SECTION AV
AUDIO, VISUAL & NAVIGATION SYSTEM

CONTENTS

BASE AUDIO WITHOUT COLOR DISPLAY

BASIC INSPECTION 11

DIAGNOSIS AND REPAIR WORKFLOW 11
Work Flow 11

SYSTEM DESCRIPTION 13

AUDIO SYSTEM 13
System Diagram 13
System Description 13
Component Parts Location 14
Component Description 14

DIAGNOSIS SYSTEM (AUDIO UNIT) 15
Diagnosis Description 15

DTC/CIRCUIT DIAGNOSIS 19

POWER SUPPLY AND GROUND CIRCUIT 19

AUDIO UNIT 19
AUDIO UNIT : Diagnosis Procedure 19

AUDIO DISPLAY UNIT 19
AUDIO DISPLAY UNIT : Diagnosis Procedure 19

ECU DIAGNOSIS INFORMATION 21

AUDIO UNIT 21
Reference Values 21

AUDIO DISPLAY UNIT 23
Reference Value 23

WIRING DIAGRAM 24

BASE AUDIO WITHOUT COLOR DISPLAY 24
Wiring Diagram 24

SYMPTOM DIAGNOSIS 32

AUDIO SYSTEM SYMPTOMS 32
Symptom Table 32

NORMAL OPERATING CONDITION 33
Description 33

PRECAUTION 35

PRECAUTIONS 35

EXCEPT FOR MEXICO 35
EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 35
EXCEPT FOR MEXICO : Precautions for Removing of Battery Terminal 35
EXCEPT FOR MEXICO : Precaution for Trouble Diagnosis 35
EXCEPT FOR MEXICO : Precaution for Harness Repair 36

FOR MEXICO 36
FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 36
FOR MEXICO : Precautions for Removing of Battery Terminal 37
FOR MEXICO : Precaution for Trouble Diagnosis 37
FOR MEXICO : Precaution for Harness Repair 37

PREPARATION 38

PREPARATION 38
Commercial Service Tools 38

REMOVAL AND INSTALLATION 39

AUDIO UNIT 39
Exploded View 39
Removal and Installation 39

AUDIO DISPLAY UNIT 40
Exploded View 40
Removal and Installation 40

FRONT DOOR SPEAKER 41
Exploded View 41
Removal and Installation 41

REAR DOOR SPEAKER 42
Exploded View 42
Removal and Installation 42

FRONT SQUAWKER 43
Exploded View 43
Removal and Installation 43

ROOF ANTENNA 44
Exploded View 44
Removal and Installation 44

ANTENNA FEEDER (RADIO) 45
Feeder Layout 45

BASE AUDIO WITH COLOR DISPLAY

PRECAUTION 46

PRECAUTIONS 46

EXCEPT FOR MEXICO 46
EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 46
EXCEPT FOR MEXICO : Precautions for Removing of Battery Terminal 46
EXCEPT FOR MEXICO : Precaution for Trouble Diagnosis 46
EXCEPT FOR MEXICO : Precaution for Harness Repair 47

FOR MEXICO 47
FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 47
FOR MEXICO : Precautions for Removing of Battery Terminal 48
FOR MEXICO : Precaution for Trouble Diagnosis 48
FOR MEXICO : Precaution for Harness Repair 48

PREPARATION 49

PREPARATION 49
Commercial Service Tools 49

SYSTEM DESCRIPTION 50

COMPONENT PARTS 50
Component Parts Location 50
Component Description 50

SYSTEM 53

MULTI AV SYSTEM 53
MULTI AV SYSTEM : System Diagram 53
MULTI AV SYSTEM : System Description 53

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ... 56
Description 56
On Board Diagnosis Function 56
CONSULT Function 65

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT) .. 68
Description 68
On Board Diagnosis Function 68

ECU DIAGNOSIS INFORMATION 70

AV CONTROL UNIT 70
Reference Value 70
DTC Index 77

DISPLAY UNIT 78
Reference Value 78

SATELLITE RADIO TUNER 81
Reference Value 81

TEL ADAPTER UNIT 83
Reference Value 83

WIRING DIAGRAM 85

BASE AUDIO WITH COLOR DISPLAY 85
Wiring Diagram 85

BASIC INSPECTION 102

DIAGNOSIS AND REPAIR WORKFLOW 102
Work Flow 102

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT) 104
Description 104
Work Procedure 104

CONFIGURATION (AV CONTROL UNIT) 105
Description 105
Work Procedure 105
Configuration List 105

DTC/CIRCUIT DIAGNOSIS 107

U1000 CAN COMM CIRCUIT 107
Description 107
DTC Logic 107
Diagnosis Procedure 107

U1010 CONTROL UNIT (CAN) 108
DTC Logic 108

U1200 AV CONTROL UNIT 109
DTC Logic 109

U1216 AV CONTROL UNIT 110
DTC Logic 110

U1232 STEERING ANGLE SENSOR 111
DTC Logic 111
Diagnosis Procedure 111

U1243 DISPLAY UNIT 112
DTC Logic 112
Diagnosis Procedure 112

U1255 SATELLITE RADIO TUNER 114
DTC Logic 114
Diagnosis Procedure 114

U1300 AV COMM CIRCUIT 116
Description 116

U1310 AV CONTROL UNIT 117
DTC Logic 117

POWER SUPPLY AND GROUND CIRCUIT ... 118

AV CONTROL UNIT 118
AV CONTROL UNIT : Diagnosis Procedure 118

DISPLAY UNIT 118
DISPLAY UNIT : Diagnosis Procedure 118

SATELLITE RADIO TUNER 119
SATELLITE RADIO TUNER : Diagnosis Procedure 119

TEL ADAPTER UNIT 120
TEL ADAPTER UNIT : Diagnosis Procedure 120

RGB (R: RED) SIGNAL CIRCUIT 121
Description 121
Diagnosis Procedure 121

RGB (G: GREEN) SIGNAL CIRCUIT 122
Description 122
Diagnosis Procedure 122

RGB (B: BLUE) SIGNAL CIRCUIT 123
Description 123
Diagnosis Procedure 123

RGB SYNCHRONIZING SIGNAL CIRCUIT 124
Description 124
Diagnosis Procedure 124

RGB AREA (YS) SIGNAL CIRCUIT 125
Description 125
Diagnosis Procedure 125

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT 126
Description 126
Diagnosis Procedure 126

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT 127
Description 127
Diagnosis Procedure 127

COMPOSITE IMAGE SIGNAL CIRCUIT 128
Description 128
Diagnosis Procedure 128

AUX IMAGE SIGNAL CIRCUIT 129
Description 129
Diagnosis Procedure 129

CAMERA IMAGE SIGNAL CIRCUIT 130
Description 130
Diagnosis Procedure 130

DISK EJECT SIGNAL CIRCUIT 132
Description 132
Diagnosis Procedure 132

MICROPHONE SIGNAL CIRCUIT 133
Description 133
Diagnosis Procedure 133

CONTROL SIGNAL CIRCUIT 135
Description 135
Diagnosis Procedure 135

STEERING SWITCH SIGNAL A CIRCUIT 136
Description 136
Diagnosis Procedure 136
Component Inspection 137

STEERING SWITCH SIGNAL B CIRCUIT 138
Description 138
Diagnosis Procedure 138
Component Inspection 139

STEERING SWITCH GROUND CIRCUIT 140
Description 140
Diagnosis Procedure 140
Component Inspection 140

SYMPTOM DIAGNOSIS 142

MULTI AV SYSTEM SYMPTOMS 142
Symptom Table 142

NORMAL OPERATING CONDITION 146
Description 146

REMOVAL AND INSTALLATION 149

AV CONTROL UNIT 149
Exploded View 149
Removal and Installation 149

DISPLAY UNIT 150
Exploded View 150
Removal and Installation 150

FRONT DOOR SPEAKER 151
Exploded View 151
Removal and Installation 151

REAR DOOR SPEAKER 152
Exploded View 152
Removal and Installation 152

FRONT SQUAWKER 153

Exploded View 153
Removal and Installation 153

MULTIFUNCTION SWITCH 154
Exploded View 154
Removal and Installation 154

PRESET SWITCH 155
Exploded View 155
Removal and Installation 155

STEERING SWITCH 156
Exploded View 156
Removal and Installation 156

AUXILIARY INPUT JACKS 157
Removal and Installation 157

USB CONNECTOR 158
Removal and Installation 158

REAR VIEW CAMERA 159
Exploded View 159
Removal and Installation 159
Adjustment 159

STEERING ANGLE SENSOR 161
Exploded View 161
Removal and Installation 161

TEL ADAPTER UNIT 162
Exploded View 162
Removal and Installation 162

TEL ANTENNA 163
Removal and Installation 163

MICROPHONE 164
Exploded View 164
Removal and Installation 164

ROOF ANTENNA 165
Exploded View 165
Removal and Installation 165

SATELLITE RADIO TUNER 166
Exploded View 166
Removal and Installation 166

ANTENNA FEEDER 167
Feeder Layout 167

BOSE AUDIO WITHOUT NAVIGATION

PRECAUTION 168

PRECAUTIONS 168

EXCEPT FOR MEXICO 168
EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 168
EXCEPT FOR MEXICO : Precautions for Removing of Battery Terminal 168
EXCEPT FOR MEXICO : Precaution for Trouble Diagnosis 168
EXCEPT FOR MEXICO : Precaution for Harness Repair 169

FOR MEXICO 169
FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 169
FOR MEXICO : Precautions for Removing of Battery Terminal 170
FOR MEXICO : Precaution for Trouble Diagnosis. 170
FOR MEXICO : Precaution for Harness Repair ... 170

PREPARATION 171

PREPARATION 171
Commercial Service Tools 171

SYSTEM DESCRIPTION 172

COMPONENT PARTS 172
Component Parts Location 172
Component Description 173

SYSTEM 175

MULTI AV SYSTEM 175
MULTI AV SYSTEM : System Diagram 175
MULTI AV SYSTEM : System Description 175

DIAGNOSIS SYSTEM (AV CONTROL UNIT).. 178
Description 178
On Board Diagnosis Function 178
CONSULT Function 187

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT).. 190
Description 190
On Board Diagnosis Function 190

ECU DIAGNOSIS INFORMATION 192

AV CONTROL UNIT 192
Reference Value 192
DTC Index 199

DISPLAY UNIT 200
Reference Value 200

BOSE AMP. 203
Reference Values 203

SATELLITE RADIO TUNER 206
Reference Value 206

TEL ADAPTER UNIT 208
Reference Value 208

WIRING DIAGRAM 210

BOSE AUDIO WITHOUT NAVIGATION 210
Wiring Diagram 210

BASIC INSPECTION 228

DIAGNOSIS AND REPAIR WORK FLOW 228
Work Flow 228

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT) 230
Description 230
Work Procedure 230

CONFIGURATION (AV CONTROL UNIT) 231
Description 231
Work Procedure 231
Configuration List 231

DTC/CIRCUIT DIAGNOSIS 233

U1000 CAN COMM CIRCUIT 233
Description 233
DTC Logic 233
Diagnosis Procedure 233

U1010 CONTROL UNIT (CAN) 234
DTC Logic 234

U1200 AV CONTROL UNIT 235
DTC Logic 235

U1216 AV CONTROL UNIT 236
DTC Logic 236

U1232 STEERING ANGLE SENSOR 237
DTC Logic 237
Diagnosis Procedure 237

U1243 DISPLAY UNIT 238
DTC Logic 238
Diagnosis Procedure 238

U1255 SATELLITE RADIO TUNER 240
DTC Logic 240
Diagnosis Procedure 240

U1300 AV COMM CIRCUIT 242
Description 242

U1310 AV CONTROL UNIT 243
DTC Logic 243

POWER SUPPLY AND GROUND CIRCUIT ... 244

AV CONTROL UNIT 244
AV CONTROL UNIT : Diagnosis Procedure 244

DISPLAY UNIT 244
DISPLAY UNIT : Diagnosis Procedure 244

BOSE AMP. 245
BOSE AMP. : Diagnosis Procedure 245

SATELLITE RADIO TUNER 246
SATELLITE RADIO TUNER : Diagnosis Procedure 246

TEL ADAPTER UNIT 246
TEL ADAPTER UNIT : Diagnosis Procedure 247

RGB (R: RED) SIGNAL CIRCUIT 248
Description 248
Diagnosis Procedure 248

RGB (G: GREEN) SIGNAL CIRCUIT 249
Description 249
Diagnosis Procedure 249

RGB (B: BLUE) SIGNAL CIRCUIT 250
Description 250
Diagnosis Procedure 250

RGB SYNCHRONIZING SIGNAL CIRCUIT ... 251
Description 251
Diagnosis Procedure 251

RGB AREA (YS) SIGNAL CIRCUIT 252
Description 252
Diagnosis Procedure 252

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT 253
Description 253
Diagnosis Procedure 253

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT 254
Description 254
Diagnosis Procedure 254

COMPOSITE IMAGE SIGNAL CIRCUIT 255
Description 255
Diagnosis Procedure 255

AUX IMAGE SIGNAL CIRCUIT 256
Description 256
Diagnosis Procedure 256

CAMERA IMAGE SIGNAL CIRCUIT 257
Description 257
Diagnosis Procedure 257

DISK EJECT SIGNAL CIRCUIT 259
Description 259
Diagnosis Procedure 259

MICROPHONE SIGNAL CIRCUIT 260
Description 260
Diagnosis Procedure 260

CONTROL SIGNAL CIRCUIT 262
Description 262
Diagnosis Procedure 262

STEERING SWITCH SIGNAL A CIRCUIT 263
Description 263
Diagnosis Procedure 263
Component Inspection 264

STEERING SWITCH SIGNAL B CIRCUIT 265
Description 265
Diagnosis Procedure 265
Component Inspection 266

STEERING SWITCH GROUND CIRCUIT 267
Description 267
Diagnosis Procedure 267
Component Inspection 267

SYMPTOM DIAGNOSIS 269

MULTI AV SYSTEM SYMPTOMS 269
Symptom Table 269

NORMAL OPERATING CONDITION 273
Description 273

REMOVAL AND INSTALLATION 276

AV CONTROL UNIT 276
Exploded View 276
Removal and Installation 276

DISPLAY UNIT 277
Exploded View 277
Removal and Installation 277

FRONT DOOR SPEAKER 278
Exploded View 278
Removal and Installation 278

REAR DOOR SPEAKER 279
Exploded View 279
Removal and Installation 279

FRONT SQUAWKER 280
Exploded View 280
Removal and Installation 280

REAR SPEAKER 281
Exploded View 281
Removal and Installation 281

CENTER SPEAKER 282
Exploded View 282
Removal and Installation 282

WOOFER 283
Exploded View 283
Removal and Installation 283

BOSE AMP. 284
Exploded View 284
Removal and Installation 284

MULTIFUNCTION SWITCH 285
Exploded View 285
Removal and Installation 285

PRESET SWITCH 286
Exploded View 286
Removal and Installation 286

STEERING SWITCH 287
Exploded View 287
Removal and Installation 287

AUXILIARY INPUT JACKS 288
Removal and Installation 288

USB CONNECTOR 289
Removal and Installation 289

REAR VIEW CAMERA 290
Exploded View 290
Removal and Installation 290
Adjustment 290

STEERING ANGLE SENSOR 292
Exploded View 292
Removal and Installation 292

TEL ADAPTER UNIT 293
Exploded View 293
Removal and Installation 293

TEL ANTENNA 294
Removal and Installation 294

MICROPHONE 295
Exploded View 295
Removal and Installation 295

ROOF ANTENNA 296
Exploded View 296
Removal and Installation 296

SATELLITE RADIO TUNER 297
Exploded View 297
Removal and Installation 297

ANTENNA FEEDER 298
Feeder Layout 298

BOSE AUDIO WITH NAVIGATION

PRECAUTION 299

PRECAUTIONS 299

EXCEPT FOR MEXICO 299
EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 299
EXCEPT FOR MEXICO : Precautions for Removing of Battery Terminal 299
EXCEPT FOR MEXICO : Precaution for Trouble Diagnosis 299
EXCEPT FOR MEXICO : Precaution for Harness Repair 300

FOR MEXICO 300

FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 300
FOR MEXICO : Precautions for Removing of Battery Terminal 301
FOR MEXICO : Precaution for Trouble Diagnosis. 301
FOR MEXICO : Precaution for Harness Repair ... 301

PREPARATION 302

PREPARATION 302
Commercial Service Tools 302

SYSTEM DESCRIPTION 303

COMPONENT PARTS 303
Component Parts Location 303
Component Description 304

SYSTEM 306

MULTI AV SYSTEM 306
MULTI AV SYSTEM : System Diagram 306
MULTI AV SYSTEM : System Description 307

DIAGNOSIS SYSTEM (AV CONTROL UNIT).. 315
Description 315
On Board Diagnosis Function 315
CONSULT Function 327

DIAGNOSIS SYSTEM (CAMERA CONTROL UNIT) 331
CONSULT Function 331

ECU DIAGNOSIS INFORMATION 335

AV CONTROL UNIT 335
Reference Value 335
Fail-Safe 340
DTC Index 340

DISPLAY UNIT 342
Reference Value 342

BOSE AMP. 344
Reference Values 344

CAMERA CONTROL UNIT 347
Reference Value 347
Fail-Safe 350
DTC Inspection Priority Chart 352
DTC Index 352

WIRING DIAGRAM 354

BOSE AUDIO WITH NAVIGATION 354
Wiring Diagram 354

BASIC INSPECTION 373

DIAGNOSIS AND REPAIR WORK FLOW 373
Work Flow 373

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT) 375
Description 375
Work Procedure 375

CONFIGURATION (AV CONTROL UNIT) 376
Description 376
Work Procedure 376
Configuration List 376

DTC/CIRCUIT DIAGNOSIS 378

U0428 STEERING ANGLE SENSOR 378
DTC Logic 378
Diagnosis Procedure 378

U1000 CAN COMM CIRCUIT 379

AV CONTROL UNIT 379
AV CONTROL UNIT : Description 379
AV CONTROL UNIT : DTC Logic 379
AV CONTROL UNIT : Diagnosis Procedure 379

CAMERA CONTROL UNIT 379
CAMERA CONTROL UNIT : Description 379
CAMERA CONTROL UNIT : DTC Logic 379
CAMERA CONTROL UNIT : Diagnosis Procedure 379

U1010 CONTROL UNIT (CAN) 381

AV CONTROL UNIT 381
AV CONTROL UNIT : DTC Logic 381

CAMERA CONTROL UNIT 381
CAMERA CONTROL UNIT : Description 381
CAMERA CONTROL UNIT : DTC Logic 381
CAMERA CONTROL UNIT : Diagnosis Procedure ..381

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT 382
DTC Logic 382
Diagnosis Procedure 382

U1200 AV CONTROL UNIT 384
DTC Logic 384

U1201 AV CONTROL UNIT 385
DTC Logic 385

U1202 AV CONTROL UNIT 386
DTC Logic 386

U1204 AV CONTROL UNIT 387
Description 387
DTC Logic 387
Diagnosis Procedure 387

U1205 AV CONTROL UNIT 388
Description 388
DTC Logic 388

Diagnosis Procedure 388

U1206 AV CONTROL UNIT 389
Description 389
DTC Logic 389
Diagnosis Procedure 389

U1207 AV CONTROL UNIT 390
Description 390
DTC Logic 390
Diagnosis Procedure 390

U1216 AV CONTROL UNIT 391
DTC Logic 391

U1217 AV CONTROL UNIT 392
DTC Logic 392

U1218 AV CONTROL UNIT 393
DTC Logic 393
Diagnosis Procedure 393

U1219 AV CONTROL UNIT 394
DTC Logic 394
Diagnosis Procedure 394

U121A AV CONTROL UNIT 395
DTC Logic 395
Diagnosis Procedure 395

U121B AV CONTROL UNIT 396
DTC Logic 396
Diagnosis Procedure 396

U121C AV CONTROL UNIT 397
DTC Logic 397
Diagnosis Procedure 397

U121D AV CONTROL UNIT 398
DTC Logic 398
Diagnosis Procedure 398

U121E AV CONTROL UNIT 399
DTC Logic 399
Diagnosis Procedure 399

U1225 AV CONTROL UNIT 400
DTC Logic 400

U1227 AV CONTROL UNIT 401
DTC Logic 401
Diagnosis Procedure 401

U1228 AV CONTROL UNIT 402
DTC Logic 402

U1229 AV CONTROL UNIT 403
DTC Logic 403

U122A AV CONTROL UNIT 404
DTC Logic 404
Diagnosis Procedure 404

U122E AV CONTROL UNIT 405
DTC Logic 405

U1232 STEERING ANGLE SENSOR 406

AV CONTROL UNIT 406
AV CONTROL UNIT : DTC Logic 406
AV CONTROL UNIT : Diagnosis Procedure 406

CAMERA CONTROL UNIT 406
CAMERA CONTROL UNIT : DTC Logic 406
CAMERA CONTROL UNIT : Diagnosis Procedure
. 406

U1243 DISPLAY UNIT 407
DTC Logic 407
Diagnosis Procedure 407

U1244 GPS ANTENNA 409
DTC Logic 409
Diagnosis Procedure 409

U1258 SATELLITE RADIO ANTENNA 410
DTC Logic 410
Diagnosis Procedure 410

U1263 USB 411
DTC Logic 411
Diagnosis Procedure 411

U1264 ANTENNA AMP. 412
DTC Logic 412
Diagnosis Procedure 412

U1265 BOSE AMP. 413
DTC Logic 413
Diagnosis Procedure 413

U1300 AV COMM CIRCUIT 414
Description 414

U1305 CONFIG UNFINISH 415
DTC Logic 415
Diagnosis Procedure 415

U1308 REAR CAMERA 416
DTC Logic 416
Diagnosis Procedure 416

U130B REAR CAMERA 417
DTC Logic 417
Diagnosis Procedure 417

U1310 AV CONTROL UNIT 418
DTC Logic 418

POWER SUPPLY AND GROUND CIRCUIT ...419

AV CONTROL UNIT 419
AV CONTROL UNIT : Diagnosis Procedure 419

DISPLAY UNIT 419
DISPLAY UNIT : Diagnosis Procedure 419

BOSE AMP. 420
BOSE AMP. : Diagnosis Procedure 420

CAMERA CONTROL UNIT 421
CAMERA CONTROL UNIT : Diagnosis Procedure 421

COMPOSITE IMAGE SIGNAL CIRCUIT 422
Description 422
Diagnosis Procedure 422

RGB DIGITAL IMAGE SIGNAL CIRCUIT 423
Description 423
Diagnosis Procedure 423

AUX IMAGE SIGNAL CIRCUIT 424
Description 424
Diagnosis Procedure 424

CAMERA IMAGE SIGNAL CIRCUIT 425
Description 425
Diagnosis Procedure 425

DISK EJECT SIGNAL CIRCUIT 427
Description 427
Diagnosis Procedure 427

MICROPHONE SIGNAL CIRCUIT 428
Description 428
Diagnosis Procedure 428

STEERING SWITCH SIGNAL A CIRCUIT 430
Description 430
Diagnosis Procedure 430
Component Inspection 430

STEERING SWITCH SIGNAL B CIRCUIT 432
Description 432
Diagnosis Procedure 432
Component Inspection 432

STEERING SWITCH GROUND CIRCUIT 434
Description 434
Diagnosis Procedure 434
Component Inspection 434

SYMPTOM DIAGNOSIS 436

MULTI AV SYSTEM SYMPTOMS 436
Symptom Table 436

NORMAL OPERATING CONDITION 441
Description 441

REMOVAL AND INSTALLATION 448

AV CONTROL UNIT 448
Exploded View 448
Removal and Installation 448

DISPLAY UNIT 449
Exploded View 449
Removal and Installation 449

FRONT DOOR SPEAKER 450
Exploded View 450
Removal and Installation 450

REAR DOOR SPEAKER 451
Exploded View 451
Removal and Installation 451

FRONT SQUAWKER 452
Exploded View 452
Removal and Installation 452

REAR SPEAKER 453
Exploded View 453
Removal and Installation 453

CENTER SPEAKER 454
Exploded View 454
Removal and Installation 454

WOOFER 455
Exploded View 455
Removal and Installation 455

BOSE AMP. 456
Exploded View 456
Removal and Installation 456

MULTIFUNCTION SWITCH 457
Exploded View 457
Removal and Installation 457

PRESET SWITCH 458
Exploded View 458
Removal and Installation 458

STEERING SWITCH 459
Exploded View 459
Removal and Installation 459

AUXILIARY INPUT JACKS 460
Removal and Installation 460

USB CONNECTOR 461
Removal and Installation 461

MICROPHONE 462
Exploded View 462
Removal and Installation 462

GPS ANTENNA 463
Removal and Installation 463

CAMERA CONTROL UNIT 464
Exploded View 464
Removal and Installation 464

REAR VIEW CAMERA 465
Exploded View (Models with BSW and LDW) 465
Exploded View (Models without BSW and LDW) 465
Removal and Installation (Models with BSW and LDW) 465

Removal and Installation (Models without BSW and LDW) 466
Adjustment (Models without BSW and LDW) 466

STEERING ANGLE SENSOR 467
Exploded View 467
Removal and Installation 467

ROOF ANTENNA 468
Exploded View 468
Removal and Installation 468

ANTENNA FEEDER 469
Feeder Layout 469

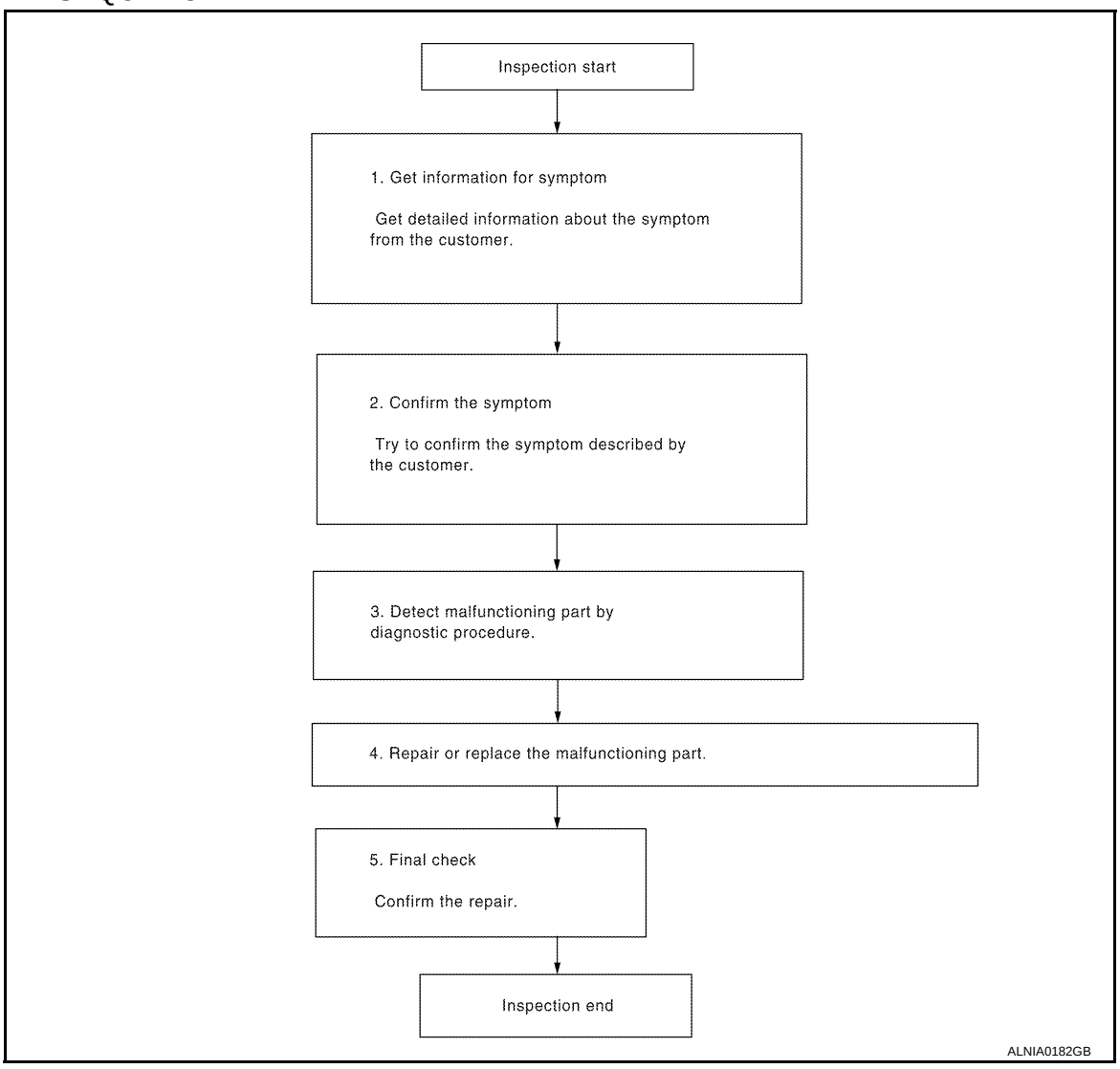
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000009721555

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 the relation between the symptom and the condition when the symptom is detected.

>> GO TO 3

3.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

Is a 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 check that the symptom is not detected.

Has the symptom been repaired?

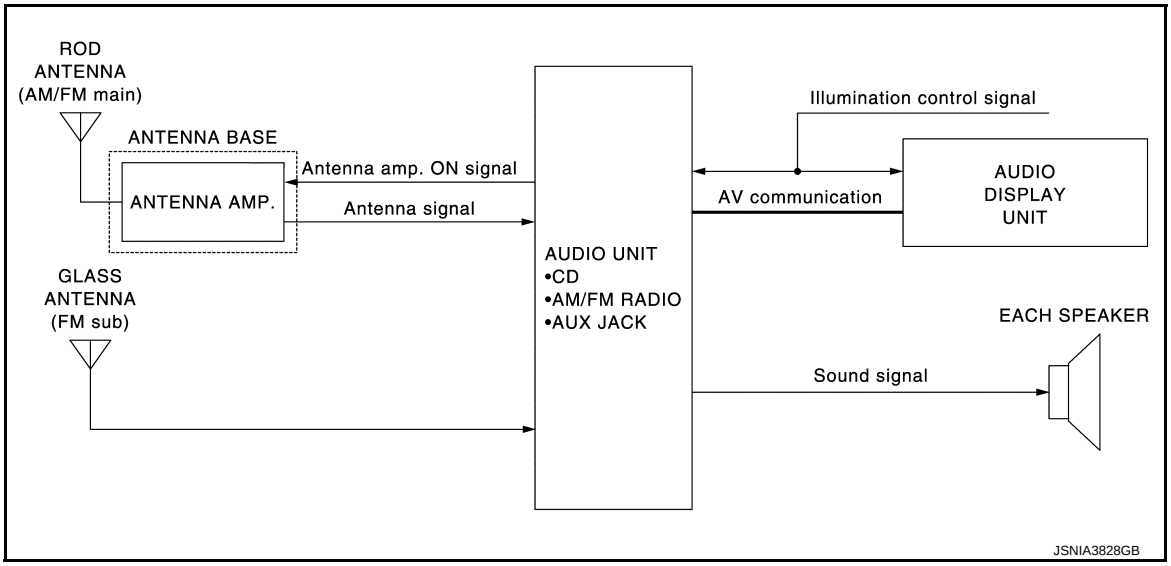
YES >> INSPECTION END.
NO >> GO TO 2

SYSTEM DESCRIPTION

AUDIO SYSTEM

System Diagram

INFOID:0000000009721556



NOTE:
An antenna base integrated with radio antenna amp. is adopted.

System Description

INFOID:0000000009721557

AUDIO SYSTEM

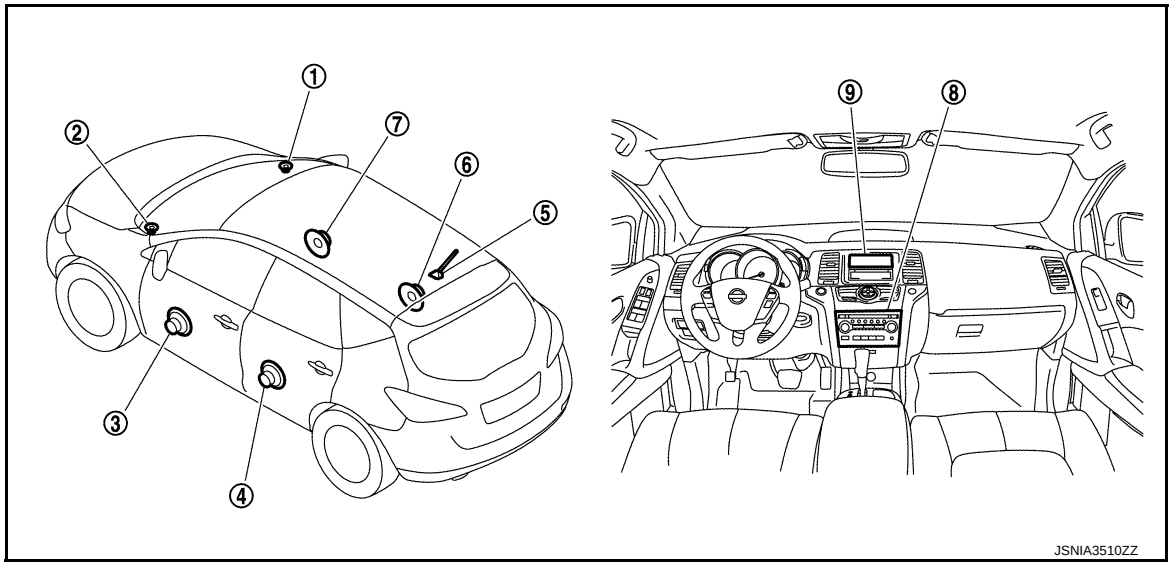
The audio system consists of the following components.
- Audio unit
- Rod antenna (AM/FM main)
- Glass antenna (FM sub)
- Front door speakers
- Rear door speakers
- Front squawker
- Audio display unit

AM/FM Radio Mode
- AM/FM radio tuner is integrated into audio unit.
- When AM/FM radio waves are received by rod antenna, the radio waves are amplified by an antenna amp. to input them to audio unit. Sound signals are output to each speaker for the audio unit. The FM sub antenna is installed on the back door window glass and the audio unit is received.

CD Mode
- The audio unit has CD function.
- The audio unit outputs sound signals to each speaker when CD is inserted into the audio unit.

Component Parts Location

INFOID:0000000009721558



1. Front squawker RH
2. Front squawker LH
3. Front door speaker LH
4. Rear door speaker LH
5. Antenna base (antenna amp.)
6. Rear door speaker RH
7. Front door speaker RH
8. Audio unit
9. Audio display unit

Component Description

INFOID:0000000009721559

Part name	Description
AUDIO UNIT	• Has radio function and CD playing function. • Sound signals are output to each speaker.
AUDIO DISPLAY UNIT	Display images are controlled by AV communication from audio unit.
FRONT DOOR SPEAKER	• Outputs sound signals from audio unit. • Outputs sound (mid and low range).
REAR DOOR SPEAKER	• Outputs sound signals from audio unit. • Outputs sound (mid and low range).
FRONT SQUAWKER	• Outputs sound signals from audio unit. • Outputs sound (high and mid range).
ANTENNA BASE	An antenna base integrated with radio antenna amp. is adopted. ANTENNA AMP. • Radio waves received by rod antenna are amplified and transmitted to audio unit. • Power (antenna amp. ON signal) is supplied from audio unit.

DIAGNOSIS SYSTEM (AUDIO UNIT)

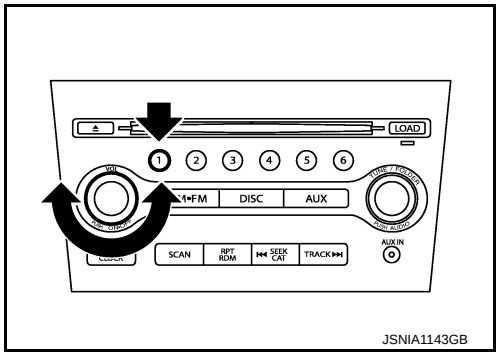
Diagnosis Description

INFOID:0000000009721560

Self-diagnosis mode can perform the following items.
- Versions display
- Channel check diagnosis
- Key check diagnosis
- AV communication diagnosis

VERSIONS DISPLAY FUNCTION

1. Turn ignition switch ON.
2. Turn the audio unit off.
3. While pressing “1” button, turn volume control dial clockwise or counterclockwise for 30 clicks or more.



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4. Diagnosis default screen of audio display unit is displayed.
   NOTE:
   Diagnosis default screen = All icons and segments of the audio display unit are turned on.
5. Pressing the AUDIO switch briefly displays the version display mode. Pressing the AUDIO switch briefly switches to each version display. Pressing and holding the AUDIO switch when displaying each software version returns to the diagnosis default screen.

Version display item

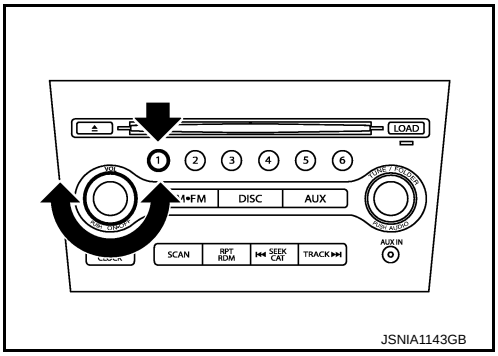
Mode		Description
Versions display	Software V######	Audio unit software version is displayed.
	Hardware V######	Audio unit hardware version is displayed.
	CD Mech V######	Audio unit CD mechanism version is displayed.
	EEPROM V######	Audio unit EEPROM version is displayed.
	Disp SW V######	Display unit software version is displayed.
	Disp HW V######	Display unit hardware version is displayed.
	SDARS V######	Audio unit SDARS version is displayed. **NOTE:** “VFFFFFF” is displayed when SDARS is not available.

6. Self-diagnosis mode is canceled when the ignition switch is turned OFF.

CHANNEL CHECK DIAGNOSIS FUNCTION

1. Turn ignition switch ON.
2. Turn the audio unit off.

3. While pressing the “1” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more.



4. The diagnosis default screen of audio display unit is displayed.
NOTE:
Diagnosis default screen = All icons and segments of the audio display unit are turned on.
5. Turning the TUNE/FOLDER dial clockwise displays the channel check mode. Pressing and holding the AUDIO switch during each channel check or waiting approximately 1 second after finishing all channel checks returns to the diagnosis default screen.

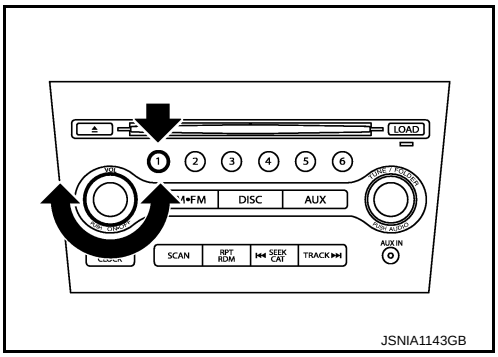
Channel check item

Mode		Description
Channel check	Channel Check Front Left	Connection of a speaker can be confirmed by test tone.
	Channel Check Front Right	
	Channel Check Rear Right	
	Channel Check Rear Left	

6. Self-diagnosis mode is canceled when the ignition switch is turned OFF.

KEY CHECK DIAGNOSIS FUNCTION

1. Turn ignition switch ON.
2. Turn the audio unit off.
3. While pressing the “1” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more.



4. The diagnosis default screen of audio display unit is displayed.
NOTE:
Diagnosis default screen = All icons and segments of the audio display unit are turned on.
5. Turning the TUNE/FOLDER dial counterclockwise displays the key check mode, and the pressed switch name is shown. Pressing and holding the AUDIO switch during the key check returns to the diagnosis default screen.

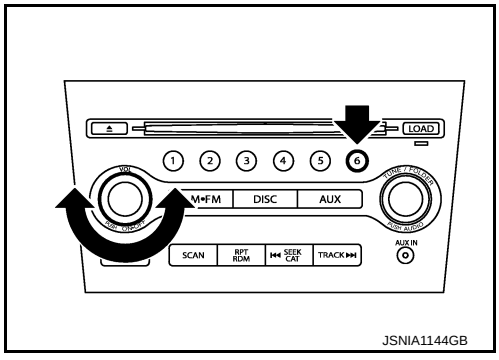
Key check item (audio unit)

Mode	Display item	Switch name
Key check	1	Preset button “1” switch
	2	Preset button “2” switch
	3	Preset button “3” switch
	4	Preset button “4” switch
	5	Preset button “5” switch
	6	Preset button “6” switch
	POWER	“ON·OFF” switch
	VOLUME up	“VOL up” switch
	VOLUME down	“VOL down” switch
	AM·FM	“AM·FM” switch
	DISC	“DISC” switch
	AUX	“AUX” switch
	AUDIO	“AUDIO” switch
	TUNE/FOLDER up	“TUNE/FOLDER up” switch
	TUNE/FOLDER down	“TUNE/FOLDER up” switch
	DISP CLOCK	“DISP CLOCK” switch
	SCAN	“SCAN” switch
	RPT/RDM	“RPT RDM” switch
	SEEK/TRACK up	“SEEK CAT” switch
	SEEK/TRACK down	“TRACK” switch
	LOAD	“LOAD” switch
	EJECT	“EJECT” switch

6. Self-diagnosis mode is canceled when the ignition switch is turned OFF.

AV COMMUNICATION DIAGNOSIS FUNCTION

1. Turn ignition switch ON.
2. Turn the audio unit off.
3. While pressing the “6” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more.



JSNIA1144GB

4. Returns to diagnosis default screen and displays “AV DIAGNOSIS”.
5. Pressing the AUDIO switch briefly displays the AV communication diagnosis mode. Pressing the AUDIO switch briefly again switches to each AV communication display.

AV communication diagnosis item

Display item			Description
AV communication item	Current	Past	
TRANSMIT	OK / UN	OK / 0 –39	The communication condition and error counter from the audio unit to the audio display unit are displayed.

Display item			Description
AV communication item	Current	Past	
DISP	OK / UN	OK / 0 –39	The communication condition and error counter from the audio display unit to the audio unit.
DISP MPDT	OK / UN	OK / 0 –39	
NO HISTORY BTHF	—	—	Not used.
AV TROUBLE DEL	—	—	The error record can be deleted.

6. Pressing the SEEK TRACK up switch displays the confirmation screen of “delete error record”. Press the SEEK TRACK down switch if returning from RECORD DEL YES? to RECORD DEL NO?
   The item is automatically determined approximately 6 seconds after it is displayed. Then the display returns to AV TROUBLE DEL display item.

Display item	Description
RECORD DEL NO?	Does not delete error record.
RECORD DEL YES?	Deletes error record.

7. Self-diagnosis mode is canceled when the ignition switch is turned OFF.

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT

AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

INFOID:0000000009721561

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate the cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between audio unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M46	19	OFF	Battery voltage
ACC power supply		7	ACC	

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check harness between audio unit and fuse.

AUDIO DISPLAY UNIT

AUDIO DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000009721562

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate the cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between audio display unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M126	9	OFF	Battery voltage
ACC power supply		8	ACC	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between audio display unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect the harness connector audio display unit.

3. Check continuity between audio display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M126	3	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

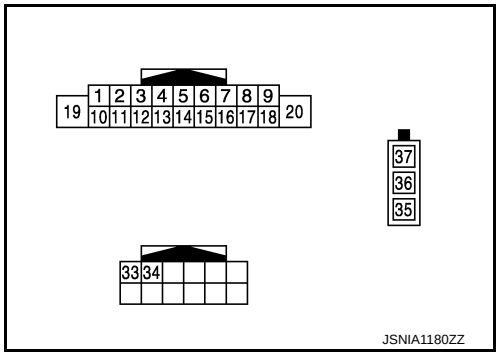
ECU DIAGNOSIS INFORMATION

AUDIO UNIT

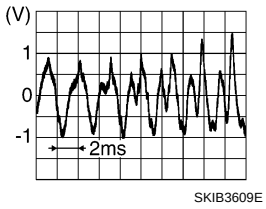
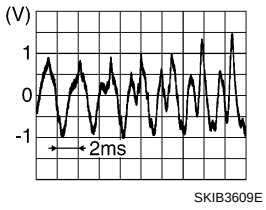
Reference Values

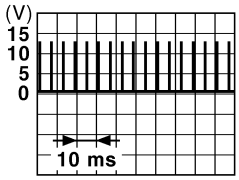
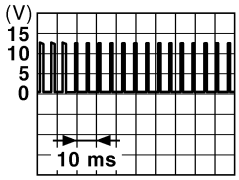
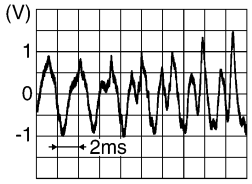
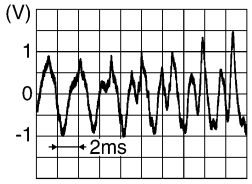
INFOID:0000000009721563

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (L)	3 (B)	Sound signal front LH	Output	Ignition switch ON	Sound output.	
4 (LG)	5 (Y)	Sound signal rear LH	Output	Ignition switch ON	Sound output.	
7 (R)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage

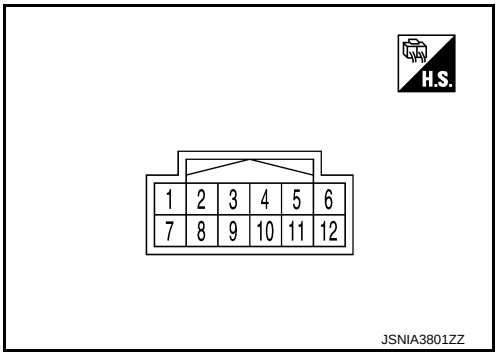
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
8 (SB)	9 (R)	Illumination control signal	Output	Ignition switch ON	• Lighting switch 1ST • When meter illumination is maximum	 JPNIA0828GB
					• Lighting switch 1ST • When meter illumination is minimum	 JPNIA0827GB
11 (BR)	12 (W)	Sound signal front RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
13 (GR)	14 (P)	Sound signal rear RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
33 (G)	Ground	AV communication signal (L)	Input/ Output	—	—	—
34 (R)	Ground	AV communication signal (H)	Input/ Output	—	—	—
35	—	FM sub	Input	—	—	—
36	—	AM-FM main	Input	—	—	—
37	Ground	Antenna amp. ON signal	Output	Ignition switch ACC	—	12.0 V

AUDIO DISPLAY UNIT

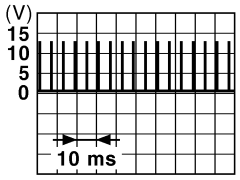
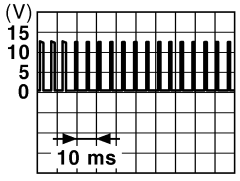
Reference Value

INFOID:0000000009721564

TERMINAL LAYOUT



PHYSICAL VALUES

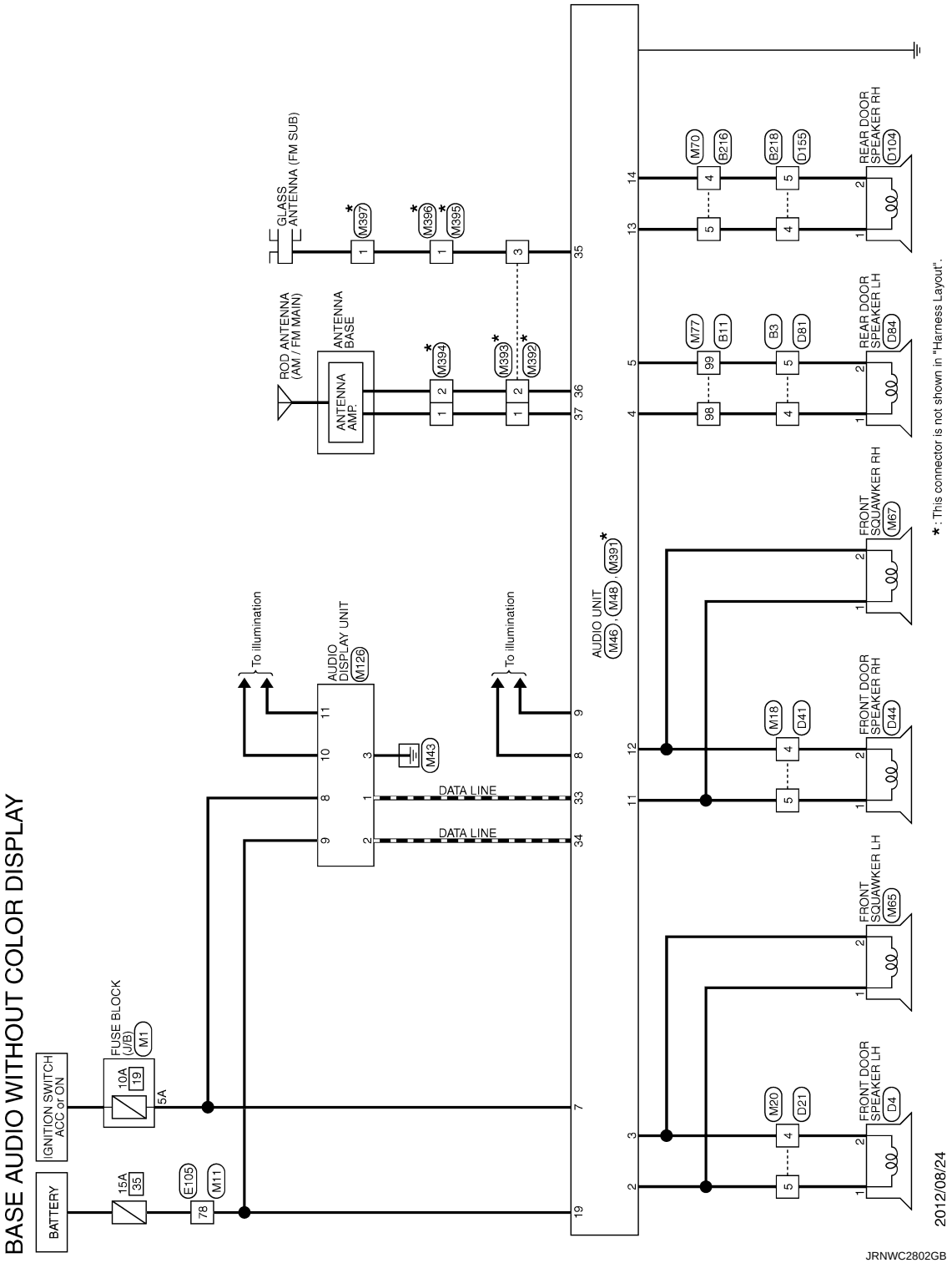
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (R)	Ground	AV communication signal (L)	Input/ Output	—	—	—
2 (G)	Ground	AV communication signal (H)	Input/ Output	—	—	—
3 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
8 (R)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
9 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
10 (R)	11 (SB)	Illumination control signal	Output	Ignition switch ON	• Lighting switch 1ST • When meter illumination is maximum	 JPNIA0828GB
					• Lighting switch 1ST • When meter illumination is minimum	 JPNIA0827GB

WIRING DIAGRAM

BASE AUDIO WITHOUT COLOR DISPLAY

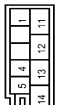
Wiring Diagram

INFOID:0000000009721565



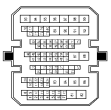
BASE AUDIO WITHOUT COLOR DISPLAY

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	–
4	LG	–
5	O	–
7	LG	–
10	B	–
11	SB	–
12	G	–
13	V	–
14	GR	–
15	BR	–
17	R	–
18	Y	–

Connector No.	B11
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS19

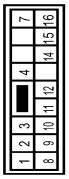


Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	–
2	B	–
3	R/L	–
4	R/W	–
6	P	–
7	V	–
8	SHIELD	–

9	BR/L	–
10	Y/G	–
11	Y/L	–
12	W/L	–
13	L	–
14	BR	–
15	SB	–
16	BR	–
17	V	–
18	SB	–
19	R	–
20	P	–
21	LG	–
22	W	–
23	Y	–
24	GR	–
25	Y	–
27	V	–
28	R	–
30	P	–
31	BR	–
32	BR	–
34	SB	–
35	SHIELD	–
36	G	–
37	LG	–
40	Y	–
41	GR	–
42	G	–
46	LG	–
47	SB	–
47	V	–
48	GR	–
48	SHIELD	–
49	B	–
49	BR	–
50	G	–
50	R/W	–
51	R	–
51	R/L	–
52	B	–
53	Y	–
54	LG	–
55	BR	–
56	P	–
57	L	–
58	R	–
59	R	–

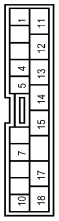
59	SHIELD	–
60	B	–
60	Y	–
61	R/L	–
62	R/W	–
63	LG	–
64	Y	–
65	BR	–
65	R	–
66	L	–
66	V	–
67	G	–
67	GR	–
68	BR	–
68	R	–
69	SHIELD	–
70	W/R	–
71	B/R	–
72	Y	–
73	LG	–
74	SB	–
75	L	–
76	G	–
77	R	–
79	B	–
80	W	–
81	R	–
82	L	–
83	BR	–
84	O	–
85	G	–
86	SB	–
87	R	–
88	G	–
89	GR	–
90	Y	–
91	G	–
92	BR	–
93	G	–
94	V	–
95	BR	–
96	GR	–
97	R	–
98	LG	–
99	O	–

Connector No.	B216
Connector Name	WIRE TO WIRE
Connector Type	NS16MBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
4	B/P	–
5	O	–
6	W	–
7	Y	–
8	GR	–
9	G	–
10	O	–
12	G	–
13	V	–
14	R	–
15	P	–
16	SB	–

Connector No.	B218
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
4	L	– [With BOSE system]
4	G	– [Without BOSE system]
5	B/P	– [Without BOSE system]
5	O	– [With BOSE system]
7	O	–

JRNWC8919GB

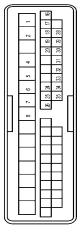
BASE AUDIO WITHOUT COLOR DISPLAY

10	B	–
11	Y	–
12	G	–
13	V	–
14	P	–
15	SB	–
17	R	–
18	GR	–

9	GR	–
10	V	–
11	O	–
14	B	–
15	LG	–
16	G	–
17	Y	–
18	GR	–
19	BR	–
20	LG	–
24	P	–
25	V	–
26	W	–
27	R	–
29	V	–
30	SB	–
31	BR	–
32	R	–
33	G	–
34	Y	–
35	L	–
41	P	–
42	GR	–
43	L	–
44	W	–
45	SB	–
46	R	–
50	V	–
51	O	–
52	L	– [Without automatic drive positioner]
52	P	– [With automatic drive positioner]
53	L	– [With automatic drive positioner]
53	P	– [Without automatic drive positioner]
54	LG	– [Without automatic drive positioner]
54	SB	– [With automatic drive positioner]
55	LG	– [With automatic drive positioner]
55	O	– [Without automatic drive positioner]

Connector No.	D41
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
2	V	–
4	B	–
5	W	–
6	P	–
7	O	–
8	B	–
16	G	–
17	Y	–
18	GR	–
19	BR	–
20	LG	–
24	LG	–
25	W	–
26	O	–
28	G	–
29	V	–
30	SB	–
31	BR	–
32	R	–
33	G	–
34	Y	–
35	L	–

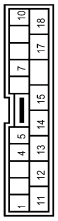
Connector No.	D44
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	NS02FW-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	B	–

Connector No.	D81
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
4	L	–
5	W	–
7	LG	–
10	B	–
11	Y	–
12	G	–
13	V	–
14	P	–
15	SB	–
17	R	–
18	GR	–

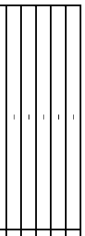
Connector No.	D4
Connector Name	FRONT DOOR SPEAKER LH
Connector Type	NS02FW-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	B	–

Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

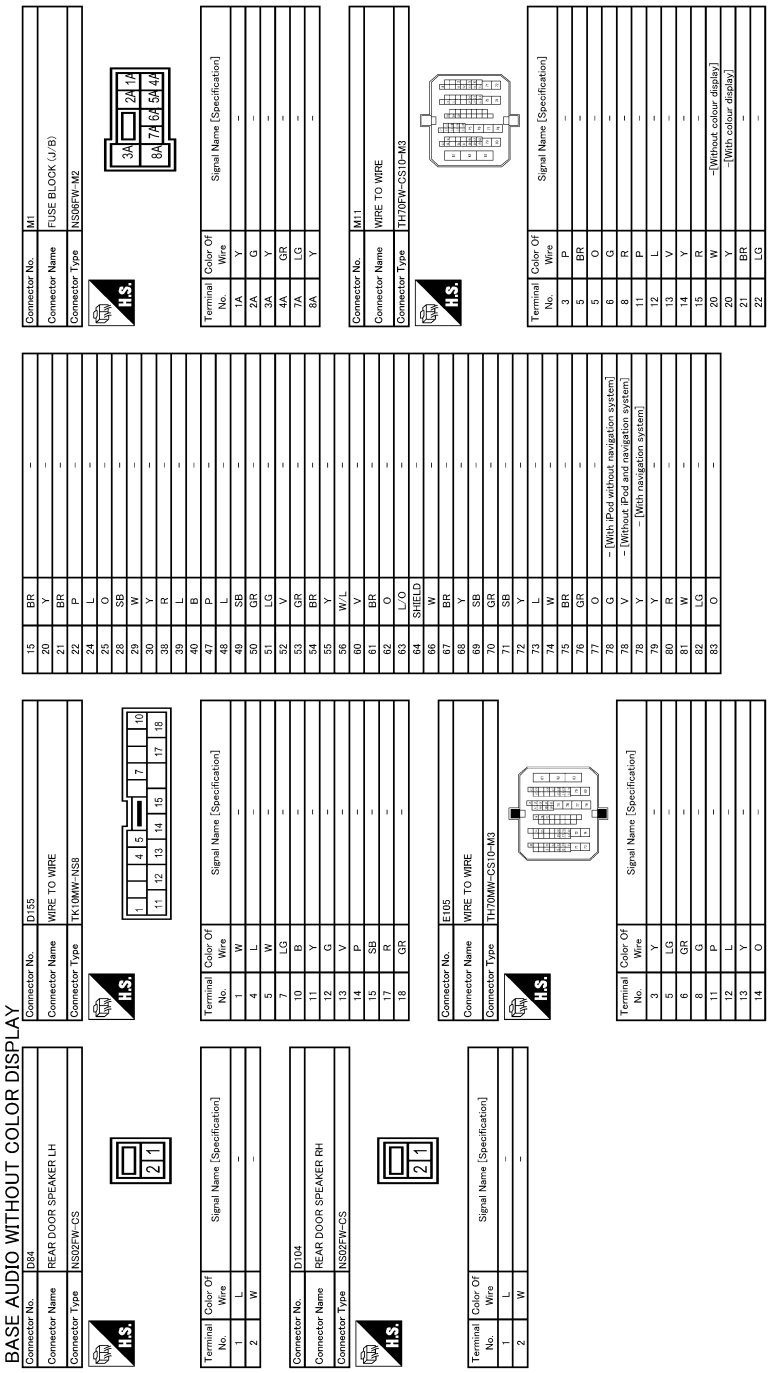
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	–
2	G	–
3	P	–
4	B	–
5	W	–
6	SB	–
7	P	–
8	BR	–

JRNWC8920GB

BASE AUDIO WITHOUT COLOR DISPLAY

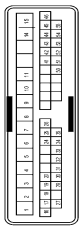


JRNWC8921GB

BASE AUDIO WITHOUT COLOR DISPLAY

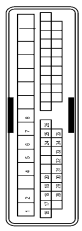
24	Y	–
25	L	–
28	BR	–
29	L	–
30	R	–
38	R	–
39	L	–
40	B	–
47	P	–
48	L	–
49	W	–
50	GR	–
51	LG	–
52	Y	–
53	V	–
54	SB	–
55	P	–
56	LG	–
60	V	–
61	GR	–
62	BR	–
63	V	–
64	SHIELD	–
66	W	–
67	R	–
68	W	–
69	P	–
70	G	–
71	G	–
72	BR	–
73	L	–
74	W	–
75	BR	–
76	R	–
77	G	–
78	Y	–
79	G	–
80	R	–
81	W	–
82	W	–
83	BG	–

Connector No.	M18
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



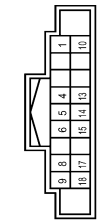
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
2	V	–
4	L	– [With iPod without BOSE system]
4	W	– [With BOSE system and base audio without iPod]
5	B	– [With BOSE system]
5	BR	– [Without iPod and BOSE system]
5	W	– [With iPod without BOSE system]
6	GR	–
7	G	–
8	B	–
16	W	–
17	Y	–
18	W	–
19	R	–
20	SB	–
24	LG	–
25	Y	–
26	P	–
28	R	–
29	GR	–
30	G	–
31	V	–
32	Y	–
33	P	–
34	BR	–
35	R	–

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	–
2	G	–
3	W	–
4	B	– [With BOSE system and base audio without iPod]
4	R	– [With iPod without BOSE system]
5	G	– [With iPod without BOSE system]
5	L	– [With BOSE system and base audio without iPod]
6	V	–
7	BR	–
8	W	–
9	SB	–
10	L	–
11	G	–
14	B	–
15	GR	–
16	L	–
17	Y	–
18	W	–
19	Y	–
20	SB	–
24	P	–
25	V	–
26	W	–
27	R	–
29	R	–
30	L	–
31	SB	–
32	W	–
33	P	–
34	BR	–
35	R	–
41	LG	–
42	LG	–
43	BR	–
44	Y	–
45	P	–
46	P	–
50	V	–
51	BG	–
52	GR	–
52	R	– [Without automatic drive positioner]
53	L	– [With automatic drive positioner]
53	V	– [Without automatic drive positioner]
54	G	– [Without automatic drive positioner]
54	LG	– [With automatic drive positioner]
55	GR	– [Without automatic drive positioner]
55	SB	– [With automatic drive positioner]

Connector No.	M46
Connector Name	AUDIO UNIT
Connector Type	TH18FW-CS2



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	SOUND SIGNAL FRONT LH (+)
3	B	SOUND SIGNAL FRONT LH (–)
4	LG	SOUND SIGNAL REAR LH (+)
5	Y	SOUND SIGNAL REAR LH (–)
7	R	ACC
8	SB	ILLUMINATION CONTROL SIGNAL (+)
9	R	ILLUMINATION CONTROL SIGNAL (–)
11	BR	SOUND SIGNAL FRONT RH (+)
12	W	SOUND SIGNAL FRONT RH (–)
13	GR	SOUND SIGNAL REAR RH (+)
14	P	SOUND SIGNAL REAR RH (–)
19	Y	BATTERY

JRNWC8922GB

BASE AUDIO WITHOUT COLOR DISPLAY

Connector No.	M48
Connector Name	AUDIO UNIT
Connector Type	TH12FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
33	G	AV COMM (L)
34	R	AV COMM (H)

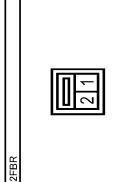
Connector No.	M65
Connector Name	FRONT SQUAWKER LH
Connector Type	TK02FBR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	– [With iPod without BOSE system]
1	L	– [Without iPod and BOSE system]
1	LG	– [With BOSE system]
2	B	– [Without iPod and BOSE system]
2	R	– [With iPod without BOSE system]
2	Y	– [With BOSE system]

Connector No.	M67
Connector Name	FRONT SQUAWKER RH
Connector Type	TK02FBR

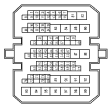
Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	– [With BOSE system and base audio without iPod]
1	W	– [With iPod without BOSE system]
2	L	– [With iPod without BOSE system]
2	R	– [With BOSE system]
2	W	– [Without iPod and BOSE system]

Connector No.	M70
Connector Name	WIRE TO WIRE
Connector Type	NS16FBR-CS



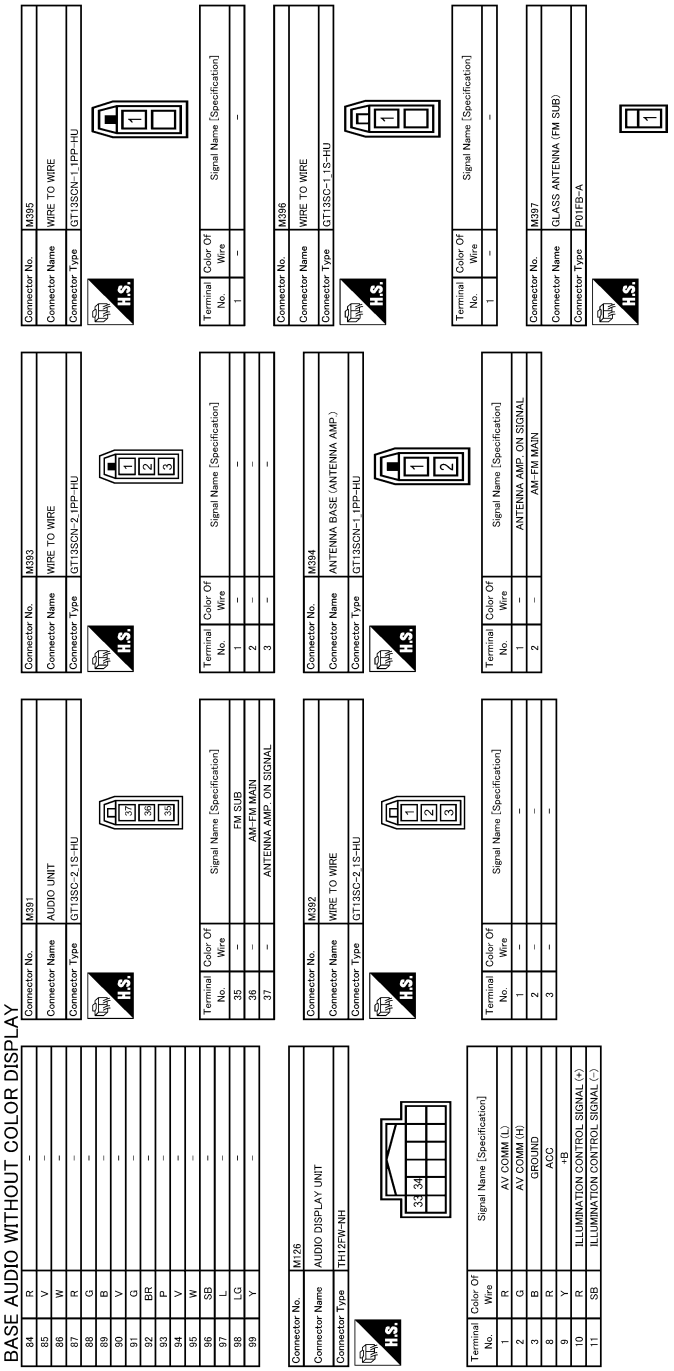
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	–
4	P	–
5	GR	–
6	R	–
7	W	–
8	GR	–
9	L	–
10	GR	–
12	P	–
13	V	–
14	L	–
15	BR	–
16	V	–

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS19



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	–
2	B	–
3	W	–
4	R	–
6	W	–
7	G	–
8	SHIELD	–
9	W	–
10	R	–
11	G	–
12	B	–
13	P	–
14	R	–
15	SB	–
16	R	–
17	V	–
18	P	–
19	P	–
20	LG	–
21	Y	–
22	BR	–
23	LG	–
24	SB	–
25	Y	–
27	Y	–
28	R	–
30	Y	–
31	W	–
32	BR	–
34	Y	–
35	B	–
36	G	–
37	Y	–
40	BR	–
41	LG	–
42	SB	–
46	G	–
46	LG	–
47	SB	–
47	Y	–
48	GR	–
48	SHIELD	–
49	BR	–
49	R	–
50	LG	–
50	R	–
51	R	–
51	V	–
52	B	–
53	BR	–
54	B	–
55	G	–
56	P	–
57	L	–
58	SB	–
59	R	–
59	SHIELD	–
60	B	–
60	Y	–
61	R	–
62	W	–
63	LG	–
64	Y	–
65	R	–
65	V	–
66	L	–
66	Y	–
67	G	–
67	W	–
68	BG	–
68	G	–
69	SHIELD	–
70	L	–
71	P	–
72	LG	–
73	Y	–
74	R	–
75	P	–
76	L	–
77	BR	–
79	B	–
80	W	–
81	L	–
82	L	– [Without automatic drive positioner]
83	GR	– [With automatic drive positioner]
83	W	–

JRNWC8923GB



JRNWC8924GB

BASE AUDIO WITHOUT COLOR DISPLAY

Terminal No.	Color Of Wire	Signal Name [Specification]
1	–	–

JRNWC8925GB

SYMPTOM DIAGNOSIS

AUDIO SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000009721566

Symptoms	Check items	Possible malfunction location / Action to take
Audio unit does not start.	—	Audio unit power supply and ground circuit. Refer to AV-19, "AUDIO UNIT : Diagnosis Procedure".
No sound comes out.	No sound from all speakers.	Audio unit power supply and ground circuit. Refer to AV-19, "AUDIO UNIT : Diagnosis Procedure".
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	• Poor connector connection of speaker. • Sound signal circuit malfunction between audio unit and speaker. • Malfunction in speaker. • Malfunction in audio unit.
Noise is mixed with audio.	Noise comes out from all speakers.	Malfunction in audio unit.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	• Poor connector connection of speaker. • Sound signal circuit malfunction between audio unit and speaker. • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in audio unit.
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	• Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-44, "Exploded View"
Radio is not received or poor reception.	• Other audio sounds are normal. • Any radio 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).	• Antenna amp. ON signal circuit malfunction. • Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-44, "Exploded View"
Audio display unit does not work.	—	• Audio display unit power supply and ground circuits. • AV communication circuits between audio unit and audio display unit.

NORMAL OPERATING CONDITION

Description

INFOID:0000000009721567

NOTE:
- Audio operation information, refer to Owner's Manual.
- The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

NOISE

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 that 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 then determine the cause.

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

Types of Noise and Possible Causes

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 • Motor
The noise occurs constantly, not just under certain conditions.		• Rear defogger coil malfunction • Open circuit in printed heater • 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 • Ground due to improper part installation • Wiring connections or a short circuit

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check that noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment. Then determine the cause.

NOTE:
- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check that the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the red book Compact Disc Standard and may not play.

Symptoms	Cause and Counter measure
Cannot play	Check that the disc was inserted correctly.
	Check that the disc is scratched or dirty.
	Check if there is condensation inside the player. If there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the CD player will play correctly after it returns to the normal temperature.
	Files with extensions other than ".MP3", ".WMA", ".mp3", or ".wma" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format. This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the disc is protected by copyright.
Poor sound quality	Check if the disc is scratched or dirty.
	Bit rate may be too low.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width, etc., might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities of data, such as for high bit rate data.
Move immediately to the next song when playing.	When a non-MP3/WMA file has been given an extension of ".MP3", ".WMA", ".mp3" or ".wma", or when play is prohibited by copyright protection, there will be approximately 5 seconds of no sound and then the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the writing software. Therefore, the files might not play in the desired order.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

NOTE:

- 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 a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

PRECAUTION

PRECAUTIONS

EXCEPT FOR MEXICO

EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000009721568

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted.
Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

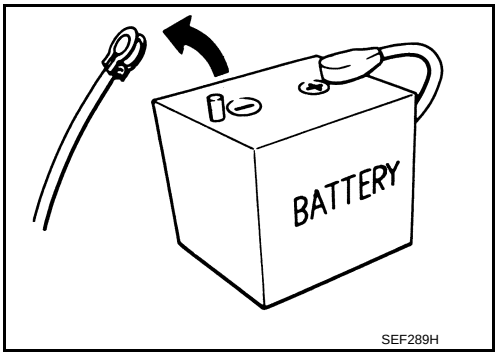
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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 3 minutes before performing any service.**

EXCEPT FOR MEXICO : Precautions for Removing of Battery Terminal

INFOID:0000000010137876

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

EXCEPT FOR MEXICO : Precaution for Trouble Diagnosis

INFOID:0000000009721569

AV COMMUNICATION SYSTEM

- Do not apply voltage of 7.0 V or higher to the measurement terminals.

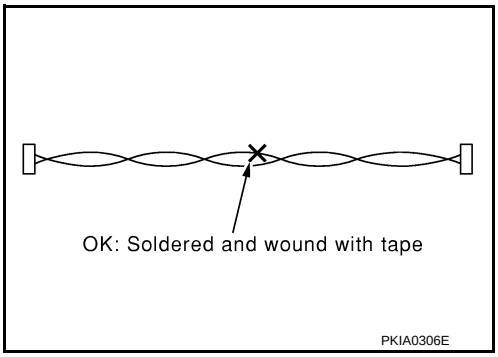
- Use the tester with its open terminal voltage at 7.0 V or less.
- Turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

EXCEPT FOR MEXICO : Precaution for Harness Repair

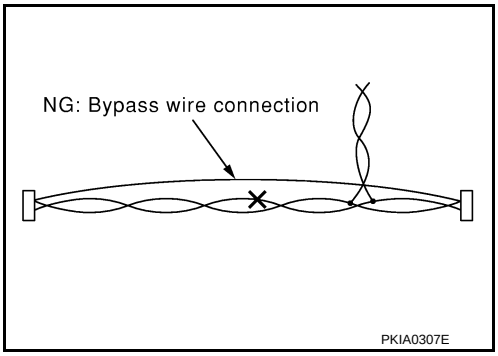
INFOID:0000000009721570

AV COMMUNICATION SYSTEM

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



- 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.)



FOR MEXICO

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

INFOID:0000000009721571

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 “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

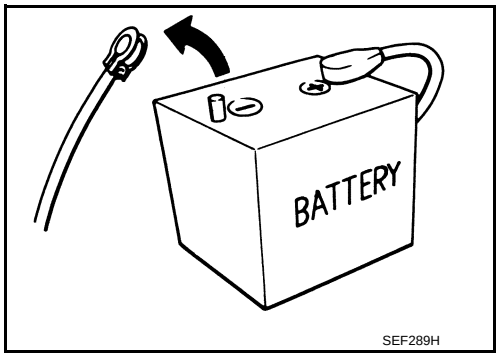
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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 3 minutes before performing any service.**

FOR MEXICO : Precautions for Removing of Battery Terminal

INFOID:0000000010137877



- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

FOR MEXICO : Precaution for Trouble Diagnosis

INFOID:0000000009721572

AV COMMUNICATION SYSTEM

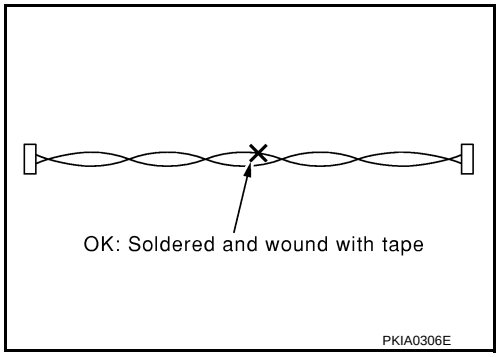
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage at 7.0 V or less.
- Turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

FOR MEXICO : Precaution for Harness Repair

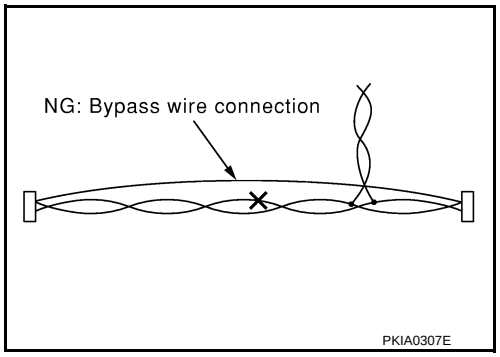
INFOID:0000000009721573

AV COMMUNICATION SYSTEM

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



- 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.)

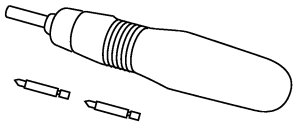


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000009721574

Tool		Description
Power tool	 PBIC0191E	Loosening screws

REMOVAL AND INSTALLATION

AUDIO UNIT

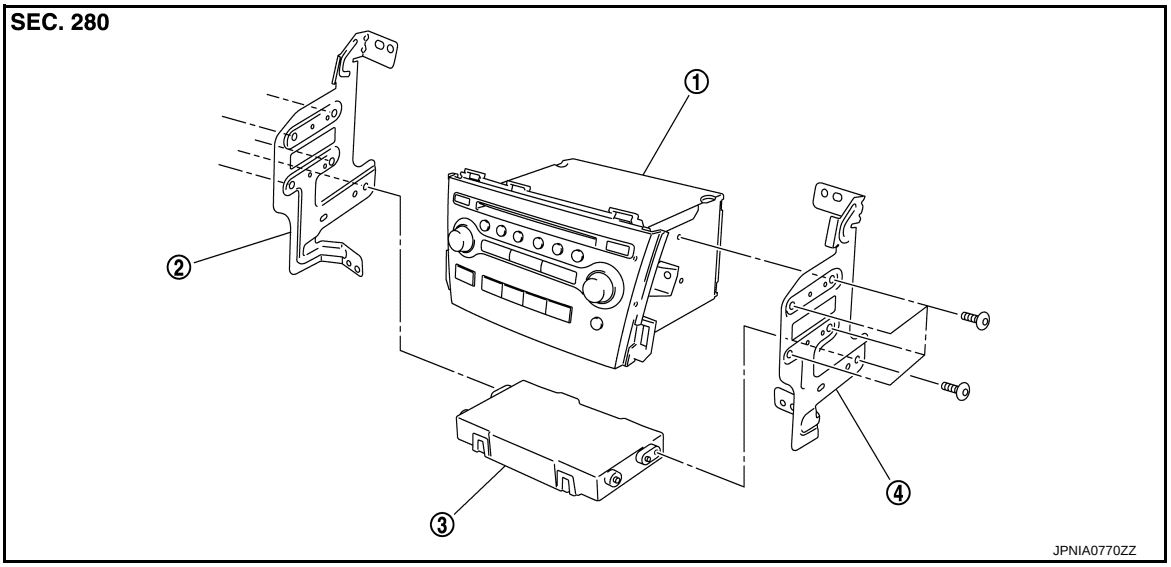
Exploded View

INFOID:0000000009721575

REMOVAL

Refer to IP-14, "Exploded View".

DISASSEMBLY



1. Audio unit
2. Bracket LH
3. A/C auto amp.
4. Bracket RH

Removal and Installation

INFOID:0000000009721576

REMOVAL

1. Remove cluster lid C lower. Refer to IP-14, "Exploded View".
2. Remove instrument stay cover LH and instrument stay cover RH. Refer to IP-14, "Exploded View".
3. Remove audio unit with an A/C auto amp. as a single unit from the body.
4. Remove bracket screws, and then remove audio unit.

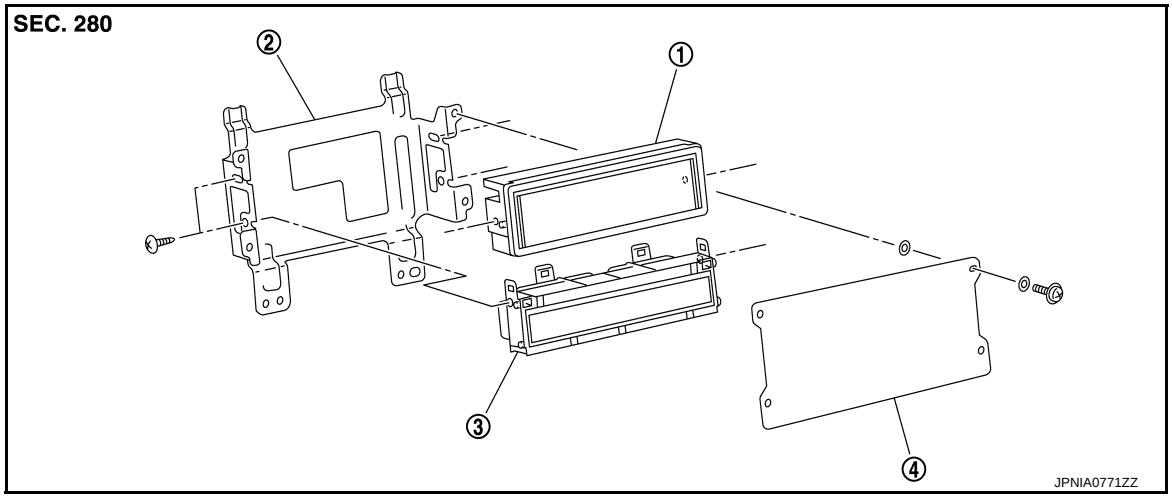
INSTALLATION

Install in the reverse order of removal.

AUDIO DISPLAY UNIT

Exploded View

INFOID:0000000009721577



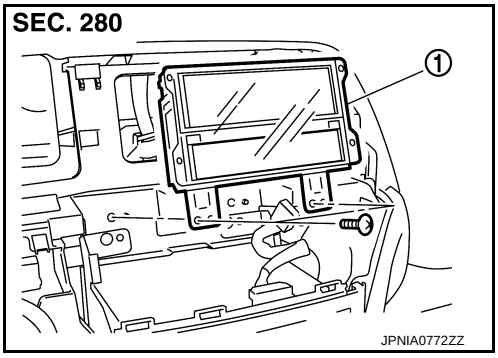
1. Audio display unit
2. Bracket
3. A/C display
4. Front cover

Removal and Installation

INFOID:0000000009721578

REMOVAL

1. Remove center ventilator assembly. Refer to IP-14, "Exploded View".
2. Remove audio display unit and A/C display with bracket as a single unit (1).
3. Remove bracket screws, and then remove audio display unit.



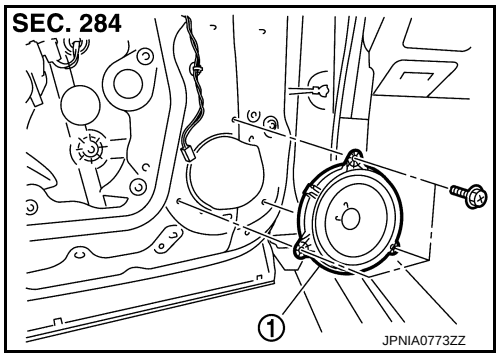
INSTALLATION

Install in the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000009721579



1. Front door speaker

Removal and Installation

INFOID:0000000009721580

REMOVAL

1. Remove front door finisher. Refer to INT-13, "FRONT DOOR FINISHER : Exploded View".
2. Remove front door speaker screws, then disconnect front door speaker connector and remove front door speaker.

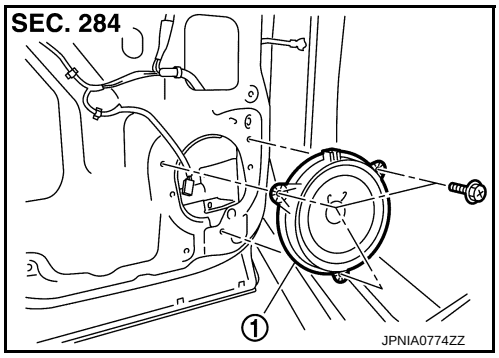
INSTALLATION

Install in the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000009721581



1. Rear door speaker

Removal and Installation

INFOID:0000000009721582

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "REAR DOOR FINISHER : Exploded View".
2. Remove rear door speaker screws, then disconnect rear door speaker connector and remove rear door speaker.

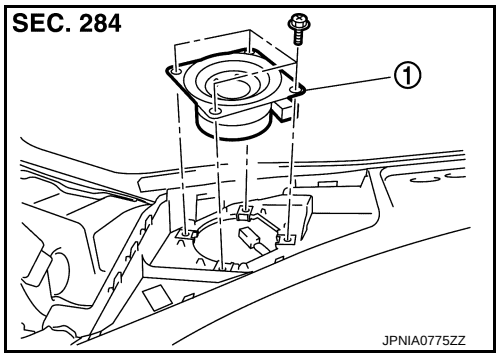
INSTALLATION

Install in the reverse order of removal.

FRONT SQUAWKER

Exploded View

INFOID:0000000009721583



1. Front squawker

Removal and Installation

INFOID:0000000009721584

REMOVAL

1. Remove speaker grille. Refer to IP-14, "Exploded View".
2. Remove front squawker screws, lift up the front squawker and disconnect front squawker connector. Then remove the front squawker.

