-free phone cannot be established.                                                                | <ul style="list-style-type: none"> <li>Hands-free phone operation can be made, but the communication cannot be established.</li> <li>Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.</li> </ul> |                                                                                                                                                                                                                         |
| The other party's voice cannot be heard by hands-free phone.                                           | Check the "microphone speaker" in Inspection & Adjustment Mode if sound is heard.                                                                                                                                                                                       |                                                                                                                                                                                                                         |
| Originating sound is not heard by the other party with hands-free phone communication.                 | Sound operation function is normal.<br><br>Sound operation function does not work.                                                                                                                                                                                      |                                                                                                                                                                                                                         |

# AUDIO SYSTEM

## < SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

| Symptoms                       | Check items                                                                                                                                                                                                                                                                                                                                                                                          | Probable malfunction location                                                                                          |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| The system cannot be operated. | <ul style="list-style-type: none"> <li>The voice recognition can be controlled.</li> <li>Steering switch's + , - , and  does not work.</li> </ul> | Steering switch malfunction.<br>Replace steering switch. Refer to <a href="#">AV-100. "Removal and Installation"</a> . |
|                                | Steering switch's  + ,  - , and  switches do not work.                                                                                            | Steering switch signal circuit malfunction.<br>Refer to <a href="#">AV-85. "Diagnosis Procedure"</a> .                 |
|                                | All steering switches do not work.                                                                                                                                                                                                                                                                                                                                                                   | Steering switch ground circuit malfunction.<br>Refer to <a href="#">AV-85. "Diagnosis Procedure"</a> .                 |

## RELATED TO REAR VIEW CAMERA

| Symptoms                         | Check items                              | Probable malfunction location                                                                                                               |
|----------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Rear view camera is inoperative. | Reverse signal circuit malfunction.      | Reverse signal circuit malfunction between BCM and audio unit.<br>Refer to <a href="#">AV-81. "Diagnosis Procedure"</a> .                   |
|                                  | Camera image signal circuit malfunction. | Camera image signal circuit malfunction between rear view camera and audio unit.<br>Refer to <a href="#">AV-81. "Diagnosis Procedure"</a> . |
|                                  | Rear view camera malfunction.            | Replace rear view camera.<br>Refer to <a href="#">AV-97. "Removal and Installation"</a> .                                                   |

## NORMAL OPERATING CONDITION

### Description

INFOID:000000009460170

#### RELATED TO NOISE

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

The following noise results from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and determine the cause.

#### NOTE:

The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

#### Type of Noise and Possible Cause

| Occurrence condition                                                                                                |                                                                                                     | Possible cause                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Occurs only when engine is ON.                                                                                      | A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed. | • Ignition components                                                                                                |
| The occurrence of the noise is linked with the operation of the fuel pump.                                          |                                                                                                     | • Fuel pump condenser                                                                                                |
| Noise only occurs when various electrical components are operating.                                                 | A cracking or snapping sound occurs with the operation of various switches.                         | • Relay malfunction, audio unit malfunction                                                                          |
|                                                                                                                     | The noise occurs when various motors are operating.                                                 | • Motor case ground<br>• Motor                                                                                       |
| The noise occurs constantly, not just under certain conditions.                                                     |                                                                                                     | • Rear defogger coil malfunction<br>• Open circuit in printed heater<br>• Poor ground of antenna feeder line         |
| A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively. |                                                                                                     | • Ground wire of body parts<br>• Ground due to improper part installation<br>• Wiring connections or a short circuit |

#### RELATED TO HANDS-FREE PHONE

| Symptom                                                                                                | Cause and Counter measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Does not recognize cellular phone connection (No connection is displayed on the display at the guide). | Some Bluetooth® enabled cellular phones may not be recognized by the in-vehicle phone module.<br>Refer to "RELATED TO HANDS-FREE PHONE (Check Compatibility)" in <a href="#">AV-88, "Symptom Table"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Cannot use hands-free phone.                                                                           | Customer will not be able to use a hands-free phone under the following conditions: <ul style="list-style-type: none"> <li>• The vehicle is outside of the telephone service area.</li> <li>• The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>• The cellular phone is locked to prevent it from being dialed.</li> </ul> <b>NOTE:</b><br>While a cellular phone is connected through the Bluetooth® wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth® Hands-Free Phone System cannot charge cellular phones. |

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

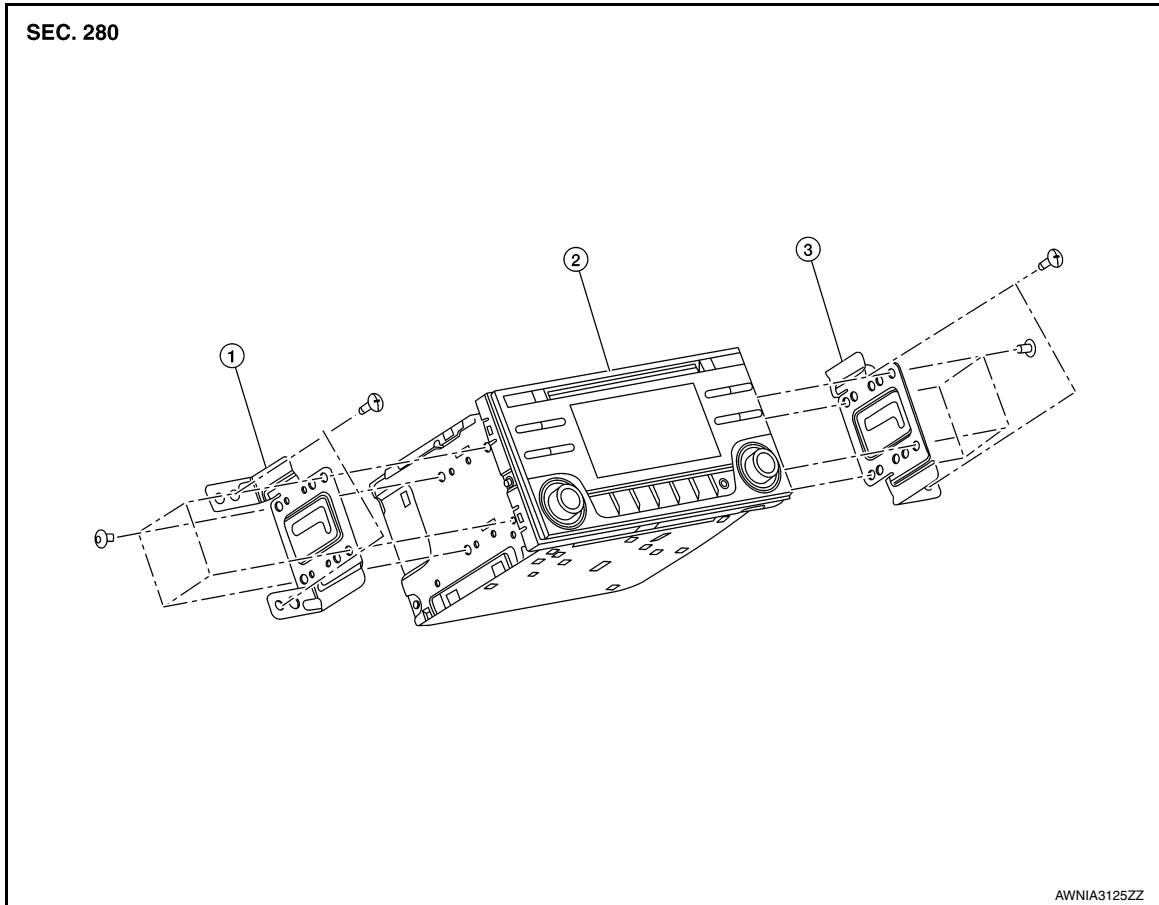
| Symptom                                                      | Cause and Counter measure                                                                                                                                                           |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The other party's voice cannot be heard by hands-free phone. | When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.                                        |
| Poor sound quality.                                          | Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption. |

## REMOVAL AND INSTALLATION

## AUDIO UNIT

## Exploded View

INFOID:000000009640329



1. Audio unit bracket (LH)

2. Audio unit

3. Audio unit bracket (RH)

## Removal and Installation

INFOID:000000009640330

## REMOVAL

1. Remove the battery negative terminal. Refer to [PG-69, "Removal and Installation \(Battery\)"](#).
2. Remove cluster lid C. Refer to [IP-22, "Removal and Installation"](#).
3. Remove the audio unit screws.
4. Partially remove the audio unit to gain access to the harness connectors.
5. Disconnect the harness connectors from the audio unit and remove.
6. Remove the audio unit bracket screws from each side of the audio unit (if necessary).

## INSTALLATION

Installation is in the reverse order of removal.

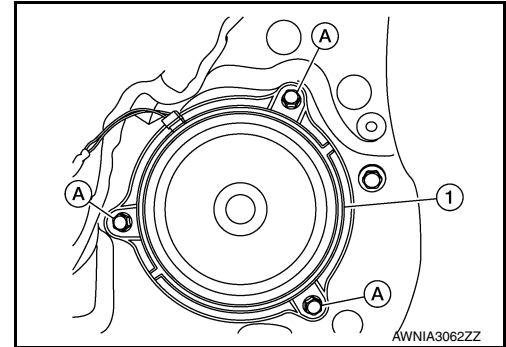
## FRONT DOOR SPEAKER

### Removal and Installation

INFOID:000000009640331

#### REMOVAL

1. Remove the front door finisher. Refer to [INT-15, "Removal and Installation"](#).
2. Disconnect the harness connector from front door speaker.
3. Remove the front door speaker screws (A).
4. Remove the front door speaker (1).



#### INSTALLATION

Installation is in the reverse order of removal.

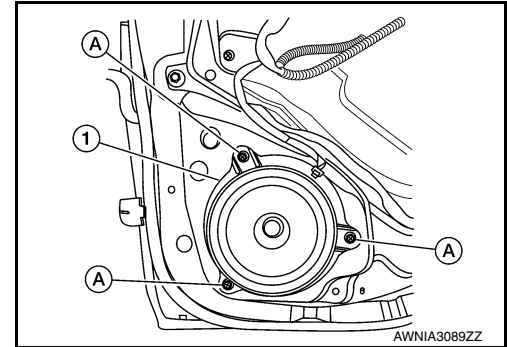
## REAR DOOR SPEAKER

### Removal and Installation

INFOID:000000009640332

#### REMOVAL

1. Remove the rear door finisher. Refer to [INT-17. "Removal and Installation"](#).
2. Disconnect the harness connector from the rear door speaker.
3. Remove the rear door speaker screws (A).
4. Remove the rear door speaker (1).



#### INSTALLATION

Installation is in the reverse order of removal.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

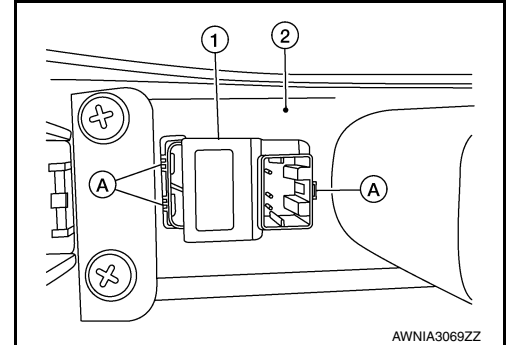
## USB INTERFACE

### Removal and Installation

INFOID:000000009640333

#### REMOVAL

1. Remove the center console assembly. Refer to [IP-18. "Removal and Installation"](#).
2. Release the pawls (A) from the back of the center console assembly (2) using a suitable tool and remove the USB interface (1).



#### INSTALLATION

Installation is in the reverse order of removal.

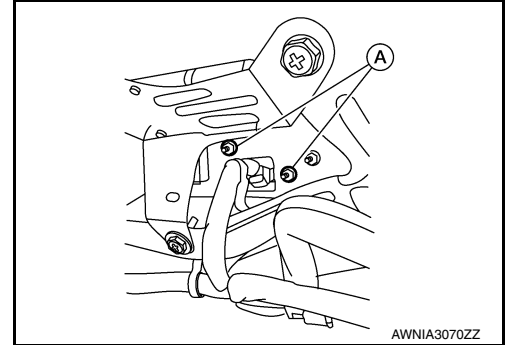
## REAR VIEW CAMERA

### Removal and Installation

INFOID:000000009640334

#### REMOVAL

1. Remove the back door outer finisher. Refer to [EXT-34. "Removal and Installation"](#).
2. Disconnect the harness connector from rear view camera.
3. Remove the nuts (A) from the rear view camera and remove.



#### INSTALLATION

Installation is in the reverse order of removal.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

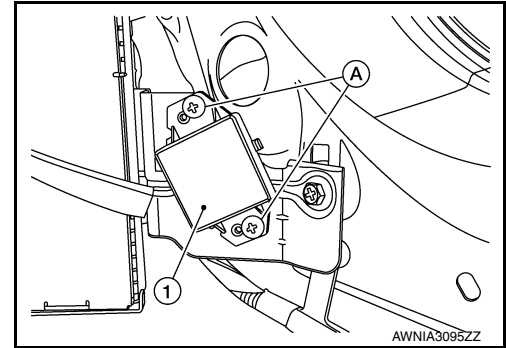
AV

**BLUETOOTH® CONTROL UNIT****Removal and Installation**

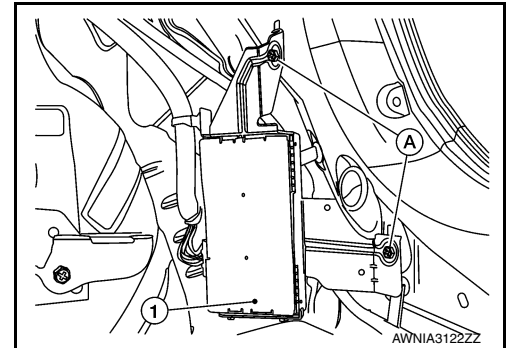
INFOID:000000009640335

**REMOVAL**

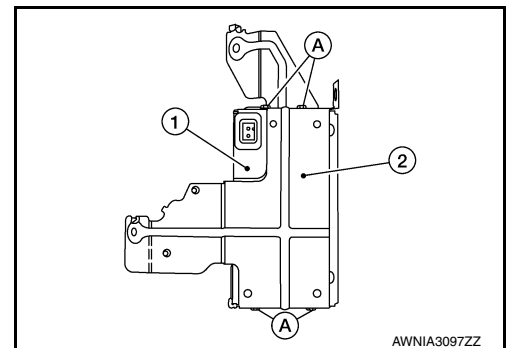
1. Remove the luggage side lower finisher (RH). Refer to [INT-32. "LUGGAGE SIDE LOWER FINISHER : Removal and Installation"](#).
2. Disconnect the harness connectors from the Bluetooth® control unit.
3. Remove the Bluetooth® antenna screws (A) and the Bluetooth® antenna (1).



4. Remove the Bluetooth® control unit bracket screws (A) and the Bluetooth® control unit (1).



5. Remove the Bluetooth® control unit screws (A) and separate the Bluetooth® control unit (1) from the bracket (2).

**INSTALLATION**

Installation is in the reverse order of removal.

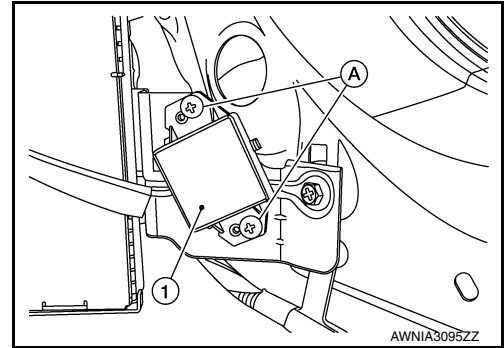
## BLUETOOTH® ANTENNA

### Removal and Installation

INFOID:000000009640336

#### REMOVAL

1. Remove the luggage side lower finisher (RH). Refer to [INT-32. "LUGGAGE SIDE LOWER FINISHER : Removal and Installation"](#).
2. Disconnect the Bluetooth® antenna harness connector from the Bluetooth® control unit.
3. Remove the Bluetooth® antenna screws (A) and the Bluetooth® antenna (1).



#### INSTALLATION

Installation is in the reverse order of removal.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

# STEERING SWITCH

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

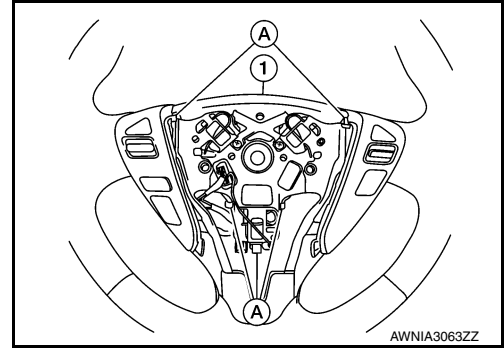
## STEERING SWITCH

### Removal and Installation

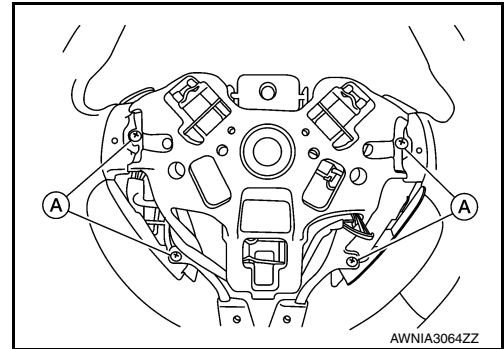
INFOID:000000009640337

#### REMOVAL

1. Remove the steering wheel. Refer to [ST-8. "Removal and Installation"](#).
2. Remove the steering wheel rear finisher (1) by releasing pawls (A).



3. Remove the steering wheel audio control switch screws (A) from the back of the steering wheel.



4. Remove the steering wheel audio control switches from the steering wheel.

#### INSTALLATION

Installation is in the reverse order of removal.

---

MICROPHONE

## Removal and Installation

INFOID:000000009640338

## REMOVAL

1. Remove the microphone from the headlining by releasing pawls using a suitable tool.
2. Disconnect the harness connector from microphone and remove.

## INSTALLATION

Installation is in the reverse order of removal.

A

B

C

D

E

F

G

H

I

J

K

L

M

AV

O

P

# ROD ANTENNA

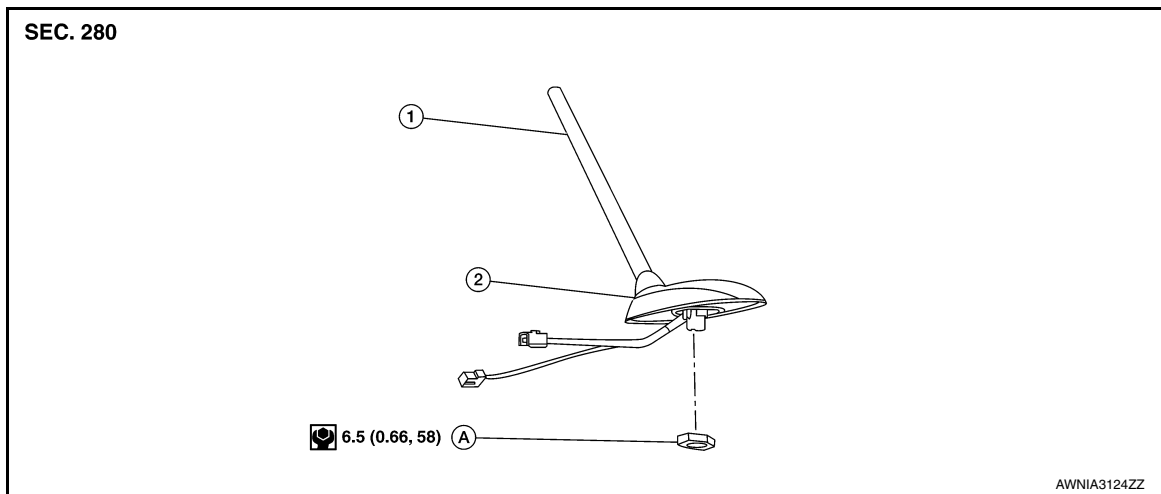
< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## ROD ANTENNA

### Exploded View

INFOID:000000009667930



1. Antenna rod

2. Antenna base

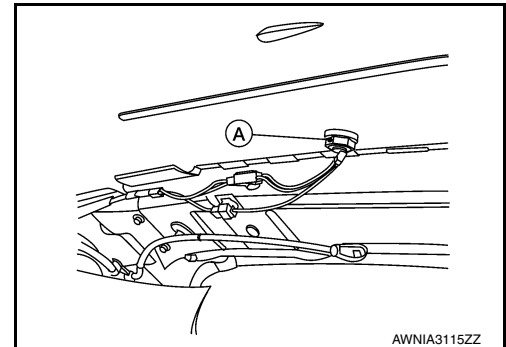
A. Antenna nut

### Removal and Installation

INFOID:000000009667931

#### REMOVAL

1. Lower the rear portion of the headlining. Refer to [INT-29, "Removal and Installation"](#).
2. Disconnect the harness connectors from the antenna (satellite radio model shown).
3. Remove the antenna nut (A) and remove the antenna.



#### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

If the antenna nut is tightened looser than the specified torque this will lower the sensitivity of the antenna. If the antenna nut is tightened tighter than the specified torque this will deform the roof panel.