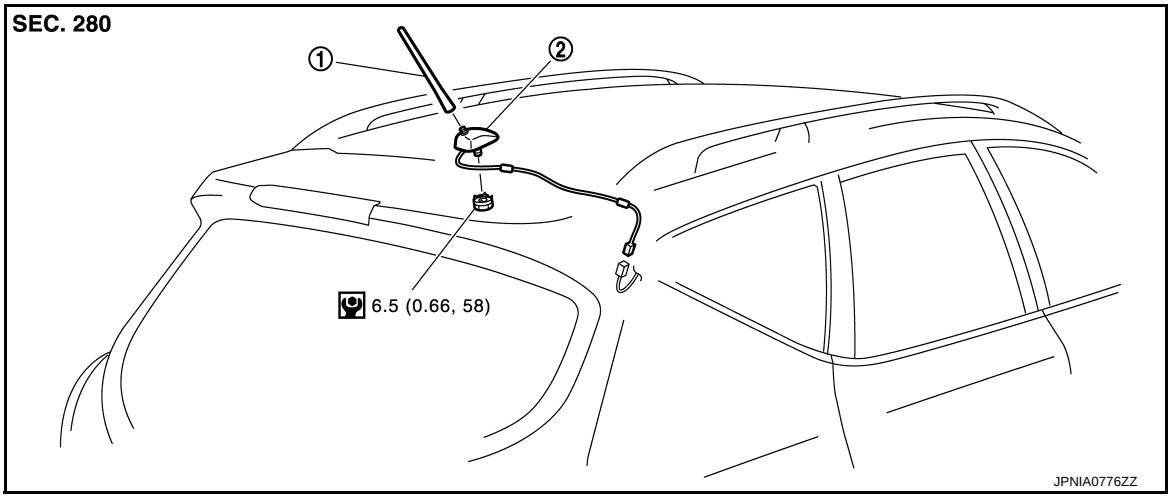
INSTALLATION

Install in the reverse order of removal.

ROOF ANTENNA

Exploded View

INFOID:0000000009721585



1. Rod antenna
2. Antenna base

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000009721586

REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to INT-26, "NORMAL ROOF : Exploded View" [normal roof] or INT-30, "SUNROOF : Exploded View" [sunroof].
2. Disconnect AM/FM main connector.
3. Remove antenna base mounting nut, and then remove antenna base from roof panel.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

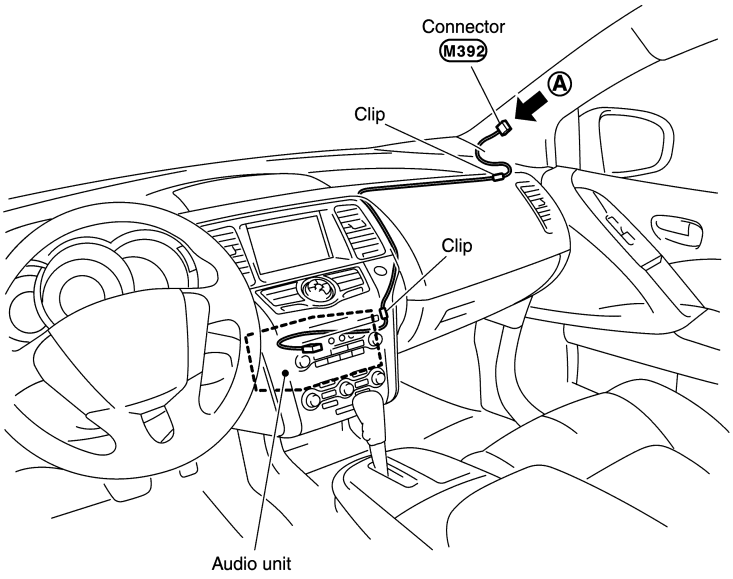
If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.

ANTENNA FEEDER (RADIO)

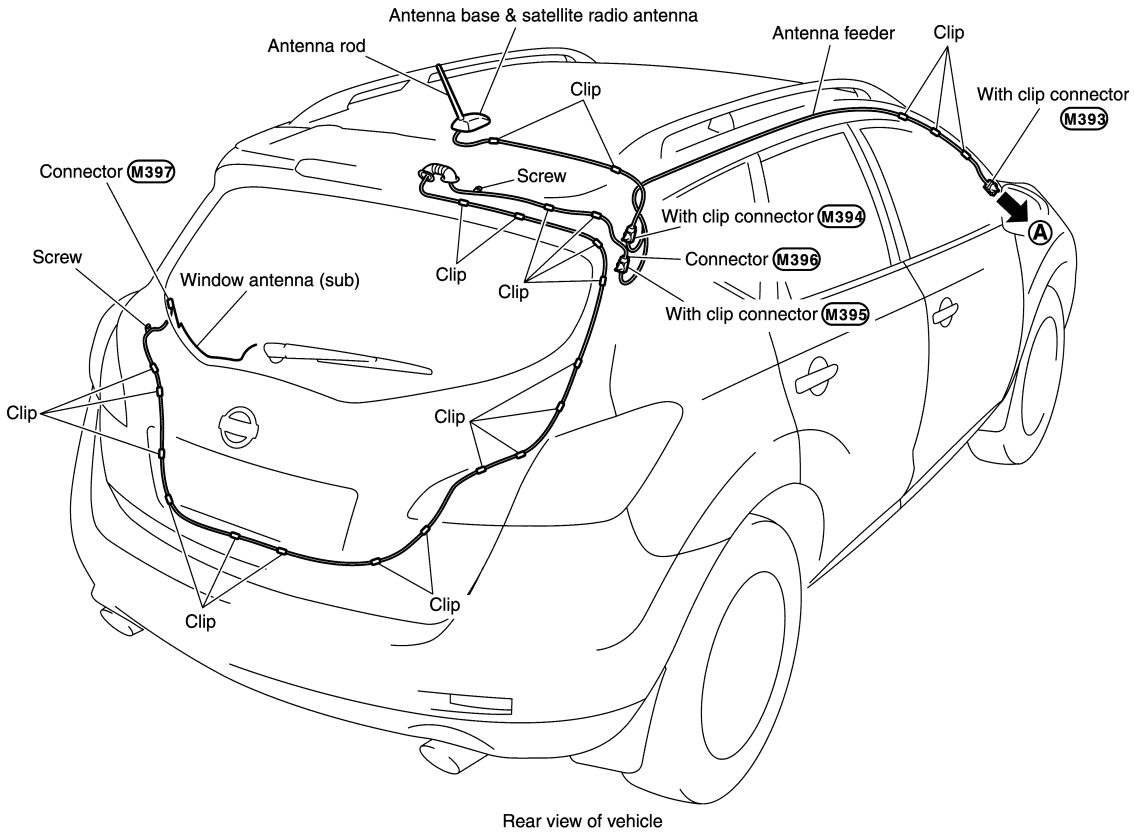
Feeder Layout

INFOID:0000000009721587

SEC. 280



Instrument panel driver side



Rear view of vehicle

JSNIA3859GB

PRECAUTION

PRECAUTIONS

EXCEPT FOR MEXICO

EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000009721588

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

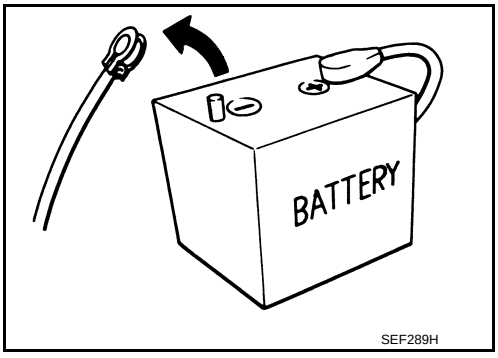
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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 3 minutes before performing any service.**

EXCEPT FOR MEXICO : Precautions for Removing of Battery Terminal

INFOID:0000000010137916

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

EXCEPT FOR MEXICO : Precaution for Trouble Diagnosis

INFOID:0000000009721590

AV COMMUNICATION SYSTEM

- Do not apply voltage of 7.0 V or higher to the measurement terminals.

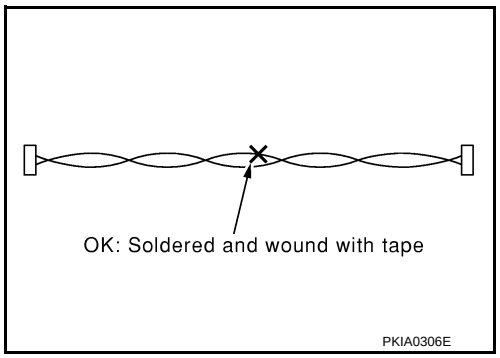
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

EXCEPT FOR MEXICO : Precaution for Harness Repair

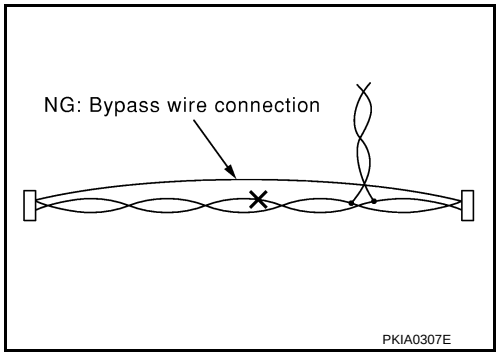
INFOID:0000000009721591

AV COMMUNICATION SYSTEM

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



- 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.)



FOR MEXICO

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

INFOID:0000000009721592

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 “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

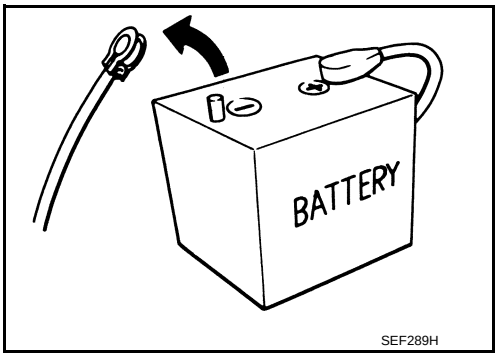
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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 3 minutes before performing any service.**

FOR MEXICO : Precautions for Removing of Battery Terminal

INFOID:0000000010137917



- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

FOR MEXICO : Precaution for Trouble Diagnosis

INFOID:0000000009721594

AV COMMUNICATION SYSTEM

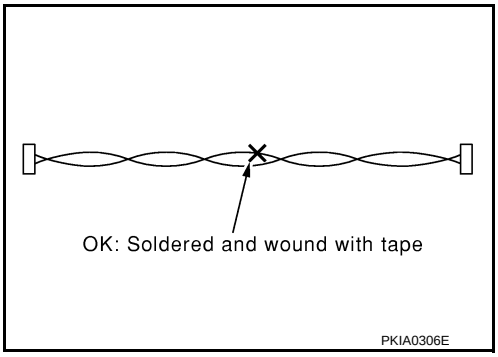
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

FOR MEXICO : Precaution for Harness Repair

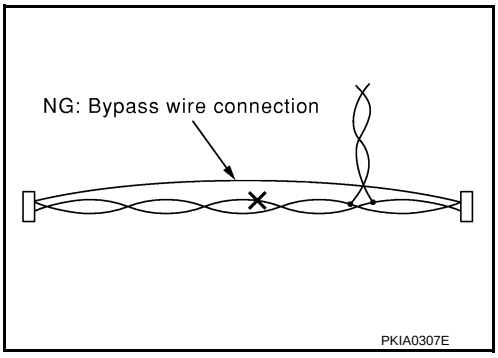
INFOID:0000000009721595

AV COMMUNICATION SYSTEM

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



- 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.)

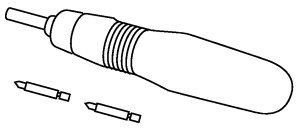


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000009721596

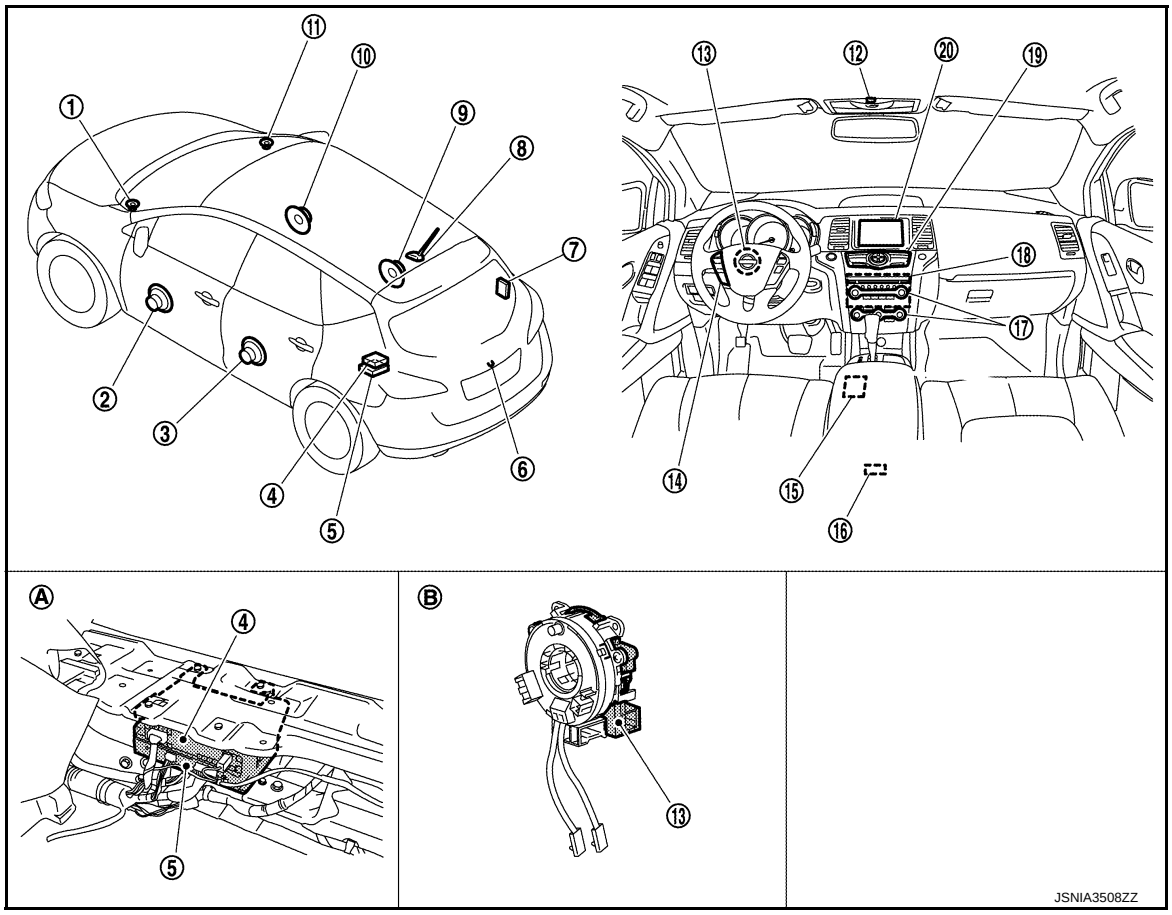
Tool		Description
Power tool	 PBIC0191E	Loosening screws

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000009721597



1.	Front squawker LH	2.	Front door speaker LH	3.	Rear door speaker LH
4.	Satellite radio tuner	5.	TEL adapter unit	6.	Rear view camera
7.	TEL antenna	8.	Antenna base (antenna amp. and satellite radio antenna)	9.	Rear door speaker RH
10.	Front door speaker RH	11.	Front squawker RH	12.	Microphone
13.	Steering angle sensor	14.	Steering switch	15.	USB connector
16.	Auxiliary input jacks	17.	Preset switch	18.	AV control unit
19.	Multifunction switch	20.	Display unit		
A.	Luggage floor finisher is removed condition	B.	Spiral cable part		

Component Description

INFOID:0000000009721598

Part name	Description
AV control unit	• It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and combination meter via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • It supplies power to the rear camera. • Sound signal is transmitted to each speaker. • TEL voice signal is input from TEL adapter unit.
Display unit	• Display image is controlled by the serial communication from AV control unit. • It receives the power (signal VCC and inverter VCC) from the AV control unit and operates. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). • Composite image signals (auxiliary input and camera images) are input from AV control unit. • Synchronizing signal (HP, VP) is output to AV control unit.
Front door speaker	• Outputs sound signal from AV control unit. • Outputs sound (high, mid and low range).
Rear door speaker	• Outputs sound signal from AV control unit. • Outputs sound (high, mid and low range).
Front squawker	• Outputs sound signal from AV control unit. • Outputs sound (high and mid range).
Multifunction switch	• Operation panel is equipped with the centralized switch where audio and auxiliary input, etc. operations are integrated. • Connected with preset switch via harness, and operation signal is transmitted to AV control unit via AV communication.
Preset switch	• Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. • Connected with multifunction switch via harness, and operation signal is transmitted to AV control unit via AV communication. • The disk ejection operating signal is performed by hardwire.
Rear view camera	• Camera power supply is input from AV control unit. • The image of vehicle rear view is transmitted to AV control unit.
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle sensor signal via CAN communication.
Steering switch	• Operations for audio and hands-free phone are possible. • Steering switch signal (operation signal) is output to AV control unit.
Microphone	• Used for hands-free phone operation. • Microphone signal is transmitted to TEL adapter unit. • Power (Microphone VCC) is supplied from TEL adapter unit.
Auxiliary input jacks	Image signal and sound signal of auxiliary input are transmitted to AV control unit.
Antenna base	A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted. ANTENNA AMP. • Radio signal received by rod antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit. SATELLITE RADIO ANTENNA • Receives satellite radio waves and outputs it to satellite radio tuner.

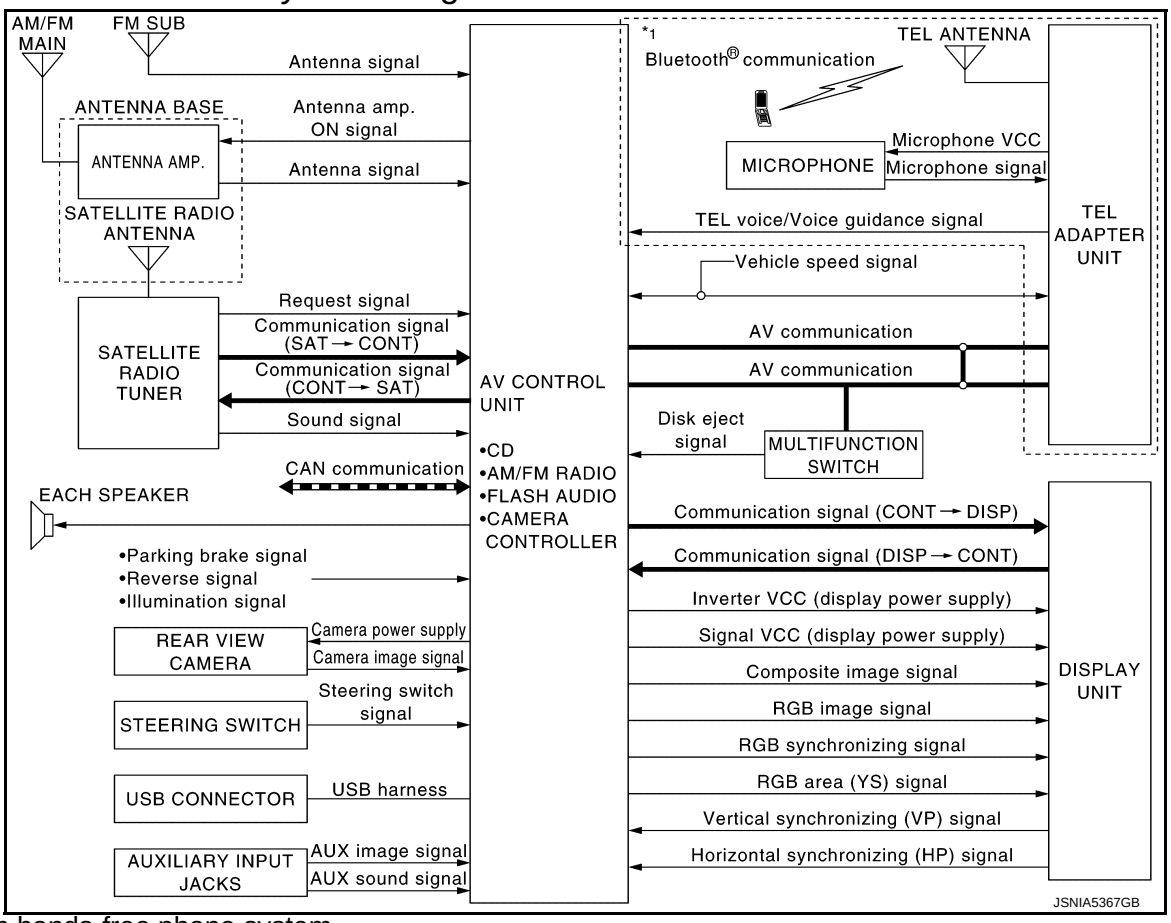
Part name	Description
Satellite radio tuner	• Inputs the satellite radio signal from satellite radio antenna and outputs the sound signal to the AV control unit. • It is controlled with the AV control unit and serial communication (communication signal and request signal).
TEL adapter unit	• Inputs the TEL voice signal from TEL antenna and outputs it to the AV control unit. • It is connected with the AV control unit via AV communication and controlled with the AV control unit.
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.
USB connector	Sound signal of USB input is transmitted to AV control unit.

SYSTEM

MULTI AV SYSTEM

MULTI AV SYSTEM : System Diagram

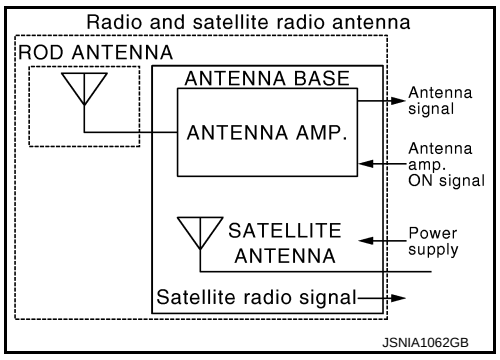
INFOID:0000000009721599



*1: With hands-free phone system

NOTE:

- FLASH AUDIO is not used.
- The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.
- An antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.



MULTI AV SYSTEM : System Description

INFOID:0000000009721600

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Audio function
Hands-free phone function
Auxiliary input function

FUNCTION NAME
Rear view monitor function
Vehicle information function

COMMUNICATION SIGNAL

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM and combination meter, and computes and displays fuel economy information value with the obtained information. Transmitting/receiving of data signal is performed by BCM. Also, it transmits the required signal of vehicle setting and receives the response signal.
- AV control unit is connected with display unit and serial communication, and it transmits the required signal of display and display control and receives the response signal from display unit.

AUDIO FUNCTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, steering switch. Operation status of audio is indicated at display.

FUNCTION
AM/FM radio
Satellite radio
CD
USB connection

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch or steering switch.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch. The disk ejection operating signal is performed by hardwire.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Display

- Switching of display is performed with serial communication between display unit and AV control unit.
- The image signal to display operating condition is performed with RGB image signal, RGB area signal and RGB image synchronizing signal.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- AM/FM radio wave is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.
- FM radio wave is received by FM sub antenna, and it is transmitted to the AV control unit directly. The FM sub antenna is installed on the back door window glass.
- AV control unit outputs audio signal to each speaker.

Satellite Radio Mode

- Satellite radio tuner is controlled by communication signal and request signal with AV control unit.
- Sound signal (satellite radio) is received by satellite radio antenna (antenna base) and transmitted to AV control unit via satellite radio tuner. AV control unit is output the sound signal (satellite radio) to each speaker.

CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to each speaker when CD is inserted to AV control unit.

USB Connection Function

- Connecting iPod® or USB memory allows the driver to play iPod® music files or USB memory-stored music files.
- Sound signals of music files stored in iPod® or USB memory is transmitted from the USB connector to the AV control unit. The AV control unit transmits the sound signals to the each speaker.

- iPod® is recharged when connected to USB connector.
- Only files that meet the following conditions will be played.

	Music file
File format	“MP3”, “WMA”
File extension	“.mp3”, “.wma”
Maximum file size	800 MB

NOTE:

- iPod® is a trademark of Apple inc., registered in the U.S. and other countries.
- Image signals cannot be received from iPod® or USB memory.
- Use the enclosed USB harness when connecting iPod® to USB connector.

HANDS-FREE PHONE SYSTEM

- TEL adapter unit is controlled with AV communication from AV control unit.
- The connection between cellular phone and TEL adapter unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the TEL adapter unit to the AV control unit to the front speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to AV-68, "On Board Diagnosis Function".

When A Call Is Originated

- Spoken voice sound output from the microphone (microphone signal) is input to TEL adapter unit.
- TEL adapter 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 TEL adapter unit by establishing Bluetooth® communication from cellular phone, and the signal is output to front speaker.

AUXILIARY INPUT FUNCTION

- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- AUX image signals are transmitted to the display unit via the AV control unit, and AUX sound signals are transmitted to each speaker via the AV control unit.

REAR VIEW MONITOR FUNCTION

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 when power is supplied from the AV control unit.
- The AV control unit transmits a warning message, fixed guide lines, and predictive course lines to the display unit by RGB image signals. Rear view monitor images are displayed by combining the RGB image signals and the camera image signals from the rear view camera.
- Predictive course lines are controlled by a steering angle sensor signal received the AV control unit via CAN communication.

VEHICLE INFORMATION FUNCTION

- Status of audio, climate control system, fuel economy and maintenance are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM and combination meter.
- AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

INFOID:0000000009721601

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

On Board Diagnosis Function

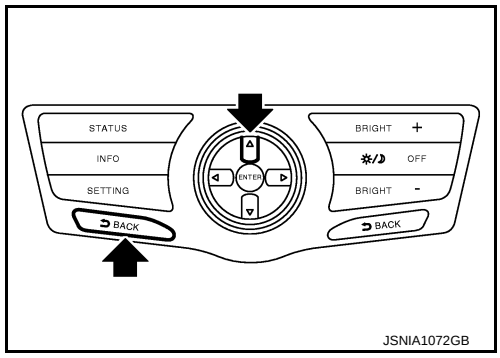
INFOID:0000000009721602

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and disk eject switch cannot be checked.



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Finishing Self-diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- Self-diagnosis mode performs the AV control unit diagnosis and the connection diagnosis between each of the units that make up the system, and it indicates the results to the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

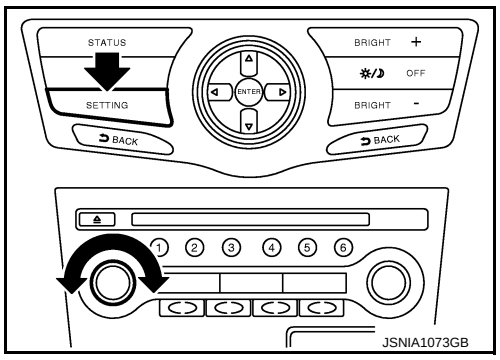
On Board Diagnosis Item

Mode	Description
Self Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and each unit.

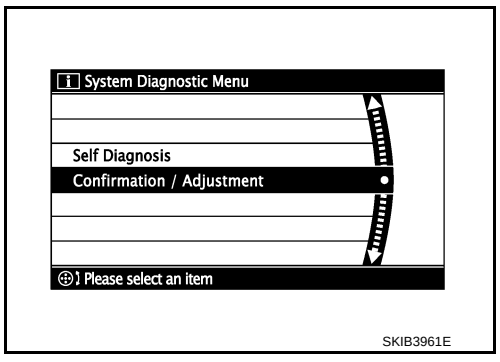
Mode		Description
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display.
	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition and reverse.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Climate Control	Start auto air conditioner system self-diagnosis.
	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 Cont.	• Guiding line position that overlaps rear view camera image can be adjusted. • Configuration stored in the AV control unit can be checked.
	Vehicle CAN Diagnosis	The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis	The communication condition of each unit of Multi AV system can be monitored.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Initialize Settings	Initializes the AV control unit memory.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, the trouble diagnosis initial screen is displayed.)
   • Shifting from current screen to previous screen is performed by pressing “BACK” button.



4. Items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected on the trouble diagnosis initial screen.

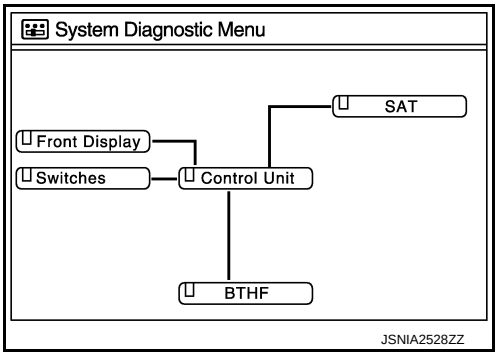


SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.

- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.

2. 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.



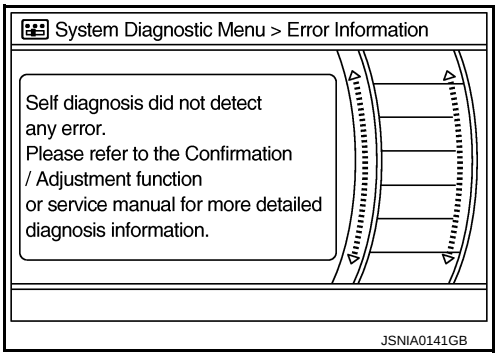
Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

NOTE:

Control unit (AV control unit) and is displayed in red.

- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-149, "Exploded View".
- 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.

- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



Detection Range of Self-diagnosis Mode

- The self-diagnosis mode allows the technician to diagnose the connection in the communication line between AV control unit and each unit and the internal operation of the AV control unit.
- Because the start condition of diagnosis function is a switch operation, the on board diagnosis function cannot be started up if any malfunction is detected in the communication circuit between AV control unit and multifunction switch.

SELF-DIAGNOSIS RESULTS

Check the applicable display at the following table, and then repair the malfunctioning parts.

Only Unit Part Is Displayed In Red.

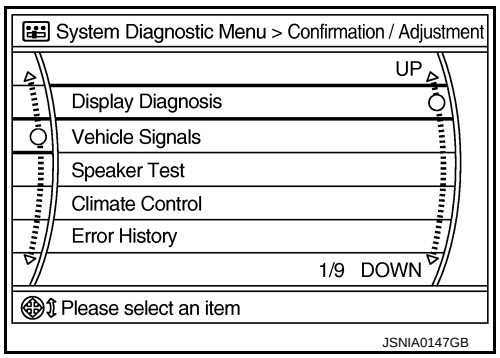
Screen switch	Description	Possible malfunction location / Action to take
Control unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

A Connecting Cable Between Units Is Displayed In Yellow.

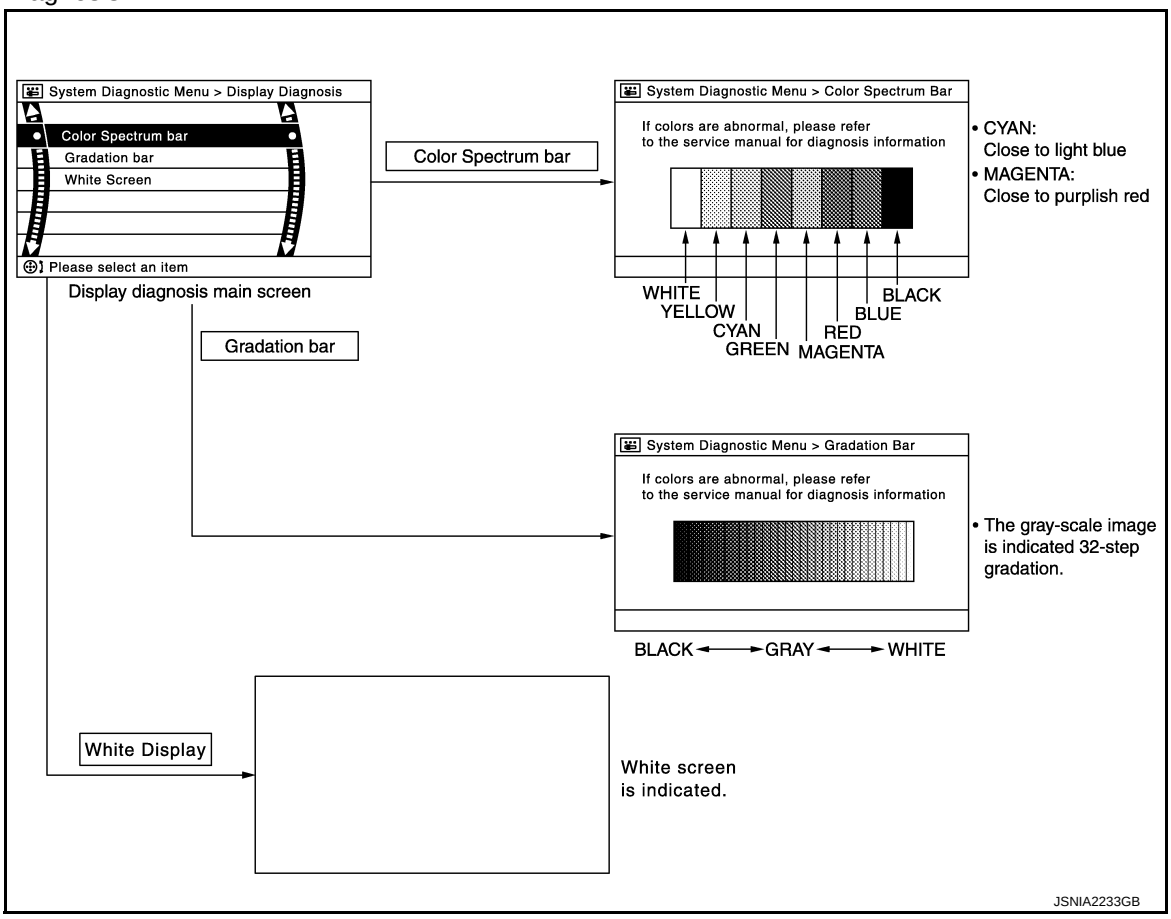
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Malfunction is detected in serial communication circuits between AV control unit and display unit.	Serial communication circuits between AV control unit and display unit.
Control unit ⇔ SAT	When either one of the following items is detected: • satellite radio tuner power supply and ground circuit are malfunctioning. • communication circuits between AV control unit and satellite radio tuner are malfunctioning. • request signal circuit between AV control unit and satellite radio tuner are malfunctioning.	• Satellite radio tuner power supply and ground circuit. Refer to AV-119, "SATELLITE RADIO TUNER : Diagnosis Procedure". • Communication circuit between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.
Control unit ⇔ BTHF	When either one of the following items is detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. Refer to AV-120, "TEL ADAPTER UNIT : Diagnosis Procedure". • AV communication circuits between AV control unit and TEL adapter unit.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “BACK” switch to return to the initial Confirmation/Adjustment Mode screen.

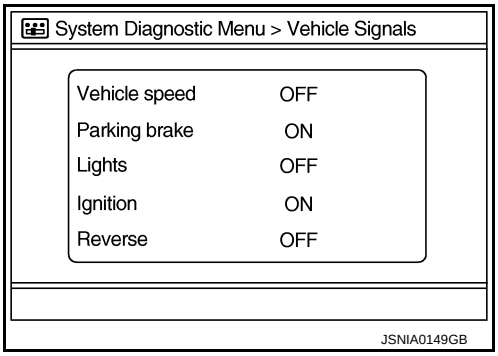


Display Diagnosis



Vehicle Signals

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

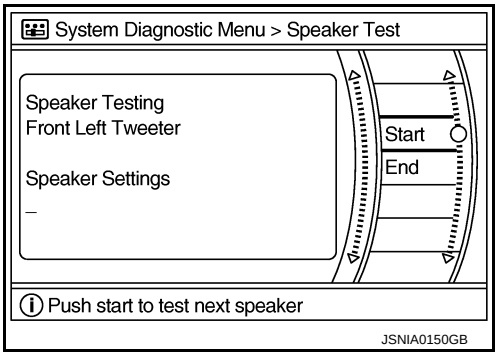


Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Lighting switch is ON	—
	OFF	Lighting switch is OFF	
Ignition	ON	Ignition switch is ON	—
	OFF	Ignition switch is in ACC position	

Diagnosis item	Display	Vehicle status	Remarks
Reverse	ON	Selector lever is in R position	Changes in indication may be delayed. This is normal.
	OFF	Selector lever is in any position other than R	

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.



Climate Control

Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

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 error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.

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

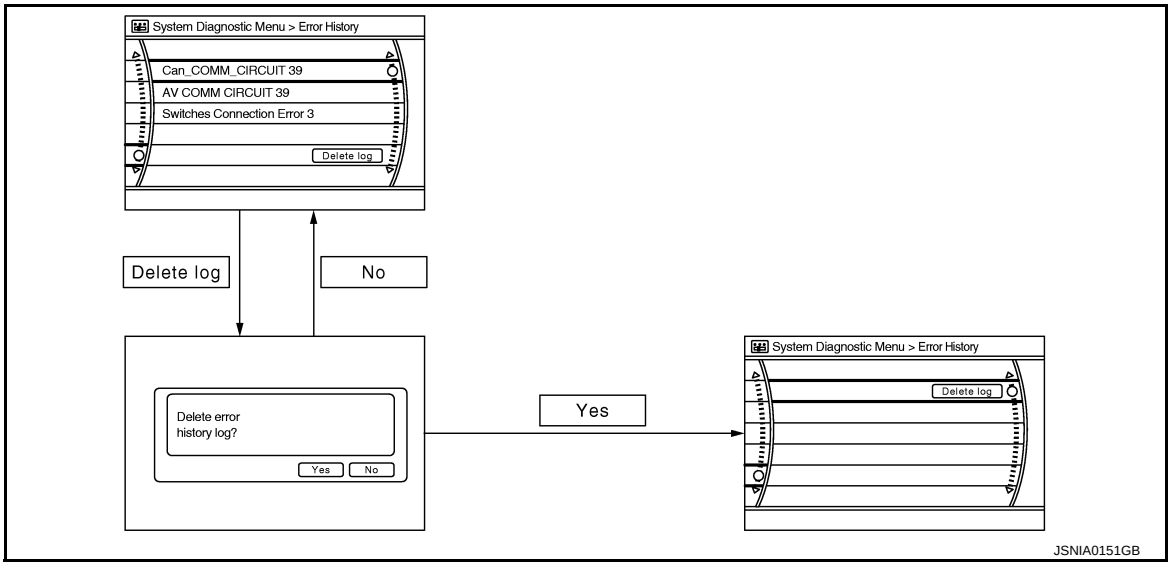
Count up method A

- The counter resets to 0 if an error occurs when ignition switch is turned ON. The counter increases by 1 if the condition is normal at a next ignition ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT.

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 or CONSULT.

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



Error item

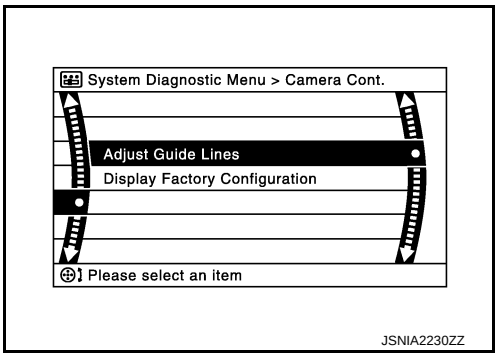
Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-65, "CONSULT Function".
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-149, "Exploded View".
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
CAN Controller Memory Error		
Steer. Angle Sensor Calibration	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor. Refer to AV-65, "CONSULT Function".
Front Display Connection Error	When either one of the following items are detected: • display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and display unit are malfunctioning.	• Display unit power supply and ground circuits. Refer to AV-118, "DISPLAY UNIT : Diagnosis Procedure". • Serial communication circuits between AV control unit and display unit.
XM Connection Error	When either one of the following items is detected: • satellite radio tuner power supply and ground circuits are malfunctioning. • communication circuits between AV control unit and satellite radio tuner are malfunctioning. • request signal circuit between AV control unit and satellite radio tuner are malfunctioning.	• Satellite radio tuner power supply and ground circuits. Refer to AV-119, "SATELLITE RADIO TUNER : Diagnosis Procedure". • Communication circuits between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT • H/F Unit Connection Error	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. Refer to AV-120, "TEL ADAPTER UNIT : Diagnosis Procedure". • AV communication circuits between AV control unit and TEL adapter unit.
• AV COMM CIRCUIT • Switches Connection Error • H/F Unit Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

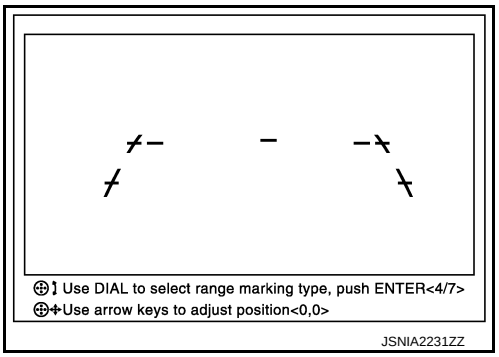
Camera Cont.

The two functions of “Adjust Guide Lines”, “Display Factory configuration” are available.



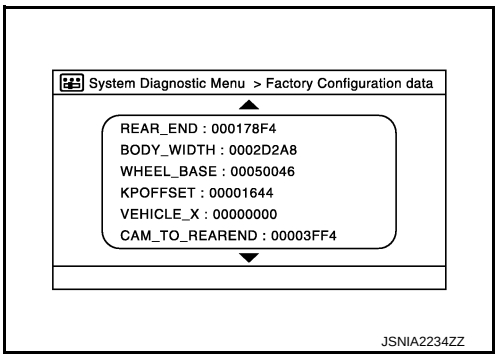
Adjust Guide Lines

- Use this mode to adjust the guide line display position of the rear view monitor if necessary after removing the rear view monitor camera.



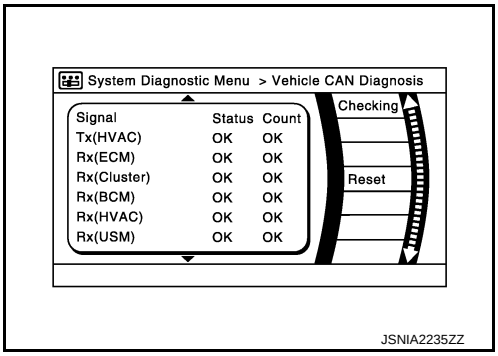
Display Factory configuration

- Configuration stored in the AV control unit can be checked.



Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- 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.

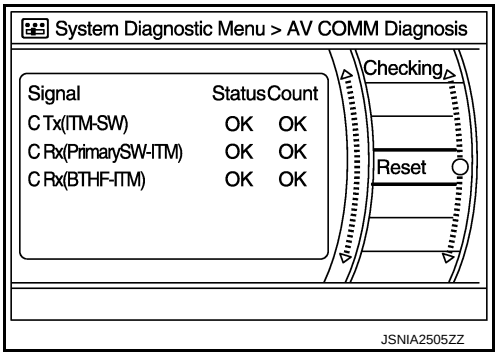


Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(BCM)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(VDC)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each 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.

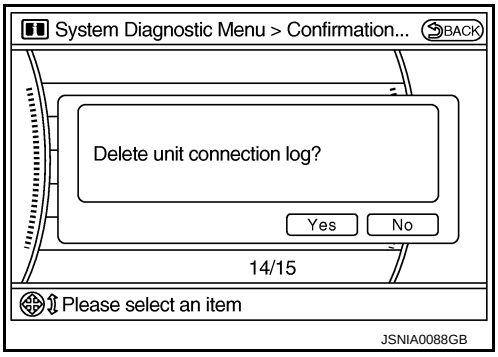


Items	Status (Current)	Counter (Past)
C Tx(ITM-PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 – 39
C Rx(BTHF-ITM)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

Delete Unit Connection Log

Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)

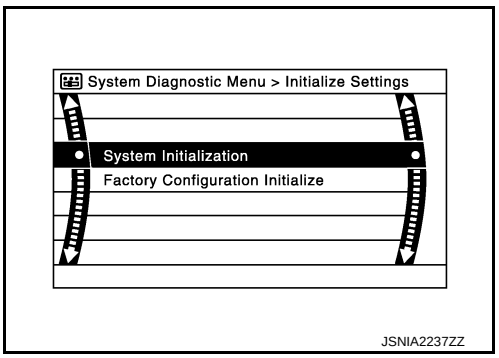


Initialize Settings

"User Data Initialization" and "Accessory Number Initialization" are possible.

CAUTION:

- **Never perform Accessory Number Initialization except when configuration is unsuccessful.**
- **Accessory Number Initialization requires configuration. For details, refer to AV-105, "Description".**



CONSULT Function

INFOID:0000000009721603

CONSULT FUNCTIONS

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

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing AV control unit.

AV Communication

When "AV communication" of "CAN Diag Support Monitor" is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".
- The timing is displayed as "0" if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-107, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-149, "Exploded View".
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200]	AV control unit malfunction is detected.	
CAN CONT [U1216]		

Error item	Description	Possible malfunction factor/Action to take
ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor. Refer to BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".
FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and display unit are malfunctioning.	• Display unit power supply and ground circuits. Refer to AV-118, "DISPLAY UNIT : Diagnosis Procedure". • Serial communication circuits between AV control unit and display unit.
SAT CONN [U1255]	When either one of the following items is detected: • satellite radio tuner power supply and ground circuits are malfunctioning. • communication circuits between AV control unit and satellite radio tuner are malfunctioning. • request signal circuit between AV control unit and satellite radio tuner are malfunctioning.	• Satellite radio tuner power supply and ground circuits. Refer to AV-119, "SATELLITE RADIO TUNER : Diagnosis Procedure". • Communication circuits between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. Refer to AV-120, "TEL ADAPTER UNIT : Diagnosis Procedure". • AV communication circuits between AV control unit and TEL adapter unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • HAND FREE CONN [U1256]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

ALL SIGNALS

- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	

Display Item	Display	Vehicle status	Remarks
ILLUM SIG	On	Lighting switch is ON.	—
	Off	Lighting switch is OFF.	
IGN SIG	On	Ignition switch is ON	
	Off	Ignition switch is in ACC position	
REV SIG	On	Selector lever is in R position	Changes in indication may be delayed. This is normal.
	Off	Selector lever is in any position other than R	

SELECTION FROM MENU

Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

CAUTION:

For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

Description

INFOID:0000000009721604

During on board diagnosis the diagnosis function of TEL adapter unit starts with the operation of the steering switch and performs the diagnosis when ignition switch ACC.

On Board Diagnosis Function

INFOID:0000000009721605

ON BOARD DIAGNOSIS ITEM

The on board diagnosis has 3 modes: the self-diagnosis mode that performs the trouble diagnosis, the speaker adaptation data deleting mode and the hands-free phone system initialization mode.

CAUTION:

- **Perform the diagnosis with the vehicle stopped.**
- **Perform STEP2 if necessary.**

STEP	MODE	Description
STEP1	Self-diagnosis	The self-diagnosis mode performs the microphone test and the diagnosis of TEL adapter unit, TEL antenna and steering unit, and then reads out the results with the sound and indicates them on the display.
STEP2	Speaker adaptation data deleting	The speaker adaptation data deleting mode can delete the speaker adaptation data.
	Hands-free phone system initialization	Hands-free phone system initialization mode can perform the initialization of hands-free phone system.

Self-diagnosis results

Self-diagnosis mode reads out the self-diagnosis results.

NOTE:

- Error count is read out simultaneously when reading out the DTC name.
- The errors are read out continuously when some errors occur at the same time.

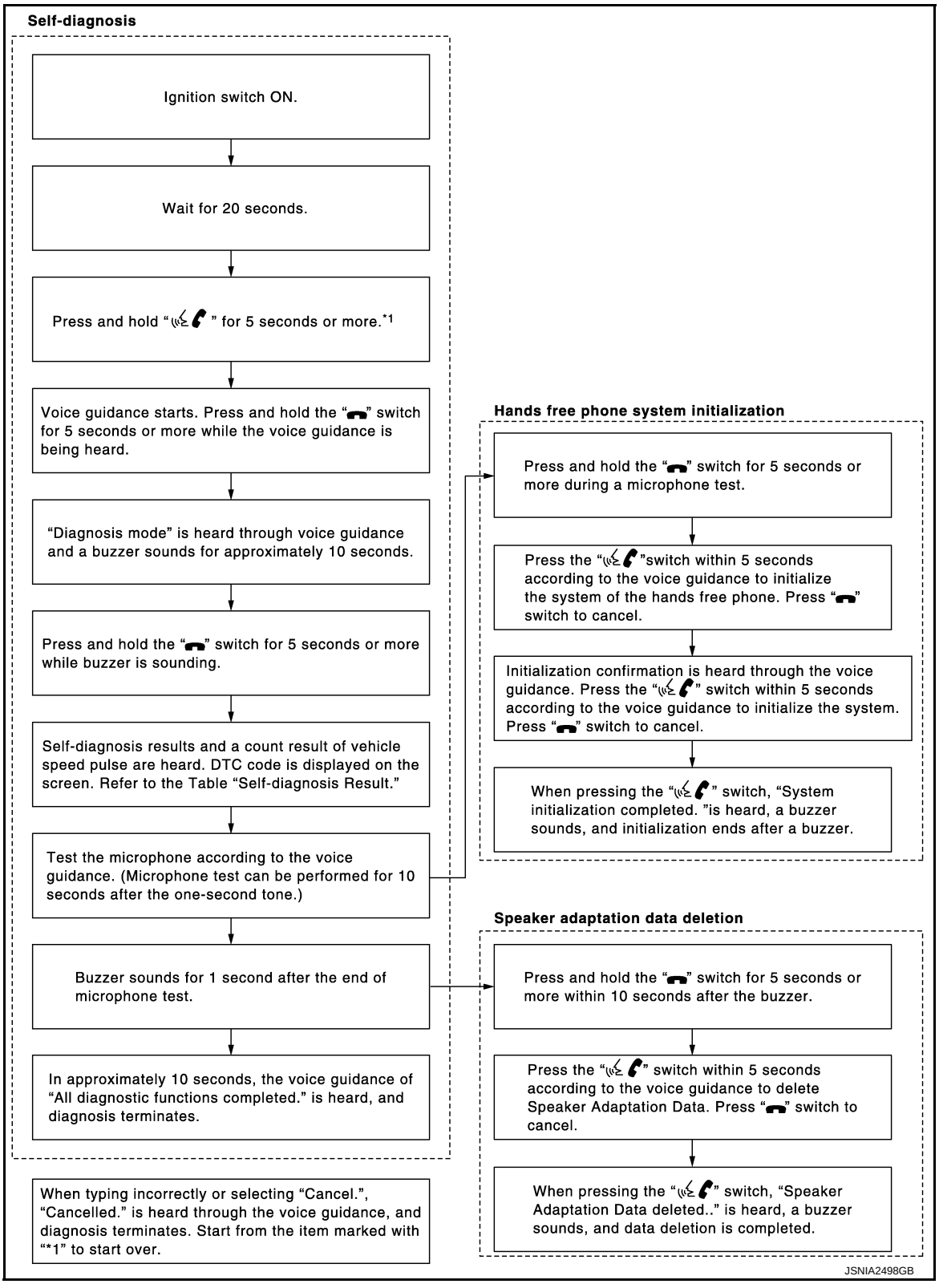
Self-diagnosis results

DTC	DTC name	Possible causes
DTC 10000	INTERNAL FAILURE	TEL adapter unit
DTC 01000	ANT. SHORT TO BATT OR OPEN	TEL antenna
DTC 00100	ANT. SHORT TO GROUND	
DTC 00010	STEERING REMOTE BUTTON STUCK A	Steering switch
DTC 00001	STEERING REMOTE BUTTON STUCK B	
DTC 00000	THERE ARE NO FAILURE RECORDS TO REPORT	—

The Details of Error Count

The error count guides “0” when the error occurs. The next time it counts up “1” if it is normal with the ignition switch ON. It continues the count up unless the initialization of hands-free phone system is performed.

FLOW CHART OF TROUBLE DIAGNOSIS



ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

INFOID:0000000009721606

VALUES ON THE DIAGNOSIS TOOL

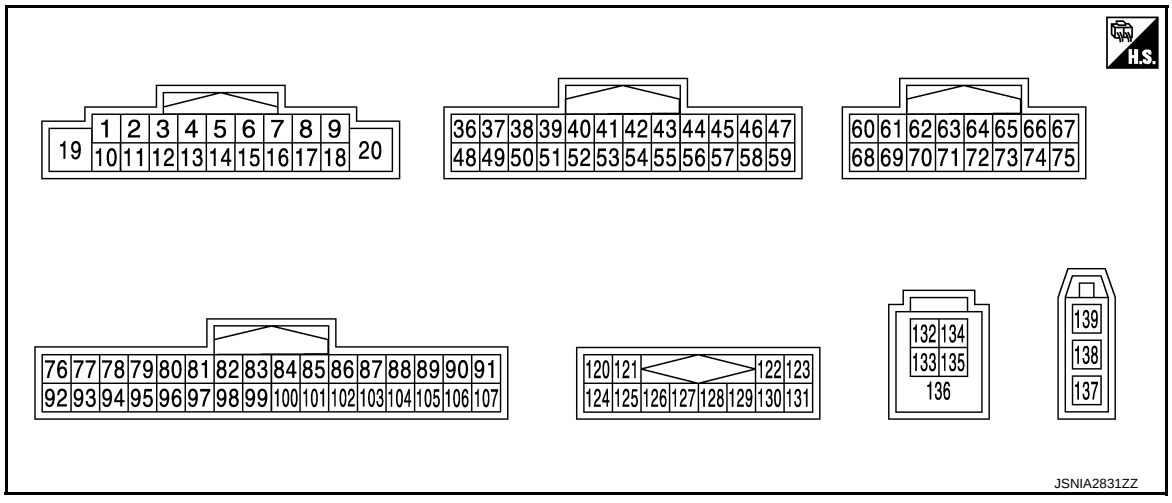
NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

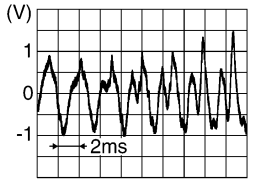
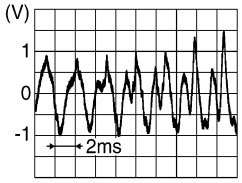
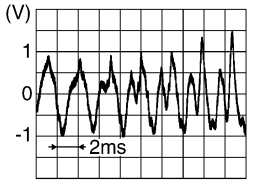
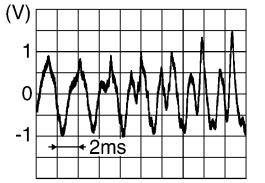
CONSULT MONITOR ITEM

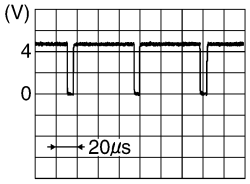
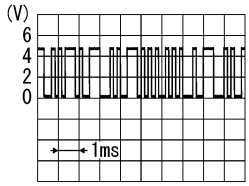
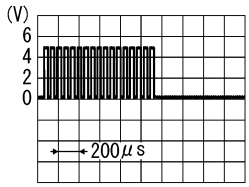
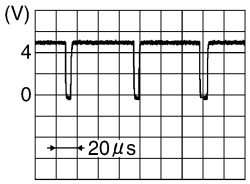
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed > 0 km/h (0 MPH)	On
		Vehicle speed = 0 km/h (0 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied.	On
		Parking brake is released.	Off
ILLUM SIG	Ignition switch ON	Lighting switch is ON	On
		Lighting switch is OFF	Off
IGN SIG	Ignition switch ON	—	On
	Ignition switch ACC	—	Off
REV SIG	Ignition switch ON	Selector lever is in R position	On
		Selector lever is in any position other than R	Off

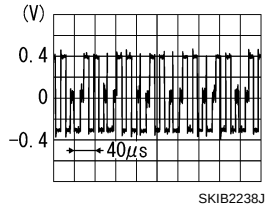
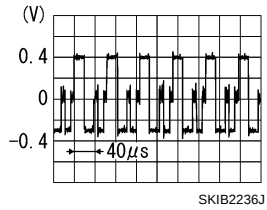
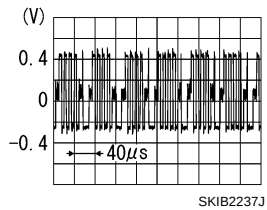
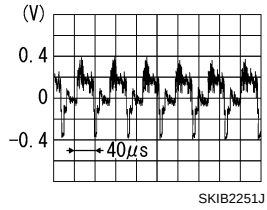
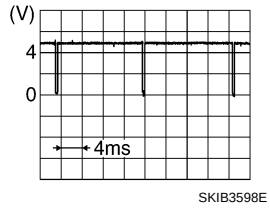
TERMINAL LAYOUT

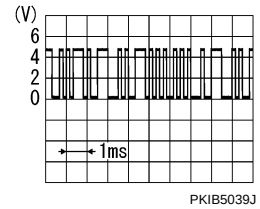
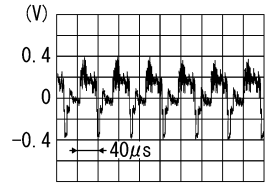
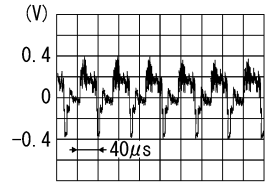


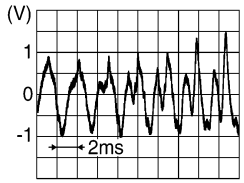
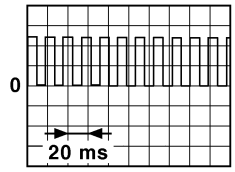
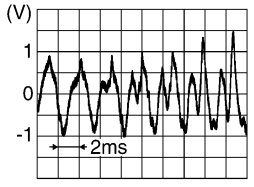
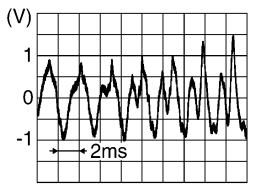
PHYSICAL VALUES

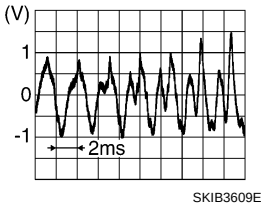
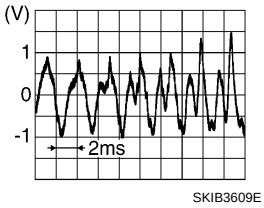
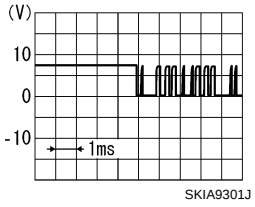
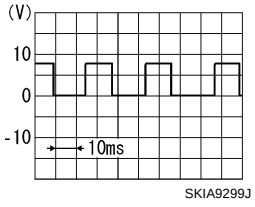
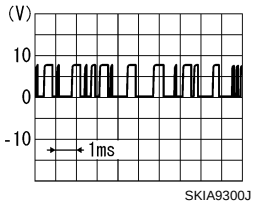
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (G)	3 (R)	Sound signal front door speaker and front squawker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (LG)	5 (Y)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (BR)	15 (L)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	0.7 V
					Keep pressing MENU DOWN switch.	1.3 V
					Keep pressing switch	2.0 V
					Except for above.	3.3 V
7 (R)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
9 (R)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
11 (W)	12 (L)	Sound signal front door speaker and front squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
13 (GR)	14 (P)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (G)	15 (L)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	0.7 V
					Keep pressing switch	1.3 V
					Except for above.	3.3 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
36 (GR)	Ground	Signal VCC	Output	Ignition switch ACC	—	9.0 V
37 (SB)	Ground	Signal ground	—	Ignition switch OFF	—	0 V
38 (G)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 SKIB3601E
39 (L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
40 (W)	Ground	RGB area (YS) signal	Output	Ignition switch ON	At RGB image is displayed.	5.0 V
					At AUX image is displayed.	 PKIB4948J
41	—	Shield	—	—	—	—
42 (B)	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	 SKIB3603E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
43 (G)	Ground	RGB signal (R: red)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2238J
44 (L)	Ground	RGB signal (G: green)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2236J
45 (Y)	Ground	RGB signal (B: blue)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2237J
46 (V)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
47 (LG)	Ground	Composite image signal	Output	Ignition switch ON	At camera image or AUX image is displayed.	 SKIB2251J
48 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	—	9.0 V
49 (BR)	Ground	Inverter ground	—	Ignition switch OFF	—	0 V
50 (R)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 SKIB3598E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
51 (P)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
52	—	Shield	—	—	—	—
57	—	Shield	—	—	—	—
58	—	Shield	—	—	—	—
61 (Y)	Ground	AUX image signal	Input	Ignition switch ON	At AUX image is displayed.	 SKIB2251J
62 (R)	Ground	Camera image signal	Input	Ignition switch ON	At camera image is displayed.	 SKIB2251J
69 (BR)	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
70	—	Shield	—	—	—	—
71	—	Shield	—	—	—	—
72 (LG)	Ground	Camera ground	—	Ignition switch ON	—	0 V
73 (V)	Ground	Camera power supply	Output	Ignition switch ON	Selector lever is in “R” position.	6.0 V
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
77 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
78 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
80 (P)	—	CAN–L	Input/ Output	—	—	—
81 (L)	—	CAN–H	Input/ Output	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
82 (V)	Ground	Switch ground	—	Ignition switch ON	—	0 V
86	—	Shield	—	—	—	—
87 (R)	88 (L)	TEL voice signal	Input	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E
92 (V)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
93 (G)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is applied.	4.5 V
					Parking brake is released.	0 V
94 (SB)	Ground	Reverse signal	Input	Ignition switch ON	Selector lever is in R position.	12.0 V
					Selector lever is in other than R position.	0 V
95 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
96 (W)	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V
103 (B)	102 (W)	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
104 (R)	102 (W)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
120 (G)	124 (B)	Satellite radio sound signal LH	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIB3609E
121 (W)	125 (R)	Satellite radio sound signal RH	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIB3609E
122 (B)	Ground	Communication signal (CONT→SAT)	Output	Ignition switch ON	When satellite radio mode is selected.	 SKIA9301J
126	—	Shield	—	—	—	—
127	—	Shield	—	—	—	—
129 (R)	Ground	Request signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIA9299J
130 (W)	Ground	Communication signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIA9300J
132 (G)	—	USB ground	—	—	—	—
133 (W)	—	USB D– signal	—	—	—	—
134 (R)	—	V BUS signal	—	—	—	—
135 (L)	—	USB D+ signal	—	—	—	—
136	—	Shield	—	—	—	—
137	—	FM sub	Input	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
138	—	AM - FM main	Input	—	—	—
139	—	Antenna amp. ON signal	Output	Ignition switch ON	—	12.0 V

DTC Index

INFOID:0000000009721607

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

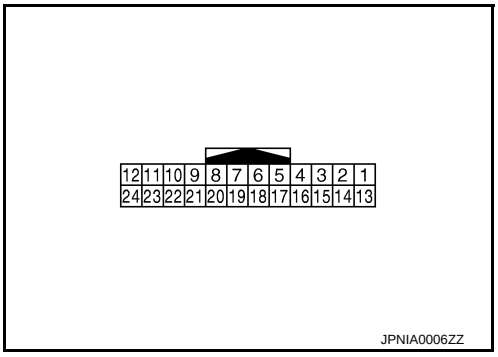
DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-107, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-108, "DTC Logic"
U1200	Cont Unit [U1200]	AV-109, "DTC Logic"
U1216	CAN CONT [U1216]	AV-110, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-111, "Diagnosis Procedure"
U1243	FRONT DISP CONN [U1243]	AV-112, "Diagnosis Procedure"
U1255	SAT CONN [U1255]	AV-114, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-117, "DTC Logic"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-116, "Description"
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	
U1300 U1240 U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • HAND FREE CONN [U1256]	

DISPLAY UNIT

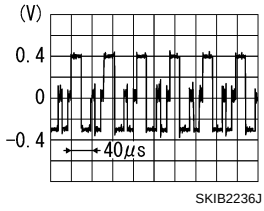
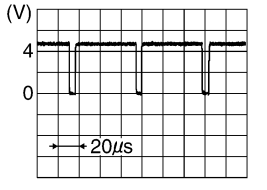
Reference Value

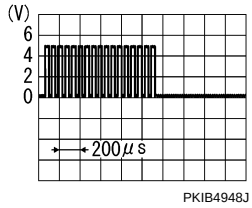
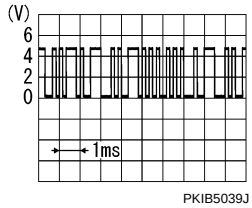
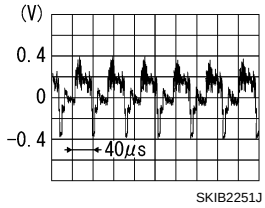
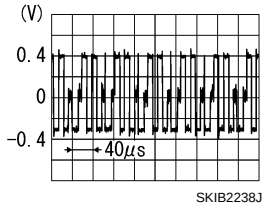
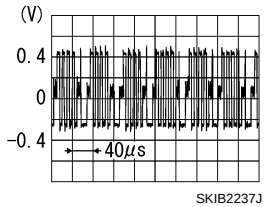
INFOID:0000000009721608

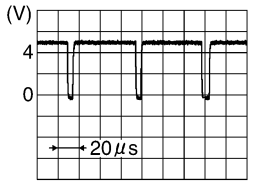
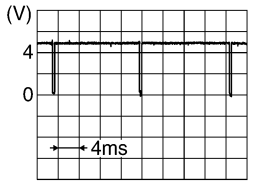
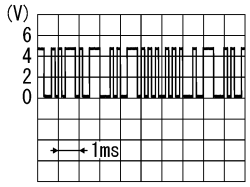
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	—	9.0 V
3 (GR)	Ground	Signal VCC	Input	Ignition switch ACC	—	9.0 V
4 (V)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6 (L)	Ground	RGB signal (G: green)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2236J
7	—	Shield	—	—	—	—
8 (G)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	 SKIB3601E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (W)	Ground	RGB area (YS) signal	Input	Ignition switch ON	At RGB image is displayed.	5.0 V
					At AUX image is displayed.	 PKIB4948J
11 (P)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
13 (BR)	Ground	Inverter ground	—	Ignition switch ON	—	0 V
14 (SB)	Ground	Signal ground	—	Ignition switch ON	—	0 V
15 (LG)	Ground	Composite image signal	Input	Ignition switch ON	At camera image is displayed.	 SKIB2251J
17 (G)	Ground	RGB signal (R: red)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2238J
18 (Y)	Ground	RGB signal (B: blue)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2237J

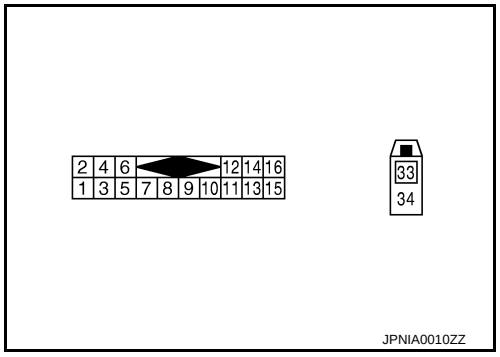
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
19 (B)	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 SKIB3603E
20 (R)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch On	—	 SKIB3598E
21	—	Shield	—	—	—	—
22 (L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
23	—	Shield	—	—	—	—

SATELLITE RADIO TUNER

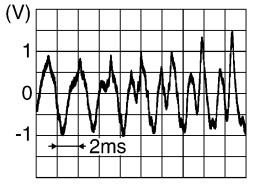
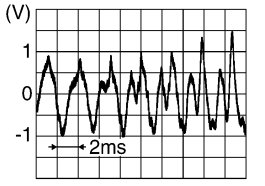
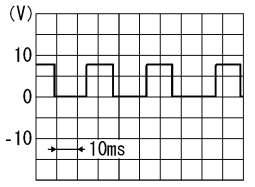
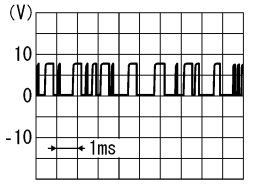
Reference Value

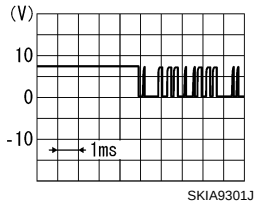
INFOID:0000000009721609

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (Y/L)	1 (W/L)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected.	 SKIB3609E
4 (BR/L)	3 (Y/G)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	 SKIB3609E
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (R/W)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	 SKIA9299J
9 (R/L)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	 SKIA9300J

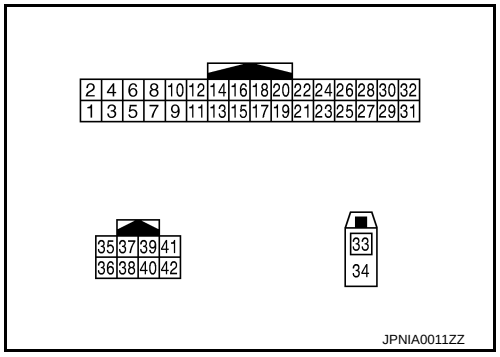
Terminal		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
10 (B)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	 SKIA9301J
12 (V)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
15 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
16 (GR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
33	—	Satellite radio antenna signal	Input	—	—	—

TEL ADAPTER UNIT

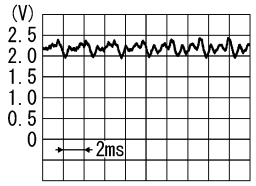
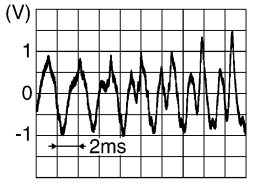
Reference Value

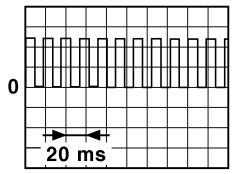
INFOID:0000000009721610

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (V)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (GR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (R)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
7 (R/W)	8 (R/L)	Microphone signal	Input	Ignition switch ON	Give a voice	 PKIB5037J
9 (B/R)	10 (W/R)	TEL voice signal	Output	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E
20 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
24 (B/W)	Ground	Control signal	Input	Ignition switch ON	—	0 V
28 (BR)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
29 (B)	8 (R/L)	Microphone VCC	Output	Ignition switch ON	—	5.0 V
33	—	TEL antenna signal	Input/ Output	—	—	—
34	—	Shield	—	—	—	—
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
40 (G)	—	AV communication signal (H)	Input/ Output	—	—	—
42 (GR)	—	AV communication signal (L)	Input/ Output	—	—	—

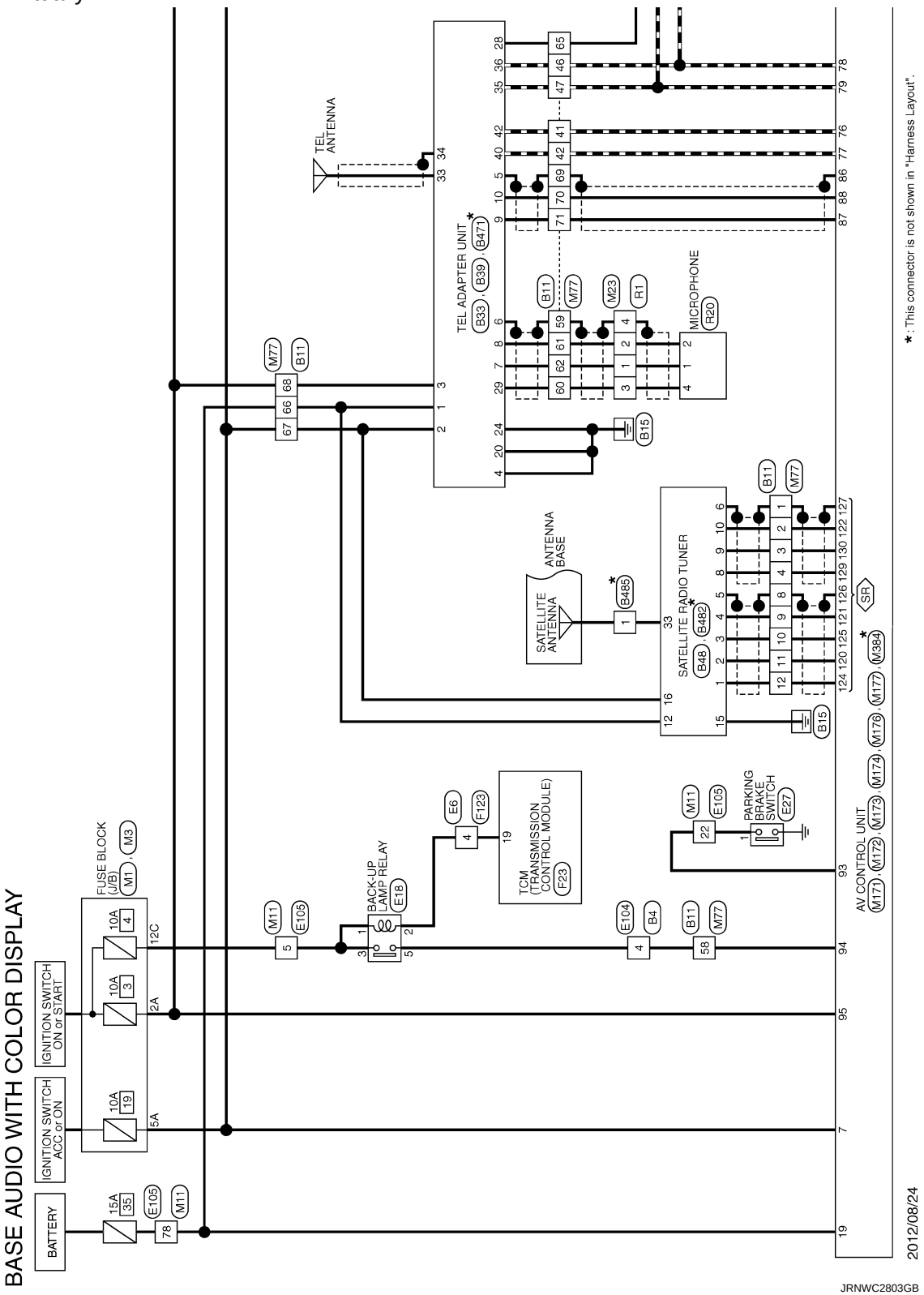
WIRING DIAGRAM

BASE AUDIO WITH COLOR DISPLAY

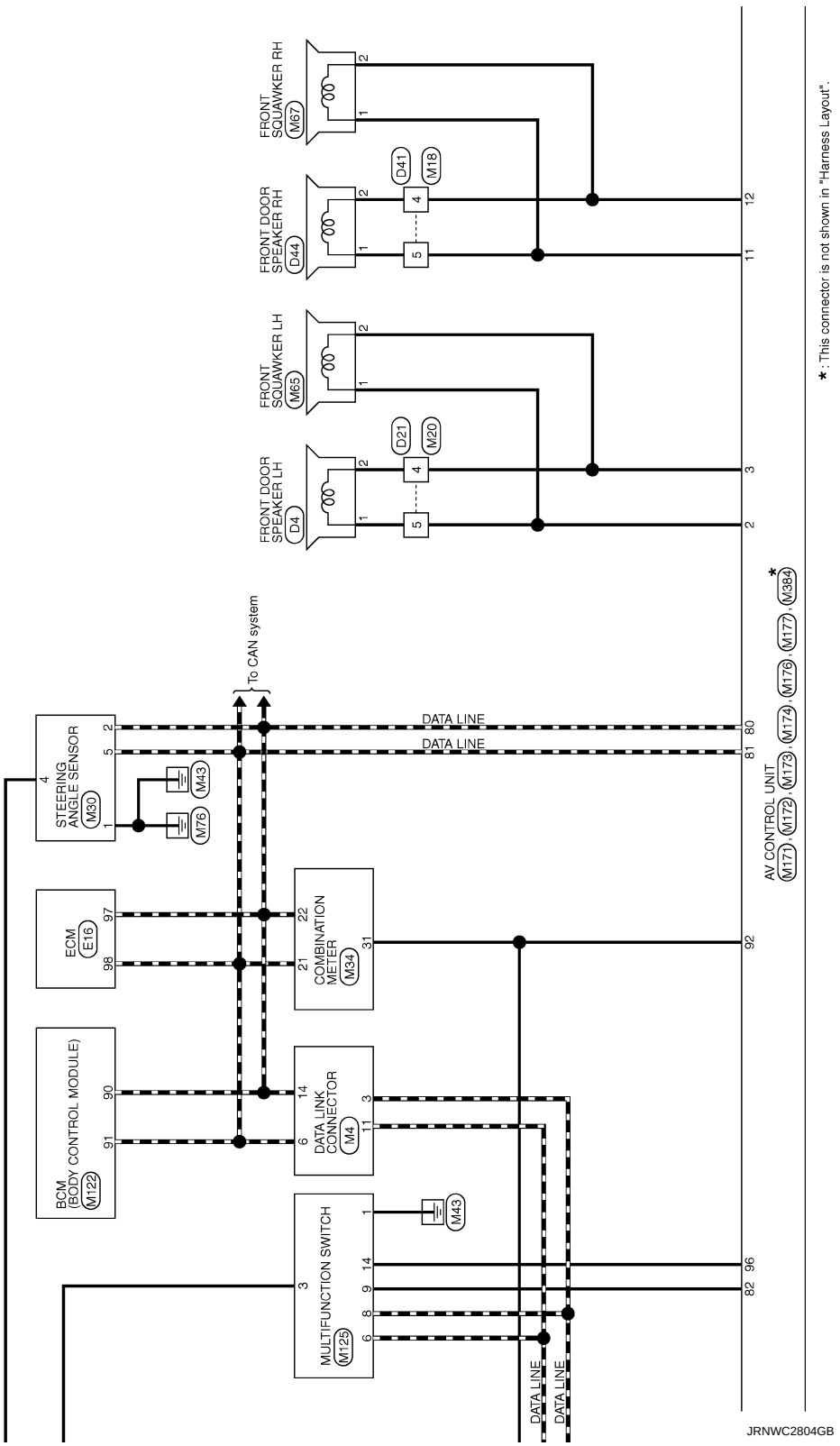
Wiring Diagram

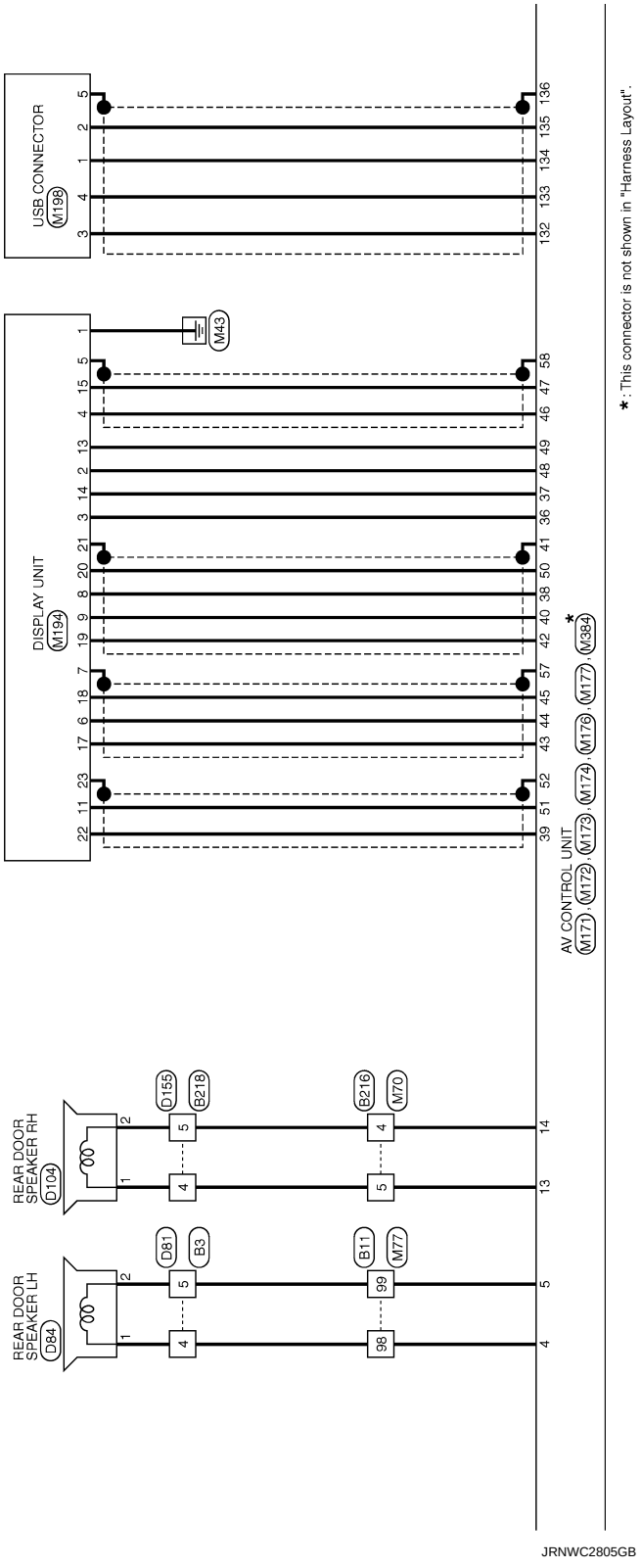
INFOID:0000000009721611

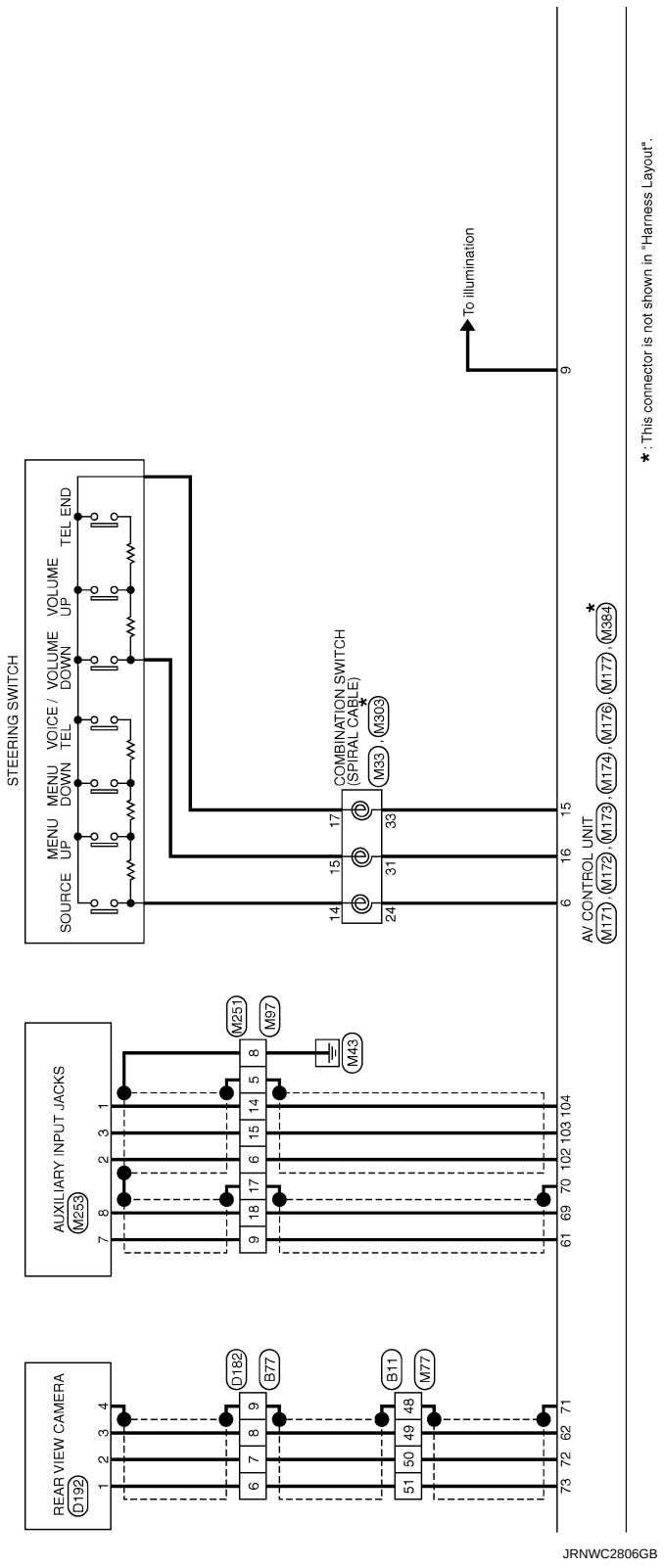
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.



JRNWC2803GB

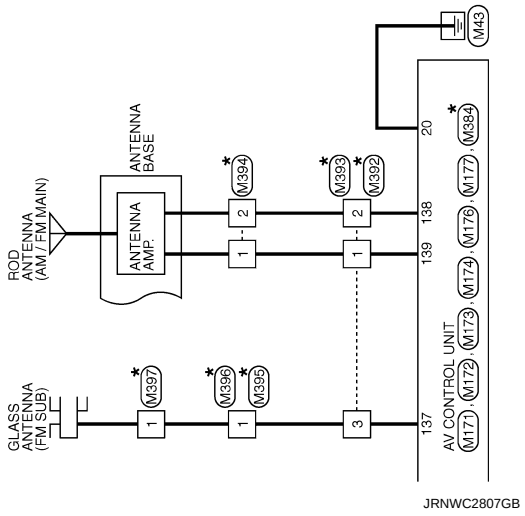

FRONT SQUAWKER RH M67
FRONT DOOR SPEAKER RH D44
FRONT SQUAWKER LH M65
FRONT DOOR SPEAKER LH D4
D41
M18
D21
M20
To CAN system
STEERING ANGLE SENSOR M30
M43
M76
ECM E16
COMBINATION METER M34
BCM (BODY CONTROL MODULE) M122
DATA LINK CONNECTOR M4
MULTIFUNCTION SWITCH M125
DATA LINE
AV CONTROL UNIT M171, M172, M173, M174, M176, M177, M384*
*: This connector is not shown in "Harness Layout".
JRNWC2804GB


USB CONNECTOR
M198
DISPLAY UNIT
M194
M43
AV CONTROL UNIT
M171, M172, M173, M174, M176, M177, M384
*
REAR DOOR SPEAKER RH
D104
REAR DOOR SPEAKER LH
D84
D155
B218
B216
M70
D81
B3
B11
M77
*: This connector is not shown in "Harness Layout".
JRNWC2805GB

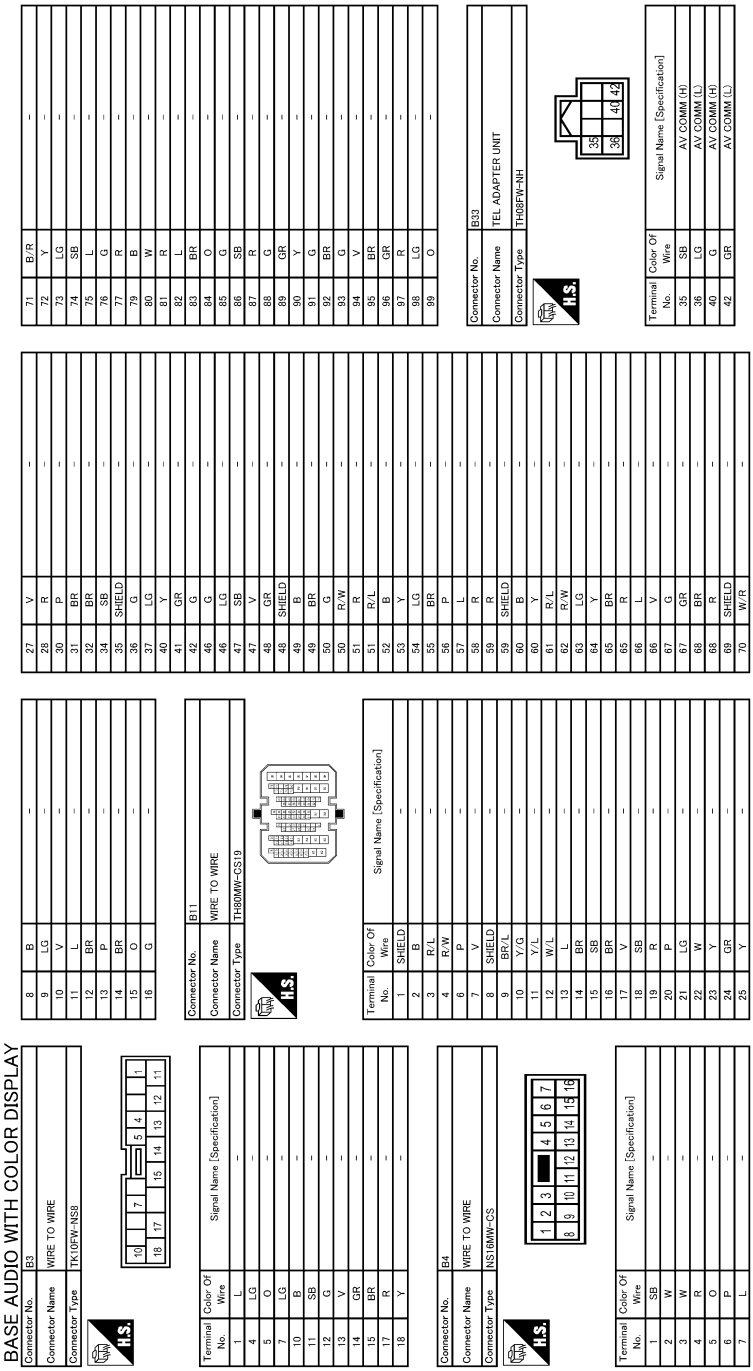


*: This connector is not shown in "Harness Layout".

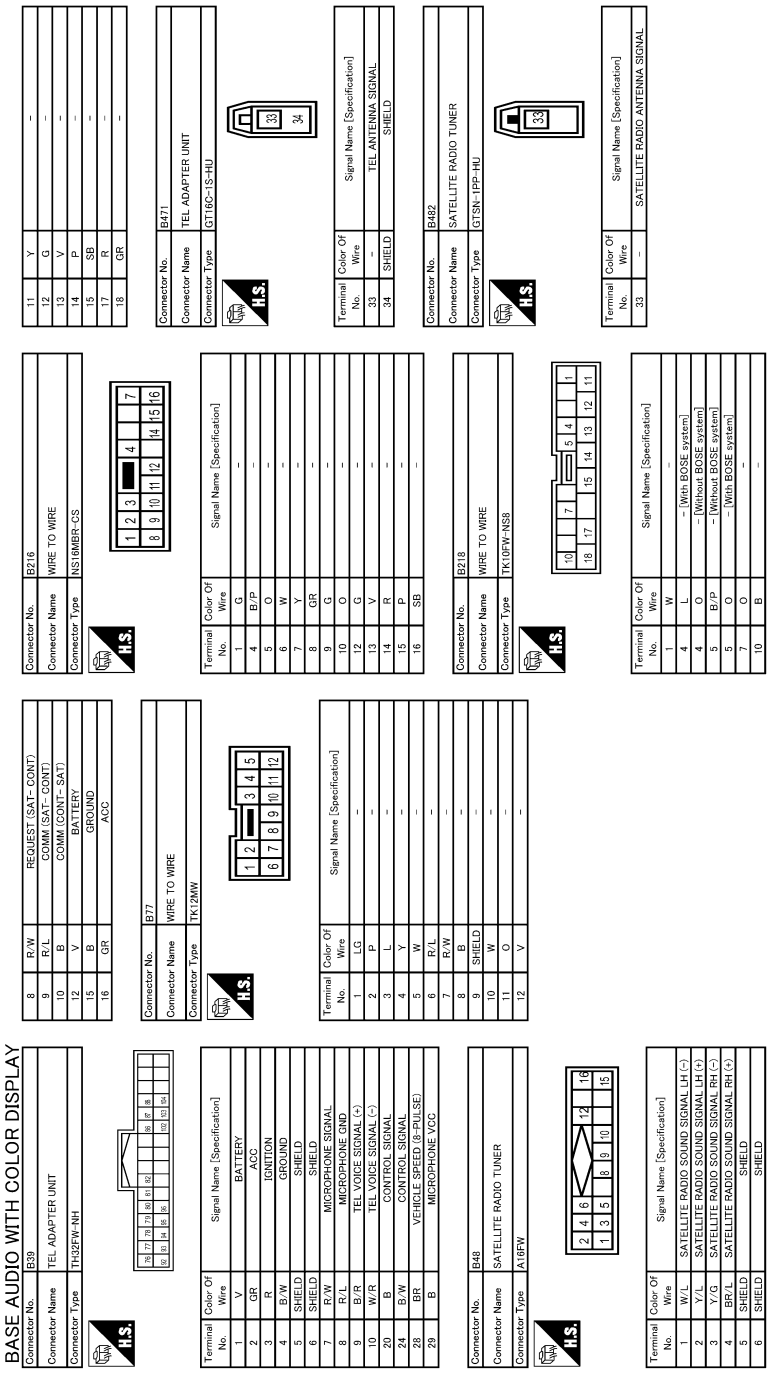
*: This connector is not shown in "Harness Layout".



JRNWC2807GB



JRNWC8926GB



JRNWC8927GB

BASE AUDIO WITH COLOR DISPLAY

Connector No.	B485
Connector Name	ANTENNA BASE (SATELLITE ANTENNA)
Connector Type	GT16C-1PP-HU

Terminal No.	Color Of Wire	Signal Name [Specification]
1	–	SATELLITE ANTENNA

Connector No.	D4
Connector Name	FRONT DOOR SPEAKER LH
Connector Type	NS02FW-CS

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	B	–

Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	–
2	G	–
3	P	–
4	B	–
5	W	–
6	SB	–
7	P	–
8	BR	–
9	GR	–
10	V	–
11	O	–
14	B	–
15	LG	–
16	G	–
17	Y	–
18	GR	–
19	BR	–
20	LG	–
24	P	–
25	V	–
26	W	–
27	R	–
29	V	–
30	SB	–
31	BR	–
32	R	–
33	G	–
34	Y	–
35	L	–
41	P	–
42	GR	–
43	L	–
44	W	–
45	SB	–
46	R	–
50	V	–
51	O	– [Without automatic drive positioner]
52	L	– [With automatic drive positioner]
52	P	– [Without automatic drive positioner]
53	L	– [With automatic drive positioner]
53	P	– [Without automatic drive positioner]
54	LG	– [Without automatic drive positioner]
54	SB	– [With automatic drive positioner]
55	LG	– [With automatic drive positioner]
55	O	– [Without automatic drive positioner]

Connector No.	D41
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
2	V	–
4	B	–
5	W	–
6	P	–
7	O	–
8	B	–
16	G	–
17	Y	–
18	GR	–
19	BR	–
20	LG	–
24	LG	–
25	W	–
26	O	–
28	G	–
29	V	–
30	SB	–
31	BR	–
32	R	–
33	G	–
34	Y	–
35	L	–

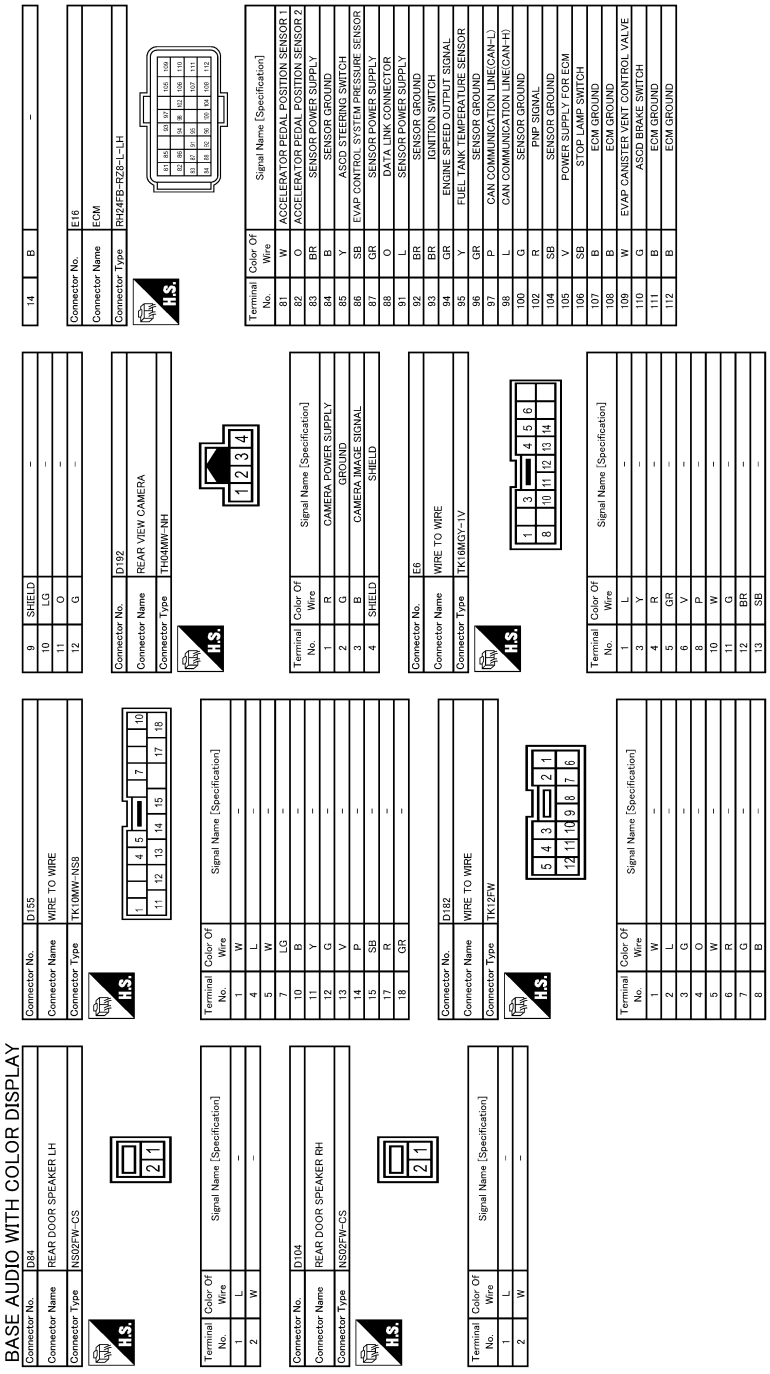
Connector No.	D44
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	NS02FW-CS

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	B	–

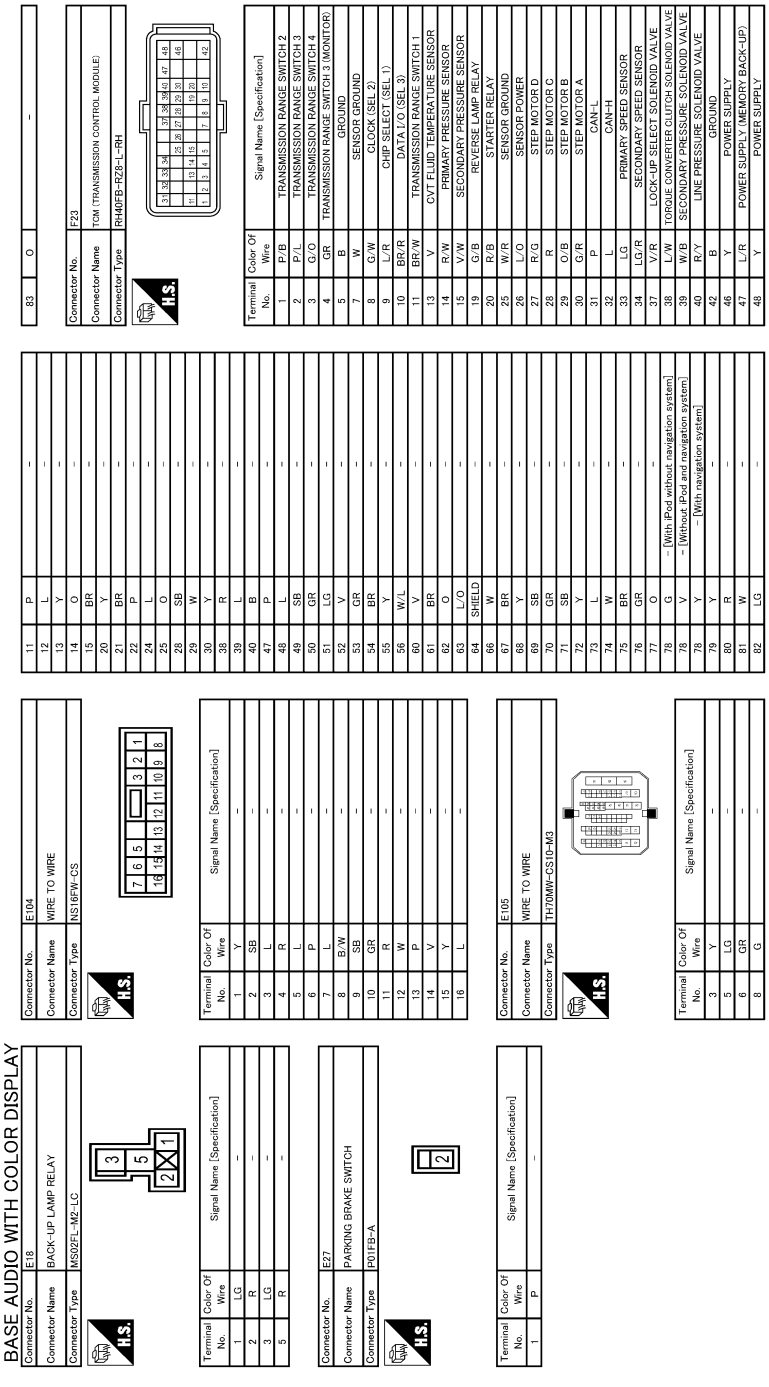
Connector No.	D81
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
4	L	–
5	W	–
7	LG	–
10	B	–
11	Y	–
12	G	–
13	V	–
14	P	–
15	SB	–
17	R	–
18	GR	–

JRNWC8928GB

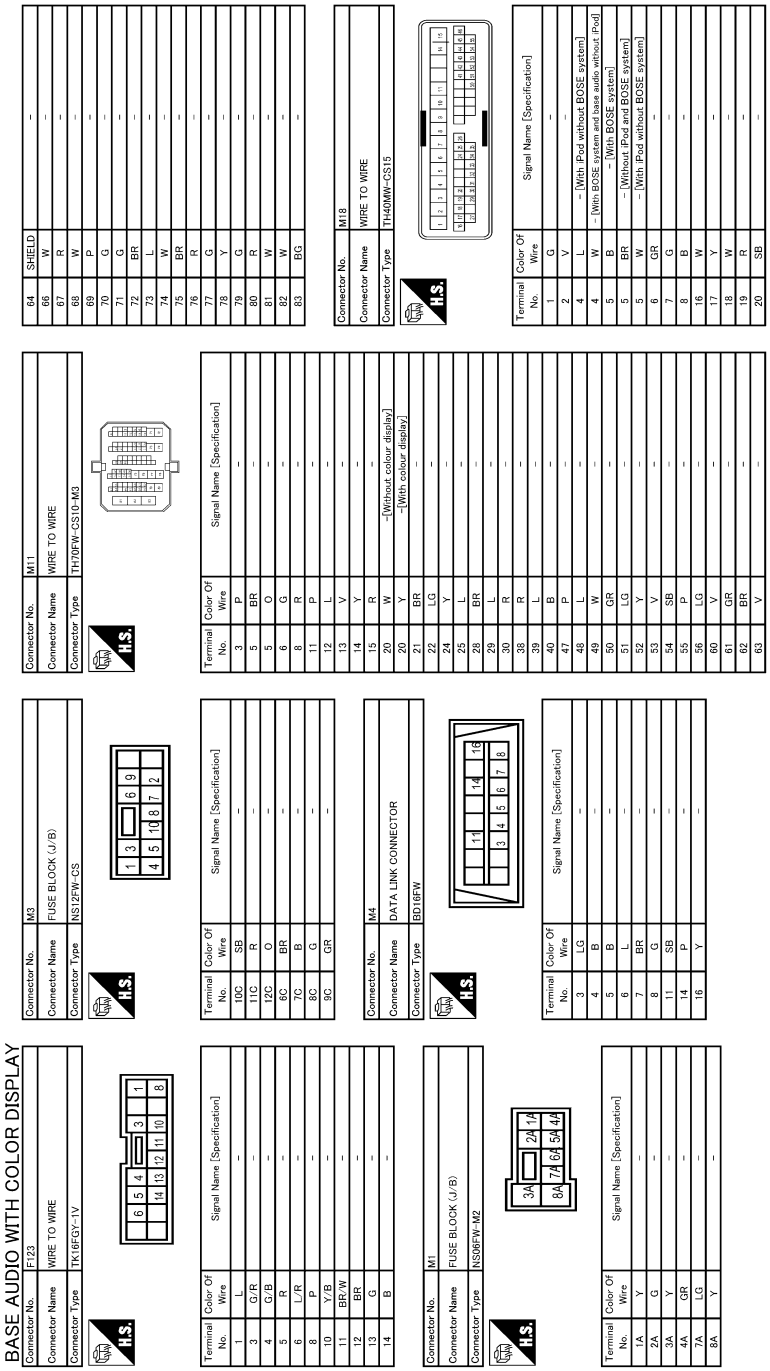


JRNWC8929GB

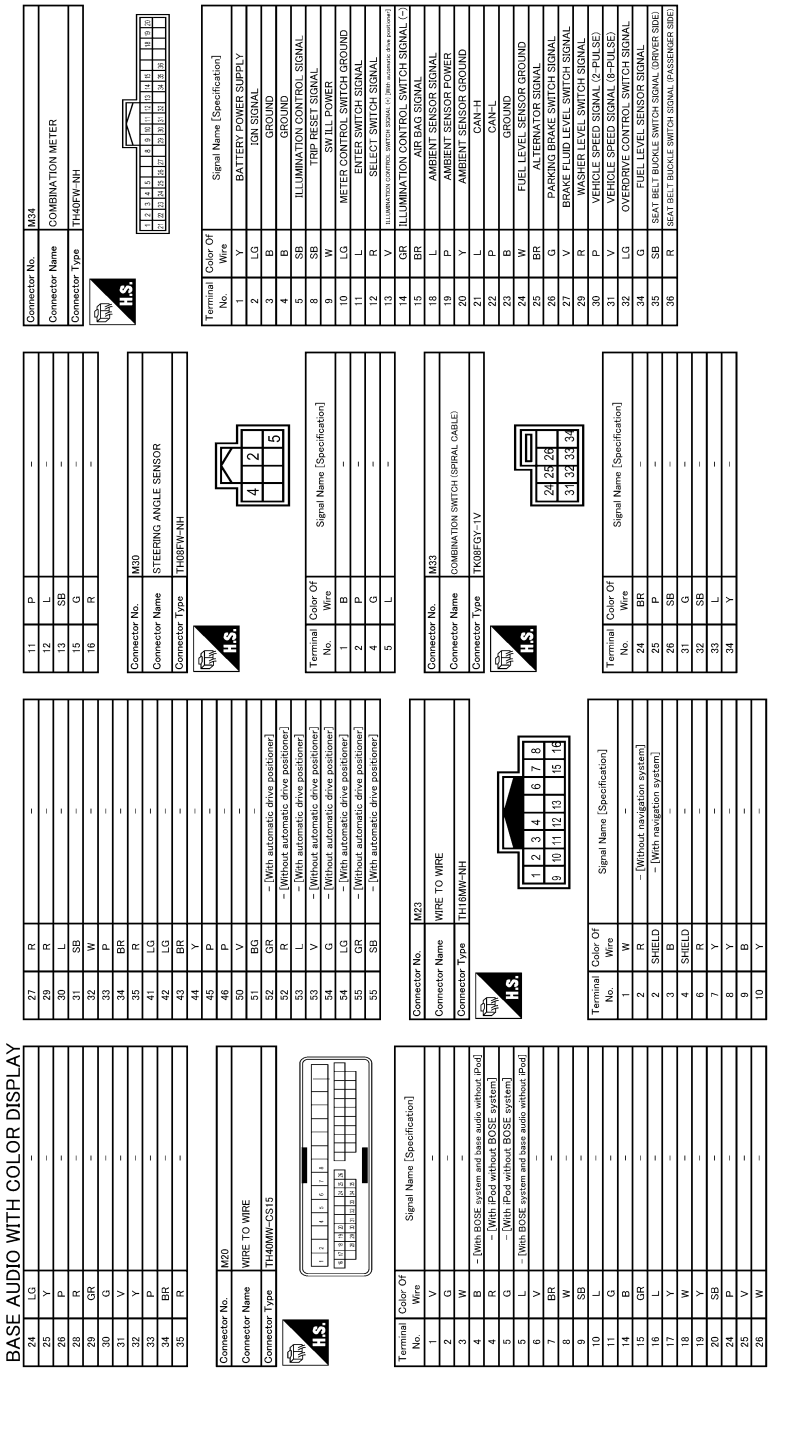


JRNWC8930GB

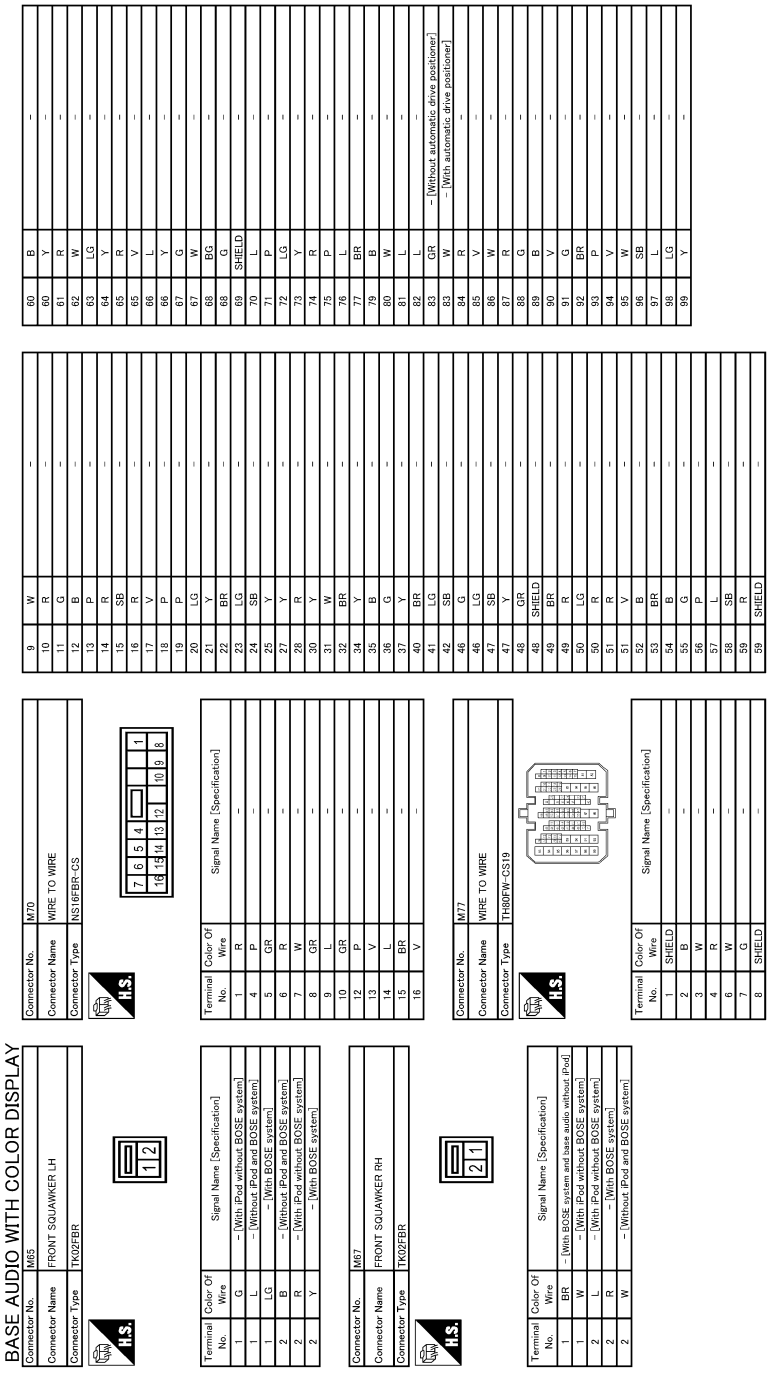
BASE AUDIO WITH COLOR DISPLAY



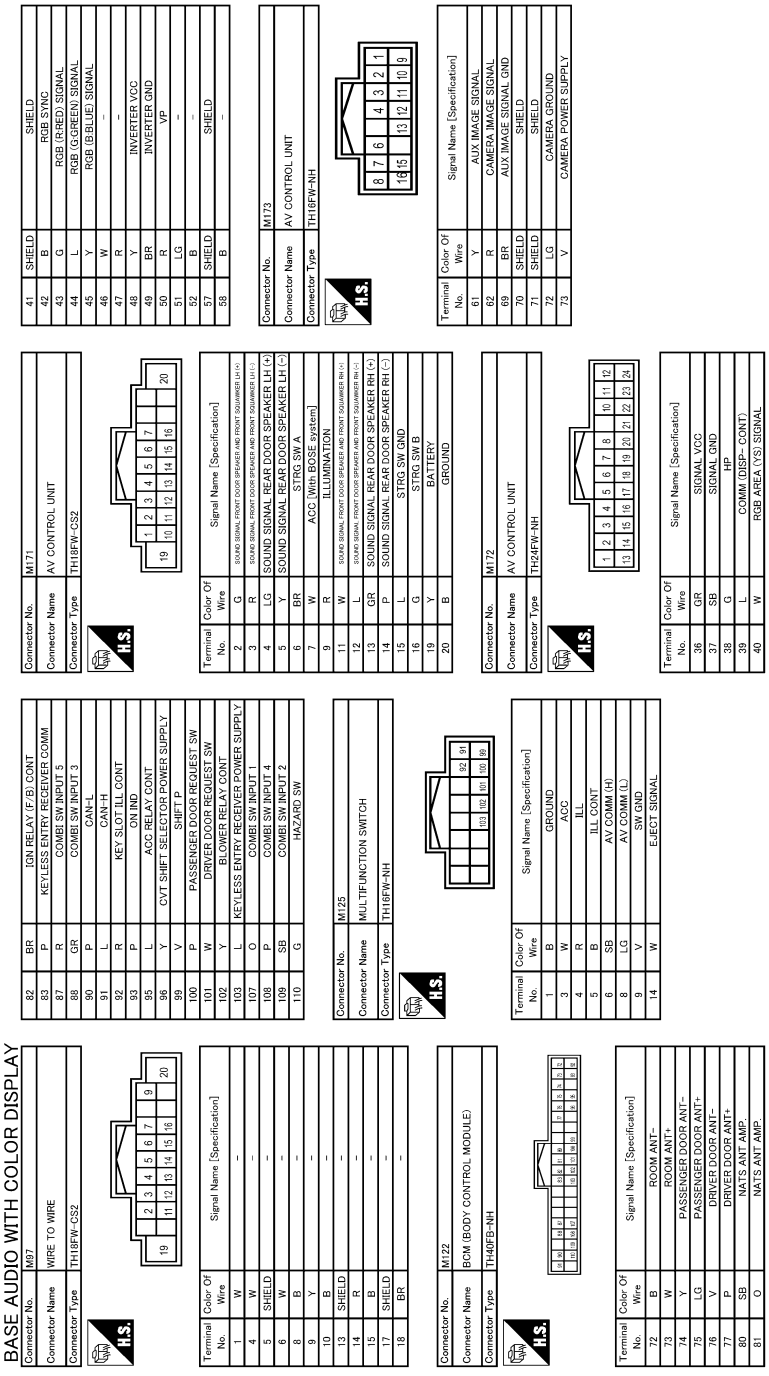
JRNWC8931GB



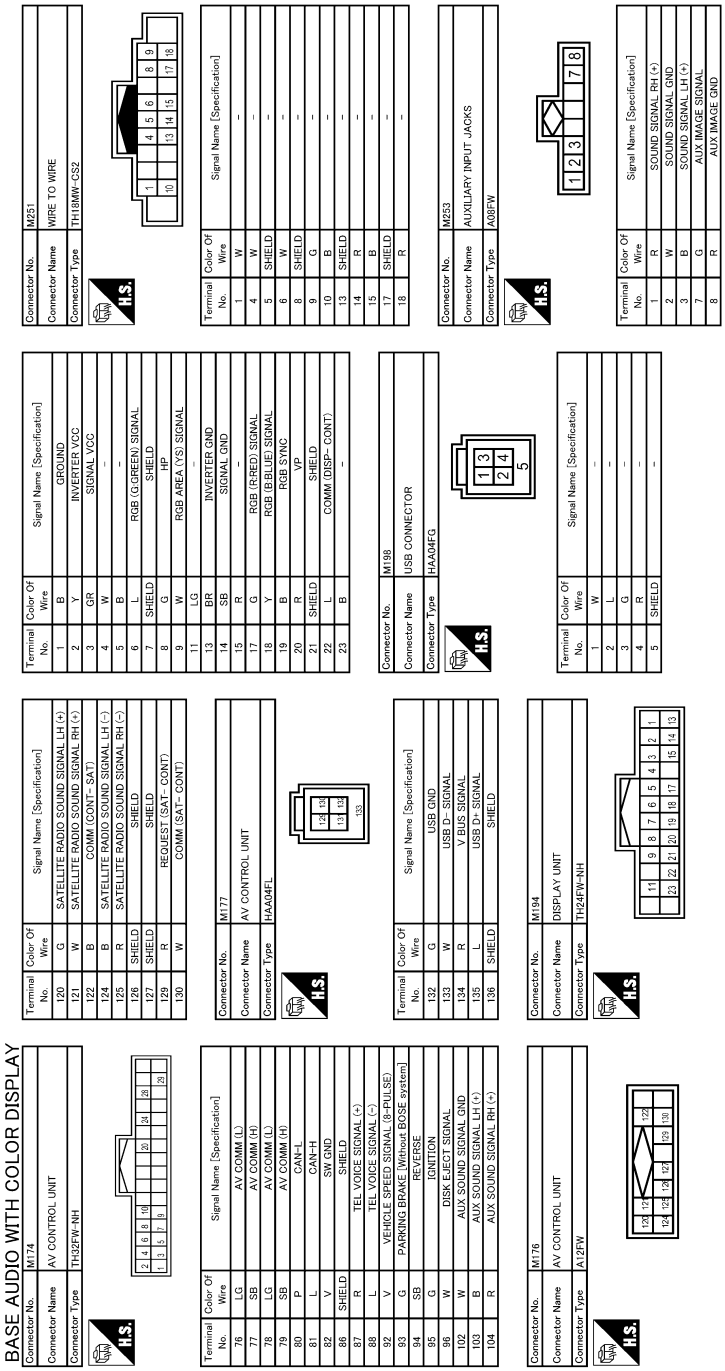
JRNWC8932GB



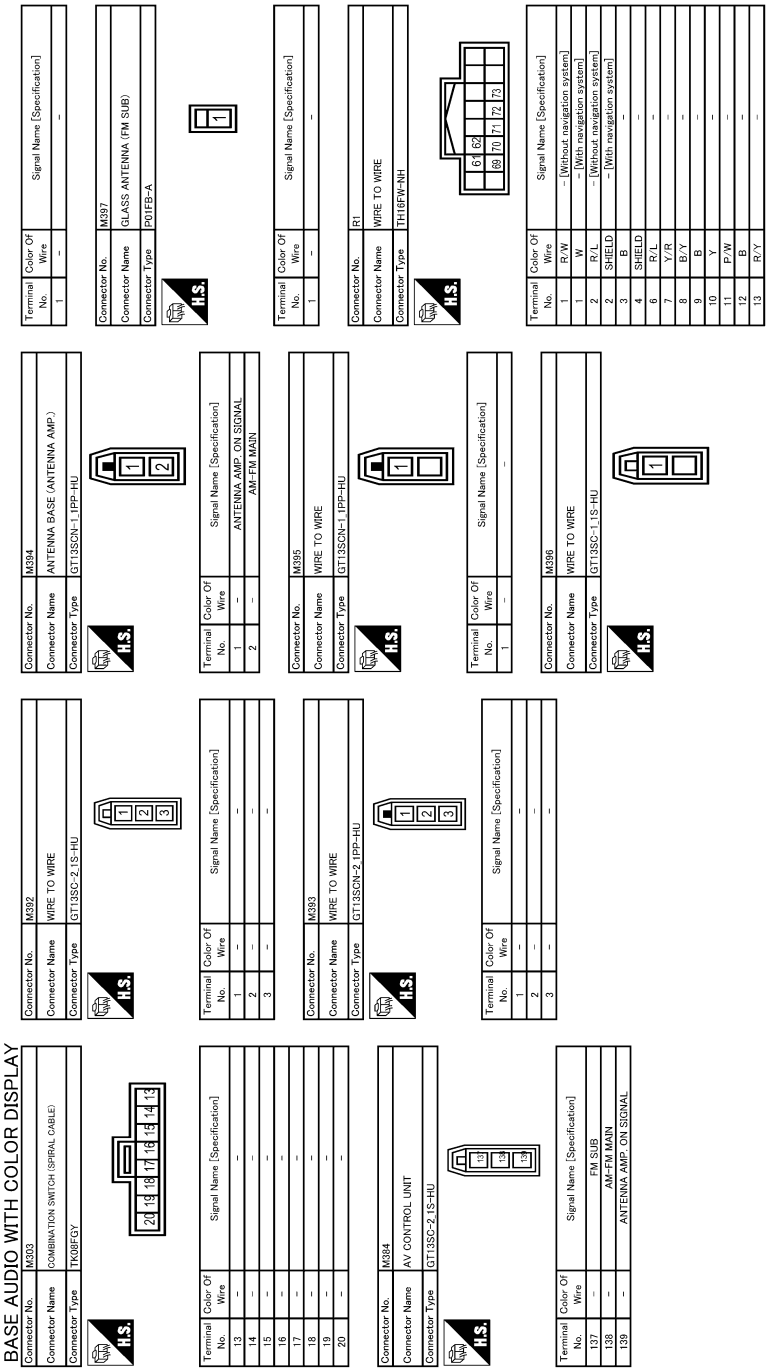
JRNWC8933GB



JRNWC8934GB



JRNWC8935GB



JRNWC8936GB

BASE AUDIO WITH COLOR DISPLAY

15	B/R	–
16	R	–

Connector No.	R20
Connector Name	MICROPHONE
Connector Type	TK04FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/W	MICROPHONE SIGNAL (-) [Without navigation system]
1	W	MICROPHONE SIGNAL (+) [With navigation system]
2	R/L	MICROPHONE SIGNAL (-) [Without navigation system]
2	SHIELD	SHIELD [With navigation system]
4	B	MICROPHONE POWER

JRNWC8937GB

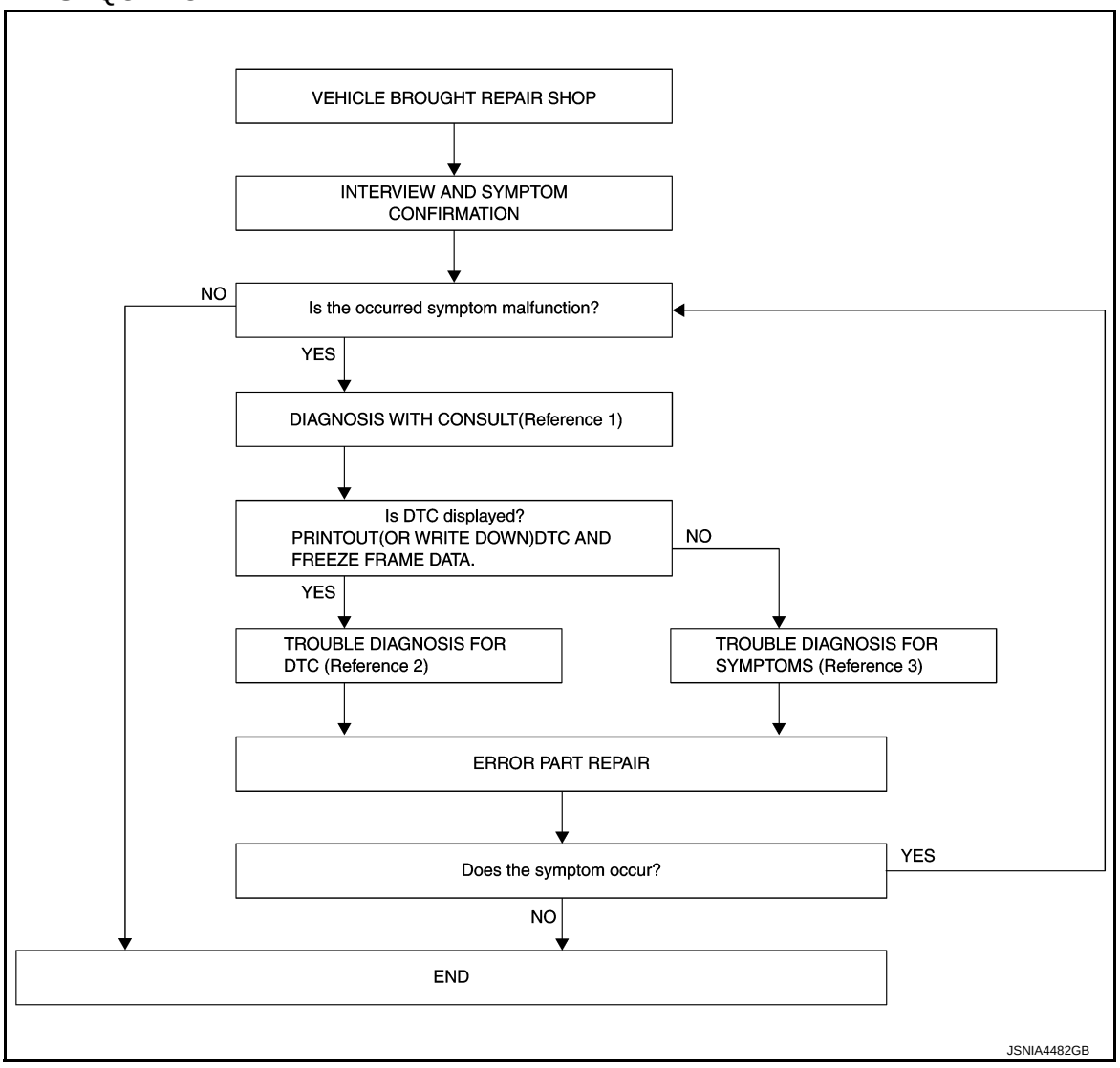
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000009721612

OVERALL SEQUENCE



- Reference 1··· Refer to AV-65, "CONSULT Function".
- Reference 2··· Refer to AV-77, "DTC Index".
- Reference 3··· Refer to AV-142, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for “MULTI AV”. Refer to AV-65, "CONSULT Function".
NOTE:
Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. When DTC is detected, follow the instructions below:
- Record DTC and Freeze Frame Data.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-77, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-142, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT.
NOTE:
Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

Description

INFOID:0000000009721613

BEFORE REPLACEMENT

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

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform “After Replace ECU” or “Manual Configuration” with CONSULT.

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

Work Procedure

INFOID:0000000009721614

1.SAVING VEHICLE SPECIFICATION

-CONSULT Configuration

Perform “Before Replace ECU” to save or print current vehicle specification. Refer to AV-105, "Description".

NOTE:

If “Before Replace ECU” can not be used, use the “Manual Configuration”.

>> GO TO 2.

2.REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-149, "Exploded View".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

-CONSULT Configuration

Perform “After Replace ECU” or “Manual Configuration” to write vehicle specification. Refer to AV-105, "Work Procedure".

>> GO TO 4.

4.OPERATION CHECK

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

>> WORK END

CONFIGURATION (AV CONTROL UNIT)

Description

INFOID:0000000009721615

- Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT.
- Configuration has three functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

Work Procedure

INFOID:0000000009721616

1.WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Write vehicle specification into AV control unit.

To write vehicle specification stored in CONSULT into the AV control unit>>GO TO 2.
To write vehicle specification into the AV control unit by hand>>GO TO 3.

2.WRITE STORED DATA

CONSULT Configuration
Select “After Replace ECU” in “Read/Write Configuration.” Write data stored in CONSULT with the “Before Replace ECU” function into the AV control unit.

>> GO TO 4.

3.MANUALLY WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Perform “Manual Configuration.” Refer to the Configuration List to write vehicle specification into the AV control unit. Refer to AV-105, "Configuration List".
NOTE:
If selection items are not displayed on the CONSULT screen, touch “NEXT.”

>> GO TO 4.

4.OPERATION CHECK

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

>> WORK END

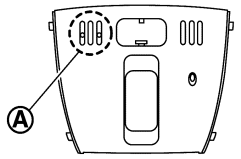
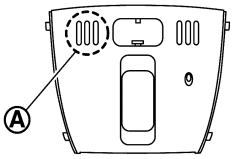
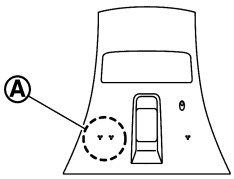
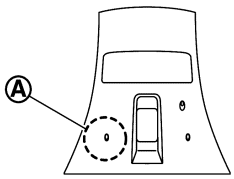
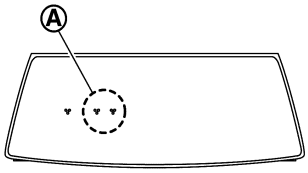
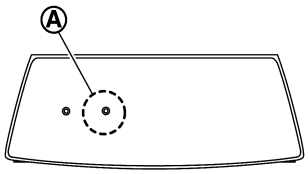
Configuration List

INFOID:0000000009721617

CAUTION:
Grasp vehicle specifications precisely. The control of ECU may not function normally if the specifications are misread.
NOTE:
- The items shown in this list depend on vehicle specifications.
- The config list may not be displayed depending on vehicle specifications. This is not a malfunction.

MANUAL SETTING ITEM		Detail
Items	Setting value	
STEERING	LHD	LHD models
	RHD	RHD models
CAMERA SYSTEM	REAR CAMERA	With rear view monitor system
	REAR+SIDE	With rear view monitor system and front-side view monitor function
SOUND SYSTEM	BASE	Without BOSE system
	BOSE	With BOSE system
MICROPHONE	DIRECTIONAL MIC	With directional microphone*
	NON-DIRECTIONAL MIC	With non-directional microphone*
AFFORDABLE ITS	WITH	With BSW and LDW
	WITHOUT	Without BSW and LDW

*: In the following table, find an illustration that the Ⓐ part matches the vehicle and select microphone type.

Directional microphone	Non-directional microphone
 JSNIA5541ZZ	 JSNIA5542ZZ
Ⓐ: Microphone installation position	Ⓐ: Microphone installation position
 JSNIA5543ZZ	 JSNIA5544ZZ
Ⓐ: Microphone installation position	Ⓐ: Microphone installation position
 JSNIA5545ZZ	 JSNIA5546ZZ
Ⓐ: Microphone installation position	Ⓐ: Microphone installation position

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000009721618

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-29, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000009721619

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:0000000009721620

1.PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-18, "Trouble Diagnosis Procedure".
NO >> Refer to GI-44, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:0000000009721621

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-149, "Exploded View".

U1200 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721622

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-149, "Exploded View".

U1216 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721623

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-149, "Exploded View".

U1232 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000009721624

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000009721625

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

U1243 DISPLAY UNIT

DTC Logic

INFOID:0000000009721626

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuits are malfunctioning. • serial communication circuits between display unit and AV control unit are malfunctioning.	• Display unit power supply and ground circuits. • Serial communication circuits between display unit and AV control unit.

Diagnosis Procedure

INFOID:0000000009721627

1.CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to AV-118, "DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M194	11	M172	51	Existed
	22		39	

4. Check continuity between display unit harness connector and ground.

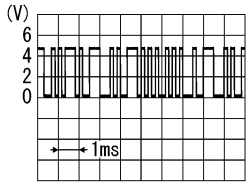
Display unit		Ground	Continuity
Connector	Terminals		
M194	11		Not existed
	12		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

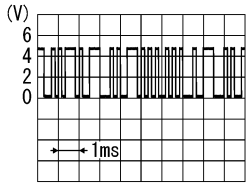
(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	11	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	22	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace display unit. Refer to AV-150, "Exploded View".

U1255 SATELLITE RADIO TUNER

DTC Logic

INFOID:0000000009721628

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1255	SAT CONN [U1255]	When either one of the following items is detected: • satellite radio tuner power supply and ground circuit are malfunctioning. • communication circuits between AV control unit and satellite radio tuner are malfunctioning. • request signal circuit between AV control unit and satellite radio tuner are malfunctioning.	• Satellite radio tuner power supply and ground circuit. Refer to AV-119, "SATELLITE RADIO TUNER : Diagnosis Procedure". • Communication circuit between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.

Diagnosis Procedure

INFOID:0000000009721629

1.CHECK SATELLITE RADIO TUNER POWER SUPPLY AND GROUND CIRCUIT

Check satellite radio tuner power supply and ground circuit. Refer to AV-119, "SATELLITE RADIO TUNER : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT AND REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and satellite radio tuner connector.
3. Check continuity between AV control unit harness connector and satellite radio tuner harness connector.

AV control unit		Satellite radio tuner		Continuity
Connector	Terminals	Connector	Terminals	
M176	122	B48	10	Existed
	129		8	
	130		9	

4. Check continuity between AV control unit harness connector.

AV control unit			Continuity
Connector	Terminals		
M176	122	Ground	Not existed
	129		
	130		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between AV control unit harness connector and ground.

(+)		(–)	Voltage (Approx.)
AV control unit			
Connector	Terminals		
M176	129	Ground	7.0 V
	130		7.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

4. CHECK SATELLITE RADIO TUNER VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector.
3. Connect satellite radio tuner connector.
4. Turn ignition switch ON.
5. Check signal between satellite radio tuner harness connector and ground.

(+)		(–)	Voltage (Approx.)
Satellite radio tuner			
Connector	Terminal		
B48	10	Ground	7.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace satellite radio tuner. Refer to AV-166, "Exploded View".

U1300 AV COMM CIRCUIT

Description

INFOID:0000000009721630

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between AV control unit and TEL adapter unit.
U1300 U1240 U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • HAND FREE CONN [U1256]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

U1310 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721631

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-149, "Exploded View".

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009721632

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M171	19	OFF	Battery voltage
ACC power supply		7	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M171	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

DISPLAY UNIT

DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000009721633

1.CHECK POWER SUPPLY CIRCUIT (DISPLAY SIDE)

Check voltage between display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Inverter VCC	M194	2	ACC	9.0 V
Signal VCC		3		

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	48	M194	2	Existed
	36		3	Existed

4. Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminal		
M194	2		Not existed
	3		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3. CHECK POWER SUPPLY CIRCUIT (AV CONTROL UNIT SIDE)

1. Connect the AV control unit harness connector.
2. Turn ignition switch ACC.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Ignition switch position	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M172	48	Ground	ACC	9.0 V
	36			9.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

4. CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M194	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:0000000009721634

1. CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between satellite radio tuner harness connector and ground.

Signal name	(+)		(-)	Ignition switch position	Voltage (Approx.)
	Satellite radio tuner				
	Connector	Terminal			
Battery power supply	B48	12	Ground	OFF	Battery voltage
ACC power supply		16		ACC	

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check harness between satellite radio tuner and fuse.

TEL ADAPTER UNIT

TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:0000000009721635

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B39	1	OFF	Battery voltage
ACC power supply		2	ACC	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between TEL adapter unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B39	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

RGB (R: RED) SIGNAL CIRCUIT

Description

INFOID:0000000009721636

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721637

1.CHECK CONTINUITY RGB (R: RED) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	43	M194	17	Existed

4. Check continuity between display unit harness connector and ground.

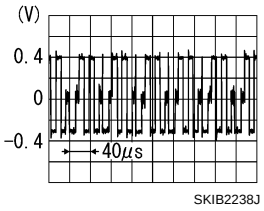
Display unit		Ground	Continuity
Connector	Terminal		
M194	17		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (R: RED) SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value
Connector	Terminal			
M194	17	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2238J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-150, "Exploded View".
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

RGB (G: GREEN) SIGNAL CIRCUIT

Description

INFOID:0000000009721638

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721639

1.CHECK CONTINUITY RGB (G: GREEN) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	44	M194	6	Existed

4. Check continuity between display unit harness connector and ground.

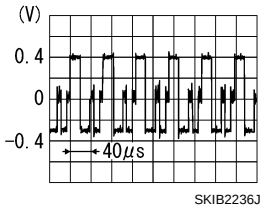
Display unit		Ground	Continuity
Connector	Terminal		
M194	6		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (G: GREEN) SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	6	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2236J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-150, "Exploded View".
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

RGB (B: BLUE) SIGNAL CIRCUIT

Description

INFOID:0000000009721640

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721641

1.CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	45	M194	18	Existed

4. Check continuity between display unit harness connector and ground.

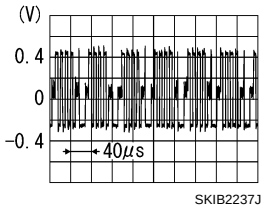
Display unit		Ground	Continuity
Connector	Terminal		
M194	18		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (B: BLUE) SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value
Connector	Terminal			
M194	18	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2237J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-150, "Exploded View".
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

RGB SYNCHRONIZING SIGNAL CIRCUIT

Description

INFOID:0000000009721642

Transmit the RGB synchronizing signal to the display unit so as to synchronize the RGB image displayed with AV control unit.

Diagnosis Procedure

INFOID:0000000009721643

1.CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	42	M194	19	Existed

4. Check continuity between display unit harness connector and ground.

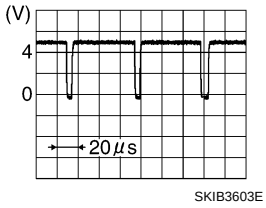
Display unit		Ground	Continuity
Connector	Terminal		
M194	19		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Reference value
Connector	Terminal		
M194	19	Ground	

SKIB3603E

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-150, "Exploded View".
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

RGB AREA (YS) SIGNAL CIRCUIT

Description

INFOID:0000000009721644

Transmits the display area of RGB image displayed by AV control unit with RGB area (YS) signal to display unit.

Diagnosis Procedure

INFOID:0000000009721645

1.CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	40	M194	9	Existed

4. Check continuity between display unit harness connector and ground.

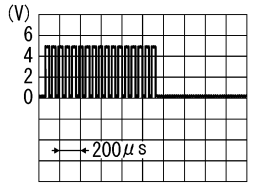
Display unit		Ground	Continuity
Connector	Terminal		
M194	9		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB AREA (YS) SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value (Approx.)
Connector	Terminal			
M194	9	Ground	At RGB image is displayed.	5.0 V
			At AUX image is displayed.	

PKIB4948J

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-150, "Exploded View".
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

Description

INFOID:0000000009721646

In composite image (AUX and camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000009721647

1.CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	8	M172	38	Existed

4. Check continuity between display unit harness connector and ground.

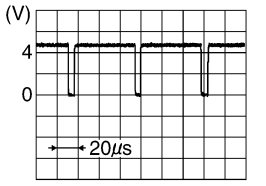
Display unit		Ground	Continuity
Connector	Terminal		
M194	8		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	8	Ground	

SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-149, "Exploded View".
NO >> Replace display unit. Refer to AV-150, "Exploded View".

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

Description

INFOID:0000000009721648

In composite image (AUX and camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000009721649

1.CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	20	M172	50	Existed

4. Check continuity between display unit harness connector and ground.

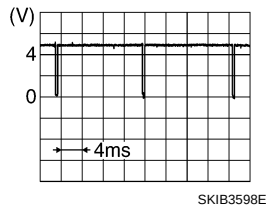
Display unit		Ground	Continuity
Connector	Terminal		
M194	20		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	20	Ground	

SKIB3598E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-149, "Exploded View".
NO >> Replace display unit. Refer to AV-150, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721650

AV control unit that inputs the camera image signal and AUX image signal transmits the composite image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721651

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	47	M194	15	Existed

4. Check continuity between AV control unit harness connector and ground.

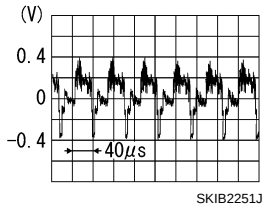
AV control unit		Ground	Continuity
Connector	Terminal		
M172	47		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between AV control unit harness connector and ground.

(+)		(–)	Condition	Reference value
AV control unit				
Connector	Terminal			
M172	47	Ground	At camera image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-150, "Exploded View".
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

AUX IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721652

- Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the display unit.

Diagnosis Procedure

INFOID:0000000009721653

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and AV control unit connector.
3. Check continuity between auxiliary input jacks harness connector and AV control unit harness connector.

Auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M253	7	M173	61	Existed

4. Check continuity between auxiliary input jacks harness connector and ground.

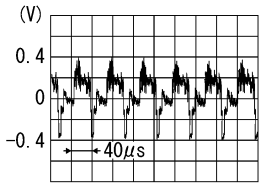
Auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M253	7		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Auxiliary input jacks				
Connector	Terminal			
M253	7	Ground	At AUX image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-149, "Exploded View".
NO >> Check that there is no malfunction in the external device.

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721654

- AV control unit outputs camera power supply to rear view camera and inputs camera image signal from rear view camera when the reverse signal is input.
- AV control unit transmits the camera image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721655

1.CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M173	73	D192	1	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M173	73		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE CAMERA POWER SUPPLY

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M173	73	Ground	Selector lever is in “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

3.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M173	62	D192	3	Existed

4. Check continuity between AV control unit harness connector and ground.

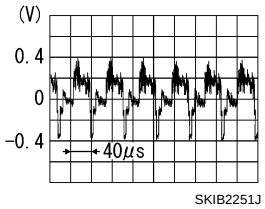
AV control unit		Ground	Continuity
Connector	Terminal		
M173	62		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK CAMERA IMAGE SIGNAL

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check signal between AV control unit harness connector and ground.

(+)		(–)	Condition	Reference value
AV control unit				
Connector	Terminal			
M173	62	Ground	At camera image is displayed.	

SKIB2251J

Is inspection result normal?

YES >> Replace AV control unit. Refer to AV-149, "Exploded View".
NO >> Replace rear view camera. Refer to AV-159, "Exploded View".

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000009721656

The eject signal is output to AV control unit when the eject switch of multifunction switch is pressed.

Diagnosis Procedure

INFOID:0000000009721657

1.CHECK CONTINUITY DISK EJECT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector and AV control unit connector.
3. Check continuity between multifunction switch harness connector and AV control unit harness connector.

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M125	14	M174	96	Existed

4. Check continuity between multifunction switch harness connector and ground.

Multifunction switch		Ground	Continuity
Connector	Terminal		
M125	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect multifunction switch connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M174	96	Ground	Pressing the eject switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-155, "Exploded View".
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000009721658

Supply power from TEL adapter unit to microphone. The microphone transmits the sound/voice to the TEL adapter unit.

Diagnosis Procedure

INFOID:0000000009721659

1.CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and microphone connector.
3. Check continuity between TEL adapter unit harness connector and microphone harness connector.

TEL adapter unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
B39	7	R20	1	Existed
	8		2	
	29		4	

4. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminals		
B39	7		Not existed
	29		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector.

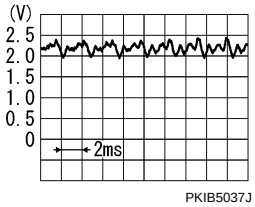
(+)		(–)		Voltage (Approx.)
TEL adapter unit				
Connector	Terminal	Connector	Terminal	
B39	29	B39	8	5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace TEL adapter unit. Refer to AV-162, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between TEL adapter unit harness connector.

(+)		(–)		Condition	Reference value
TEL adapter unit					
Connector	Terminal	Connector	Terminal		
B39	7	B39	8	give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace TEL adapter unit. Refer to AV-162, "Removal and Installation".
NO >> Replace microphone. Refer to AV-164, "Exploded View".

CONTROL SIGNAL CIRCUIT

Description

INFOID:0000000009721660

TEL adapter unit identifies the vehicle model according to the control signal and performs the control.

Diagnosis Procedure

INFOID:0000000009721661

1.CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminals		
B39	20		Existed
	24		

Is the inspection result normal?

YES >> Replace TEL adapter unit. Refer to AV-162, "Removal and Installation".
NO >> Repair harness or connector.

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000009721662

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009721663

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M171	6	M33	24	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M171	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-15, "Exploded View" (except for Mexico) or SR-42, "Exploded View" (for Mexico).

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit				
Connector	Terminal	Connector	Terminal	
M171	6	M171	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-137, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-156, "Exploded View".

Component Inspection

INFOID:0000000009721664

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

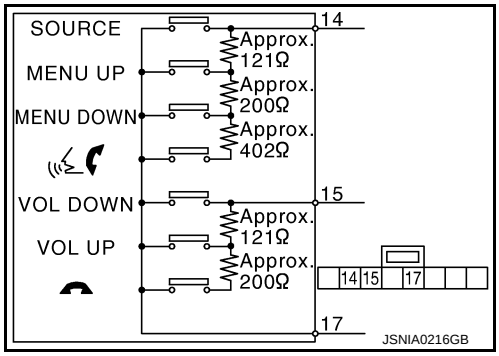
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000009721665

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009721666

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M171	16	M33	31	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M171	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-15, "Exploded View" (except for Mexico) or SR-42, "Exploded View" (for Mexico).

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit				
Connector	Terminal	Connector	Terminal	
M171	16	M171	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-139, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-156, "Exploded View".

Component Inspection

INFOID:0000000009721667

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

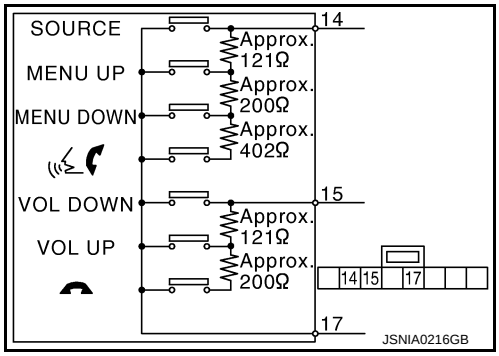
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



STEERING SWITCH GROUND CIRCUIT

Description

INFOID:0000000009721668

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009721669

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M171	15	M33	33	Existed

4. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-15, "Exploded View" (except for Mexico) or SR-42, "Exploded View" (for Mexico).

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M171	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-149, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-140, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-156, "Exploded View".

Component Inspection

INFOID:0000000009721670

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

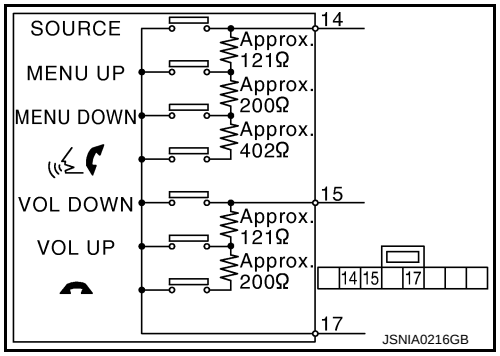
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000009721671

OPERATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT is started.	• Multifunction switch power supply and ground circuit. • AV communication circuit between AV control unit and multifunction switch. Perform “Self Diagnostic Result” of “MULTI AV” with CONSULT. Refer to AV-65, "CONSULT Function".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-118, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-56, "On Board Diagnosis Function".
Fuel economy display is abnormal.	There is malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-77, "DTC Index".
	There is no malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”.	Ignition signal circuit malfunction. (AV control unit)

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 checking that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.
   NOTE:
   The customer's phone may be required, depending upon their concern.
3. 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.
4. Go to “www.nissanusa.com/bluetooth/”.

a. Using the website's search engine, find out if the customer's phone is on the approved list.

b. 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.

c. 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” list.

d. 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.	TEL adapter unit malfunction. Refer to AV-162, "Removal and Installation".
Hands-free phone cannot be established.	Both the reception and the speech cannot be performed	• Perform “Self Diagnostic Result” of “MULTI AV” with CONSULT. Refer to AV-65, "CONSULT Function". • No malfunction. TEL adapter unit malfunction. Refer to AV-162, "Removal and Installation". • Malfunction is detected. Perform detected DTC diagnosis. Refer to AV-77, "DTC Index".
The other party's voice cannot be heard by hands-free phone.	Steering switch's “ ” switch works.	TEL voice signal circuit malfunction between TEL adapter unit and AV control unit.
	Steering switch's “ ” switch do not work.	Control signal circuit malfunction. Refer to AV-135, "Diagnosis Procedure".
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	TEL adapter unit malfunction. Refer to AV-162, "Removal and Installation".
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-133, "Diagnosis Procedure".
The system cannot be operated.	Steering switch's “SOURCE”, “MENU UP”, and “MENU DOWN” switches works, but “ ” it does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-156, "Exploded View".
	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN” and “ ” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-138, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-140, "Diagnosis Procedure".

RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (Vehicle width and predictive course line is displayed.)	AUX image is displayed.	Camera image signal circuit. Refer to AV-130, "Diagnosis Procedure".
	AUX image is not displayed.	Composite image signal circuit. Refer to AV-128, "Diagnosis Procedure".
Camera image is not shown. (displayed in black and nothing can be displayed)	—	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and display unit. Refer to AV-126, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and display unit. Refer to AV-127, "Diagnosis Procedure".
Camera image does not switch.	“Reverse” is not turned ON on “Vehicle Signals” screen of “Confirmation/Adjustment”.	Reverse signal circuit malfunction.
	“Reverse” is turned ON on “Vehicle Signals”screen of “Confirmation/Adjustment”.	AV control unit malfunction. Replace AV control unit. Refer to AV-149, "Exploded View".

RELATED TO RGB IMAGE

Symptoms	Check items	Possible malfunction location / Action to take
RGB image is not shown.	There is malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-77, "DTC Index".
	There is no malfunction in CONSULT “self-diagnosis results” of “MULTI AV”.	Vertical synchronizing (VP) signal circuit. Refer to AV-127, "Diagnosis Procedure".
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to AV-121, "Diagnosis Procedure".
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to AV-122, "Diagnosis Procedure".
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to AV-123, "Diagnosis Procedure".
RGB screen is rolling.	—	RGB synchronizing signal circuit. Refer to AV-124, "Diagnosis Procedure".
Fuel economy display is malfunctioning.	There is malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-77, "DTC Index".
	There is no malfunction in CONSULT “self-diagnosis results” of “MULTI AV”.	Ignition signal circuit malfunction. (AV control unit)

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-132, "Diagnosis Procedure".
No sound comes out or the level of the sound is low.	No sound from all speakers.	AV control unit power supply and ground circuits malfunction. Refer to AV-118, "AV CONTROL UNIT : Diagnosis Procedure".
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and speaker. • Malfunction in speaker. • Malfunction in AV control unit.
Noise is mixed with audio.	Noise comes out from all speakers.	Malfunction in AV control unit.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and speaker. • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in AV control unit.
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	• Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-165, "Exploded View".
Radio is not received or poor reception.	• Other audio sounds are normal. • Any radio 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).	• Antenna amp. ON signal circuit malfunction. • Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-165, "Exploded View".

Symptoms	Check items	Probable malfunction location
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to AV-65, "CONSULT Function".	• Malfunction in antenna, antenna feeder, or AV control unit. Perform DTC diagnosis. Refer to AV-77, "DTC Index". • Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder.
	There is no malfunction in the CONSULT self-diagnosis result. Refer to AV-65, "CONSULT Function".	• Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. • Loose satellite radio antenna mounting nut. Refer to AV-165, "Exploded View".

RELATED TO USB

NOTE:
Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	• USB harness malfunction. • USB connector malfunction.

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

RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-140, "Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to AV-156, "Exploded View".
“SOURCE”, “MENU UP”, “MENU DOWN”, “ ” switches are not operated.	Steering switch signal A circuit. Refer to AV-136, "Diagnosis Procedure".
”VOL UP“, “VOL DOWN”, “ ” switches are not operated.	Steering switch signal B circuit. Refer to AV-138, "Diagnosis Procedure".

RELATED TO AUXILIARY INPUT

NOTE:
Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuit.
Image is not displayed when AUX mode is selected.	Camera image is displayed.	AUX image signal circuit malfunction. Refer to AV-129, "Diagnosis Procedure".
	Camera image is not displayed.	Composite image signal circuit malfunction. Refer to AV-128, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000009721672

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press “DISC-AUX” to change the mode.
	The display is turned off.	Press “☀/◗ OFF” to turn on the display.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the multi AV system.

RELATED TO VOICE RECOGNITION

Related to Telephone

The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See “Speaker adaptation (SA) mode” earlier in this section. Refer to “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- 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 then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3 (.mp3)" or ".WMA (.wma)" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA file has been given an extension of ".MP3 (.mp3)" or ".WMA (.wma)" when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

NOTE:

- 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 a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

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. Refer to “RELATED TO HANDS-FREE PHONE (Check Compatibility)” of MULTI AV SYSTEM SYMPTOM.
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. • The vehicle is outside of the telephone service area. • 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. • The cellular phone is locked to prevent it from being dialed. **NOTE:** 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.
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

AV CONTROL UNIT

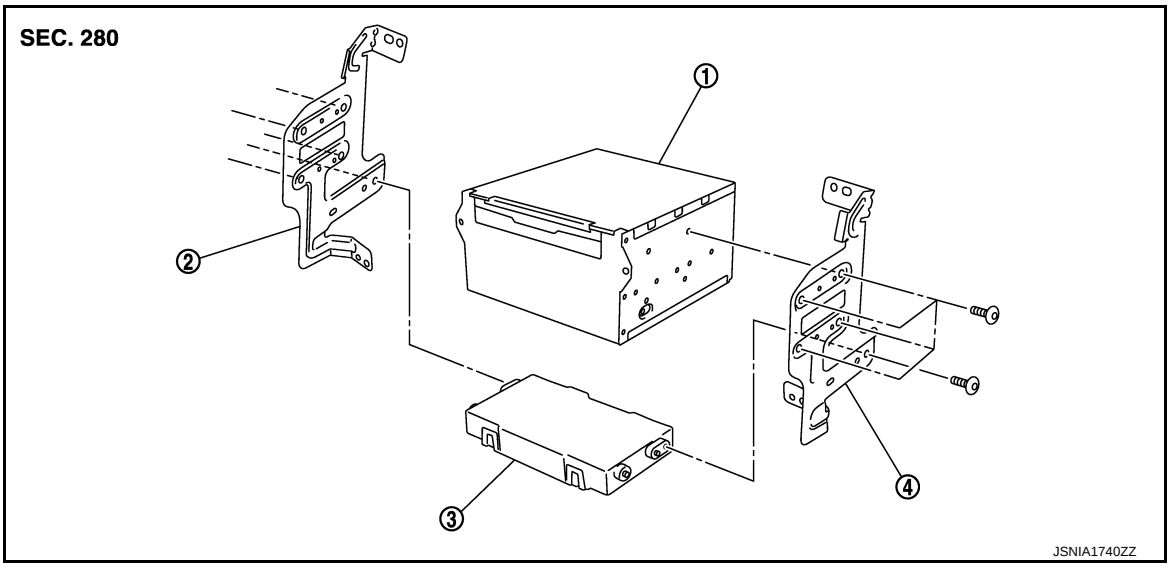
Exploded View

INFOID:0000000009721673

CAUTION:
Before replacing AV control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-105, "Description".

REMOVAL
Refer to IP-14, "Exploded View".

DISASSEMBLY



1. AV control unit
2. Bracket LH
3. A/C auto amp.
4. Bracket RH

Removal and Installation

INFOID:0000000009721674

REMOVAL
CAUTION:
Before replacing AV control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-105, "Description".

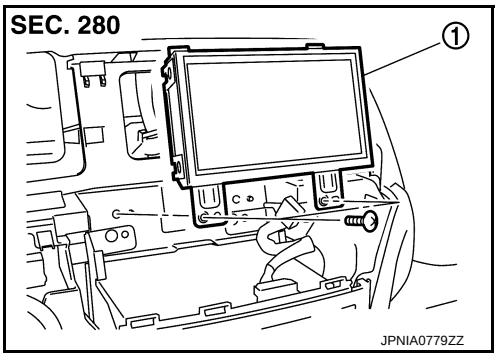
1. Remove cluster lid C. Refer to IP-14, "Exploded View".
2. Remove AV control unit with an A/C auto amp. as a single unit from the vehicle.
3. Remove bracket screws, and then remove AV control unit.

INSTALLATION
Install in the reverse order of removal.
CAUTION:
Be sure to perform “Read/Write Configuration” when replacing AV control unit. For details, refer to AV-376, "Work Procedure".

DISPLAY UNIT

Exploded View

INFOID:0000000009721675



1. Display unit

Removal and Installation

INFOID:0000000009721676

REMOVAL

1. Remove center ventilator assembly. Refer to IP-14, "Exploded View".
2. Remove display unit with bracket as a single unit.

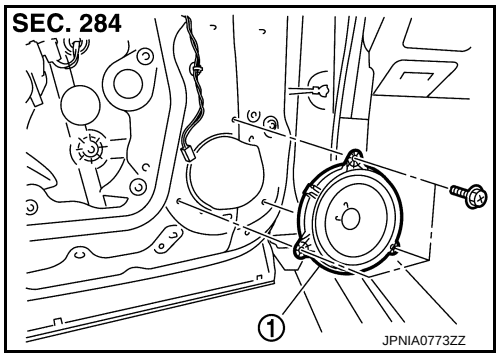
INSTALLATION

Install in the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000009721677



1. Front door speaker

Removal and Installation

INFOID:0000000009721678

REMOVAL

1. Remove front door finisher. Refer to INT-13, "FRONT DOOR FINISHER : Exploded View".
2. Remove front door speaker screws, then disconnect front door speaker connector and remove front door speaker.

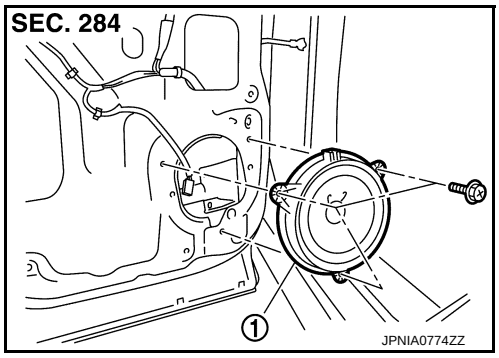
INSTALLATION

Install in the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000009721679



1. Rear door speaker

Removal and Installation

INFOID:0000000009721680

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "REAR DOOR FINISHER : Exploded View".
2. Remove rear door speaker screws, then disconnect rear door speaker connector and remove rear door speaker.

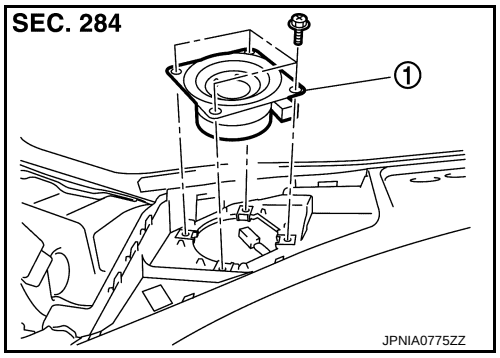
INSTALLATION

Install in the reverse order of removal.

FRONT SQUAWKER

Exploded View

INFOID:0000000009721681



1. Front squawker

Removal and Installation

INFOID:0000000009721682

REMOVAL

1. Remove speaker grille. Refer to IP-14, "Exploded View".
2. Remove front squawker screws, lift up the front squawker and disconnect front squawker connector. Then remove the front squawker.

INSTALLATION

Install in the reverse order of removal.

MULTIFUNCTION SWITCH

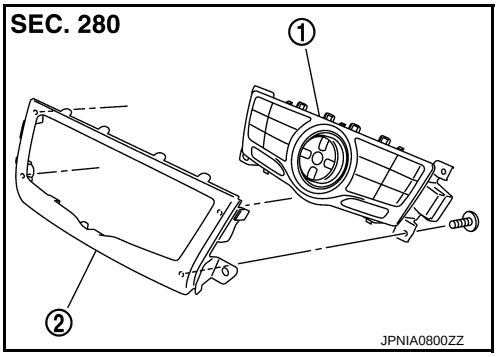
Exploded View

INFOID:0000000009721683

REMOVAL

Refer to IP-14, "Exploded View".

DISASSEMBLY



1. Multifunction switch
2. Cluster lid D

Removal and Installation

INFOID:0000000009721684

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "Exploded View".
2. Remove multifunction switch with center ventilator grille as a single unit.
3. Remove multifunction switch screws, remove multifunction switch from cluster lid D.

INSTALLATION

Install in the reverse order of removal.

PRESET SWITCH

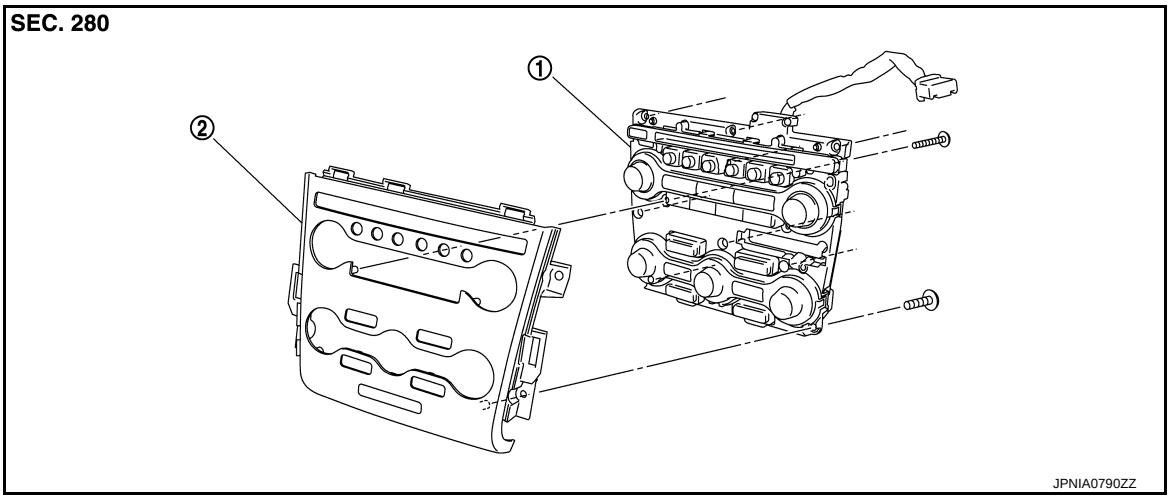
Exploded View

INFOID:0000000009721685

REMOVAL

Refer to IP-14, "Exploded View".

DISASSEMBLY



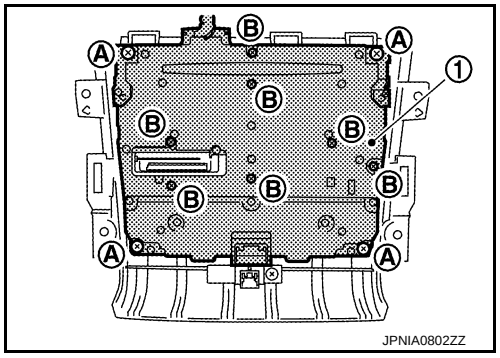
1. Preset switch
2. Cluster lid C

Removal and Installation

INFOID:0000000009721686

REMOVAL

1. Remove cluster lid C. Refer to IP-14, "Exploded View".
2. Remove preset switch screws (A) (B), remove preset switch (1) from cluster lid C.



1. Preset switch
A. Screw
B. Screw

INSTALLATION

Install in the reverse order of removal.

STEERING SWITCH

Exploded View

INFOID:0000000009721687

Refer to ST-36, "Exploded View".

Removal and Installation

INFOID:0000000009721688

REMOVAL

Refer to ST-36, "Removal and Installation".

INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Removal and Installation

INFOID:0000000009721689

REMOVAL

1. Remove center console assembly. Refer to IP-22, "Exploded View".
2. Remove auxiliary input jacks mounting screws.
3. Disconnect connector to remove auxiliary input jacks from lower console assembly.

INSTALLATION

Install in the reverse order of removal.

USB CONNECTOR

Removal and Installation

INFOID:0000000009721690

REMOVAL

1. Remove console finisher assembly. Refer to IP-22, "Exploded View".
2. Press the pawl from the back of lower console assembly to remove USB connector.

INSTALLATION

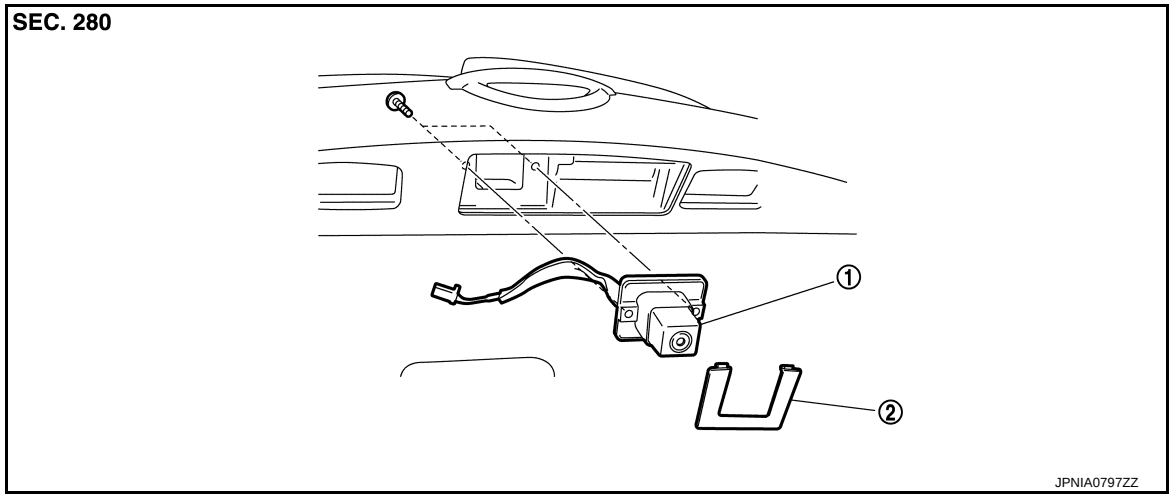
Install in the reverse order of removal.

REAR VIEW CAMERA

Exploded View

INFOID:0000000009721691

SEC. 280



1. Rear view camera
2. Finisher

Removal and Installation

INFOID:0000000009721692

REMOVAL

1. Remove back door finisher inner. Refer to INT-38, "Exploded View".
2. Remove finisher.
3. Remove rear view camera screws, disconnect rear view camera connector and remove rear view camera from back door assembly.

INSTALLATION

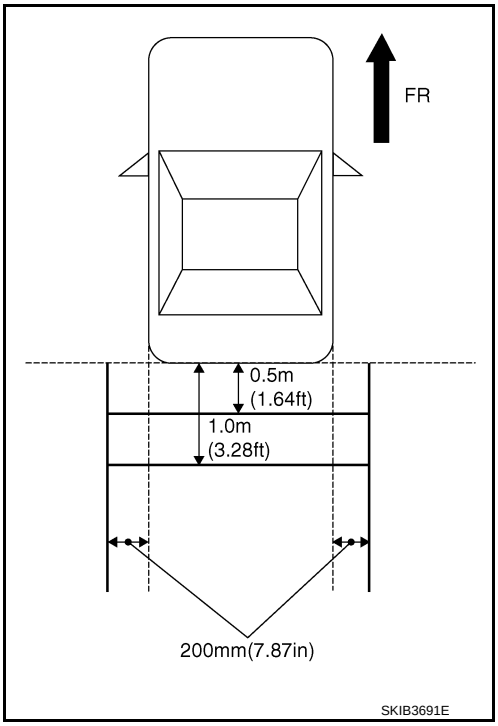
Install in the reverse order of removal.

Adjustment

INFOID:0000000009721693

Adjust the guide line position if the guide line position is shifted after installing the rear view camera.

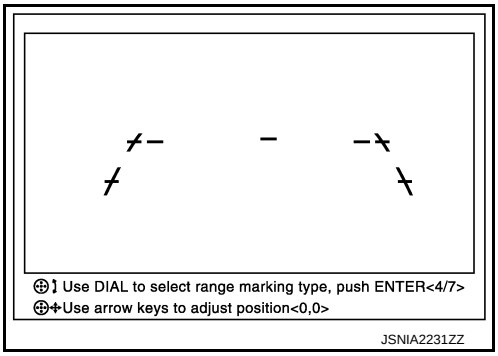
1. Draw lines on rearward area of the vehicle passing through the following points: 200 mm (7.87 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into “Adjust Guide Lines” mode of “Confirmation/Adjustment” mode.



3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.

Selected pattern : 7

4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press “OK” switch and record the adjusted guiding line position to the AV control unit.



Up/Down adjustment range : 20° to 20°

Left/Right adjustment range : 20° to 20°

CAUTION:

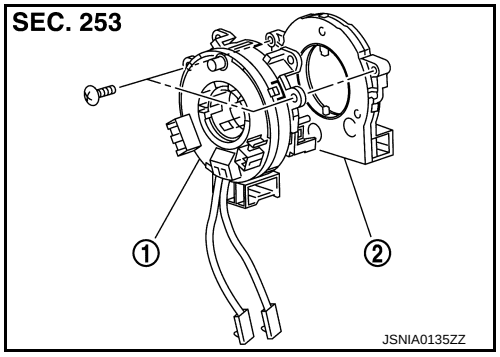
Never operate other function such as pressing BACK while writing index data.

STEERING ANGLE SENSOR

Exploded View

INFOID:0000000009721694

DISASSEMBLY



1. Spiral cable
2. Steering angle sensor

Removal and Installation

INFOID:0000000009721695

REMOVAL

1. Remove spiral cable. Refer to SR-15, "Exploded View" (except for Mexico) or SR-42, "Exploded View" (for Mexico).
2. Remove steering angle sensor from spiral cable.