# ANTENNA FEEDER

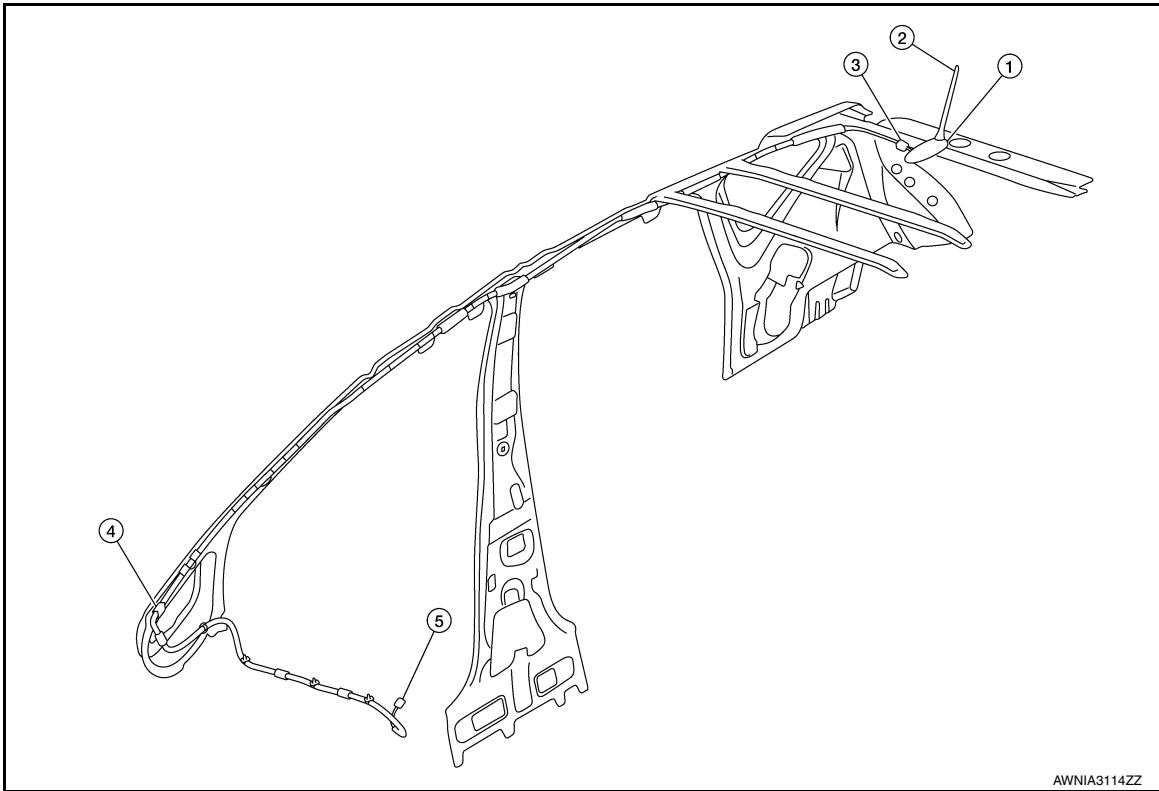
< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## ANTENNA FEEDER

### Feeder Layout

INFOID:000000009460183



- 1. Antenna base (antenna amp.)
- 4. M67, M350

- 2. Rod Antenna
- 5. M108

- 3. M351

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
AV  
O  
P

## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009640342

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

##### **WARNING:**

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

##### **WARNING:**

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

#### Precaution for Trouble Diagnosis

INFOID:000000009640343

#### AV COMMUNICATION SYSTEM

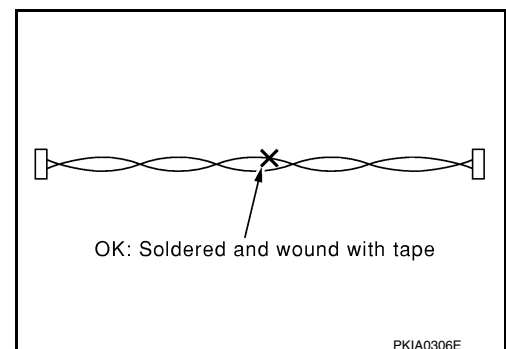
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

#### Precaution for Harness Repair

INFOID:000000009640344

#### AV COMMUNICATION SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]

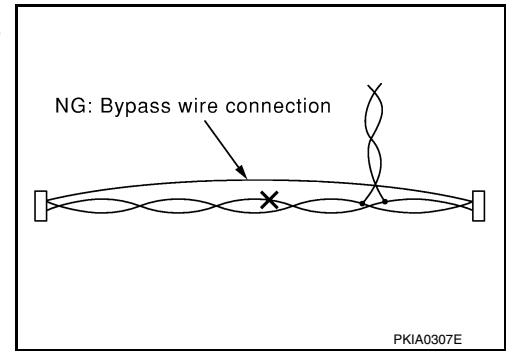


# PRECAUTIONS

< PRECAUTION >

[NAVIGATION]

- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



## Precaution for Work

INFOID:000000009640345

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:
    - Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
    - Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
    - Then rub with a soft, dry cloth.
  - Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
  - For genuine leather seats, use a genuine leather seat cleaner.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

# PREPARATION

< PREPARATION >

[NAVIGATION]

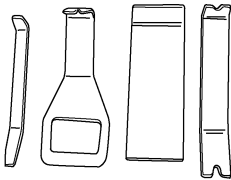
## PREPARATION

### PREPARATION

#### Special Service Tools

INFOID:000000009640346

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

| Tool number<br>(Kent-Moore No.)<br>Tool name                                                     | Description              |
|--------------------------------------------------------------------------------------------------|--------------------------|
| —<br>(J-46534)<br>Trim Tool Set                                                                  | Removing trim components |
| <br>AWJIA0483ZZ |                          |

#### Commercial Service Tools

INFOID:000000009640347

| Tool name                                                                                       | Description                      |
|-------------------------------------------------------------------------------------------------|----------------------------------|
| Power tool                                                                                      | Loosening nuts, screws and bolts |
| <br>PIIB1407E |                                  |

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

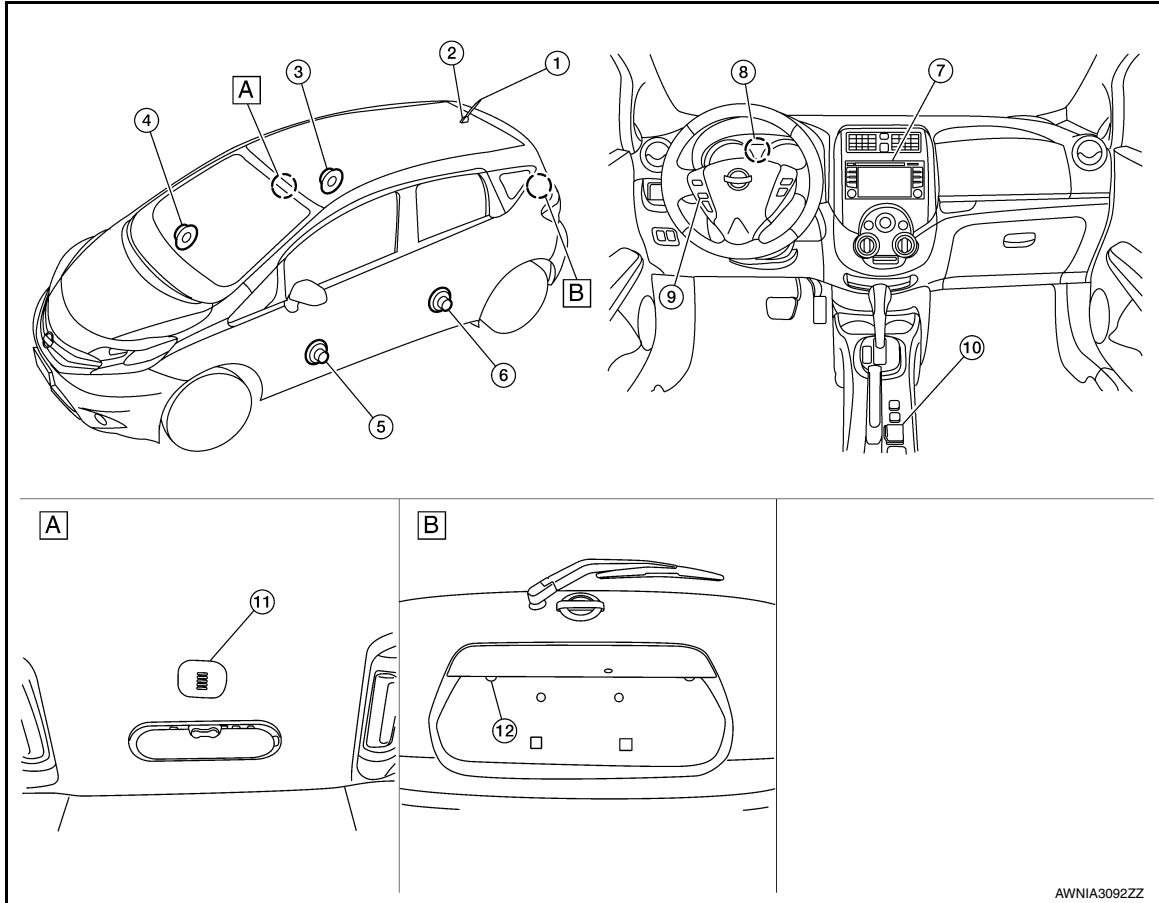
[NAVIGATION]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:0000000009509296



A. Front of headliner

B. Center of back door

| No. | Component                             | Function                                                                          |
|-----|---------------------------------------|-----------------------------------------------------------------------------------|
| 1.  | Rod antenna                           | Refer to <a href="#">AV-109, "Rod Antenna, Antenna Amp. and Antenna Feeder"</a> . |
| 2.  | Antenna base (antenna amp.)           |                                                                                   |
| 3.  | Rear door speaker RH                  |                                                                                   |
| 4.  | Front door speaker RH                 | Refer to <a href="#">AV-108, "Speaker"</a> .                                      |
| 5.  | Front door speaker LH                 |                                                                                   |
| 6.  | Rear door speaker LH                  |                                                                                   |
| 7.  | AV control unit                       | Refer to <a href="#">AV-107, "AV Control Unit"</a> .                              |
| 8.  | GPS antenna                           | Refer to <a href="#">AV-110, "GPS Antenna"</a> .                                  |
| 9.  | Steering wheel audio control switches | Refer to <a href="#">AV-109, "Steering Switch"</a> .                              |
| 10. | USB interface and AUX in jack         | Refer to <a href="#">AV-108, "USB Interface and AUX In Jack"</a> .                |
| 11. | Microphone                            | Refer to <a href="#">AV-109, "Microphone"</a> .                                   |
| 12. | Rear view camera                      | Refer to <a href="#">AV-109, "Rear View Camera"</a> .                             |

#### AV Control Unit

INFOID:0000000009606268

#### Description

Revision: April 2013

**AV-107**

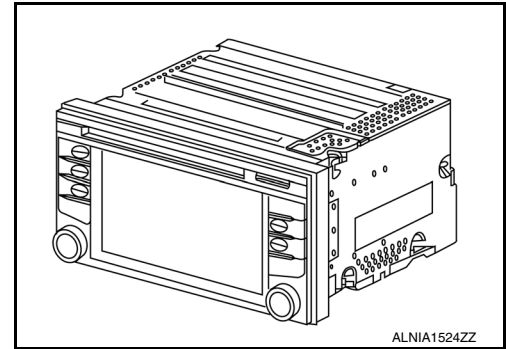
2014 Note

## COMPONENT PARTS

### < SYSTEM DESCRIPTION >

### [NAVIGATION]

- A 5.8-inch QVGA display, an AM/FM electronic tuner radio, CD drive, audio amplifier, Bluetooth® module, USB interface, camera controller and navigation unit are integrated into the AV control unit.
- The 5.8-inch display is a high resolution monitor that includes touch panel functions.
- Music files stored in iPod®\*/USB memory can be played using the separate USB interface.

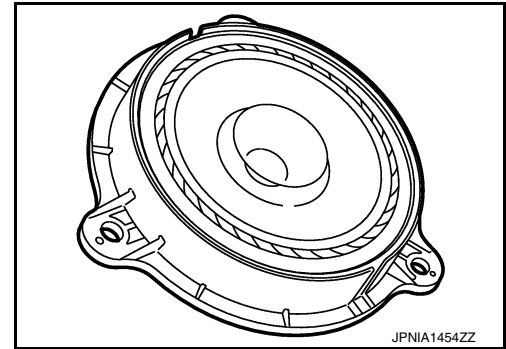


INFOID:000000009606269

## Speaker

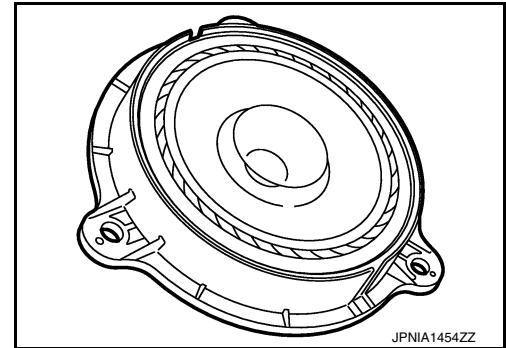
### FRONT DOOR SPEAKER

- 16.5 cm (6.5 in) speakers are installed in the bottom of the front doors.
- Sound signals are input from the AV control unit to output high, mid and low range sounds.



### REAR DOOR SPEAKER

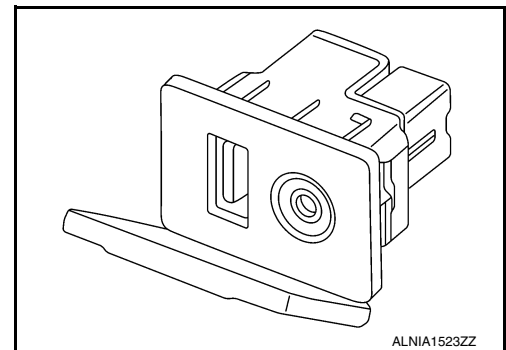
- 16.5 cm (6.5 in) speakers are installed in the bottom of the rear doors.
- Sound signals are input from the AV control unit to output high, mid and low range sounds.



INFOID:000000009606270

## USB Interface and AUX In Jack

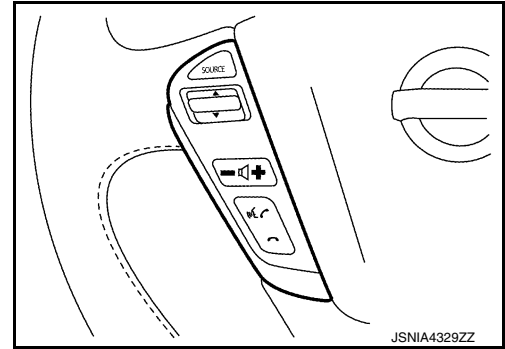
- USB Interface and AUX in jack is installed in the console.
- iPod® and USB memory can be connected to the AV control unit through the USB interface.
- An external audio device can be connected to the AV control unit through the AUX in jack.



## Steering Switch

INFOID:000000009606271

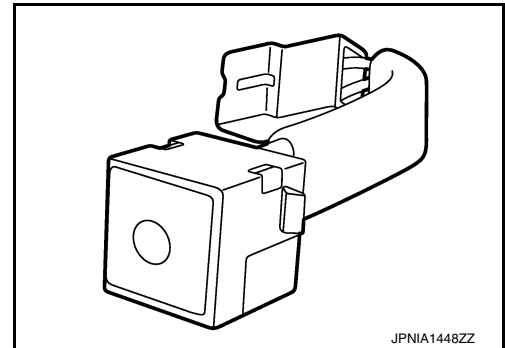
- Operations for audio and hands-free phone are possible.
- Switch is connected to the AV control unit.



## Microphone

INFOID:000000009606272

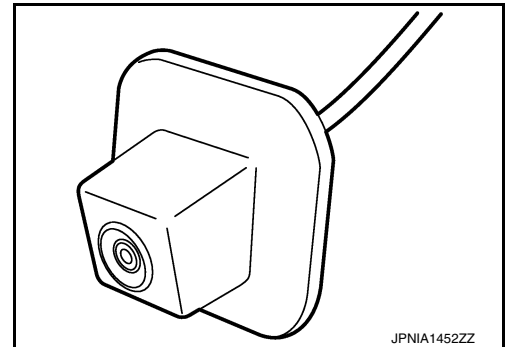
- The microphone is installed in the roof in front of the map lamp assembly.
- Power is supplied from the AV control unit.



## Rear View Camera

INFOID:000000009606273

- The rear view camera is installed to the back door finisher.
- Power is supplied from the AV control unit.

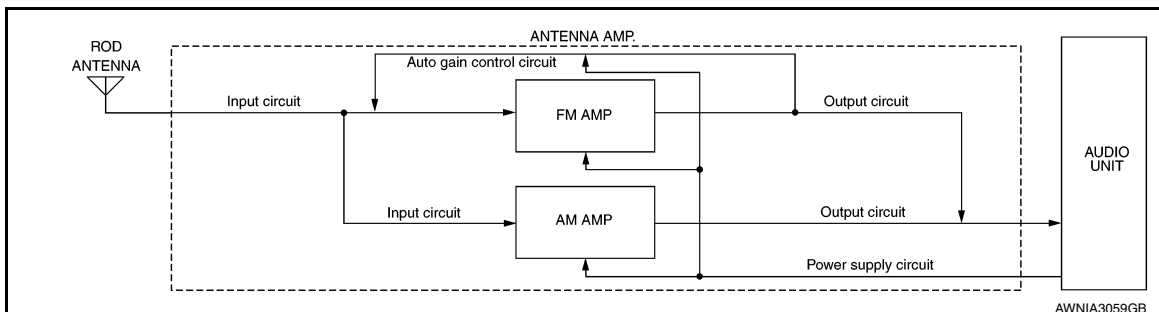


## Rod Antenna, Antenna Amp. and Antenna Feeder

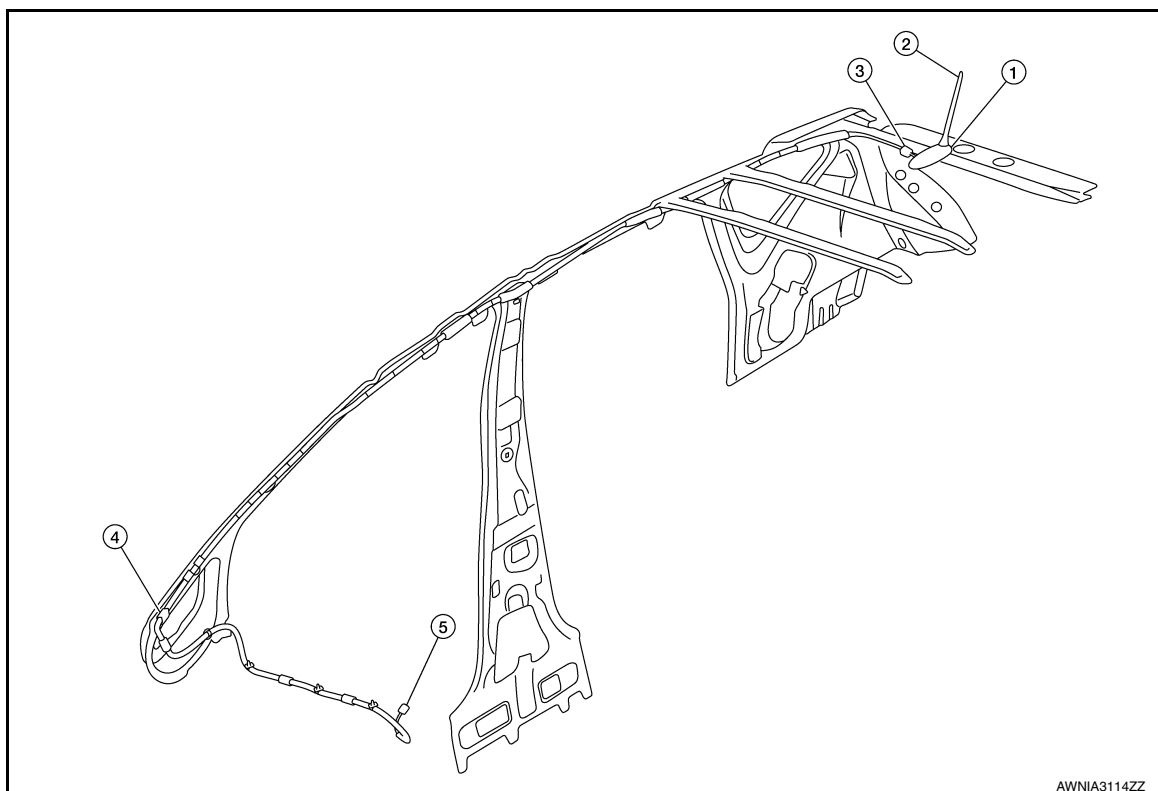
INFOID:000000009606274

### RADIO ANTENNA

AM/FM radio rod antenna and antenna base is located on the rear of the roof. The antenna amp. is built into the antenna base.



## ANTENNA FEEDER LAYOUT

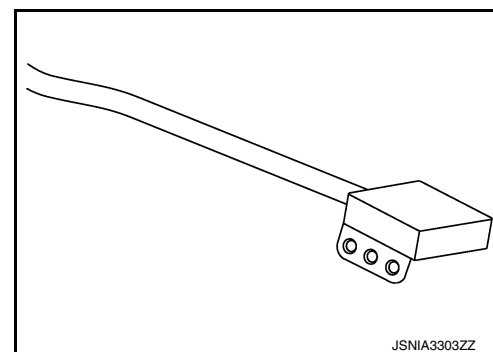


- |                                |                |         |
|--------------------------------|----------------|---------|
| 1. Antenna base (antenna amp.) | 2. Rod Antenna | 3. M351 |
| 4. M67, M350                   | 5. M73         |         |

## GPS Antenna

INFOID:000000009509301

- GPS antenna is installed in the instrument panel.
- Power is supplied from the AV control unit.



INFOID:000000009509305

## SD Card

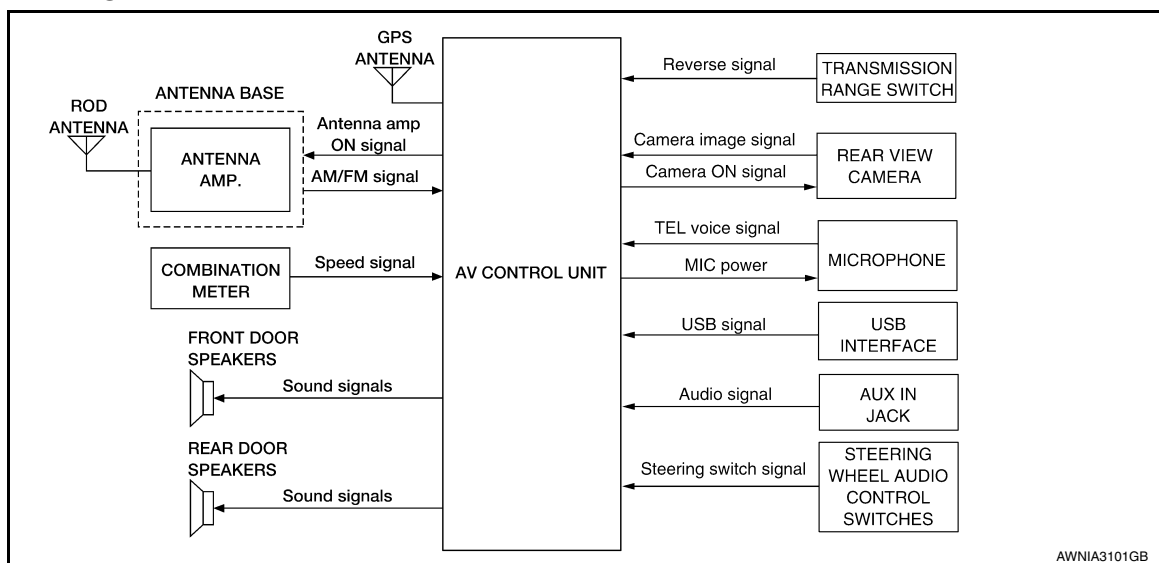
- Map data is memorized in the SD card.
- Map data is sent to the AV control unit from the SD slot.

## SYSTEM

## System Description

INFOID:000000009460258

## SYSTEM DIAGRAM



## AUDIO SYSTEM

Refer to Owner's Manual for navigation and audio system operating instructions.

Audio function and display are built into AV control unit.

This navigation has the following functions.

- Map data on SD-card
- Full support for playback of music from iPod® and USB device
- High resolution color 5.8-inch display with touch panel function
- FM/AM twin digital tuner
- USB mass storage connection
- Hands-free phone system

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

## NAVIGATION SYSTEM

## Description

- The navigation system can be operated by control panel of the AV control unit and display (touch panel) of the AV control unit.
- Guide sound during the operation of the navigation system is output from AV control unit to front tweeters.
- AV control unit calculates the vehicle location based on the signals from GYRO (angle speed sensor), vehicle sensor, and GPS satellite, as well as the map data from map SD-card. The vehicle location is displayed on the AV control unit.

## POSITION DETECTION PRINCIPLE

The navigation system periodically calculates the vehicle's current position according to the following three signals:

- Travel distance of the vehicle as determined by the vehicle speed sensor
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor)
- Direction of vehicle travel as determined by the GPS antenna (GPS information)

The current position of the vehicle is then identified by comparing the calculated vehicle position with map data read from the map SD-card (map-matching), and indicated on the screen as a vehicle mark. More accurate data is judged and used by comparing vehicle position detection results found by the GPS with the result by map-matching.

# SYSTEM

## < SYSTEM DESCRIPTION >

## [NAVIGATION]

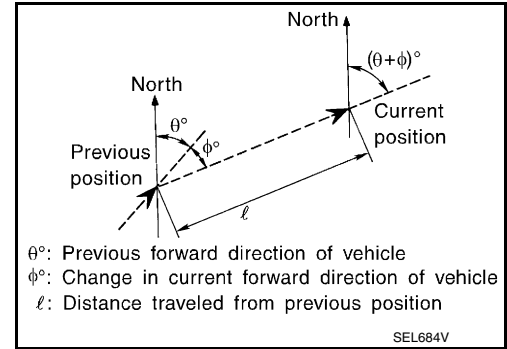
The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.

- Travel distance

Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance correction function has been adopted.

- Travel direction

Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). They have both advantages and disadvantages.



| Type                                   | Advantage                                                          | Disadvantage                                                                                |
|----------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Gyroscope<br>(angular velocity sensor) | Can detect the vehicle's turning angle quite accurately.           | Direction errors may accumulate when vehicle is driven for long distances without stopping. |
| GPS antenna<br>(GPS information)       | Can detect the vehicle's travel direction (North/South/East/West). | Correct direction cannot be detected when vehicle speed is low.                             |

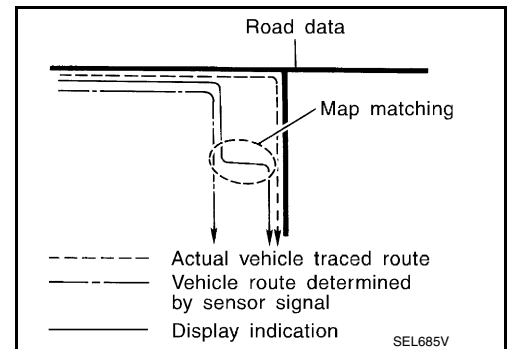
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

### MAP-MATCHING

Map-matching compares a current location detected by the method in the "Location Detection Principle" with a road map data from map SD-card.

**NOTE:**

The road map data is based on data stored in the map SD-card.

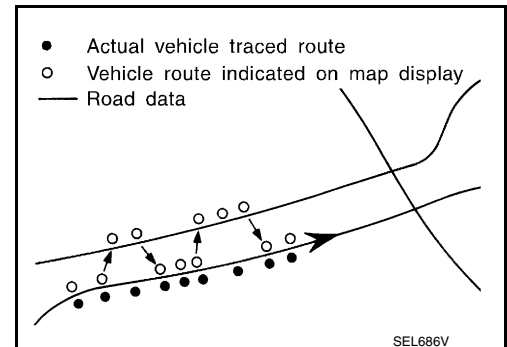


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the vehicle mark on the display must be corrected manually.

- In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the vehicle mark has been repositioned.

Alternative routes will be shown in different order of priority, and the incorrect road can be avoided if there is an error in distance and/or direction.

Routes are of the same priority if two roads are running in parallel. Therefore, the vehicle mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.

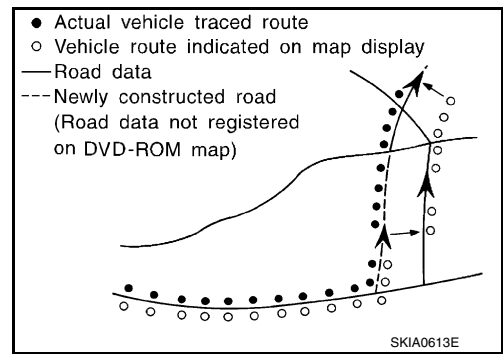


# SYSTEM

## < SYSTEM DESCRIPTION >

## [NAVIGATION]

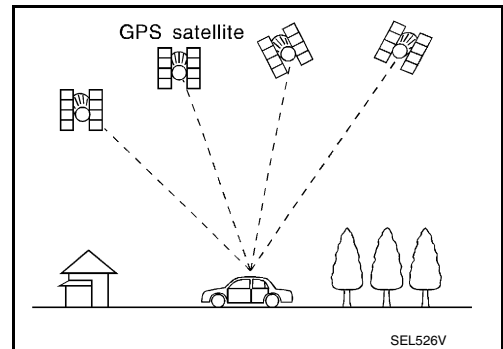
- Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD-card, or when road pattern stored in the map data and the actual road pattern are different due to repair. The map-matching function may find another road and position the vehicle mark on it when driving on a road not present in the map. Then, the vehicle mark may change to it when the correct road is detected.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the map SD-card is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.



### GPS (Global Positioning System)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,049 mile).

The receiver calculates the travel position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves that four or more GPS satellites transmit (three-dimensional positioning). The GPS receiver calculates the travel position in two dimensions (latitude/longitude) with the previous altitude data if the GPS receiver receives only three radio waves (two-dimensional positioning). GPS position correction is not performed while stopping the vehicle.



Accuracy of the GPS will deteriorate under the following conditions:

- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The position of GPS satellite affects GPS detection precision. The position detection may not be precisely performed.
- The position detection is not performed if GPS receiver does not receive radio waves from GPS satellites. (Inside a tunnel, parking in a building, under an elevated highway etc.) GPS receiver may not receive radio waves from GPS satellites if any object is placed on the GPS antenna.

### NOTE:

- The detection result has an error of approximately 10 m (32.81 ft) even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

## REAR VIEW MONITOR

### Camera Image Operation Principle

- The AV control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the AV control unit.
- The AV control unit combines a warning message and fixed guide lines with an image received from the rear view camera.

## USB INTERFACE

- iPod® or music files in USB memory can be played.
- Sound signals are transmitted from USB interface to the AV control unit and output to each speaker.
- iPod® is recharged when connected to USB interface.

## AUX IN JACK

- Sound can be output from an external device by connecting a device to the AUX in jack.
- AUX sound signals are transmitted to each speaker via AV control unit.

## SPEED SENSITIVE VOLUME SYSTEM

- Volume level of this system goes up and down automatically in proportion to the vehicle speed.
- The control level can be selected by the customer.

---

## HANDS-FREE PHONE SYSTEM

- Bluetooth® control is built into AV control unit.
- The connection between cellular phone and AV control unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the AV control unit and output to the front speakers when operating the cellular phone.

### When A Call Is Originated

- Spoken voice sound output from the microphone (microphone signal) is input to AV control unit.
- AV control unit outputs to cellular phone with Bluetooth® communication as a TEL voice signal.
- Voice sound is then heard at the other party.

### When Receiving A Call

- Voice sound is input to own cellular phone from the other party.
- TEL voice signal is input to AV control unit by establishing Bluetooth® communication from cellular phone, and the signal is output to front speakers.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### Description

INFOID:000000009460259

The AV control unit on board diagnosis performs the functions listed in the table below:

| Mode               |                           | Item                                                                                                                                                                                                                                                                                                                                                                                                                        | Content                                                                                                |
|--------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Version            |                           | —                                                                                                                                                                                                                                                                                                                                                                                                                           | Version data of the AV control unit is displayed.                                                      |
| User Configuration | Touch Display Calibration | —                                                                                                                                                                                                                                                                                                                                                                                                                           | Allows correction of the position detection accuracy of the touch panel.                               |
| Radio              | FM monitor                | —                                                                                                                                                                                                                                                                                                                                                                                                                           | Monitors the dynamic values of the current tuner                                                       |
|                    | AM monitor                | —                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                        |
|                    | XM monitor                | —                                                                                                                                                                                                                                                                                                                                                                                                                           | Version data is displayed.                                                                             |
|                    | XM functions              | <ul style="list-style-type: none"><li>• Clear XM Chipset NVM</li><li>• Reset All XM Settings</li><li>• Clear IGS</li><li>• XM CBM Debug Mode</li><li>• External Diag Mode</li></ul>                                                                                                                                                                                                                                         | Current status is displayed.                                                                           |
| System State       | Running System Status     | <ul style="list-style-type: none"><li>• SD card slot Access</li><li>• Power Supply</li><li>• Speed Signal</li><li>• Direction Signal</li><li>• Illumination Signal</li><li>• GPS Antenna</li><li>• GPS Tracking</li><li>• Satellites Visible</li><li>• Satellites Tracked</li><li>• Microphone Current</li><li>• Steering wheel key</li><li>• Radio Antenna</li><li>• USB Device</li><li>• iPod® firmware version</li></ul> | The current system status is displayed.                                                                |
|                    | Speaker Test 4kHz         | —                                                                                                                                                                                                                                                                                                                                                                                                                           | This activates a sequence of test tone outputs to the audio circuits one after the other for 1 second. |
|                    | Speaker Test 100Hz        |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                        |
|                    |                           | Display-Test                                                                                                                                                                                                                                                                                                                                                                                                                | —                                                                                                      |
| Self Test          |                           | <ul style="list-style-type: none"><li>• SD Card Access</li><li>• BT Module Access</li><li>• Radio Antenna</li><li>• GPS Antenna</li><li>• XM Antenna</li></ul>                                                                                                                                                                                                                                                              | A system self test is executed and the results are stored into the error memory.                       |

Perform CONSULT diagnosis if the AV control unit on board diagnosis does not start or the screen does not display anything.

### On Board Diagnosis Function

INFOID:000000009460260

#### METHOD OF STARTING

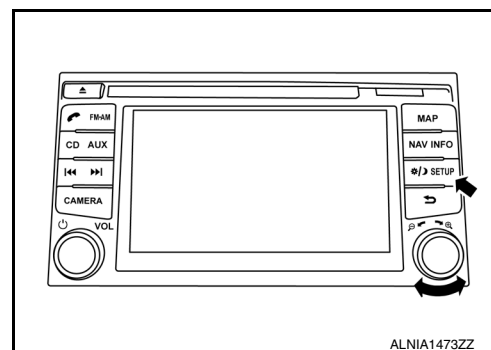
1. Turn the ignition ON.
2. Turn the audio system OFF.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

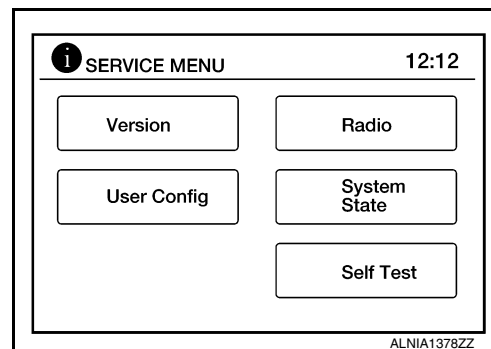
## < SYSTEM DESCRIPTION >

## [NAVIGATION]

3. While pressing the SETUP button, turn the TUNE-SCROLL dial counterclockwise 3 or more clicks, then clockwise 3 or more clicks, then counterclockwise 3 or more clicks. Shifting from current screen to previous screen is performed by pressing  button.



4. The trouble diagnosis initial screen is displayed, and Version, User Config, Radio, System State or Self Test can be selected.



## CONSULT Function

INFOID:000000009460261

### CONSULT FUNCTIONS

CONSULT performs the following functions via communication with the AV control unit.

| Direct Diagnostic Mode | Description                                                                                                                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ecu Identification     | The AV control unit part number is displayed.                                                                                                                                                                      |
| Self Diagnostic Result | The AV control unit self diagnostic results are displayed.                                                                                                                                                         |
| Data Monitor           | The AV control unit input/output data is displayed in real time.                                                                                                                                                   |
| Configuration          | <ul style="list-style-type: none"><li>• The vehicle specification can be read and saved.</li><li>• The vehicle specification can be written when replacing AV control unit.</li></ul>                              |
| CAN Diag Support Mntr  | <ul style="list-style-type: none"><li>• The result of transmit/receive diagnosis of AV communication is displayed.</li><li>• The result of transmit/receive diagnosis of CAN communication is displayed.</li></ul> |

### ECU IDENTIFICATION

The part number of AV control unit is displayed.

### SELF DIAGNOSTIC RESULT

Refer to [AV-120. "DTC Index"](#).

### DATA MONITOR

| Monitor Item [Unit]   | Description                                                                               |
|-----------------------|-------------------------------------------------------------------------------------------|
| VHCL SPD SIG [On/Off] | Indicates vehicle speed signal received from combination meter on CAN communication line. |
| ILLUM SIG [On/Off]    | Indicates condition of illumination signal for the AV control unit.                       |
| IGN SIG [On/Off]      | Indicates condition of ignition signal.                                                   |
| REV SIG [On/Off]      | Indicates condition of reverse signal received from BCM.                                  |

### CONFIGURATION

Refer to [AV-135. "CONFIGURATION \(AV CONTROL UNIT\) : Description"](#).

### CAN DIAG SUPPORT MNTR

Refer to [LAN-12. "CAN Diagnostic Support Monitor"](#).

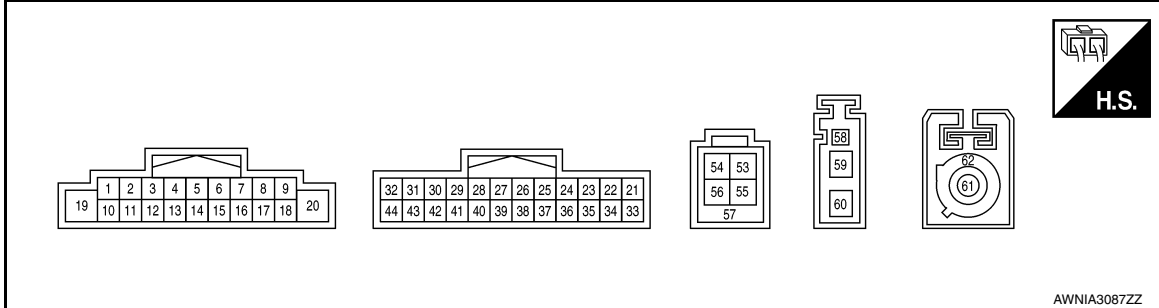
## ECU DIAGNOSIS INFORMATION

### AV CONTROL UNIT

#### Reference Value

INFOID:000000009460262

#### TERMINAL LAYOUT



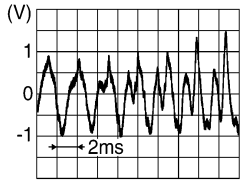
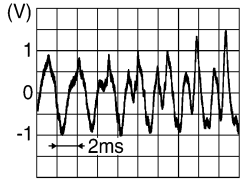
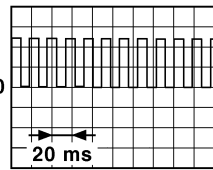
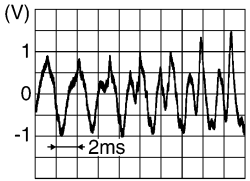
#### PHYSICAL VALUES

| Terminal<br>(Wire color) |           | Description                      |                  | Condition          |                     | Reference value<br>(Approx.) |
|--------------------------|-----------|----------------------------------|------------------|--------------------|---------------------|------------------------------|
| +                        | —         | Signal name                      | Input/<br>Output | Ignition<br>switch | Operation           |                              |
| 2<br>(GR)                | 3<br>(P)  | Sound signal front speaker<br>LH | Output           | ON                 | Sound output        | <p>SKIB3609E</p>             |
| 4<br>(W)                 | 5<br>(R)  | Sound signal rear speaker<br>LH  | Output           | ON                 | Sound output        | <p>SKIB3609E</p>             |
| 6<br>(SB)                | 15<br>(G) | Steering switch signal A         | Input            | ON                 | Press SOURCE switch | 0V                           |
|                          |           |                                  |                  |                    | Press △ switch      | 1.0V                         |
|                          |           |                                  |                  |                    | Press ▽ switch      | 2.0V                         |
|                          |           |                                  |                  |                    | Press ⚡ switch      | 3.0V                         |
|                          |           |                                  |                  |                    | Except above        | 5.0V                         |
| 7<br>(W)                 | Ground    | ACC power supply                 | Input            | ACC                | —                   | Battery voltage              |
| 8<br>(L)                 | —         | CAN (H)                          | Input/<br>Output | —                  | —                   | —                            |
| 9<br>(LG/R)              | 44<br>(B) | Illumination control signal      | Input            | ON                 | Headlamps ON        | Battery voltage              |

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

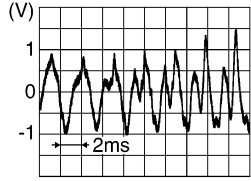
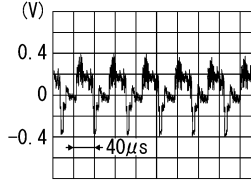
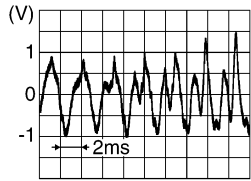
[NAVIGATION]

| Terminal<br>(Wire color) |           | Description                      |                  | Condition          |                                                       | Reference value<br>(Approx.)                                                                         |
|--------------------------|-----------|----------------------------------|------------------|--------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| +                        | —         | Signal name                      | Input/<br>Output | Ignition<br>switch | Operation                                             |                                                                                                      |
| 11<br>(O)                | 12<br>(V) | Sound signal front speaker<br>RH | Output           | ON                 | Sound output                                          | <br>SKIB3609E     |
| 13<br>(L)                | 14<br>(Y) | Sound signal rear speaker<br>RH  | Output           | ON                 | Sound output                                          | <br>SKIB3609E     |
| 16<br>(V)                | 15<br>(G) | Steering switch signal B         | Input            | ON                 | Press  switch                                         | 0V                                                                                                   |
|                          |           |                                  |                  |                    | Press  switch                                         | 1.0V                                                                                                 |
|                          |           |                                  |                  |                    | Press  switch                                         | 2.0V                                                                                                 |
|                          |           |                                  |                  |                    | Except above                                          | 5.0V                                                                                                 |
| 17<br>(P)                | —         | CAN (L)                          | Input/<br>Output | —                  | —                                                     | —                                                                                                    |
| 18<br>(LG)               | Ground    | Vehicle speed signal             | Input            | ON                 | When vehicle speed is approx. 40 km/h (25 MPH)        | <br>JSNIA0012GB |
| 19<br>(Y)                | Ground    | Battery power supply             | Input            | OFF                | —                                                     | Battery voltage                                                                                      |
| 20<br>(B/W)              | Ground    | Ground                           | —                | ON                 | —                                                     | 0 V                                                                                                  |
| 23<br>(R)                | —         | MR output                        | Output           | —                  | —                                                     | —                                                                                                    |
| 28<br>(Y)                | Ground    | Reverse signal                   | Input            | ON                 | Selector lever in R (reverse)                         | Battery voltage                                                                                      |
|                          |           |                                  |                  |                    | Selector lever in any position other than R (reverse) | 0 V                                                                                                  |
| 30<br>(Y)                | Ground    | AUX jack audio signal LH         | Input            | ON                 | Received audio signal (AUX input)                     | <br>SKIB3609E   |
| 31<br>(G)                | Ground    | AUX ground                       | —                | ON                 | —                                                     | 0V                                                                                                   |

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

| Terminal<br>(Wire color) |                | Description                |                  | Condition          |                                      | Reference value<br>(Approx.)                                                          |
|--------------------------|----------------|----------------------------|------------------|--------------------|--------------------------------------|---------------------------------------------------------------------------------------|
| +                        | —              | Signal name                | Input/<br>Output | Ignition<br>switch | Operation                            |                                                                                       |
| 32<br>(L)                | Ground         | AUX jack audio signal RH   | Input            | ON                 | Received audio signal<br>(AUX input) |    |
| 33<br>(B)                | Ground         | Camera ground              | —                | ON                 | —                                    | 0 V                                                                                   |
| 34<br>(L)                | Ground         | Camera image signal        | Input            | ON                 | When camera image is displayed       |    |
| 35<br>(Shield)           | —              | Camera image signal shield | —                | —                  | —                                    | —                                                                                     |
| 36<br>(Y)                | Ground         | Camera power supply        | Output           | ON                 | When camera image is displayed       | 6.0 V                                                                                 |
|                          |                |                            |                  |                    | Except for above                     | 0 V                                                                                   |
| 37<br>(O)                | Ground         | Ignition power supply      | Input            | ON                 | —                                    | Battery voltage                                                                       |
| 42<br>(L)                | —              | MIC VCC                    | Input            | ON                 | —                                    | —                                                                                     |
| 43<br>(P)                | 41<br>(Shield) | Microphone signal          | Input            | ON                 | While speaking into microphone.      |  |
| 53<br>(W)                | —              | V BUS signal               | —                | —                  | —                                    | —                                                                                     |
| 54<br>(G)                | —              | USB ground                 | —                | —                  | —                                    | —                                                                                     |
| 55<br>(L)                | —              | USB D+ signal              | —                | —                  | —                                    | —                                                                                     |
| 56<br>(R)                | —              | USB D– signal              | —                | —                  | —                                    | —                                                                                     |
| 57<br>(Shield)           | —              | USB shield                 | —                | —                  | —                                    | —                                                                                     |
| 58<br>(B)                | Ground         | Antenna amp. ON signal     | Output           | ON                 | —                                    | Battery voltage                                                                       |
| 59<br>(B)                | Ground         | AM-FM main antenna         | Input            | ON                 | —                                    | 5.0 V                                                                                 |