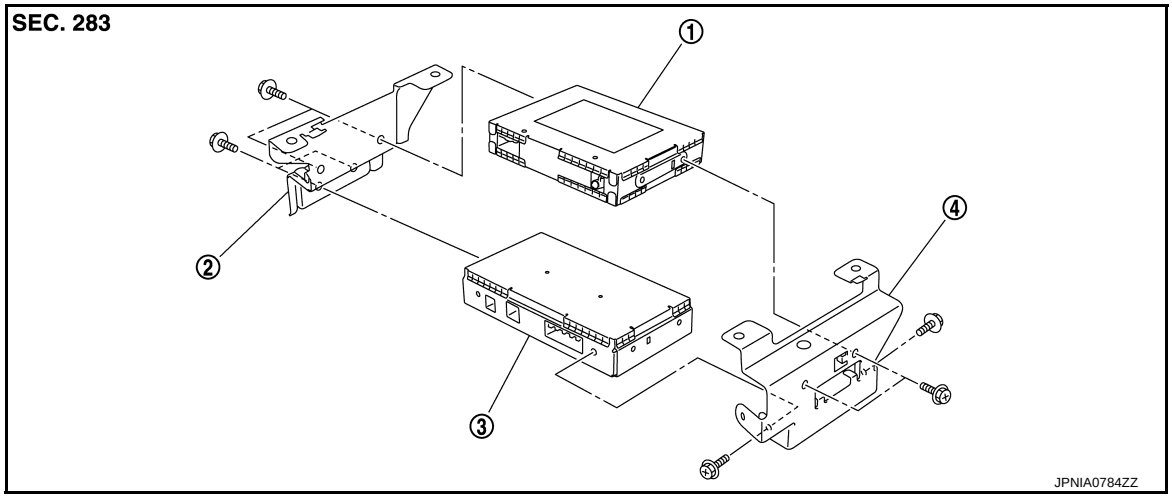
INSTALLATION

1. Install in the reverse order of removal.
2. Perform steering angle sensor neutral position adjustment. Refer to AV-65, "CONSULT Function".

TEL ADAPTER UNIT

Exploded View

INFOID:0000000009721696



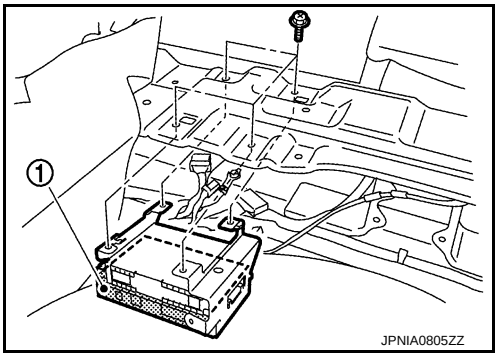
1. Satellite radio tuner
2. Bracket LH
3. TEL adapter unit
4. Bracket RH

Removal and Installation

INFOID:0000000009721697

REMOVAL

1. Remove luggage floor finisher front. Refer to INT-34, "Exploded View".
2. Remove TEL adapter unit (1) with satellite radio tuner as a single unit from the vehicle.
3. Remove bracket screws, and them remove TEL adapter unit.



INSTALLATION

Install in the reverse order of removal.

TEL ANTENNA

Removal and Installation

INFOID:0000000009721698

REMOVAL

1. Remove luggage floor finisher center (front and rear). Refer to INT-34, "Exploded View".
2. Remove luggage side finisher lower RH. Refer to INT-34, "Exploded View".
3. Remove TEL antenna feeder clips.
4. Disconnect TEL antenna connector, and them remove TEL antenna.

INSTALLATION

Install in the reverse order of removal.

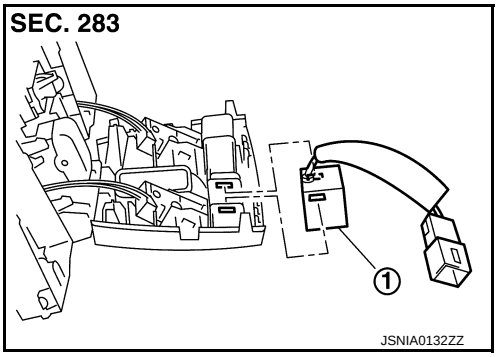
MICROPHONE

Exploded View

INFOID:0000000009721699

REMOVAL
Refer to INL-123, "Exploded View".

DISASSEMBLY



1. Microphone

Removal and Installation

INFOID:0000000009721700

REMOVAL

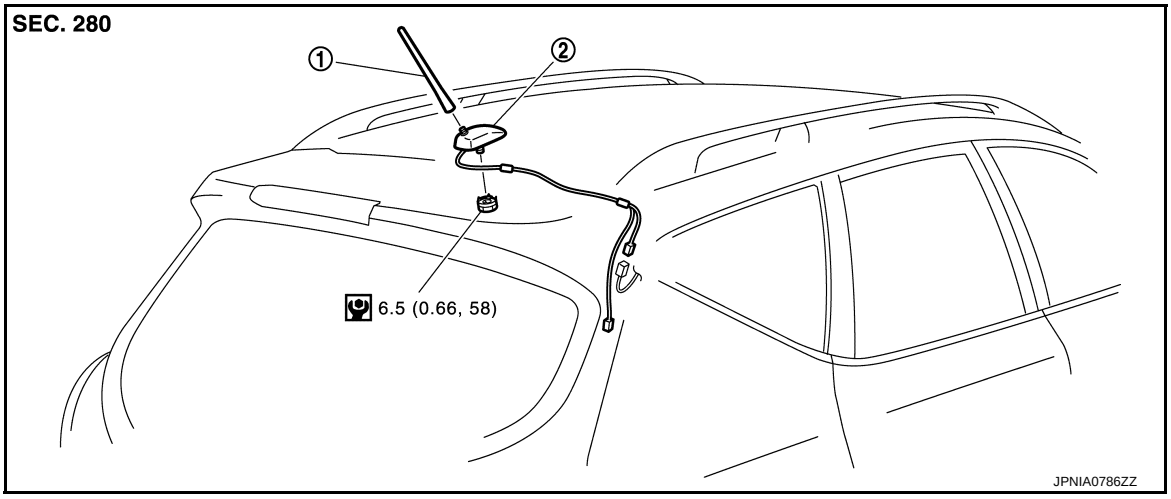
1. Remove map lamp. Refer to INL-123, "Exploded View".
2. Remove microphone from map lamp.

INSTALLATION
Install in the reverse order of removal.

ROOF ANTENNA

Exploded View

INFOID:0000000009721701



1. Rod antenna
2. Antenna base

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000009721702

REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to INT-26, "NORMAL ROOF : Exploded View" [normal roof] or INT-30, "SUNROOF : Exploded View" [sunroof].
2. Disconnect antenna feeder connectors.
3. Remove antenna base mounting nut, and then remove antenna base from roof panel.

INSTALLATION

Install in the reverse order of removal.

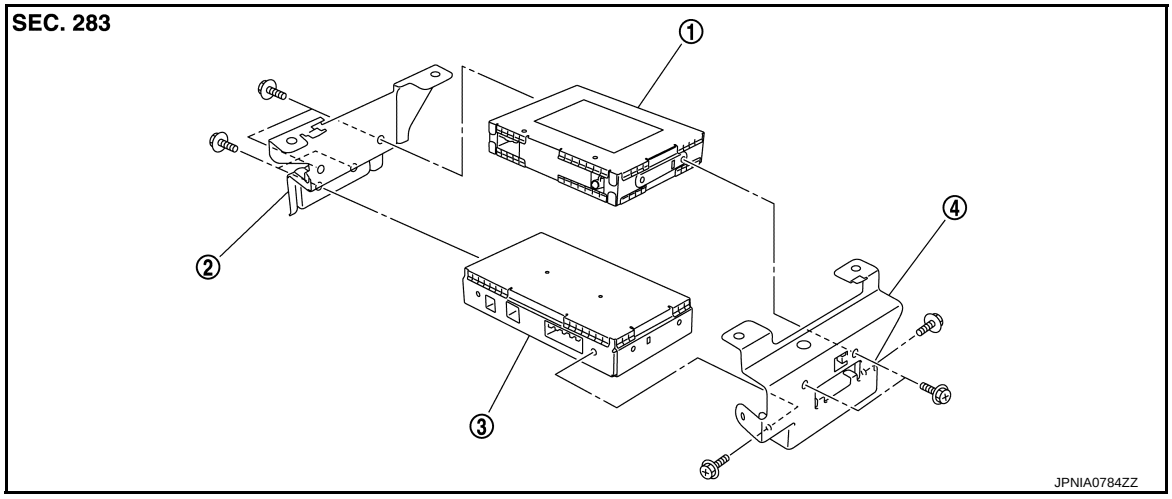
CAUTION:

If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.

SATELLITE RADIO TUNER

Exploded View

INFOID:0000000009721703



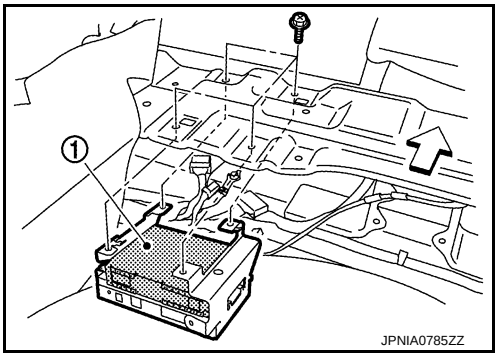
1. Satellite radio tuner
2. Bracket LH
3. TEL adapter unit
4. Bracket RH

Removal and Installation

INFOID:0000000009721704

REMOVAL

1. Remove luggage floor finisher front. Refer to INT-34, "Exploded View".
2. Remove satellite radio tuner (1) with TEL adapter unit as a single unit from the body.



⇦: Vehicle front

3. Remove bracket screws, and them remove satellite tuner.

INSTALLATION

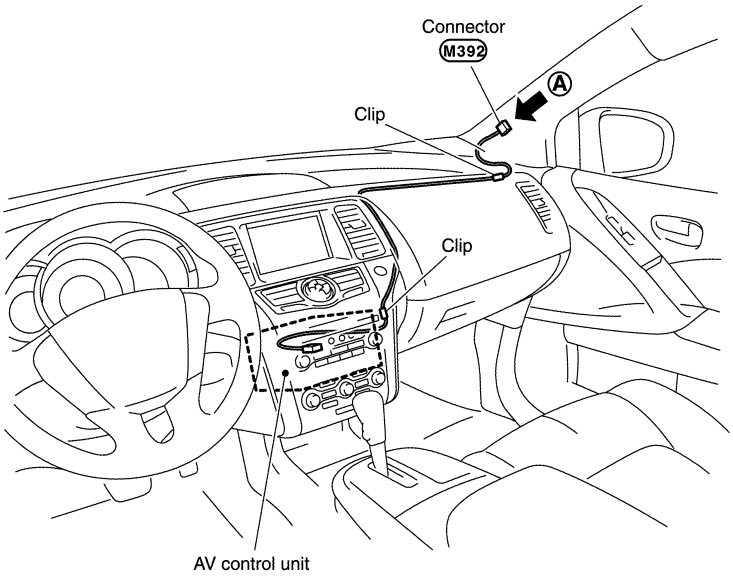
Install in the reverse order of removal.

ANTENNA FEEDER

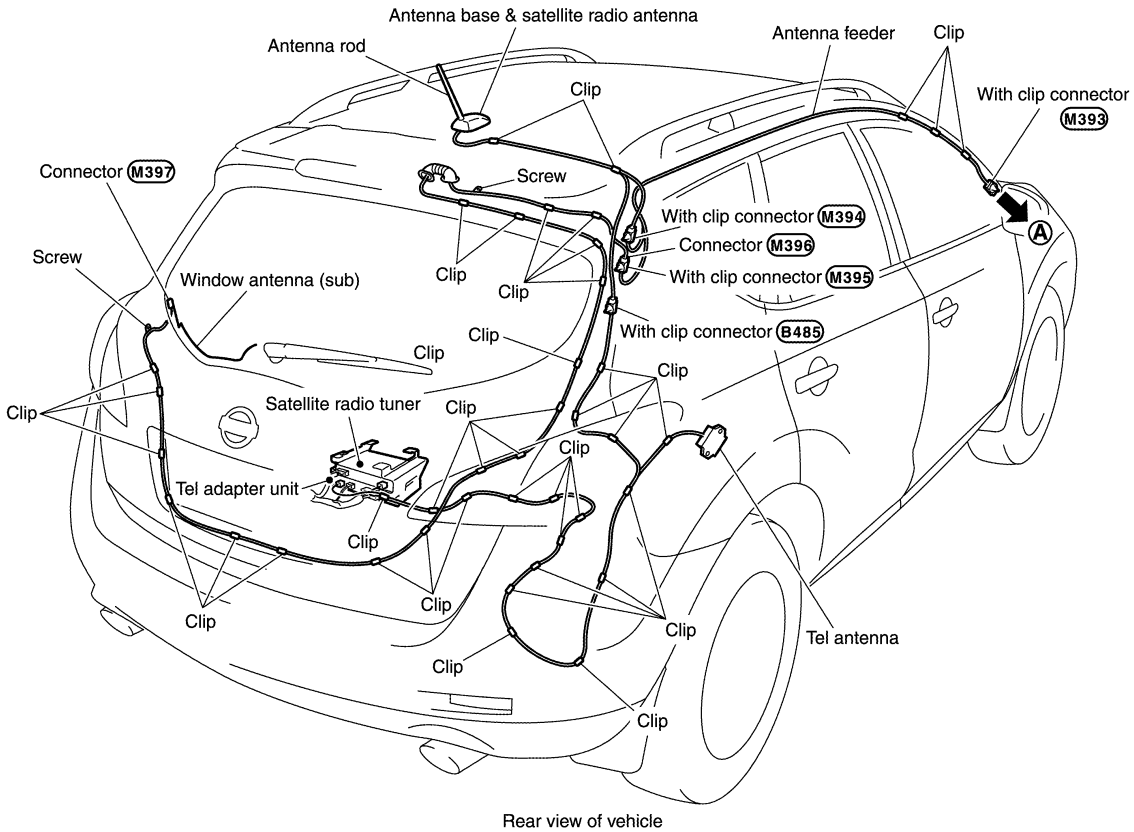
Feeder Layout

INFOID:0000000009721705

SEC. 280



Instrument panel driver side



Rear view of vehicle

JSNIA3506GB

PRECAUTION

PRECAUTIONS

EXCEPT FOR MEXICO

EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000009721706

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

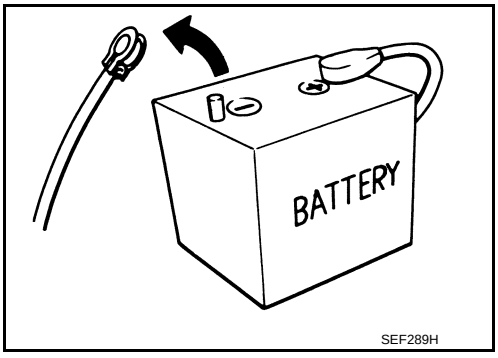
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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 3 minutes before performing any service.**

EXCEPT FOR MEXICO : Precautions for Removing of Battery Terminal

INFOID:0000000010137946

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

EXCEPT FOR MEXICO : Precaution for Trouble Diagnosis

INFOID:0000000009721708

AV COMMUNICATION SYSTEM

- Do not apply voltage of 7.0 V or higher to the measurement terminals.

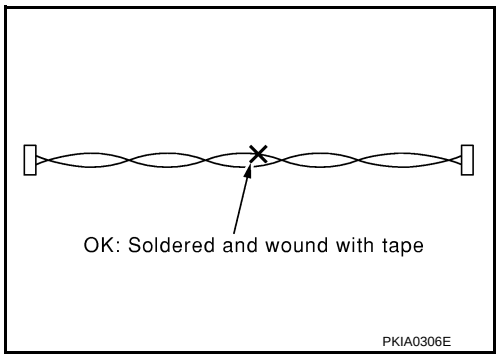
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

EXCEPT FOR MEXICO : Precaution for Harness Repair

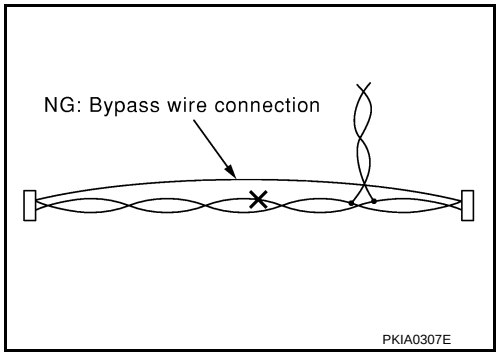
INFOID:0000000009721709

AV COMMUNICATION SYSTEM

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



- 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.)



FOR MEXICO

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

INFOID:0000000009721710

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 “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

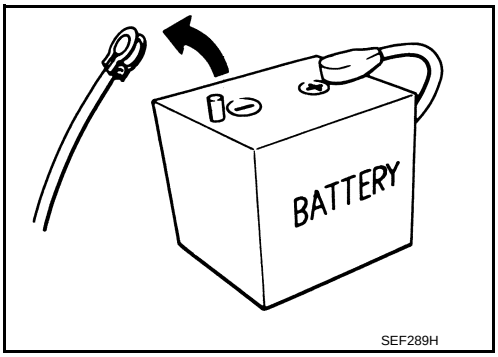
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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 3 minutes before performing any service.**

FOR MEXICO : Precautions for Removing of Battery Terminal

INFOID:0000000010137955



- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

FOR MEXICO : Precaution for Trouble Diagnosis

INFOID:0000000009721712

AV COMMUNICATION SYSTEM

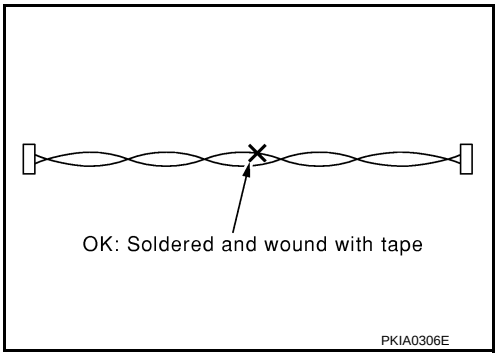
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

FOR MEXICO : Precaution for Harness Repair

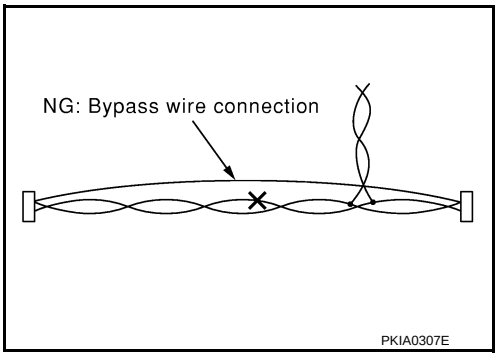
INFOID:0000000009721713

AV COMMUNICATION SYSTEM

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



- 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.)

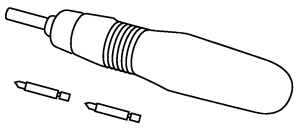


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000009721714

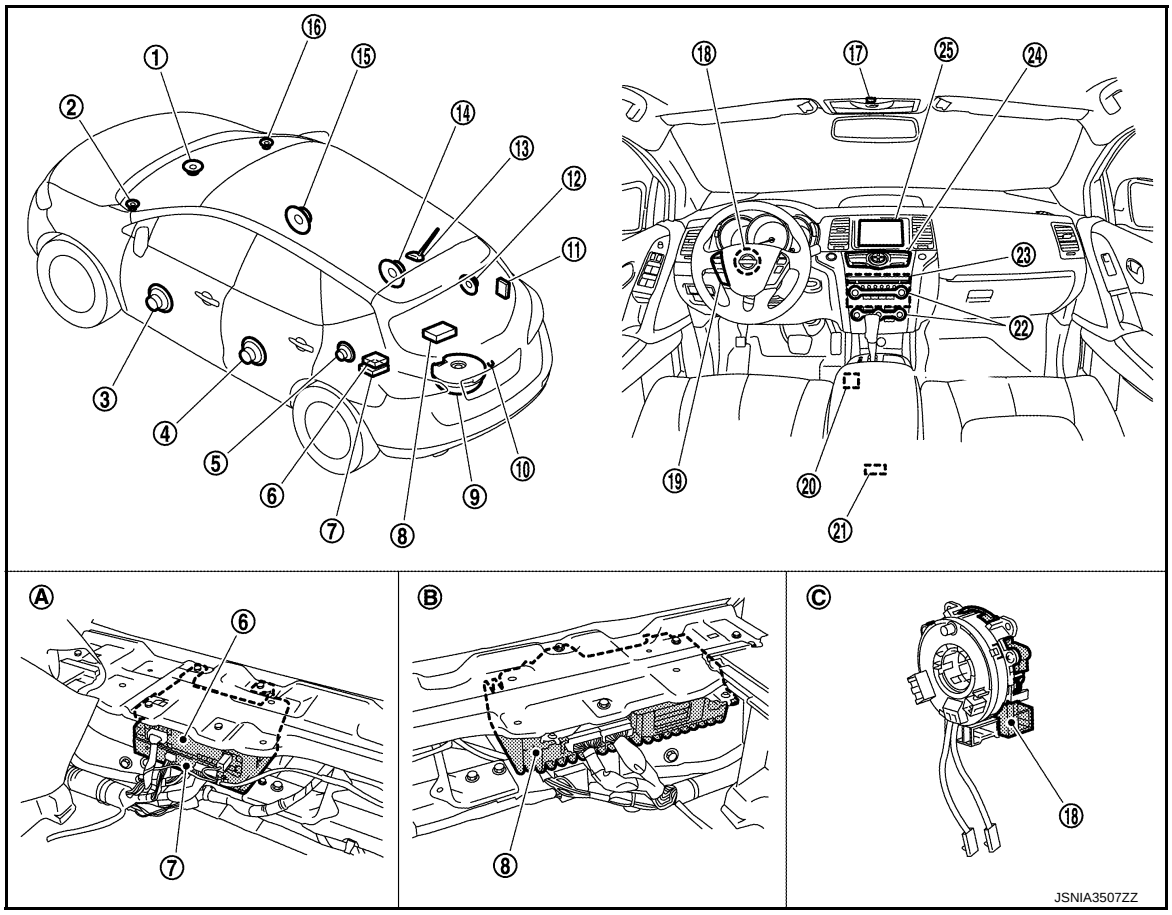
Tool		Description
Power tool	 PBIC0191E	Loosening screws

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000009721715



1.	Center speaker	2.	Front squawker LH	3.	Front door speaker LH
4.	Rear door speaker LH	5.	Rear speaker LH	6.	Satellite radio tuner
7.	TEL adapter unit	8.	BOSE amp.	9.	Woofer
10.	Rear view camera	11.	TEL antenna	12.	Rear speaker RH
13.	Antenna base (antenna amp. and satellite radio antenna)	14.	Rear door speaker RH	15.	Front door speaker RH
16.	Front squawker RH	17.	Microphone	18.	Steering angle sensor
19.	Steering switch	20.	USB connector	21.	Auxiliary input jacks
22.	Preset switch	23.	AV control unit	24.	Multifunction switch
25.	Display unit				
A.	Luggage floor finisher is removed condition	B.	Luggage floor finisher is removed condition	C.	Spiral cable part

Component Description

INFOID:0000000009721716

Part name	Description
AV control unit	• It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and combination meter via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • It supplies power to the rear camera. • Amp. ON signal and sound signal are transmitted to BOSE amp. • TEL voice signal is input from TEL adapter unit.
Display unit	• Display image is controlled by the serial communication from AV control unit. • It receives the power (signal VCC and inverter VCC) from the AV control unit and operates. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). • Composite image signals (auxiliary input and camera images) are input from AV control unit. • Synchronizing signal (HP, VP) is output to AV control unit.
BOSE amp.	Inputs sound signal from AV control unit, and outputs sound signal to each speaker.
Front door speaker	• Outputs sound signal from BOSE amp. • Outputs sound (mid and low range).
Rear door speaker	• Outputs sound signal from BOSE amp. • Outputs sound (mid and low range).
Front squawker	• Outputs sound signal from BOSE amp. • Outputs sound (high and mid range).
Rear speaker	• Outputs sound signal from BOSE amp. • Outputs sound (high and mid range).
Center speaker	• Outputs sound signal from BOSE amp. • Outputs sound (high and mid range).
Woofer	• Composed of two woofers. • Inputs sound signal from BOSE amp. • Outputs sound (low range).
Multifunction switch	• Operation panel is equipped with the centralized switch where audio and auxiliary input, etc. operations are integrated. • Connected with preset switch via harness, and operation signal is transmitted to AV control unit via AV communication.
Preset switch	• Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. • Connected with multifunction switch via harness, and operation signal is transmitted to AV control unit via AV communication. • The disk ejection operating signal is performed by hardwire.
Rear view camera	• Camera power supply is input from AV control unit. • The image of vehicle rear view is transmitted to AV control unit.
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle sensor signal via CAN communication.
Steering switch	• Operations for audio and hands-free phone are possible. • Steering switch signal (operation signal) is output to AV control unit.

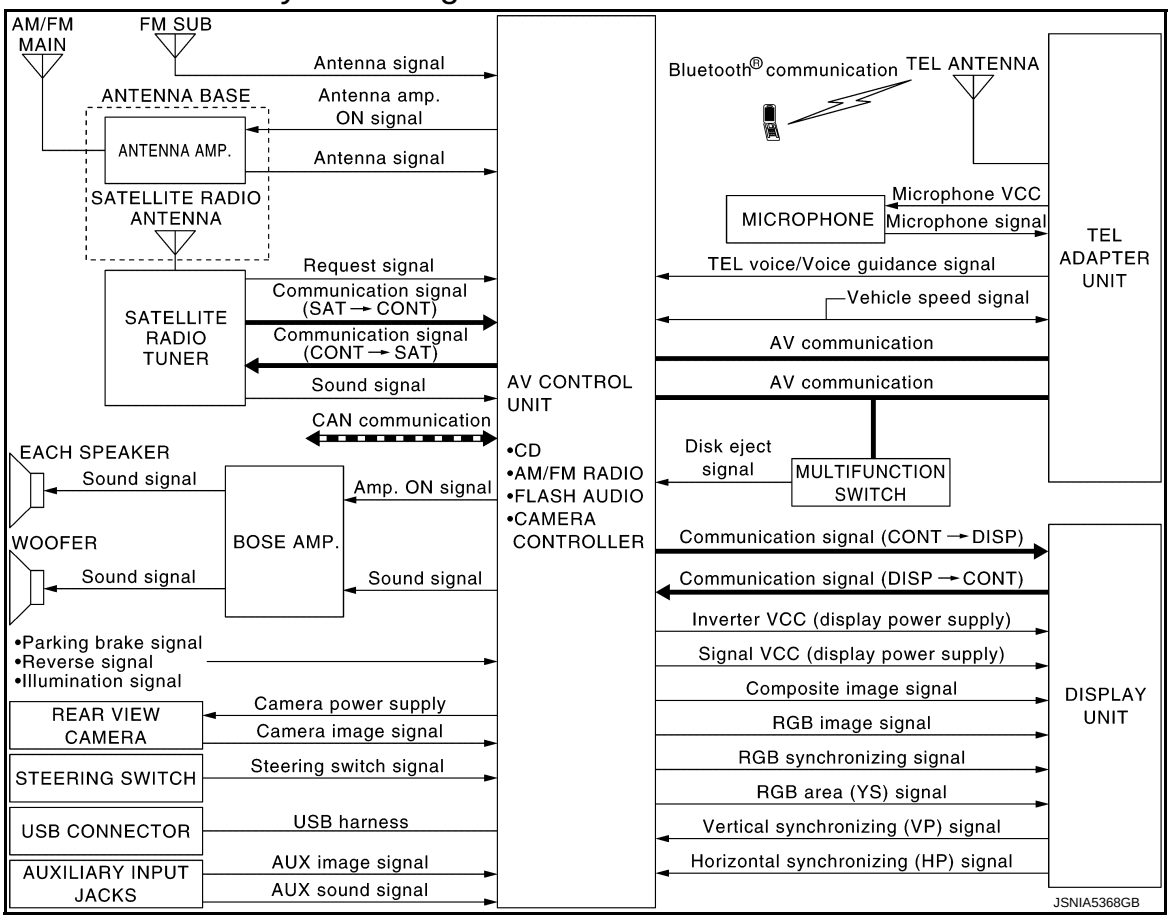
Part name	Description
Microphone	• Used for hands-free phone operation. • Microphone signal is transmitted to TEL adapter unit. • Power (Microphone VCC) is supplied from TEL adapter unit.
Auxiliary input jacks	Image signal and sound signal of auxiliary input are transmitted to AV control unit.
Antenna base	A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted. ANTENNA AMP. • Radio signal received by rod antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit. SATELLITE RADIO ANTENNA • Receives satellite radio waves and outputs it to Satellite radio tuner.
Satellite radio tuner	• Inputs the satellite radio signal from satellite radio antenna and outputs the sound signal to the AV control unit. • It is controlled with the AV control unit and serial communication (communication signal and request signal).
TEL adapter unit	• Inputs the TEL voice signal from TEL antenna and outputs it to the AV control unit. • It is connected with the AV control unit via AV communication and controlled with the AV control unit.
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.
USB connector	Sound signal of USB input is transmitted to AV control unit.

SYSTEM

MULTI AV SYSTEM

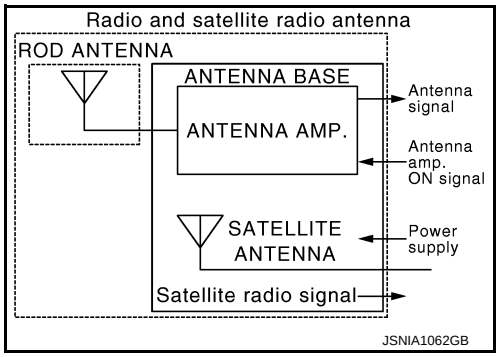
MULTI AV SYSTEM : System Diagram

INFOID:0000000009721717



NOTE:

- FLASH AUDIO is not used.
- The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.
- An antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.



MULTI AV SYSTEM : System Description

INFOID:0000000009721718

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Audio function
Hands-free phone function
Auxiliary input function

FUNCTION NAME
Rear view monitor function
Vehicle information function

COMMUNICATION SIGNAL

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM and combination meter, and computes and displays fuel economy information value with the obtained information. Transmitting/receiving of data signal is performed by BCM. Also, it transmits the required signal of vehicle setting and receives the response signal.
- AV control unit is connected with display unit and serial communication, and it transmits the required signal of display and display control and receives the response signal from display unit.

AUDIO FUNCTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, steering switch. Operation status of audio is indicated at display.

FUNCTION
AM/FM radio
Satellite radio
CD
USB connection

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch or steering switch.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch. The disk ejection operating signal is performed by hardwire.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Display

- Switching of display is performed with serial communication between display unit and AV control unit.
- The image signal to display operating condition is performed with RGB image signal, RGB area signal and RGB image synchronizing signal.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- AM/FM radio wave is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.
- FM radio wave is received by FM sub antenna, and it is transmitted to the AV control unit directly. The FM sub antenna is installed on the back door window glass.
- AV control unit outputs audio signal to BOSE amp. The signal is also outputted from BOSE amp. to woofer and each speaker.

Satellite Radio Mode

- Satellite radio tuner is controlled by communication signal and request signal with AV control unit.
- Sound signal (satellite radio) is received by satellite radio antenna (antenna base) and transmitted to AV control unit via satellite radio tuner.
- AV control unit outputs audio signal (satellite radio) to BOSE amp. The signal is also outputted from BOSE amp. to woofer and each speaker.

CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to BOSE amp. The signal is also outputted from BOSE amp. to woofer and each speaker when CD is inserted to AV control unit.

USB Connection Function

- Connecting iPod® or USB memory allows the driver to play iPod® music files or USB memory-stored music files.
- Sound signals of music files stored in iPod® or USB memory is transmitted from the USB connector to the AV control unit.
- AV control unit outputs sound signal to BOSE amp. The signal is also outputted from BOSE amp. to woofer and each speaker.
- iPod® is recharged when connected to USB connector.
- Only files that meet the following conditions will be played.

	Music file
File format	“MP3”, “WMA”
File extension	“.mp3”, “.wma”
Maximum file size	800 MB

NOTE:
- iPod® is a trademark of Apple inc., registered in the U.S. and other countries.
- Image signals cannot be received from iPod® or USB memory.
- Use the enclosed USB harness when connecting iPod® to USB connector.

HANDS-FREE PHONE SYSTEM

- TEL adapter unit is controlled with AV communication from AV control unit.
- The connection between cellular phone and TEL adapter unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the TEL adapter unit to the AV control unit, and output to the front speaker via BOSE amp. when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to AV-190, "On Board Diagnosis Function".

When A Call Is Originated
- Spoken voice sound output from the microphone (microphone signal) is input to TEL adapter unit.
- TEL adapter 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 TEL adapter unit by establishing Bluetooth® communication from cellular phone, and the signal is output to front speaker via BOSE amp.

AUXILIARY INPUT FUNCTION

- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- AUX image signals are transmitted to the display unit via the AV control unit.
- AUX sound signals are transmitted to BOSE amp. via AV control unit. The signal is also outputted from BOSE amp. to woofer and each speaker.

REAR VIEW MONITOR FUNCTION

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 when power is supplied from the AV control unit.
- The AV control unit transmits a warning message, fixed guide lines, and predictive course lines to the display unit by RGB image signals. Rear view monitor images are displayed by combining the RGB image signals and the camera image signals from the rear view camera.
- Predictive course lines are controlled by a steering angle sensor signal received the AV control unit via CAN communication.

VEHICLE INFORMATION FUNCTION

- Status of audio, climate control system, fuel economy and maintenance are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM and combination meter.
- AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

INFOID:0000000009721719

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

On Board Diagnosis Function

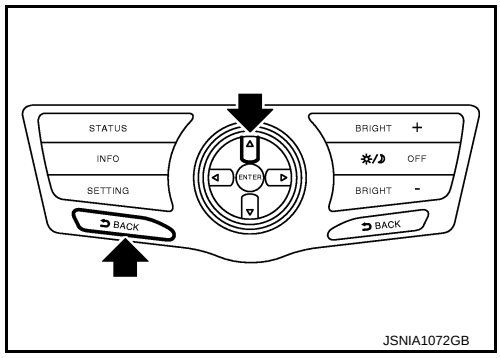
INFOID:0000000009721720

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and disk eject switch cannot be checked.



Finishing Self-diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- Self-diagnosis mode performs the AV control unit diagnosis and the connection diagnosis between each of the units that make up the system, and it indicates the results to the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

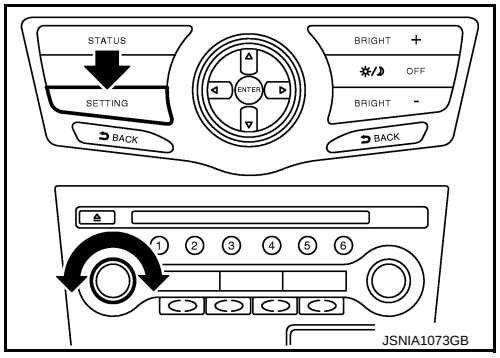
On Board Diagnosis Item

Mode	Description
Self Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and each unit.

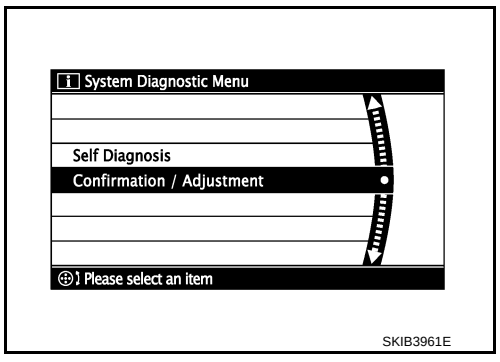
Mode		Description
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display.
	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition and reverse.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Climate Control	Start auto air conditioner system self-diagnosis.
	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 Cont.	• Guiding line position that overlaps rear view camera image can be adjusted. • Configuration stored in the AV control unit can be checked.
	Vehicle CAN Diagnosis	The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis	The communication condition of each unit of Multi AV system can be monitored.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Initialize Settings	Initializes the AV control unit memory.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, the trouble diagnosis initial screen is displayed.)
   • Shifting from current screen to previous screen is performed by pressing “BACK” button.



4. Items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected on the trouble diagnosis initial screen.

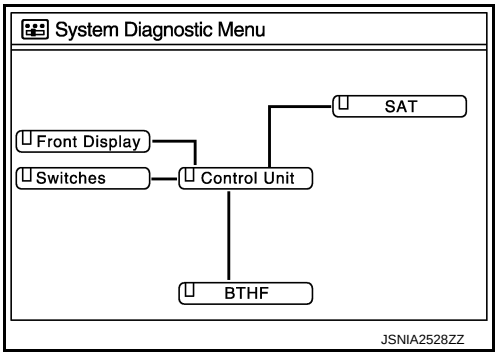


SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.

- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.

2. 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.



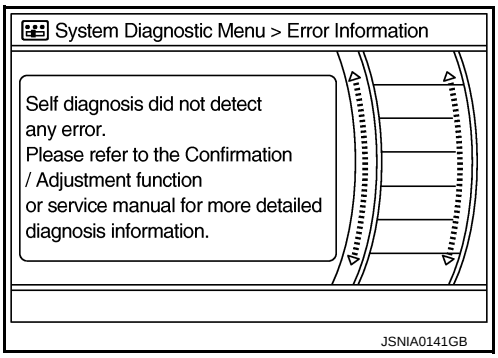
Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

NOTE:

Control unit (AV control unit) and is displayed in red.

- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-276, "Exploded View".
- 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.

- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



Detection Range of Self-diagnosis Mode

- The self-diagnosis mode allows the technician to diagnose the connection in the communication line between AV control unit and each unit and the internal operation of the AV control unit.
- Because the start condition of diagnosis function is a switch operation, the on board diagnosis function cannot be started up if any malfunction is detected in the communication circuit between AV control unit and multifunction switch.

SELF-DIAGNOSIS RESULTS

Check the applicable display at the following table, and then repair the malfunctioning parts.

Only Unit Part Is Displayed In Red.

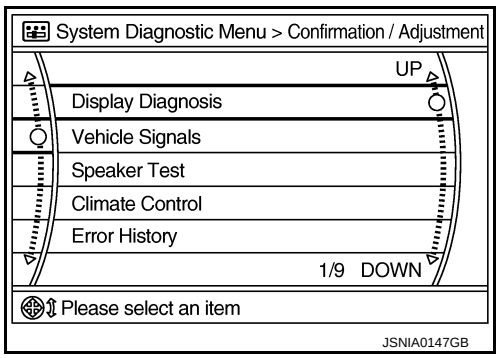
Screen switch	Description	Possible malfunction location / Action to take
Control unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

A Connecting Cable Between Units Is Displayed In Yellow.

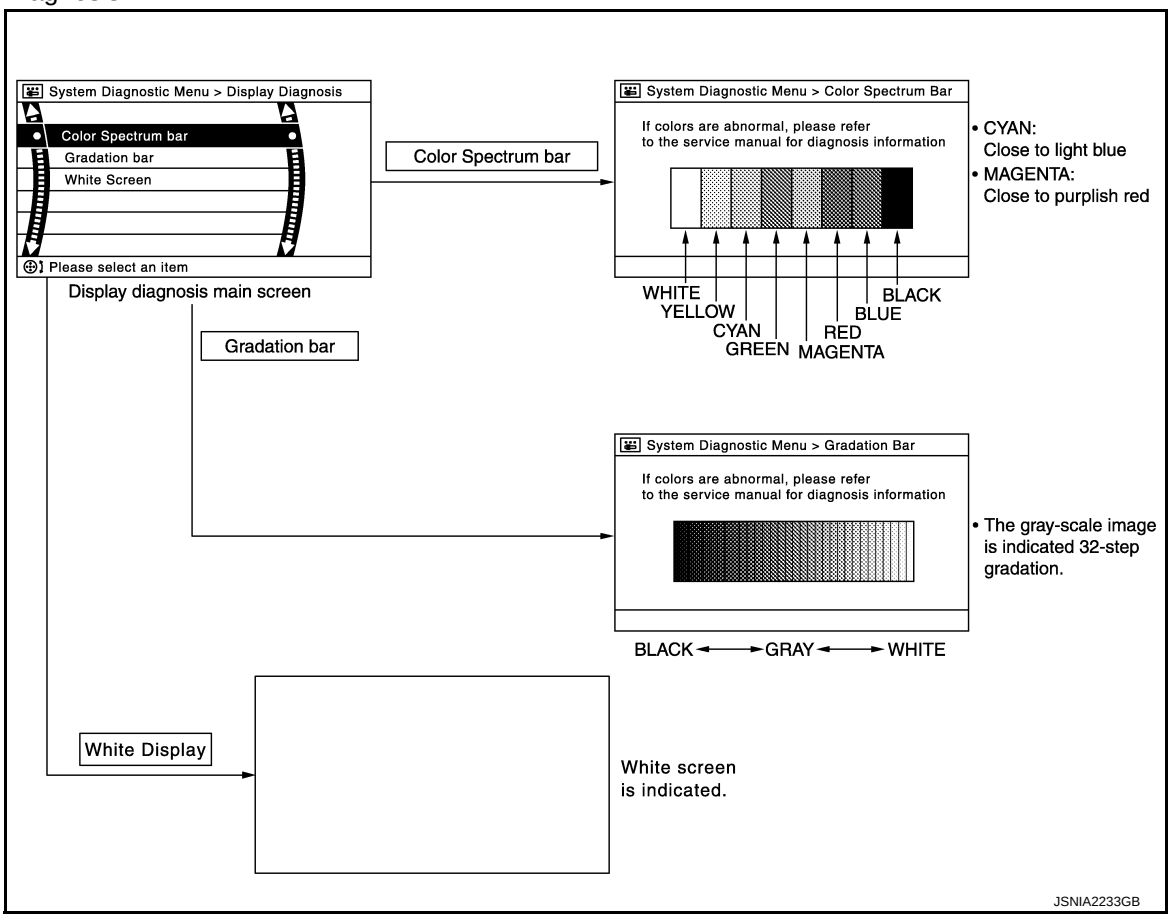
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Malfunction is detected in serial communication circuits between AV control unit and display unit.	Serial communication circuits between AV control unit and display unit.
Control unit ⇔ SAT	When either one of the following items is detected: • satellite radio tuner power supply and ground circuit are malfunctioning. • communication circuits between AV control unit and satellite radio tuner are malfunctioning. • request signal circuit between AV control unit and satellite radio tuner are malfunctioning.	• Satellite radio tuner power supply and ground circuit. Refer to AV-246, "SATELLITE RADIO TUNER : Diagnosis Procedure". • Communication circuit between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.
Control unit ⇔ BTHF	When either one of the following items is detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. Refer to AV-247, "TEL ADAPTER UNIT : Diagnosis Procedure". • AV communication circuits between AV control unit and TEL adapter unit.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “BACK” switch to return to the initial Confirmation/Adjustment Mode screen.

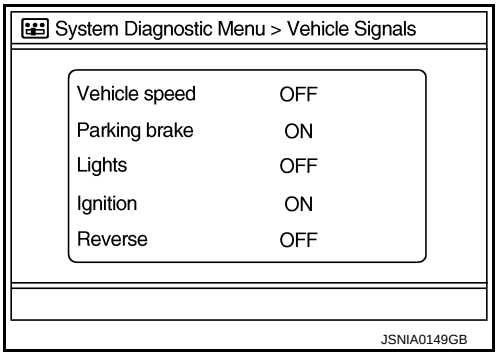


Display Diagnosis



Vehicle Signals

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

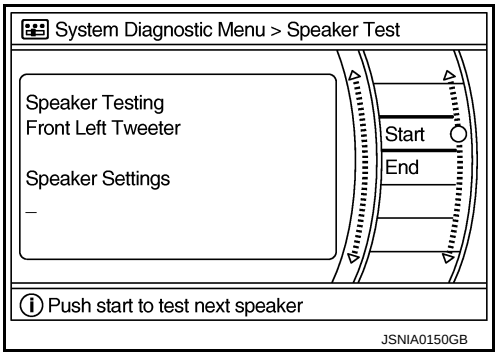


Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Lighting switch is ON	—
	OFF	Lighting switch is OFF	
Ignition	ON	Ignition switch is ON	—
	OFF	Ignition switch is in ACC position	

Diagnosis item	Display	Vehicle status	Remarks
Reverse	ON	Selector lever is in R position	Changes in indication may be delayed. This is normal.
	OFF	Selector lever is in any position other than R	

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.



Climate Control

Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

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 error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.

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

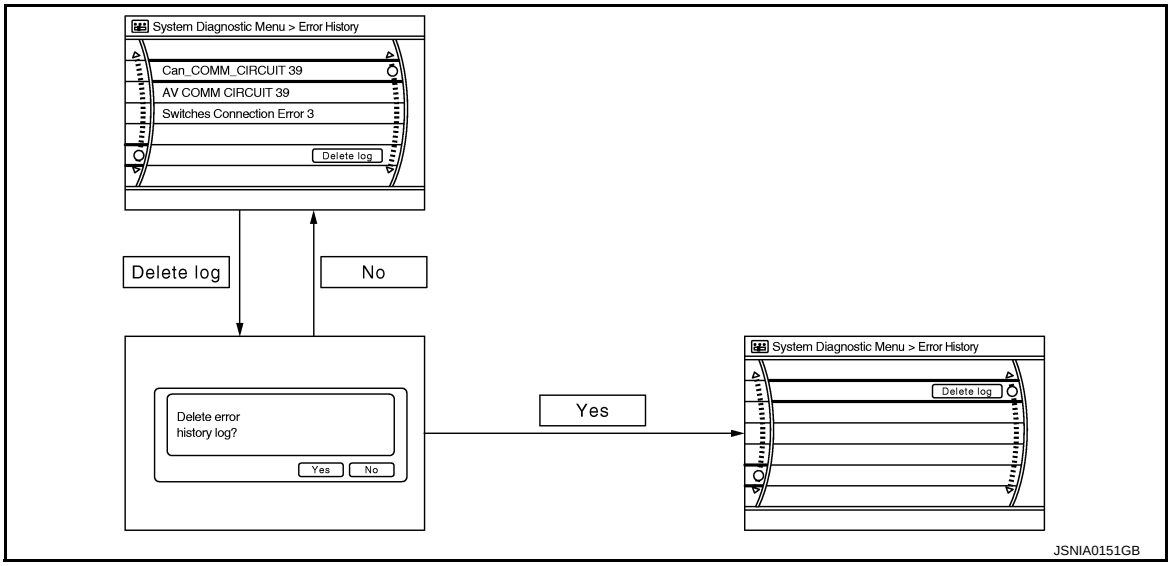
Count up method A

- The counter resets to 0 if an error occurs when ignition switch is turned ON. The counter increases by 1 if the condition is normal at a next ignition ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT.

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 or CONSULT.

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



Error item

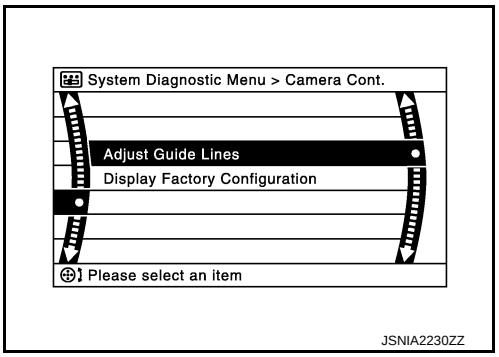
Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-187, "CONSULT Function".
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-276, "Exploded View".
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
CAN Controller Memory Error		
Steer. Angle Sensor Calibration	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor. Refer to AV-187, "CONSULT Function".
Front Display Connection Error	When either one of the following items are detected: • display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and display unit are malfunctioning.	• Display unit power supply and ground circuits. Refer to AV-244, "DISPLAY UNIT : Diagnosis Procedure". • Serial communication circuits between AV control unit and display unit.
XM Connection Error	When either one of the following items is detected: • satellite radio tuner power supply and ground circuits are malfunctioning. • communication circuits between AV control unit and satellite radio tuner are malfunctioning. • request signal circuit between AV control unit and satellite radio tuner are malfunctioning.	• Satellite radio tuner power supply and ground circuits. Refer to AV-246, "SATELLITE RADIO TUNER : Diagnosis Procedure". • Communication circuits between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT • H/F Unit Connection Error	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. Refer to AV-247, "TEL ADAPTER UNIT : Diagnosis Procedure". • AV communication circuits between AV control unit and TEL adapter unit.
• AV COMM CIRCUIT • Switches Connection Error • H/F Unit Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

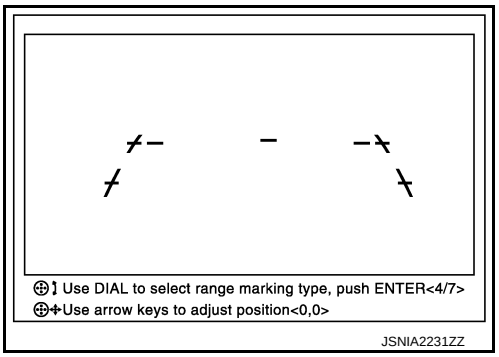
Camera Cont.

The two functions of “Adjust Guide Lines”, “Display Factory configuration” are available.



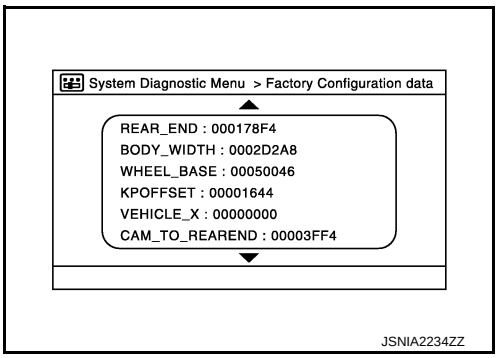
Adjust Guide Lines

- Use this mode to adjust the guide line display position of the rear view monitor if necessary after removing the rear view monitor camera.



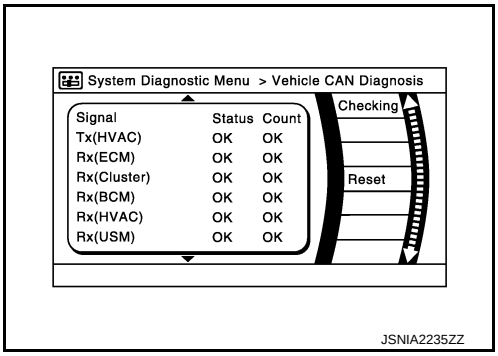
Display Factory configuration

- Configuration stored in the AV control unit can be checked.



Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- 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.

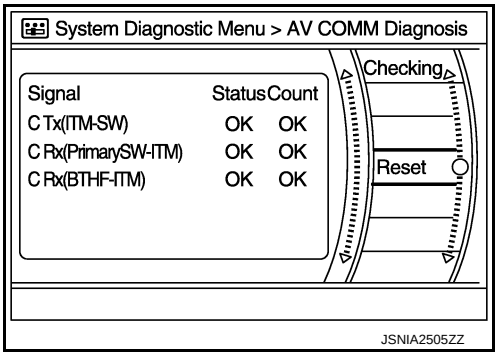


Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(BCM)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(VDC)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each 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.

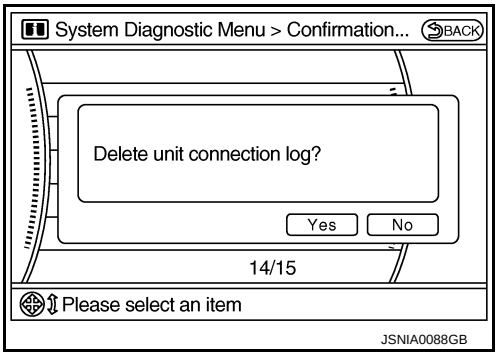


Items	Status (Current)	Counter (Past)
C Tx(ITM-PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 – 39
C Rx(BTHF-ITM)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

Delete Unit Connection Log

Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)

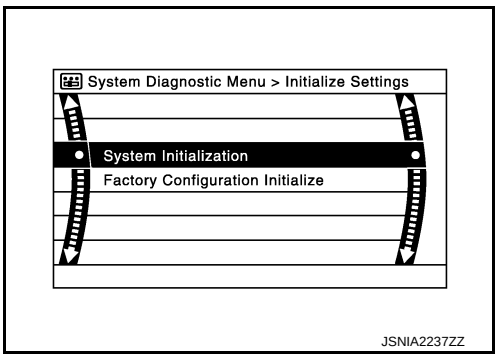


Initialize Settings

"User Data Initialization" and "Accessory Number Initialization" are possible.

CAUTION:

- **Never perform Accessory Number Initialization except when configuration is unsuccessful.**
- **Accessory Number Initialization requires configuration. For details, refer to AV-231, "Description".**



CONSULT Function

INFOID:0000000009721721

CONSULT FUNCTIONS

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

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing AV control unit.

AV Communication

When "AV communication" of "CAN Diag Support Monitor" is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".
- The timing is displayed as "0" if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-233, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-276, "Exploded View".
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200]	AV control unit malfunction is detected.	
CAN CONT [U1216]		

Error item	Description	Possible malfunction factor/Action to take
ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor. Refer to BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".
FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and display unit are malfunctioning.	• Display unit power supply and ground circuits. Refer to AV-244, "DISPLAY UNIT : Diagnosis Procedure". • Serial communication circuits between AV control unit and display unit.
SAT CONN [U1255]	When either one of the following items is detected: • satellite radio tuner power supply and ground circuits are malfunctioning. • communication circuits between AV control unit and satellite radio tuner are malfunctioning. • request signal circuit between AV control unit and satellite radio tuner are malfunctioning.	• Satellite radio tuner power supply and ground circuits. Refer to AV-246, "SATELLITE RADIO TUNER : Diagnosis Procedure". • Communication circuits between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. Refer to AV-247, "TEL ADAPTER UNIT : Diagnosis Procedure". • AV communication circuits between AV control unit and TEL adapter unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • HAND FREE CONN [U1256]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

ALL SIGNALS

- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	

Display Item	Display	Vehicle status	Remarks
ILLUM SIG	On	Lighting switch is ON.	—
	Off	Lighting switch is OFF.	
IGN SIG	On	Ignition switch is ON	
	Off	Ignition switch is in ACC position	
REV SIG	On	Selector lever is in R position	Changes in indication may be delayed. This is normal.
	Off	Selector lever is in any position other than R	

SELECTION FROM MENU

Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

CAUTION:

For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

Description

INFOID:0000000009721722

During on board diagnosis the diagnosis function of TEL adapter unit starts with the operation of the steering switch and performs the diagnosis when ignition switch ACC.

On Board Diagnosis Function

INFOID:0000000009721723

ON BOARD DIAGNOSIS ITEM

The on board diagnosis has 3 modes: the self-diagnosis mode that performs the trouble diagnosis, the speaker adaptation data deleting mode and the hands-free phone system initialization mode.

CAUTION:

- **Perform the diagnosis with the vehicle stopped.**
- **Perform STEP2 if necessary.**

STEP	MODE	Description
STEP1	Self-diagnosis	The self-diagnosis mode performs the microphone test and the diagnosis of TEL adapter unit, TEL antenna and steering unit, and then reads out the results with the sound and indicates them on the display.
STEP2	Speaker adaptation data deleting	The speaker adaptation data deleting mode can delete the speaker adaptation data.
	Hands-free phone system initialization	Hands-free phone system initialization mode can perform the initialization of hands-free phone system.

Self-diagnosis results

Self-diagnosis mode reads out the self-diagnosis results.

NOTE:

- Error count is read out simultaneously when reading out the DTC name.
- The errors are read out continuously when some errors occur at the same time.

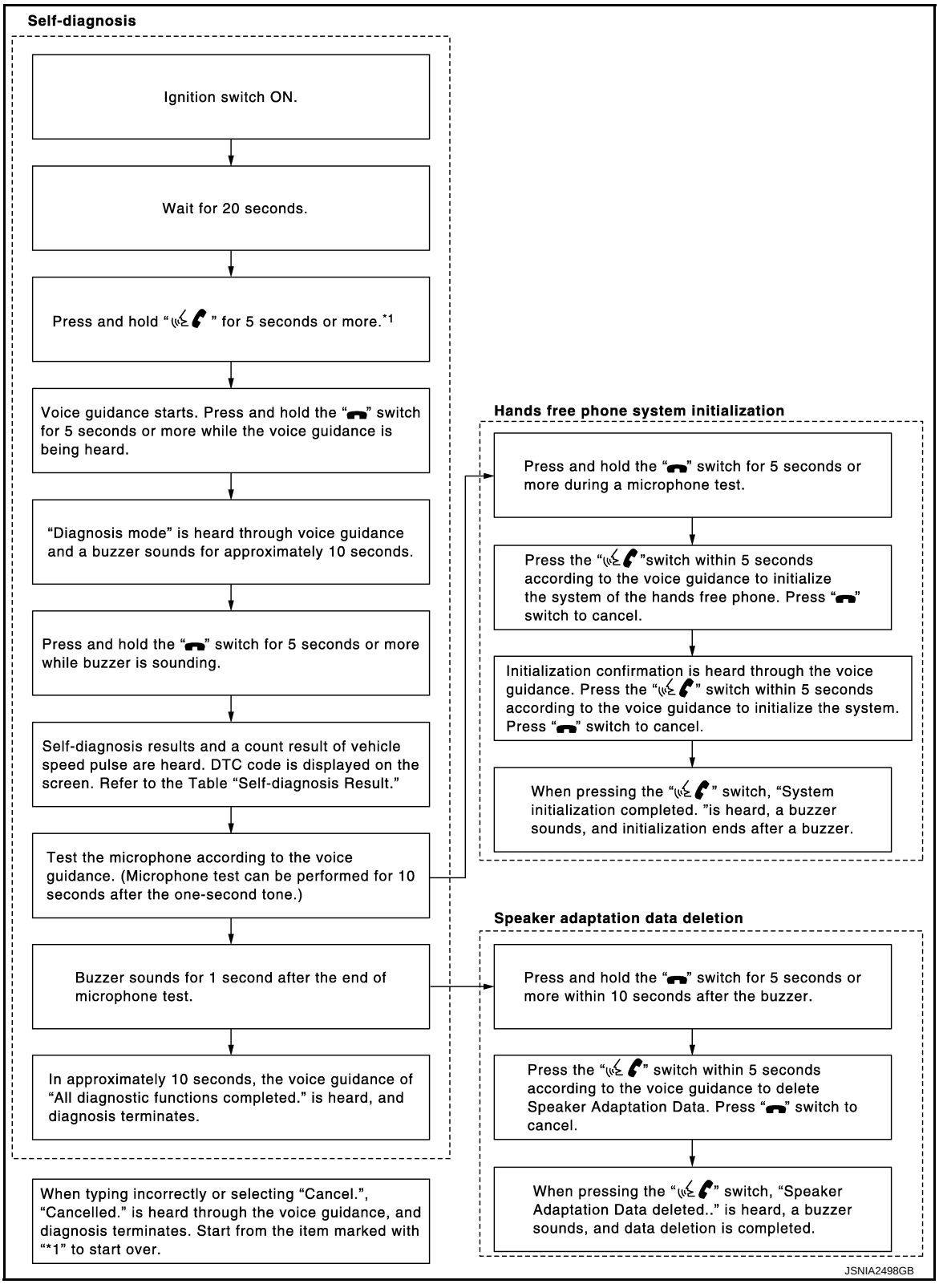
Self-diagnosis results

DTC	DTC name	Possible causes
DTC 10000	INTERNAL FAILURE	TEL adapter unit
DTC 01000	ANT. SHORT TO BATT OR OPEN	TEL antenna
DTC 00100	ANT. SHORT TO GROUND	
DTC 00010	STEERING REMOTE BUTTON STUCK A	Steering switch
DTC 00001	STEERING REMOTE BUTTON STUCK B	
DTC 00000	THERE ARE NO FAILURE RECORDS TO REPORT	—

The Details of Error Count

The error count guides “0” when the error occurs. The next time it counts up “1” if it is normal with the ignition switch ON. It continues the count up unless the initialization of hands-free phone system is performed.

FLOW CHART OF TROUBLE DIAGNOSIS



ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

INFOID:0000000009721724

VALUES ON THE DIAGNOSIS TOOL

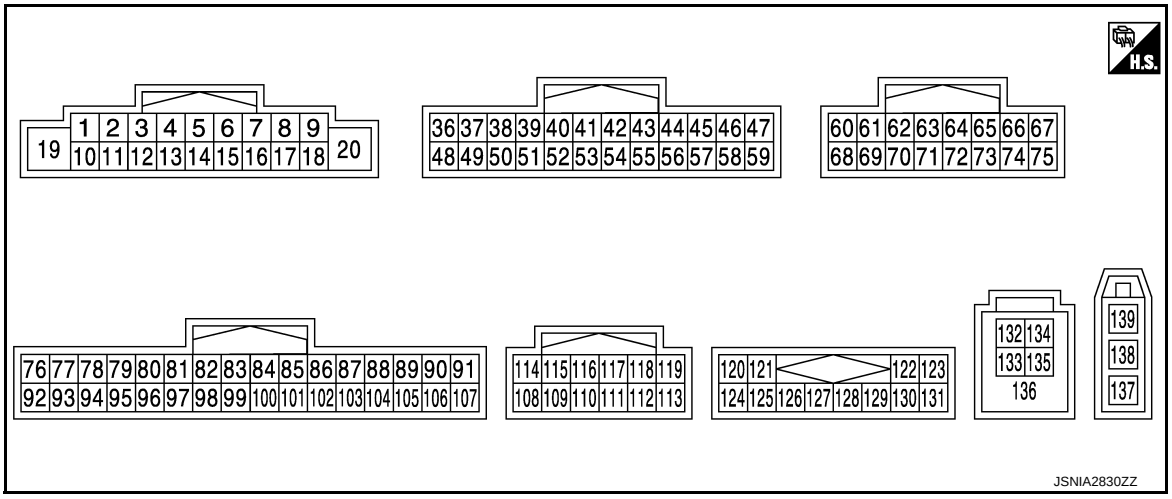
NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

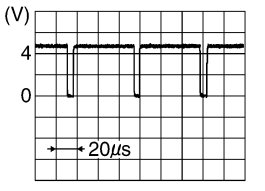
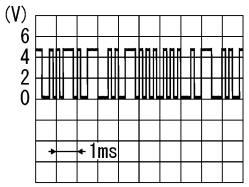
CONSULT MONITOR ITEM

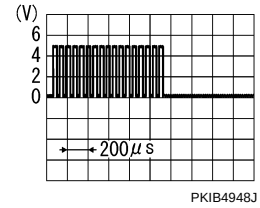
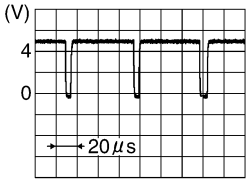
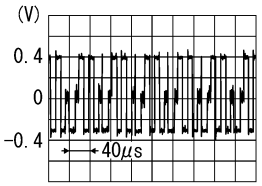
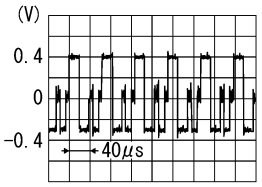
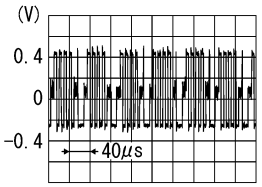
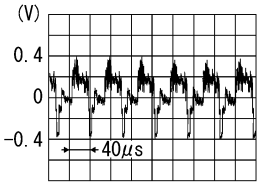
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed > 0 km/h (0 MPH)	On
		Vehicle speed = 0 km/h (0 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied.	On
		Parking brake is released.	Off
ILLUM SIG	Ignition switch ON	Lighting switch is ON	On
		Lighting switch is OFF	Off
IGN SIG	Ignition switch ON	—	On
	Ignition switch ACC	—	Off
REV SIG	Ignition switch ON	Selector lever is in R position	On
		Selector lever is in any position other than R	Off

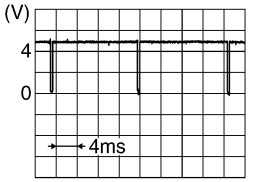
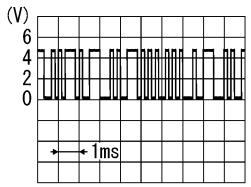
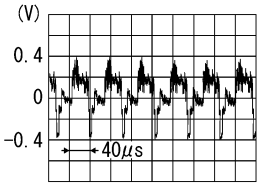
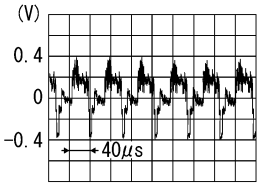
TERMINAL LAYOUT

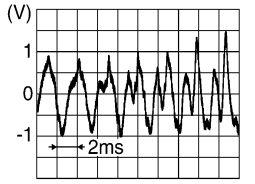
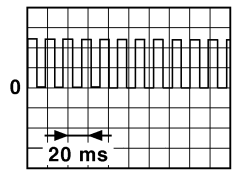


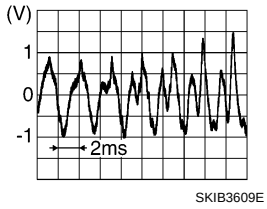
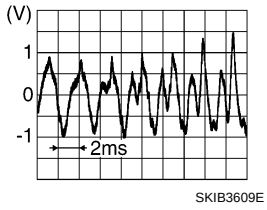
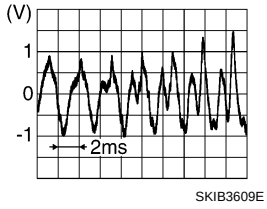
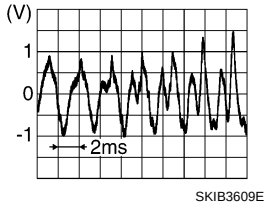
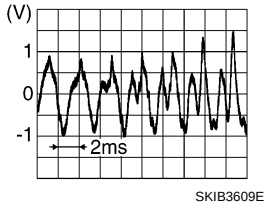
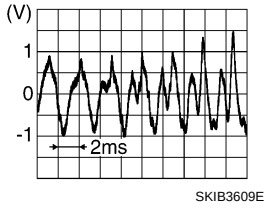
PHYSICAL VALUES

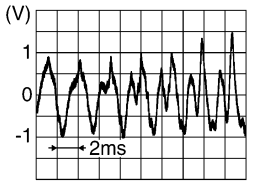
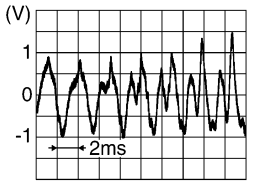
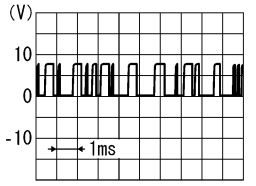
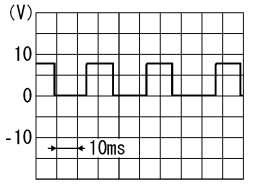
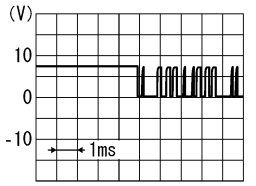
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
6 (BR)	15 (L)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	0.7 V
					Keep pressing MENU DOWN switch.	1.3 V
					Keep pressing switch	2.0 V
					Except for above.	3.3 V
7 (W)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
9 (R)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
16 (G)	15 (L)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	0.7 V
					Keep pressing switch.	1.3 V
					Except for above.	3.3 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
36 (GR)	Ground	Signal VCC	Output	Ignition switch ACC	—	9.0 V
37 (SB)	Ground	Signal ground	—	Ignition switch OFF	—	0 V
38 (G)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 SKIB3601E
39 (L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
40 (W)	Ground	RGB area (YS) signal	Output	Ignition switch ON	At RGB image is displayed.	5.0 V
					At AUX image is displayed.	 PKIB4948J
41	—	Shield	—	—	—	—
42 (B)	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	 SKIB3603E
43 (G)	Ground	RGB signal (R: red)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2238J
44 (L)	Ground	RGB signal (G: green)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2236J
45 (Y)	Ground	RGB signal (B: blue)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2237J
46 (V)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
47 (LG)	Ground	Composite image signal	Output	Ignition switch ON	At camera image is displayed.	 SKIB2251J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
48 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	—	9.0 V
49 (BR)	Ground	Inverter ground	—	Ignition switch OFF	—	0 V
50 (R)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 SKIB3598E
51 (P)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
52	—	Shield	—	—	—	—
57	—	Shield	—	—	—	—
58	—	Shield	—	—	—	—
61 (Y)	Ground	AUX image signal	Input	Ignition switch ON	At AUX image is displayed.	 SKIB2251J
62 (R)	Ground	Camera image signal	Input	Ignition switch ON	At camera image is displayed.	 SKIB2251J
69 (BR)	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
70	—	Shield	—	—	—	—
71	—	Shield	—	—	—	—
72 (LG)	Ground	Camera ground	—	Ignition switch ON	—	0 V
73 (V)	Ground	Camera power supply	Output	Ignition switch ON	Selector lever is in “R” position.	6.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
77 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
78 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
80 (P)	—	CAN–L	Input/ Output	—	—	—
81 (L)	—	CAN–H	Input/ Output	—	—	—
82 (V)	Ground	Switch ground	—	Ignition switch ON	—	0 V
86	—	Shield	—	—	—	—
87 (R)	88 (L)	TEL voice signal	Input	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E
92 (V)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
93 (LG)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is applied.	4.5 V
					Parking brake is released.	0 V
94 (SB)	Ground	Reverse signal	Input	Ignition switch ON	Selector lever is in R position.	12.0 V
					Selector lever is in other than R position.	0 V
95 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
96 (W)	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
103 (B)	102 (W)	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
104 (R)	102 (W)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
108 (LG)	114 (V)	Sound signal rear RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
109 (W)	115 (B)	Sound signal front RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
110 (P)	Ground	Amp. ON signal	Output	Ignition switch ACC	—	12.0 V
111 (B)	—	Shield	—	—	—	—
112 (R)	118 (L)	Sound signal rear LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
113 (R)	119 (G)	Sound signal front LH	Output	Ignition switch ON	Sound output.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
120 (G)	124 (B)	Satellite radio sound signal LH	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIB3609E
121 (W)	125 (R)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	 SKIB3609E
122 (B)	Ground	Communication signal (CONT→SAT)	Output	Ignition switch ON	When satellite radio mode is selected.	 SKIA9300J
126	—	Shield	—	—	—	—
127	—	Shield	—	—	—	—
129 (R)	Ground	Request signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIA9299J
130 (W)	Ground	Communication signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIA9301J
132 (G)	—	USB ground	—	—	—	—
133 (W)	—	USB D– signal	—	—	—	—
134 (R)	—	V BUS signal	—	—	—	—
135 (L)	—	USB D+ signal	—	—	—	—
136	—	Shield	—	—	—	—
137	—	FM sub	Input	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
138	—	AM - FM main	Input	—	—	—
139	—	Antenna amp. ON signal	Output	Ignition switch ON	—	12.0 V

DTC Index

INFOID:0000000009721725

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

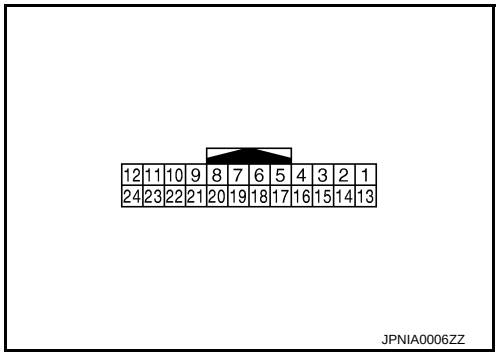
DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-233, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-234, "DTC Logic"
U1200	Cont Unit [U1200]	AV-235, "DTC Logic"
U1216	CAN CONT [U1216]	AV-236, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-237, "Diagnosis Procedure"
U1243	FRONT DISP CONN [U1243]	AV-238, "Diagnosis Procedure"
U1255	SAT CONN [U1255]	AV-240, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-243, "DTC Logic"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-242, "Description"
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	
U1300 U1240 U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • HAND FREE CONN [U1256]	

DISPLAY UNIT

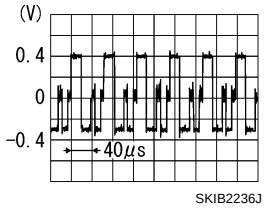
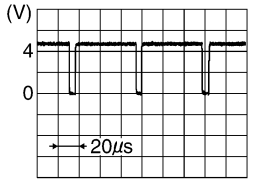
Reference Value

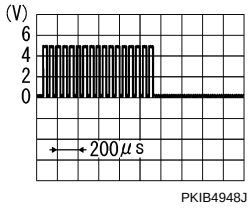
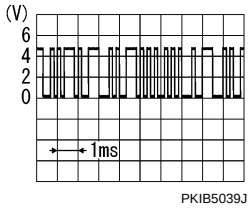
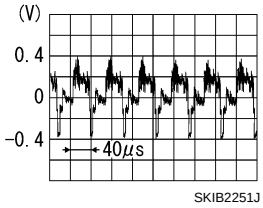
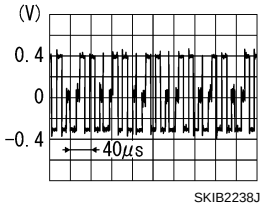
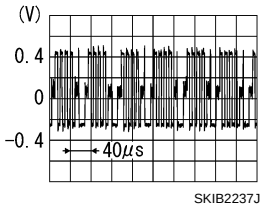
INFOID:0000000009721726

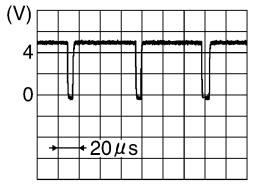
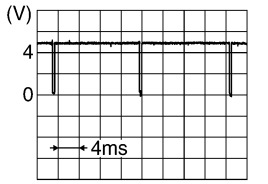
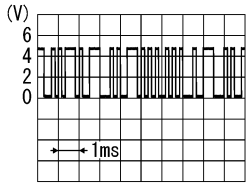
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	—	9.0 V
3 (GR)	Ground	Signal VCC	Input	Ignition switch ACC	—	9.0 V
4 (V)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6 (L)	Ground	RGB signal (G: green)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2236J
7	—	Shield	—	—	—	—
8 (G)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	 SKIB3601E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (W)	Ground	RGB area (YS) signal	Input	Ignition switch ON	At RGB image is displayed.	5.0 V
					At AUX image is displayed.	 PKIB4948J
11 (P)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
13 (BR)	Ground	Inverter ground	—	Ignition switch ON	—	0 V
14 (SB)	Ground	Signal ground	—	Ignition switch ON	—	0 V
15 (LG)	Ground	Composite image signal	Input	Ignition switch ON	At camera image is displayed.	 SKIB2251J
17 (G)	Ground	RGB signal (R: red)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2238J
18 (Y)	Ground	RGB signal (B: blue)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2237J

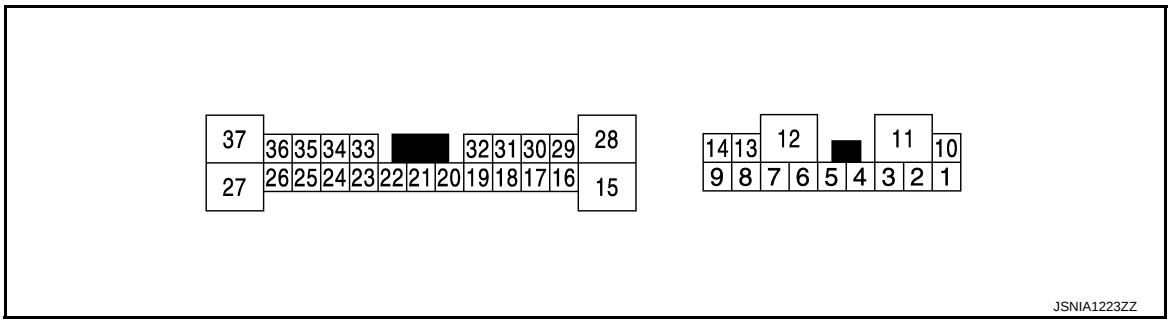
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
19 (B)	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 SKIB3603E
20 (R)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch On	—	 SKIB3598E
21	—	Shield	—	—	—	—
22 (L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
23	—	Shield	—	—	—	—

BOSE AMP.