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
AV  
O  
P

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

| Terminal<br>(Wire color) |        | Description        |                  | Condition          |           | Reference value<br>(Approx.) |
|--------------------------|--------|--------------------|------------------|--------------------|-----------|------------------------------|
| +                        | —      | Signal name        | Input/<br>Output | Ignition<br>switch | Operation |                              |
| 61<br>(B)                | Ground | GPS antenna signal | Input            | ON                 | —         | 5.0 V                        |
| 62<br>(Shield)           | —      | GPS antenna shield | —                | —                  | —         | —                            |

## DTC Index

INFOID:000000009460263

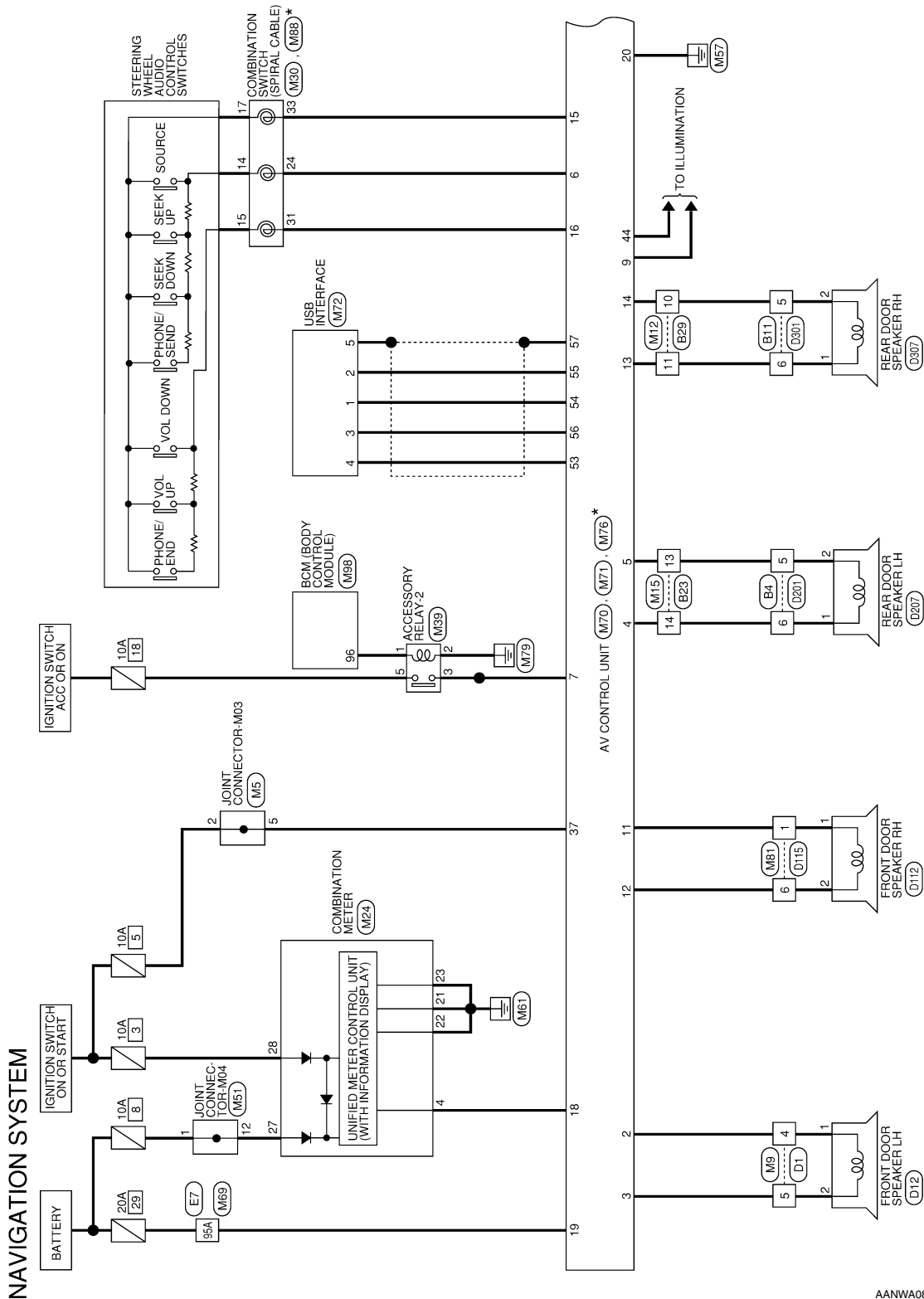
| CONSULT Display                               | Reference Page                      |
|-----------------------------------------------|-------------------------------------|
| U1000: CAN COMM CIRCUIT                       | <a href="#">AV-137, "DTC Logic"</a> |
| U1010: CONTROL UNIT (CAN)                     | <a href="#">AV-138, "DTC Logic"</a> |
| U1217: BLUETOOTH MODULE                       | <a href="#">AV-139, "DTC Logic"</a> |
| U1229: iPod CERTIFICATION                     | <a href="#">AV-140, "DTC Logic"</a> |
| U122F: Digital broadcasting connection error  | <a href="#">AV-141, "DTC Logic"</a> |
| U1244: GPS ANTENNA CONN                       | <a href="#">AV-142, "DTC Logic"</a> |
| U1263: USB OVERCURRENT                        | <a href="#">AV-143, "DTC Logic"</a> |
| U1264: ANTENNA AMP TERMINAL                   | <a href="#">AV-144, "DTC Logic"</a> |
| U12AA: Configuration Error                    | <a href="#">AV-145, "DTC Logic"</a> |
| U12AC: Display Temperature too High           | <a href="#">AV-146, "DTC Logic"</a> |
| U12AD: ECU Temperature too High               | <a href="#">AV-147, "DTC Logic"</a> |
| U12AE: Internal Amplifier temperature Warning | <a href="#">AV-148, "DTC Logic"</a> |
| U12AF: CD Mechanism Temperature Warning       | <a href="#">AV-149, "DTC Logic"</a> |
| U12B0: Supply Voltage Goes below 9V > 20s     | <a href="#">AV-150, "DTC Logic"</a> |
| U12B1: Supply Voltage Goes High > 16V for 20s | <a href="#">AV-151, "DTC Logic"</a> |
| U1310: CONTROL UNIT (AV)                      | <a href="#">AV-152, "DTC Logic"</a> |

## WIRING DIAGRAM

### NAVIGATION SYSTEM

#### Wiring Diagram

INFOID:000000009460264



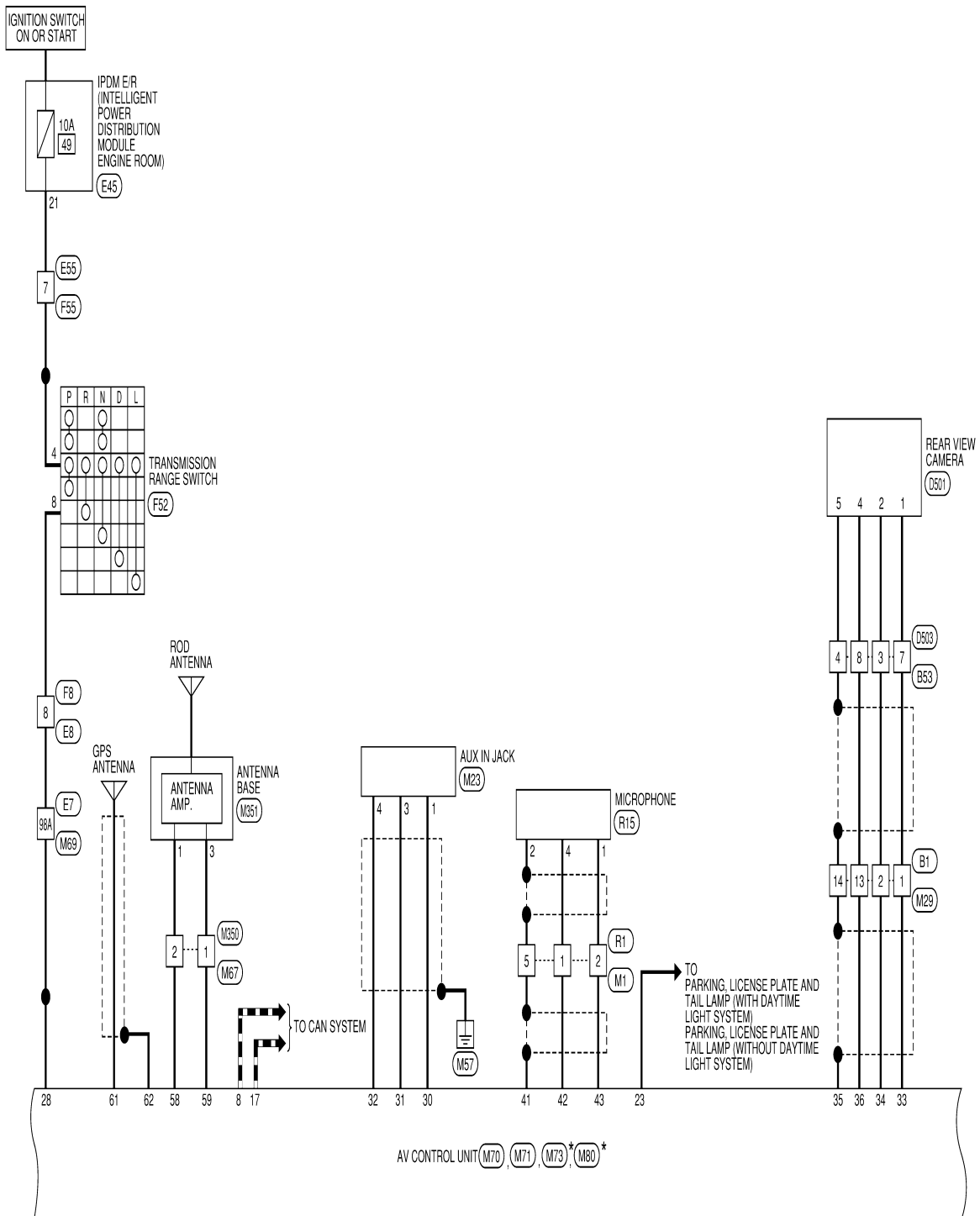
\* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

AANWA0861GB

# NAVIGATION SYSTEM

< WIRING DIAGRAM >

[NAVIGATION]

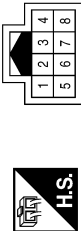


\* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

AANWA0862GB

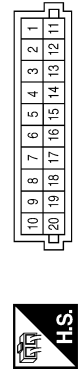
NAVIGATION SYSTEM CONNECTORS

|                 |              |
|-----------------|--------------|
| Connector No.   | M1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



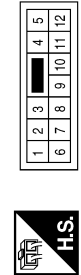
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | -           |
| 2            | P             | -           |
| 5            | SHIELD        | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M5                  |
| Connector Name  | JOINT CONNECTOR-M03 |
| Connector Color | BROWN               |



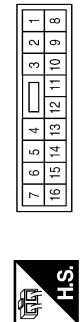
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2            | O             | -           |
| 5            | O             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M9           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



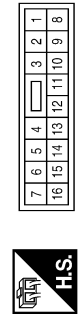
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | GR            | -           |
| 5            | P             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M12          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10           | Y             | -           |
| 11           | L             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M15          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 13           | R             | -           |
| 14           | W             | -           |

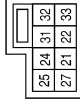
|                 |             |
|-----------------|-------------|
| Connector No.   | M23         |
| Connector Name  | AUX IN JACK |
| Connector Color | WHITE       |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | Y             | -           |
| 2            | -             | -           |
| 3            | G             | -           |
| 4            | L             | -           |

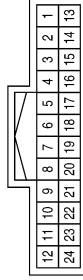
AANIA1720GB

|                 |                                      |
|-----------------|--------------------------------------|
| Connector No.   | M30                                  |
| Connector Name  | COMBINATION SWITCH<br>(SPIRAL CABLE) |
| Connector Color | GRAY                                 |



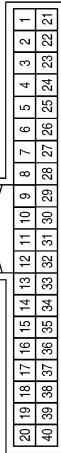
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 24           | SB            | STRG SW A   |
| 31           | V             | STRG SW B   |
| 33           | G             | STRG SW GND |

|                 |              |
|-----------------|--------------|
| Connector No.   | M29          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |
| 2            | L             | -           |
| 13           | Y             | -           |
| 14           | SHIELD        | -           |

|                 |                   |
|-----------------|-------------------|
| Connector No.   | M24               |
| Connector Name  | COMBINATION METER |
| Connector Color | WHITE             |



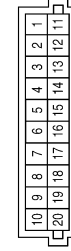
| Terminal No. | Color of Wire | Signal Name   |
|--------------|---------------|---------------|
| 4            | LG            | 8P/R          |
| 21           | B             | GND (ILL)     |
| 22           | B             | GND (POWER)   |
| 23           | B             | GND (CIRCUIT) |
| 27           | R/W           | BAT           |
| 28           | GR            | IGN           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M67          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |
| 2            | B             | -           |

|                 |                     |
|-----------------|---------------------|
| Connector No.   | M51                 |
| Connector Name  | JOINT CONNECTOR-M04 |
| Connector Color | GRAY                |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | LG            | -           |
| 12           | R/W           | -           |

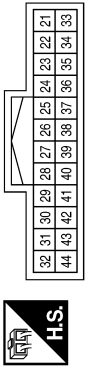
|                 |                   |
|-----------------|-------------------|
| Connector No.   | M39               |
| Connector Name  | ACCESSORY RELAY-2 |
| Connector Color | BLUE              |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | SB            | -           |
| 2            | B             | -           |
| 3            | L             | -           |
| 5            | O             | -           |

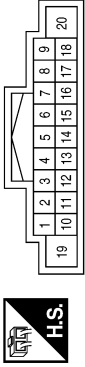
AANIA1721GB

|                 |                 |
|-----------------|-----------------|
| Connector No.   | M71             |
| Connector Name  | AV CONTROL UNIT |
| Connector Color | WHITE           |



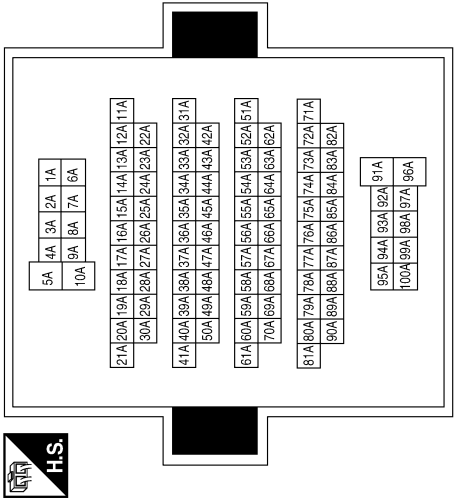
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 21           | -             | -           |
| 22           | -             | -           |
| 23           | R             | MR OUTPUT   |
| 24           | -             | -           |
| 25           | -             | -           |
| 26           | -             | -           |
| 27           | -             | -           |
| 28           | Y             | REVERSE SIG |
| 29           | -             | -           |
| 30           | Y             | AUDIO L     |
| 31           | G             | AUDIO GND   |
| 32           | L             | AUDIO R     |
| 33           | B             | CAMERA GRD  |
| 34           | L             | CAMERA ON   |
| 35           | SHIELD        | CAMERA SHLD |
| 36           | Y             | CAMERA +    |
| 37           | O             | IGN         |
| 38           | -             | -           |
| 39           | -             | -           |
| 40           | -             | -           |
| 41           | SHIELD        | MIC GND     |
| 42           | L             | MIC VCC     |
| 43           | P             | MIC SIG     |
| 44           | B             | ILL (-)     |

|                 |                 |
|-----------------|-----------------|
| Connector No.   | M70             |
| Connector Name  | AV CONTROL UNIT |
| Connector Color | WHITE           |



| Terminal No. | Color of Wire | Signal Name       |
|--------------|---------------|-------------------|
| 1            | -             | -                 |
| 2            | GR            | FR SP LH (+)      |
| 3            | P             | FR SP LH (-)      |
| 4            | W             | RR SP LH (+)      |
| 5            | R             | RR SP LH (-)      |
| 6            | SB            | STRG SW A         |
| 7            | W             | ACC               |
| 8            | L             | CAN-H             |
| 9            | LG/R          | ILL (+), LIGHT SW |
| 10           | -             | -                 |
| 11           | O             | FR SP RH (+)      |
| 12           | V             | FR SP RH (-)      |
| 13           | L             | RR SP RH (+)      |
| 14           | Y             | RR SP RH (-)      |
| 15           | G             | STRG SW GND       |
| 16           | V             | STRG SW B         |
| 17           | P             | CAN-L             |
| 18           | LG            | SPEED SIGNAL      |
| 19           | Y             | BAT               |
| 20           | B/W           | GND               |

|                 |              |
|-----------------|--------------|
| Connector No.   | M69          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



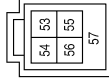
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 95A          | Y             | -           |
| 98A          | SB            | -           |

AANIA1722GB

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

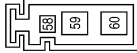
AV

|                 |                 |
|-----------------|-----------------|
| Connector No.   | M76             |
| Connector Name  | AV CONTROL UNIT |
| Connector Color | GRAY            |



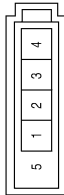
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 53           | W             | V BUS       |
| 54           | G             | USB GND     |
| 55           | L             | USB D+      |
| 56           | R             | USB D-      |
| 57           | SHIELD        | SHIELD      |

|                 |                 |
|-----------------|-----------------|
| Connector No.   | M73             |
| Connector Name  | AV CONTROL UNIT |
| Connector Color | GRAY            |



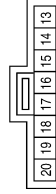
| Terminal No. | Color of Wire | Signal Name    |
|--------------|---------------|----------------|
| 58           | B             | ANT+B          |
| 59           | B             | ANTENNA SIGNAL |
| 60           | -             | -              |

|                 |               |
|-----------------|---------------|
| Connector No.   | M72           |
| Connector Name  | USB INTERFACE |
| Connector Color | GRAY          |

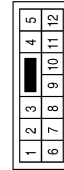


| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | G             | -           |
| 2            | L             | -           |
| 3            | R             | -           |
| 4            | W             | -           |
| 5            | SHIELD        | -           |

|                 |                                   |
|-----------------|-----------------------------------|
| Connector No.   | M88                               |
| Connector Name  | COMBINATION SWITCH (SPIRAL CABLE) |
| Connector Color | GRAY                              |



|                 |              |
|-----------------|--------------|
| Connector No.   | M81          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 14           | W             | REMOTE A    |
| 15           | L             | REMOTE B    |
| 17           | BR            | GND         |

|                 |                 |
|-----------------|-----------------|
| Connector No.   | M80             |
| Connector Name  | AV CONTROL UNIT |
| Connector Color | BLUE            |



| Terminal No. | Color of Wire | Signal Name        |
|--------------|---------------|--------------------|
| 61           | B             | GPS ANT            |
| 62           | B             | GPS ANTENNA SHIELD |

AANIA1723GB

|                 |              |
|-----------------|--------------|
| Connector No.   | M351         |
| Connector Name  | ANTENNA BASE |
| Connector Color | GRAY         |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |
| 2            | -             | -           |
| 3            | B             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | M350         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | B             | -           |
| 2            | B             | -           |

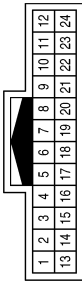
|                 |                           |
|-----------------|---------------------------|
| Connector No.   | M98                       |
| Connector Name  | BCM (BODY CONTROL MODULE) |
| Connector Color | WHITE                     |



|    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |
|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  | 81  | 82  | 83  | 84  | 85  | 86  | 87  | 88  | 89  | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |

| Terminal No. | Color of Wire | Signal Name      |
|--------------|---------------|------------------|
| 96           | SB            | ACC RELAY OUTPUT |

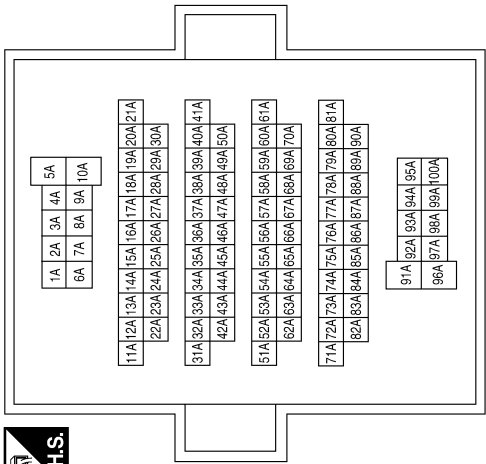
|                 |              |
|-----------------|--------------|
| Connector No.   | E8           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 8            | SB            | -           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 95A          | LG            | -           |
| 98A          | SB            | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | E7           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



AANIA1724GB

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

AV

|                 |              |
|-----------------|--------------|
| Connector No.   | F8           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

|               |   |
|---------------|---|
| Terminal No.  | 8 |
| Color of Wire | O |
| Signal Name   | — |

|                 |              |
|-----------------|--------------|
| Connector No.   | E55          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |



|    |    |   |   |    |
|----|----|---|---|----|
| 1  | 2  | 3 | 4 | 5  |
| 6  | 7  | 8 | 9 | 10 |
| 11 | 12 |   |   |    |

|               |   |
|---------------|---|
| Terminal No.  | 7 |
| Color of Wire | R |
| Signal Name   | — |

|                 |                                                              |
|-----------------|--------------------------------------------------------------|
| Connector No.   | E45                                                          |
| Connector Name  | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BROWN                                                        |



|    |    |    |    |    |
|----|----|----|----|----|
| 21 | 20 | 19 | 18 | 17 |
| 28 | 27 | 26 | 25 | 24 |
| 23 | 22 |    |    |    |

|               |                   |
|---------------|-------------------|
| Terminal No.  | 21                |
| Color of Wire | R                 |
| Signal Name   | AT ECU (WITH CVT) |

|                 |              |
|-----------------|--------------|
| Connector No.   | B1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | —           |
| 2            | G             | —           |
| 13           | Y             | —           |
| 14           | B             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | F55          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | GRAY         |



|    |    |    |   |   |
|----|----|----|---|---|
| 5  | 4  | 3  | 2 | 1 |
| 12 | 11 | 10 | 9 | 8 |
| 7  | 6  |    |   |   |

|               |   |
|---------------|---|
| Terminal No.  | 7 |
| Color of Wire | R |
| Signal Name   | — |

|                 |                           |
|-----------------|---------------------------|
| Connector No.   | F52                       |
| Connector Name  | TRANSMISSION RANGE SWITCH |
| Connector Color | BLACK                     |



|    |   |   |   |   |   |
|----|---|---|---|---|---|
| 6  | 5 | 4 | 3 | 2 | 1 |
| 10 | 9 | 8 | 7 |   |   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | R/W           | —           |
| 8            | O             | —           |