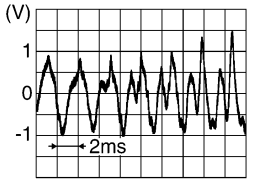
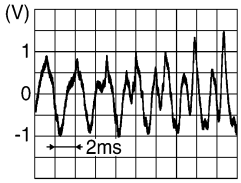
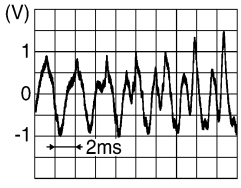
Reference Values

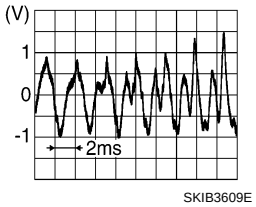
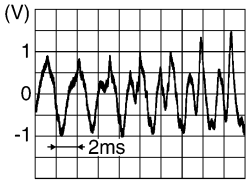
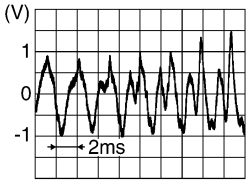
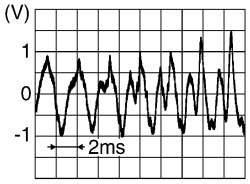
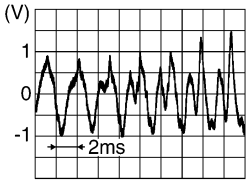
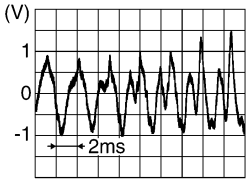
INFOID:0000000009721727

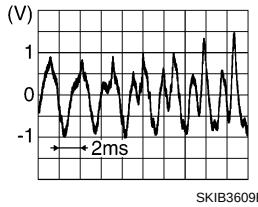
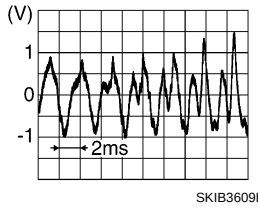
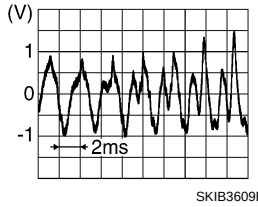
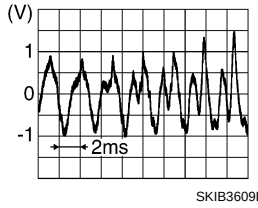
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (LG)	2 (V)	Sound signal front squawker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (P)	3 (L)	Sound signal front squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
7 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
10 (SB)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
11 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
13 (GR)	8 (BR)	Sound signal woofer	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
14 (L)	9 (O)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
16 (GR)	17 (BR)	Sound signal rear speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
18 (W)	19 (B)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
20 (SB)	Ground	Amp. ON signal	Input	Ignition switch ACC	—	12.0 V
24 (GR/V)	23 (W/L)	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
26 (GR/V)	25 (W/L)	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
28 (G)	15 (R)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E

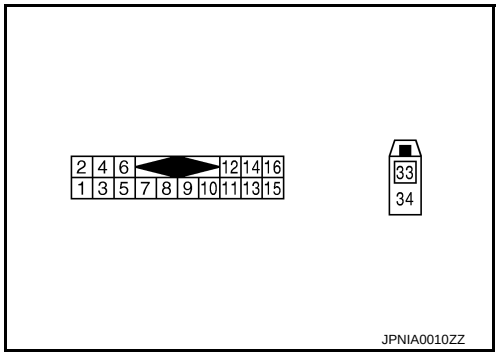
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
29 (V)	30 (P)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
31 (BR)	32 (Y)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
33 (W/R)	34 (B/R)	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E
35 (W/R)	36 (B/R)	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E

SATELLITE RADIO TUNER

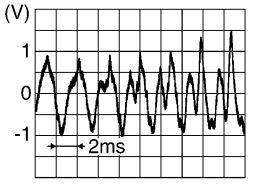
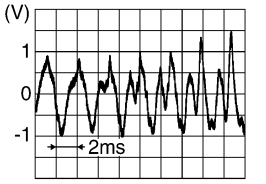
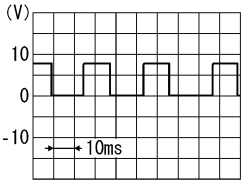
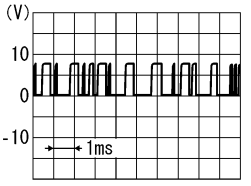
Reference Value

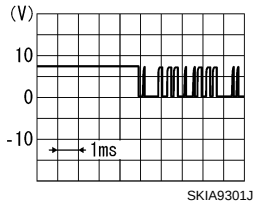
INFOID:0000000009721728

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (Y/L)	1 (W/L)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected.	 SKIB3609E
4 (BR/L)	3 (Y/G)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	 SKIB3609E
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (R/W)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	 SKIA9299J
9 (R/L)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	 SKIA9300J

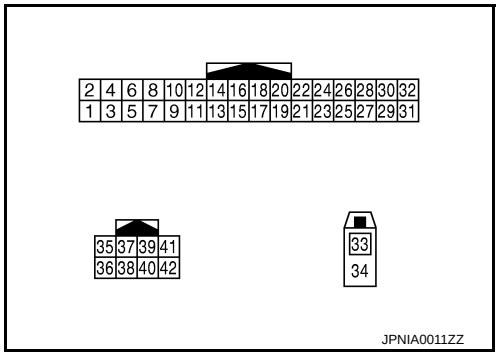
Terminal		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
10 (B)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	 SKIA9301J
12 (V)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
15 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
16 (GR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
33	—	Satellite radio antenna signal	Input	—	—	—

TEL ADAPTER UNIT

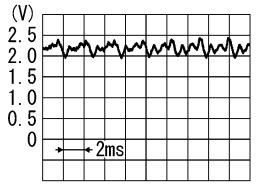
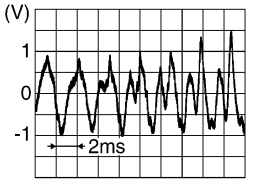
Reference Value

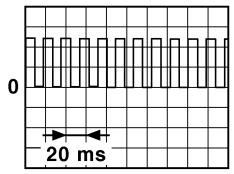
INFOID:0000000009721729

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (V)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (GR)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (R)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B/W)	Ground	Ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
7 (R/W)	8 (R/L)	Microphone signal	Input	Ignition switch ON	Give a voice	 PKIB5037J
9 (B/R)	10 (W/R)	TEL voice signal	Output	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E
20 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
24 (B/W)	Ground	Control signal	Input	Ignition switch ON	—	0 V
28 (BR)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
29 (B)	8 (R/L)	Microphone VCC	Output	Ignition switch ON	—	5.0 V
33	—	TEL antenna signal	Input/ Output	—	—	—
34	—	Shield	—	—	—	—
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
40 (G)	—	AV communication signal (H)	Input/ Output	—	—	—
42 (GR)	—	AV communication signal (L)	Input/ Output	—	—	—

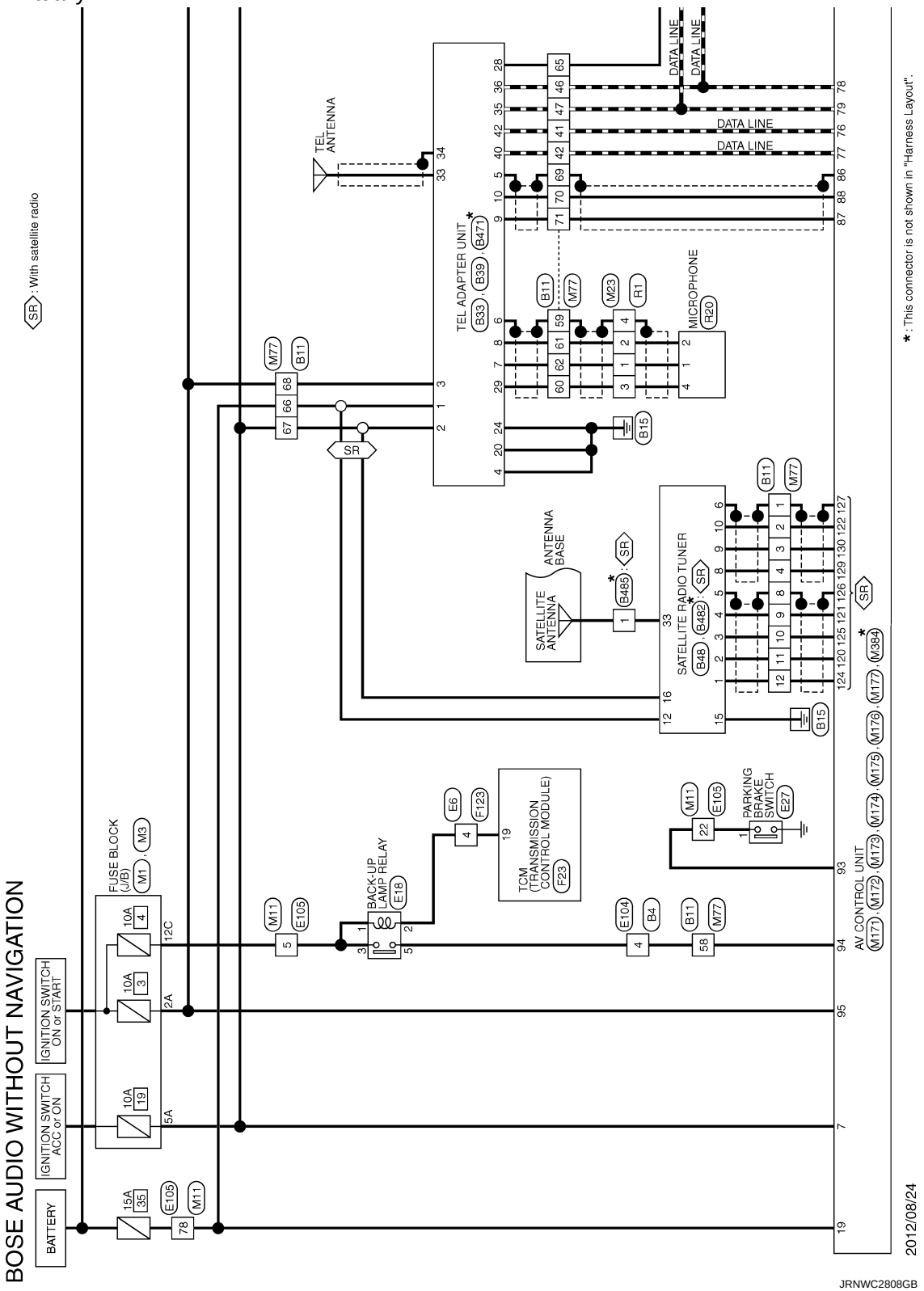
WIRING DIAGRAM

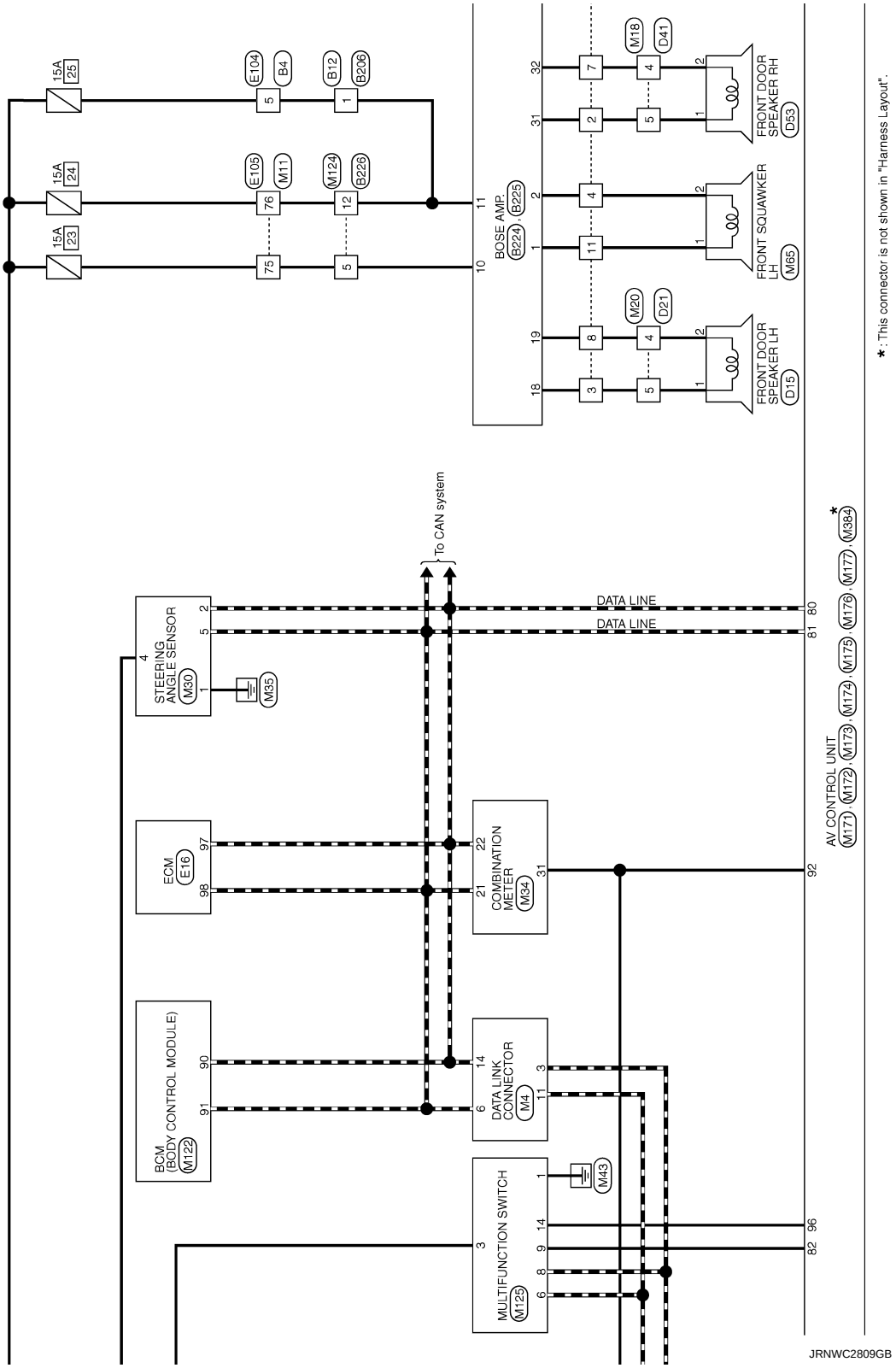
BOSE AUDIO WITHOUT NAVIGATION

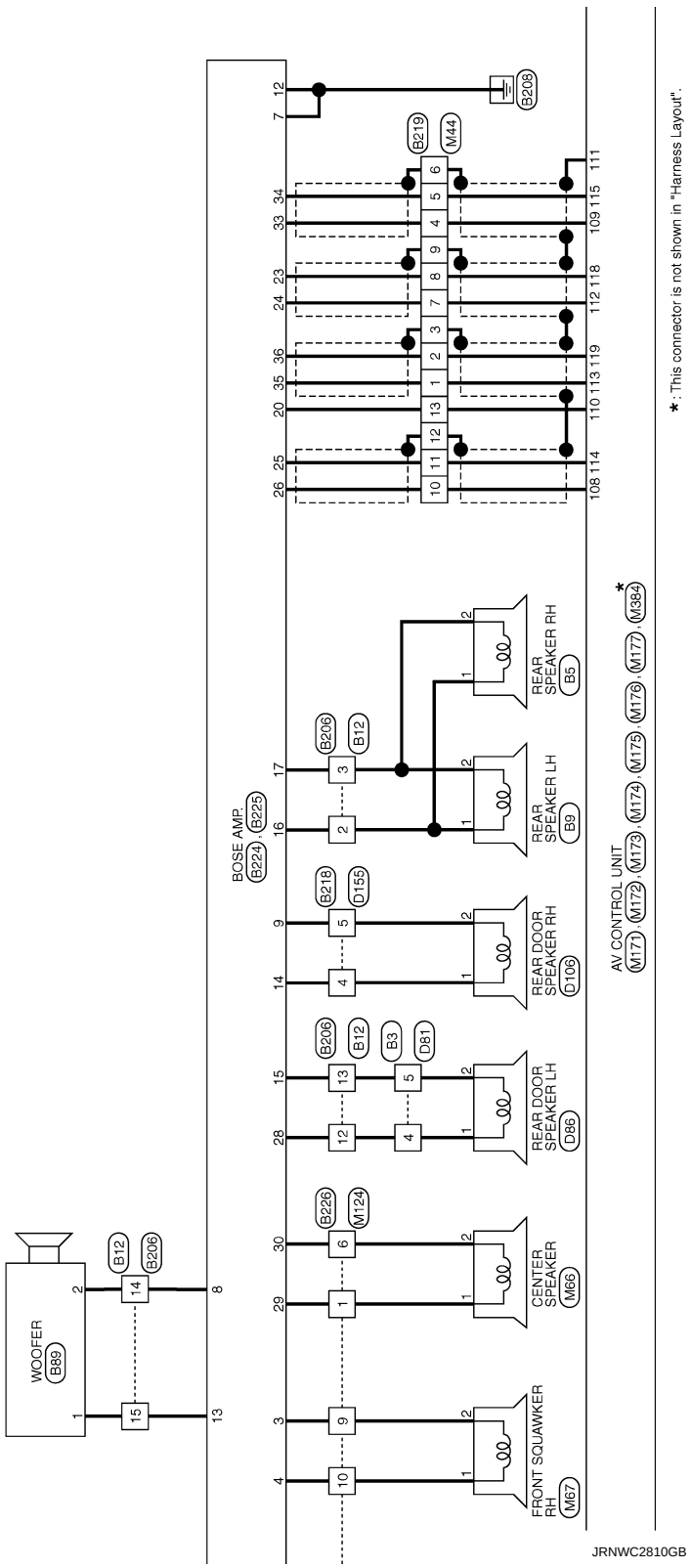
Wiring Diagram

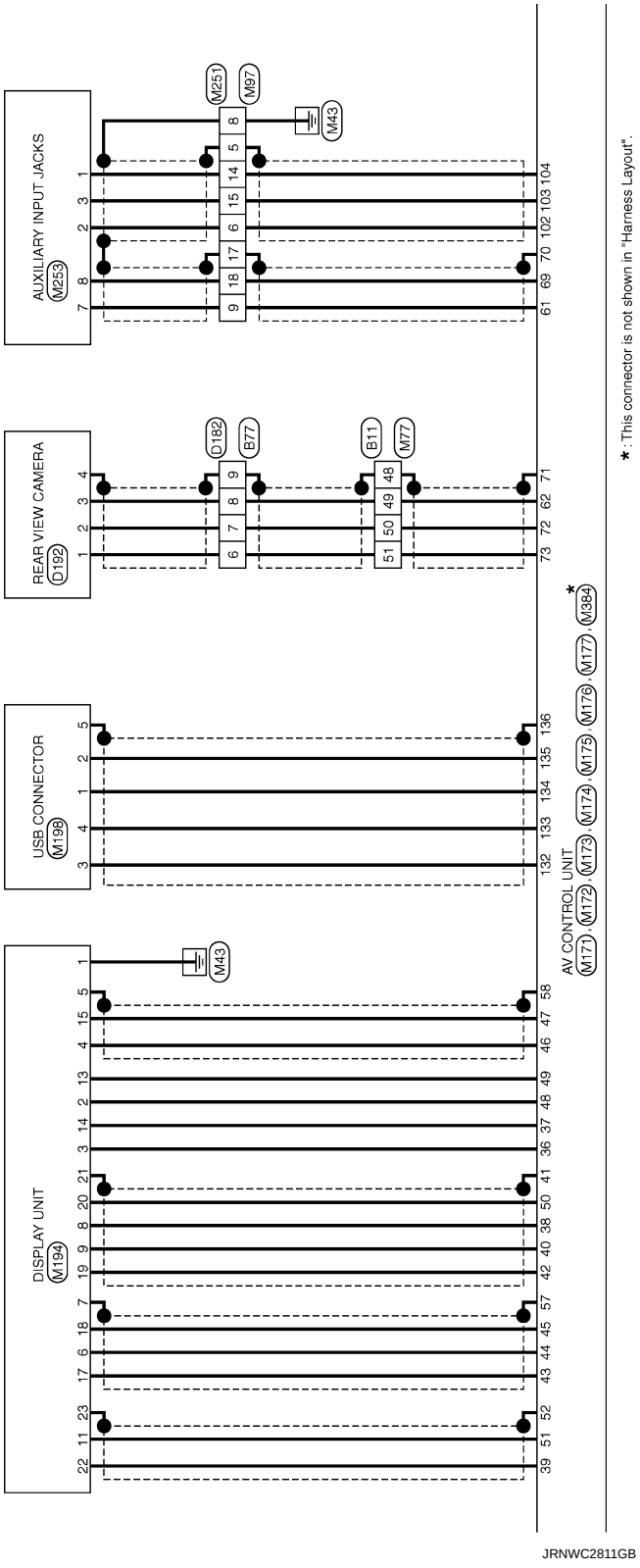
INFOID:0000000009721730

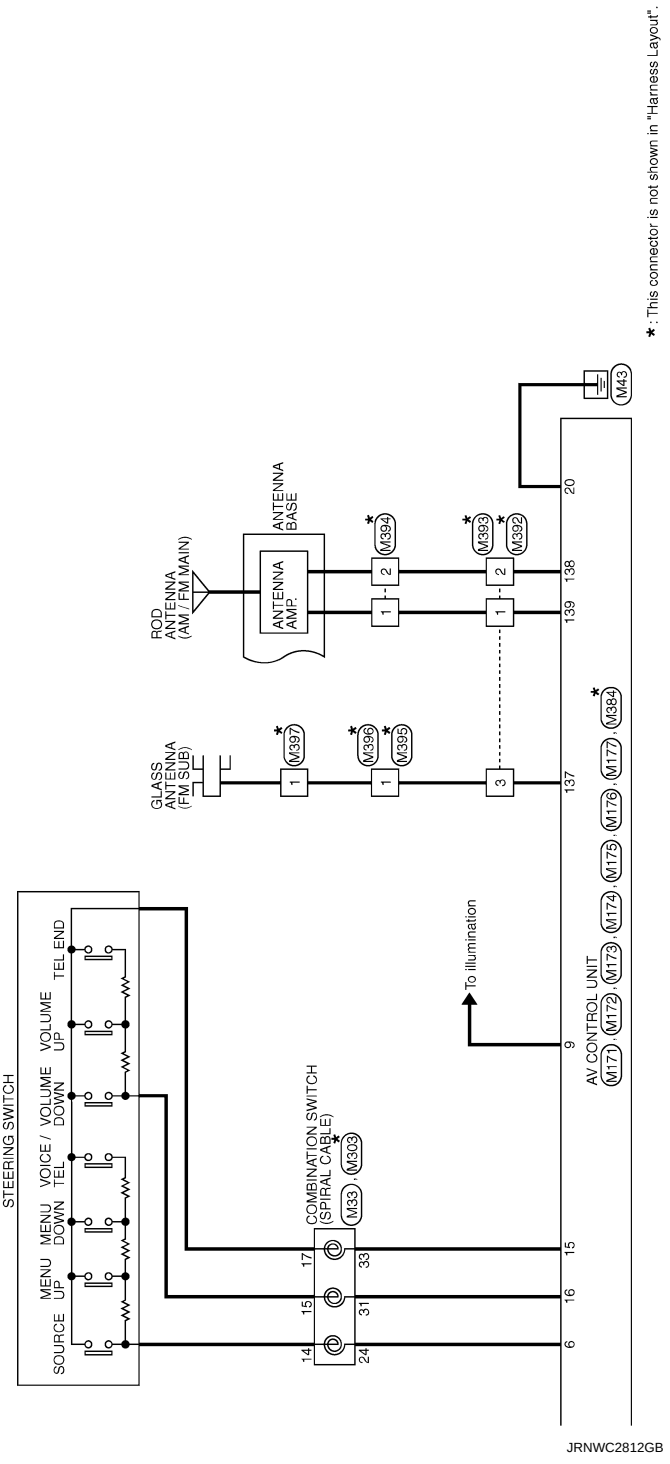
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

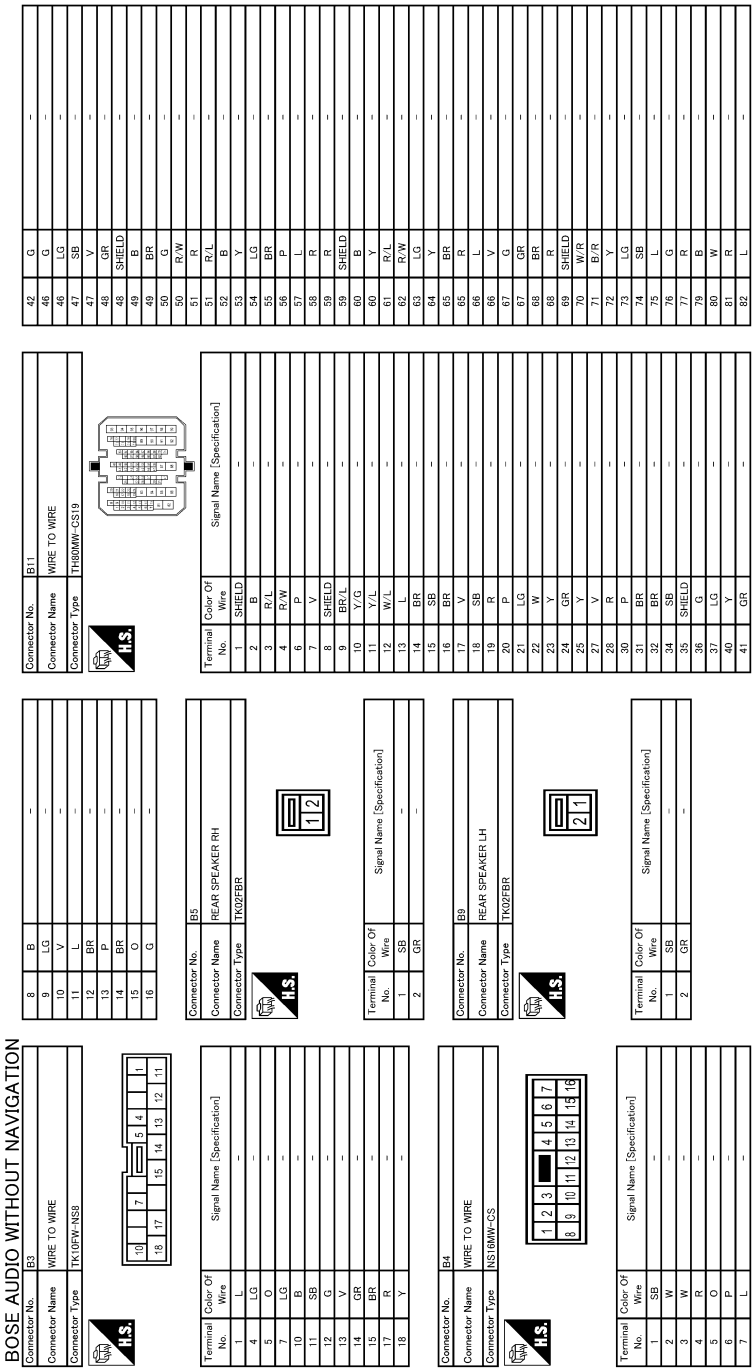



15A 25
15A 24
15A 23
E104
B4
B12
B206
E105
M11
M124
B226
BOSE AMP (B224), (B225)
M18
D41
FRONT DOOR SPEAKER RH (D53)
FRONT SQUAWKER LH (M65)
M20
D21
FRONT DOOR SPEAKER LH (D15)
*: This connector is not shown in "Harness Layout".
To CAN system
DATA LINE
DATA LINE
STEERING ANGLE SENSOR (M30)
M35
ECM (E16)
COMBINATION METER (M34)
BCM (BODY CONTROL MODULE) (M122)
DATA LINK CONNECTOR (M4)
MULTIFUNCTION SWITCH (M125)
M43
AV CONTROL UNIT (M171), (M172), (M173), (M174), (M175), (M176), (M177), (M384)*
JRNWC2809GB

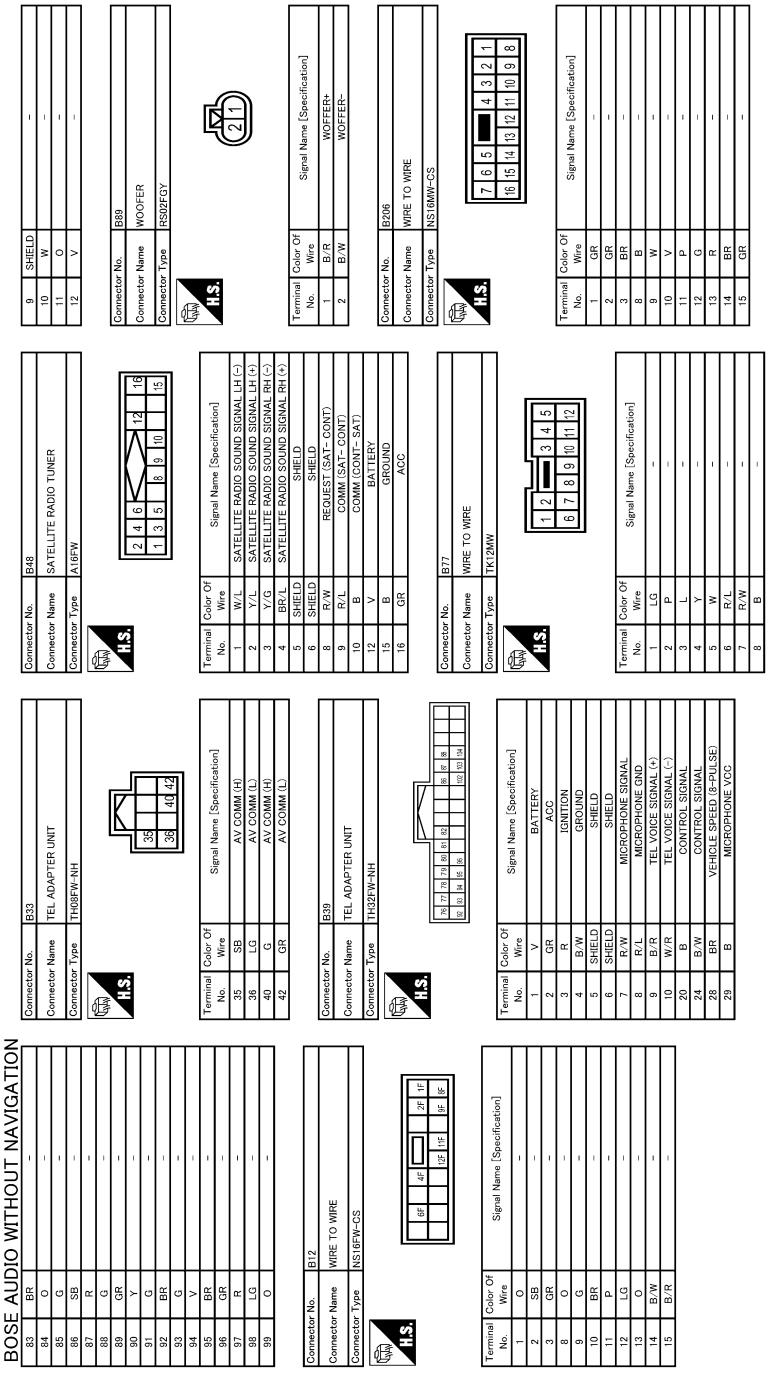

BOSE AMP.
B224, B225
AV CONTROL UNIT
M171, M172, M173, M174, M175, M176, M177, M384*
WOOFER
B89
FRONT SQUAWKER RH
M67
CENTER SPEAKER
M66
REAR DOOR SPEAKER LH
D86
REAR DOOR SPEAKER RH
D106
REAR SPEAKER LH
B9
REAR SPEAKER RH
B5
B208
B219
M44
B206
B12
B3
D81
B218
D155
B226
M124
*: This connector is not shown in "Harness Layout".
JRNWC2810GB


AUXILIARY INPUT JACKS
M253
M25
M97
M43
REAR VIEW CAMERA
D192
D182
B77
B11
M77
USB CONNECTOR
M198
DISPLAY UNIT
M194
M43
AV CONTROL UNIT
M171, M172, M173, M174, M175, M176, M177, M384*
*: This connector is not shown in "Harness Layout".
JRNWC2811GB


*: This connector is not shown in "Harness Layout".
ROD ANTENNA (AM / FM MAIN)
ANTENNA BASE
ANTENNA AMP.
GLASS ANTENNA (FM SUB)
STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE / TEL
VOLUME DOWN
VOLUME UP
TEL END
COMBINATION SWITCH (SPIRAL CABLE)
To illumination
AV CONTROL UNIT
M43
M394
M393
M392
M397
M396
M395
M384
M176
M177
M175
M174
M173
M172
M171
M303
M33
JRNWC2812GB



JRNWC8938GB


BOSE AUDIO WITHOUT NAVIGATION
Connector No. B12
Connector Name WIRE TO WIRE
Connector Type NS16FW-CS
Connector No. B33
Connector Name TEL ADAPTER UNIT
Connector Type TH08FW-NH
Connector No. B39
Connector Name TEL ADAPTER UNIT
Connector Type TH32FW-NH
Connector No. B48
Connector Name SATELLITE RADIO TUNER
Connector Type A16FW
Connector No. B77
Connector Name WIRE TO WIRE
Connector Type TK12MW
Connector No. B89
Connector Name WOOFER
Connector Type RS02FGY
Connector No. B206
Connector Name WIRE TO WIRE
Connector Type NS16MW-CS
JRNWC8939GB

BOSE AUDIO WITHOUT NAVIGATION

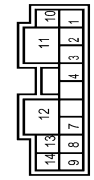
Connector No.	B218
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
4	L	– [With BOSE system]
4	O	– [Without BOSE system]
5	B/P	– [Without BOSE system]
5	O	– [With BOSE system]
7	O	–
10	B	–
11	Y	–
12	G	–
13	V	–
14	P	–
15	SB	–
17	R	–
18	GR	–

Connector No.	B219
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

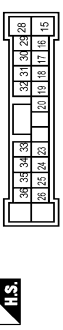
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/R	–
2	B/R	–
3	SHIELD	–
4	W/R	–
5	B/R	–
6	SHIELD	–
7	GR/V	–
8	W/L	–
9	SHIELD	–
10	GR/V	–
11	W/L	–
12	SHIELD	–
13	SB	–
15	SB	–
16	Y	–
17	R	–
18	W	–
29	G	–
30	P	–
31	V	–
32	BR	–

Connector No.	B224
Connector Name	BOSE AMP.
Connector Type	SGA12FBR-SJA2



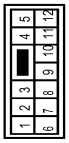
Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	SOUND SIGNAL FRONT SQUAWKER LH (+)
2	V	SOUND SIGNAL FRONT SQUAWKER LH (–)
3	L	SOUND SIGNAL FRONT SQUAWKER RH (–)
4	P	SOUND SIGNAL FRONT SQUAWKER RH (+)
7	B	GROUND
8	BR	SOUND SIGNAL WOOFER (–)
9	O	SOUND SIGNAL REAR DOOR SPEAKER RH (–)
10	SB	BATTERY
11	GR	BATTERY
12	B	GROUND
13	GR	SOUND SIGNAL WOOFER (+)
14	L	SOUND SIGNAL REAR DOOR SPEAKER RH (+)

Connector No.	B225
Connector Name	BOSE AMP.
Connector Type	SCA19FBR-SGA4



Terminal No.	Color Of Wire	Signal Name [Specification]
15	R	SOUND SIGNAL REAR DOOR SPEAKER LH (–)
16	GR	SOUND SIGNAL REAR SPEAKER (+)
17	BR	SOUND SIGNAL REAR SPEAKER (–)
18	W	SOUND SIGNAL FRONT DOOR SPEAKER LH (+)
19	B	SOUND SIGNAL FRONT DOOR SPEAKER LH (–)
20	SB	AMP. ON SIGNAL
23	W/L	SOUND SIGNAL REAR LH (–)
24	GR/V	SOUND SIGNAL REAR LH (+)
25	W/L	SOUND SIGNAL REAR RH (–)
26	GR/V	SOUND SIGNAL REAR RH (+)
28	G	SOUND SIGNAL REAR DOOR SPEAKER LH (+)
29	V	SOUND SIGNAL CENTER SPEAKER (+)
30	P	SOUND SIGNAL CENTER SPEAKER (–)
31	BR	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
32	Y	SOUND SIGNAL FRONT DOOR SPEAKER RH (–)
33	W/R	SOUND SIGNAL FRONT RH (+)
34	B/R	SOUND SIGNAL FRONT RH (–)
35	W/R	SOUND SIGNAL FRONT LH (+)
36	B/R	SOUND SIGNAL FRONT LH (–)

Connector No.	B226
Connector Name	WIRE TO WIRE
Connector Type	NS12MBR-CS



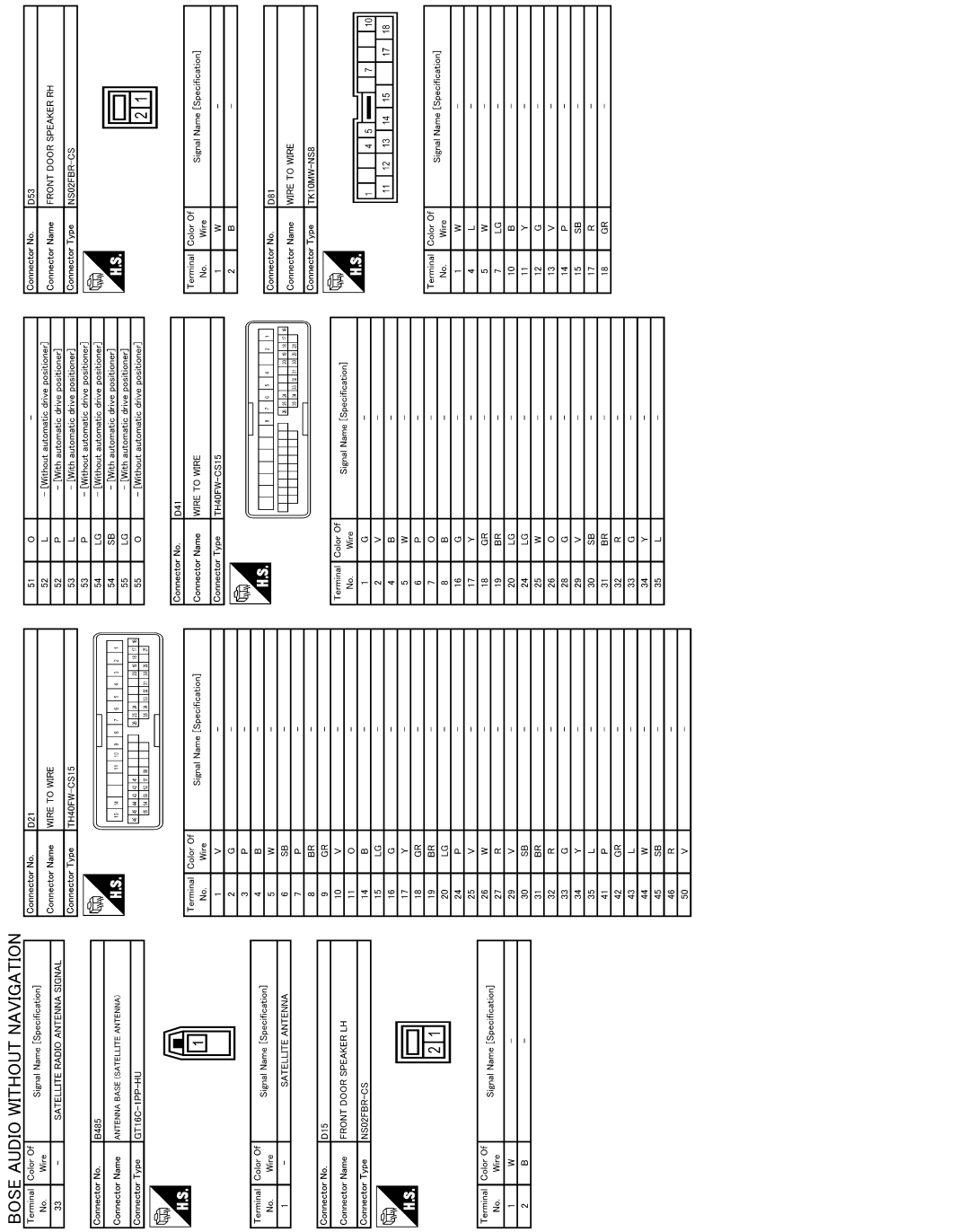
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	–
2	BR	–
3	W	–
4	V	–
5	SB	–
6	P	–
7	Y	–
8	B	–
9	L	–
10	P	–
11	LG	–
12	GR	–

Connector No.	B471
Connector Name	TEL ADAPTER UNIT
Connector Type	GT16C-1S-HU

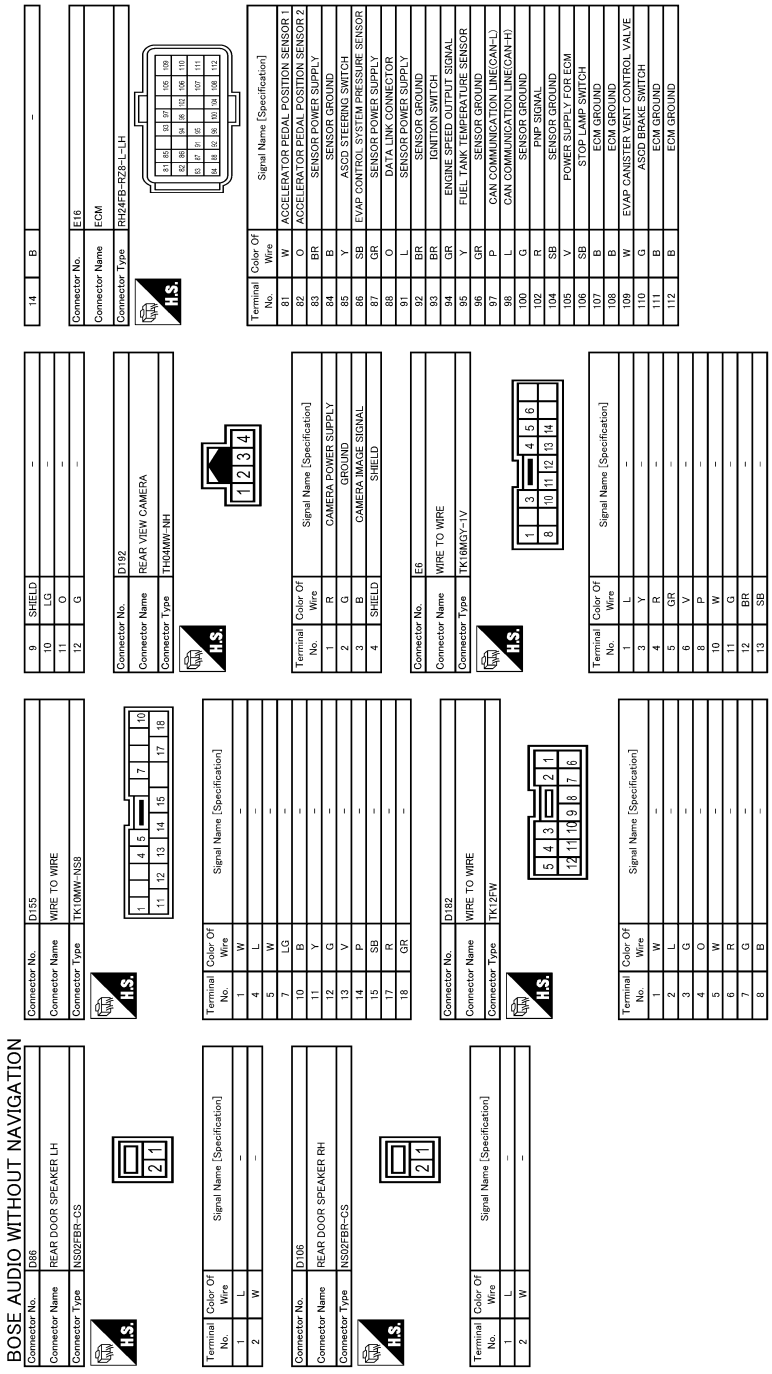
Terminal No.	Color Of Wire	Signal Name [Specification]
33	–	TEL ANTENNA SIGNAL
34	SHIELD	SHIELD

Connector No.	B482
Connector Name	SATELLITE RADIO TUNER
Connector Type	GTSN-1PP-HU

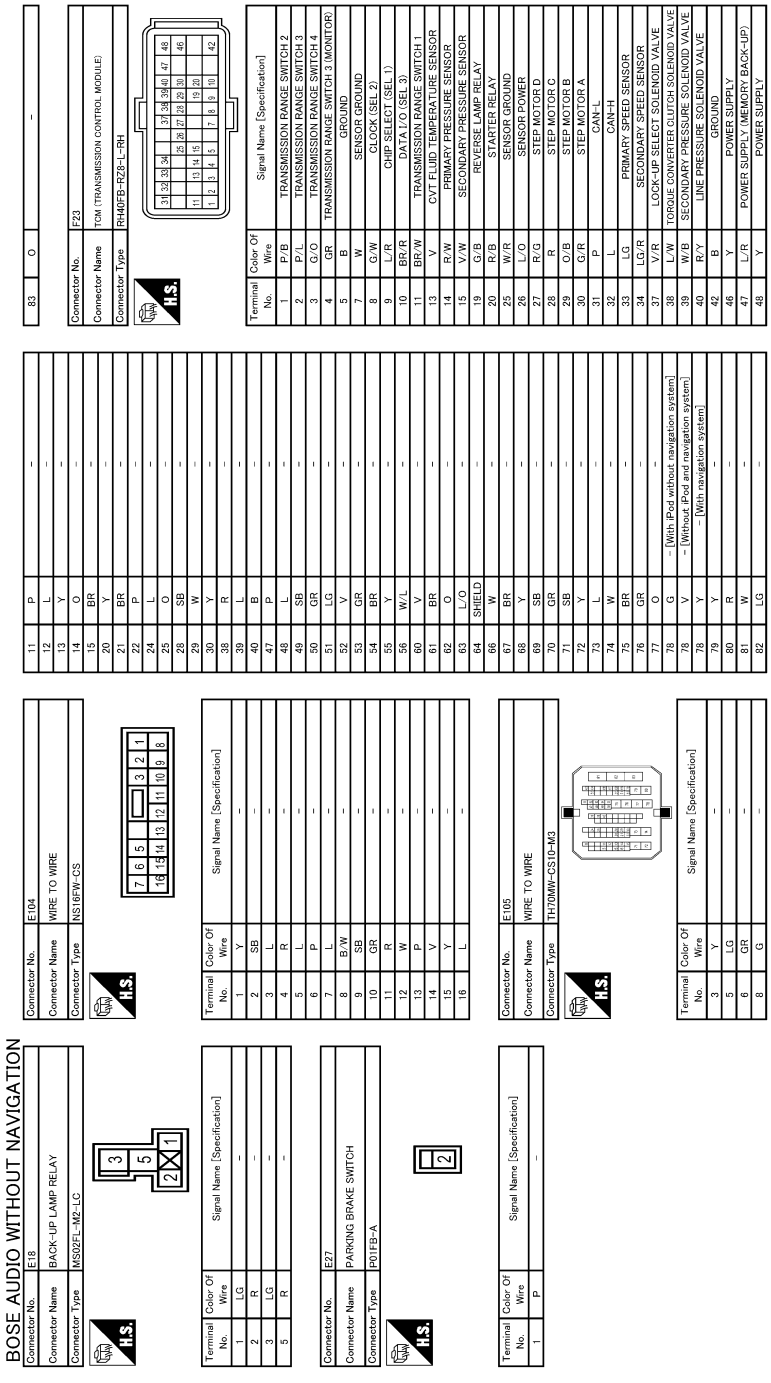
JRNWC8940GB



JRNWC8941GB



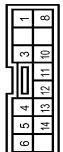
JRNWC8942GB



JRNWC8943GB

BOSE AUDIO WITHOUT NAVIGATION

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK16FGY-1V

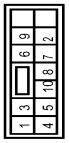


Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	–
3	G/R	–
4	G/B	–
5	R	–
6	L/R	–
8	P	–
10	Y/B	–
11	BR/W	–
12	BR	–
13	G	–
14	B	–

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FW-M2

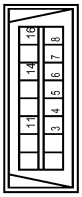
Terminal No.	Color Of Wire	Signal Name [Specification]
1A	Y	–
2A	G	–
3A	Y	–
4A	GR	–
7A	LG	–
8A	Y	–

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FW-CS



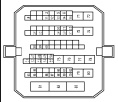
Terminal No.	Color Of Wire	Signal Name [Specification]
10C	SB	–
11C	R	–
12C	O	–
6C	BR	–
7C	B	–
8C	G	–
9C	GR	–

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



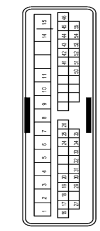
Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	–
4	B	–
5	B	–
6	L	–
7	BR	–
8	G	–
11	SB	–
14	P	–
16	Y	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH70FW-CS10-M3



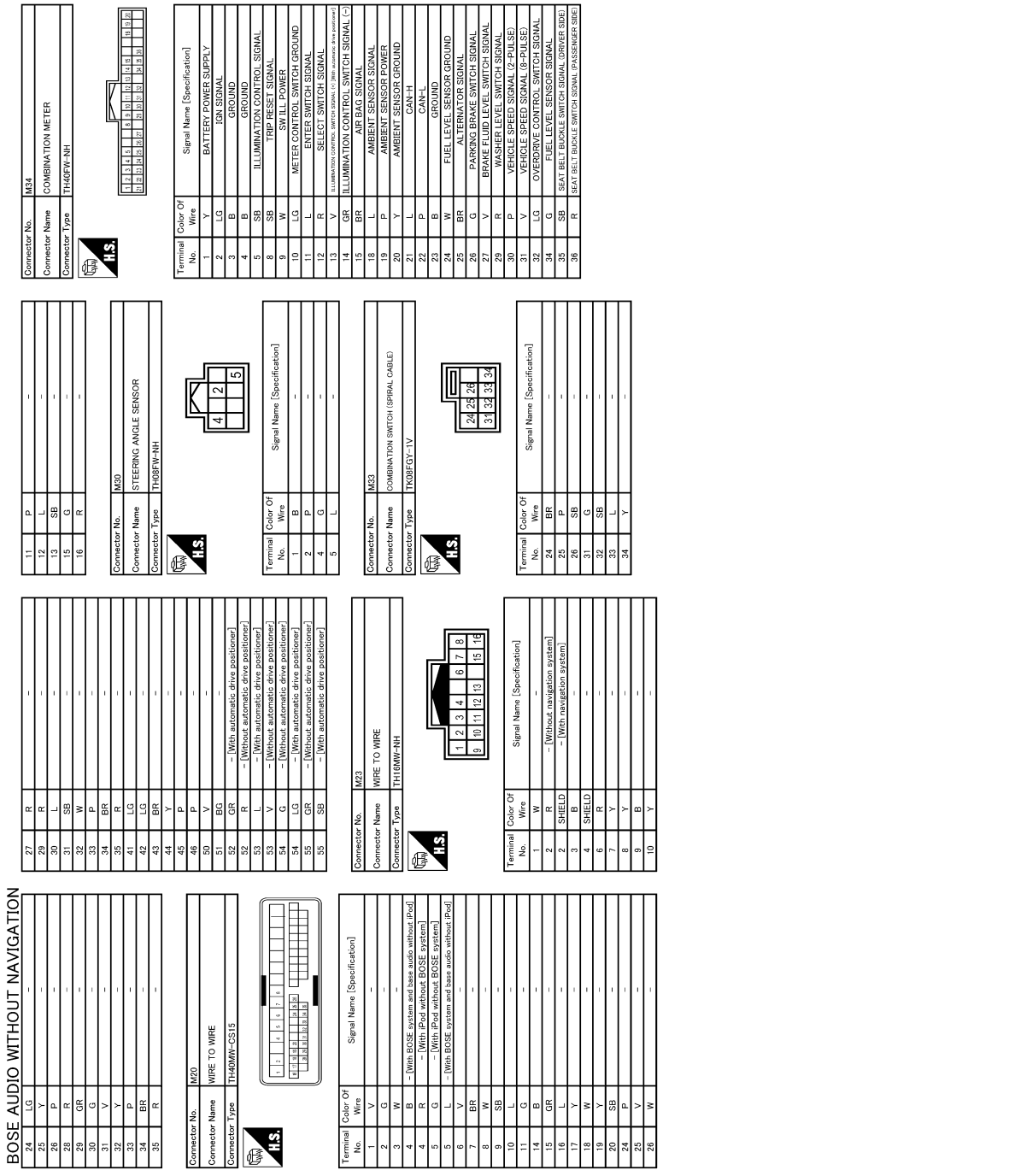
Terminal No.	Color Of Wire	Signal Name [Specification]
3	P	–
5	BR	–
5	O	–
6	G	–
8	R	–
11	P	–
12	L	–
13	V	–
14	Y	–
15	R	–
20	W	–[Without colour display]
20	Y	–[With colour display]
21	BR	–
22	LG	–
24	Y	–
25	L	–
28	BR	–
29	L	–
30	R	–
38	R	–
39	L	–
40	B	–
47	P	–
48	L	–
49	W	–
50	GR	–
51	LG	–
52	Y	–
53	V	–
54	SB	–
55	P	–
56	LG	–
60	V	–
61	GR	–
62	BR	–
63	V	–
64	SHIELD	–
66	W	–
67	R	–
68	W	–
69	P	–
70	G	–
71	G	–
72	BR	–
73	L	–
74	W	–
75	BR	–
76	R	–
77	G	–
78	Y	–
79	G	–
80	R	–
81	W	–
82	W	–
83	BG	–

Connector No.	M18
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
2	V	–
4	L	– [With iPod without BOSE system]
4	W	– [With BOSE system and base audio without iPod]
5	B	– [With BOSE system]
5	BR	– [Without iPod and BOSE system]
5	W	– [With iPod without BOSE system]
6	GR	–
7	G	–
8	B	–
16	W	–
17	Y	–
18	W	–
19	R	–
20	SB	–

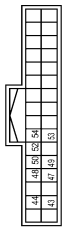
JRNWC8944GB



JRNWC8945GB

BOSE AUDIO WITHOUT NAVIGATION

Connector No.	M44
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
2	R	–
3	SHIELD	–
4	B	–
5	W	–
6	SHIELD	–
7	L	–
8	R	–
9	SHIELD	–
10	V	–
11	LG	–
12	SHIELD	–
13	P	–
15	LG	–
16	L	–
17	R	–
18	W	–
29	L	–
30	BG	–
31	Y	–
32	V	–

Connector No.	M65
Connector Name	FRONT SQUAWKER LH
Connector Type	TK02FBR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	– [With iPod without BOSE system]
1	L	– [Without iPod and BOSE system]
1	LG	– [With BOSE system]
2	B	– [Without iPod and BOSE system]
2	R	– [With iPod without BOSE system]
2	Y	– [With BOSE system]

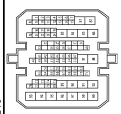
Connector No.	M66
Connector Name	CENTER SPEAKER
Connector Type	TK02FBR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	GR	–

Connector No.	M67
Connector Name	FRONT SQUAWKER RH
Connector Type	TK02FBR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	– [With BOSE system and base audio without iPod]
1	W	– [With iPod without BOSE system]
1	L	– [With iPod without BOSE system]
2	R	– [With BOSE system]
2	W	– [Without iPod and BOSE system]

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS19



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	–
2	B	–
3	W	–
4	R	–
6	W	–
7	G	–
8	SHIELD	–
9	W	–
10	R	–
11	G	–
12	B	–
13	P	–
14	R	–
15	SB	–
16	R	–
17	V	–
18	P	–
19	P	–
20	LG	–
21	Y	–
22	BR	–
23	LG	–
24	SB	–
25	Y	–
27	Y	–
28	R	–
30	Y	–
31	W	–
32	BR	–
34	Y	–
35	B	–
36	G	–
37	Y	–
40	BR	–
41	LG	–
42	SB	–
46	G	–
46	LG	–
47	SB	–
47	Y	–
48	GR	–
48	SHIELD	–
49	BR	–
49	R	–
50	LG	–
50	R	–
51	R	–
51	V	–
52	B	–
53	BR	–
54	B	–
55	G	–
56	P	–
57	L	–
58	SB	–
59	R	–
59	SHIELD	–
60	B	–
60	Y	–
61	R	–
62	W	–
63	LG	–
64	Y	–
65	R	–
65	V	–

JRNWC8946GB

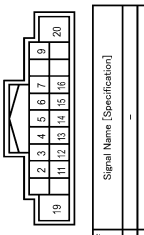
BOSE AUDIO WITHOUT NAVIGATION

66	L	–	
66	Y	–	
67	G	–	
67	W	–	
68	BG	–	
68	G	–	
69	SHIELD	–	
70	L	–	
71	P	–	
72	LG	–	
73	Y	–	
74	R	–	
75	P	–	
76	L	–	
77	BR	–	
79	B	–	
80	W	–	
81	L	–	
82	L	–	
83	GR	– [Without automatic drive positioner]	
83	W	– [With automatic drive positioner]	
84	R	–	
85	V	–	
86	W	–	
87	R	–	
88	G	–	
89	B	–	
90	V	–	
91	G	–	
92	BR	–	
93	P	–	
94	V	–	
95	W	–	
96	SB	–	
97	L	–	
98	LG	–	
99	Y	–	

Connector No.	M97
Connector Name	WIRE TO WIRE
Connector Type	TH18FW-CS2

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
4	W	–
5	SHIELD	–
6	W	–
8	B	–
9	Y	–
10	B	–
13	SHIELD	–
14	R	–
15	B	–
17	SHIELD	–
18	BR	–

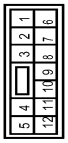
Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
72	B	ROOM ANT–
73	W	ROOM ANT+
74	Y	PASSENGER DOOR ANT–
75	LG	PASSENGER DOOR ANT+
76	V	DRIVER DOOR ANT–
77	P	DRIVER DOOR ANT+
80	SB	NATS ANT AMP.
81	O	NATS ANT AMP.

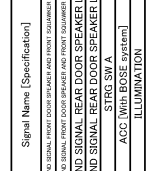
82	BR	
83	P	KEYLESS ENTRY RECEIVER COMM
87	R	COMBI SW INPUT 5
88	GR	COMBI SW INPUT 3
90	P	CAN–L
91	L	CAN–H
92	R	KEY SLOT ILL CONT
93	P	ON IND
95	L	ACC RELAY CONT
96	Y	CVT SHIFT SELECTOR POWER SUPPLY
99	V	SHIFT P
100	P	PASSENGER DOOR REQUEST SW
101	W	DRIVER DOOR REQUEST SW
102	Y	BLOWER RELAY CONT
103	L	KEYLESS ENTRY RECEIVER POWER SUPPLY
107	O	COMBI SW INPUT 1
108	P	COMBI SW INPUT 4
109	SB	COMBI SW INPUT 2
110	G	HAZARD SW

Connector No.	M124
Connector Name	WIRE TO WIRE
Connector Type	NS12FBR-CS



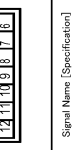
Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	B	–
3	L	–
4	Y	–
5	BR	–
6	GR	–
7	W	–
8	B	–
9	R	–
10	BR	–
11	LG	–
12	R	–

Connector No.	M125
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
3	W	ACC
4	R	ILL
5	B	ILL CONT
6	SB	AV COMM (H)
8	LG	AV COMM (L)
9	V	SW GND
14	W	EJECT SIGNAL

Connector No.	M171
Connector Name	AV CONTROL UNIT
Connector Type	TH18FW-CS2



Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	SOUND SIGNAL - FRONT DOOR SPEAKER AND FRONT SQUAWKER LH (+)
3	R	SOUND SIGNAL - FRONT DOOR SPEAKER AND FRONT SQUAWKER LH (–)
4	LG	SOUND SIGNAL REAR DOOR SPEAKER LH (+)
5	Y	SOUND SIGNAL REAR DOOR SPEAKER LH (–)
6	BR	STRG SW A
7	W	ACC [With BOSE system]
9	R	ILLUMINATION
11	W	SOUND SIGNAL - FRONT DOOR SPEAKER AND FRONT SQUAWKER RH (+)
12	L	SOUND SIGNAL - FRONT DOOR SPEAKER AND FRONT SQUAWKER RH (–)
13	GR	SOUND SIGNAL REAR DOOR SPEAKER RH (+)
14	P	SOUND SIGNAL REAR DOOR SPEAKER RH (–)
15	L	STRG SW GND

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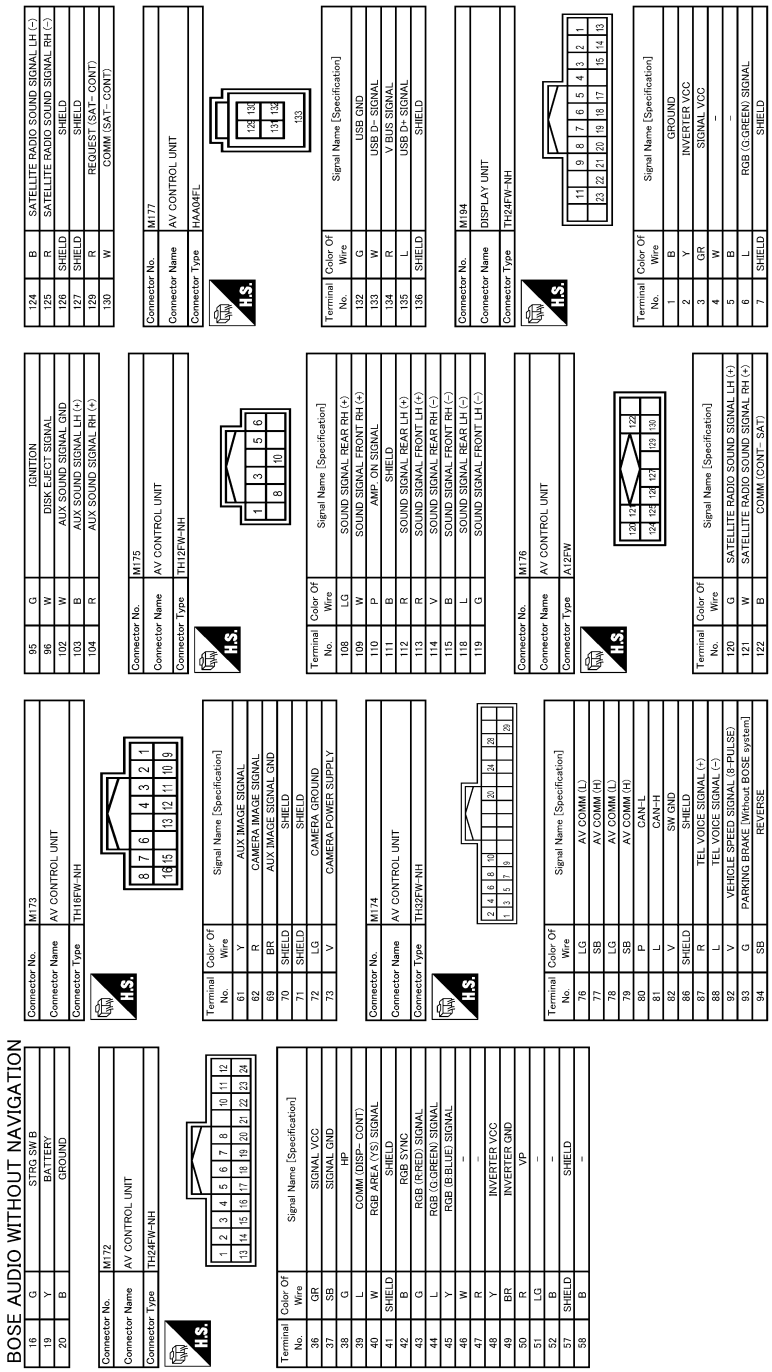
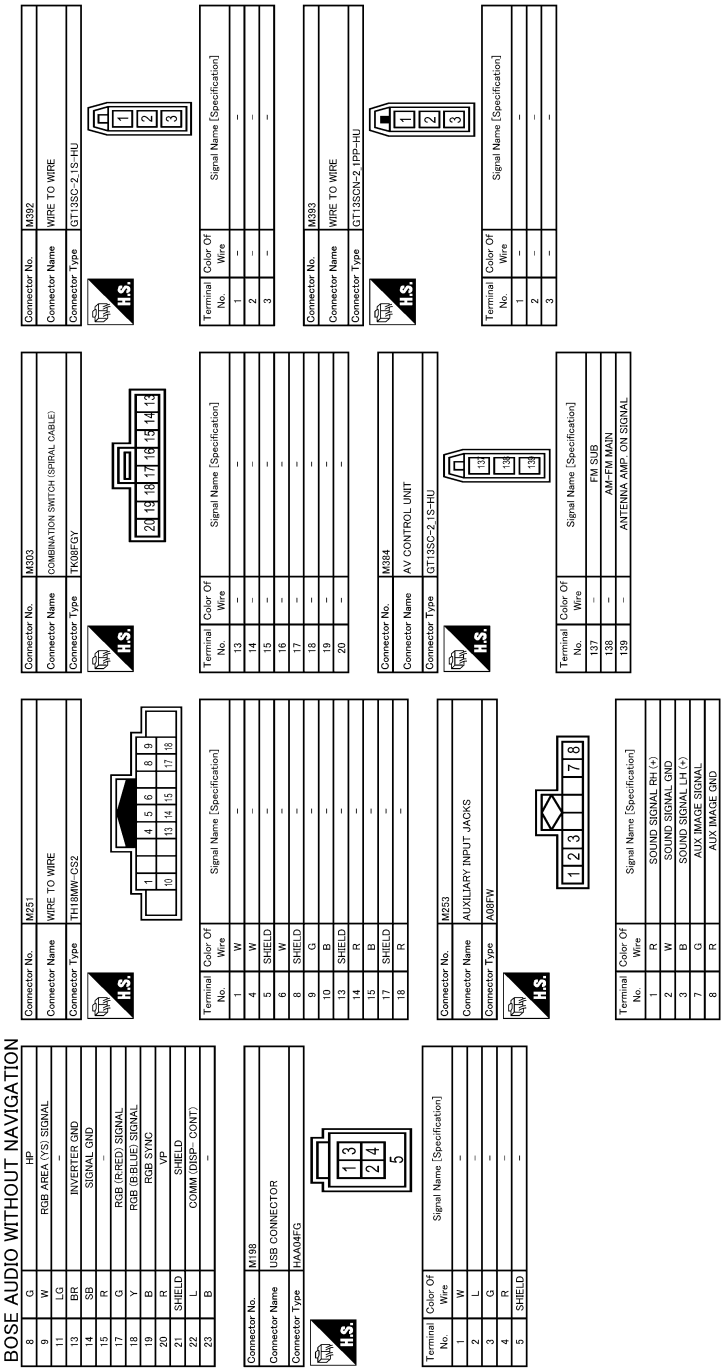
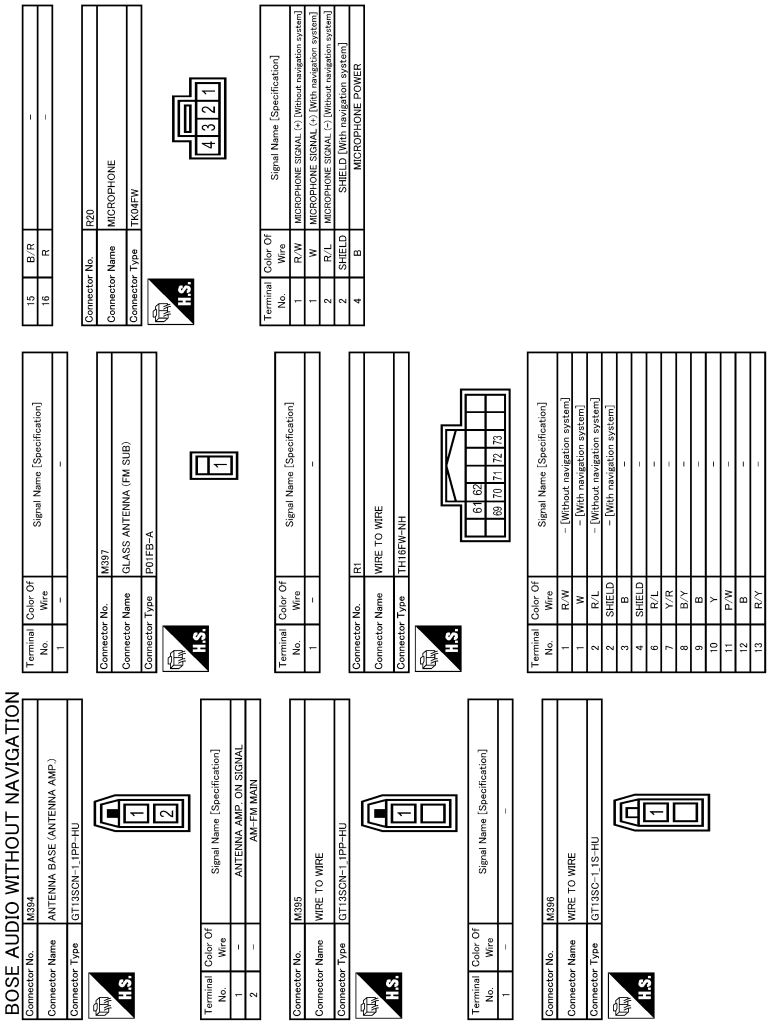


JRNWC8948GB



JRNWC8949GB



JRNWC8950GB

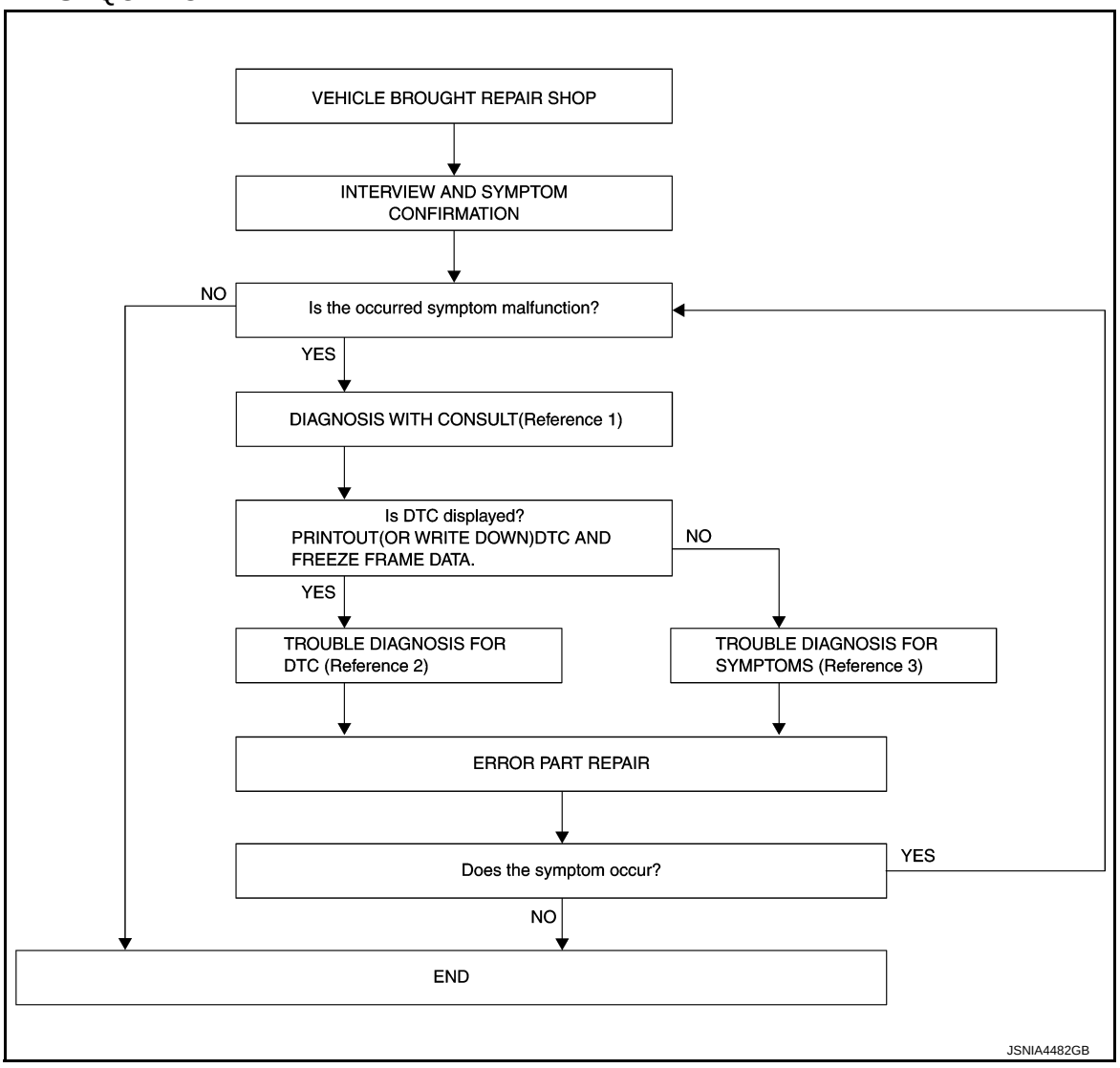
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000009721731

OVERALL SEQUENCE



- Reference 1··· Refer to AV-187, "CONSULT Function".
- Reference 2··· Refer to AV-199, "DTC Index".
- Reference 3··· Refer to AV-269, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for “MULTI AV”. Refer to AV-187, "CONSULT Function".
NOTE:
Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. When DTC is detected, follow the instructions below:
- Record DTC and Freeze Frame Data.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-199, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-269, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT.
NOTE:
Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

Description

INFOID:0000000009721732

BEFORE REPLACEMENT

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

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform “After Replace ECU” or “Manual Configuration” with CONSULT.

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

Work Procedure

INFOID:0000000009721733

1. SAVING VEHICLE SPECIFICATION

-CONSULT Configuration

Perform “Before Replace ECU” to save or print current vehicle specification. Refer to AV-231, "Description".

NOTE:

If “Before Replace ECU” can not be used, use the “Manual Configuration”.

>> GO TO 2.

2. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-276, "Exploded View".

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

-CONSULT Configuration

Perform “After Replace ECU” or “Manual Configuration” to write vehicle specification. Refer to AV-231, "Work Procedure".

>> GO TO 4.

4. OPERATION CHECK

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

>> WORK END

CONFIGURATION (AV CONTROL UNIT)

Description

INFOID:0000000009721734

- Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT.
- Configuration has three functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

Work Procedure

INFOID:0000000009721735

1.WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Write vehicle specification into AV control unit.

To write vehicle specification stored in CONSULT into the AV control unit>>GO TO 2.
To write vehicle specification into the AV control unit by hand>>GO TO 3.

2.WRITE STORED DATA

CONSULT Configuration
Select “After Replace ECU” in “Read/Write Configuration.” Write data stored in CONSULT with the “Before Replace ECU” function into the AV control unit.

>> GO TO 4.

3.MANUALLY WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Perform “Manual Configuration.” Refer to the Configuration List to write vehicle specification into the AV control unit. Refer to AV-231, "Configuration List".
NOTE:
If selection items are not displayed on the CONSULT screen, touch “NEXT.”

>> GO TO 4.

4.OPERATION CHECK

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

>> WORK END

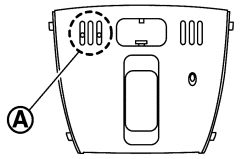
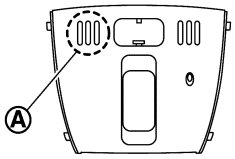
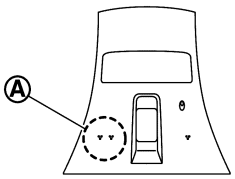
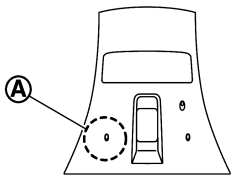
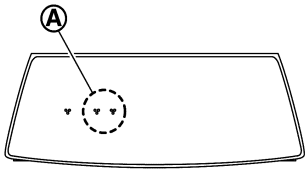
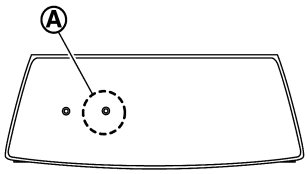
Configuration List

INFOID:0000000009721736

CAUTION:
Grasp vehicle specifications precisely. The control of ECU may not function normally if the specifications are misread.
NOTE:
- The items shown in this list depend on vehicle specifications.
- The config list may not be displayed depending on vehicle specifications. This is not a malfunction.

MANUAL SETTING ITEM		Detail
Items	Setting value	
STEERING	LHD	LHD models
	RHD	RHD models
CAMERA SYSTEM	REAR CAMERA	With rear view monitor system
	REAR+SIDE	With rear view monitor system and front-side view monitor function
SOUND SYSTEM	BASE	Without BOSE system
	BOSE	With BOSE system
MICROPHONE	DIRECTIONAL MIC	With directional microphone*
	NON-DIRECTIONAL MIC	With non-directional microphone*
AFFORDABLE ITS	WITH	With BSW and LDW
	WITHOUT	Without BSW and LDW

*: In the following table, find an illustration that the Ⓐ part matches the vehicle and select microphone type.

Directional microphone	Non-directional microphone
 JSNIA5541ZZ Ⓐ: Microphone installation position	 JSNIA5542ZZ Ⓐ: Microphone installation position
 JSNIA5543ZZ Ⓐ: Microphone installation position	 JSNIA5544ZZ Ⓐ: Microphone installation position
 JSNIA5545ZZ Ⓐ: Microphone installation position	 JSNIA5546ZZ Ⓐ: Microphone installation position

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000009721737

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-29, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000009721738

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:0000000009721739

1. PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-18, "Trouble Diagnosis Procedure".
NO >> Refer to GI-44, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:0000000009721740

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-276, "Exploded View".

U1200 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721741

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-276, "Exploded View".

U1216 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721742

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-276, "Exploded View".

U1232 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000009721743

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000009721744

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

U1243 DISPLAY UNIT

DTC Logic

INFOID:0000000009721745

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuits are malfunctioning. • serial communication circuits between display unit and AV control unit are malfunctioning.	• Display unit power supply and ground circuits. • Serial communication circuits between display unit and AV control unit.

Diagnosis Procedure

INFOID:0000000009721746

1.CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to AV-244, "DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M194	11	M172	51	Existed
	22		39	

4. Check continuity between display unit harness connector and ground.

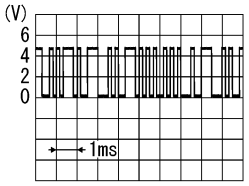
Display unit		Ground	Continuity
Connector	Terminals		
M194	11		Not existed
	12		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

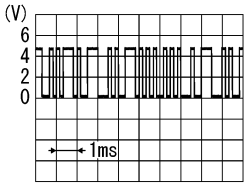
(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	11	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	22	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace display unit. Refer to AV-277, "Exploded View".

U1255 SATELLITE RADIO TUNER

DTC Logic

INFOID:0000000009721747

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1255	SAT CONN [U1255]	When either one of the following items is detected: • satellite radio tuner power supply and ground circuit are malfunctioning. • communication circuits between AV control unit and satellite radio tuner are malfunctioning. • request signal circuit between AV control unit and satellite radio tuner are malfunctioning.	• Satellite radio tuner power supply and ground circuit. Refer to AV-246, "SATELLITE RADIO TUNER : Diagnosis Procedure". • Communication circuit between AV control unit and satellite radio tuner. • Request signal circuit between AV control unit and satellite radio tuner.

Diagnosis Procedure

INFOID:0000000009721748

1.CHECK SATELLITE RADIO TUNER POWER SUPPLY AND GROUND CIRCUIT

Check satellite radio tuner power supply and ground circuit. Refer to AV-246, "SATELLITE RADIO TUNER : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT AND REQUEST SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and satellite radio tuner connector.
3. Check continuity between AV control unit harness connector and satellite radio tuner harness connector.

AV control unit		Satellite radio tuner		Continuity
Connector	Terminals	Connector	Terminals	
M176	122	B48	10	Existed
	129		8	
	130		9	

4. Check continuity between AV control unit harness connector.

AV control unit			Continuity
Connector	Terminals		
M176	122	Ground	Not existed
	129		
	130		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between AV control unit harness connector and ground.

(+)		(–)	Voltage (Approx.)
AV control unit			
Connector	Terminals		
M176	129	Ground	7.0 V
	130		7.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

4. CHECK SATELLITE RADIO TUNER VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector.
3. Connect satellite radio tuner connector.
4. Turn ignition switch ON.
5. Check signal between satellite radio tuner harness connector and ground.

(+)		(–)	Voltage (Approx.)
Satellite radio tuner			
Connector	Terminal		
B48	10	Ground	7.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace satellite radio tuner. Refer to AV-297, "Exploded View".

U1300 AV COMM CIRCUIT

Description

INFOID:0000000009721749

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between AV control unit and TEL adapter unit.
U1300 U1240 U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • HAND FREE CONN [U1256]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

U1310 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721750

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-276, "Exploded View".

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009721751

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M171	19	OFF	Battery voltage
ACC power supply		7	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M171	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

DISPLAY UNIT

DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000009721752

1.CHECK POWER SUPPLY CIRCUIT (DISPLAY SIDE)

Check voltage between display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Inverter VCC	M194	2	ACC	9.0 V
Signal VCC		3		

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	48	M194	2	Existed
	36		3	Existed

4. Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminal		
M194	2		Not existed
	3		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK POWER SUPPLY CIRCUIT (AV CONTROL UNIT SIDE)

1. Connect the AV control unit harness connector.
2. Turn ignition switch ACC.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Ignition switch position	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M172	48	Ground	ACC	9.0 V
	36			9.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

4.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M194	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE AMP.

BOSE AMP. : Diagnosis Procedure

INFOID:0000000009721753

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	23
	24
	25

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B224	10	OFF	Battery voltage
		11		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B224	7	OFF	Existed
		12		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:0000000009721754

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between satellite radio tuner harness connector and ground.

Signal name	(+)		(-)	Ignition switch position	Voltage (Approx.)
	Satellite radio tuner				
	Connector	Terminal			
Battery power supply	B48	12	Ground	OFF	Battery voltage
ACC power supply		16		ACC	

Is the inspection result normal?

YES >> INSPECTION END
NO >> Check harness between satellite radio tuner and fuse.

TEL ADAPTER UNIT

TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:0000000009721755

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B39	1	OFF	Battery voltage
ACC power supply		2	ACC	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between TEL adapter unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B39	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

RGB (R: RED) SIGNAL CIRCUIT

Description

INFOID:0000000009721756

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721757

1.CHECK CONTINUITY RGB (R: RED) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	43	M194	17	Existed

4. Check continuity between display unit harness connector and ground.

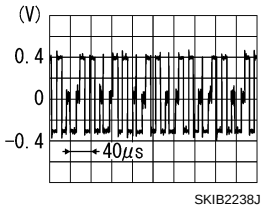
Display unit		Ground	Continuity
Connector	Terminal		
M194	17		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (R: RED) SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	17	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2238J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-277, "Exploded View".
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

RGB (G: GREEN) SIGNAL CIRCUIT

Description

INFOID:0000000009721758

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721759

1.CHECK CONTINUITY RGB (G: GREEN) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	44	M194	6	Existed

4. Check continuity between display unit harness connector and ground.

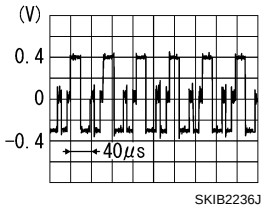
Display unit		Ground	Continuity
Connector	Terminal		
M194	6		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (G: GREEN) SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	6	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	 SKIB2236J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-277, "Exploded View".
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

RGB (B: BLUE) SIGNAL CIRCUIT

Description

INFOID:0000000009721760

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721761

1.CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	45	M194	18	Existed

4. Check continuity between display unit harness connector and ground.

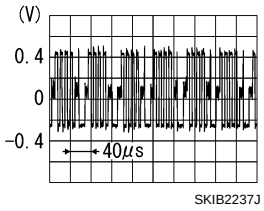
Display unit		Ground	Continuity
Connector	Terminal		
M194	18		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (B: BLUE) SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value
Connector	Terminal			
M194	18	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2237J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-277, "Exploded View".
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

RGB SYNCHRONIZING SIGNAL CIRCUIT

Description

INFOID:0000000009721762

Transmit the RGB synchronizing signal to the display unit so as to synchronize the RGB image displayed with AV control unit.

Diagnosis Procedure

INFOID:0000000009721763

1.CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	42	M194	19	Existed

4. Check continuity between display unit harness connector and ground.

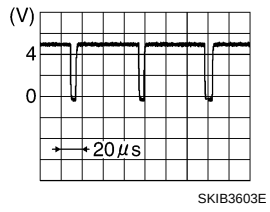
Display unit		Ground	Continuity
Connector	Terminal		
M194	19		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	19	Ground	

SKIB3603E

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-277, "Exploded View".
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

RGB AREA (YS) SIGNAL CIRCUIT

Description

INFOID:0000000009721764

Transmits the display area of RGB image displayed by AV control unit with RGB area (YS) signal to display unit.

Diagnosis Procedure

INFOID:0000000009721765

1.CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	40	M194	9	Existed

4. Check continuity between display unit harness connector and ground.

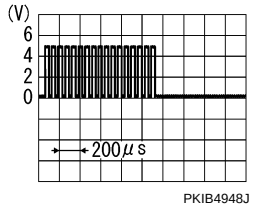
Display unit		Ground	Continuity
Connector	Terminal		
M194	9		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB AREA (YS) SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value (Approx.)
Connector	Terminal			
M194	9	Ground	At RGB image is displayed.	5.0 V
			At AUX image is displayed.	

PKIB4948J

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-277, "Exploded View".
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

Description

INFOID:0000000009721766

In composite image (AUX and camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000009721767

1.CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	8	M172	38	Existed

4. Check continuity between display unit harness connector and ground.

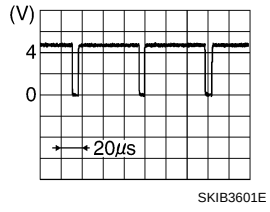
Display unit		Ground	Continuity
Connector	Terminal		
M194	8		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	8	Ground	

SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-276, "Exploded View".
NO >> Replace display unit. Refer to AV-277, "Exploded View".

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

Description

INFOID:0000000009721768

In composite image (AUX and camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000009721769

1.CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	20	M172	50	Existed

4. Check continuity between display unit harness connector and ground.

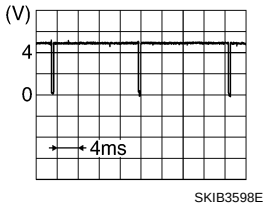
Display unit		Ground	Continuity
Connector	Terminal		
M194	20		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	20	Ground	

SKIB3598E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-276, "Exploded View".
NO >> Replace display unit. Refer to AV-277, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721770

AV control unit that inputs the camera image signal and AUX image signal transmits the composite image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721771

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M172	47	M194	15	Existed

4. Check continuity between AV control unit harness connector and ground.

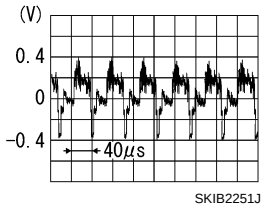
AV control unit		Ground	Continuity
Connector	Terminal		
M172	47		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between AV control unit harness connector and ground.

(+) AV control unit		(–)	Condition	Reference value
Connector	Terminal			
M172	47	Ground	At camera image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-277, "Exploded View".
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

AUX IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721772

- Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the display unit.

Diagnosis Procedure

INFOID:0000000009721773

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and AV control unit connector.
3. Check continuity between auxiliary input jacks harness connector and AV control unit harness connector.

Auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M253	7	M173	61	Existed

4. Check continuity between auxiliary input jacks harness connector and ground.

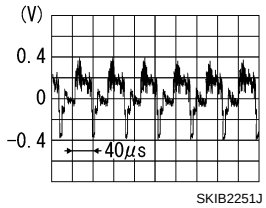
Auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M253	7		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Auxiliary input jacks				
Connector	Terminal			
M253	7	Ground	At AUX image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-276, "Exploded View".
NO >> Check that there is no malfunction in the external device.

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721774

- AV control unit outputs camera power supply to rear view camera and inputs camera image signal from rear view camera when the reverse signal is input.
- AV control unit transmits the camera image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721775

1.CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M173	73	D192	1	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M173	73		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE CAMERA POWER SUPPLY

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M173	73	Ground	Selector lever is in “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

3.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M173	62	D192	3	Existed

4. Check continuity between AV control unit harness connector and ground.

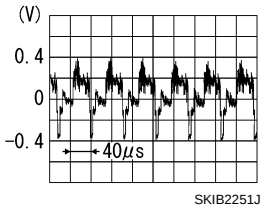
AV control unit		Ground	Continuity
Connector	Terminal		
M173	62		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK CAMERA IMAGE SIGNAL

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check signal between AV control unit harness connector and ground.

(+)		(–)	Condition	Reference value
AV control unit				
Connector	Terminal			
M173	62	Ground	At camera image is displayed.	

SKIB2251J

Is inspection result normal?

YES >> Replace AV control unit. Refer to AV-276, "Exploded View".
NO >> Replace rear view camera. Refer to AV-290, "Exploded View".

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000009721776

The eject signal is output to AV control unit when the eject switch of multifunction switch is pressed.

Diagnosis Procedure

INFOID:0000000009721777

1.CHECK CONTINUITY DISK EJECT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector and AV control unit connector.
3. Check continuity between multifunction switch harness connector and AV control unit harness connector.

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M125	14	M174	96	Existed

4. Check continuity between multifunction switch harness connector and ground.

Multifunction switch		Ground	Continuity
Connector	Terminal		
M125	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect multifunction switch connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M174	96	Ground	Pressing the eject switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-286, "Exploded View".
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000009721778

Supply power from TEL adapter unit to microphone. The microphone transmits the sound/voice to the TEL adapter unit.

Diagnosis Procedure

INFOID:0000000009721779

1.CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and microphone connector.
3. Check continuity between TEL adapter unit harness connector and microphone harness connector.

TEL adapter unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
B39	7	R20	1	Existed
	8		2	
	29		4	

4. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminals		
B39	7		Not existed
	29		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector.

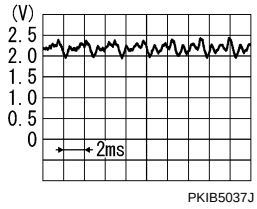
(+)		(–)		Voltage (Approx.)
TEL adapter unit				
Connector	Terminal	Connector	Terminal	
B39	29	B39	8	5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace TEL adapter unit. Refer to AV-293, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between TEL adapter unit harness connector.

(+)		(–)		Condition	Reference value
TEL adapter unit					
Connector	Terminal	Connector	Terminal		
B39	7	B39	8	give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace TEL adapter unit. Refer to AV-293, "Removal and Installation".
NO >> Replace microphone. Refer to AV-295, "Exploded View".

CONTROL SIGNAL CIRCUIT

Description

INFOID:0000000009721780

TEL adapter unit identifies the vehicle model according to the control signal and performs the control.

Diagnosis Procedure

INFOID:0000000009721781

1.CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminals		
B39	20		Existed
	24		

Is the inspection result normal?

YES >> Replace TEL adapter unit. Refer to AV-293, "Removal and Installation".
NO >> Repair harness or connector.

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000009721782

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009721783

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M171	6	M33	24	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M171	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-15, "Exploded View" (except for Mexico) or SR-42, "Exploded View" (for Mexico).

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit				
Connector	Terminal	Connector	Terminal	
M171	6	M171	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-264, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-287, "Exploded View".

Component Inspection

INFOID:0000000009721784

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

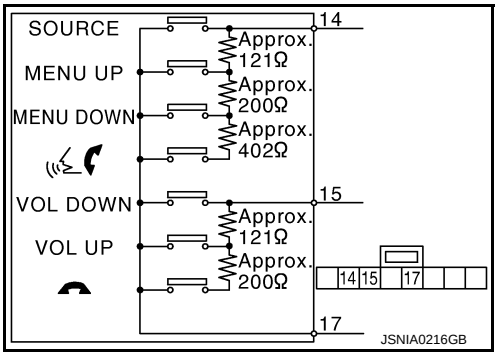
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000009721785

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009721786

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M171	16	M33	31	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M171	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-15, "Exploded View" (except for Mexico) or SR-42, "Exploded View" (for Mexico).

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit				
Connector	Terminal	Connector	Terminal	
M171	16	M171	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-266, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-287, "Exploded View".

Component Inspection

INFOID:0000000009721787

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

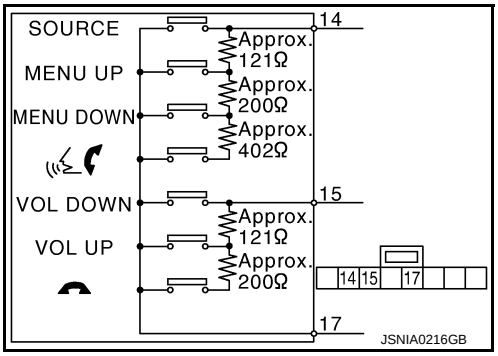
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



STEERING SWITCH GROUND CIRCUIT

Description

INFOID:0000000009721788

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009721789

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Trun ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M171	15	M33	33	Existed

4. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-15, "Exploded View" (except for Mexico) or SR-42, "Exploded View" (for Mexico).

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M171	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-276, "Exploded View".

4.CHECK STEERING SWITCH

Check steering switch. Refer to AV-267, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-287, "Exploded View".

Component Inspection

INFOID:0000000009721790

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

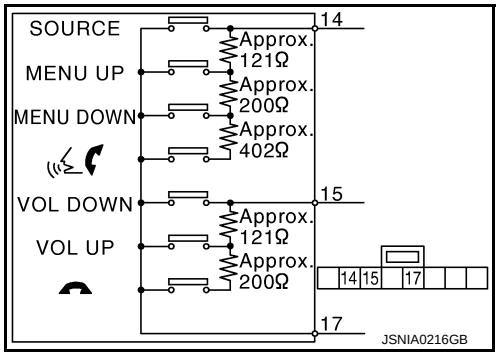
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000009721791

OPERATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT is started.	• Multifunction switch power supply and ground circuit. • AV communication circuit between AV control unit and multifunction switch. Perform “Self Diagnostic Result” of “MULTI AV” with CONSULT. Refer to AV-187, "CONSULT Function".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-244, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-178, "On Board Diagnosis Function".
Fuel economy display is abnormal.	There is malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-199, "DTC Index".
	There is no malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”.	Ignition signal circuit malfunction. (AV control unit)

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 checking that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.
   NOTE:
   The customer's phone may be required, depending upon their concern.
3. 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.
4. Go to “www.nissanusa.com/bluetooth/”.

a. Using the website's search engine, find out if the customer's phone is on the approved list.

b. 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.

c. 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” list.

d. 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.	TEL adapter unit malfunction. Refer to AV-293, "Removal and Installation".
Hands-free phone cannot be established.	Both the reception and the speech cannot be performed	• Perform “Self Diagnostic Result” of “MULTI AV” with CONSULT. Refer to AV-187, "CONSULT Function". • No malfunction. TEL adapter unit malfunction. Refer to AV-293, "Removal and Installation". • Malfunction is detected. Perform detected DTC diagnosis. Refer to AV-199, "DTC Index".
The other party's voice cannot be heard by hands-free phone.	Steering switch's “ ” switch works.	TEL voice signal circuit malfunction between TEL adapter unit and AV control unit.
	Steering switch's “ ” switch do not work.	Control signal circuit malfunction. Refer to AV-262, "Diagnosis Procedure".
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	TEL adapter unit malfunction. Refer to AV-293, "Removal and Installation".
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-260, "Diagnosis Procedure".
The system cannot be operated.	Steering switch's “SOURCE”, “MENU UP”, and “MENU DOWN” switches works, but “ ” it does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-287, "Exploded View".
	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN” and “ ” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-265, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-267, "Diagnosis Procedure".

RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (Vehicle width and predictive course line is displayed.)	AUX image is displayed.	Camera image signal circuit. Refer to AV-257, "Diagnosis Procedure".
	AUX image is not displayed.	Composite image signal circuit. Refer to AV-255, "Diagnosis Procedure".
Camera image is not shown. (displayed in black and nothing can be displayed)	—	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and display unit. Refer to AV-253, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and display unit. Refer to AV-254, "Diagnosis Procedure".
Camera image does not switch.	“Reverse” is not turned ON on “Vehicle Signals” screen of “Confirmation/Adjustment”.	Reverse signal circuit malfunction.
	“Reverse” is turned ON on “Vehicle Signals”screen of “Confirmation/Adjustment”.	AV control unit malfunction. Replace AV control unit. Refer to AV-276, "Exploded View".

RELATED TO RGB IMAGE

Symptoms	Check items	Possible malfunction location / Action to take
RGB image is not shown.	There is malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-199, "DTC Index".
	There is no malfunction in CONSULT “self-diagnosis results” of “MULTI AV”.	Vertical synchronizing (VP) signal circuit. Refer to AV-254, "Diagnosis Procedure".
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to AV-248, "Diagnosis Procedure".
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to AV-249, "Diagnosis Procedure".
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to AV-250, "Diagnosis Procedure".
RGB screen is rolling.	—	RGB synchronizing signal circuit. Refer to AV-251, "Diagnosis Procedure".
Fuel economy display is malfunctioning.	There is malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-199, "DTC Index".
	There is no malfunction in CONSULT “self-diagnosis results” of “MULTI AV”.	Ignition signal circuit malfunction. (AV control unit)

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-259, "Diagnosis Procedure".
No sound comes out or the level of the sound is low.	No sound from all speakers.	• BOSE amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction. Refer to AV-245, "BOSE AMP. : Diagnosis Procedure".
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and BOSE amp. • Sound signal circuit malfunction between BOSE amp. and speaker. • Malfunction in speaker. • Malfunction in AV control unit. • Malfunction in BOSE amp.
Noise is mixed with audio.	Noise comes out from all speakers.	• Malfunction in AV control unit. • Malfunction in BOSE amp.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and BOSE amp. • Sound signal circuit malfunction between BOSE amp. and speaker. • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in AV control unit. • Malfunction in BOSE amp.
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	• Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-296, "Exploded View".
Radio is not received or poor reception.	• Other audio sounds are normal. • Any radio 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).	• Antenna amp. ON signal circuit malfunction. • Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-296, "Exploded View".

Symptoms	Check items	Probable malfunction location
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to AV-187, "CONSULT Function".	• Malfunction in antenna, antenna feeder, or AV control unit. Perform DTC diagnosis. Refer to AV-199, "DTC Index". • Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder.
	There is no malfunction in the CONSULT self-diagnosis result. Refer to AV-187, "CONSULT Function".	• Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. • Loose satellite radio antenna mounting nut. Refer to AV-296, "Exploded View".

RELATED TO USB

NOTE:

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	• USB harness malfunction. • USB connector malfunction.

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

RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-267, "Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to AV-287, "Exploded View".
“SOURCE”, “MENU UP”, “MENU DOWN”, “ ” switches are not operated.	Steering switch signal A circuit. Refer to AV-263, "Diagnosis Procedure".
”VOL UP“, “VOL DOWN”, “ ” switches are not operated.	Steering switch signal B circuit. Refer to AV-265, "Diagnosis Procedure".

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuit.
Image is not displayed when AUX mode is selected.	Camera image is displayed.	AUX image signal circuit malfunction. Refer to AV-256, "Diagnosis Procedure".
	Camera image is not displayed.	Composite image signal circuit malfunction. Refer to AV-255, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000009721792

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press “DISC-AUX” to change the mode.
	The display is turned off.	Press “☀/☽ OFF” to turn on the display.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the multi AV system.

RELATED TO VOICE RECOGNITION

Related to Telephone

The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See “Speaker adaptation (SA) mode” earlier in this section. Refer to “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- 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 then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3 (.mp3)" or ".WMA (.wma)" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA file has been given an extension of ".MP3 (.mp3)" or ".WMA (.wma)" when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

NOTE:

- 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 a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

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. Refer to “RELATED TO HANDS-FREE PHONE (Check Compatibility)” of MULTI AV SYSTEM SYMPTOM.
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. • The vehicle is outside of the telephone service area. • 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. • The cellular phone is locked to prevent it from being dialed. **NOTE:** 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.
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

AV CONTROL UNIT

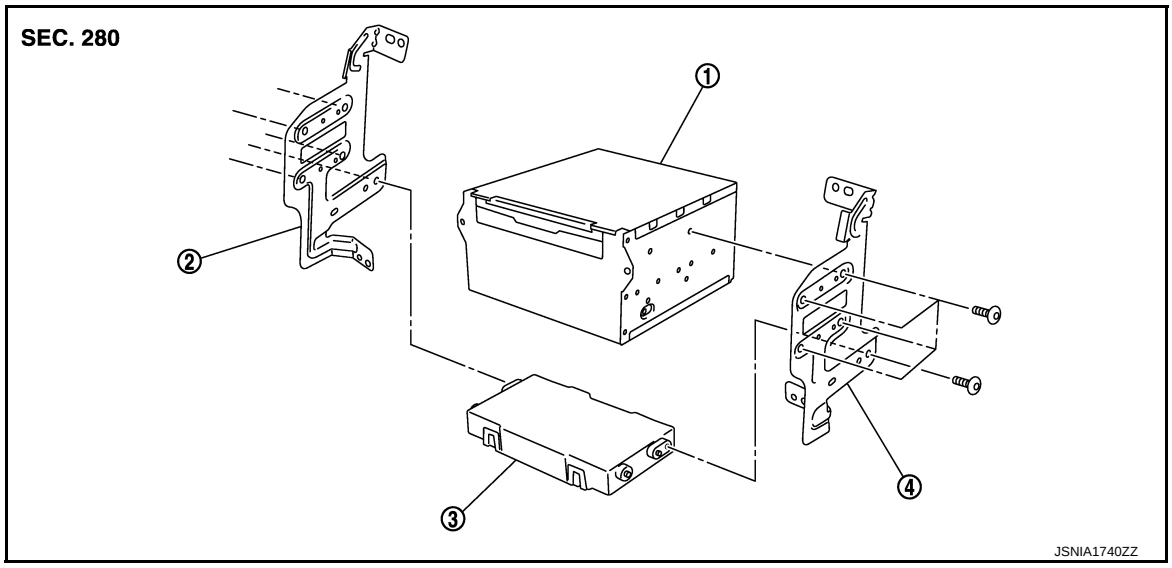
Exploded View

INFOID:0000000009721793

CAUTION:
Before replacing AV control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-231, "Description".

REMOVAL
Refer to IP-14, "Exploded View".

DISASSEMBLY



1. AV control unit
2. Bracket LH
3. A/C auto amp.
4. Bracket RH

Removal and Installation

INFOID:0000000009721794

REMOVAL
CAUTION:
Before replacing AV control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-231, "Description".

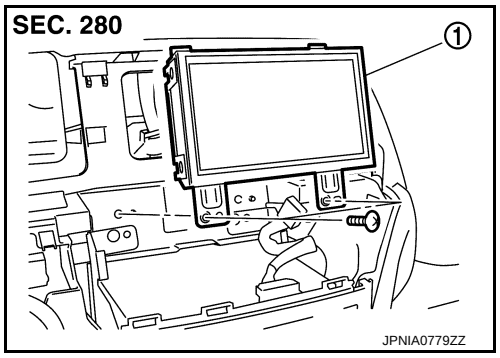
1. Remove cluster lid C. Refer to IP-14, "Exploded View".
2. Remove AV control unit with an A/C auto amp. as a single unit from the vehicle.
3. Remove bracket screws, and then remove AV control unit.

INSTALLATION
Install in the reverse order of removal.
CAUTION:
Be sure to perform “Read/Write Configuration” when replacing AV control unit. For details, refer to AV-231, "Work Procedure".

DISPLAY UNIT

Exploded View

INFOID:0000000009721795



1. Display unit

Removal and Installation

INFOID:0000000009721796

REMOVAL

1. Remove center ventilator assembly. Refer to IP-14, "Exploded View".
2. Remove display unit with bracket as a single unit.

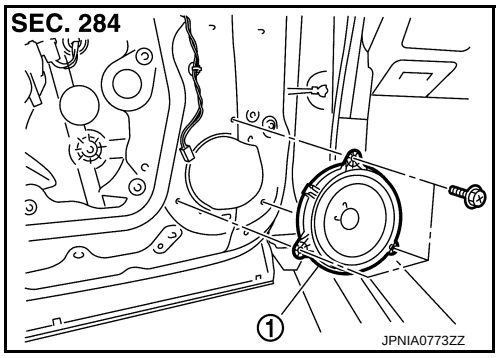
INSTALLATION

Install in the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000009721797



1. Front door speaker

Removal and Installation

INFOID:0000000009721798

REMOVAL

1. Remove front door finisher. Refer to INT-13, "FRONT DOOR FINISHER : Exploded View".
2. Remove front door speaker screws, then disconnect front door speaker connector and remove front door speaker.

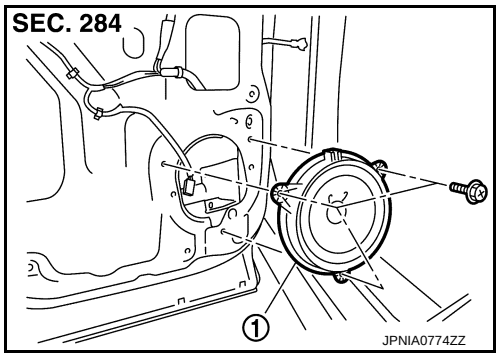
INSTALLATION

Install in the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000009721799



1. Rear door speaker

Removal and Installation

INFOID:0000000009721800

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "REAR DOOR FINISHER : Exploded View".
2. Remove rear door speaker screws, then disconnect rear door speaker connector and remove rear door speaker.

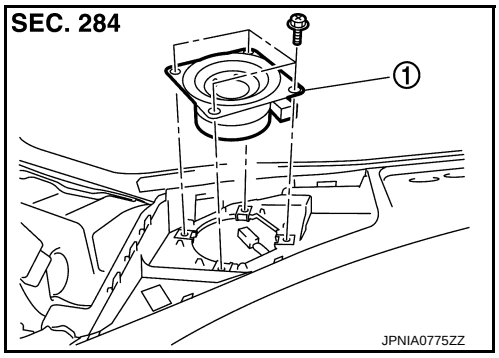
INSTALLATION

Install in the reverse order of removal.

FRONT SQUAWKER

Exploded View

INFOID:0000000009721801



1. Front squawker

Removal and Installation

INFOID:0000000009721802

REMOVAL

1. Remove speaker grille. Refer to IP-14, "Exploded View".
2. Remove front squawker screws, lift up the front squawker and disconnect front squawker connector. Then remove the front squawker.

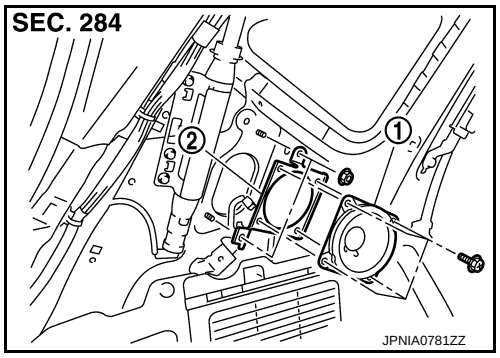
INSTALLATION

Install in the reverse order of removal.

REAR SPEAKER

Exploded View

INFOID:0000000009721803



1. Rear speaker
2. Rear speaker bracket

Removal and Installation

INFOID:0000000009721804

REMOVAL

1. Remove luggage side finisher upper. Refer to INT-34, "Exploded View".
2. Remove rear speaker screws, lift up the rear speaker and disconnect rear speaker connector. Then remove the rear speaker.

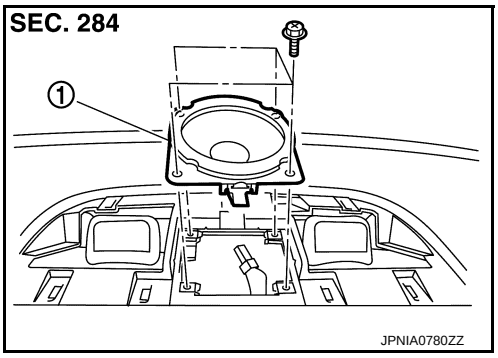
INSTALLATION

Install in the reverse order of removal.

CENTER SPEAKER

Exploded View

INFOID:0000000009721805



1. Center speaker

Removal and Installation

INFOID:0000000009721806

REMOVAL

1. Remove center speaker grille. Refer to IP-14, "Exploded View".
2. Remove center speaker screws, lift up the center speaker and disconnect center speaker connector. Then remove the center speaker.

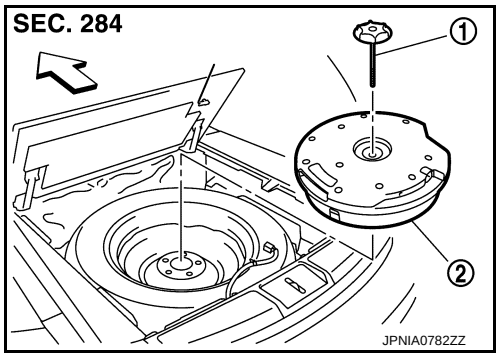
INSTALLATION

Install in the reverse order of removal.

WOOFER

Exploded View

INFOID:0000000009721807



⇦: Vehicle front
1. Clamp
2. Woofer

Removal and Installation

INFOID:0000000009721808

REMOVAL

1. Remove luggage floor center finisher rear. Refer to INT-34, "Exploded View".
2. Remove clamp, disconnect woofer connector and remove the woofer.

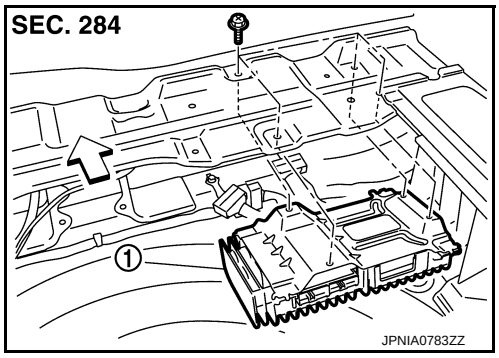
INSTALLATION

Install in the reverse order of removal.

BOSE AMP.

Exploded View

INFOID:0000000009721809



⇦: Vehicle front
1. BOSE amp.

Removal and Installation

INFOID:0000000009721810

REMOVAL

1. Remove luggage floor center finisher front. Refer to INT-34, "Exploded View".
2. Remove BOSE amp. screws, disconnect BOSE amp. connector and remove the BOSE amp.

INSTALLATION

Install in the reverse order of removal.

MULTIFUNCTION SWITCH

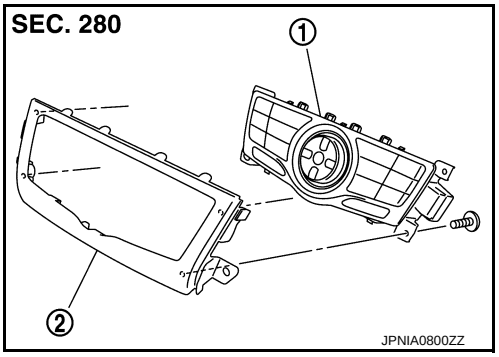
Exploded View

INFOID:0000000009721811

REMOVAL

Refer to IP-14, "Exploded View".

DISASSEMBLY



1. Multifunction switch
2. Cluster lid D

Removal and Installation

INFOID:0000000009721812

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "Exploded View".
2. Remove multifunction switch with center ventilator grille as a single unit.
3. Remove multifunction switch screws, remove multifunction switch from cluster lid D.

INSTALLATION

Install in the reverse order of removal.

PRESET SWITCH

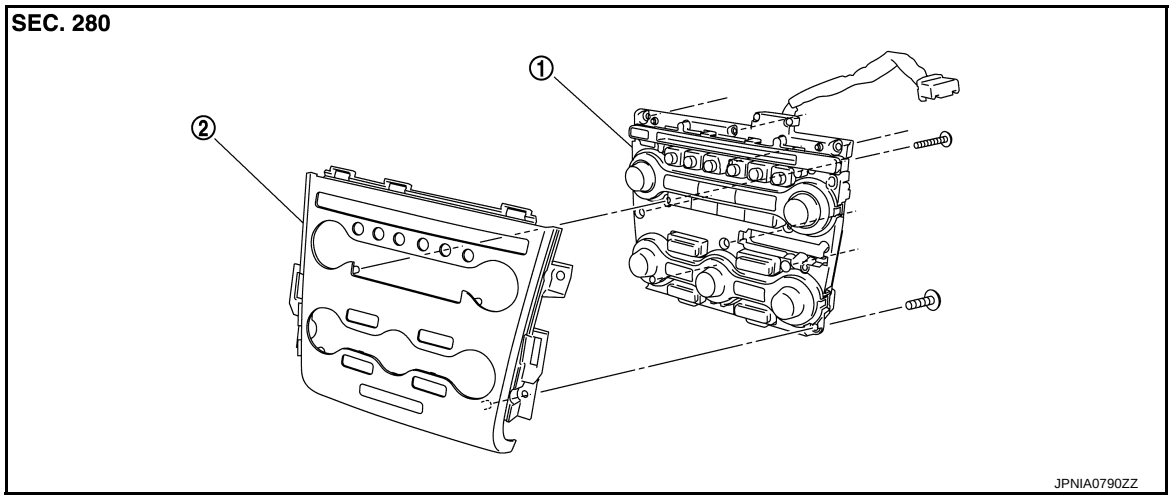
Exploded View

INFOID:0000000009721813

REMOVAL

Refer to IP-14, "Exploded View".

DISASSEMBLY



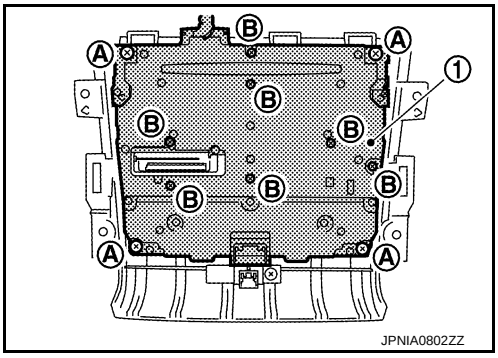
1. Preset switch
2. Cluster lid C

Removal and Installation

INFOID:0000000009721814

REMOVAL

1. Remove cluster lid C. Refer to IP-14, "Exploded View".
2. Remove preset switch screws (A) (B), remove preset switch (1) from cluster lid C.



1. Preset switch
A. Screw
B. Screw

INSTALLATION

Install in the reverse order of removal.

STEERING SWITCH

Exploded View

INFOID:0000000009721815

Refer to ST-36, "Exploded View".

Removal and Installation

INFOID:0000000009721816

REMOVAL

Refer to ST-36, "Removal and Installation".

INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Removal and Installation

INFOID:0000000009721817

REMOVAL

1. Remove center console assembly. Refer to IP-22, "Exploded View".
2. Remove auxiliary input jacks mounting screws.
3. Disconnect connector to remove auxiliary input jacks from lower console assembly.

INSTALLATION

Install in the reverse order of removal.

USB CONNECTOR

Removal and Installation

INFOID:0000000009721818

REMOVAL

1. Remove console finisher assembly. Refer to IP-22, "Exploded View".
2. Press the pawl from the back of lower console assembly to remove USB connector.

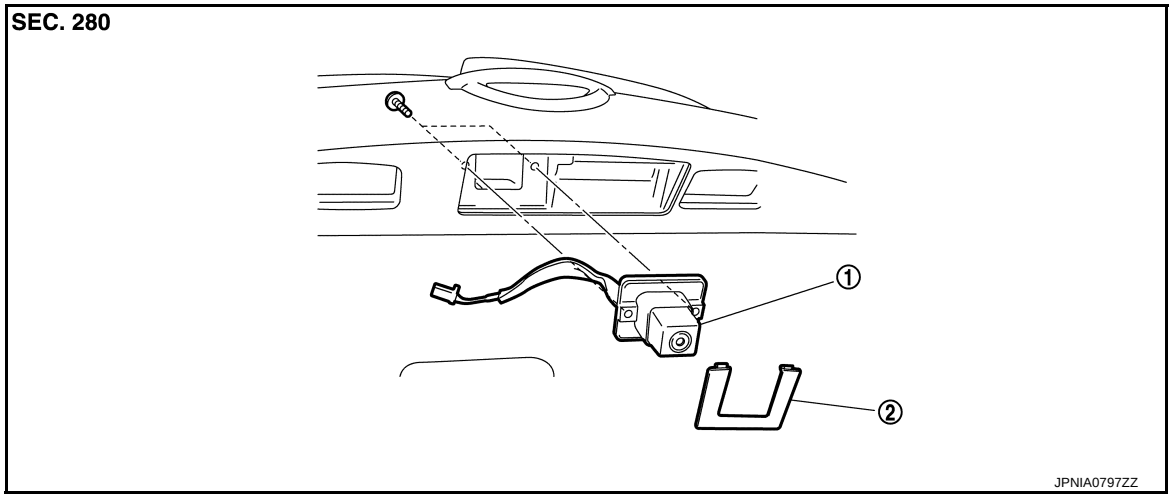
INSTALLATION

Install in the reverse order of removal.

REAR VIEW CAMERA

Exploded View

INFOID:0000000009721819



1. Rear view camera
2. Finisher

Removal and Installation

INFOID:0000000009721820

REMOVAL

1. Remove back door finisher inner. Refer to INT-38, "Exploded View".
2. Remove finisher.
3. Remove rear view camera screws, disconnect rear view camera connector and remove rear view camera from back door assembly.

INSTALLATION

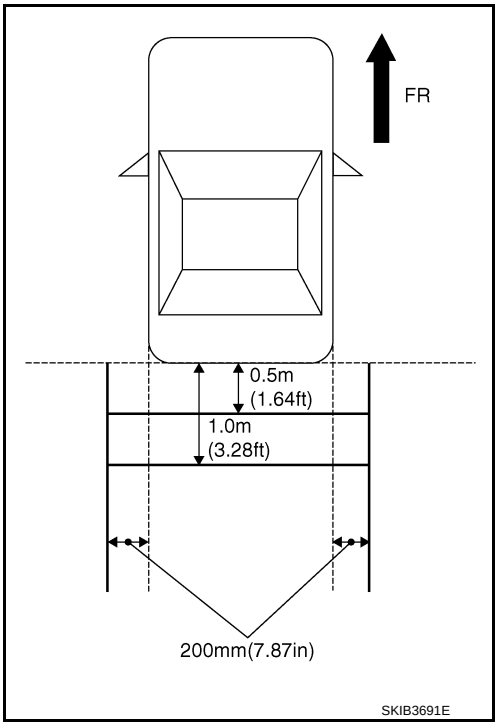
Install in the reverse order of removal.

Adjustment

INFOID:0000000009721821

Adjust the guide line position if the guide line position is shifted after installing the rear view camera.

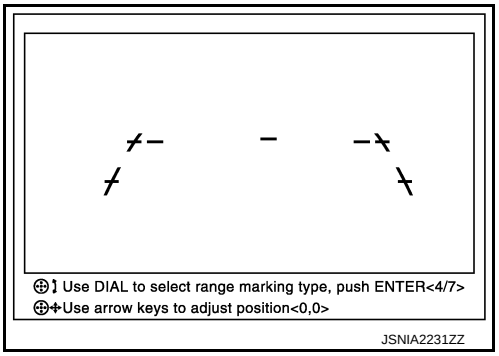
1. Draw lines on rearward area of the vehicle passing through the following points: 200 mm (7.87 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into “Adjust Guide Lines” mode of “Confirmation/Adjustment” mode.



3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.

Selected pattern : 7

4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press “OK” switch and record the adjusted guiding line position to the AV control unit.



Up/Down adjustment range : 20° to 20°

Left/Right adjustment range : 20° to 20°

CAUTION:

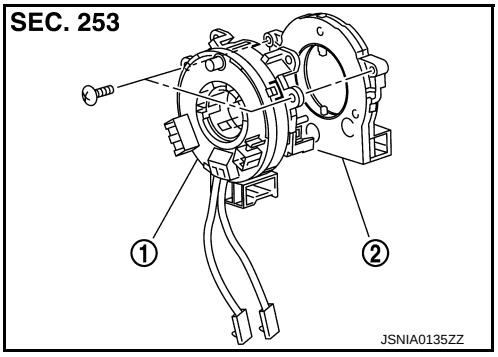
Never operate other function such as pressing BACK while writing index data.

STEERING ANGLE SENSOR

Exploded View

INFOID:0000000009721822

DISASSEMBLY



1. Spiral cable
2. Steering angle sensor

Removal and Installation

INFOID:0000000009721823

REMOVAL

1. Remove spiral cable. Refer to SR-15, "Exploded View" (except for Mexico) or SR-42, "Exploded View" (for Mexico).
2. Remove steering angle sensor from spiral cable.

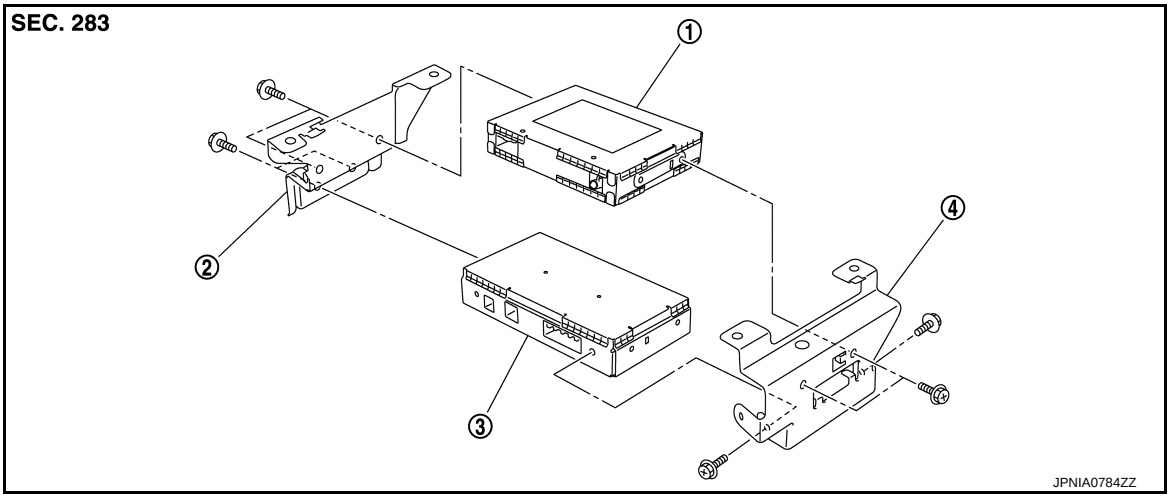
INSTALLATION

1. Install in the reverse order of removal.
2. Perform steering angle sensor neutral position adjustment. Refer to AV-187, "CONSULT Function".

TEL ADAPTER UNIT

Exploded View

INFOID:0000000009721824



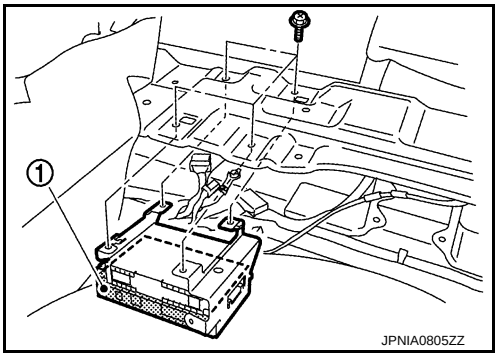
1. Satellite radio tuner
2. Bracket LH
3. TEL adapter unit
4. Bracket RH

Removal and Installation

INFOID:0000000009721825

REMOVAL

1. Remove luggage floor finisher front. Refer to INT-34, "Exploded View".
2. Remove TEL adapter unit (1) with satellite radio tuner as a single unit from the vehicle.
3. Remove bracket screws, and them remove TEL adapter unit.



INSTALLATION

Install in the reverse order of removal.

TEL ANTENNA

Removal and Installation

INFOID:0000000009721826

REMOVAL

1. Remove luggage floor finisher center (front and rear). Refer to INT-34, "Exploded View".
2. Remove luggage side finisher lower RH. Refer to INT-34, "Exploded View".
3. Remove TEL antenna feeder clips.
4. Disconnect TEL antenna connector, and them remove TEL antenna.

INSTALLATION

Install in the reverse order of removal.

MICROPHONE

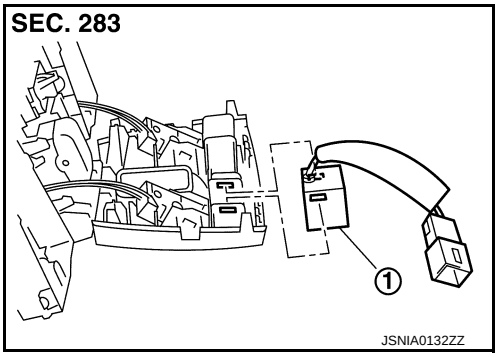
Exploded View

INFOID:0000000009721827

REMOVAL

Refer to INL-123, "Exploded View".

DISASSEMBLY



1. Microphone

Removal and Installation

INFOID:0000000009721828

REMOVAL

1. Remove map lamp. Refer to INL-123, "Exploded View".
2. Remove microphone from map lamp.

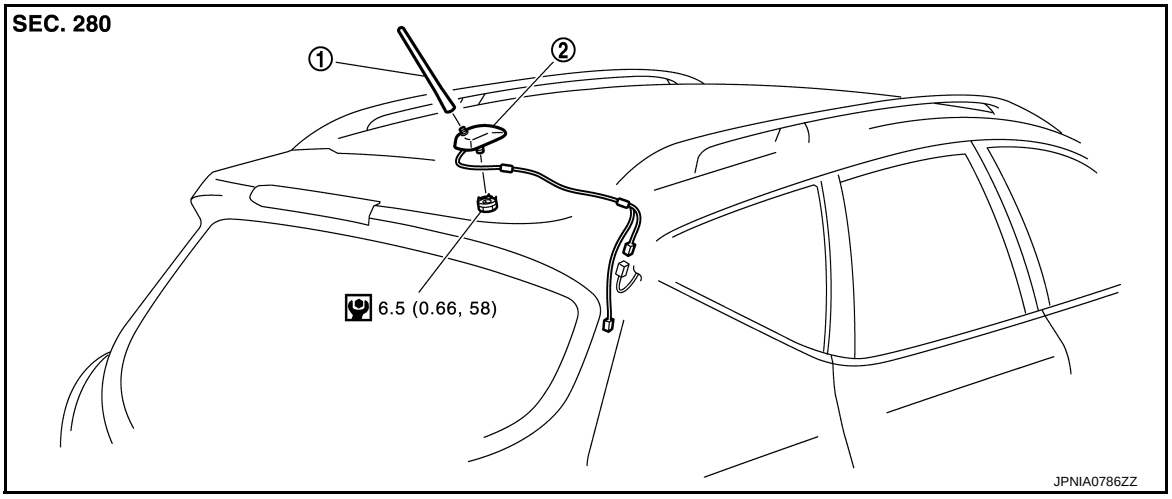
INSTALLATION

Install in the reverse order of removal.

ROOF ANTENNA

Exploded View

INFOID:0000000009721829



1. Rod antenna
2. Antenna base

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000009721830

REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to INT-26, "NORMAL ROOF : Exploded View" [normal roof] or INT-30, "SUNROOF : Exploded View" [sunroof].
2. Disconnect antenna feeder connectors.
3. Remove antenna base mounting nut, and then remove antenna base from roof panel.

INSTALLATION

Install in the reverse order of removal.

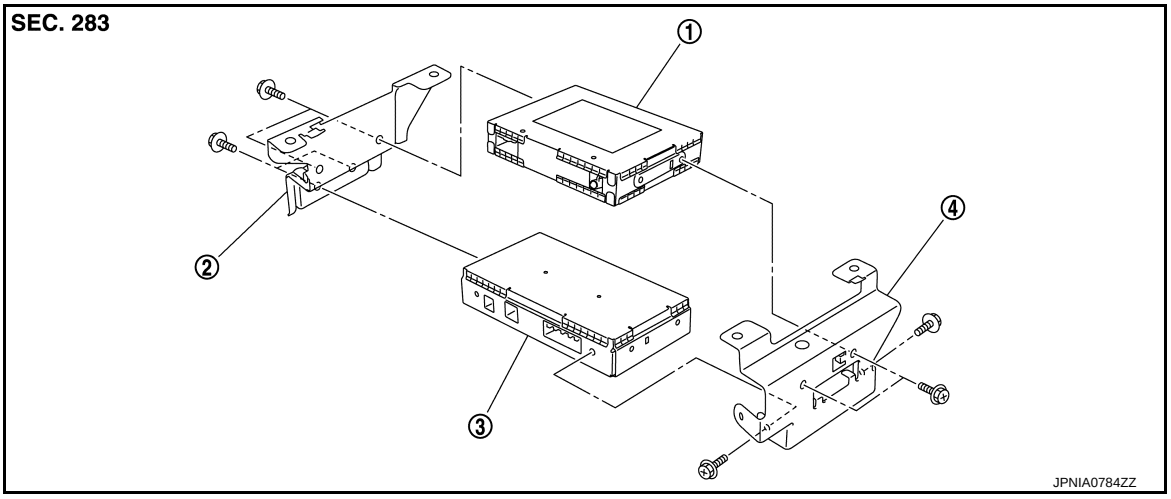
CAUTION:

If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.

SATELLITE RADIO TUNER

Exploded View

INFOID:0000000009721831



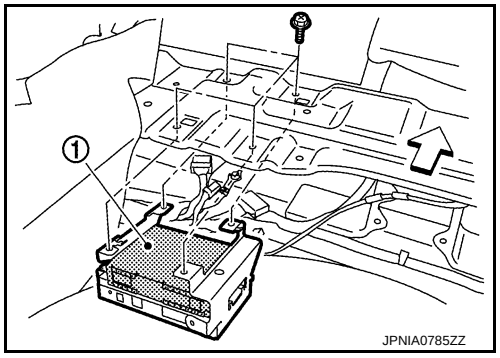
1. Satellite radio tuner
2. Bracket LH
3. TEL adapter unit
4. Bracket RH

Removal and Installation

INFOID:0000000009721832

REMOVAL

1. Remove luggage floor finisher front. Refer to INT-34, "Exploded View".
2. Remove satellite radio tuner (1) with TEL adapter unit as a single unit from the body.



⇦: Vehicle front

3. Remove bracket screws, and them remove satellite tuner.

INSTALLATION

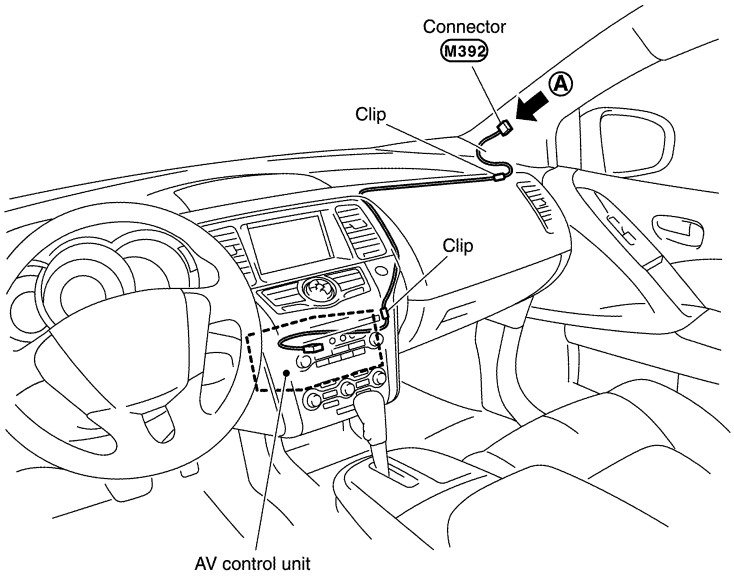
Install in the reverse order of removal.

ANTENNA FEEDER

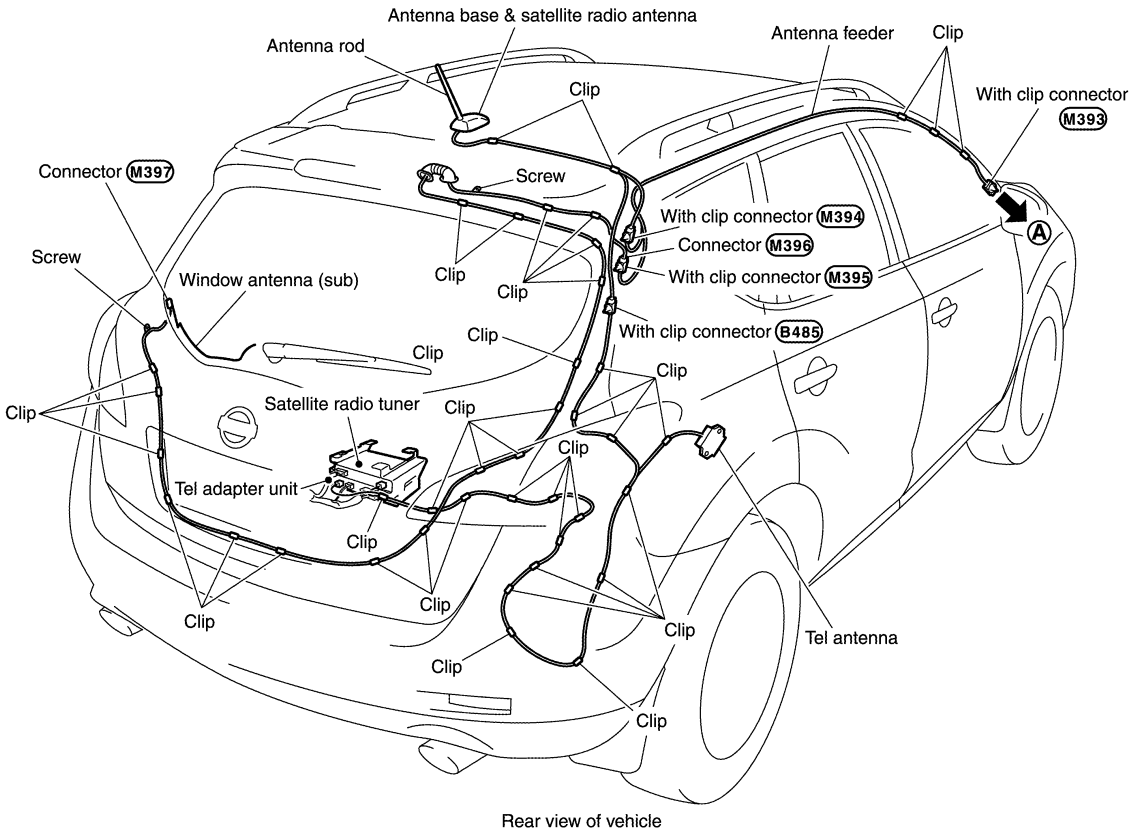
Feeder Layout

INFOID:0000000009721833

SEC. 280



Instrument panel driver side



Rear view of vehicle

JSNIA3506GB

PRECAUTION

PRECAUTIONS

EXCEPT FOR MEXICO

EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000009721834

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted.
Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

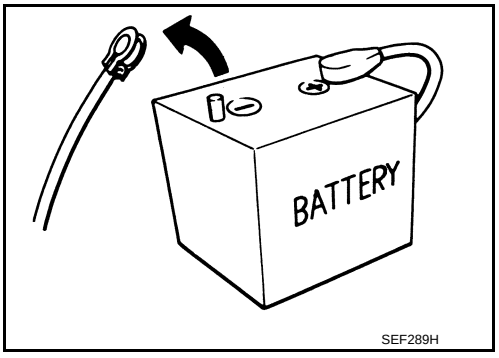
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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 3 minutes before performing any service.**

EXCEPT FOR MEXICO : Precautions for Removing of Battery Terminal

INFOID:0000000010137979

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

EXCEPT FOR MEXICO : Precaution for Trouble Diagnosis

INFOID:0000000009721836

AV COMMUNICATION SYSTEM

- Do not apply voltage of 7.0 V or higher to the measurement terminals.

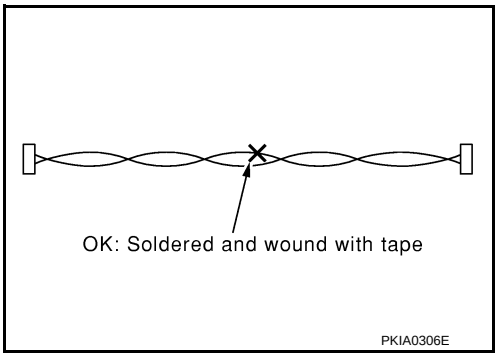
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

EXCEPT FOR MEXICO : Precaution for Harness Repair

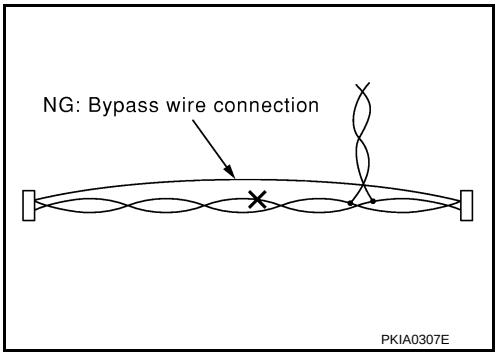
INFOID:0000000009721837

AV COMMUNICATION SYSTEM

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



- 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.)



FOR MEXICO

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

INFOID:0000000009721838

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 “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

Always observe the following items for preventing accidental activation.

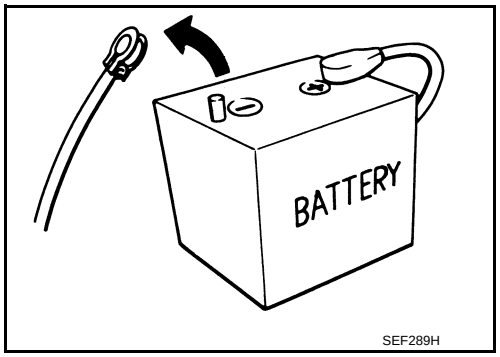
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**

- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

FOR MEXICO : Precautions for Removing of Battery Terminal

INFOID:0000000010137980

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

FOR MEXICO : Precaution for Trouble Diagnosis

INFOID:0000000009721840

AV COMMUNICATION SYSTEM

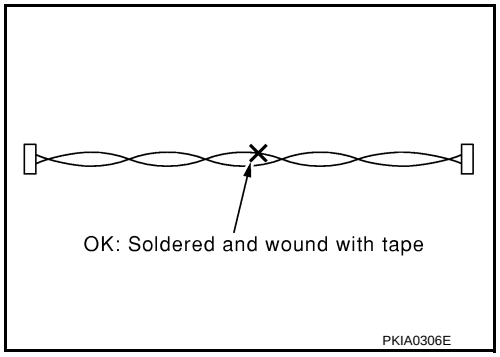
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

FOR MEXICO : Precaution for Harness Repair

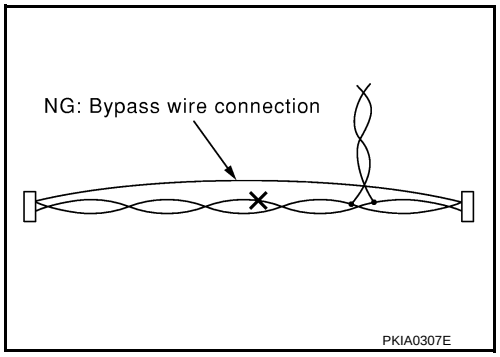
INFOID:0000000009721841

AV COMMUNICATION SYSTEM

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



- 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.)

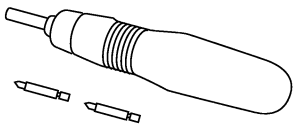


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000009721842

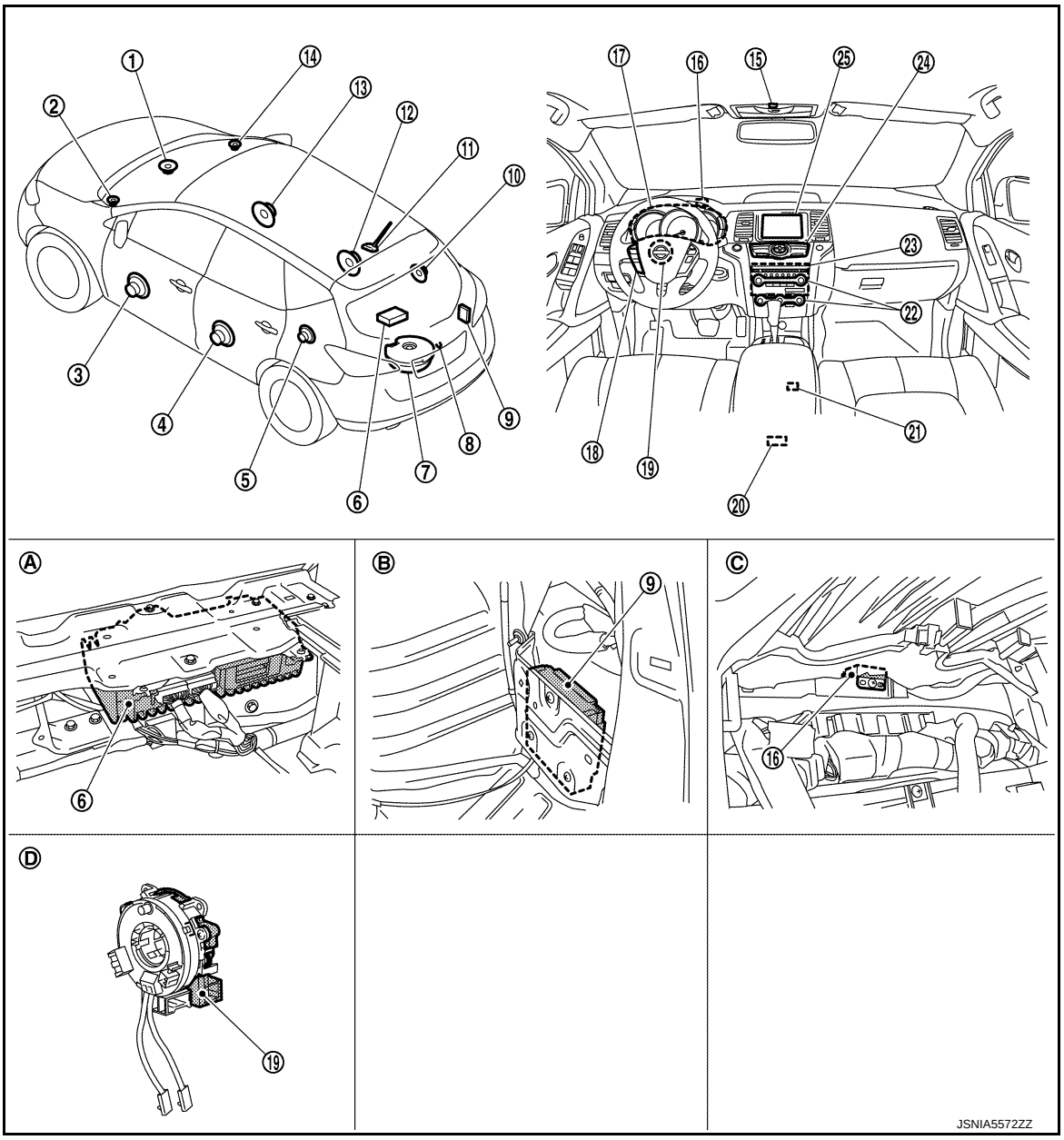
Tool	Description
Power tool  PBIC0191E	Loosening screws

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000009721843



1. Center speaker
2. Front squawker LH
3. Front door speaker LH
4. Rear door speaker LH
5. Rear speaker LH
6. BOSE amp.
7. Woofer
8. Rear view camera
9. Camera control unit (Models with LDW and BSW)
10. Rear speaker RH
11. Antenna base (antenna amp. and satellite radio antenna)
12. Rear door speaker RH
13. Front door speaker RH
14. Front squawker RH
15. Microphone
16. GPS antenna
17. Combination meter
18. Steering switch
19. Steering angle sensor
20. Auxiliary input jacks
21. USB connector
22. Preset switch
23. AV control unit
24. Multifunction switch
25. Display unit

A. Luggage floor center finisher removed condition
B. Luggage side finisher lower RH is removed condition
C. Combination meter removed condition
D. Spiral cable part

Component Description

INFOID:0000000009721844

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. (Models with music box) • Integrates hard disk drive (HDD) allowing map data to be stored. (Models without music box) • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, rear view monitor, hands-free phone, voice control, navigation, USB connection, DVD play, satellite radio and vehicle information functions. • It is connected to ECM and combination meter via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • The RGB digital image signal and composite image signal are output to display unit. • It supplies power to rear view camera. (Models without LDW and BSW) • Amp. ON signal and sound signal are transmitted to BOSE amp. • Update of map data is performed with the DVD-ROM.
Display unit	• Display image is controlled by the serial communication from AV control unit. • RGB digital image signal is input from AV control unit. • Composite image signal is input from AV control unit. • Camera image signal is input from rear view camera. (Models without LDW and BSW) • Camera image signal is input from camera control unit. (Models with LDW and BSW) • Touch panel function can be operated for each system by touching a display directly.
Camera control unit (Models with LDW and BSW)	• It supplies power to rear view camera. • The image of vehicle rear view is transmitted to display unit. • Controls the LDW and BSW system. Refer to the following. - LDW system: DAS-12, "System Description" - BSW system: DAS-109, "System Description"
BOSE amp.	Inputs sound signal from AV control unit, and outputs sound signal to each speaker.
Front door speaker	• Outputs sound signal from BOSE amp. • Outputs sound (mid and low range).
Rear door speaker	• Outputs sound signal from BOSE amp. • Outputs sound (mid and low range).
Front squawker	• Outputs sound signal from BOSE amp. • Outputs sound (high and mid range).
Rear speaker	• Outputs sound signal from BOSE amp. • Outputs sound (high and mid range).
Center speaker	• Outputs sound signal from BOSE amp. • Outputs sound (high and mid range).
Woofer	• Composed of two woofers. • Inputs sound signal from BOSE amp. • Outputs sound (low range).

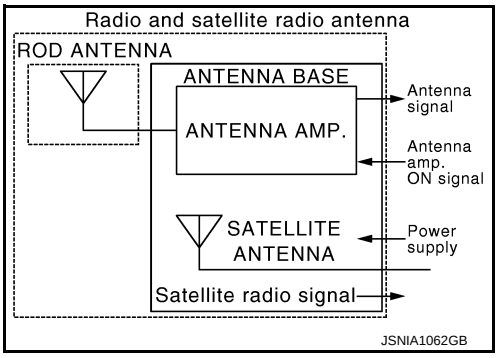
Part name	Description
Multifunction switch	• Operation panel is equipped with the centralized switch where audio, auxiliary input and navigation, etc. operations are integrated. • Connected with preset switch via harness, and operation signal is transmitted to AV control unit via AV communication.
Preset switch	• Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. • Connected with multifunction switch via harness, and operation signal is transmitted to AV control unit via AV communication. • The disk ejection operating signal is performed by hardwire.
Rear view camera	Models without LDW and BSW • Camera power supply is input from AV control unit. • The image of vehicle rear view is transmitted to display unit. Models with LDW and BSW • Camera power supply is input from camera control unit. • The image of vehicle rear view is transmitted to camera control unit.
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle sensor signal via CAN communication.
Steering switch	• Operations for audio, hands-free phone, voice control and navigation, etc. are possible. • Steering switch signal (operation signal) is output to AV control unit.
Microphone	• Used for hands-free phone function and voice recognition function. • Microphone signal is transmitted to AV control unit. • Power (Microphone VCC) is supplied from AV control unit.
Auxiliary input jacks	Image signal and sound signal of auxiliary input are transmitted to AV control unit.
GPS antenna	GPS signal is received and transmitted to AV control unit.
Antenna base	A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted. ANTENNA AMP. • Radio signal received by rod antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit. SATELLITE RADIO ANTENNA • Receives satellite radio waves and outputs it to AV control unit.
USB connector	Image signal*1 and sound signal of USB input is transmitted to AV control unit.
Combination meter (Models with BSW and LDW)	Receives buzzer output signal from camera control unit via CAN communication and sounds the buzzer.

*1: Image signals cannot be received from iPod®.

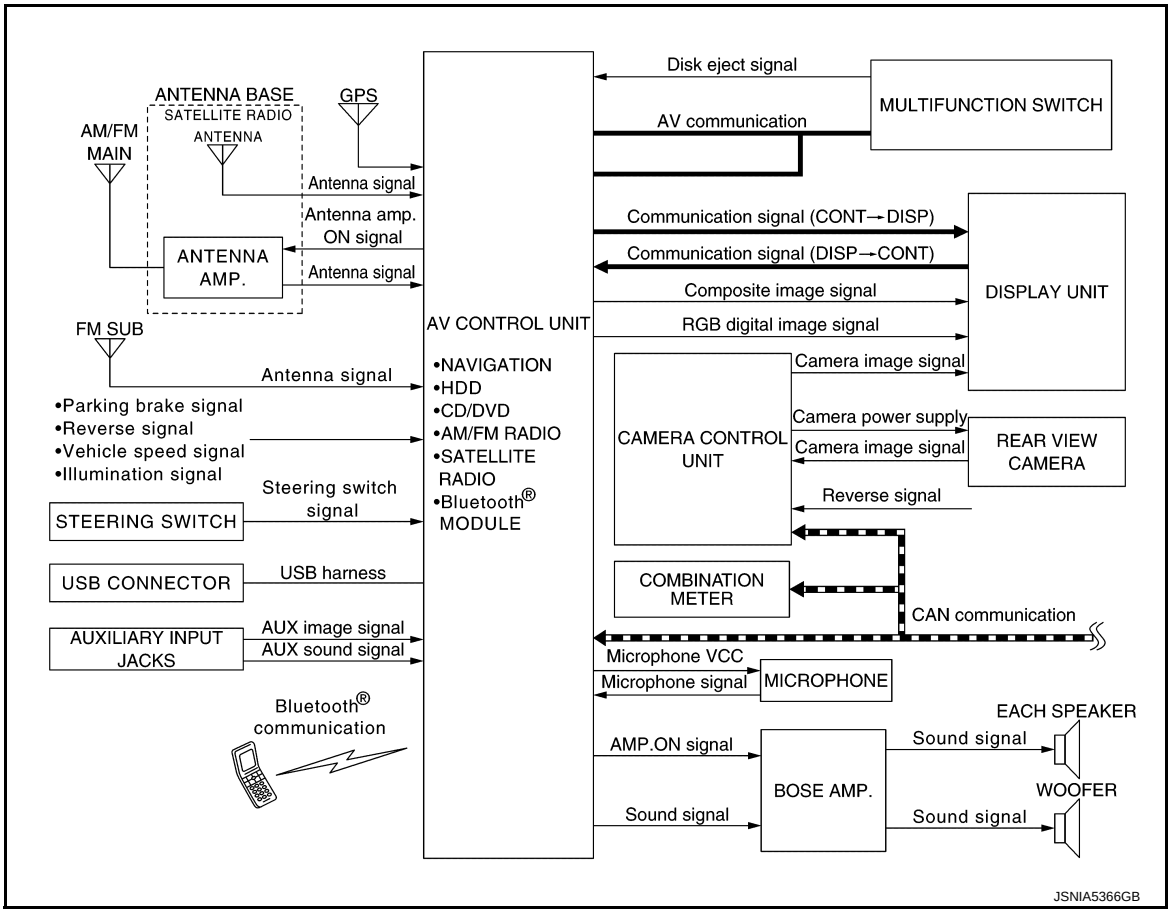
SYSTEM
MULTI AV SYSTEM
MULTI AV SYSTEM : System Diagram

INFOID:0000000009721845

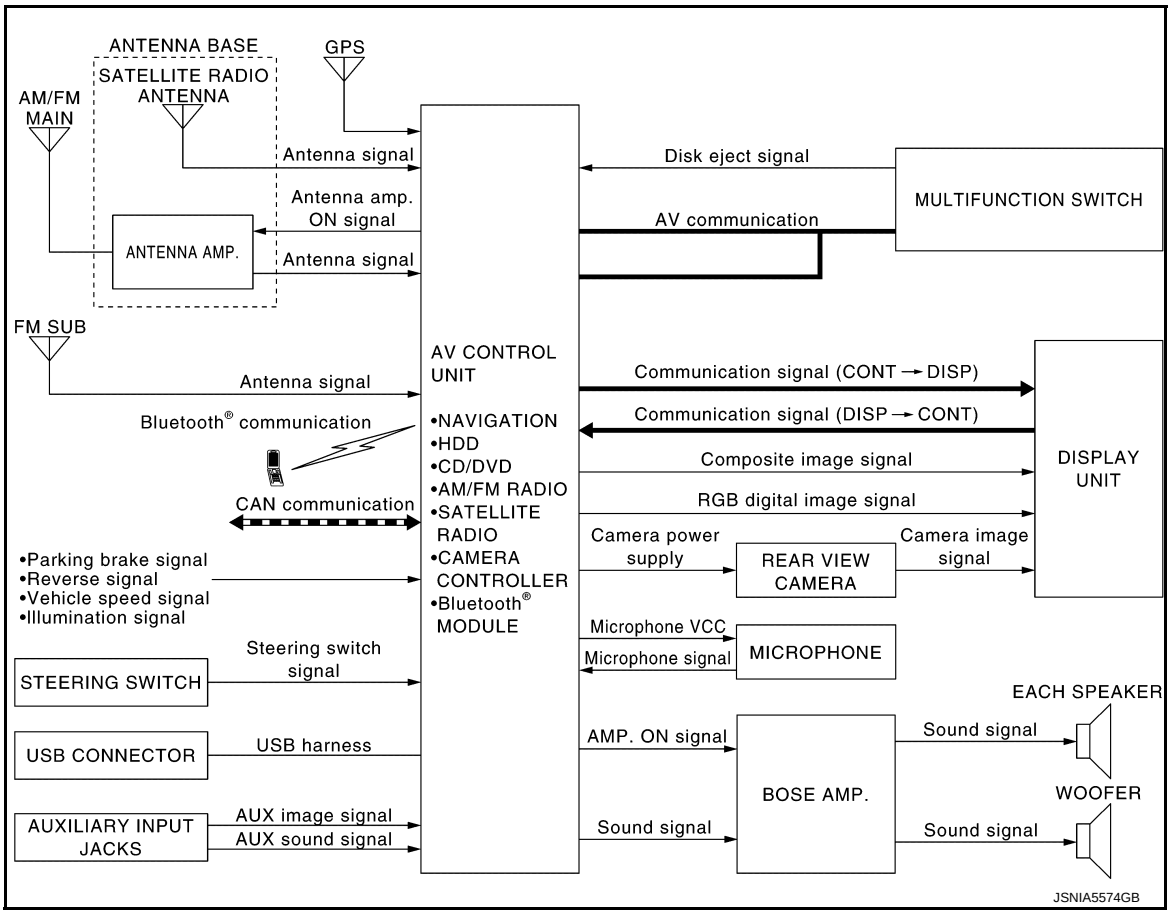
NOTE:
- The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.
- An antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.



MODELS WITH LDW AND BSW



MODELS WITHOUT LDW AND BSW



MULTI AV SYSTEM : System Description

INFOID:0000000009721846

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Navigation system function
Audio function
DVD play function
Hands-free phone function
Auxiliary input function
USB connection function
Voice recognition function
Touch panel function
Rear view monitor function
Vehicle information function

COMMUNICATION SIGNAL

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM and combination meter, and computes and displays fuel economy information value with the obtained information. Transmitting/receiving of data signal is performed by BCM. Also, it transmits the required signal of vehicle setting and receives the response signal.

- AV control unit is connected with display unit and serial communication, and it transmits the required signal of display and display control and receives the response signal from display unit.

NAVIGATION SYSTEM FUNCTION

Description

- The AV control unit controls navigation function while GPS tuner has built-in map data, GYRO (angle speed sensor), on the HDD (Hard Disk Drive).
- The AV control unit inputs operation signal with communication signal, through display (touch panel) and multifunction switch and steering switch.
- Guide sound is output to front speaker through BOSE amp. from AV control unit when operating navigation system.
- A vehicle position is calculated with the GYRO (angle speed sensor), vehicle sensor, signal from GPS satellite and map data stored on HDD (Hard Disk Drive), and transmits the map image signal (RGB image, RGB area, RGB image synchronizing) to the display.

Position Detection Principle

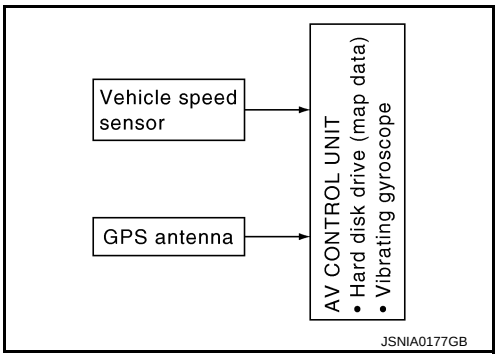
The navigation system periodically calculates the current vehicle position according to the following three types of signals.

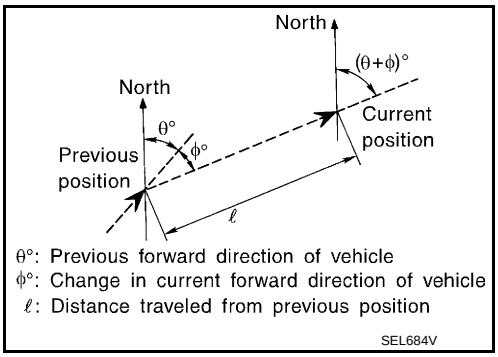
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Vehicle turning angle determined by the gyroscope (angular speed sensor)
- The travel direction of the vehicle determined by the GPS antenna (GPS information)

The current position of the vehicle is then identified by comparing the calculated vehicle position with map data, which is stored in the HDD (Hard Disk Drive) (map-matching), and indicated on the screen with a current location mark. More accurate data is used by comparing position detection results from GPS to the map-matching.

The current position is calculated by detecting the travel distance from the previous calculation point, and its direction change.

- Travel distance
  The travel distance is generated from the vehicle speed sensor input signal. The automatic distance correction function is adopted for preventing a miss-detection of the travel distance because of tire wear etc.
- Travel direction
  The gyroscope (angular velocity sensor) and GPS antenna (GPS information) generate the change of the travel direction. Both have advantages and disadvantages as per the following descriptions.



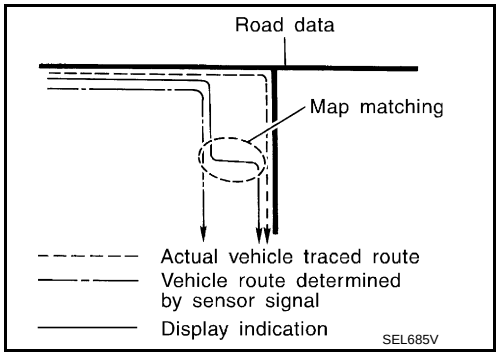


Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	The turning angle is precisely detected.	Errors are accumulated when driving a long distance without stopping.
GPS antenna (GPS information)	The travel direction (North/South/East/West) is detected.	The travel direction is not precisely detected when driving slowly.

Input signals are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

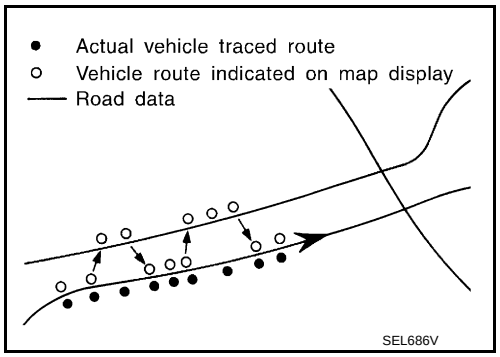
Map-matching

Map-matching repositions the vehicle on the road map when a new location is judged to be more accurate. This is done by comparing the current vehicle position (calculated by the normal position detection method) from the map data stored in the HDD (Hard Disk Drive).

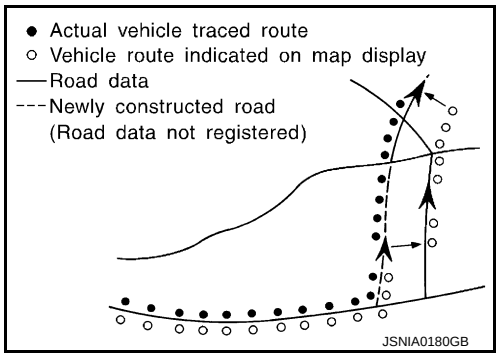


There is a possibility that the vehicle position may not be corrected in the following case, and when vehicle is driven over a certain distance or time in which GPS information is hard to receive. Correct manually the current location mark on the screen.

- In map-matching, several alternative routes are prepared and prioritized in addition to the road judged as currently driving on.
  Therefore, due to errors in the distance and/or direction, an incorrect road may be prioritized, and the current location mark may be repositioned to the incorrect road.
  If two roads are running in parallel, they are of the same priority. Therefore, the current location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road, etc.



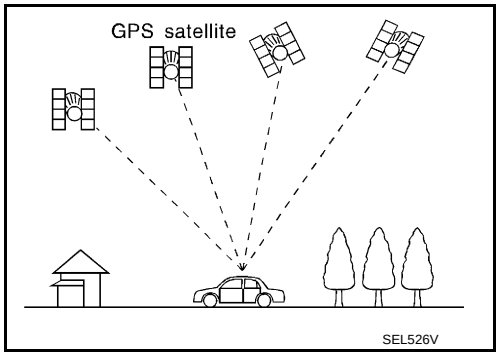
- Map-matching does not function correctly when road on which the vehicle is driving is new, etc. and not recorded in the map data. Also, map-matching does not function correctly when road pattern stored in the map data and the actual road pattern are different due to repair, etc.
  Therefore, the map-matching function judges other road as a currently driving road if the road is not in the map, and displays the current location mark on it. Later, the current location mark may be repositioned to the road if 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 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.

AUDIO FUNCTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, touch panel, steering switch or voice recognition. Operation status of audio is indicated at display.

FUNCTION
AM/FM radio
Satellite radio
CD
Bluetooth® audio
Music Box (Hard Disk Drive)*
Speed sensitive volume

*: For Mexico

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch, steering switch, touch panel function or voice recognition function.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch. The disk ejection operating signal is performed by hardwire.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Display

Switching of display is performed with serial communication between display unit and AV control unit.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- AM/FM radio wave is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.
- FM radio wave is received by FM sub antenna, and it is transmitted to the AV control unit directly. The FM sub antenna is installed on the back door window glass.
- Audio signal is input to BOSE amp. and BOSE amp. outputs to woofer and each speaker for AV control unit.

Satellite Radio Mode

- Satellite radio tuner is built into AV control unit.
- Sound signal (satellite radio) is received by satellite radio antenna and transmitted to AV control unit (satellite radio antenna is built into antenna base.). AV control unit outputs sound signal to BOSE amp. The signal is also outputted from BOSE amp. to woofer and each speaker.

CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to woofer and each speaker when CD is inserted to AV control unit.

Bluetooth® Audio Mode

- Bluetooth® audio function is built into AV control unit.
- When the Bluetooth® audio is connected to the portable audio equipped with the Bluetooth® communication compliant profile via Bluetooth® communication, it can be play the music data in the portable audio.
- A maximum of five Bluetooth® devices including the audio devices and cellular phones can be registered in the AV control unit.
- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to woofer and each speaker.

Music Box Mode (for Mexico)
- Music CD data is stored on HDD that is built into AV control unit, and it can be played.
- AV control unit outputs music (sound signal) that is stored on HDD to BOSE amp., and BOSE amp. outputs to woofer and each speaker.

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

DVD PLAY FUNCTION
- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the display unit (except for Mexico), and DVD sound signals are transmitted to woofer and each speaker via BOSE amp.

HANDS-FREE PHONE FUNCTION
- AV control unit includes hands-free phone function.
- Hands-free communication can be operated by connecting using Bluetooth® communication with cellular phone.
- Operation is performed by steering switch, and operating condition is indicated on display.
- Guide sound that is heard during operation is input from AV control unit to BOSE amp., and is output from front speaker and center speaker.

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 output to front speaker and center speaker from BOSE amp. via AV control unit by establishing Bluetooth® communication from cellular phone.

AUXILIARY INPUT FUNCTION
- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- AUX image signals are transmitted to the display unit via the AV control unit.
- AUX sound signals are transmitted to BOSE amp. via AV control unit. The signal is also outputted from BOSE amp. to woofer and each speaker.

USB CONNECTION FUNCTION
- Connecting iPod® or USB memory allows the driver to play iPod® music files or USB memory-stored music files, video data, and image viewer data.
- Sound signals of music files stored in iPod® or USB memory are transmitted from the USB connector to the AV control unit. The AV control unit transmits the sound signals to woofer and each speaker via BOSE amp.
- Video signals and image viewer file signals are transmitted from the USB connector to the AV control unit. The data and files are displayed on the display unit screen.
- iPod® is recharged when connected to USB connector.
- Only files that meet the following conditions will be played.

	Music file	Video file	Image viewer file
File format	“MP3”, “WMA”, “AAC”, “M4A”	“DivX”, “MPEG4 (ASF)”	“JPEG”
File extension	“.mp3”, “.wma”, “.aac”, “.m4a”	“.divx”, “.afs”, “.avi”	“.jpg”, “.jpeg”
Maximum file size	2 GB	2 GB	2 MB

NOTE:
- iPod® is a trademark of Apple inc., registered in the U.S. and other countries.
- Image signals cannot be received from iPod®.
- Use the enclosed USB harness when connecting iPod® to USB connector.
- If a video-sound codec combination is not satisfied, its video file may not be played.

VOICE RECOGNITION FUNCTION
- Each operation of multi AV system can be performed by inputting sound to microphone.

- Start of sound recognition system can be performed by steering switch.

TOUCH PANEL SYSTEM

Each operation of multi AV system can be performed by directly touching a display.

REAR VIEW MONITOR FUNCTION (MODELS WITHOUT LDW AND BSW)

Camera Image Operation Principle

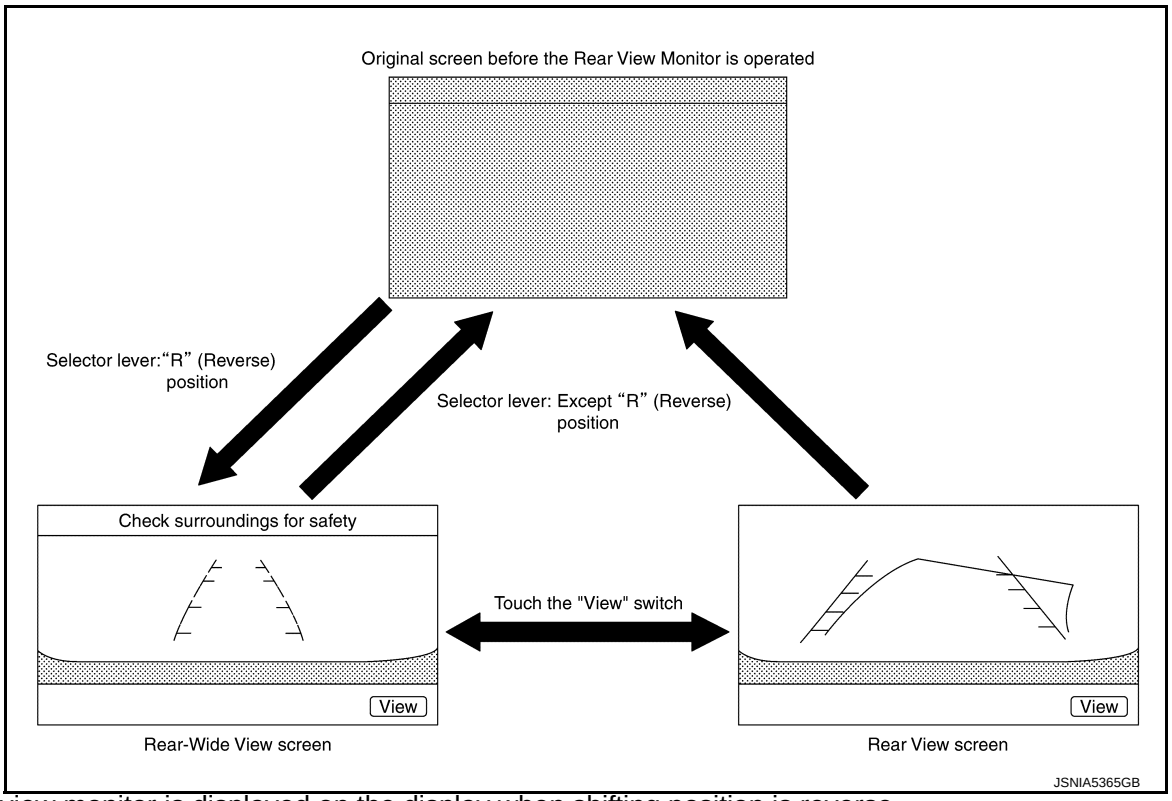
- The AV control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the display unit when power is supplied from the AV control unit.
- The AV control unit transmits a warning message, fixed guide lines, and predictive course lines to the display unit by RGB digital image signals. Rear view monitor images are displayed by combining the RGB digital image signals and the camera image signals from the rear view camera.
- Predictive course lines are controlled by a steering angle sensor signal received the AV control unit via CAN communication.

REAR VIEW MONITOR FUNCTION (MODELS WITH LDW AND BSW)

- This system is equipped with wide-angle high-resolution camera on the rear of the vehicle.
- Rear-wide view function is adopted.
- AV control unit renders the “View” switch and warning message on display.

Operation Description

Rear view monitor screen transition



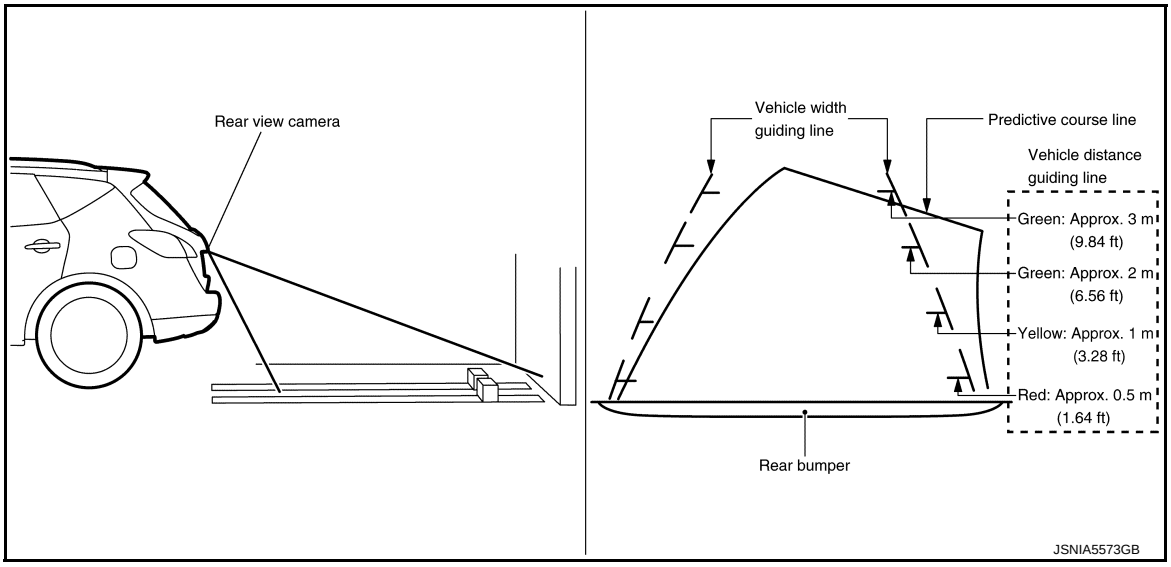
- Rear view monitor is displayed on the display when shifting position is reverse.
- Rear view/rear-wide view can be switched by “View” switch (touch switch) while rear view/rear-wide view is displayed.
- In permanent OFF, MOD is not operative until MOD is switched to ON by “Driver Assistance” screen.
- When camera control unit receives reverse signal, while shift position is R position, camera control unit reads image signal from rear view camera.
- When camera control unit reads image signal from rear view camera, superimposes camera image, vehicle width guide lines, predicted course line, and “MOD” icon, and then outputs them to display.

REAR VIEW

- The rear view image is from the rear view camera.
- When the selector lever is in the reverse position, the rear view is displayed. The rear-wide view function allows the display of an image with a 180° horizontal angle.

- Display the vehicle width guiding line and vehicle distance guiding line in rear view and display the predictive course line according to the steering angle (except when using the rear-wide view function).
- The predictive course line is not displayed at the steering neutral position.
- Camera control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication.
- Camera control unit controls the direction and distance of predictive course line according to the sensor signal from steering angle sensor.

Rear view guiding lines



Moving Object Detection (MOD)

- Moving Object Detection (MOD) is a function that notifies the driver of the presence of moving objects in the area around the vehicle. MOD detects moving objects from camera image, illuminates frame of view in yellow whenever “MOD” icon is displayed in blue, and sounds buzzer in combination meter.
- MOD detects moving objects while camera image is displayed on display.
- Camera control unit performs the following process when moving objects are detected.
- Superimposes yellow frame line on camera image signal and outputs them to front display.
- Transmits buzzer output signal to combination meter via CAN communication so that buzzer in combination meter sounds.
- Camera control unit detects moving objects from camera image according to an image recognition method called optical flow.
- MOD does not detect a background as a moving object when the vehicle moves (when whole screen moves), but detects a moving object when an actual moving object is displayed on screen.
- MOD can be set to permanent OFF by the following operation.
- Permanent OFF: MOD is switched to off by “Settings”→“Driver Assistance”→“Moving Object Detection (MOD)”.
- Color of “MOD” icon indicates whether or not MOD is operative. “MOD” icon is displayed as shown in the following table. When MOD is operative, “MOD” icon is displayed in blue. When MOD is not operative, “MOD” icon is displayed in gray or orange. MOD icon is not displayed when MOD is off (permanent off) by “Settings”→“Driver Assistance”→“Moving Object Detection (MOD)”.
- MOD illuminates frame of view in yellow and sounds buzzer, when any of the conditions in the following table are satisfied.

Operation Condition		View where MOD is operative
Shift position	Vehicle speed	
R position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	• Rear view • Rear-wide view

- MOD does not operate or stops operation when any of the conditions in the following table are satisfied. “MOD” icon is displayed in gray or orange.

Operation stop condition	“MOD” icon color	Note
Back door is open.	Gray	Operation of rear view and rear-wide view stops when back door is open.
Rear view camera installation angle is incorrect	Gray	Operation of rear view and rear-wide view stops when rear view camera installation angle is incorrect.
Rear view camera image is abnormal (Temporary)	Gray	Operation of rear view and rear-wide view stops when camera image is temporarily abnormal.
System malfunction	Orange	Refer to AV-352, "DTC Index"

Camera Image Operation Principle

- When the selector lever is in the reverse position, camera control unit receives the reverse signal, supplies the power to each camera, and inputs the camera image from each camera.
- Camera control unit superimposes the camera image, predicted course line, vehicle width guiding lines, “MOD” icon, and outputs them to the display unit.
- Predictive course lines are controlled by a steering angle sensor signal received the steering angle sensor via CAN communication.

VEHICLE INFORMATION FUNCTION

- Status of audio, climate control system, fuel economy, maintenance and navigation are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM and combination meter.
- AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

INFOID:0000000009721847

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

On Board Diagnosis Function

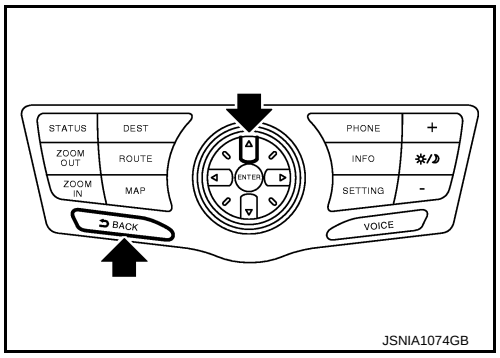
INFOID:0000000009721848

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and disk eject switch cannot be checked.



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Finishing Self-diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- The self-diagnosis mode performs diagnoses on the AV control unit, connections between system components as well as connections between AV control unit and GPS antenna. Then it displays the diagnosis results on the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

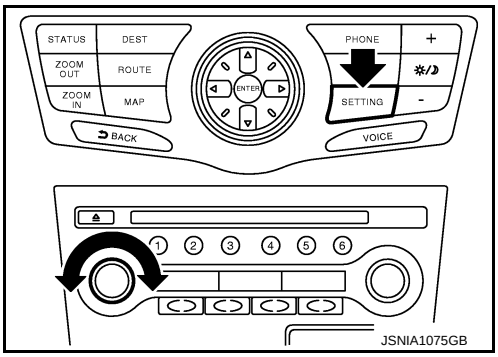
On Board Diagnosis Item

Mode	Description
Self Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and GPS antenna.