AANIA1725GB

|                 |              |
|-----------------|--------------|
| Connector No.   | B23          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| 8  | 9  | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 |    |    |    |    |    |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 13           | R             | —           |
| 14           | W             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B11          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |   |   |   |
|----|---|---|---|
| 4  | 3 | 2 | 1 |
| 10 | 9 | 8 | 7 |
| 6  | 5 |   |   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | GR            | —           |
| 6            | LG            | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B4           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |   |   |   |
|----|---|---|---|
| 4  | 3 | 2 | 1 |
| 10 | 9 | 8 | 7 |
| 6  | 5 |   |   |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | R             | —           |
| 6            | W             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | R1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|   |   |   |   |
|---|---|---|---|
| 4 | 3 | 2 | 1 |
| 8 | 7 | 6 | 5 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | —           |
| 2            | P             | —           |
| 5            | SHIELD        | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B53          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|   |   |   |   |
|---|---|---|---|
| 4 | 3 | 2 | 1 |
| 8 | 7 | 6 | 5 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | G             | —           |
| 4            | B             | —           |
| 7            | L             | —           |
| 8            | Y             | —           |

|                 |              |
|-----------------|--------------|
| Connector No.   | B29          |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| 8  | 9  | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 |    |    |    |    |    |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10           | GR            | —           |
| 11           | LG            | —           |

AANIA1726GB

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

AV

# NAVIGATION SYSTEM

< WIRING DIAGRAM >

[NAVIGATION]

|                 |                       |
|-----------------|-----------------------|
| Connector No.   | D12                   |
| Connector Name  | FRONT DOOR SPEAKER LH |
| Connector Color | WHITE                 |



|   |   |
|---|---|
| 2 | 1 |
|---|---|

|                 |              |
|-----------------|--------------|
| Connector No.   | D1           |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |    |   |   |   |
|----|----|----|---|---|---|
| 5  | 4  |    | 3 | 2 | 1 |
| 12 | 11 | 10 | 9 | 8 | 7 |
|    |    |    |   |   | 6 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | -           |
| 2            | P             | -           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 4            | GR            | -           |
| 5            | P             | -           |

|                 |            |
|-----------------|------------|
| Connector No.   | R15        |
| Connector Name  | MICROPHONE |
| Connector Color | WHITE      |



|   |   |   |   |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
|---|---|---|---|

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | P             | SIG         |
| 2            | SHIELD        | GND         |
| 3            | -             | -           |
| 4            | L             | VCC         |

|                 |              |
|-----------------|--------------|
| Connector No.   | D201         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|   |   |   |   |    |
|---|---|---|---|----|
| 1 | 2 |   | 3 | 4  |
| 5 | 6 | 7 | 8 | 9  |
|   |   |   |   | 10 |

|                 |              |
|-----------------|--------------|
| Connector No.   | D115         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



|    |    |             |   |   |   |   |
|----|----|-------------|---|---|---|---|
| 5  | 4  | <div></div> | 3 | 2 | 1 |   |
| 12 | 11 | 10          | 9 | 8 | 7 | 6 |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | R             | -           |
| 6            | W             | -           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | -           |
| 6            | P             | -           |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | GR            | -           |
| 2            | P             | -           |

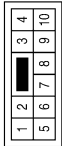
AANIA1727GB

|                 |                      |
|-----------------|----------------------|
| Connector No.   | D307                 |
| Connector Name  | REAR DOOR SPEAKER RH |
| Connector Color | WHITE                |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | W             | -           |
| 2            | R             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | D301         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



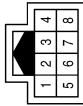
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 5            | R             | -           |
| 6            | W             | -           |

|                 |                      |
|-----------------|----------------------|
| Connector No.   | D207                 |
| Connector Name  | REAR DOOR SPEAKER LH |
| Connector Color | WHITE                |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | W             | -           |
| 2            | R             | -           |

|                 |              |
|-----------------|--------------|
| Connector No.   | D503         |
| Connector Name  | WIRE TO WIRE |
| Connector Color | WHITE        |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3            | G             | -           |
| 4            | B             | -           |
| 7            | L             | -           |
| 8            | Y             | -           |

|                 |                  |
|-----------------|------------------|
| Connector No.   | D501             |
| Connector Name  | REAR VIEW CAMERA |
| Connector Color | BLACK            |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1            | L             | -           |
| 2            | G             | -           |
| 3            | -             | -           |
| 4            | Y             | -           |
| 5            | B             | -           |
| 6            | -             | -           |

AANIA1728GB

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

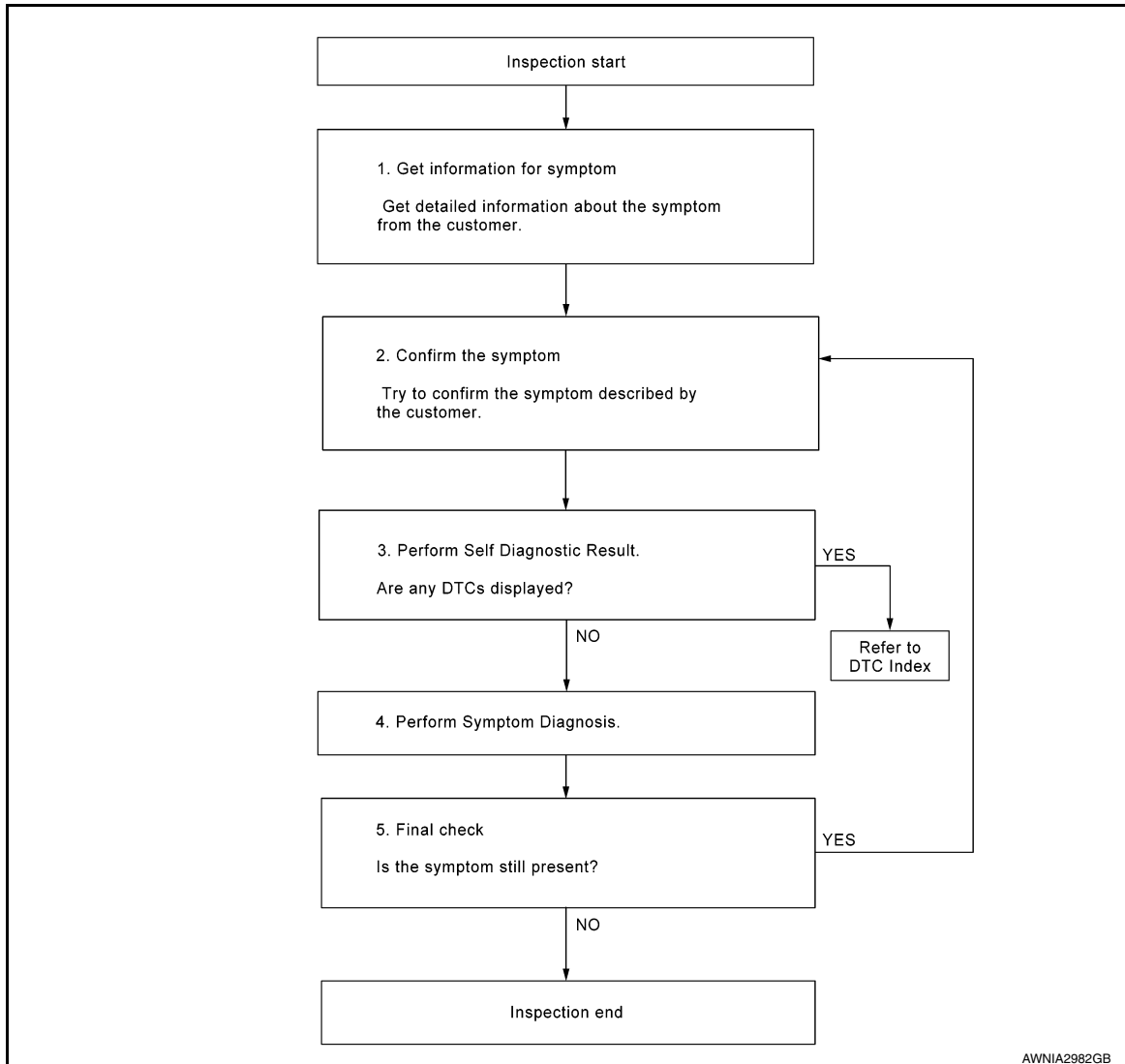
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000009460265

#### OVERALL SEQUENCE



#### DETAILED FLOW

##### 1.GET INFORMATION FOR SYMPTOM

Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

>> GO TO 2.

##### 2.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 3.

##### 3.PERFORM SELF DIAGNOSTIC RESULT

1. Turn ignition switch ON and wait for 2 seconds or more.

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[NAVIGATION]

2. Perform Self Diagnostic Result for MULTI AV.

Are any DTCs displayed?

YES >> Refer to [AV-120, "DTC Index"](#).

NO >> GO TO 4.

## 4.PERFORM SYMPTOM DIAGNOSIS

Refer to [AV-166, "Symptom Table"](#).

>> GO TO 5

## 5.FINAL CHECK

Refer to symptom described by the customer in step 1.

Is the symptom still present?

YES >> GO TO 2

NO >> Inspection End.

A

B

C

D

E

F

G

H

I

J

K

L

M

AV

O

P

## INSPECTION AND ADJUSTMENT

## ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT

## ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description

INFOID:000000009460266

## BEFORE REPLACEMENT

When replacing AV control unit, save or print current vehicle specification with CONSULT configuration before replacement.

**NOTE:**

If "Before Replace ECU" cannot be used, use the "After Replace ECU" or "Manual Configuration" after replacing AV control unit.

## AFTER REPLACEMENT

**CAUTION:**

When replacing AV control unit, you must perform "After Replace ECU" with CONSULT.

- Complete the procedure of "After Replace ECU" in order.
- If you set incorrect "After Replace ECU", incidents might occur.
- Configuration is different for each vehicle model. Confirm configuration of each vehicle model.

## ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Work Procedure

INFOID:000000009460267

## 1. SAVING VEHICLE SPECIFICATION

## ⑧-CONSULT

Enter "Re/Programming, Configuration" and perform "Before Replace ECU" to save or print current vehicle specification.

**NOTE:**

If "Before Replace ECU" cannot be used, use the "After Replace ECU" or "Manual Configuration" after replacing AV control unit.

>> GO TO 2.

## 2. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to [AV-178. "Removal and Installation"](#).

>> GO TO 3.

## 3. WRITING VEHICLE SPECIFICATION

## ⑧CONSULT

1. Enter "Re/Programming, Configuration".
2. If "Before Replace ECU" operation was performed, automatically an "Operation Log Selection" screen will be displayed. Select the applicable file from the "Saved Data List" and press "Confirm" to write vehicle specification. Refer to [AV-135. "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).
3. If "Before Replace ECU" operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to [AV-135. "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).

>> GO TO 4.

## 4. OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines) are normal.

>> Work End.

## CONFIGURATION (AV CONTROL UNIT)

## CONFIGURATION (AV CONTROL UNIT) : Description

INFOID:000000009460268

Vehicle specification needs to be written with CONSULT because it is not written after replacing AV control unit.

Configuration has three functions as follows:

| Function                 | Description                                                                                                                                                      |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| "Before Replace ECU"     | <ul style="list-style-type: none"> <li>• Reads the vehicle configuration of current AV control unit.</li> <li>• Saves the read vehicle configuration.</li> </ul> |
| "After Replace ECU"      | Writes the vehicle configuration with manual selection.                                                                                                          |
| "Select Saved Data List" | Writes the vehicle configuration with saved data.                                                                                                                |

**CAUTION:**

- When replacing AV control unit, you must perform "Select Saved Data List" or "After Replace ECU" with CONSULT.
- Complete the procedure of "Select Saved Data List" or "After Replace ECU" in order.
- If you set incorrect "Select Saved Data List" or "After Replace ECU", incidents might occur.
- Configuration is different for each vehicle model. Confirm configuration of each vehicle model.
- Never perform "Select Saved Data List" or "After Replace ECU" except for new AV control unit.

## CONFIGURATION (AV CONTROL UNIT) : Work Procedure

INFOID:000000009460269

## 1. WRITING MODE SELECTION

 CONSULT

Select "Reprogramming, Configuration" of AV control unit.

When writing saved data>>GO TO 2.

When writing manually>>GO TO 3.

## 2. PERFORM "SAVED DATA LIST"

 CONSULT

Automatically "Operation Log Selection" window will display if "Before Replace ECU" was performed. Select applicable file from the "Save Data List" and press "Confirm".

>> Work End.

## 3. PERFORM "AFTER REPLACE ECU" OR "MANUAL CONFIGURATION"

 CONSULT

1. Select "After Replace ECU" or "Manual Configuration".
2. Identify the correct model and configuration list. Refer to [AV-136. "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).
3. Confirm and/or change setting value for each item.

**CAUTION:**

Thoroughly read and understand the vehicle specification. ECU control may not operate normally if the setting is not correct.

4. Select "Next".

**CAUTION:**

Make sure to select "Next", confirm each setting value and press "OK" even if the indicated configuration of brand new AV control unit is same as the desirable configuration. If not, configuration which is set automatically by selecting vehicle model can not be memorized.

5. When "Completed", select "End".

>> GO TO 4.

## 4. OPERATION CHECK

Confirm that each function controlled by AV control unit operates normally.

# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION]

>> Work End.

## CONFIGURATION (AV CONTROL UNIT) : Configuration List

INFOID:000000009460270

### CAUTION:

Thoroughly read and understand the vehicle specification. Incorrect settings may result in abnormal control of ECU.

| MANUAL SETTING ITEM |                        |
|---------------------|------------------------|
| Items               | Setting value          |
| SOUND SYSTEM        | BASE ⇔ BOSE            |
| CAMERA SYSTEM       | NONE/AVM ⇔ REAR CAMERA |

⇔: Items which confirm vehicle specifications

## DTC/CIRCUIT DIAGNOSIS

### U1000 CAN COMM CIRCUIT

#### DTC Logic

INFOID:000000009460271

#### DTC DETECTION LOGIC

| CONSULT Display             | DTC Detection Condition                                                                                | Possible Cause            |
|-----------------------------|--------------------------------------------------------------------------------------------------------|---------------------------|
| CAN COMM CIRCUIT<br>[U1000] | AV control unit is not transmitting or receiving<br>CAN communication signal for 2 seconds or<br>more. | CAN communication system. |

#### Diagnosis Procedure

INFOID:000000009460272

#### 1.PERFORM SELF DIAGNOSTIC RESULT

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform Self Diagnostic Result for MULTI AV.

##### Is CAN COMM CIRCUIT displayed?

- YES >> Refer to [LAN-15, "Trouble Diagnosis Flow Chart"](#).  
NO >> Refer to [GI-41, "Intermittent Incident"](#).

AV

## U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

### U1010 CONTROL UNIT (CAN)

#### DTC Logic

INFOID:000000009460273

#### DTC DETECTION LOGIC

| CONSULT Display               | DTC Detection Condition                                     | Possible Cause                                                                                                                     |
|-------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| CONTROL UNIT (CAN)<br>[U1010] | Error during CAN controller hardware initialization (VCAN). | Replace the AV control unit if the malfunction occurs constantly.<br>Refer to <a href="#">AV-178, "Removal and Installation"</a> . |

U1217 AV CONTROL UNIT

DTC Logic

INFOID:000000009460274

DTC DETECTION LOGIC

| CONSULT Display             | DTC Detection Condition                                                            | Possible Cause                                                                                                                |
|-----------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| BLUETOOTH MODULE<br>[U1217] | Connection failure to the internal Bluetooth <sup>®</sup> sub<br>unit is detected. | Replace AV control unit if malfunction occurs<br>constantly.<br>Refer to <a href="#">AV-178, "Removal and Installation"</a> . |

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

## U1229 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

### U1229 AV CONTROL UNIT

#### DTC Logic

INFOID:000000009460275

#### DTC DETECTION LOGIC

| CONSULT Display               | DTC Detection Condition         | Possible Cause                                                                                                             |
|-------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| iPod CERTIFICATION<br>[U1229] | iPod authentication chip error. | Replace AV control unit if malfunction occurs constantly.<br>Refer to <a href="#">AV-178, "Removal and Installation"</a> . |

U122F AV CONTROL UNIT

DTC Logic

INFOID:000000009460276

DTC DETECTION LOGIC

| CONSULT Display                                  | DTC Detection Condition                                                              | Possible Cause                                                                                                             |
|--------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Digital broadcasting connection error<br>[U122F] | Communication error with digital audio broadcast module internal to AV control unit. | Replace AV control unit if malfunction occurs constantly.<br>Refer to <a href="#">AV-178, "Removal and Installation"</a> . |

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
AV  
O  
P

## U1244 GPS ANTENNA

### DTC Logic

INFOID:000000009460277

### DTC DETECTION LOGIC

| CONSULT Display             | DTC Detection Condition                                        | Possible Cause                                                                                                                               |
|-----------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| GPS ANTENNA CONN<br>[U1244] | Open or short to ground is detected in GPS antenna connection. | <ul style="list-style-type: none"> <li>GPS antenna disconnection.</li> <li>Open or short to ground in GPS antenna signal circuit.</li> </ul> |

### Diagnosis Procedure

INFOID:000000009460278

Regarding Wiring Diagram information, refer to [AV-121, "Wiring Diagram"](#).

### 1. GPS ANTENNA INSPECTION

Visually inspect the GPS antenna and antenna feeder. Refer to [AV-186, "Removal and Installation"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

### 2. CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect AV control unit connector M80.
2. Turn ignition switch ON.
3. Check voltage between AV control unit connector M80 and ground.

| AV control unit |          | Ground | Voltage |
|-----------------|----------|--------|---------|
| Connector       | Terminal |        |         |
| M80             | 61       | —      | 5.0 V   |

Is inspection result normal?

YES >> Replace GPS antenna. Refer to [AV-186, "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-178, "Removal and Installation"](#).

## U1263 USB

## DTC Logic

INFOID:000000009460281

## DTC DETECTION LOGIC

| CONSULT Display            | DTC Detection Condition                 | Possible Cause                                                                                                                                       |
|----------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| USB OVERCURRENT<br>[U1263] | Overcurrent in USB harness is detected. | <ul style="list-style-type: none"> <li>Device connected to USB interface.</li> <li>Harness between the AV control unit and USB interface.</li> </ul> |

## DTC CONFIRMATION PROCEDURE

## 1.PERFORM SELF DIAGNOSTIC RESULT

1. If there is a device connected to the USB interface, disconnect it.
2. Turn ignition switch ON and wait for 2 seconds or more.
3. Perform Self Diagnostic Result for MULTI AV.

Is DTC U1263 displayed?

- YES >> Refer to [AV-143, "Diagnosis Procedure"](#).  
 NO >> Inspection End.

## Diagnosis Procedure

INFOID:000000009460282

## 1.CHECK USB INTERFACE HARNESS

Visually inspect USB interface harness. Refer to [AV-181, "Removal and Installation"](#).

Is the inspection result normal?

- YES >> GO TO 2.  
 NO >> Replace USB interface harness. Refer to [AV-181, "Removal and Installation"](#).

## 2.CHECK USB INTERFACE HARNESS

Check USB interface harness. Refer to [AV-164, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-178, "Removal and Installation"](#).  
 NO >> Replace USB interface harness. Refer to [AV-181, "Removal and Installation"](#).

# U1264 ANTENNA AMP.

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1264 ANTENNA AMP.

### DTC Logic

INFOID:000000009460283

### DTC DETECTION LOGIC

| CONSULT Display                 | DTC Detection Condition                                         | Possible Cause                                                                                                                                 |
|---------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| ANTENNA AMP TERMINAL<br>[U1264] | Open or short to ground is detected in Antenna amp. connection. | <ul style="list-style-type: none"><li>Antenna amp. disconnection.</li><li>Open or short to ground in antenna amp. ON signal circuit.</li></ul> |

### Diagnosis Procedure

INFOID:000000009460284

Regarding Wiring Diagram information, refer to [AV-121, "Wiring Diagram"](#).

### 1. ANTENNA AMP. INSPECTION

Visually inspect the antenna base (antenna amp.) and antenna feeder. Refer to [AV-188, "Feeder Layout"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

### 2. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND ANTENNA BASE

- Turn ignition switch OFF.
- Disconnect AV control unit connector M73 and antenna base connector M351.
- Check continuity between AV control unit connector M73 and antenna base connector M351.

| AV control unit |          | Antenna base |          | Continuity |
|-----------------|----------|--------------|----------|------------|
| Connector       | Terminal | Connector    | Terminal |            |
| M73             | 58       | M351         | 1        | Yes        |

- Check continuity between AV control unit connector M73 and ground.

| AV control unit |          | Ground | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| M73             | 58       | —      | No         |

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

### 3. CHECK AV CONTROL UNIT VOLTAGE

- Connect AV control unit connector M73.
- Turn ignition switch ON.
- Check voltage between AV control unit connector M73 and ground.

| AV control unit |          | Ground | Voltage<br>(Approx.) |
|-----------------|----------|--------|----------------------|
| (+)             |          | (-)    |                      |
| Connector       | Terminal |        |                      |
| M73             | 58       | —      | Battery voltage      |

Is the inspection result normal?

YES >> Replace antenna base. Refer to [AV-187, "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-178, "Removal and Installation"](#).

# U12AA CONFIGURATION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U12AA CONFIGURATION ERROR

### DTC Logic

INFOID:000000009460285

### DTC DETECTION LOGIC

| CONSULT Display                | DTC Detection Condition                                                 | Possible Cause                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Configuration Error<br>[U12AA] | AV control unit is not properly configured or configuration is corrupt. | Configuration data needs to be written.<br>Refer to <a href="#">AV-135, "CONFIGURATION (AV CONTROL UNIT) : Work Procedure"</a> . |

### Diagnosis Procedure

INFOID:000000009460286

#### 1.PERFORM CONFIGURATION

When U12AA is detected, configuration data must be written.

>> Write configuration data with CONSULT. Refer to [AV-135, "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

## U12AC AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

### U12AC AV CONTROL UNIT

#### DTC Logic

INFOID:000000009460287

#### DTC DETECTION LOGIC

| CONSULT Display                         | DTC Detection Condition                                                                                     | Possible Cause                                                                                                             |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Display Temperature too High<br>[U12AC] | Display temperature has exceeded maximum temperature. Display is switched OFF to avoid irreversible damage. | Replace AV control unit if malfunction occurs constantly.<br>Refer to <a href="#">AV-178, "Removal and Installation"</a> . |

# U12AD AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U12AD AV CONTROL UNIT

### DTC Logic

INFOID:000000009460288

### DTC DETECTION LOGIC

| CONSULT Display                     | DTC Detection Condition                                       | Possible Cause                                                                                                             |
|-------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| ECU Temperature too High<br>[U12AD] | AV control unit temperature has exceeded maximum temperature. | Replace AV control unit if malfunction occurs constantly.<br>Refer to <a href="#">AV-178, "Removal and Installation"</a> . |

A

B

C

D

E

F

G

H

I

J

K

L

M

AV

O

P

## U12AE AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

### U12AE AV CONTROL UNIT

#### DTC Logic

INFOID:000000009460289

#### DTC DETECTION LOGIC

| CONSULT Display                                      | DTC Detection Condition                                             | Possible Cause                                                                                                                |
|------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Internal Amplifier temperature<br>Warning<br>[U12AE] | Internal amplifier temperature has exceeded<br>maximum temperature. | Replace AV control unit if malfunction occurs<br>constantly.<br>Refer to <a href="#">AV-178, "Removal and Installation"</a> . |

# U12AF AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U12AF AV CONTROL UNIT

### DTC Logic

INFOID:000000009460290

### DTC DETECTION LOGIC

| CONSULT Display                             | DTC Detection Condition                                                                                       | Possible Cause                                                                                                             |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| CD Mechanism Temperature Warning<br>[U12AF] | CD drive temperature has exceeded maximum temperature. CD drive is switched OFF to avoid irreversible damage. | Replace AV control unit if malfunction occurs constantly.<br>Refer to <a href="#">AV-178, "Removal and Installation"</a> . |

A

B

C

D

E

F

G

H

I

J

K

L

M

AV

O

P

# U12B0 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U12B0 POWER SUPPLY VOLTAGE

### DTC Logic

INFOID:000000009460291

### DTC DETECTION LOGIC

| CONSULT Display                                  | DTC Detection Condition                              | Possible Cause                                                                                                                        |
|--------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Supply Voltage Goes below 9V<br>> 20s<br>[U12B0] | AV control unit supply voltage exceeds lower limits. | <ul style="list-style-type: none"><li>Charging system malfunction.</li><li>AV control unit power supply or ground circuits.</li></ul> |

### Diagnosis Procedure

INFOID:000000009460292

#### 1.CHECK CHARGING SYSTEM

Check the vehicle charging system. Refer to [CHG-10, "Work Flow \(With EXP-800 NI or GR8-1200 NI\)"](#) or [CHG-13, "Work Flow \(Without EXP-800 NI or GR8-1200 NI\)"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning components.

#### 2.CHECK AV CONTROL UNIT POWER SUPPLY AND GROUND CIRCUITS

Perform the AV control unit power supply and ground circuit diagnosis procedure. Refer to [AV-153, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to [AV-178, "Removal and Installation"](#).

NO >> Repair or replace harness or connectors.

# U12B1 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U12B1 POWER SUPPLY VOLTAGE

### DTC Logic

INFOID:000000009460293

### DTC DETECTION LOGIC

| CONSULT Display                                      | DTC Detection Condition                              | Possible Cause               |
|------------------------------------------------------|------------------------------------------------------|------------------------------|
| Supply Voltage Goes High ><br>16V for 20s<br>[U12B1] | AV control unit supply voltage exceeds upper limits. | Charging system malfunction. |

### Diagnosis Procedure

INFOID:000000009460294

#### 1.CHECK CHARGING SYSTEM

Check the vehicle charging system. Refer to [CHG-10, "Work Flow \(With EXP-800 NI or GR8-1200 NI\)"](#) or [CHG-13, "Work Flow \(Without EXP-800 NI or GR8-1200 NI\)"](#).

Is the inspection result normal?

- YES >> Replace the AV control unit. Refer to [AV-178, "Removal and Installation"](#).  
NO >> Repair or replace the malfunctioning components.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

## U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

### U1310 AV CONTROL UNIT

#### DTC Logic

INFOID:000000009460295

#### DTC DETECTION LOGIC

| CONSULT Display              | DTC Detection Condition                                     | Possible Cause                                                                                                             |
|------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| CONTROL UNIT (AV)<br>[U1310] | Error during CAN controller hardware initialization (MCAN). | Replace AV control unit if malfunction occurs constantly.<br>Refer to <a href="#">AV-178, "Removal and Installation"</a> . |

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## POWER SUPPLY AND GROUND CIRCUIT

### AV CONTROL UNIT

#### AV CONTROL UNIT : Diagnosis Procedure

INFOID:000000009460296

Regarding Wiring Diagram information, refer to [AV-121, "Wiring Diagram"](#).

#### 1.CHECK FUSE

Check that the following fuses are not blown.

| Terminal No. | Signal name           | Fuse No. |
|--------------|-----------------------|----------|
| 7            | ACC power supply      | 18 (10A) |
| 19           | Battery power supply  | 29 (15A) |
| 37           | Ignition power supply | 5 (10A)  |

Are the fuses blown?

YES >> Replace the blown fuse after repairing the affected circuit.

NO >> GO TO 2.

#### 2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors M70 and M71.
3. Check voltage between AV control unit connectors M70 and M71 and ground.

| AV control unit |          | Ground | Condition            | Voltage<br>(Approx.) |
|-----------------|----------|--------|----------------------|----------------------|
| Connector       | Terminal |        |                      |                      |
| M70             | 19       | —      | Ignition switch: OFF | Battery voltage      |
|                 | 7        |        | Ignition switch: ON  |                      |
| M71             | 37       |        |                      |                      |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

#### 3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between AV control unit connector M70 and ground.

| AV control unit |          | Ground | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| M70             | 20       | —      | Yes        |

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

## FRONT DOOR SPEAKER

## Diagnosis Procedure

INFOID:000000009460297

Regarding Wiring Diagram information, refer to [AV-121, "Wiring Diagram"](#).

**1.CONNECTOR CHECK**

Check the AV control unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

**2.CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY**

1. Disconnect AV control unit connector M70 and suspect front door speaker connector.
2. Check continuity between AV control unit connector M70 and suspect front door speaker connector.

| AV control unit |          | Front door speaker |          | Continuity |
|-----------------|----------|--------------------|----------|------------|
| Connector       | Terminal | Connector          | Terminal |            |
| M70             | 2        | D12 (LH)           | 1        | Yes        |
|                 | 3        |                    | 2        |            |
|                 | 11       | D112 (RH)          | 1        |            |
|                 | 12       |                    | 2        |            |

3. Check continuity between AV control unit connector M70 and ground.

| AV control unit |          | Ground | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| M70             | 2        | —      | No         |
|                 | 3        |        |            |
|                 | 11       |        |            |
|                 | 12       |        |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

**3.CHECK FRONT DOOR SPEAKER SIGNAL**

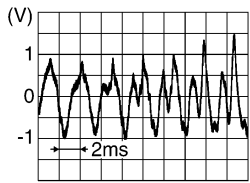
1. Connect AV control unit connector M70 and suspect front door speaker connector.
2. Turn ignition switch to ACC.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of AV control unit connector M70.

| AV control unit connector M70 |          | Condition | Reference value |
|-------------------------------|----------|-----------|-----------------|
| (+)                           | (-)      |           |                 |
| Terminal                      | Terminal |           |                 |

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

|    |    |                     |                                                                                     |
|----|----|---------------------|-------------------------------------------------------------------------------------|
| 2  | 3  | Audio signal output |  |
| 11 | 12 |                     |                                                                                     |

Is the inspection result normal?

- YES >> Replace front door speaker. Refer to [AV-179. "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-178. "Removal and Installation"](#).

AV

## REAR DOOR SPEAKER

### Diagnosis Procedure

INFOID:000000009460299

Regarding Wiring Diagram information, refer to [AV-121, "Wiring Diagram"](#).

### 1.CONNECTOR CHECK

Check the AV control unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

### 2.CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M70 and suspect rear door speaker connector.
2. Check continuity between AV control unit connector M70 and suspect rear door speaker connector.

| AV control unit |          | Rear door speaker |          | Continuity |
|-----------------|----------|-------------------|----------|------------|
| Connector       | Terminal | Connector         | Terminal |            |
| M70             | 4        | D207 (LH)         | 1        | Yes        |
|                 | 5        |                   | 2        |            |
|                 | 13       | D307 (RH)         | 1        |            |
|                 | 14       |                   | 2        |            |

3. Check continuity between AV control unit connector M70 and ground.

| AV control unit |          | Ground | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| M70             | 4        | —      | No         |
|                 | 5        |        |            |
|                 | 13       |        |            |
|                 | 14       |        |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3.CHECK REAR DOOR SPEAKER SIGNAL

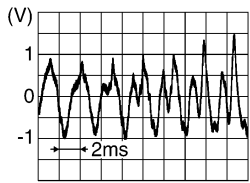
1. Connect AV control unit connector M70 and suspect rear door speaker connector.
2. Turn ignition switch to ACC.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of AV control unit connector M70.

| AV control unit connector M70 |          | Condition | Reference value |
|-------------------------------|----------|-----------|-----------------|
| (+)                           | (-)      |           |                 |
| Terminal                      | Terminal |           |                 |

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

|    |    |                     |                                                                                     |
|----|----|---------------------|-------------------------------------------------------------------------------------|
| 4  | 5  | Audio signal output |  |
| 13 | 14 |                     |                                                                                     |

Is the inspection result normal?

- YES >> Replace rear door speaker. Refer to [AV-180. "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-178. "Removal and Installation"](#).

AV

# REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

### Diagnosis Procedure

INFOID:000000009460300

Regarding Wiring Diagram information, refer to [AV-121, "Wiring Diagram"](#).

### 1. CHECK REVERSE INPUT SIGNAL

1. Turn ignition switch ON.
2. Shift the selector lever to R (reverse).
3. Check voltage between AV control unit connector M71 and ground.

| AV control unit |          | Ground | Condition                     | Voltage<br>(Approx.) |
|-----------------|----------|--------|-------------------------------|----------------------|
| (+) (–)         |          | (–)    |                               |                      |
| Connector       | Terminal |        |                               |                      |
| M71             | 34       | —      | Selector lever in R (reverse) | Battery Voltage      |

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

### 2. CHECK CAMERA POWER SUPPLY CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M71 and rear view camera connector.
3. Check continuity between AV control unit connector M71 and rear view camera connector D501.

| AV control unit |          | Rear view camera |          | Continuity |
|-----------------|----------|------------------|----------|------------|
| Connector       | Terminal | Connector        | Terminal |            |
| M71             | 34       | D501             | 2        | Yes        |

4. Check continuity between AV control unit connector M71 and ground.

| AV control unit |          | Ground | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| M71             | 34       |        | No         |

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3. CHECK CAMERA POWER SUPPLY VOLTAGE

1. Connect AV control unit connector M71 and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R (reverse).
4. Check voltage between AV control unit connector M71 and ground.

| AV control unit |          | Ground | Condition                 | Voltage<br>(Approx.) |
|-----------------|----------|--------|---------------------------|----------------------|
| (+) (–)         |          | (–)    |                           |                      |
| Connector       | Terminal |        |                           |                      |
| M71             | 36       | —      | Selector lever is in "R". | 6.0 V                |

Is inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to [AV-178, "Removal and Installation"](#).

# REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## 4.CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M71 and rear view camera connector.
3. Check continuity between AV control unit connector M71 and rear view camera connector D501.

| AV control unit |          | Rear view camera |          | Continuity |
|-----------------|----------|------------------|----------|------------|
| Connector       | Terminal | Connector        | Terminal |            |
| M71             | 36       | D501             | 4        | Yes        |

4. Check continuity between AV control unit connector M71 and ground.

| AV control unit |          | Ground | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| M71             | 36       |        | No         |

Is inspection result normal?

- YES >> GO TO 5.  
NO >> Repair or replace harness or connectors.

## 5.CHECK CAMERA GROUND CIRCUIT CONTINUITY

Check continuity between AV control unit connector M71 and rear view camera connector D501.

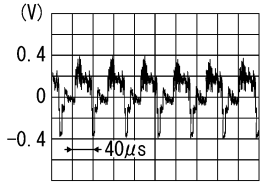
| AV control unit |          | Rear view camera |          | Continuity |
|-----------------|----------|------------------|----------|------------|
| Connector       | Terminal | Connector        | Terminal |            |
| M71             | 33       | D501             | 1        | Yes        |

Is inspection result normal?

- YES >> GO TO 6.  
NO >> Repair or replace harness or connectors.

## 6.CHECK CAMERA IMAGE SIGNAL

1. Connect AV control unit connector M71 and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to R (reverse).
4. Check signal between AV control unit connector M71 and ground.

| AV control unit |          | Ground | Condition               | Reference value                                                                                    |
|-----------------|----------|--------|-------------------------|----------------------------------------------------------------------------------------------------|
| (+) (V)         |          | (-)    |                         |                                                                                                    |
| Connector       | Terminal |        |                         |                                                                                                    |
| M71             | 33       | —      | Camera image displayed. | <br>SKIB2251J |

Is inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-178, "Removal and Installation"](#).  
NO >> Replace rear view camera. Refer to [AV-185, "Removal and Installation"](#).

## MICROPHONE SIGNAL CIRCUIT

## Diagnosis Procedure

INFOID:000000009460301

Regarding Wiring Diagram information, refer to [AV-121. "Wiring Diagram"](#).

**1. CHECK MICROPHONE SIGNAL CIRCUIT CONTINUITY**

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M71 and microphone connector R15.
3. Check continuity between AV control unit connector M71 and microphone connector R15.

| AV control unit |          | Microphone |          | Continuity |
|-----------------|----------|------------|----------|------------|
| Connector       | Terminal | Connector  | Terminal |            |
| M71             | 41       | R15        | 2        | Yes        |
|                 | 42       |            | 4        |            |
|                 | 43       |            | 1        |            |

4. Check continuity between AV control unit connector M71 and ground.

| AV control unit |          | Ground | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| M71             | 42       | —      | No         |
|                 | 43       |        |            |

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

**2. CHECK MICROPHONE VCC VOLTAGE**

1. Connect AV control unit connector M71.
2. Turn ignition switch ON.
3. Check voltage between terminals of AV control unit connector M71.

| AV control unit connector M71 |          | Voltage<br>(Approx.) |
|-------------------------------|----------|----------------------|
| (+)                           | (-)      |                      |
| Terminal                      | Terminal |                      |
| 42                            | 41       | 5.0 V                |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace AV control unit. Refer to [AV-178. "Removal and Installation"](#).

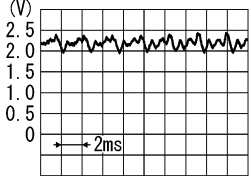
**3. CHECK MICROPHONE SIGNAL**

1. Connect microphone connector.
2. Check signal between terminals of AV control unit connector M71.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

| AV control unit connector M71 |          | Condition              | Reference value                                                                                                                                                                  |
|-------------------------------|----------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (+)                           | (-)      |                        |                                                                                                                                                                                  |
| Terminal                      | Terminal |                        |                                                                                                                                                                                  |
| 43                            | 41       | Speak into microphone. | <div><p>(V)<br/>2.5<br/>2.0<br/>1.5<br/>1.0<br/>0.5<br/>0</p><p>2ms</p><p>PKIB5037J</p></div> |

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-178. "Removal and Installation"](#).
- NO >> Replace microphone. Refer to [AV-184. "Removal and Installation"](#).

AV

## STEERING SWITCH

## Diagnosis Procedure

INFOID:000000009460302

Regarding Wiring Diagram information, refer to [AV-121. "Wiring Diagram"](#).

## 1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch connector M88.
3. Check resistance between the terminals of combination switch connector M88.

| Combination switch connector M88 |          | Condition                                                                                            | Resistance Ω<br>(Approx.) |
|----------------------------------|----------|------------------------------------------------------------------------------------------------------|---------------------------|
| Terminal                         | Terminal |                                                                                                      |                           |
| 14                               | 17       | Depress SOURCE switch.                                                                               | 1                         |
|                                  |          | Depress △ switch.                                                                                    | 121                       |
|                                  |          | Depress ▽ switch.                                                                                    | 321                       |
|                                  |          | Depress  switch.    | 723                       |
| 15                               |          | Depress -  switch.  | 1                         |
|                                  |          | Depress  + switch. | 121                       |
|                                  |          | Depress  switch.  | 321                       |

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to [AV-183. "Removal and Installation"](#).

## 2. CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M88 and M30.

| Combination switch |          |           |          | Continuity |
|--------------------|----------|-----------|----------|------------|
| Connector          | Terminal | Connector | Terminal |            |
| M88                | 14       | M30       | 24       | Yes        |
|                    | 15       |           | 31       |            |
|                    | 17       |           | 33       |            |

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to [SR-15. "Removal and Installation"](#).

## 3. CHECK HARNESS BETWEEN COMBINATION SWITCH AND AV CONTROL UNIT

1. Disconnect AV control unit connector M70.
2. Check continuity between combination switch connector M30 and AV control unit connector M70.

| Combination switch |          | AV control unit |          | Continuity |
|--------------------|----------|-----------------|----------|------------|
| Connector          | Terminal | Connector       | Terminal |            |
| M30                | 24       | M70             | 6        | Yes        |
|                    | 31       |                 | 16       |            |
|                    | 33       |                 | 15       |            |

## STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

3. Check continuity between combination switch connector M30 and ground.

| Combination switch |          | Ground | Continuity |
|--------------------|----------|--------|------------|
| Connector          | Terminal |        |            |
| M30                | 24       | —      | No         |
|                    | 31       |        |            |
|                    | 33       |        |            |

Is the inspection result normal?

YES >> Replace AV control unit. Refer to [AV-178. "Removal and Installation"](#).  
NO >> Repair or replace harness or connectors.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

## USB CONNECTOR

### Diagnosis Procedure

INFOID:000000009460303

Regarding Wiring Diagram information, refer to [AV-121, "Wiring Diagram"](#).

#### 1. CHECK USB INTERFACE HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M76 and USB interface connector M72.
3. Check continuity between AV control unit connector M76 and USB interface connector M72.

| AV control unit |          | USB interface |          | Continuity |
|-----------------|----------|---------------|----------|------------|
| Connector       | Terminal | Connector     | Terminal |            |
| M76             | 53       | M72           | 4        | Yes        |
|                 | 54       |               | 1        |            |
|                 | 55       |               | 2        |            |
|                 | 56       |               | 3        |            |
|                 | 57       |               | 5        |            |

4. Check continuity between AV control unit connector M76 and ground.

| AV control unit |          | —      | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| M76             | 53       | Ground | No         |
|                 | 55       |        |            |

Is the inspection result normal?

- YES >> Replace the USB interface. Refer to [AV-181, "Removal and Installation"](#).
- NO >> Repair or replace harness or connectors.

## AUXILIARY INPUT JACK

## Diagnosis Procedure

INFOID:000000009460304

Regarding Wiring Diagram information, refer to [AV-121. "Wiring Diagram"](#).

**1. CHECK AUX JACK HARNESS CONTINUITY**

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M71 and AUX jack connector M23.
3. Check continuity between AV control unit connector M71 and AUX jack connector M23.

| AV control unit |          | AUX jack  |          | Continuity |
|-----------------|----------|-----------|----------|------------|
| Connector       | Terminal | Connector | Terminal |            |
| M71             | 30       | M23       | 1        | Yes        |
|                 | 31       |           | 3        |            |
|                 | 32       |           | 4        |            |

4. Check continuity between AV control unit connector M71 and ground.

| AV control unit |          | —      | Continuity |
|-----------------|----------|--------|------------|
| Connector       | Terminal |        |            |
| M71             | 30       | Ground | No         |
|                 | 32       |        |            |

Is the inspection result normal?

- YES >> Replace the AUX jack. Refer to [AV-182. "Removal and Installation"](#).  
NO >> Repair or replace harness or connectors.

## SYMPTOM DIAGNOSIS

### MULTI AV SYSTEM

#### Symptom Table

INFOID:000000009460305

#### RELATED TO AUDIO

| Symptoms                                             | Check items                                                                                                                              | Probable malfunction location                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The disk cannot be removed.                          | AV control unit                                                                                                                          | Malfunction in AV control unit.<br>Refer to <a href="#">AV-115, "On Board Diagnosis Function"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| No sound comes out or the level of the sound is low. | No sound from all speakers.                                                                                                              | <ul style="list-style-type: none"> <li>• Speaker circuit shorted to ground. Refer to <a href="#">AV-121, "Wiring Diagram"</a>.</li> <li>• AV control unit power supply and ground circuits malfunction. Refer to <a href="#">AV-153, "AV CONTROL UNIT : Diagnosis Procedure"</a>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                      | Only a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH) does not output sound. | <ul style="list-style-type: none"> <li>• Poor connector connection of speaker.</li> <li>• Sound signal circuit malfunction between AV control unit and speaker. Refer to: <ul style="list-style-type: none"> <li>- <a href="#">AV-154, "Diagnosis Procedure"</a> (front door speaker).</li> <li>- <a href="#">AV-156, "Diagnosis Procedure"</a> (rear door speaker).</li> </ul> </li> <li>• Malfunction in speaker. Refer to: <ul style="list-style-type: none"> <li>- <a href="#">AV-179, "Removal and Installation"</a> (front door speaker).</li> <li>- <a href="#">AV-180, "Removal and Installation"</a> (rear door speaker).</li> </ul> </li> <li>• Malfunction in AV control unit. Refer to <a href="#">AV-115, "On Board Diagnosis Function"</a>.</li> </ul>                                                                        |
| Noise is mixed with audio.                           | Noise comes out from all speakers.                                                                                                       | Malfunction in AV control unit.<br>Refer to <a href="#">AV-115, "On Board Diagnosis Function"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                      | Noise comes out only from a certain speaker (front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH).  | <ul style="list-style-type: none"> <li>• Poor connector connection of speaker.</li> <li>• Sound signal circuit malfunction between AV control unit and speaker. Refer to: <ul style="list-style-type: none"> <li>- <a href="#">AV-154, "Diagnosis Procedure"</a> (front door speaker).</li> <li>- <a href="#">AV-156, "Diagnosis Procedure"</a> (rear door speaker).</li> </ul> </li> <li>• Malfunction in speaker.</li> <li>• Poor Installation of speaker (e.g. backlash and looseness). Refer to: <ul style="list-style-type: none"> <li>- <a href="#">AV-179, "Removal and Installation"</a> (front door speaker).</li> <li>- <a href="#">AV-180, "Removal and Installation"</a> (rear door speaker).</li> </ul> </li> <li>• Malfunction in AV control unit. Refer to <a href="#">AV-115, "On Board Diagnosis Function"</a>.</li> </ul> |
|                                                      | Noise is mixed with radio only (when the vehicle hits a bump or while driving over bad roads)                                            | Poor connector connection of antenna or antenna feeder.<br>Refer to <a href="#">AV-188, "Feeder Layout"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

# MULTI AV SYSTEM

## < SYMPTOM DIAGNOSIS >

## [NAVIGATION]

| Symptoms                              | Check items                                                                                                                                                                                                                                                                                    | Probable malfunction location                                                                                                                                                                                                                                            |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No radio reception or poor reception. | <ul style="list-style-type: none"> <li>Other audio sounds are normal.</li> <li>Any radio station cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).</li> </ul> | <ul style="list-style-type: none"> <li>Antenna amp. ON signal circuit malfunction. Refer to <a href="#">AV-144, "Diagnosis Procedure"</a>.</li> <li>Poor connector connection of antenna or antenna feeder. Refer to <a href="#">AV-188, "Feeder Layout"</a>.</li> </ul> |
| Buzz/rattle sound from speaker        | The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the buzz/rattle.                                                                                                                                           | Refer to "SQUEAK AND RATTLE TROUBLE DIAGNOSIS" in the appropriate interior trim section.                                                                                                                                                                                 |

## RELATED TO HANDS-FREE PHONE

- Before performing diagnosis, confirm that the cellular phone being used by the customer is compatible with the vehicle.
- It is possible that a malfunction is occurring due to a version change of the phone even though the phone is a compatible type. This can be confirmed by changing the cellular phone to another compatible type, and check that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

### Check Compatibility

- Make sure the customer's Bluetooth® related concern is understood.
- Verify the customer's concern.  
**NOTE:**  
The customer's phone may be required, depending upon their concern.
- Write down the customer's phone brand, model and service provider.  
**NOTE:**  
It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
- Go to "www.nissanusa.com/bluetooth/".
  - Using the website's search engine, find out if the customer's phone is on the approved list.
  - If the customer's phone is NOT on the approved list:  
Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.
  - If the feature related to the customer's concern shows as "N" (not compatible):  
Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features".
  - If the feature related to the customer's concern shows as "Y" (compatible):  
Perform diagnosis as per the following table.

| Symptoms                                                                                               | Check items                                                                                                                                                                                                                                                             | Probable malfunction location                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Does not recognize cellular phone connection (no connection is displayed on the display at the guide). | Repeat the registration of cellular phone.                                                                                                                                                                                                                              | Malfunction in AV control unit. Replace AV control unit. Refer to <a href="#">AV-178, "Removal and Installation"</a> .<br><br>Microphone signal circuit malfunction. Refer to <a href="#">AV-160, "Diagnosis Procedure"</a> . |
| Hands-free phone cannot be established.                                                                | <ul style="list-style-type: none"> <li>Hands-free phone operation can be made, but the communication cannot be established.</li> <li>Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.</li> </ul> |                                                                                                                                                                                                                               |
| The other party's voice cannot be heard by hands-free phone.                                           | Check the "microphone speaker" in Inspection & Adjustment Mode if sound is heard.                                                                                                                                                                                       |                                                                                                                                                                                                                               |
| Originating sound is not heard by the other party with hands-free phone communication.                 | Sound operation function is normal.<br>Sound operation function does not work.                                                                                                                                                                                          |                                                                                                                                                                                                                               |

# MULTI AV SYSTEM

## < SYMPTOM DIAGNOSIS >

## [NAVIGATION]

| Symptoms                       | Check items                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Probable malfunction location                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| The system cannot be operated. | <ul style="list-style-type: none"> <li>The voice recognition can be controlled.</li> <li>Steering switch's +, -, and  switches work, but  does not work.</li> </ul> | Steering switch malfunction.<br>Replace steering switch. Refer to <a href="#">AV-183. "Removal and Installation"</a> . |
|                                | Steering switch's  +,  -, and  switches do not work.                                                                                                                                                                                                 | Steering switch signal circuit malfunction.<br>Refer to <a href="#">AV-162. "Diagnosis Procedure"</a> .                |
|                                | All steering switches do not work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Steering switch ground circuit malfunction.<br>Refer to <a href="#">AV-162. "Diagnosis Procedure"</a> .                |

## RELATED TO NAVIGATION

| Symptoms                          | Check items                          | Probable malfunction location                                                                                                                                                                                 |
|-----------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Navigation system is inoperative. | Navigation malfunction.              | <ul style="list-style-type: none"> <li>Malfunction in SD card.</li> <li>Malfunction in AV control unit.<br/>Refer to <a href="#">AV-115. "On Board Diagnosis Function"</a>.</li> </ul>                        |
|                                   | Steering switches malfunction.       | Steering switch signal circuit malfunction.<br>Refer to <a href="#">AV-162. "Diagnosis Procedure"</a> .                                                                                                       |
|                                   | Voice activated control malfunction. | Microphone signal circuit malfunction.<br>Refer to <a href="#">AV-160. "Diagnosis Procedure"</a> .<br>Steering switch signal circuit malfunction.<br>Refer to <a href="#">AV-162. "Diagnosis Procedure"</a> . |

## RELATED TO REAR VIEW CAMERA

| Symptoms                         | Check items                              | Probable malfunction location                                                                                                                     |
|----------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Rear view camera is inoperative. | Reverse signal circuit malfunction.      | Reverse signal circuit malfunction between BCM and AV control unit.<br>Refer to <a href="#">AV-158. "Diagnosis Procedure"</a> .                   |
|                                  | Camera image signal circuit malfunction. | Camera image signal circuit malfunction between rear view camera and AV control unit.<br>Refer to <a href="#">AV-158. "Diagnosis Procedure"</a> . |
|                                  | Rear view camera malfunction.            | Replace rear view camera.<br>Refer to <a href="#">AV-185. "Removal and Installation"</a> .                                                        |

## NORMAL OPERATING CONDITION

### Description

INFOID:000000009460306

#### RELATED TO NOISE

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

The following noise results from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and determine the cause.

#### NOTE:

The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

#### Type of Noise and Possible Cause

| Occurrence condition                                                                                                |                                                                                                     | Possible cause                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Occurs only when engine is ON.                                                                                      | A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed. | • Ignition components                                                                                                |
| The occurrence of the noise is linked with the operation of the fuel pump.                                          |                                                                                                     | • Fuel pump condenser                                                                                                |
| Noise only occurs when various electrical components are operating.                                                 | A cracking or snapping sound occurs with the operation of various switches.                         | • Relay malfunction, AV control unit malfunction                                                                     |
|                                                                                                                     | The noise occurs when various motors are operating.                                                 | • Motor case ground<br>• Motor                                                                                       |
| The noise occurs constantly, not just under certain conditions.                                                     |                                                                                                     | • Rear defogger coil malfunction<br>• Open circuit in printed heater<br>• Poor ground of antenna feeder line         |
| A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively. |                                                                                                     | • Ground wire of body parts<br>• Ground due to improper part installation<br>• Wiring connections or a short circuit |

#### RELATED TO HANDS-FREE PHONE

| Symptom                                                                                                | Cause and Counter measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Does not recognize cellular phone connection (No connection is displayed on the display at the guide). | Some Bluetooth® enabled cellular phones may not be recognized by the in-vehicle phone module.<br>Refer to "RELATED TO HANDS-FREE PHONE (Check Compatibility)" in <a href="#">AV-166, "Symptom Table"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Cannot use hands-free phone.                                                                           | Customer will not be able to use a hands-free phone under the following conditions: <ul style="list-style-type: none"> <li>• The vehicle is outside of the telephone service area.</li> <li>• The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>• The cellular phone is locked to prevent it from being dialed.</li> </ul> <b>NOTE:</b><br>While a cellular phone is connected through the Bluetooth® wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth® Hands-Free Phone System cannot charge cellular phones. |

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

| Symptom                                                      | Cause and Counter measure                                                                                                                                                           |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The other party's voice cannot be heard by hands-free phone. | When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.                                        |
| Poor sound quality.                                          | Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption. |

### RELATED TO NAVIGATION

#### Basic Operation

| Symptom                                                                | Cause                                                                                                                           | Remedy                                                                        |
|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| No image is shown.                                                     | Display brightness adjustment is set fully to DARK side.                                                                        | Adjust the display brightness.                                                |
| No guide sound is heard.<br>Audio guide volume is too low or too high. | Volume control is set to OFF, MIN or MAX.<br>Audio guidance is not available while the vehicle is driving on a dark pink route. | Adjust the audio guide volume.<br>System is not malfunctioning.               |
| Screen is too dark.<br>Motion of the image is too slow.                | Temperature inside the vehicle is low.                                                                                          | Wait until the temperature inside the vehicle reaches the proper temperature. |
| Small black or bright spots appear on the screen.                      | Symptom peculiar to a liquid crystal display (display unit).                                                                    | System is not malfunction.                                                    |

#### Vehicle Mark

| Symptom                                                                          | Cause                                                                                                                                                                                                                                                                      | Remedy                                                                         |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Map screen and BIRDVIEW™ Name of the place vary with the screen.                 | Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ.<br>The same place name, street name, etc. may not be displayed every time on account of the data processing. | System is not malfunctioning.                                                  |
| Vehicle mark is not positioned correctly.                                        | Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.                                                                                                                                                                                   | Drive the vehicle for a while in the GPS satellite signal receiving condition. |
| Screen will not switch to nighttime mode after the lighting switch is turned ON. | The daytime screen is selected by the "SWITCH SCREENS" when the last time the screen dimming setting is done.<br>Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjustment function.                                            | Perform screen dimming and select the nighttime screen by "SWITCH SCREENS".    |
| Map screen will not scroll in accordance with the vehicle travel.                | Current location is not displayed.                                                                                                                                                                                                                                         | Press "MAP" button to display the current location.                            |
| Vehicle mark will not be shown.                                                  | Current location is not displayed.                                                                                                                                                                                                                                         | Press "MAP" button to display the current location.                            |
| Accuracy indicator (GPS satellite mark) on the map screen stays gray.            | GPS satellite signal is intercepted because the vehicle is in or behind a building.                                                                                                                                                                                        | Move the vehicle out to an open space.                                         |
|                                                                                  | GPS satellite signal cannot be received because an obstacle is placed on top of the instrument panel.                                                                                                                                                                      | Do not place anything on top of the meter display (instrument panel).          |
|                                                                                  | GPS satellites are not visible from current location.                                                                                                                                                                                                                      | Wait until GPS satellites are visible by moving the vehicle.                   |

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

| Symptom                           | Cause                                                                                                                                                                                                | Remedy                                                                                                                                                                                                                                                            |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vehicle location accuracy is low. | Accuracy indicator (GPS satellite mark) on the map screen stays gray.                                                                                                                                | Current location is not determined.                                                                                                                                                                                                                               |
|                                   | Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fitted or the system has been used on another vehicle. | Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMATION/ADJUSTMENT mode of diagnosis function. |
|                                   | Map data has error or omission. (Vehicle mark is always deviated to the same position.)                                                                                                              | As a rule, an updated map DVD-ROM will be released once a year.                                                                                                                                                                                                   |

## Destination, Passing Points and Menu Items Cannot be Selected/Set

| Symptom                                                                                                               | Cause                                                                                                                            | Remedy                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Destination cannot be set.                                                                                            | Destination to be set is on an expressway.                                                                                       | Set the destination on an ordinary road.                                                                                  |
| Passing point is not searched when re-searching the route.                                                            | The vehicle has already passed the passing point, or the system judged so.                                                       | To include the passing points that have been passed into the route again, set the route again.                            |
| Route information will not be displayed.                                                                              | Route searching has not been done.                                                                                               | Set the destination and perform route searching.                                                                          |
|                                                                                                                       | Vehicle mark is not on the recommended route.                                                                                    | Drive on the recommended route.                                                                                           |
|                                                                                                                       | Route guide is turned OFF.                                                                                                       | Turn route guide ON.                                                                                                      |
|                                                                                                                       | Route information is not available on the dark pink route.                                                                       | System is not malfunctioning.                                                                                             |
| After the route searching, no guide sign will appear as the vehicle goes near the entrance/exit to the toll road.     | Vehicle mark is not on the recommended route. (On the display, only guide signs related to the recommended route will be shown.) | Drive on the recommended route.                                                                                           |
| Automatic route searching is not possible.                                                                            | Vehicle is driving on a highway (gray route), or no recommended route is available.                                              | Drive on a road to be searched. Or re-search the route manually. In this case, however, the whole route will be searched. |
| Performed automatic detour search (or detour search). However, the result is the same as that of the previous search. | Performed search with every conditions considered. However, the result is the same as that of the previous search.               | System is not malfunctioning.                                                                                             |
| Passing points cannot be set.                                                                                         | More than five passing points were set.                                                                                          | Passing points can be set up to five. To stop at more than five points, perform sharing in several steps.                 |
| When setting the route, the starting point cannot be selected.                                                        | The current vehicle location is always set as the starting point of a route.                                                     | System is not malfunctioning.                                                                                             |
| Some menu items cannot be selected.                                                                                   | The vehicle is being driven.                                                                                                     | Stop the vehicle at a safe place and then operate the system.                                                             |

## Voice Guide

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

| Symptom                                             | Cause                                                                                                                                                                                                    | Remedy                                                  |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Voice guide will not operate.                       | Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction. | System is not malfunctioning.                           |
|                                                     | The vehicle is not on the recommended route.                                                                                                                                                             | Return to the recommended route or re-search the route. |
|                                                     | Voice guide is turned OFF.                                                                                                                                                                               | Turn voice guide ON.                                    |
|                                                     | Route guide is turned OFF.                                                                                                                                                                               | Turn route guide ON.                                    |
| Voice guide does not match the actual road pattern. | Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.                                                                                      | Drive in conformity to the actual traffic rules.        |

## Route Search

| Symptom                                                                            | Cause                                                                                                                                                                                                                                  | Remedy                                                                                                                                                                              |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No route is shown.                                                                 | No road to be searched is found around the destination.                                                                                                                                                                                | Find wider road (orange road or wider) nearby and reset the destination and passing points onto it. Take care of the traveling direction when there are separate up and down roads. |
|                                                                                    | Starting point and the destination are too close.                                                                                                                                                                                      | Set the destination at more distant point.                                                                                                                                          |
|                                                                                    | Conditional traffic regulation (day of the week/ time of the day) is set at the area around the current location or the destination.                                                                                                   | Turn the time-regulating search conditions OFF. Turn "Avoid regulation time" in the search conditions OFF.                                                                          |
| Indicated route is intermittent.                                                   | In some areas, highways (gray routes) are not used for the search <sup>(Note)</sup> Therefore, the route to the current location or the passing points may be intermittent.                                                            | System is not malfunctioning.                                                                                                                                                       |
| When the vehicle has passed the recommended route, it is deleted from the screen.  | A recommended route is controlled by each section. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.) | System is not malfunctioning.                                                                                                                                                       |
| Detouring route is recommended.                                                    | In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.                                                                                                                 | Set the route closer to the basic route (gray route).                                                                                                                               |
|                                                                                    | A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.                                                                                      | Slightly move the starting point or the destination, or set the passing point on the route of your choice.                                                                          |
|                                                                                    | In the area where highways (gray routes) are used for the search, left turn has priority around the current location and the destination (passing points). For this reason, the recommended route may be detouring.                    | System is not malfunctioning.                                                                                                                                                       |
| Landmarks on the map do not match the actual ones.                                 | This can be happen due to omission or error in the map data.                                                                                                                                                                           | As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.                                                                     |
| Recommended route is far from the starting point, passing points, and destination. | Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.                                                                | Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.                   |

### NOTE:

Except for the ordinance-designated cities. (Malfunctioning areas may be changed in the updated map disc.)

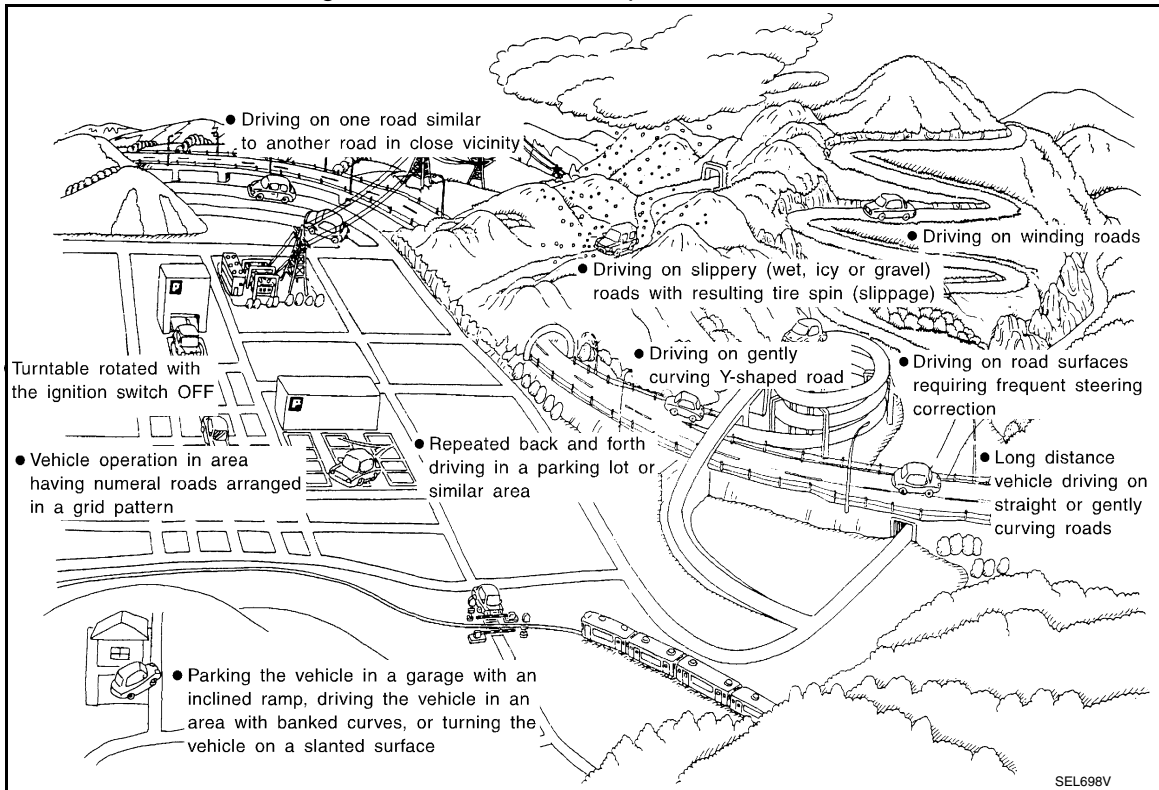
### Examples of Current-Location Mark Displacement

## NORMAL OPERATING CONDITION

### < SYMPTOM DIAGNOSIS >

### [NAVIGATION]

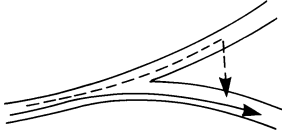
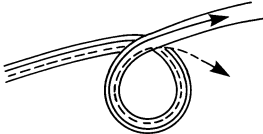
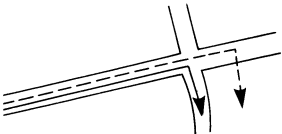
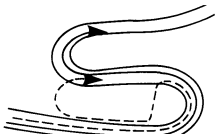
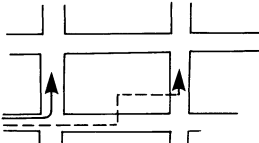
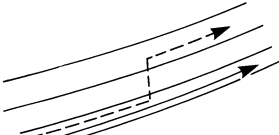
Vehicle's travel amount is calculated by reading its travel distance and turning angle. Therefore, if the vehicle is driven in the following manner, an error will occur in the vehicle's current location display. If correct location has not been restored after driving the vehicle for a while, perform location correction.



# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

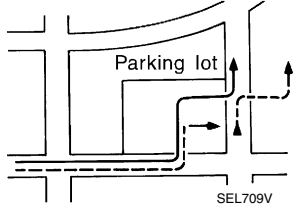
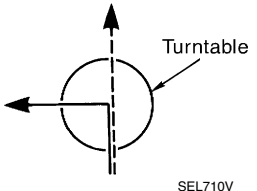
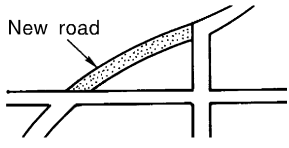
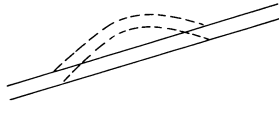
[NAVIGATION]

| Cause (condition)    -: While driving    ooo: Display |                                                                                                                                            | Driving condition                                                                                                                                                                                                                                                    | Remarks (correction, etc.)                                                                                                                                 |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Road configuration                                    | <b>Y-intersections</b><br><br>ELK0192D                    | At a Y intersection or similar gradual division of roads, an error in the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.                                                                             | If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction. |
|                                                       | <b>Spiral roads</b><br><br>ELK0193D                       | When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark may deviate from the correct location.                                                                                                |                                                                                                                                                            |
|                                                       | <b>Straight roads</b><br><br>ELK0194D                     | When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and distance errors may accumulate. As a result, the vehicle mark may deviate from the correct location when the vehicle is turned at a corner. |                                                                                                                                                            |
|                                                       | <b>Zigzag roads</b><br><br>ELK0195D                     | When driving on a zigzag road, the map may be matched to other roads in the similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.                                                                                      |                                                                                                                                                            |
|                                                       | <b>Roads laid out in a grid pattern</b><br><br>ELK0196D | When driving where roads are laid out in a grid pattern, or where many roads are running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.                                      |                                                                                                                                                            |
|                                                       | <b>Parallel roads</b><br><br>ELK0197D                   | When two roads are running in parallel (such as highway and sideways), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.                                                                               |                                                                                                                                                            |

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

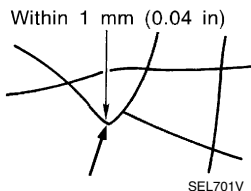
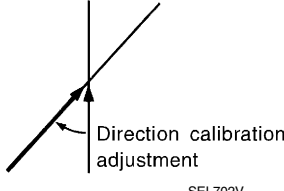
[NAVIGATION]

| Cause (condition)    -: While driving    ooo: Display |                                                                                                                                                      | Driving condition                                                                                                                                                                                                                                                                                                                                                                                            | Remarks (correction, etc.)                                                                                                                                                      |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Place                                                 | In a parking lot<br><br>SEL709V                                     | When driving in a parking lot, or other location where there are no roads on the map, matching may place the vehicle mark on a nearby road. When the vehicle returns to the road, the vehicle mark may have deviated from the correct location.<br>When driving in circle or turning the steering wheel repeatedly, direction errors accumulate, and the vehicle mark may deviate from the correct location. | If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.                      |
|                                                       | Turntable<br><br>SEL710V                                            | When the ignition switch is OFF, the navigation system cannot get the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be wrong and the correct road may not be easily returned to after rotating the vehicle on a turntable with the ignition OFF.                                                                                                                  |                                                                                                                                                                                 |
|                                                       | Slippery roads                                                                                                                                       | On snow, wet roads, gravel, or other roads where tires may slip easily, accumulated mileage errors may cause the vehicle mark to deviate from the correct road.                                                                                                                                                                                                                                              |                                                                                                                                                                                 |
|                                                       | Slopes                                                                                                                                               | When parking in sloped garages, when travelling on banked roads, or in other cases where the vehicle turns when tilted, an error in the turning angle will occur, and the vehicle mark may deviate from the road.                                                                                                                                                                                            |                                                                                                                                                                                 |
| Map data                                              | Road not displayed on the map screen<br><br>SEL699V               | When driving on new roads or other roads not displayed on the map screen, map matching does not function correctly and matches the location to a nearby road. When the vehicle returns to a road which is on the map, the vehicle mark may deviate from the correct road.                                                                                                                                    |                                                                                                                                                                                 |
|                                                       | Different road pattern<br>(Changed due to repair)<br><br>ELK0201D | If the road pattern stored in the map data and the actual road pattern are different, map matching does not function correctly and matches the location to a nearby road. The vehicle mark may deviate from the correct road.                                                                                                                                                                                |                                                                                                                                                                                 |
| Vehicle                                               | Use of tire chains                                                                                                                                   | When tire chains are used, the mileage is not correctly detected, and the vehicle mark may deviate from the correct road.                                                                                                                                                                                                                                                                                    | Drive the vehicle for a while. If the distance still deviates, adjust it by using the distance adjustment function. (If the tire chain is removed, recover the original value.) |

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

| Cause (condition)    -: While driving    ooo: Display |                                                                                                                            | Driving condition                                                                                                                                                                                                    | Remarks (correction, etc.)                                                                                                                                 |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Precautions for driving                               | Just after the engine is started                                                                                           | If the vehicle is driven just after the engine is started when the gyroscope (angular speed sensor) correction is not completed, the vehicle can lose its direction and may have deviated from the correct location. | Wait for a short while before driving after starting the engine.                                                                                           |
|                                                       | Continuous driving without stopping                                                                                        | When driving long distances without stopping, direction errors may accumulate, and the current-location mark may deviate from the correct road.                                                                      | Stop and adjust the orientation.                                                                                                                           |
|                                                       | Abusive driving                                                                                                            | Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable perform correct detection, and may cause the vehicle mark to deviate from the correct road.                  | If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction. |
| How to correct location                               | Position correction accuracy<br>          | If the accuracy of location settings is poor, accuracy may be reduced when the correct road cannot be found, particularly in places where there are many roads.                                                      | Enter in the road displayed on the screen with an accuracy of approx. 1mm.<br>Caution: Whenever possible, use detailed map for the correction.             |
|                                                       | Direction when location is corrected<br> | If the accuracy of location settings during correction is poor, accuracy may be reduced afterwards.                                                                                                                  | Perform direction correction.                                                                                                                              |

## Location Correction by Map-Matching is Slow

- The map-matching function needs to refer to the data of the surrounding area. It is necessary to drive some distance for the function to work.
- Because map-matching operates on this principle, when there are many roads running in similar directions in the surrounding area, no matching determination may be made. The location may not be corrected until some special feature is found.

## Name of Road is Not Displayed

The current road name may not be displayed if there are no road names displayed on the map screen.

## Contents of Display Differ for Birdview™ and the (Flat) Map Screen

Difference of the BIRDVIEW™ screen from the flat map screen are as follows.

- The current place name displays names which are primarily in the direction of vehicle travel.
- The amount of time before the vehicle travel or turn angle is updated on the screen is longer than for the (flat) map display.
- The conditions for display of place names, roads, and other data are different for nearby areas and for more distant areas.
- Some thinning of the character data is done to prevent the display becoming too complex. In some cases and in some locations, the display contents may differ.
- The same place name, street name, etc. may be displayed multiple times.

## Vehicle Mark Shows a Position Which is Completely Wrong

In the following cases, the vehicle mark may appear on completely different position in the map depending on the GPS satellite signal receiving conditions. In this case, perform location correction and direction correction.

- When location correction has not been done
- If the receiving conditions of the GPS satellite signal is poor, if the vehicle mark becomes out of place, it may move to a completely different location and not come back if location correction is not done. The position will be corrected if the GPS signal can be received.
- When the vehicle has traveled by ferry, or when the vehicle has been being towed

## NORMAL OPERATING CONDITION

### < SYMPTOM DIAGNOSIS >

### [NAVIGATION]

- Because calculation of the current location cannot be done when traveling with the ignition off, for example when traveling by ferry or when being towed, the location before travel is displayed. If the precise location can be detected with GPS, the location will be corrected.

A

#### Vehicle Mark Jumps

In the following cases, the vehicle mark may appear to jump as a result of automatic correction of the current location.

B

- When map matching has been done
- If the current location and the vehicle mark are different when map matching is done, the vehicle mark may seem to jump. At this time, the location may be “corrected” to the wrong road or to a location which is not on a road.
- When GPS location correction has been done
- If the current location and the vehicle mark are different when the location is corrected using GPS measurements, the vehicle mark may seem to jump. At this time, the location may be “corrected” to a location which is not on a road.

C

D

#### Vehicle Mark is in a River or Sea

E

The navigation system moves the vehicle mark with no distinction between land and rivers or sea. If the vehicle mark is somehow out of place, it may appear that the vehicle is driving in a river or the sea.

#### Vehicle Mark Automatically Rotates

F

The system wrongly memorizes the rotating status as stopping when the ignition switch is turned ON with the turntable rotating. That causes the vehicle mark to rotate when the vehicle is stopped.

#### When Driving on Same Road, Sometimes Vehicle Mark is in Right Place and Sometimes it is in Wrong Place

G

The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and the operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been wrong, conditions may cause the vehicle mark to deviate.

H

I

J

K

L

M

AV

O

P

## REMOVAL AND INSTALLATION

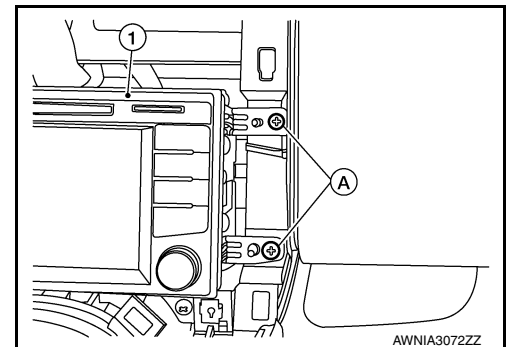
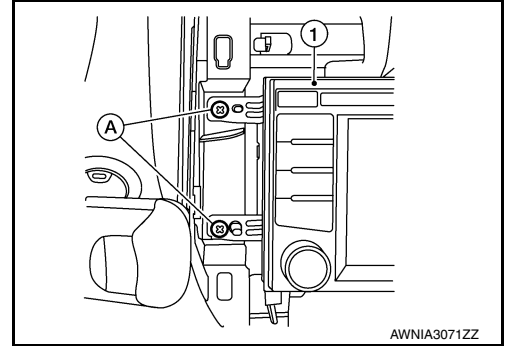
### AV CONTROL UNIT

#### Removal and Installation

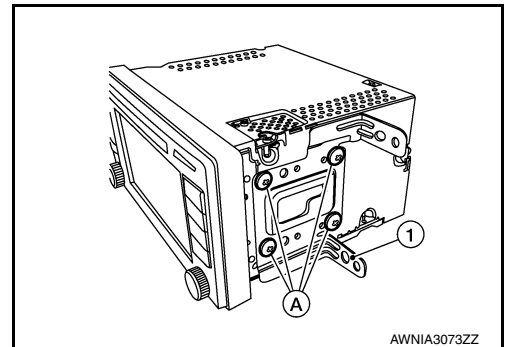
INFOID:000000009640348

#### REMOVAL

1. Perform read configuration using CONSULT. Refer to [AV-135. "CONFIGURATION \(AV CONTROL UNIT\) : Description"](#).
2. Remove the battery negative terminal. Refer to [PG-69. "Removal and Installation \(Battery\)"](#).
3. Remove cluster lid C. Refer to [JP-22. "Removal and Installation"](#).
4. Remove the AV control unit screws (A) and partially remove the AV control unit (1).



5. Disconnect the harness connectors from the AV control unit and remove.
6. Remove the AV control unit bracket screws (A) and the AV control unit bracket (1) from each side of the AV control unit (if necessary).



#### INSTALLATION

Installation is in the reverse order of removal.

#### NOTE:

Perform AV control unit configuration after replacement. Refer to [AV-135. "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).

# FRONT DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[NAVIGATION]

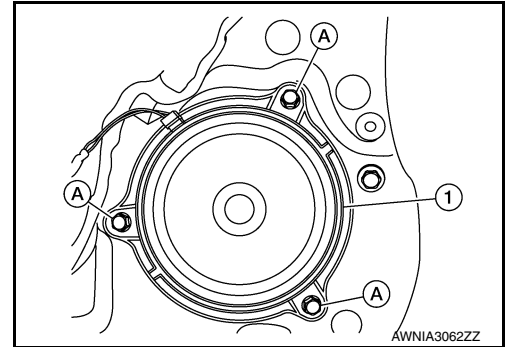
## FRONT DOOR SPEAKER

### Removal and Installation

INFOID:000000009640349

#### REMOVAL

1. Remove the front door finisher. Refer to [INT-15, "Removal and Installation"](#).
2. Disconnect the harness connector from front door speaker.
3. Remove the front door speaker screws (A).
4. Remove the front door speaker (1).



#### INSTALLATION

Installation is in the reverse order of removal.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

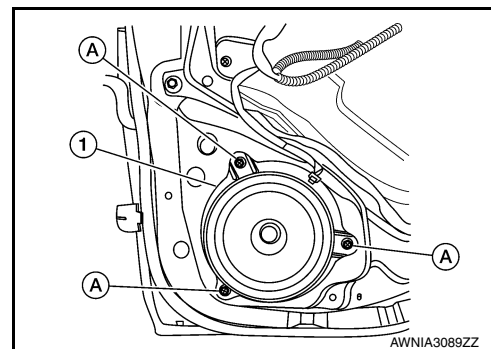
## REAR DOOR SPEAKER

### Removal and Installation

INFOID:000000009640350

#### REMOVAL

1. Remove the rear door finisher. Refer to [INT-17, "Removal and Installation"](#).
2. Disconnect the harness connector from the rear door speaker.
3. Remove the rear door speaker screws (A).
4. Remove the rear door speaker (1).



#### INSTALLATION

Installation is in the reverse order of removal.

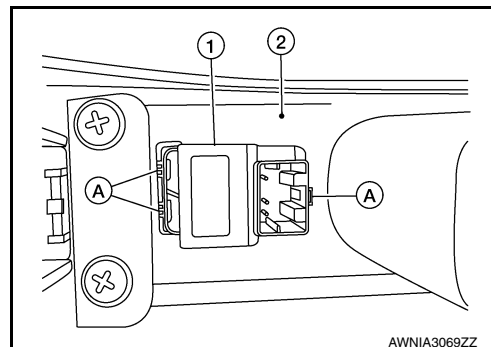
## USB INTERFACE

### Removal and Installation

INFOID:000000009640351

#### REMOVAL

1. Remove the center console assembly. Refer to [IP-18. "Removal and Installation"](#).
2. Release the pawls (A) from the back of the center console assembly (2) using a suitable tool and remove the USB interface (1).



#### INSTALLATION

Installation is in the reverse order of removal.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

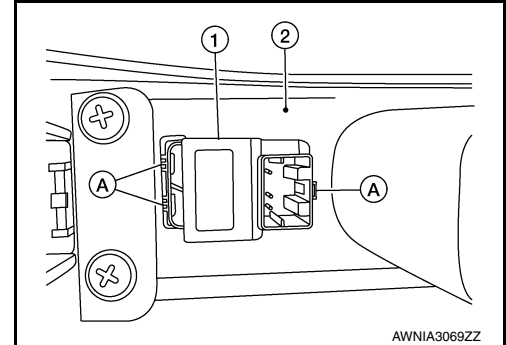
## AUXILIARY INPUT JACK

### Removal and Installation

INFOID:000000009647057

#### REMOVAL

1. Remove the center console assembly. Refer to [IP-18. "Removal and Installation"](#).
2. Release the pawls (A) from the back of the center console assembly (2) using a suitable tool and remove the auxiliary input jack (1).



#### INSTALLATION

Installation is in the reverse order of removal.

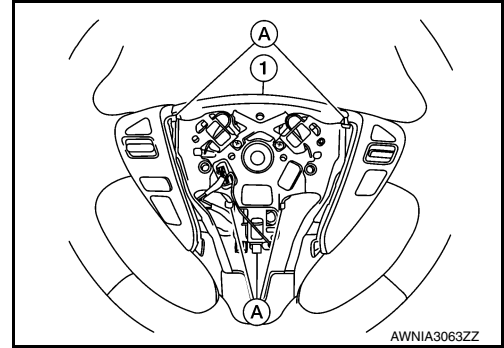
## STEERING SWITCH

### Removal and Installation

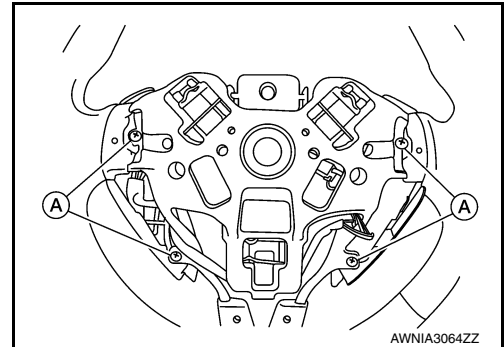
INFOID:000000009640352

#### REMOVAL

1. Remove the steering wheel. Refer to [ST-8. "Removal and Installation"](#).
2. Remove the steering wheel rear finisher (1) by releasing pawls (A).



3. Remove the steering wheel audio control switch screws (A) from the back of the steering wheel.



4. Remove the steering wheel audio control switches from the steering wheel.

#### INSTALLATION

Installation is in the reverse order of removal.

## MICROPHONE

### Removal and Installation

INFOID:000000009640353

#### REMOVAL

1. Remove the microphone from the headlining by releasing pawls using a suitable tool.
2. Disconnect the harness connector from microphone and remove.

#### INSTALLATION

Installation is in the reverse order of removal.

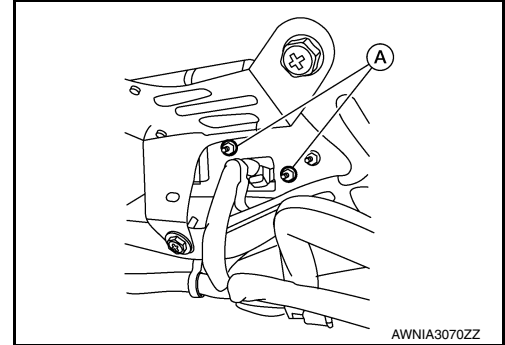
## REAR VIEW CAMERA

### Removal and Installation

INFOID:000000009640356

#### REMOVAL

1. Remove the back door outer finisher. Refer to [EXT-34. "Removal and Installation"](#).
2. Disconnect the harness connector from rear view camera.
3. Remove the nuts (A) from the rear view camera and remove.



#### INSTALLATION

Installation is in the reverse order of removal.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

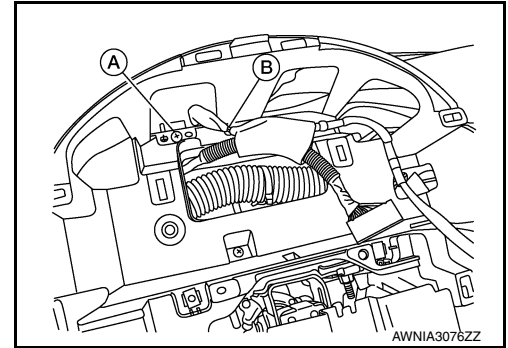
## GPS ANTENNA

### Removal and Installation

INFOID:000000009640358

#### REMOVAL

1. Remove the combination meter. Refer to [MWI-48, "Removal and Installation"](#).
2. Remove the AV control unit in order to disconnect the GPS antenna harness connector. Refer to [AV-178, "Removal and Installation"](#).
3. Remove the GPS antenna screw (A) from the GPS antenna.
4. Disconnect the harness clip (B) and remove the GPS antenna.



#### INSTALLATION

Installation is in the reverse order of removal.

# ROD ANTENNA

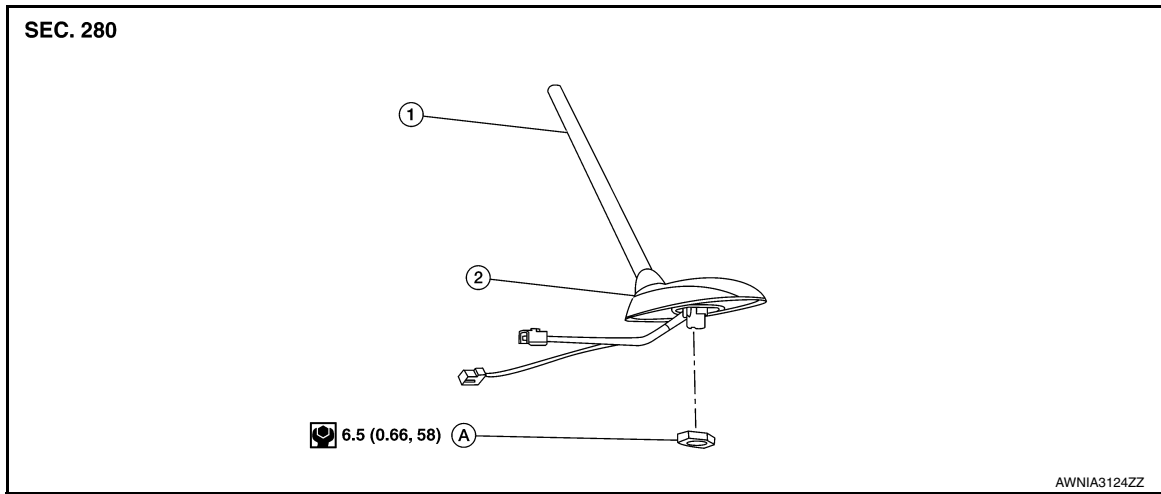
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## ROD ANTENNA

### Exploded View

INFOID:000000009667932

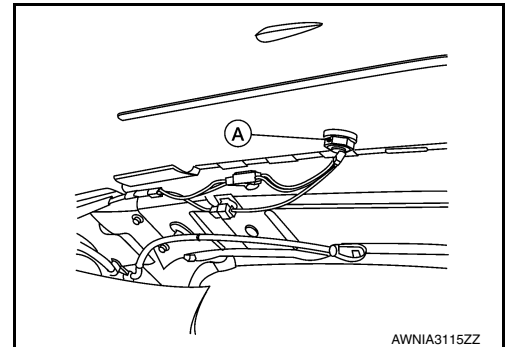


### Removal and Installation

INFOID:000000009667933

#### REMOVAL

1. Lower the rear portion of the headlining. Refer to [INT-29. "Removal and Installation"](#).
2. Disconnect the harness connectors from the antenna (satellite radio model shown).
3. Remove the antenna nut (A) and remove the antenna.



#### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

If the antenna nut is tightened looser than the specified torque this will lower the sensitivity of the antenna. If the antenna nut is tightened tighter than the specified torque this will deform the roof panel.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
AV  
O  
P

# ANTENNA FEEDER

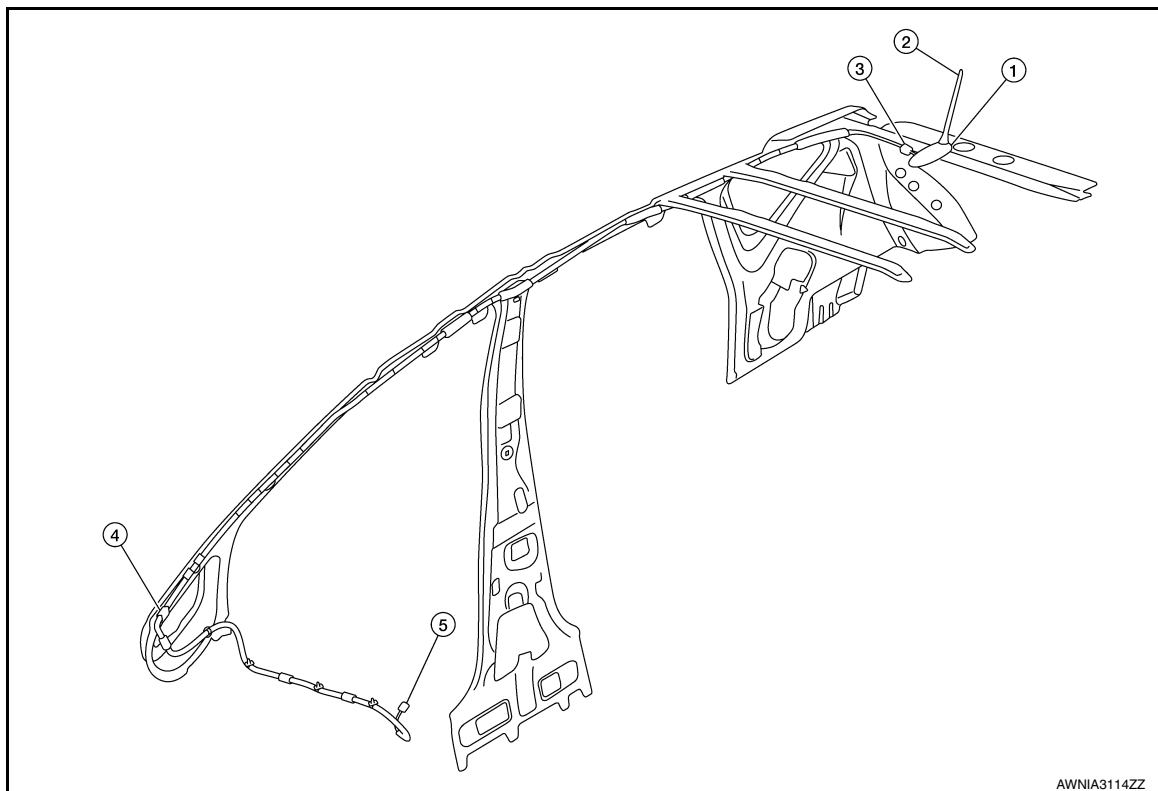
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## ANTENNA FEEDER

### Feeder Layout

INFOID:000000009460322



- |                                |                |         |
|--------------------------------|----------------|---------|
| 1. Antenna base (antenna amp.) | 2. Rod Antenna | 3. M351 |
| 4. M67, M350                   | 5. M73         |         |