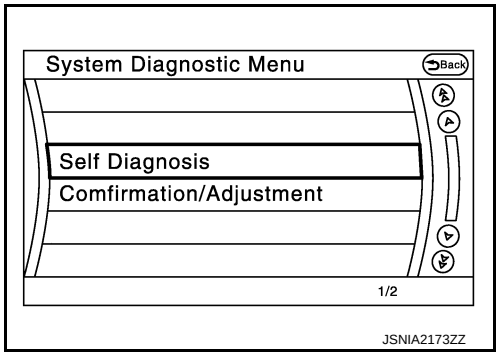
Mode			Description
Confirmation/ Adjustment	Display Diagnosis		The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display and touch panel calibration response check.
	Vehicle Signals		Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition and reverse.
	Speaker Test		The connection of a speaker can be confirmed by test tone.
	Climate Control		Start auto air conditioner system self-diagnosis.
	Navigation	Steering Angle Adjustment	When there is a difference between the actual turning angle and the vehicle mark turning angle, it can be adjusted.
		Speed Calibration	When there is a difference between the current location mark and the actual location, it can be adjusted.
		XM SAT Subscription Status	The XM NavTraffic subscription status can be checked.
	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.
	Synchronizer FES Clock		–
	Vehicle CAN Diagnosis		The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis		The communication condition of each unit of Multi AV system can be monitored.
	Handsfree Phone		The received volume adjustment of hands-free phone, microphone speaker check, and erase memory can be performed.
	Camera (Models without BSW and LDW)		The four functions of “Correct Draw Line of Rear view Camera”, “Alter/ Confirm Configuration”, “Reset Configuration” and “Camera Syst Type” are available.
	XM	XM NaviTrffic	Change Channel • Any necessary channels required to receive traffic information from the satellite radio system can be set. Change Application ID • Any application ID'-s required to receive traffic information from the satellite radio system can be set.
		XM NavWeather	
		XM CGS	
		Diag	
	Delete Unit Connection Log		Erase the connection history of unit and error history.
	Initialize Settings		Initializes the AV control unit memory.
	Version Information		Version information of the AV control unit is displayed.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, the trouble diagnosis initial screen is displayed.)
   • Shifting from current screen to previous screen is performed by pressing “BACK” button.



4. Items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected on the trouble diagnosis initial screen.



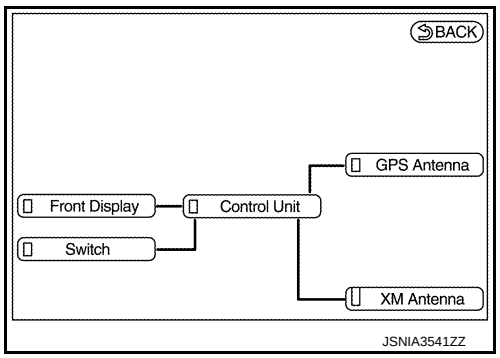
SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.

- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.

2. 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 Note	Red	Green

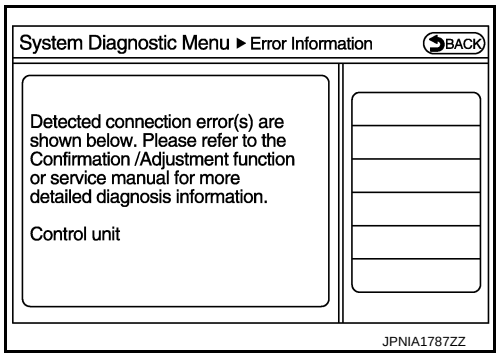


NOTE:

Control unit (AV control unit) is displayed in red.

- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-448, "Exploded View".
- 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.

- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



Detection Range of Self-diagnosis Mode

- The self-diagnosis mode allows the technician to diagnose the connection in the communication line between AV control unit and each unit and the internal operation of the AV control unit.
- Because the start condition of diagnosis function is a switch operation, the on board diagnosis function cannot be started up if any malfunction is detected in the communication circuit between AV control unit and multifunction switch.

SELF-DIAGNOSIS RESULTS

Check the applicable display at the following table, and then repair the malfunctioning parts.

Only Unit Part Is Displayed In Red.

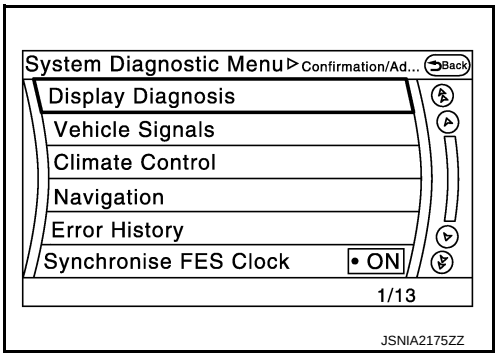
Screen switch	Description	Possible malfunction location / Action to take
Control Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

A Connecting Cable Between Units Is Displayed In Yellow.

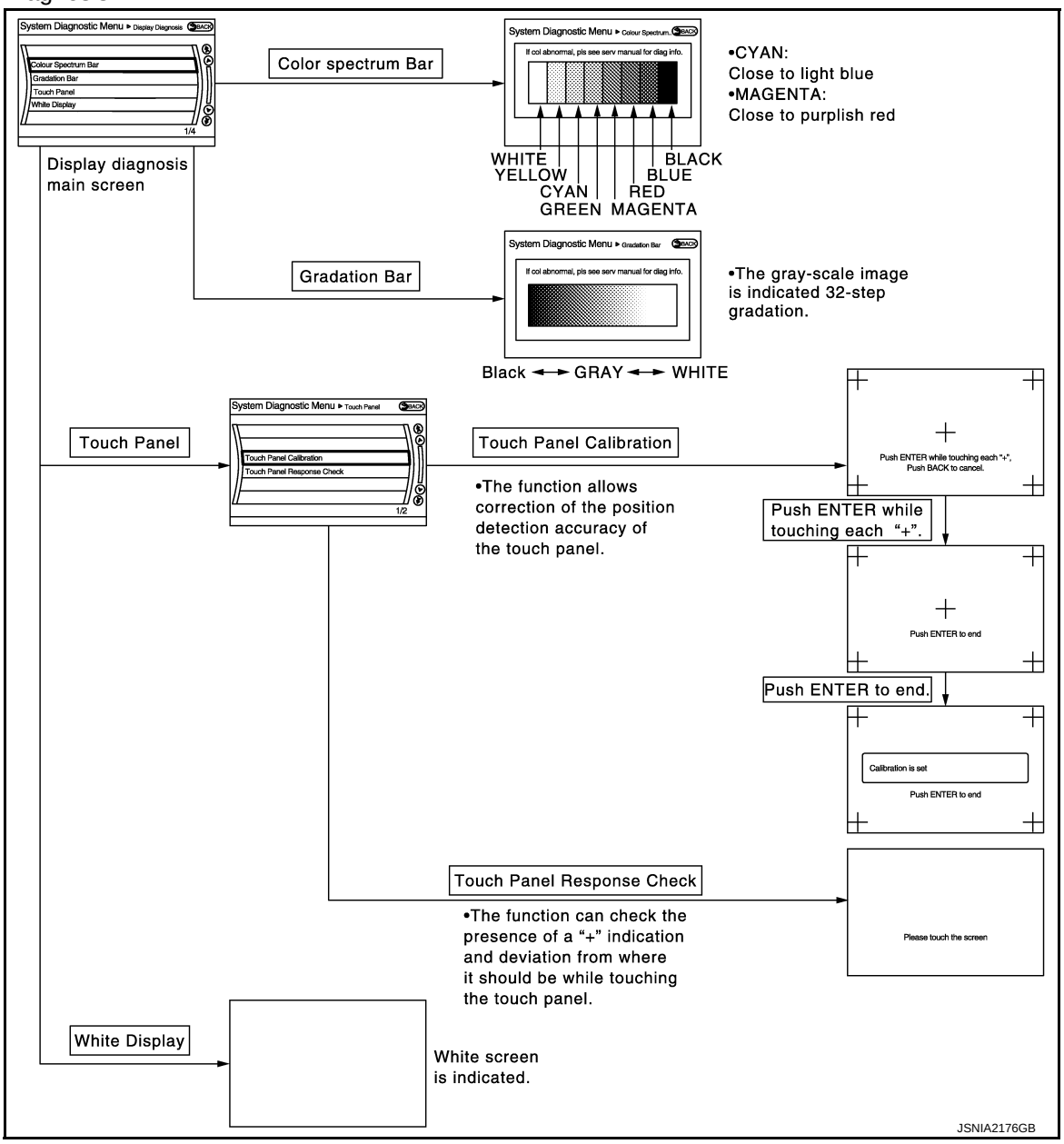
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Serial communication circuits between AV control unit and display unit are malfunctioning.	Serial communication circuits between AV control unit and display unit.
Control unit ⇔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna
Control unit ⇔ XM Antenna	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “Back” switch to return to the initial Confirmation/Adjustment Mode screen.

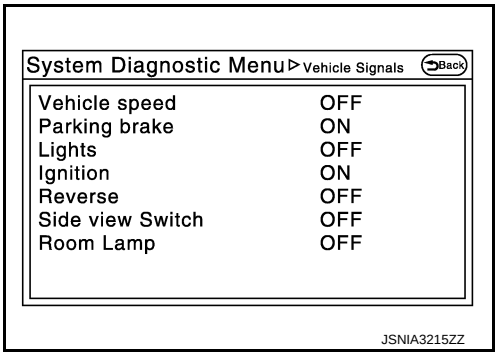


Display Diagnosis



Vehicle Signals

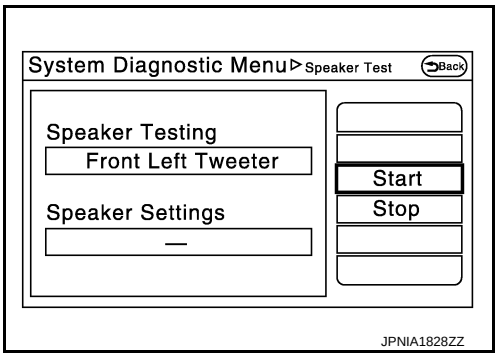
A comparison check can be made of each actual vehicle signal and the signals recognized by the system.



Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed >= 8 km/h (5 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed < 8 km/h (5 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Lighting switch is ON	—
	OFF	Lighting switch is OFF	
Ignition	ON	Ignition switch is ON	—
	OFF	Ignition switch is in ACC position	
Reverse	ON	Selector lever is in R position	Changes in indication may be delayed. This is normal.
	OFF	Selector lever is in any position other than R	
SIDE VIEW SW	OFF	—	This item is displayed, but cannot be monitored.
ROOM LAMP	OFF	—	This item is displayed, but cannot be monitored.

Speaker Test

Select “SPEAKER DIAGNOSIS” to display the Speaker Diagnosis screen. Press “Start” to generate a test tone in a speaker. Press “Start” to generate a test tone in the next speaker. Press “Stop” to stop the test tones.



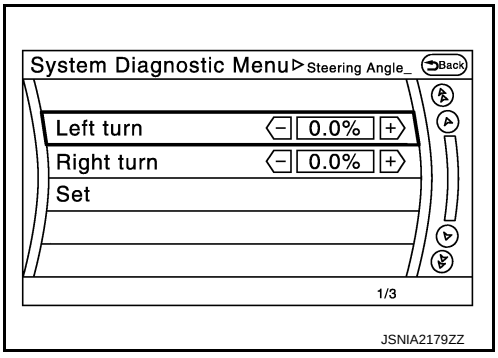
Climate Control

Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

Navigation

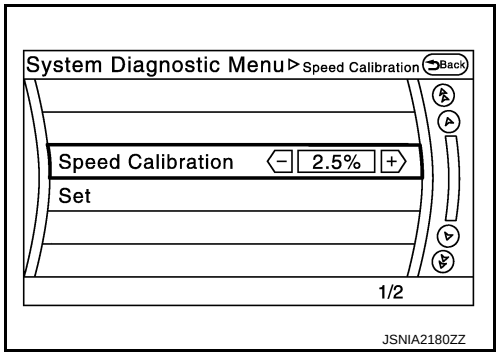
STEERING ANGLE ADJUSTMENT

The steering angle output value detected with the gyroscope is adjusted.



SPEED CALIBRATION

During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.



XM SAT SUBSCRIPTION STATUS
The XM NavTraffic subscription status can be checked.

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 error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.

- If there is a malfunction with the GPS antenna circuit board in the AV control unit, the correct date and time of occurrence may not be able to be displayed.
- Place of the error occurrence is represented by the position of the current location mark at the time an error occurred. If current location mark has deviated from the correct position, then the place of the error occurrence cannot be located correctly.
- The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

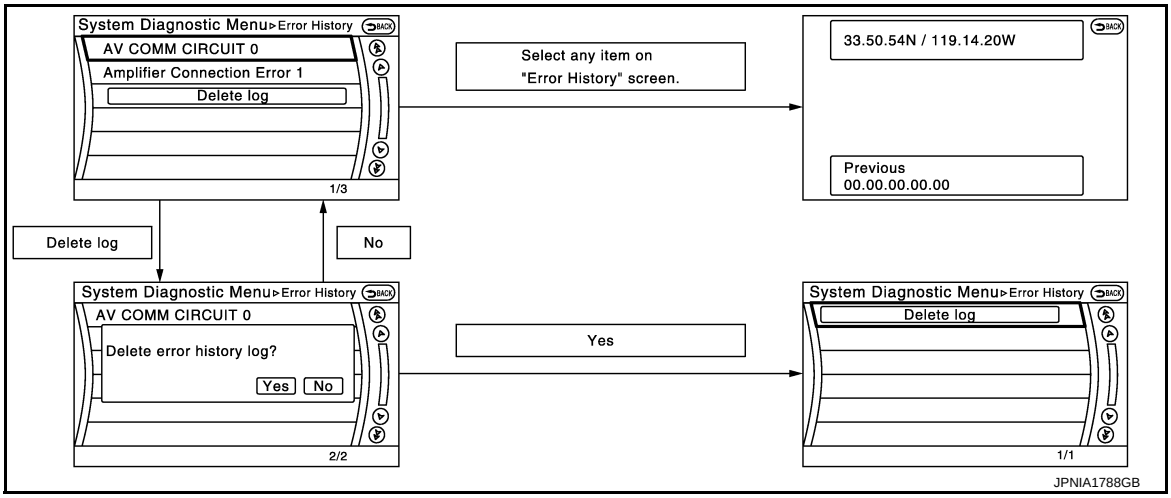
Count up method A

- The counter resets to 0 if an error occurs when ignition switch is turned ON. The counter increases by 1 if the condition is normal at a next ignition ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT.

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 or CONSULT.

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



Error item

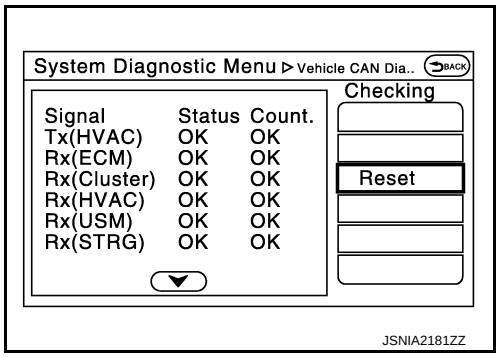
Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-327, "CONSULT Function".
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
Connection Of Gyro		
Connection of G Sensor		
CAN Controller Memory Error		
Bluetooth Module Connection Error		
Sub CPU Connection Error		
iPod authentification chip error		
Audio connection error		
DSP Connection Error	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
DSP Communication Error		
HDD Connection Error	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
HDD Read Error		
HDD Write Error		
HDD Communication Error		
HDD Access Error		
GPS Communication Error	GPS malfunction is detected.	• An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		

Error item	Description	Possible malfunction factor/Action to take
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT.
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DVD Mechanism Communication Error	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
Steer. Angle Sensor Calibration	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor. Refer to AV-327, "CONSULT Function".
Front Display Connection Error	When either one of the following items are detected: • display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and display unit are malfunctioning.	• Display unit power supply and ground circuits. • Serial communication circuits between AV control unit and display unit.
AM/FM antenna amplifier short to ground	Radio antenna amp. ON signal circuit malfunction is detected.	Radio antenna amp. ON signal circuit between AV control unit and antenna base.
AM/FM antenna amplifier open		
Ext_Amp_ON output terminal short to ground	BOSE amp. ON signal circuit malfunction is detected.	BOSE amp. ON signal circuit between AV control unit and BOSE amp.
Ext_Amp_ON output terminal :open		
GPS Antenna Error	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.
USB electric current Error	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
XM Antenna Connection Error	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items are detected: • multifunction switch power supply and ground circuits were malfunctioning. • AV communication circuits between AV control unit and multifunction switch were malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.

Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- 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.



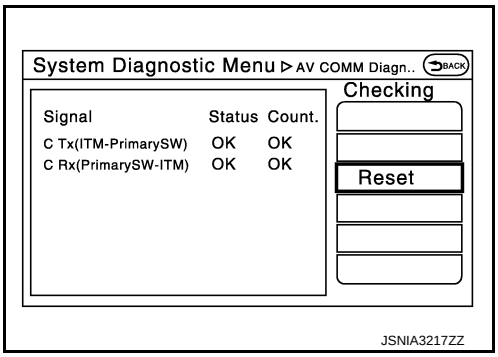
Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(BCM)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39

Items	Display (Current)	Malfunction counter (Past)
Rx(USM)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

NOTE:
"???" indicates UNKWN.

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each 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.

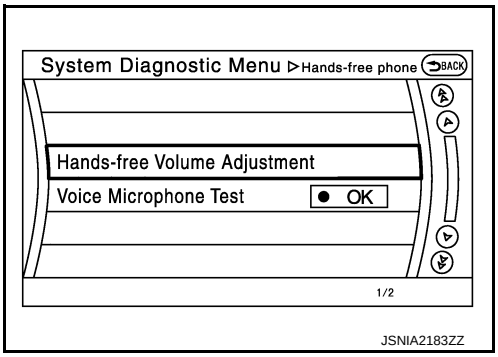


Items	Status (Current)	Counter (Past)
C Tx(ITM–PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW–ITM)	OK / ???	OK / 0 – 39

NOTE:
"???" indicates UNKWN

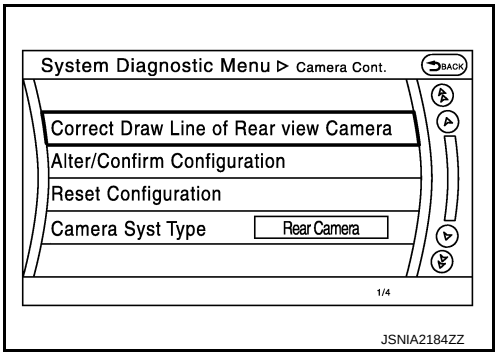
Hands-Free Phone

The hands-free phone reception volume adjustment and microphone and speaker test functions are also available.



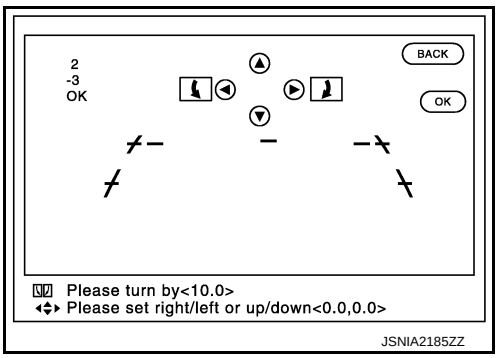
Camera (Models without BSW and LDW)

The four functions of "Correct Draw Line of Rear view Camera", "Alter/Confirm Configuration", "Reset Configuration" and "Camera Syst Type" are available.



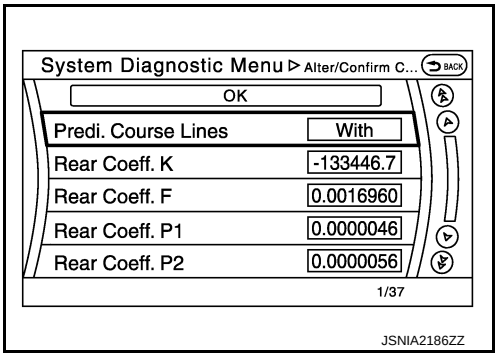
Correct Draw Line of Rear view Camera

- Use this mode to adjust the guide line display position of the rear view monitor if necessary after removing the rear view monitor camera.



Alter/Confirm Configuration

- Configuration stored in the AV control unit can be checked and modified.

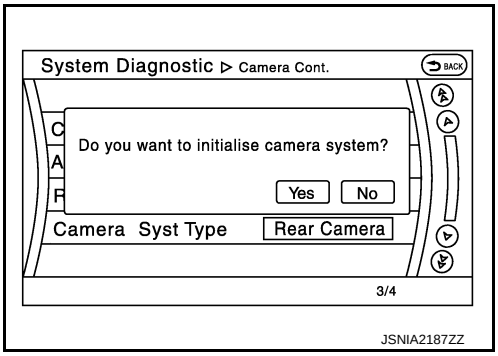


Configuration list

Setting item	Setting	Setting item	Setting
Predi. Course Lines	With	Total Length	0.0000000
Rear Coeff. K	–80000.00	Steering Gear Ratio	18.252000
Rear Coeff. F	0.0011760	Side Coeff. K	
Rear Coeff. P1	0.0000072	Side Coeff. F	
Rear Coeff. P2	0.0000056	Side Coeff. P1	
Rear Coeff. C1	800.00000	Side Coeff. P2	
Rear Coeff. C2	480.00000	Side Coeff. C1	
Rear Coeff. D1	485.00000	Side Coeff. C2	
Rear Coeff. D2	394.00000	Side Coeff. D1	
Car Width	1.8970000	Side Coeff. D2	0.0000000
Rear Offset	0.0260000	Side Offset	
Rear Height	0.9927000	Overall Height	
Rear L/R Angle	0.0000000	Side L/R Angle	
Rear Up/Dn Angle	47.400001	Side Up/Dn Angle	
Rear Roll Angle	0.0000000	Side Roll Angle	
Bumper Rear Dist.	0.1127000	Side Front End Dist	
Bumper Rear Ax Dist	1.0030000	Total Width	
Steer. Max Angle	560.61016	—	—
Min. Turning Rad.	5.8000002	—	—
Wheelbase	2.8250000	—	—

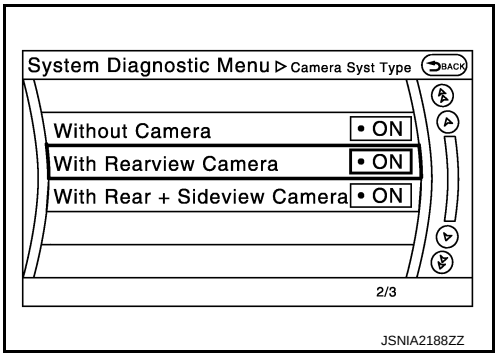
Reset Configuration

• Configuration stored in the AV control unit can be initialized.



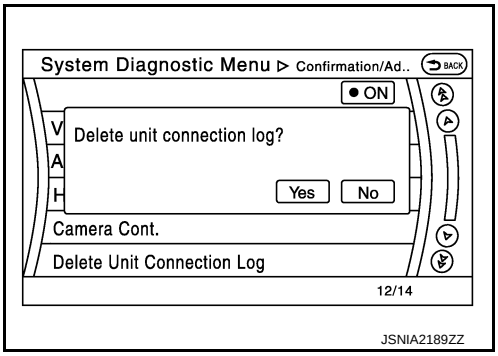
Camera Syst Type

• Type of camera system is selectable.



Delete Unit Connection Log

Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)

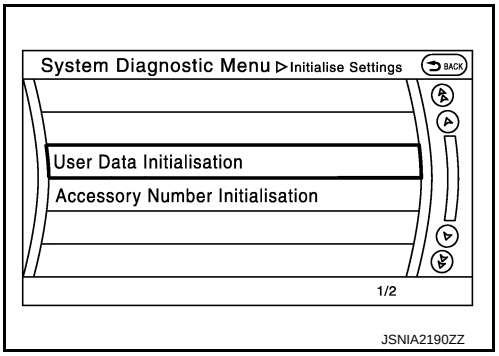


Initialize Settings

"User Data Initialization" and "Accessory Number Initialization" are possible.

CAUTION:

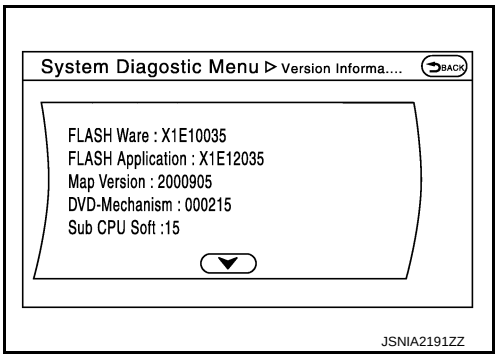
- **Never perform Accessory Number Initialization except when configuration is unsuccessful.**
- **Accessory Number Initialization requires configuration. For details, refer to AV-376, "Description".**



JSNIA2190ZZ

Version Information

Version information of the AV control unit is displayed.



JSNIA2191ZZ

CONSULT Function

INFOID:0000000009721849

CONSULT FUNCTIONS

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

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing AV control unit.

AV Communication

When "AV communication" of "CAN Diag Support Monitor" is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".
- The timing is displayed as "0" if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Refer to AV-379, "AV CONTROL UNIT : Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200]	AV control unit malfunction is detected.	
GYRO NO CONN [U1201]		
G-SENSOR NO CONN [U1202]		
CAN CONT [U1216]		
BLUETOOTH MODULE [U1217]		
SUB CPU CONN [U1228]		
iPod CERTIFICATION [U1229]		
Built-in AUDIO CONN [U122E]		
HDD CONN [U1218]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
HDD READ [U1219]		
HDD WRITE [U121A]		
HDD COMM [U121B]		
HDD ACCESS [U121C]		
GPS COMM [U1204]	GPS malfunction is detected.	• An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
GPS ROM [U1205]		
GPS RAM [U1206]		
GPS RTC [U1207]		
USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
DSP COMM [U121E]		
DVD COMM [U1227]	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".
CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT.
ST ANGLE SEN CALIB [U1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor. Refer to BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".
FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuits are malfunctioning. • serial communication circuits between AV control unit and display unit are malfunctioning.	• Display unit power supply and ground circuits. • Serial communication circuits between AV control unit and display unit.

Error item	Description	Possible malfunction factor/Action to take
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.
XM ANTENNA CONN [U1258]	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection.
USB OVERCURRENT [U1263]	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.
ANTENNA AMP TERMINAL [OPEN or SHORT] [U1264]	Radio antenna amp. ON signal circuit malfunction is detected.	Radio antenna amp. ON signal circuit between AV control unit and antenna amp.
AMP ON TERMINAL [GND-SHORT or VB-SHORT] [U1265]	BOSE amp. ON signal circuit malfunction is detected.	BOSE amp. ON signal circuit between AV control unit and BOSE amp.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

ALL SIGNALS
- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >= 8 km/h (5 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed < 8 km/h (5 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Lighting switch is ON	—
	Off	Lighting switch is OFF	
IGN SIG	On	Ignition switch is ON	
	Off	Ignition switch is in ACC position	
REV SIG	On	Selector lever is in R position	Changes in indication may be delayed. This is normal.
	Off	Selector lever is in any position other than R	
SIDE VIEW SW	Off	—	This item is displayed, but cannot be monitored.
ROOM LAMP	Off	—	This item is displayed, but cannot be monitored.

SELECTION FROM MENU
Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	
SIDE VIEW SW	
ROOM LAMP	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

CAUTION:

For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

DIAGNOSIS SYSTEM (CAMERA CONTROL UNIT)

CONSULT Function

INFOID:0000000009721850

CONSULT FUNCTIONS

CONSULT performs the following functions via the CAN communication with the camera control unit.

Diagnosis mode	Description
ECU Identification	Camera control unit part number can be identified.
Self Diagnostic Results	Camera control unit diagnosis is performed. Current and previous malfunctions are displayed collectively.
Data Monitor	Diagnosis of vehicle signal that is received by camera control unit can be performed.
Work Support	• Target line calibration of rear wide view can be performed. • Display of predicted course line can be switched to ON/OFF. • Calibration and initialization of rear view camera can be performed. • Neutral position adjustment of steering angle sensor can be performed. • Calibration for LDW and BSW can be performed. • Displays causes of system cancellation occurred during system control.
Active Test	Enables an operational check of a load by transmitting a driving signal from the camera control unit to the load.
Configuration	• The vehicle specification that is written in camera control unit can be displayed or stored. • The vehicle specification can be written when camera control unit is replaced.

ECU IDENTIFICATION

Camera control unit part number can be identified.

SELF DIAGNOSIS RESULT

Refer to AV-352, "DTC Index".

- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates “CRNT”. The past malfunction indicates “PAST”.
- The timing is displayed as “0” if any of the error codes [U1000] and [U1010] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name	Display content
IGN counter (0 to 39)	Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected. • When “0” is displayed, it indicates that the system is presently malfunctioning. • When any numerical number other than “0” is displayed, it indicates that system malfunction in the past is detected, but the system is presently normal. **NOTE:** Each time when ignition switch turns OFF→ON, numerical number increases from 1→2→3...38→39. When number of times exceeds 39, numeric display does not increase and 39 is displayed until self-diagnosis is erased.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

- Displays the status of the following vehicle signals inputted into the camera control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Remarks
ST ANGLE SENSOR SIGNAL [ON/OFF]	Receiving status of steering angle signal received from steering angle sensor is switched to ON/OFF.
REVERSE SIGNAL [ON/OFF]	Receiving status of reverse signal received from AV control unit is displayed by ON/OFF.

Display Item	Remarks
VEHICLE SPEED SIGNAL [ON/OFF]	Receiving status of vehicle speed signal received from ABS actuator control unit is displayed by ON/OFF.
ILL [ON/OFF]	Receiving status of dimmer signal received from BCM is displayed by ON/OFF.
CAMERA SWITCH SIGNAL [ON/OFF]	Receiving status of camera switch signal received from AV control unit is displayed by ON/OFF.
CAMERA OFF SIGNAL [ON/OFF]	Receiving status of camera OFF signal received from AV control unit is displayed by ON/OFF.
ITS SW 1 [ON/OFF]	Indicates the state of the warning system switch as seen by the camera control unit.
ITS SW 1 IND [ON/OFF]	Indicates the state of the warning system switch indicator output.
ST ANGLE SENSOR TYPE [ABSOLUTE]	Input type of steering angle sensor is displayed. **NOTE:** For this vehicle, “Absolute” is displayed.
STEERING GEAR RATIO TYPE [TYPE1]	Type of steering gear ratio is displayed. **NOTE:** For this vehicle, “TYPE 1” is displayed.
STEERING POSITION [LHD]	Steering position is displayed. **NOTE:** For this vehicle, “LHD” is displayed.
WASH SW [ON/OFF]	Indicates [On/Off] status of the washer switch signal input
REAR CAMERA IMAGE SIGNAL [OK/NG]	Input status of rear view camera image signal is displayed by OK/NG in real time.
R-CAMERA COMM STATUS [OK/NG]	Communication status with rear camera is displayed by OK/NG in real time.
R-CAMERA COMM LINE [OK/NG]	Status of communication line with rear camera is displayed by OK/NG in real time.
TURN SIGNAL [ON/OFF]	Indicates [On/Off] status of the turn signal input
ITS SW 2 [No setting]	Indicates the status of warning systems switch as seen by the camera control unit. **NOTE:** For this vehicle, “No setting” is displayed.
PUMP COMM STATUS [OK/NG]	Communication status with pump control unit is displayed by OK/NG in real time.
ITS SW 2 IND [No setting]	Indicates the status of warning systems switch indicator output. **NOTE:** For this vehicle, “No setting” is displayed.

WORK SUPPORT

Display Item	Remarks
REAR WIDE-VIEW FIXED GUIDE LINE CORRECTION	The position of rear wide view guiding line can be changed.
PREDICTIVE COURSE LINE DISPLAY	ON/OFF setting of predictive course line can be performed.
INITIALIZE CAMERA IMAGE CALIBRATION	The calibration can be initialized to factory shipment condition. **NOTE:** Calibration of camera image caused by misalignment of the camera installation position is performed.

Display Item	Remarks
STEERING ANGLE SENSOR ADJUSTMENT	Steering angle sensor neutral position can be adjusted and registered. **CAUTION:** **For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side. Refer to BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".**
REAR CAMERA ITS	Calibration for LDW/BSW can be performed.
CAUSE OF LDW CANCEL	Displays causes of automatic system cancellation occurred during control of the LDW system.
CAUSE OF BSW CANCEL	Displays causes of automatic system cancellation occurred during control of the BSW system.

NOTE:
- Causes of the maximum five cancellations (system cancel) are displayed.
- The displayed cancellation causes display the number of the ignition switch ON/OFF up to 254. It is fixed to 254 if it is over 254. It returns to 0 when the same cancellation cause is detected again.

Display Items for The Cause of LDW/BSW Cancel

Cause of cancellation	Description
REAR CAMERA DIRTY	Rear view camera lens is dirty.
TRUNK OPEN	Back door is open.
TRAILER HITCH ON	Towing (by attaching a trailer).
R CAMERA COMM ERR	Communication error between camera control unit and rear view camera.
LOW WASH FLUID	Washer fluid level is low.
LO TMP(AIR WIPING)	Ambient temperature drops to -20 °C (-4 °F) or less.
LO TMP(WSH WIPING)	Ambient temperature drops to -20 °C (-4 °F) or less.
NO RECORD	—

ACTIVE TEST

CAUTION:
- **Never perform “Active Test” while driving the vehicle.**
- **The “Active Test” cannot be performed when the following systems warning indicator is illuminated.**
- **Lane departure warning lamp**
- **BSW warning lamp**
- **Shift the selector lever to “P” position, and then perform the test.**

Test items	Description
LED LH INDICATOR	BSW indicator LH can be illuminated by ON/OFF operations as necessary.
LED RH INDICATOR	BSW indicator RH can be illuminated by ON/OFF operations as necessary.
WASH ACTIVE	Camera washer can be operated by ON/OFF operations as necessary.
AIR ACTIVE	Camera blower can be operated by ON/OFF operations as necessary.
AIR & WASH ACTIVE	Camera blower and washer can be operated by ON/OFF operations as necessary.

LED LH INDICATOR

Test item	Operation	Description	BSW indicator LH
LED LH INDICATOR	Off	Stops transmitting the BSW indicator LH signal below to end the test	OFF
	On	Transmits the BSW indicator LH signal to the BSW indicator	ON

LED RH INDICATOR

Test item	Operation	Description	BSW indicator RH
LED RH INDICATOR	Off	Stops transmitting the BSW indicator RH signal below to end the test	OFF
	On	Transmits the BSW indicator RH signal to the BSW indicator	ON

WASH ACTIVE

Test item	Operation	Description	Rear view camera washer
WASH ACTIVE	Off	Stops transmitting the rear view camera washer signal below to end the test	OFF
	On	Transmits the rear view camera washer signal to the pump control unit via communication line	ON

AIR ACTIVE

Test item	Operation	Description	Rear view camera air blower
AIR ACTIVE	Off	Stops transmitting the rear view camera air blow signal below to end the test	OFF
	On	Transmits the rear view camera air blow signal to the pump control unit via communication line	ON

AIR & WASHER ACTIVE

Test item	Operation	Description	Rear view camera air blower and washer
AIR & WASHER ACTIVE	Off	Stops transmitting the rear view camera air blow / washer signal below to end the test	OFF
	On	Transmits the rear view camera air blow / washer signal to the pump control unit via communication line	ON

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in camera control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the camera control unit.
Manual Configuration		Allows the writing of the vehicle specification into the camera control unit by hand.

ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

INFOID:0000000009721851

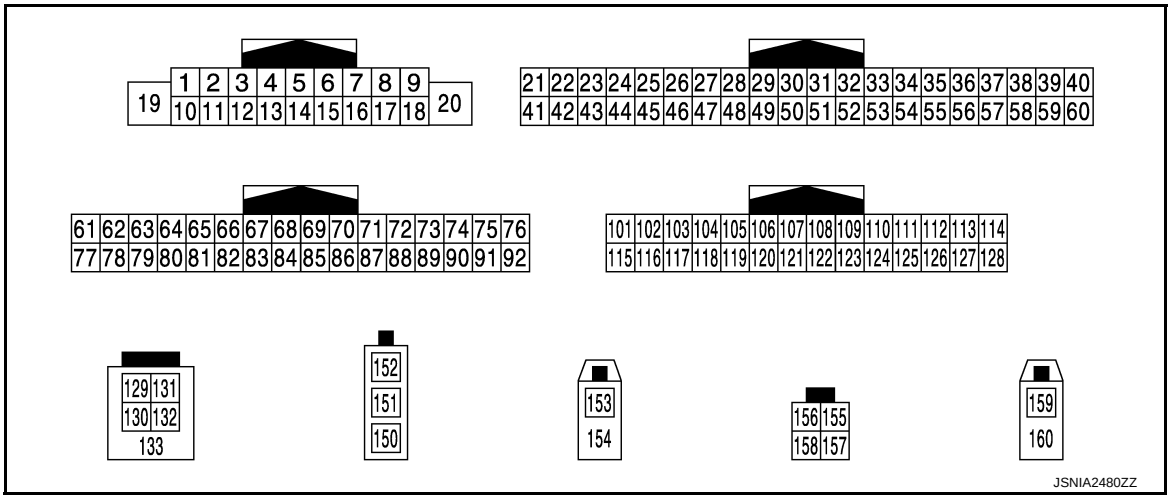
VALUES ON THE DIAGNOSIS TOOL

NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

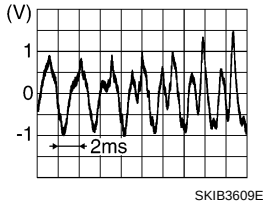
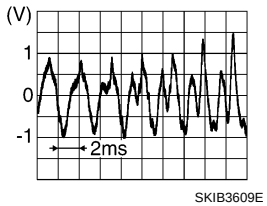
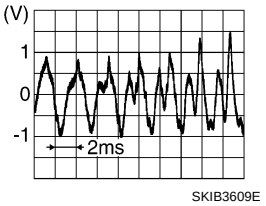
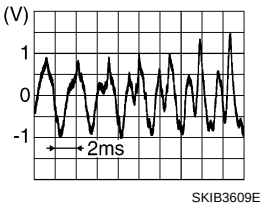
CONSULT MONITOR ITEM

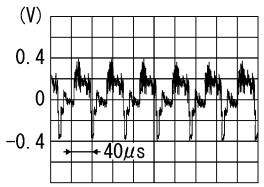
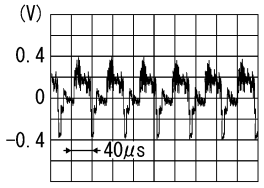
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed >= 8 km/h (5 MPH)	On
		Vehicle speed < 8 km/h (5 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied.	On
		Parking brake is released.	Off
ILLUM SIG	Ignition switch ON	Lighting switch is ON	On
		Lighting switch is OFF	Off
IGN SIG	Ignition switch ON	—	On
	Ignition switch ACC	—	Off
REV SIG	Ignition switch ON	Selector lever is in R position	On
		Selector lever is in any position other than R	Off
SIDE VIEW SW	Ignition switch ON	This item is displayed, but cannot be monitored.	Off
ROOM LAMP	Ignition switch ON	This item is displayed, but cannot be monitored.	Off

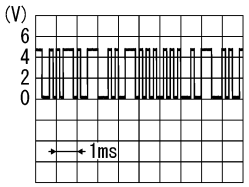
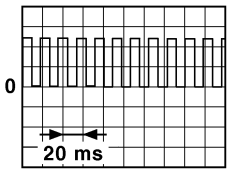
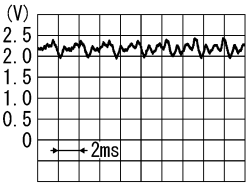
TERMINAL LAYOUT

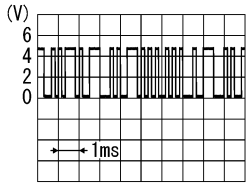
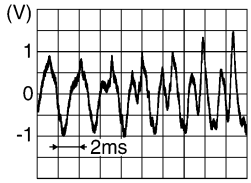
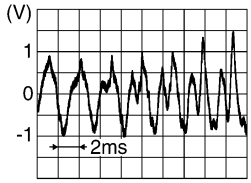


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (P)	Ground	Amp. ON signal	Input	Ignition switch ON	—	12.0 V
2 (G)	3 (R)	Sound signal front LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (O)	5 (SB)	Sound signal rear LH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (BR)	15 (L)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	1.0 V
					Keep pressing MENU DOWN switch.	2.0 V
					Keep pressing switch	3.0 V
					Keep pressing ENTER switch.	4.0 V
					Except for above.	5.0 V
7 (W)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
10 (B)	—	Shield	—	—	—	—
11 (B)	12 (W)	Sound signal front RH	Output	Ignition switch ON	Sound output	 SKIB3609E
13 (V)	14 (LG)	Sound signal rear RH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (G)	15 (L)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.0 V
					Keep pressing switch.	2.0 V
					Keep pressing switch.	3.0 V
					Except for above.	5.0 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (V)	Ground	Camera power supply	Output	Ignition switch ON	Selector lever is in “R” position.	6.0 V
					Except for above.	0 V
26 (Y)	Ground	AUX image signal	Input	Ignition switch ON	At AUX image is displayed.	 SKIB2251J
29 (W)	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V
42 (LG)	Ground	Camera ground	—	Ignition switch ON	—	0 V
46 (BR)	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
47	—	Shield	—	—	—	—
49 (V)	Ground	Switch ground	—	Ignition switch ON	—	0 V
65 (LG)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is applied.	4.5 V
					Parking brake is released.	0 V
67 (BR)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
68 (GR)	Ground	Composite image signal	Output	Ignition switch ON	At DVD image is displayed.	 SKIB2251J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
72 (B)	Ground	Microphone VCC	Output	Ignition switch ON	—	5.0 V
73 (R)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
74 (P)	—	CAN–L	Input/ Output	—	—	—
75 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (R)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
80 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
81 (SB)	Ground	Reverse signal	Input	Ignition switch ON	Selector lever is in R position.	12.0 V
					Selector lever is in other than R position.	0 V
82 (V)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
83	—	Shield	—	—	—	—
87 (W)	71	Microphone signal	Input	Ignition switch ON	Give a voice	 PKIB5037J
88	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
89 (G)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
90 (L)	—	CAN–H	Input/ Output	—	—	—
91 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
92 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
104 (B)	119 (W)	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
117	—	Shield	—	—	—	—
118 (R)	119 (W)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
129 (G)	—	USB ground	—	—	—	—
130 (W)	—	USB D– signal	—	—	—	—
131 (R)	—	V BUS signal	—	—	—	—
132 (L)	—	USB D+ signal	—	—	—	—
133	—	Shield	—	—	—	—
150	—	FM sub	Input	—	—	—
151	—	AM-FM main	Input	—	—	—
152	Ground	Antenna amp. ON signal	Input	Ignition switch ON	—	12.0 V
153	Ground	GPS antenna signal	Input	Ignition switch ON	Not connected GPS antenna connector.	5.0 V
154	—	Shield	—	—	—	—
157	Ground	RGB digital image signal (–)	Output	Ignition switch ON	Not connected connector.	3.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
158	Ground	RGB digital image signal (+)	Output	Ignition switch ON	Not connected connector.	3.0 V
159	—	Satellite radio antenna signal	Input	—	—	—

Fail-Safe

INFOID:0000000009721852

When the ambiance temperature becomes extremely low or extremely high, AV control unit displays the message and limits the AV control unit function.

FAIL-SAFE CONDITIONS

When the ambiance temperature is –20°C (–4°F) or lower, or when it is 70°C (158°F) or higher

Display

The messages displayed on fail-safe conditions are as shown below:

Fail-safe mode	Display (display of the fail-safe condition)
When HDD temperature is low	HDD system is experiencing problems due to extreme low temperature. Normal operation will resume when temperature rises.
When HDD temperature is high	HDD system is experiencing problems due to extreme high temperature. Normal operation will resume when temperature drops.

DESCRIPTION OF CONTROLS

Function		When Fail-safe Function is activated
Air conditioner	Operation	Only multifunction switch (preset switch) can be operated.
	Display	• LED of multifunction switch (preset switch) illuminates. • Aimed temperature, blow angle, and flow rate are displayed in simplified mode.
Audio	Operation	Only ON/OFF and volume control operations by multifunction switch (preset switch) are possible.
	Display	No display (“Fail-safe mode” is displayed)
Camera	Operation	Image tone cannot be controlled.
	Display	Cannot be superimposed. (warning display, tone control display)
Hands-free phone	Operation	Cannot be operated.
Navigation	Operation	Cannot be operated.
Self diagnosis		The display in simplified mode of fail-safe condition
CONSULT diagnosis		Cannot be operated.

Ability Operation Mode

There is an ability operation mode for Fail-safes due to low or high ambiance temperature.
If HDD data can be read, fail-safe is shown, then normal displays are displayed only for functions which can be operated.

RELEASE CONDITIONS OF FAIL-SAFE

Fail-safe is released on following conditions and normal mode is restored.

When The Temperature of HDD Is Low or High

If the ambient temperature becomes out of fail-safe condition range, normal mode is restored.

DTC Index

INFOID:0000000009721853

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

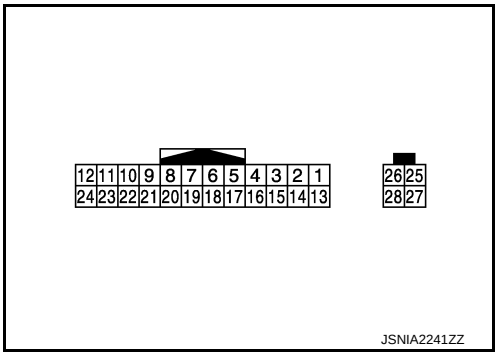
DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-379, "AV CONTROL UNIT : Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-381, "AV CONTROL UNIT : DTC Logic"
U1200	Cont Unit [U1200]	AV-384, "DTC Logic"
U1201	GYRO NO CONN [U1201]	AV-385, "DTC Logic"
U1202	G-SENSOR NO CONN [U1202]	AV-386, "DTC Logic"
U1204	GPS COMM [U1204]	AV-387, "Diagnosis Procedure"
U1205	GPS ROM [U1205]	AV-388, "Diagnosis Procedure"
U1206	GPS RAM [U1206]	AV-389, "Diagnosis Procedure"
U1207	GPS RTC [U1207]	AV-390, "Diagnosis Procedure"
U1216	CAN CONT [U1216]	AV-391, "DTC Logic"
U1217	BLUETOOTH MODULE [U1217]	AV-392, "DTC Logic"
U1218	HDD CONN [U1218]	AV-393, "Diagnosis Procedure"
U1219	HDD READ [U1219]	AV-394, "Diagnosis Procedure"
U121A	HDD WRITE [U121A]	AV-395, "Diagnosis Procedure"
U121B	HDD COMM [U121B]	AV-396, "Diagnosis Procedure"
U121C	HDD ACCESS [U121C]	AV-397, "Diagnosis Procedure"
U121D	DSP CONN [U121D]	AV-398, "Diagnosis Procedure"
U121E	DSP COMM [U121E]	AV-399, "Diagnosis Procedure"
U1225	USB CONTROLLER [U1225]	AV-400, "DTC Logic"
U1227	DVD COMM [U1227]	AV-401, "Diagnosis Procedure"
U1228	SUB CPU CONN [U1228]	AV-402, "DTC Logic"
U1229	iPod CERTIFICATION [U1229]	AV-403, "DTC Logic"
U122A	CONFIG UNFINISH [U122A]	AV-404, "Diagnosis Procedure"
U122E	Built-in AUDIO CONN [U122E]	AV-405, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-406, "AV CONTROL UNIT : Diagnosis Procedure"
U1243	FRONT DISP CONN [U1243]	AV-407, "Diagnosis Procedure"
U1244	GPS ANTENNA CONN [U1244]	AV-409, "Diagnosis Procedure"
U1258	XM ANTENNA CONN [U1258]	AV-410, "Diagnosis Procedure"
U1263	USB OVERCURRENT [U1263]	AV-411, "Diagnosis Procedure"
U1264	ANTENNA AMP TERMINAL [OPEN or SHORT] [U1264]	AV-412, "Diagnosis Procedure"
U1265	AMP ON TERMINAL [GND-SHORT or VB-SHORT] [U1265]	AV-413, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-418, "DTC Logic"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-414, "Description"

DISPLAY UNIT

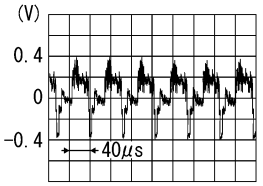
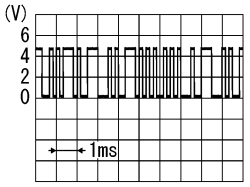
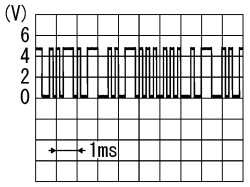
Reference Value

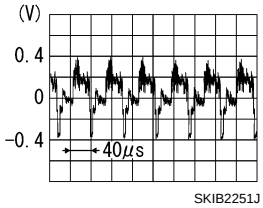
INFOID:0000000009721854

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
6	—	Shield	—	—	—	—
7	—	Shield	—	—	—	—
8 (R)	Ground	Camera image signal	Input	Ignition switch ON	At camera image is displayed.	 SKIB2251J
9 (G)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
10 (R)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
11 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

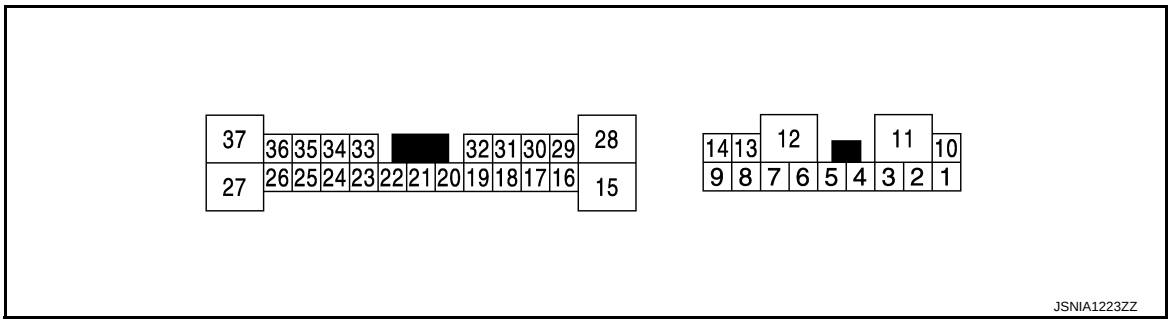
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
18 (GR)	Ground	Composite image signal	Input	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
19 (BR)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
22	—	Shield	—	—	—	—
23 (W)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
27	—	RGB digital image signal (–)	Input	—	—	—
28	—	RGB digital image signal (+)	Input	—	—	—

BOSE AMP.

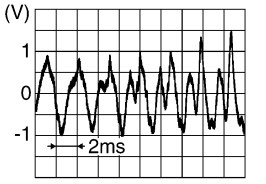
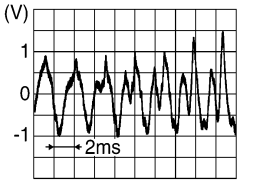
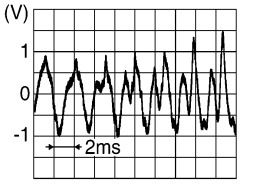
Reference Values

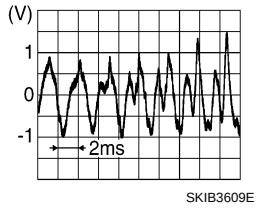
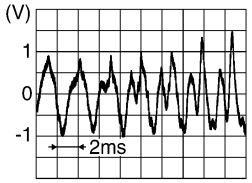
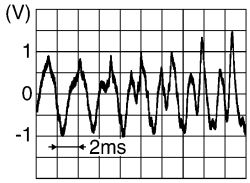
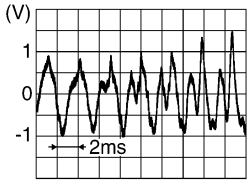
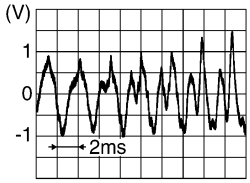
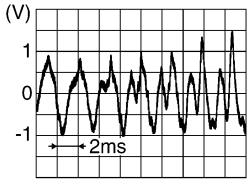
INFOID:0000000009721855

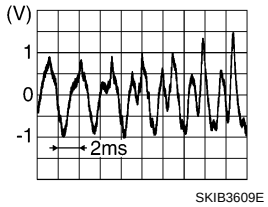
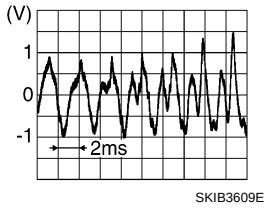
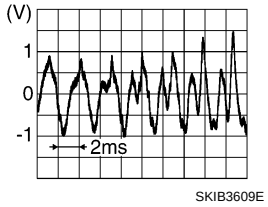
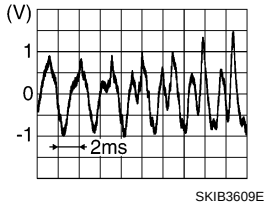
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (LG)	2 (V)	Sound signal front squawker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (P)	3 (L)	Sound signal front squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
7 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
10 (SB)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
11 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
13 (GR)	8 (BR)	Sound signal woofer	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
14 (L)	9 (O)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
16 (GR)	17 (BR)	Sound signal rear speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
18 (W)	19 (B)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
20 (SB)	Ground	Amp. ON signal	Input	Ignition switch ACC	—	12.0 V
24 (GR/V)	23 (W/L)	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
26 (GR/V)	25 (W/L)	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
28 (G)	15 (R)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
29 (V)	30 (P)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
31 (BR)	32 (Y)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
33 (W/R)	34 (B/R)	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E
35 (W/R)	36 (B/R)	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E

CAMERA CONTROL UNIT

Reference Value

INFOID:0000000009721856

VALUES ON THE DIAGNOSIS TOOL

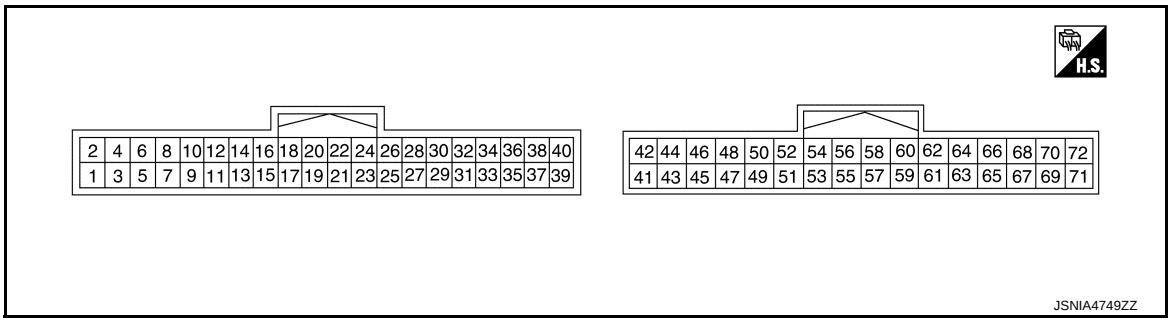
NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor Item	Condition		Value/Status
ST ANGLE SENSOR SIGNAL [ON/OFF]	Ignition switch ON	When steering angle sensor signal is input	ON
		Other than the above	OFF
REVERSE SIGNAL [ON/OFF]	Ignition switch ON	R position	ON
		Other than R position	OFF
VEHICLE SPEED SIGNAL [ON/OFF]	Ignition switch ON	When vehicle speed is input	ON
		Other than the above	OFF
ILL [ON/OFF]	Ignition switch ON	When lighting switch is ON	ON
		When lighting switch is OFF	OFF
CAMERA SWITCH SIGNAL [ON/OFF]	Ignition switch ON	When camera switch signal is input	ON
		Other than the above	OFF
CAMERA OFF SIGNAL [ON/OFF]	Ignition switch ON	When camera OFF signal is input	ON
		Other than the above	OFF
ITS SW 1 [ON/OFF]	Ignition switch ON	Warning systems switch is ON. (Warning systems ON indicator illuminates.)	ON
		Warning systems switch is OFF. (Warning systems ON indicator OFF.)	OFF
ITS SW 1 IND [ON/OFF]	Ignition switch ON	Warning systems ON indicator illuminates.	ON
		Warning systems ON indicator OFF	OFF
ST ANGLE SENSOR TYPE [Absolute]	Ignition switch ON	—	Absolute
STEERING GEAR RATIO TYPE [TYPE1]	Ignition switch ON	—	TYPE1
STEERING POSITION [LHD]	Ignition switch ON	—	LHD
WASH SW [ON/OFF]	Ignition switch ON	When washer switch signal is input	ON
		Other than the above	OFF
REAR CAMERA IMAGE SIGNAL [OK/NG]	Ignition switch ON	When rear camera image signal input status is normal	OK
		When rear view camera image signal input status is not normal	NG
R-CAMERA COMM STATUS [OK/NG]	Ignition switch ON	When communication status with rear camera is normal	OK
		When communication status with rear camera is not normal	NG
TURN SIGNAL [ON/OFF]	Ignition switch ON	Turn signal is ON	ON
		Turn signal is OFF	OFF
ITS SW 2 [No setting]	Ignition switch ON	—	No setting

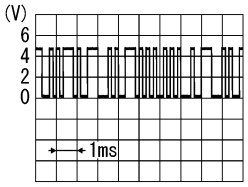
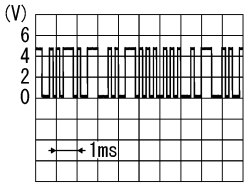
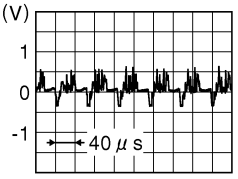
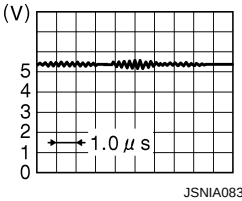
Monitor Item	Condition		Value/Status
PUMP COMM STATUS [OK/NG]	Ignition switch ON	When communication signal is input	OK
		Other than the above	NG
ITS SW 2 IND [No setting]	Ignition switch ON	—	No setting

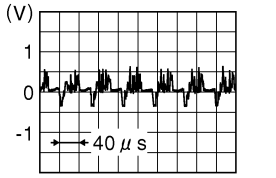
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output				
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 - 0.1 V	0 V
2 (V)	1 (B)	Battery power supply	Input	Ignition switch OFF	—	9.5 - 16 V	Battery voltage
3 (G)	1 (B)	Ignition signal	Input	Ignition switch ON	—	9.5 - 16 V	Battery voltage
7 (R)	Ground	BSW indicator LH	Output	Ignition switch ON	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check).	5.5 - 16 V	6.0 V
8 (G)	Ground	BSW indicator RH	Output	Ignition switch ON	Approx. 2 sec. after ignition switch OFF ⇒ ON (bulb check)	5.5 - 16 V	6.0 V
15 (BR)	Ground	Warning systems ON indicator	Output	Ignition switch ON	Warning systems ON indicator ON	0 - 0.1 V	0 V
					Warning systems ON indicator OFF	9.5 - 16 V	12.0 V
17 (GR)	Ground	Warning systems switch	Input	Ignition switch ON	When warning systems switch is not pressed	9.5 - 16 V	12.0 V
					When warning systems switch is pressed	0 - 0.1 V	0 V
25 (R)	1 (B)	Reverse signal	Input	Ignition switch ON	R position	9.5 - 16 V	12.0 V
					Other than R position	0 - 0.1 V	0 V
27 (L)	—	CAN-H	Input/ Output	—	—	—	—
28 (P)	—	CAN-L	Input/ Output	—	—	—	—

Terminal (Wire color)		Description		Condition		Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output				
36 (W)	Ground	Communication signal (CAMERA → PUMP)	Output	Ignition switch ON	—	Input the waveform synchronized with the communication status.  PKIB5039J	
37 (SB)	Ground	COMM GND	—	Ignition switch ON	—	0 - 0.1 V	0 V
38 (V)	Ground	Communication signal (PUMP → CAMERA)	Input	Ignition switch ON	—	Input the waveform synchronized with the communication status.  PKIB5039J	
40 (R)	Ground	Washer level switch	Input	Ignition switch ON	Washer is empty	0 - 0.1 V	0 V
					Washer is not empty	9.5 - 16 V	12 V
47 (B)	48	Camera image signal	Output	Ignition switch ON	—	Input the waveform synchronized with the camera image signal.  JSNIA0834GB	
48	Ground	Camera image signal ground	—	Ignition switch ON	—	0 - 0.1 V	0 V
49 (W)	52 (R/W)	Rear camera communication signal	Input/ Output	Ignition switch ON	—	Input the waveform synchronized with the communication status.  JSNIA0836GB	
50 (R/L)	52 (R/W)	Rear camera power supply	Output	Ignition switch ON	—	5.0 - 9.0 V	6.0 V
52 (R/W)	Ground	Rear camera ground	—	Ignition switch ON	—	0 - 0.1 V	0 V

Terminal (Wire color)		Description		Condition		Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output				
53 (B)	54	Rear camera image signal (+)	Input	Ignition switch ON	—	Input the waveform synchronized with the camera image signal.  JSNIA0834GB	
54	Ground	Rear camera image signal (–)	—	Ignition switch ON	—	0 - 0.1 V	0 V

Fail-Safe

INFOID:0000000009721857

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
C1A03 VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from ABS actuator and electric unit (control unit) received by the camera control unit via CAN communication, are inconsistent	• LDW system is cancel • BSW system is cancel
C1A04 ABS/TCS/VDC CIRC	If a malfunction occurs in the VDC/TCS/ABS system	• LDW system is cancel • BSW system is cancel
C1A39 STRG SEN CIR	If the steering angle sensor is malfunction	• LDW system is cancel • BSW system is cancel
U0122 VDC P-RUN DIAGNOSIS	If camera control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	• LDW system is cancel • BSW system is cancel
U0416 VDC CHECKSUM DIAGNOSIS	If camera control unit detects an error signal that is received from ABS actuator and electric unit (control unit) via CAN communication	• LDW system is cancel • BSW system is cancel
U0428 ST ANGLE SENSOR CALIBRATION	Neutral position adjustment of steering angle sensor is not complete.	• Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • LDW system is stopped. • BSW system is stopped.

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U1000 CAN COMM CIRCUIT	When camera control unit cannot transmit/receive CAN communication signal continuously for 2 seconds or more.	The following functions are stopped • When communication of steering angle sensor signal is not normal - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - LDW system is stopped. - BSW system is stopped. - Front tire angle display is stopped. - Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed. • When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - LDW system is stopped. - BSW system is stopped. - Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed • When communication of sonar signal is not normal - Predicted course line is not displayed.
U1010 CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	• MOD (Moving Object Detection) function is stopped. • LDW system is stopped. • BSW system is stopped.
U111A REAR CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. **NOTE:** Current malfunction is displayed only and is not saved.	• Camera image is not displayed (Gray screen display). • LDW system is stopped. • BSW system is stopped.
U1232 ST ANGLE SEN CALIB	Neutral position adjustment of steering angle sensor is performed. NG signal from steering angle sensor is received.	• Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • LDW system is stopped. • BSW system is stopped. • Tire icon is stopped. • Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed.
U1305 CONFIG UNFINISH	The vehicle setting of camera control unit is incomplete. **NOTE:** Current malfunction is displayed only and is not saved.	Operation is according to the vehicle setting value as default value.
U1308 R-CAMERA (R&L) CALIB JDGMNT	Camera image calibration is incomplete	• MOD (Moving Object Detection) function is stopped. • LDW system is stopped. • BSW system is stopped.

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U1309 PUMP INPUT CURRENT JUDGE	Camera control unit detects the value of current from pump control unit is incorrect	• MOD (Moving Object Detection) function is stopped. • LDW system is stopped. • BSW system is stopped.
U130B RR CAMERA COMM ERROR	Camera control unit receives the incorrect communication signal from rear view camera	• MOD (Moving Object Detection) function is stopped. • LDW system is stopped. • BSW system is stopped.
U1310 PUMP ECU JUDGE	If the pump control unit is malfunction	• LDW system is stopped. • BSW system is stopped.
Other	When camera control unit is not normal.	Switch to camera screen is not allowed.
	When communication between camera control unit and each camera is not normal.	On applicable camera screen ⚠ marking (Red) is displayed.
	When communication line between camera control unit and each camera image line are affected by electromagnetic noises.	On applicable camera image screen, ☒ display (Blue) is displayed.

DTC Inspection Priority Chart

INFOID:0000000009721858

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• U1232: ST ANGLE SEN CALIB • U1305: CONFIG UNFINISH
3	• U0428: ST ANGLE SENSOR CALIBRATION
4	• U130B: RR CAMERA COMM ERROR
5	• U1308: R-CAMERA (R&L) CALIB JDGMNT
6	• C1A04: ABS/TCS/VDC CIRC • C1A39: STRG SEN CIR • U0122: VDC P-RUN DIAGNOSIS • U0416: VDC CHECKSUM DIAGNOSIS • U111A: REAR CAMERA IMAGE SIGNAL • U1309: PUMP INPUT CURRENT JUDGE • U1310: PUMP ECU JUDGE
7	• C1A03: VHCL SPEED SE CIRC

DTC Index

INFOID:0000000009721859

DTC	CONSULT display	Warning lamp		"MOD" (Moving Object Detection) icon	Reference
		Lane departure warning lamp	BSW warning lamp		
C1A03	VHCL SPEED SE CIRC	ON	ON	Orange	DAS-58, "DTC Logic"
C1A04	ABS/TCS/VDC CIRC	ON	ON	Orange	DAS-59, "DTC Logic"
C1A39	STRG SEN CIR	ON	ON	Orange	DAS-60, "DTC Logic"
U0122	VDC P-RUN DIAGNOSIS	ON	ON	Orange	DAS-61, "DTC Logic"
U0416	VDC CHECKSUM DIAGNOSIS	ON	ON	Orange	DAS-62, "DTC Logic"
U0428	ST ANGLE SENSOR CALIBRATION	ON	ON	Orange	AV-378, "DTC Logic"

DTC	CONSULT display	Warning lamp		"MOD" (Moving Object Detection) icon	Reference
		Lane departure warning lamp	BSW warning lamp		
U1000	CAN COMM CIRCUIT	ON	ON	Orange	AV-379, "CAMERA CONTROL UNIT : DTC Logic"
U1010	CONTROL UNIT (CAN)	ON	ON	Orange	AV-381, "CAMERA CONTROL UNIT : DTC Logic"
U111A	REAR CAMERA IMAGE SIGNAL	ON	ON	Orange	AV-382, "DTC Logic"
U1232	ST ANGLE SEN CALIB	ON	ON	Orange	AV-406, "CAMERA CONTROL UNIT : DTC Logic"
U1305	CONFIG UNFINISH	ON	ON	Orange	AV-415, "DTC Logic"
U1308	R-CAMERA (R&L) CALIB JDGMNT	ON	ON	Orange	DAS-70, "DTC Logic"
U1309	PUMP INPUT CURRENT JUDGE	ON	ON	Blue	DAS-71, "DTC Logic"
U130B	RR CAMERA COMM ERROR	ON	ON	Orange	AV-417, "DTC Logic"
U1310	PUMP ECU JUDGE	ON	ON	Blue	DAS-73, "DTC Logic"

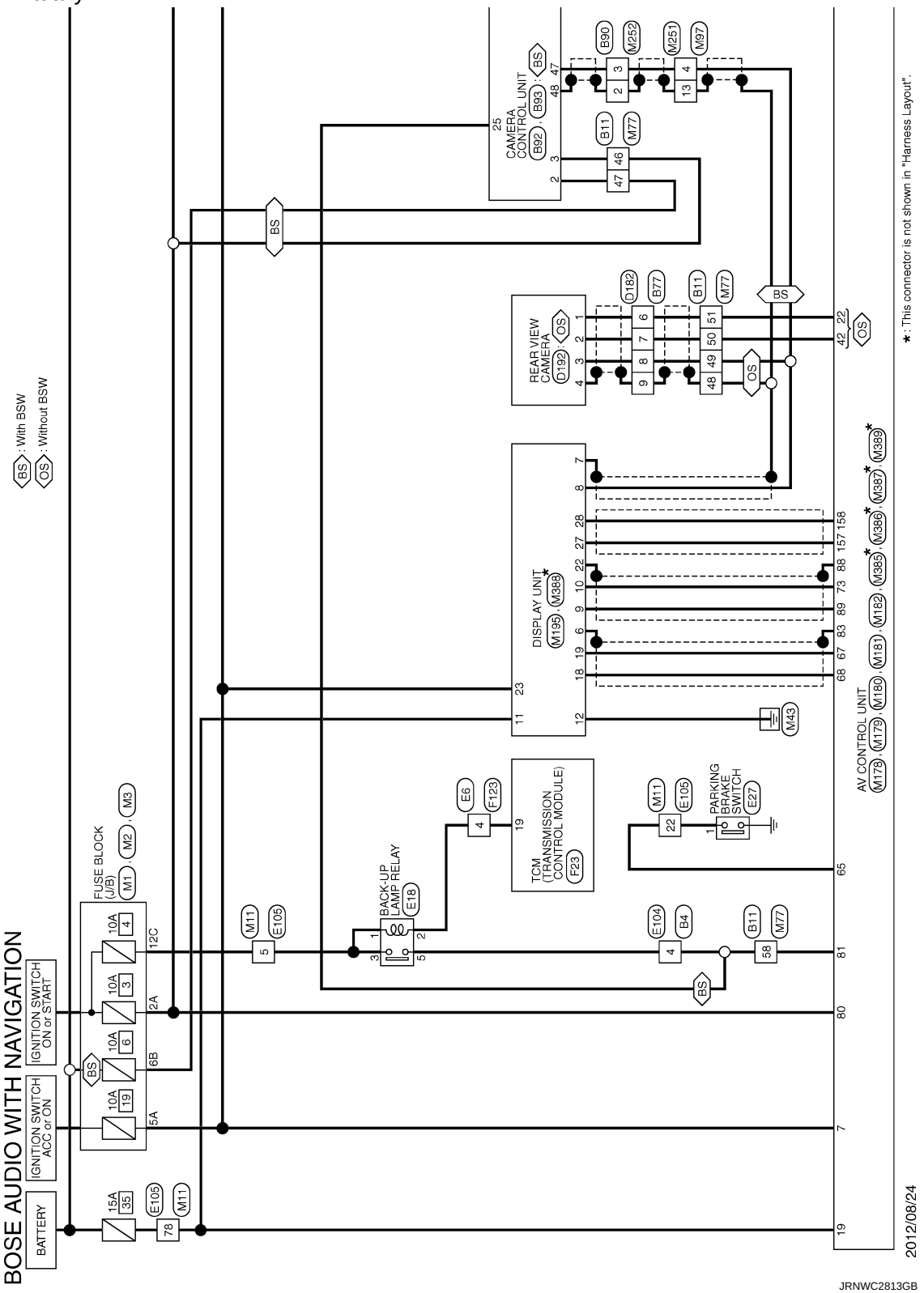
WIRING DIAGRAM

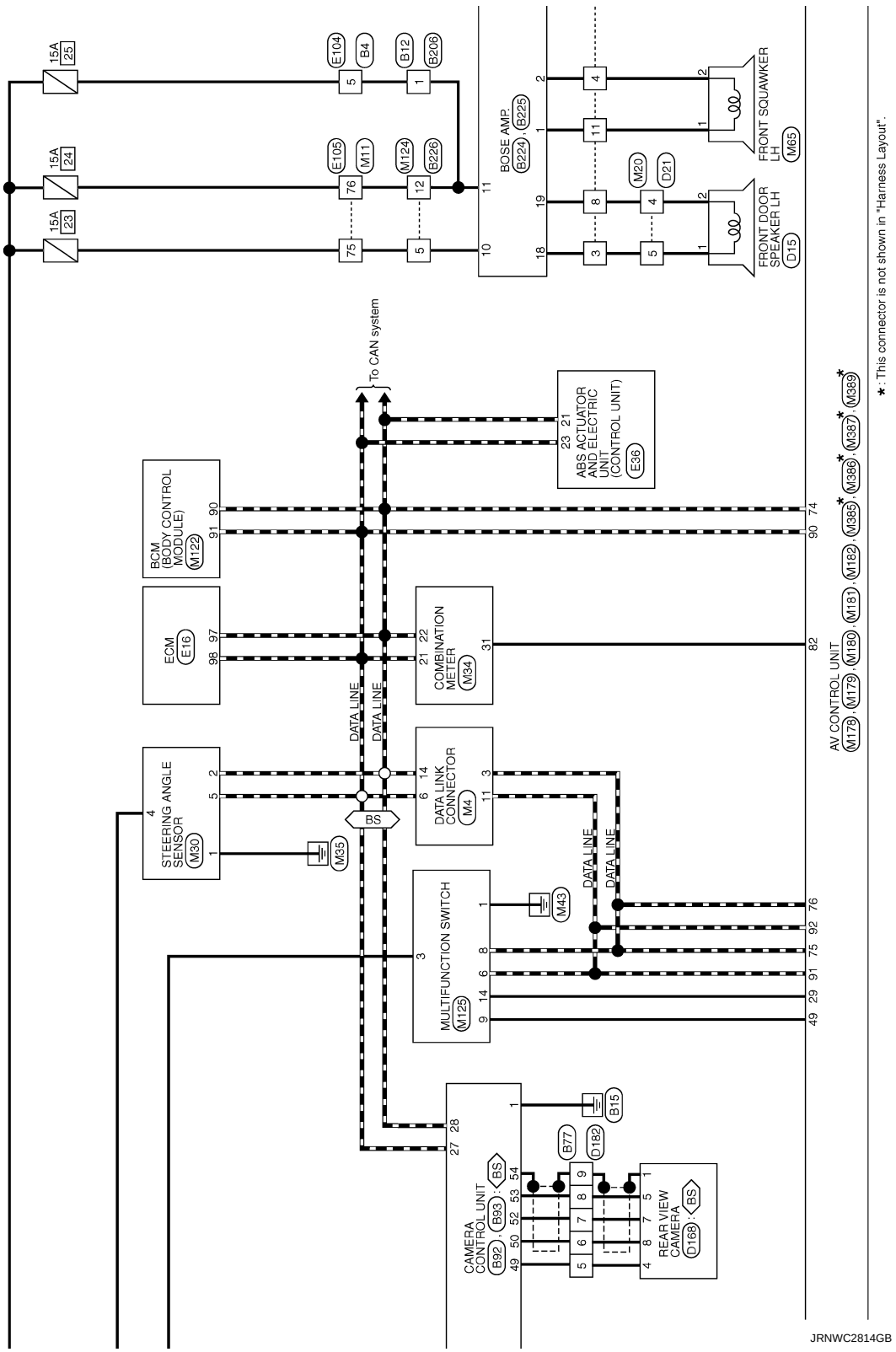
BOSE AUDIO WITH NAVIGATION

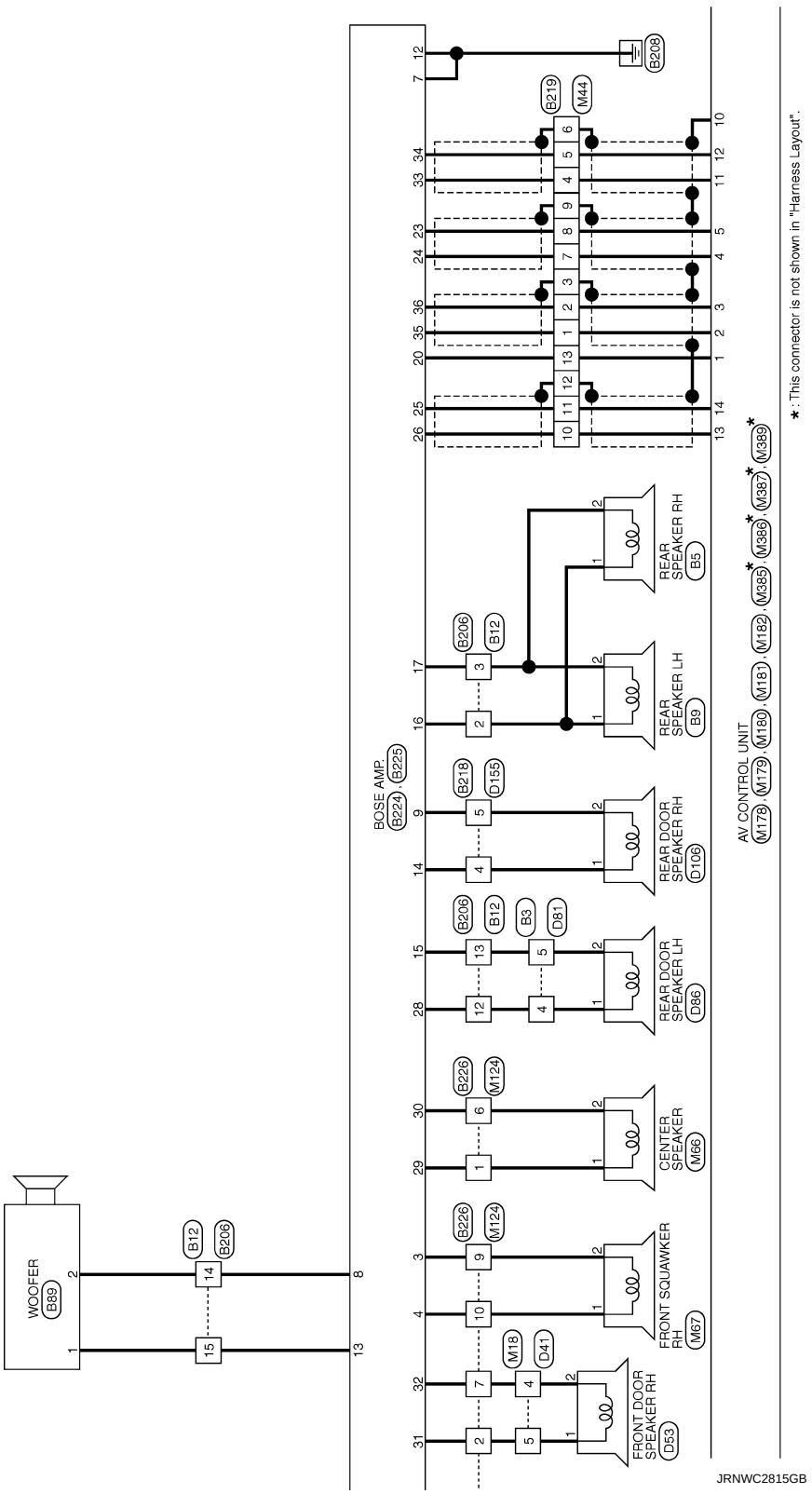
Wiring Diagram

INFOID:0000000009721860

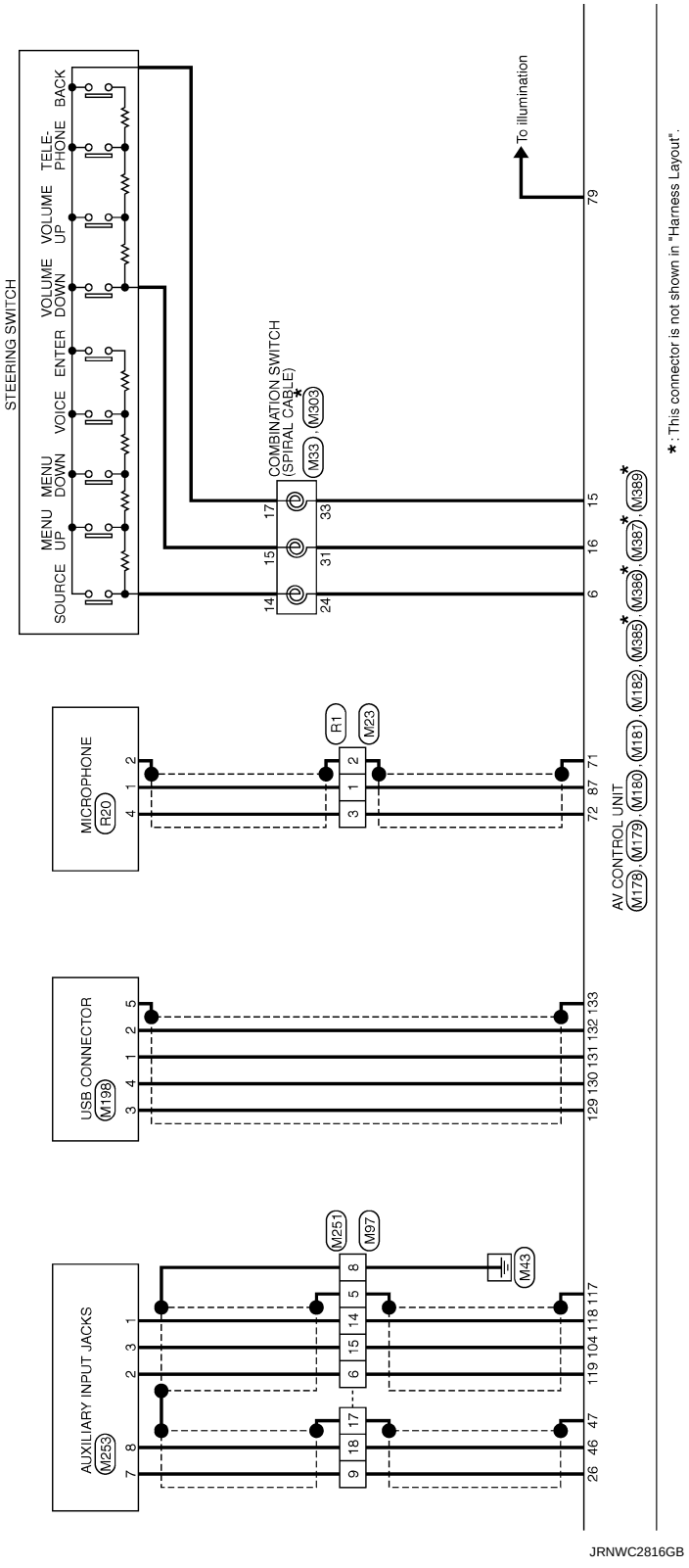
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

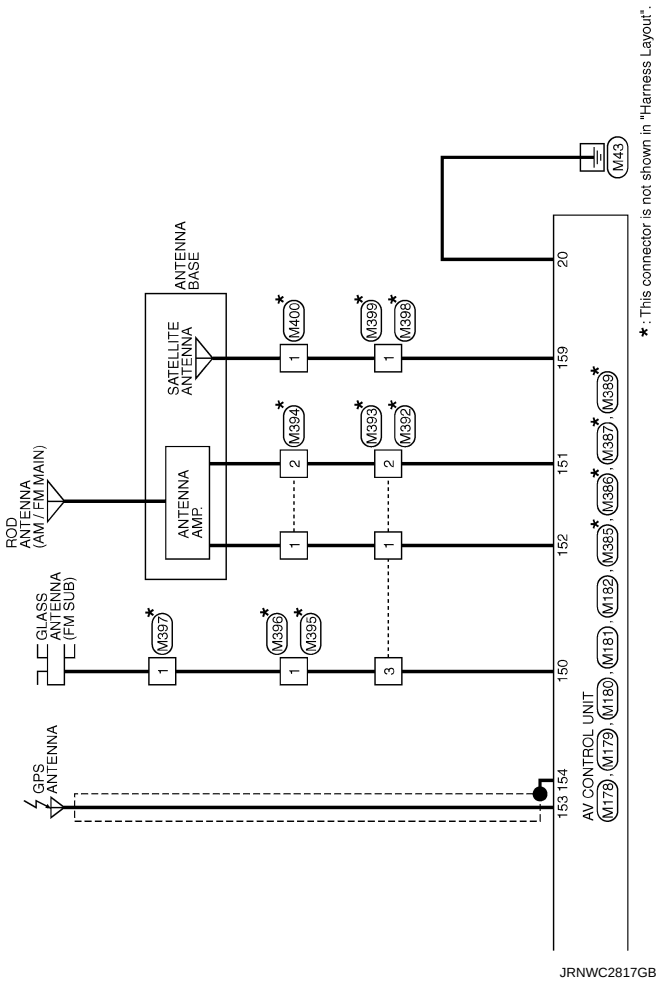


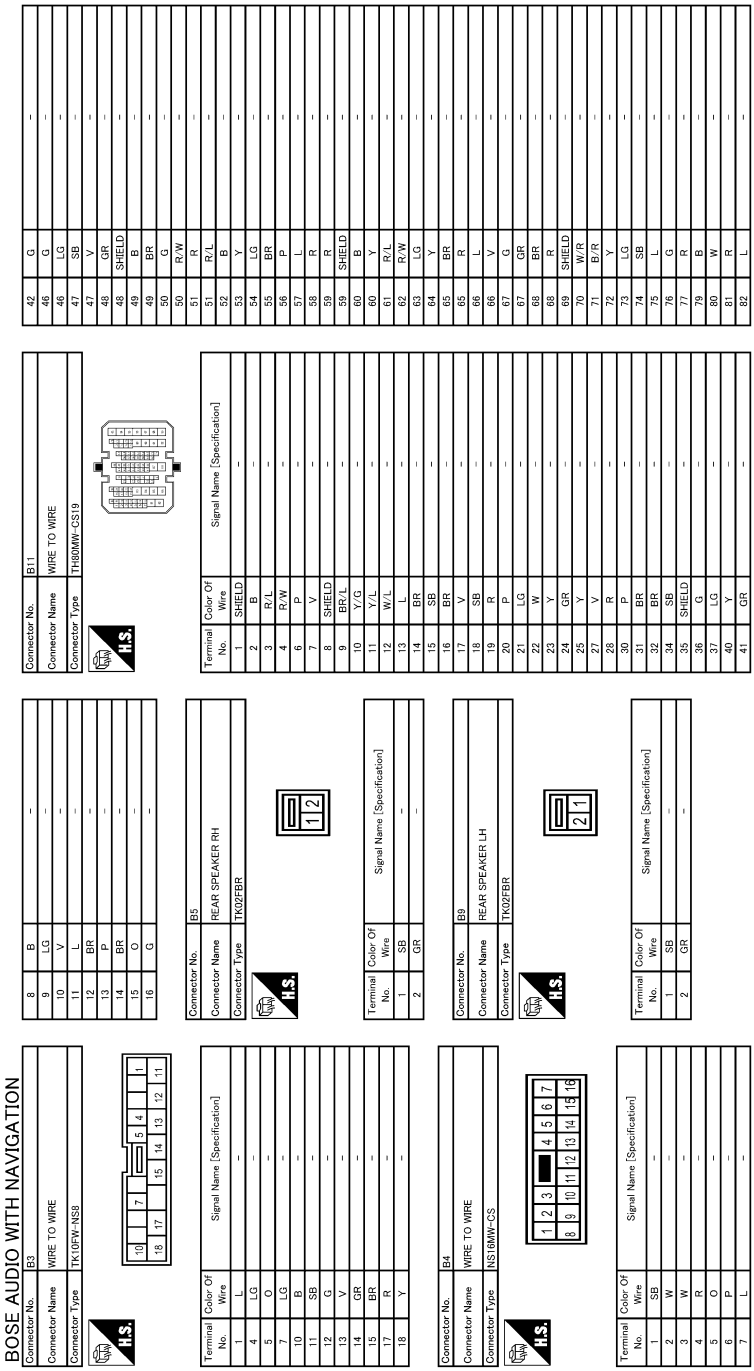

15A 25
15A 24
15A 23
E104
B4
B12
B206
E105
M11
M124
B226
BOSE AMP
B224
B225
FRONT SQUAWKER LH
M65
M20
D21
FRONT DOOR SPEAKER LH
D15
To CAN system
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
E36
BCM (BODY CONTROL MODULE)
M122
ECM
E16
COMBINATION METER
M34
DATA LINE
STEERING ANGLE SENSOR
M30
M35
DATA LINK CONNECTOR
M4
BS
MULTIFUNCTION SWITCH
M125
M43
AV CONTROL UNIT
M178, M179, M180, M181, M182, M385, M386, M387, M389
*: This connector is not shown in "Harness Layout".
CAMERA CONTROL UNIT
B92, B93
B15
B77
D182
REAR VIEW CAMERA
D168
JRNWC2814GB



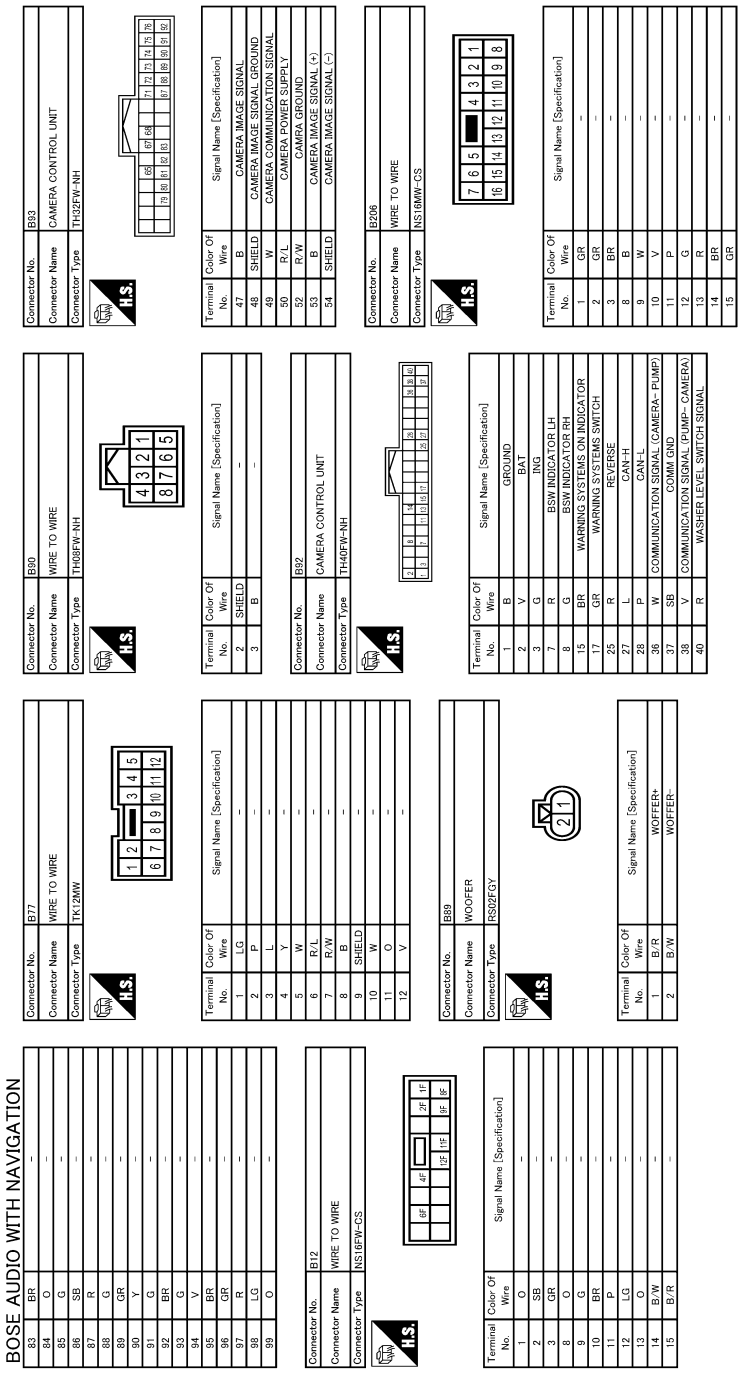
*: This connector is not shown in "Harness Layout".


STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE
ENTER
VOLUME DOWN
VOLUME UP
TELE-PHONE
BACK
COMBINATION SWITCH (SPIRAL CABLE)
M33
M303
To illumination
79
MICROPHONE
R20
R1
M23
AV CONTROL UNIT
M178, M179, M180, M181, M182, M385, M386, M387, M389
USB CONNECTOR
M198
AUXILIARY INPUT JACKS
M253
M251
M97
M43
129 130 131 132 133
119 104 118 117
26 46 47
72 87 71
6 16 15
14 15 17
24 31 33
* : This connector is not shown in "Harness Layout".
JRNWC2816GB


*: This connector is not shown in "Harness Layout".
M43
20
ANTENNA BASE
SATELLITE ANTENNA
M400
M399
M398
159
ROD ANTENNA (AM / FM MAIN)
ANTENNA AMP.
M394
M393
M392
M389
M387
M386
M385
M182
M181
M180
M179
M178
151
152
GLASS ANTENNA (FM SUB)
M397
M396
M395
150
GPS ANTENNA
153 154
AV CONTROL UNIT
JRNWC2817GB



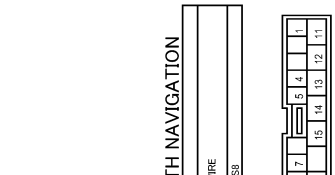
JRNWC8951GB



JRNWC8952GB

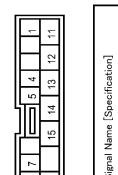
BOSE AUDIO WITH NAVIGATION

Connector No.	B218
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



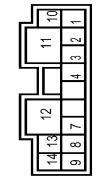
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
4	L	– [With BOSE system]
4	O	– [Without BOSE system]
5	B/P	– [Without BOSE system]
5	O	– [With BOSE system]
7	O	–
10	B	–
11	Y	–
12	G	–
13	V	–
14	P	–
15	SB	–
17	R	–
18	GR	–

Connector No.	B219
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH



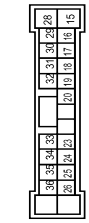
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/R	–
2	B/R	–
3	SHIELD	–
4	W/R	–
5	B/R	–
6	SHIELD	–
7	GR/V	–
8	W/L	–
9	SHIELD	–
10	GR/V	–
11	W/L	–
12	SHIELD	–
13	SB	–
15	SB	–
16	Y	–
17	R	–
18	W	–
29	G	–
30	P	–
31	V	–
32	BR	–

Connector No.	B224
Connector Name	BOSE AMP.
Connector Type	SGA12FBR-SJA2



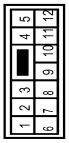
Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	SOUND SIGNAL FRONT SQUAWKER LH (+)
2	V	SOUND SIGNAL FRONT SQUAWKER LH (–)
3	L	SOUND SIGNAL FRONT SQUAWKER RH (–)
4	P	SOUND SIGNAL FRONT SQUAWKER RH (+)
7	B	GROUND
8	BR	SOUND SIGNAL WOOFER (–)
9	O	SOUND SIGNAL REAR DOOR SPEAKER RH (–)
10	SB	BATTERY
11	GR	BATTERY
12	B	GROUND
13	GR	SOUND SIGNAL WOOFER (+)
14	L	SOUND SIGNAL REAR DOOR SPEAKER RH (+)

Connector No.	B225
Connector Name	BOSE AMP.
Connector Type	SCA19FBR-SGA4



Terminal No.	Color Of Wire	Signal Name [Specification]
15	R	SOUND SIGNAL REAR DOOR SPEAKER LH (–)
16	GR	SOUND SIGNAL REAR SPEAKER (+)
17	BR	SOUND SIGNAL REAR SPEAKER (–)
18	W	SOUND SIGNAL FRONT DOOR SPEAKER LH (+)
19	B	SOUND SIGNAL FRONT DOOR SPEAKER LH (–)
20	SB	AMP. ON SIGNAL
23	W/L	SOUND SIGNAL REAR LH (–)
24	GR/V	SOUND SIGNAL REAR LH (+)
25	W/L	SOUND SIGNAL REAR RH (–)
26	GR/V	SOUND SIGNAL REAR RH (+)
28	G	SOUND SIGNAL REAR DOOR SPEAKER LH (+)
29	V	SOUND SIGNAL CENTER SPEAKER (+)
30	P	SOUND SIGNAL CENTER SPEAKER (–)
31	BR	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
32	Y	SOUND SIGNAL FRONT DOOR SPEAKER RH (–)
33	W/R	SOUND SIGNAL FRONT RH (+)
34	B/R	SOUND SIGNAL FRONT RH (–)
35	W/R	SOUND SIGNAL FRONT LH (+)
36	B/R	SOUND SIGNAL FRONT LH (–)

Connector No.	B226
Connector Name	WIRE TO WIRE
Connector Type	NS12MBR-CS

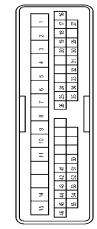


Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	–
2	BR	–
3	W	–
4	V	–
5	SB	–
6	P	–
7	Y	–
8	B	–
9	L	–
10	P	–
11	LG	–
12	GR	–

Connector No.	D15
Connector Name	FRONT DOOR SPEAKER LH
Connector Type	NS02FBR-CS

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	B	–

Connector No.	D21
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



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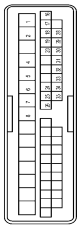
BOSE AUDIO WITH NAVIGATION

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	–
2	G	–
3	P	–
4	B	–
5	W	–
6	SB	–
7	P	–
8	BR	–
9	GR	–
10	V	–
11	O	–
14	B	–
15	LG	–
16	G	–
17	Y	–
18	GR	–
19	BR	–
20	LG	–
24	P	–
25	V	–
26	W	–
27	R	–
29	V	–
30	SB	–
31	BR	–
32	R	–
33	G	–
34	SB	–
35	L	–
41	P	–
42	GR	–
43	L	–
44	W	–
45	SB	–
46	R	–
50	V	–
51	O	–
52	L	– [Without automatic drive positioner]
52	P	– [With automatic drive positioner]
53	L	– [With automatic drive positioner]
53	P	– [Without automatic drive positioner]
54	LG	– [Without automatic drive positioner]
54	SB	– [With automatic drive positioner]
55	LG	– [With automatic drive positioner]
55	O	– [Without automatic drive positioner]

Connector No.	D41
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
2	V	–
4	B	–
5	W	–
6	P	–
7	O	–
8	B	–
16	G	–
17	Y	–
18	GR	–
19	BR	–
20	LG	–
24	LG	–
25	W	–
26	O	–
28	G	–
29	V	–
30	SB	–
31	BR	–
32	R	–
33	G	–
34	Y	–
35	L	–

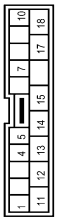
Connector No.	D53
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	NS02FBR-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
2	B	–

Connector No.	D81
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	–
4	L	–
5	W	–
7	LG	–
10	B	–
11	Y	–
12	G	–
13	V	–
14	P	–
15	SB	–
17	R	–
18	GR	–

Connector No.	D86
Connector Name	REAR DOOR SPEAKER LH
Connector Type	NS02FBR-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	–
2	W	–

Connector No.	D106
Connector Name	REAR DOOR SPEAKER RH
Connector Type	NS02FBR-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	–
2	W	–

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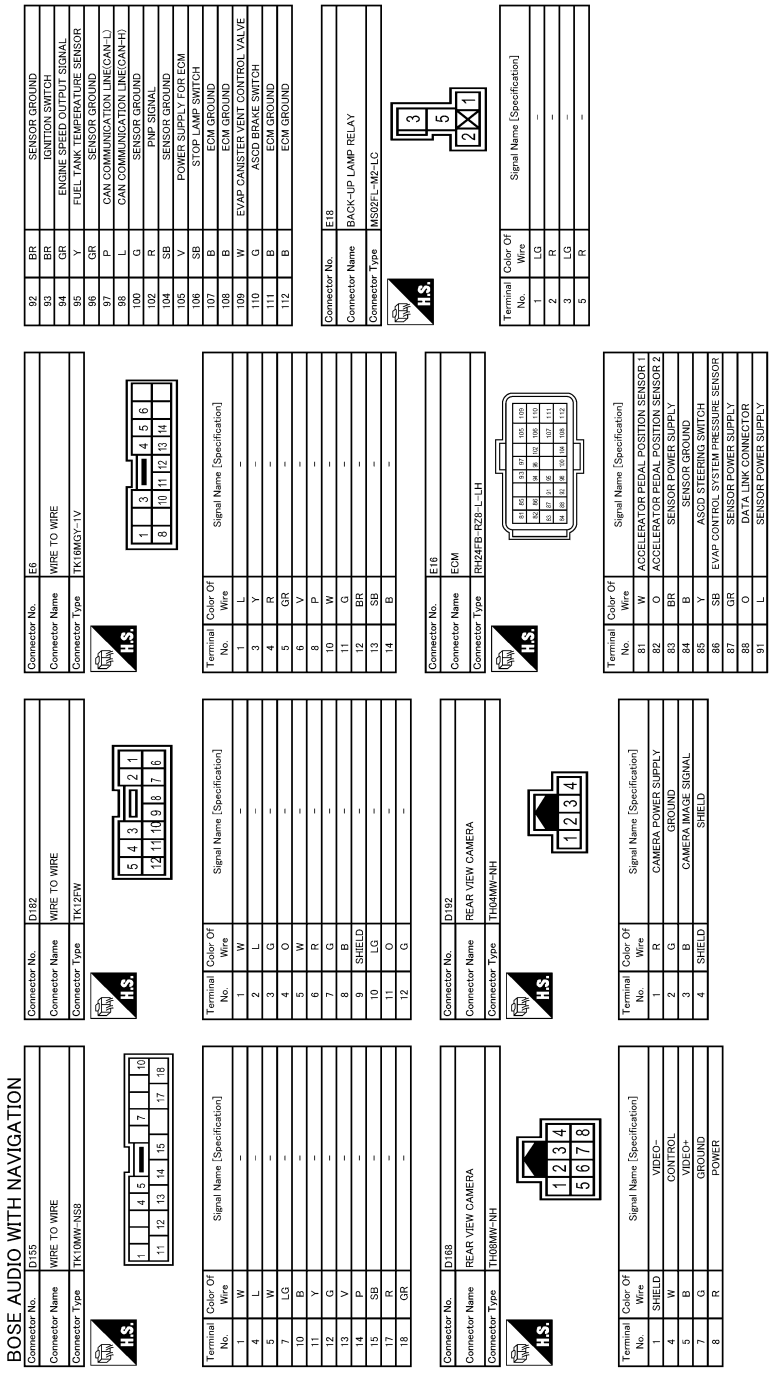

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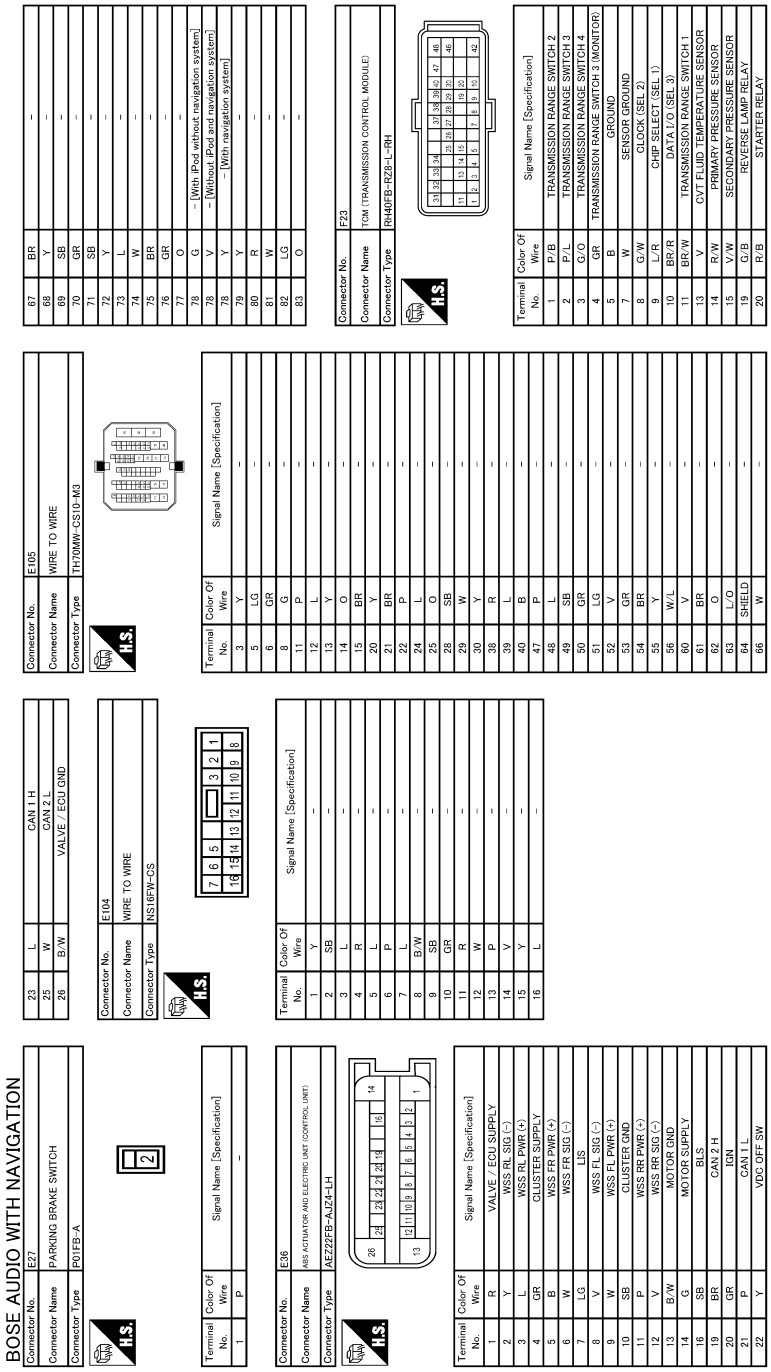

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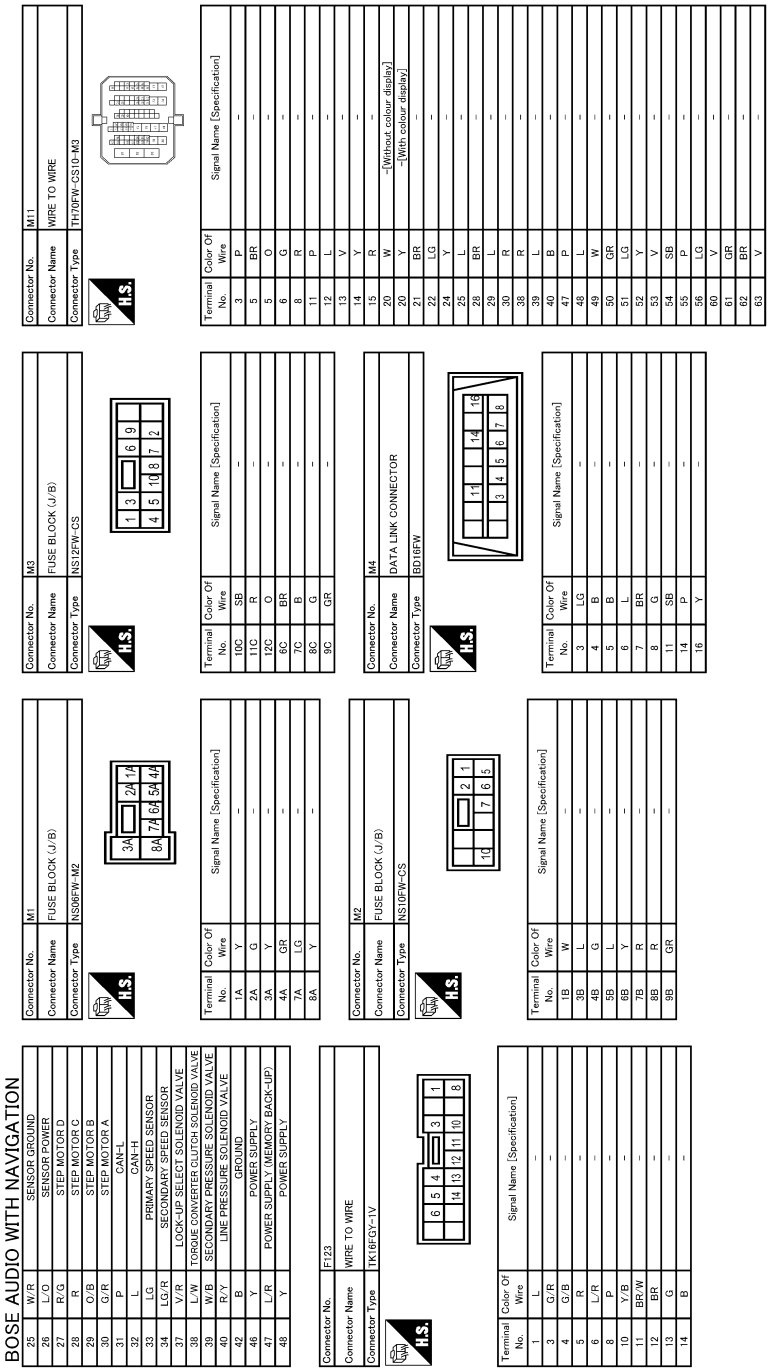

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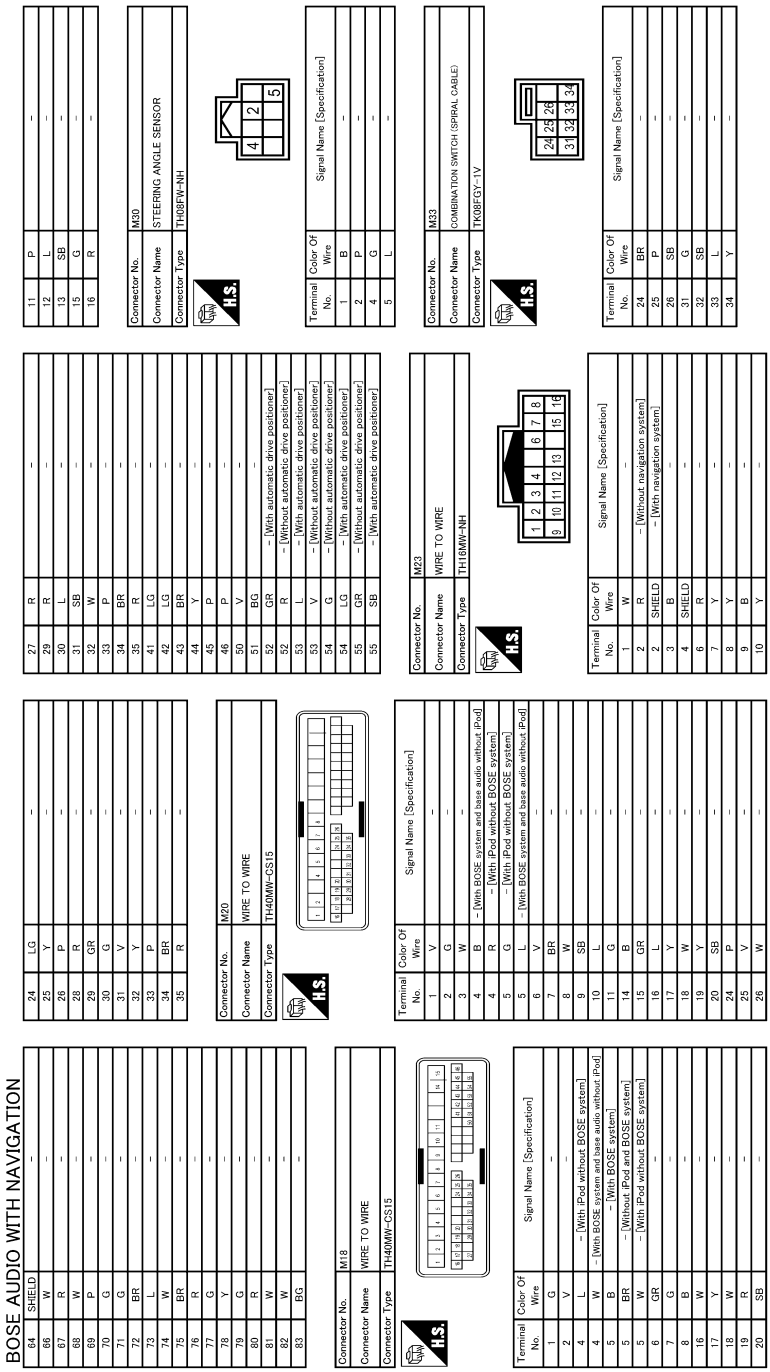

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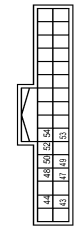
BOSE AUDIO WITH NAVIGATION

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	LG	IGN SIGNAL
3	B	GROUND
4	B	GROUND
5	SB	ILLUMINATION CONTROL SIGNAL
8	SB	TRIP RESET SIGNAL
9	W	SW ILL POWER
10	LG	METER CONTROL SWITCH GROUND
11	L	ENTER SWITCH SIGNAL
12	R	SELECT SWITCH SIGNAL
13	V	ILLUMINATION CONTROL SWITCH SIGNAL (+) (With automatic drive positioner)
14	GR	ILLUMINATION CONTROL SWITCH SIGNAL (-)
15	BR	AIR BAG SIGNAL
18	L	AMBIENT SENSOR SIGNAL
19	P	AMBIENT SENSOR POWER
20	Y	AMBIENT SENSOR GROUND
21	L	CAN-H
22	P	CAN-L
23	B	GROUND
24	W	FUEL LEVEL SENSOR GROUND
25	BR	ALTERNATOR SIGNAL
26	G	PARKING BRAKE SWITCH SIGNAL
27	V	BRAKE FLUID LEVEL SWITCH SIGNAL
29	R	WASHER LEVEL SWITCH SIGNAL
30	P	VEHICLE SPEED SIGNAL (2-PULSE)
31	V	VEHICLE SPEED SIGNAL (8-PULSE)
32	LG	OVERDRIVE CONTROL SWITCH SIGNAL
34	G	FUEL LEVEL SENSOR SIGNAL
35	SB	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	R	SEAT BELT BUCKLE SWITCH SIGNAL (PASSENGER SIDE)

Connector No.	M44
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	–
2	R	–
3	SHIELD	–
4	B	–
5	W	–
6	SHIELD	–
7	L	–
8	R	–
9	SHIELD	–
10	V	–
11	LG	–
12	SHIELD	–
13	P	–
15	LG	–
16	L	–
17	R	–
18	W	–
29	L	–
30	BG	–
31	Y	–
32	V	–

Connector No.	M65
Connector Name	FRONT SQUAWKER LH
Connector Type	TK02FBR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	– [With iPod without BOSE system]
1	L	– [Without iPod and BOSE system]
1	LG	– [With BOSE system]
2	B	– [Without iPod and BOSE system]
2	R	– [With iPod without BOSE system]
2	Y	– [With BOSE system]

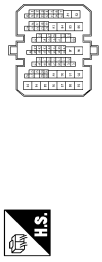
Connector No.	M66
Connector Name	CENTER SPEAKER
Connector Type	TK02FBR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	–
2	GR	–

Connector No.	M67
Connector Name	FRONT SQUAWKER RH
Connector Type	TK02FBR

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	– [With BOSE system and base audio without iPod]
1	W	– [With iPod without BOSE system]
2	L	– [With iPod without BOSE system]
2	R	– [With BOSE system]
2	W	– [Without iPod and BOSE system]

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS19



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	–
2	B	–
3	W	–
4	R	–
6	W	–
7	G	–
8	SHIELD	–
9	W	–
10	R	–
11	G	–
12	B	–
13	P	–
14	R	–
15	SB	–
16	R	–

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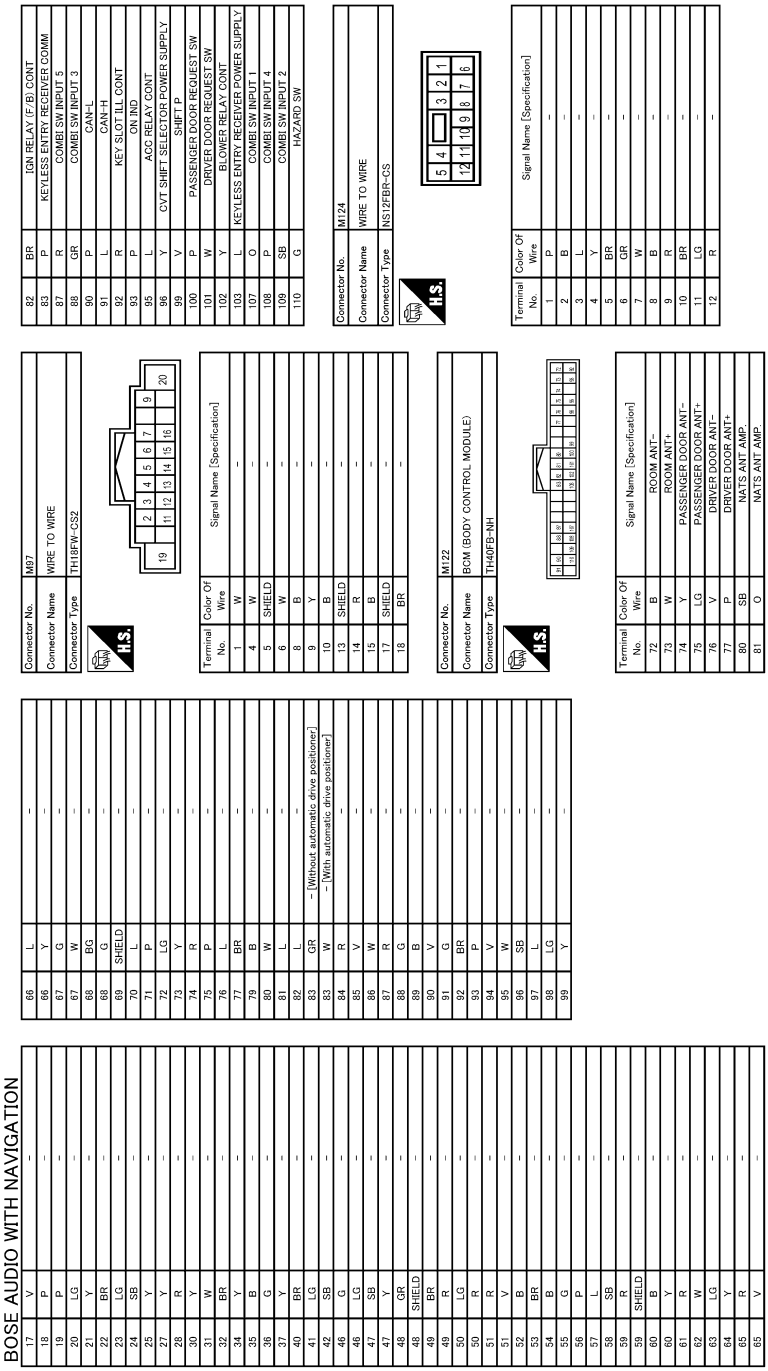
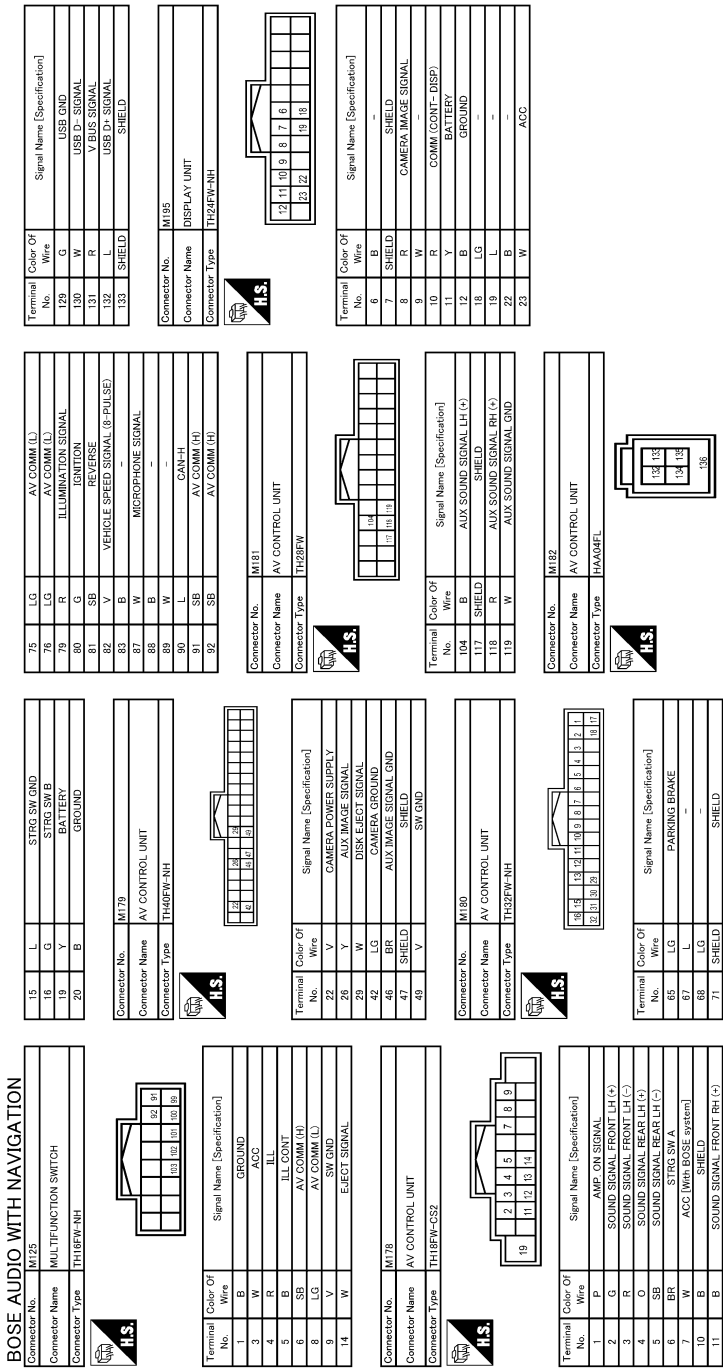

BOSE AUDIO WITH NAVIGATION
Connector No. M97
Connector Name WIRE TO WIRE
Connector Type TH16FW-CS2
Connector No. M122
Connector Name BCM (BODY CONTROL MODULE)
Connector Type TH40FB-NH
Connector No. M124
Connector Name WIRE TO WIRE
Connector Type NS12FBR-CS
Terminal No. Color Of Wire Signal Name [Specification]
1 W –
2 P –
3 B –
4 L –
5 Y –
6 BR –
7 W –
8 B –
9 R –
10 BR –
11 LG –
12 R –
82 BR IGN RELAY (F/B) CONT
83 P KEYLESS ENTRY RECEIVER COMM
87 R COMBI SW INPUT 5
88 GR COMBI SW INPUT 3
90 P CAN–L
91 L CAN–H
92 R KEY SLOT ILL CONT
93 P ON IND
95 L ACC RELAY CONT
96 Y CVT SHIFT SELECTOR POWER SUPPLY
99 V SHIFT P
100 P PASSENGER DOOR REQUEST SW
101 W DRIVER DOOR REQUEST SW
102 Y BLOWER RELAY CONT
103 L KEYLESS ENTRY RECEIVER POWER SUPPLY
107 O COMBI SW INPUT 1
108 P COMBI SW INPUT 4
109 SB COMBI SW INPUT 2
110 G HAZARD SW
17 V –
18 P –
19 P –
20 LG –
21 Y –
22 BR –
23 LG –
24 SB –
25 Y –
27 Y –
28 R –
30 Y –
31 W –
32 BR –
34 Y –
35 B –
36 G –
37 Y –
40 BR –
41 LG –
42 SB –
46 G –
46 LG –
47 SB –
47 Y –
48 GR –
48 SHIELD –
49 BR –
49 R –
50 LG –
50 R –
51 R –
51 V –
52 B –
53 BR –
54 B –
55 G –
56 P –
57 L –
58 SB –
59 R –
59 SHIELD –
60 B –
60 Y –
61 R –
62 W –
63 LG –
64 Y –
65 R –
65 V –
66 L –
66 Y –
67 G –
67 W –
68 BG –
68 G –
69 SHIELD –
70 L –
71 P –
72 LG –
73 Y –
74 R –
75 P –
76 L –
77 BR –
79 B –
80 W –
81 L –
82 L –
83 GR – [Without automatic drive positioner]
83 W – [With automatic drive positioner]
84 R –
85 V –
86 W –
87 R –
88 G –
89 B –
90 V –
91 G –
92 BR –
93 P –
94 V –
95 W –
96 SB –
97 L –
98 LG –
99 Y –
Terminal No. Color Of Wire Signal Name [Specification]
72 B ROOM ANT–
73 W ROOM ANT+
74 Y PASSENGER DOOR ANT–
75 LG PASSENGER DOOR ANT+
76 V DRIVER DOOR ANT–
77 P DRIVER DOOR ANT+
80 SB NATS ANT AMP.
81 O NATS ANT AMP.
JRNWC8960GB



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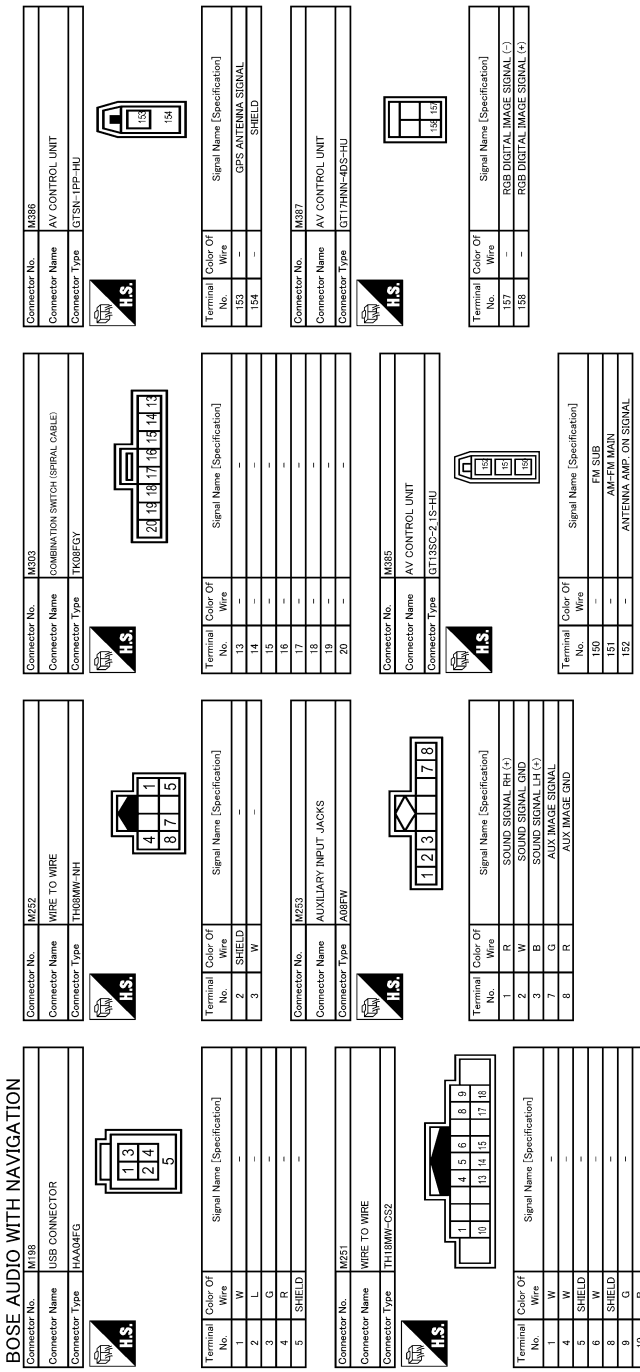

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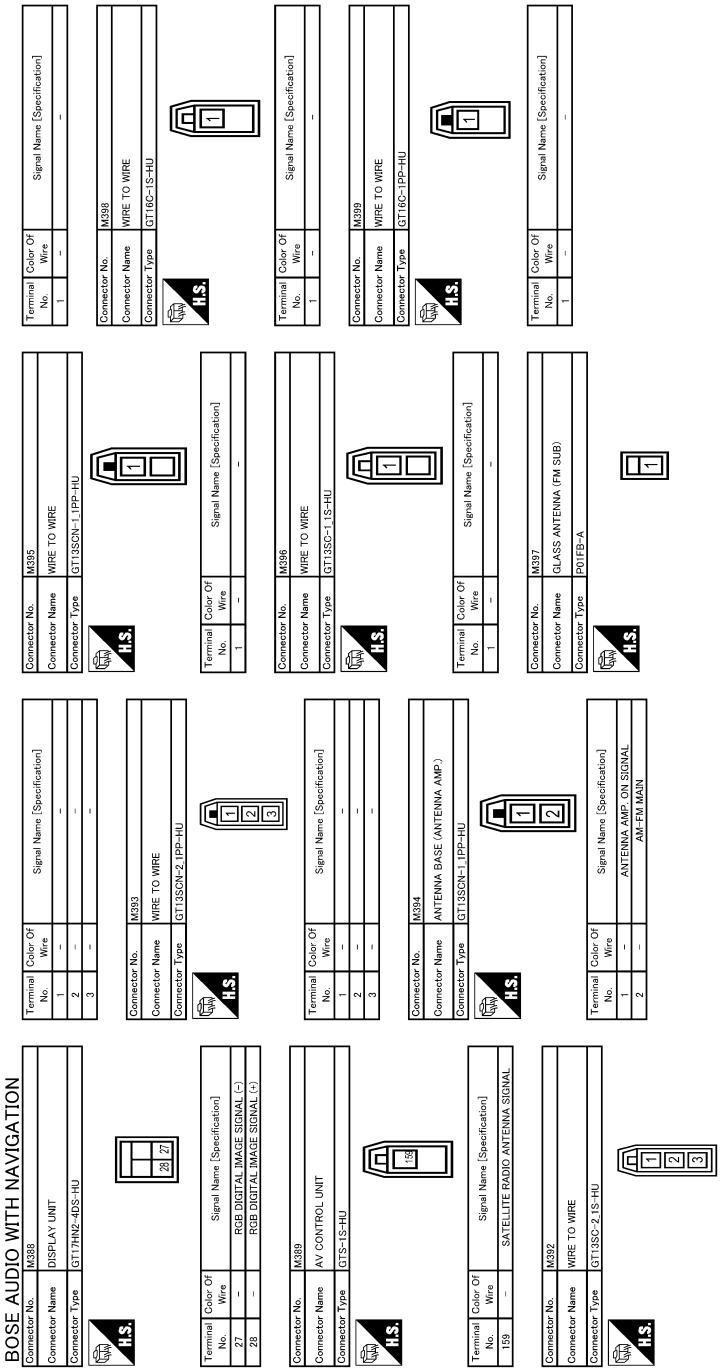

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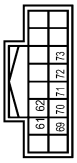
BOSE AUDIO WITH NAVIGATION

Connector No.	M400
Connector Name	ANTENNA BASE (SATELLITE ANTENNA)
Connector Type	GT16C-1PP-HU

Terminal No.	Color Of Wire	Signal Name [Specification]
1	–	SATELLITE ANTENNA

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/W	+ [Without navigation system]
1	W	– [With navigation system]
2	R/L	– [Without navigation system]
2	SHIELD	– [With navigation system]
3	B	–
4	SHIELD	–
6	R/L	–
7	Y/R	–
8	B/Y	–
9	B	–
10	Y	–
11	P/W	–
12	B	–
13	R/Y	–
15	B/R	–
16	R	–

Connector No.	R20
Connector Name	MICROPHONE
Connector Type	TK04FW

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/W	MICROPHONE SIGNAL (+) [Without navigation system]
1	W	MICROPHONE SIGNAL (+) [With navigation system]
2	R/L	MICROPHONE SIGNAL (–) [Without navigation system]
2	SHIELD	SHIELD [With navigation system]
4	B	MICROPHONE POWER

JRNWC8964GB

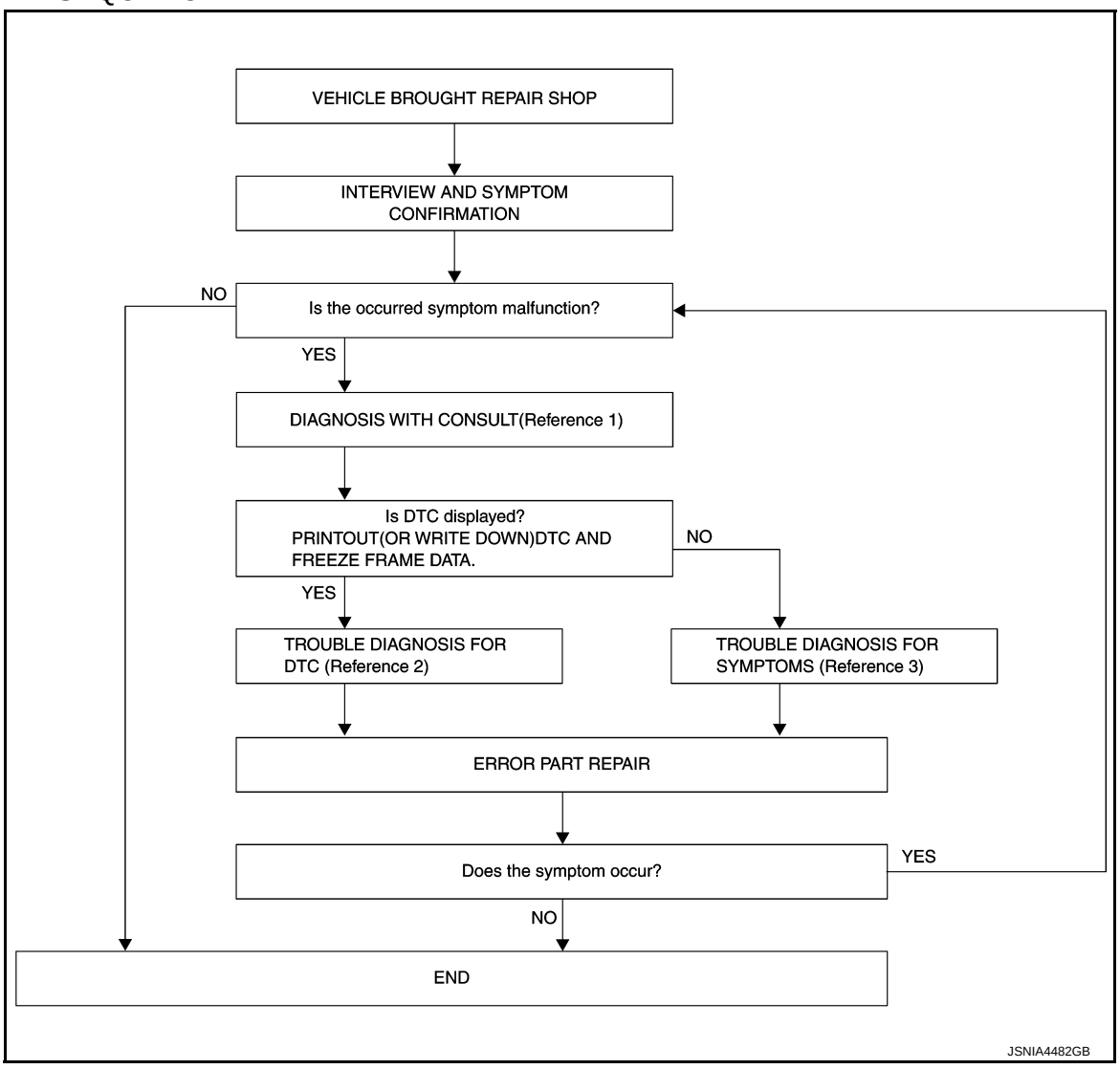
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000009721861

OVERALL SEQUENCE



- Reference 1··· Refer to AV-327, "CONSULT Function" (AV control unit), and AV-331, "CONSULT Function" [Camera control unit (models with BSW and LDW)].
- Reference 2··· Refer to AV-340, "DTC Index" (AV control unit), and AV-352, "DTC Index" [Camera control unit (models with BSW and LDW)].
- Reference 3··· Refer to AV-436, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2.DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for “MULTI AV” and “AVM” (models with BSW and LDW). Refer to AV-327, "CONSULT Function".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “MULTI AV” or “AVM” (models with BSW and LDW) is not displayed.
2. When DTC is detected, follow the instructions below:

- Record DTC and Freeze Frame Data.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3.TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-340, "DTC Index".

>> GO TO 5.

4.TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-436, "Symptom Table".

>> GO TO 5.

5.ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” and “AVM” (models with BSW and LDW) with CONSULT.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

Description

INFOID:0000000009721862

BEFORE REPLACEMENT

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

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform “After Replace ECU” or “Manual Configuration” with CONSULT.

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

Work Procedure

INFOID:0000000009721863

1. SAVING VEHICLE SPECIFICATION

CONSULT Configuration

Perform “Before Replace ECU” to save or print current vehicle specification. Refer to AV-376, "Description".

NOTE:

If “Before Replace ECU” can not be used, use the “Manual Configuration”.

>> GO TO 2.

2. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-448, "Exploded View".

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

CONSULT Configuration

Perform “After Replace ECU” or “Manual Configuration” to write vehicle specification. Refer to AV-376, "Work Procedure".

>> GO TO 4.

4. OPERATION CHECK

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

>> WORK END

CONFIGURATION (AV CONTROL UNIT)

Description

INFOID:0000000009721864

- Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT.
- Configuration has three functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

Work Procedure

INFOID:0000000009721865

1.WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Write vehicle specification into AV control unit.

To write vehicle specification stored in CONSULT into the AV control unit>>GO TO 2.
To write vehicle specification into the AV control unit by hand>>GO TO 3.

2.WRITE STORED DATA

CONSULT Configuration
Select “After Replace ECU” in “Read/Write Configuration.” Write data stored in CONSULT with the “Before Replace ECU” function into the AV control unit.

>> GO TO 4.

3.MANUALLY WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Perform “Manual Configuration.” Refer to the Configuration List to write vehicle specification into the AV control unit. Refer to AV-376, "Configuration List".
NOTE:
If selection items are not displayed on the CONSULT screen, touch “NEXT.”

>> GO TO 4.

4.OPERATION CHECK

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

>> WORK END

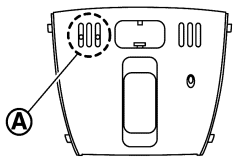
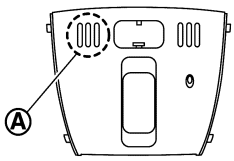
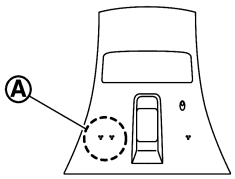
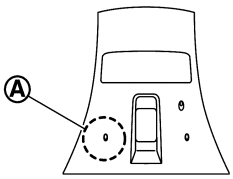
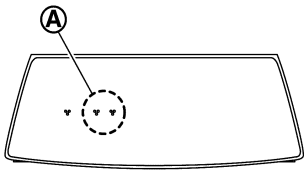
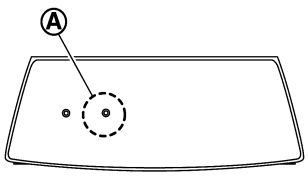
Configuration List

INFOID:0000000009721866

CAUTION:
Grasp vehicle specifications precisely. The control of ECU may not function normally if the specifications are misread.
NOTE:
- The items shown in this list depend on vehicle specifications.
- The config list may not be displayed depending on vehicle specifications. This is not a malfunction.

MANUAL SETTING ITEM		Detail
Items	Setting value	
STEERING	LHD	LHD models
	RHD	RHD models
CAMERA SYSTEM	REAR CAMERA	With rear view monitor system
	REAR+SIDE	With rear view monitor system and front-side view monitor function
SOUND SYSTEM	BASE	Without BOSE system
	BOSE	With BOSE system
MICROPHONE	DIRECTIONAL MIC	With directional microphone*
	NON-DIRECTIONAL MIC	With non-directional microphone*
AFFORDABLE ITS	WITH	With BSW and LDW
	WITHOUT	Without BSW and LDW

*: In the following table, find an illustration that the Ⓐ part matches the vehicle and select microphone type.

Directional microphone	Non-directional microphone
 JSNIA5541ZZ	 JSNIA5542ZZ
Ⓐ: Microphone installation position	Ⓐ: Microphone installation position
 JSNIA5543ZZ	 JSNIA5544ZZ
Ⓐ: Microphone installation position	Ⓐ: Microphone installation position
 JSNIA5545ZZ	 JSNIA5546ZZ
Ⓐ: Microphone installation position	Ⓐ: Microphone installation position

DTC/CIRCUIT DIAGNOSIS

U0428 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000009721867

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U0428	ST ANGLE SENSOR CALIBRATION	The neutral position adjustment of the steering angle sensor is incomplete.	• Neutral position of steering angle sensor is not yet adjusted • Steering angle sensor

NOTE:
If DTC “U0428” is detected along with DTC “U1232”, first diagnose the DTC “U1232”. Refer to AV-406, "CAMERA CONTROL UNIT : DTC Logic".

Diagnosis Procedure

INFOID:0000000009721868

1.ADJUST THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

When U0428 is detected, adjust the neutral position of the steering angle sensor.

>> Perform adjustment of the neutral position of the steering angle sensor. Refer to BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

CAUTION:
For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

U1000 CAN COMM CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Description

INFOID:0000000009721869

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-29, "CAN Communication Signal Chart".

AV CONTROL UNIT : DTC Logic

INFOID:0000000009721870

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009721871

1.PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-18, "Trouble Diagnosis Procedure".
NO >> Refer to GI-44, "Intermittent Incident".

CAMERA CONTROL UNIT

CAMERA CONTROL UNIT : Description

INFOID:0000000009721872

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-29, "CAN Communication Signal Chart".

CAMERA CONTROL UNIT : DTC Logic

INFOID:0000000009721873

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1000	CAN COMM CIRCUIT	Camera control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system

NOTE:
If “U1000” is detected, first diagnose the CAN communication system.

CAMERA CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009721874

1.PERFORM THE SELF-DIAGNOSIS

1. Start the engine.

2. Turn the LDW system ON, and then wait for 30 seconds or more.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U1000” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “U1000” detected as the current malfunction?

YES >> Refer to LAN-18, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-44, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:0000000009721875

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

CAMERA CONTROL UNIT

CAMERA CONTROL UNIT : Description

INFOID:0000000009721876

CAN controller controls the communication of CAN communication signal and the error detection.

CAMERA CONTROL UNIT : DTC Logic

INFOID:0000000009721877

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1010	CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Camera control unit

CAMERA CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009721878

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine.
2. Turn the LDW system ON.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U1010” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “U1010” detected as the current malfunction?

YES >> Replace the camera control unit. Refer to AV-464, "Removal and Installation".
NO >> INSPECTION END

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000009721879

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U111A	REAR CAMERA IMAGE SIGNAL	Camera image signal circuit is open or shorted.	• Camera image signal circuit between rear view camera and camera control unit • Camera control unit • Rear view camera

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch ON.
2. Shift the selector lever to “R” position.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U111A” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “U111A” detected as the current malfunction?

YES >> Refer to AV-382, "Diagnosis Procedure".
NO >> Refer to GI-44, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000009721880

1.CHECK CONTINUITY REAR VIEW CAMERA POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector and rear view camera connector.
3. Check continuity between camera control unit harness connector and rear view camera harness connector.

Camera control unit		Rear view camera		Continuity
Connector	Terminals	Connector	Terminals	
B93	50	D168	8	Existed
	52		7	

4. Check continuity between camera control unit harness connector and ground.

Camera control unit		Ground	Continuity
Connector	Terminal		
B93	50		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE REAR VIEW CAMERA POWER SUPPLY

1. Connect camera control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Check voltage between camera control unit harness connector and ground.

Terminal				Standard voltage	Reference voltage (Approx.)
(+)		(–)			
Camera control unit					
Connector	Terminal	Connector	Terminal		
B93	50	B93	52	5.0 - 9.0 V	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace camera control unit. Refer to AV-464, "Removal and Installation".

3.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect camera control unit connector and rear view camera connector.
3. Check continuity between camera control unit harness connector and rear view camera harness connector.

Camera control unit		Rear view camera		Continuity
Connector	Terminals	Connector	Terminals	
B93	53	D168	5	Existed
	54		1	

4. Check continuity between camera control unit harness connector and ground.

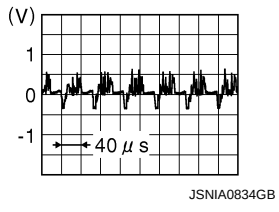
Camera control unit		Ground	Continuity
Connector	Terminals		
B93	53		Not existed
	54		

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK CAMERA IMAGE SIGNAL

1. Connect camera control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Check signal between camera control unit harness connector.

Terminal				Reference value
(+)		(–)		
Camera control unit				
Connector	Terminal	Connector	Terminal	
B93	53	B93	54	

JSNIA0834GB

Is inspection result normal?

YES >> Replace camera control unit. Refer to AV-464, "Removal and Installation".
NO >> Replace rear view camera. Refer to AV-466, "Removal and Installation (Models without BSW and LDW)".

U1200 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721881

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

U1201 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721882

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1201	GYRO NO CONN [U1201]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

U1202 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721883

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1202	G-SENSOR NO CONN [U1202]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

U1204 AV CONTROL UNIT

Description

INFOID:0000000009721884

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

DTC Logic

INFOID:0000000009721885

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1204	GPS CONN [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721886

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “Self Diagnostic Results” of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-448, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1205 AV CONTROL UNIT

Description

INFOID:0000000009721887

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

DTC Logic

INFOID:0000000009721888

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1205	GPS ROM [U1205]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721889

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “Self Diagnostic Results” of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-448, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1206 AV CONTROL UNIT

Description

INFOID:0000000009721890

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

DTC Logic

INFOID:0000000009721891

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1206	GPS RAM [U1206]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721892

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “Self Diagnostic Results” of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-448, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1207 AV CONTROL UNIT

Description

INFOID:0000000009721893

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

DTC Logic

INFOID:0000000009721894

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1207	GPS RTC [U1207]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721895

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “Self Diagnostic Results” of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-448, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1216 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721896

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

U1217 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721897

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1217	BLUETOOTH MODULE [U1217]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

U1218 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721898

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1218	HDD CONN [U1218]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721899

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U1219 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721900

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1219	HDD READ [U1219]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721901

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U121A AV CONTROL UNIT

DTC Logic

INFOID:0000000009721902

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121A	HDD WRITE [U121A]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721903

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U121B AV CONTROL UNIT

DTC Logic

INFOID:0000000009721904

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121B	HDD COMM [U121B]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721905

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U121C AV CONTROL UNIT

DTC Logic

INFOID:0000000009721906

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121C	HDD ACCESS [U121C]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721907

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U121D AV CONTROL UNIT

DTC Logic

INFOID:0000000009721908

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121D	DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721909

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U121E AV CONTROL UNIT

DTC Logic

INFOID:0000000009721910

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121E	DSP COMM [U121E]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721911

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U1225 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721912

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1225	USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.

U1227 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721913

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1227	DVD COMM [U1227]	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

Diagnosis Procedure

INFOID:0000000009721914

1.CHECK PLAYBACK OF A DISK (DVD)

Can a disc (DVD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U1228 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721915

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1228	SUB CPU CONN [U1228]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

U1229 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721916

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1229	iPod CERTIFICATION [U1229]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

U122A AV CONTROL UNIT

DTC Logic

INFOID:0000000009721917

DTC	Display contents of CONSULT	DTC detection condition	Action to take
U122A	CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT.

Diagnosis Procedure

INFOID:0000000009721918

1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with CONSULT.

>> Write configuration data with CONSULT. Refer to AV-327, "CONSULT Function".

U122E AV CONTROL UNIT

DTC Logic

INFOID:0000000009721919

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U122E	Built-in AUDIO CONN [U122E]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

U1232 STEERING ANGLE SENSOR

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:0000000009721920

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009721921

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

CAMERA CONTROL UNIT

CAMERA CONTROL UNIT : DTC Logic

INFOID:0000000009721922

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1232	ST ANGLE SEN CALIB	The neutral position registration of the steering angle sensor can not finish.	• Steering angle sensor • Camera control unit

CAMERA CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009721923

1.REGISTER THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

1. Turn the ignition switch ON.
2. Perform registration of the neutral position of the steering angle sensor. Refer to BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".
3. Check “Self Diagnostic Result” of “AVM” with CONSULT.

Is “U1232” detected as the current malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2.CHECK STEERING ANGLE SENSOR

Check steering angle sensor.

Is the inspection result normal?

YES >> Replace the camera control unit. Refer to AV-464, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

U1243 DISPLAY UNIT

DTC Logic

INFOID:0000000009721924

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuits are malfunctioning. • serial communication circuits between display unit and AV control unit are malfunctioning.	• Display unit power supply and ground circuits. • Serial communication circuits between display unit and AV control unit.

Diagnosis Procedure

INFOID:0000000009721925

1.CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to AV-419, "DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M195	9	M180	89	Existed
	10		73	

4. Check continuity between display unit harness connector and ground.

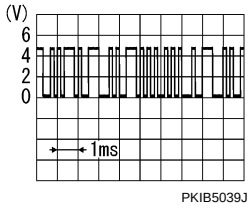
Display unit		Ground	Continuity
Connector	Terminals		
M195	9		Not existed
	10		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

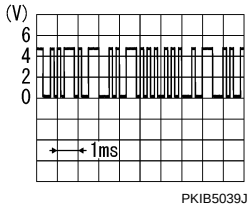
(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M195	9	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M195	10	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace display unit. Refer to AV-449, "Exploded View".

U1244 GPS ANTENNA

DTC Logic

INFOID:0000000009721926

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

Diagnosis Procedure

INFOID:0000000009721927

1.GPS ANTENNA CHECK

Visually check GPS antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Trun ignition switch OFF.
2. Disconnect GPS antenna connector.
3. Turn ignition switch ON.
4. Check voltage between AV control unit and ground.

(+) AV control unit Terminal	(–)	Voltage (Approx.)
153	Ground	5.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U1258 SATELLITE RADIO ANTENNA

DTC Logic

INFOID:0000000009721928

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1258	XM ANTENNA CONN [U1258]	Satellite radio antenna connection malfunction is detected.	• Satellite radio antenna feeder. • Antenna base.

Diagnosis Procedure

INFOID:0000000009721929

1. SATELLITE RADIO ANTENNA CHECK

Visually check antenna base and satellite radio antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2. CHECK AV CONTROL UNIT VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect satellite radio antenna connector.
3. Turn ignition switch ON.
4. Check voltage between AV control unit terminal and ground.

(+) AV control unit Terminal	(–)	Voltage (Approx.)
159	Ground	5.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U1263 USB

DTC Logic

INFOID:0000000009721930

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1263	USB OVERCURRENT [U1263]	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.

Diagnosis Procedure

INFOID:0000000009721931

1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-448, "Exploded View".
NO >> Replace USB harness.

U1264 ANTENNA AMP.

DTC Logic

INFOID:0000000009721932

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1264	ANTENNA AMP TERMINAL [U1264]	Radio antenna amp. ON circuit is open or shorted.	Check antenna amp. ON signal circuit between the AV control unit and radio antenna amp.

Diagnosis Procedure

INFOID:0000000009721933

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND ANTENNA BASE

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and antenna base connector.
3. Check continuity between AV control unit harness connector and antenna base harness connector.

AV control unit		Antenna base		Continuity
Connector	Terminals	Connector	Terminals	
M385	152	M394	1	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M385	152		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE AV CONTROL UNIT

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

(+)		(–)	Voltage (Approx.)
AV control unit			
Connector	Terminals		
M385	152	Ground	12.0 V

Is the inspection result normal?

YES >> Replace antenna base. Refer to AV-468, "Exploded View".
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U1265 BOSE AMP.

DTC Logic

INFOID:0000000009721934

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1265	AMP ON TERMINAL [U1265]	BOSE amp. ON signal circuit is open or shorted.	Check BOSE amp. ON signal circuit between the AV control unit and BOSE amp.

Diagnosis Procedure

INFOID:0000000009721935

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND BOSE AMP.

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and BOSE amp. connector.
3. Check continuity between AV control unit harness connector and BOSE amp. harness connector.

AV control unit		BOSE amp.		Continuity
Connector	Terminals	Connector	Terminals	
M178	1	B225	20	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M178	1		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE AV CONTROL UNIT

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

(+)		(–)	Voltage (Approx.)
AV control unit			
Connector	Terminals		
M178	1	Ground	12.0 V

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to AV-456, "Exploded View".
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

U1300 AV COMM CIRCUIT

Description

INFOID:0000000009721936

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.

U1305 CONFIG UNFINISH

DTC Logic

INFOID:0000000009721937

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1305	CONFIG UNFINISH	The vehicle specifications of camera control unit is incomplete.	Vehicle specifications for camera control unit is incomplete

NOTE:
Current malfunction is displayed only and is not saved.

Diagnosis Procedure

INFOID:0000000009721938

1.PERFORM CONFIGURATION OF CAMERA CONTROL UNIT

Perform configuration of camera control unit when DTC U1305 is detected.

>> Perform configuration of camera control unit. Refer to DAS-52, "Work Procedure".

U1308 REAR CAMERA

DTC Logic

INFOID:0000000009721939

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U1308	R-CAMERA (R&L) CALIB JDGMNT	Camera image calibration is incomplete	• Calibration for camera image is incomplete • Camera communication line is open

NOTE:
If DTC U1308 is detected along with DTC U130B, first diagnose the DTC U130B. Refer to AV-417, "DTC Logic".

Diagnosis Procedure

INFOID:0000000009721940

1.PERFORM CALIBRATION OF CAMERA IMAGE

Perform calibration of camera image when DTC U1308 is detected.

>> Perform calibration of camera image. Refer to DAS-53, "Work Procedure (Preparation)".

U130B REAR CAMERA

DTC Logic

INFOID:0000000009721941

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detecting condition	Possible causes
U130B	REAR CAMERA COMM ERROR	Camera control unit receives the incorrect communication signal from rear camera unit	• Rear view camera • Camera control unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn the ignition switch ON.
2. Shift the selector lever to “R” position.
3. Perform “All DTC Reading” with CONSULT.
4. Check if the “U130B” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “U130B” detected as the current malfunction?

YES >> Refer to AV-417, "Diagnosis Procedure".
NO >> Refer to GI-44, "Intermittent Incident".

Diagnosis Procedure

INFOID:0000000009721942

1.REPLACE REAR VIEW CAMERA

1. Turn ignition switch OFF.
2. Replace the rear view camera. Refer to AV-465, "Removal and Installation (Models with BSW and LDW)".
3. Turn ignition switch ON.
4. Erases All self-diagnosis results.
5. Shift selector lever to “R” position.
6. Perform “All DTC Reading” again.
7. Check if the “U130B” is detected in self-diagnosis results of “AVM”.

Is inspection result normal?

YES >> Refer to INSPECTION END.
NO >> Replace camera control unit. Refer to AV-464, "Removal and Installation".

U1310 AV CONTROL UNIT

DTC Logic

INFOID:0000000009721943

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-448, "Exploded View".

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009721944

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M178	19	OFF	Battery voltage
ACC power supply		7	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M178	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

DISPLAY UNIT

DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000009721945

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M195	11	OFF	Battery voltage
ACC power supply		23	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between display unit and fuse.

3.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M195	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE AMP.

BOSE AMP. : Diagnosis Procedure

INFOID:0000000009721946

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	23
	24

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B224	10	OFF	Battery voltage
		11		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B224	7	OFF	Existed
		12		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

CAMERA CONTROL UNIT

CAMERA CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009721947

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery power supply	6
Ignition signal	3

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK CAMERA CONTROL UNIT POWER SUPPLY CIRCUIT

Check voltage between camera control unit harness connector and ground.

Terminal				Condition	Standard voltage	Reference voltage (Approx.)
(+)		(–)				
Camera control unit				Ignition switch		
Connector	Terminal	Connector	Terminal			
B92	2	B92	1	OFF	9.5 - 16 V	Battery voltage
	3			OFF	0 - 0.1 V	0 V
				ON	9.5 - 16 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair the camera control unit power supply circuit.

3.CHECK CAMERA CONTROL UNIT GROUND CIRCUIT

1. Turn the ignition switch OFF.
2. Disconnect the camera control unit connector.
3. Check for continuity between camera control unit harness connector and ground.

Camera control unit		Ground	Continuity
Connector	Terminal		
B92	1		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair the camera control unit ground circuit.

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721948

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the display unit.
- AV control unit receives the image signal from the auxiliary input jacks and USB (video data) and then transmits it to the display unit.

Diagnosis Procedure

INFOID:0000000009721949

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M180	68	M195	18	Existed

4. Check continuity between AV control unit harness connector and ground.

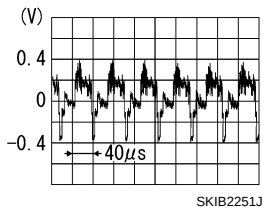
AV control unit		Ground	Continuity
Connector	Terminal		
M180	68		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between AV control unit harness connector and ground.

(+)		(–)	Condition	Reference value
AV control unit				
Connector	Terminal			
M180	68	Ground	At DVD image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-449, "Exploded View".
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

RGB DIGITAL IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721950

Transmit the image displayed with AV control unit with RGB digital image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721951

1.CHECK CONTINUITY RGB DIGITAL IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M388	27	M387	157	Existed
	28		158	

4. Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminals		
M388	27		Not existed
	28		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB DIGITAL IMAGE SIGNAL

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Display unit				
Connector	Terminal			
M388	27	Ground	—	3.0 V
	28			

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-449, "Exploded View".
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

AUX IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721952

- Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the display unit.

Diagnosis Procedure

INFOID:0000000009721953

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and AV control unit connector.
3. Check continuity between auxiliary input jacks harness connector and AV control unit harness connector.

Auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M253	7	M179	26	Existed

4. Check continuity between auxiliary input jacks harness connector and ground.

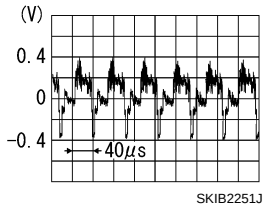
Auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M253	7		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Auxiliary input jacks				
Connector	Terminal			
M253	7	Ground	At AUX image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-448, "Exploded View".
NO >> Check that there is no malfunction in the external device.

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009721954

- When receiving a reverse signal, the AV control unit supplies power to rear view camera.
- The rear view camera transmits a camera image signal to the display unit.

Diagnosis Procedure

INFOID:0000000009721955

1.CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M179	22	D192	1	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M179	22		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Disconnect display unit connector and rear view camera connector.
2. Check continuity between display unit harness connector and rear view camera harness connector.

Display unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M195	8	D192	3	Existed

3. Check continuity between display unit harness connector and ground.

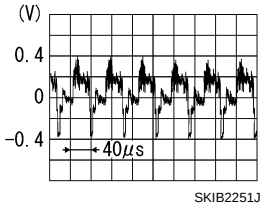
Display unit		Ground	Continuity
Connector	Terminal		
M195	8		Not existed

Is inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK CAMERA IMAGE SIGNAL

1. Connect display unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M195	8	Ground	At camera image is displayed.	 SKIB2251J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-449, "Exploded View".
NO >> Replace rear view camera. Refer to AV-465, "Exploded View (Models without BSW and LDW)".

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000009721956

The eject signal is output to AV control unit when the eject switch of multifunction switch is pressed.

Diagnosis Procedure

INFOID:0000000009721957

1.CHECK CONTINUITY DISK EJECT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector and AV control unit connector.
3. Check continuity between multifunction switch harness connector and AV control unit harness connector.

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M125	14	M179	29	Existed

4. Check continuity between multifunction switch harness connector and ground.

Multifunction switch		Ground	Continuity
Connector	Terminal		
M125	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect multifunction switch connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M179	29	Ground	Pressing the eject switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-458, "Exploded View".
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000009721958

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

Diagnosis Procedure

INFOID:0000000009721959

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and microphone connector.
3. Check continuity between AV control unit harness connector and microphone harness connector.

AV control unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
M180	71	R20	2	Existed
	72		4	
	87		1	

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M180	72		Not existed
	87		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

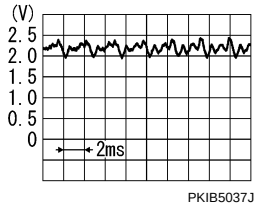
(+)		(–)	Voltage (Approx.)
AV control unit		Ground	
Connector	Terminal		
M180	72		5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between AV control unit harness connector.

(+)		(–)		Condition	Reference value
AV control unit		AV control unit			
Connector	Terminal	Connector	Terminal		
M180	87	M180	71	Give a voice.	

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Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-448, "Exploded View".
NO >> Replace microphone. Refer to AV-462, "Exploded View".

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000009721960

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009721961

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M178	6	M33	24	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M178	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-15, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit				
Connector	Terminal	Connector	Terminal	
M178	6	M178	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-430, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-459, "Exploded View".

Component Inspection

INFOID:0000000009721962

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

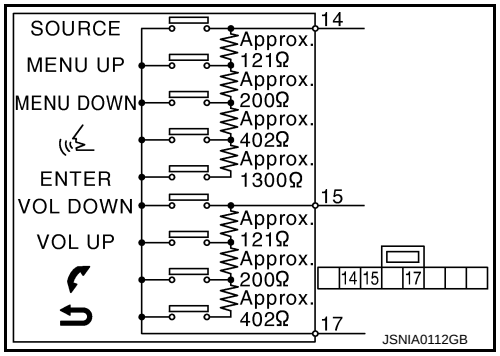
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000009721963

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009721964

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M178	16	M33	31	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M178	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-15, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit				
Connector	Terminal	Connector	Terminal	
M178	16	M178	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-432, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-459, "Exploded View".

Component Inspection

INFOID:0000000009721965

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

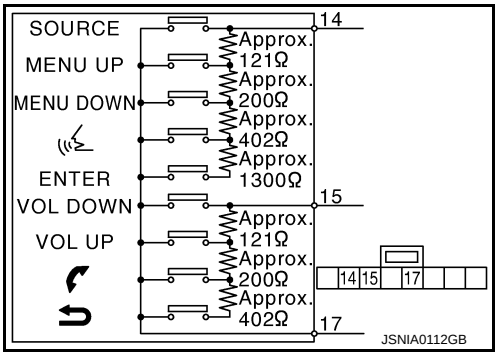
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



STEERING SWITCH GROUND CIRCUIT

Description

INFOID:0000000009721966

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009721967

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and spiral cable connector.
3. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M178	15	M33	33	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-15, "Exploded View".

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M178	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-448, "Exploded View".

4.CHECK STEERING SWITCH

Check steering switch. Refer to AV-434, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-459, "Exploded View".

Component Inspection

INFOID:0000000009721968

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

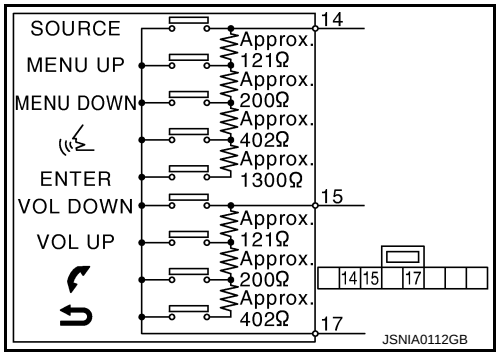
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000009721969

RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT is started.	• Multifunction switch power supply and ground circuit malfunction. • AV communication circuit between AV control unit and multifunction switch. Perform “Self Diagnostic Result” of “MULTI AV” with CONSULT. Refer to AV-327, "CONSULT Function".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT is started.	AV control unit power supply and ground circuit malfunction. Refer to AV-419, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-315, "On Board Diagnosis Function".
Fuel economy display is abnormal.	There is malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-340, "DTC Index".
	There is no malfunction in the CONSULT “self-diagnosis results” of “MULTI AV”.	Ignition signal circuit malfunction.
Guide sound is not heard or too low.	On the setting display select “system sound (guide sound volume, etc.),” and confirm that guide sound is ON.	AV control unit malfunction. Replace AV control unit. Refer to AV-448, "Exploded View".

RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

- 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 checking that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.
   NOTE:
   The customer's phone may be required, depending upon their concern.
3. 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.
4. Go to “www.nissanusa.com/bluetooth/”.

a. Using the website's search engine, find out if the customer's phone is on the approved list.

b. 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.

c. 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” list.

d. 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.	AV control unit malfunction. Replace AV control unit. Refer to AV-448, "Exploded View".
Hands-free phone cannot be established.	• Hands-free phone operation can be made, but the communication cannot be established. • Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.	
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.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-428, "Diagnosis Procedure".
The system cannot be operated.	• The voice recognition can be controlled. • Steering switch's ”VOL UP”, “VOL DOWN” and “↩” switch works, but “📞” it does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-459, "Exploded View".
	Steering switch's “📞”, ”VOL UP”, “VOL DOWN” and “↩” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-432, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-434, "Diagnosis Procedure".

RELATED TO HANDS-FREE PHONE (FOR MEXICO)

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.	AV control unit malfunction. Replace AV control unit. Refer to AV-448, "Exploded View".
Hands-free phone cannot be established.	• Hands-free phone operation can be made, but the communication cannot be established. • Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.	
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.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-428, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
The system cannot be operated.	• The voice recognition can be controlled. • Steering switch's ”VOL UP”, “VOL DOWN” and “↩” switch works, but “📞” it does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-459, "Exploded View".
	Steering switch's “📞”, ”VOL UP”, “VOL DOWN” and “↩” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-432, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-434, "Diagnosis Procedure".

RELATED TO CAMERA

Models without BSW and LDW

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (Vehicle width and predictive course line are displayed.)	—	Camera image signal circuit. Refer to AV-425, "Diagnosis Procedure".
Camera image does not switch.	“Reverse” is not turned ON on “Vehicle Signals” screen of “Confirmation/Adjustment”.	Reverse signal circuit malfunction.
	“Reverse” is turned ON on “Vehicle Signals”screen of “Confirmation/Adjustment”.	AV control unit malfunction. Replace AV control unit. Refer to AV-448, "Exploded View".

Models with BSW and LDW

Symptoms	Check items	Probable malfunction location
Camera image is not displayed. (Only warning message under area is displayed.)	—	Reverse signal circuit malfunction (camera control unit).
Camera image does not switch.	—	Reverse signal circuit malfunction (AV control unit).

RELATED TO VOICE CONTROL

Symptoms	Check items	Probable malfunction location
The voice cannot be controlled even if the voice control screen is displayed.	Voice sounds at “Voice Microphone Test” of Confirmation/Adjustment mode.	AV control unit malfunction. Replace AV control unit. Refer to AV-448, "Exploded View".
	Voice does not sound at “Voice Microphone Test” of Confirmation/Adjustment mode.	Microphone signal circuit malfunction. Refer to AV-428, "Diagnosis Procedure".
The voice cannot be controlled (Voice control screen is not displayed).	• Hands-free phone system can be operated. • Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN” and “ENTER” switch works, but “🎤” it does not work.	Steering switch malfunction. Replace steering switch. Refer to AV-459, "Exploded View".
	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “🎤” and “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-430, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-434, "Diagnosis Procedure".

RELATED TO RGB IMAGE

Symptoms	Check items	Probable malfunction location
RGB image is not shown.	—	RGB digital image signal circuit malfunction. Refer to AV-423, "Diagnosis Procedure".

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-427, "Diagnosis Procedure".
No sound comes out or the level of the sound is low.	No sound from all speakers.	• BOSE amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction. Refer to AV-420, "BOSE AMP. : Diagnosis Procedure".
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and BOSE amp. • Sound signal circuit malfunction between BOSE amp. and speaker. • Malfunction in speaker. • Malfunction in AV control unit. • Malfunction in BOSE amp.
Noise is mixed with audio.	Noise comes out from all speakers.	• Malfunction in AV control unit. • Malfunction in BOSE amp.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and BOSE amp. • Sound signal circuit malfunction between BOSE amp. and speaker. • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in AV control unit. • Malfunction in BOSE amp.
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	• Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-468, "Exploded View"
Radio is not received or poor reception.	• Other audio sounds are normal. • Any radio 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).	• Antenna amp. ON signal circuit malfunction. • Poor connector connection of antenna or antenna feeder. • Loose antenna base mounting nut. Refer to AV-468, "Exploded View"
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to AV-327, "CONSULT Function".	• Malfunction in antenna, antenna feeder, or AV control unit. Perform DTC diagnosis. Refer to AV-340, "DTC Index". • Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder.
	There is no malfunction in the CONSULT self-diagnosis result. Refer to AV-327, "CONSULT Function".	• Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. • Loose satellite radio antenna mounting nut. Refer to AV-468, "Exploded View".

RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-434, "Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to AV-459, "Exploded View".
Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “” and “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-430, "Diagnosis Procedure".
Steering switch's “”, “VOL UP”, “VOL DOWN” and “” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-432, "Diagnosis Procedure".

RELATED TO USB

NOTE:

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	• USB harness malfunction. • USB connector malfunction.

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

RELATED TO DVD MODE

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-427, "Diagnosis Procedure".
DVD image is not displayed.	—	Perform “Self Diagnostic Result” of “MULTI AV” with CONSULT. Refer to AV-327, "CONSULT Function". When detecting no malfunction in those components, the following items are a possible cause. • Composite image signal circuits malfunction. Refer to AV-422, "Diagnosis Procedure".
DVD sound is not heard.	No sound from all speakers and woofer.	• Amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction. Refer to AV-420, "BOSE AMP. : Diagnosis Procedure".
	Sound is heard only from specific places.	Sound signals circuit of suspect system.

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuit.
Image is not displayed when AUX mode is selected.	DVD image is displayed.	AUX image signal circuit malfunction. Refer to AV-424, "Diagnosis Procedure".
	DVD image is not displayed.	Composite image signal circuit between AV control unit and display unit. Refer to AV-422, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000009721970

NOTE:
For Navigation system operation information, refer to Navigation system Owner's Manual.

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press “DISC-AUX” to change the mode.
	The display is turned off.	Press “☀/☽” to turn on the display.
	The interior of the vehicle becomes the a little less than 80°C (176°F) or high temperature, and the protection of the display acts, and a display is turned off.	Wait until the interior of the vehicle has cooled down.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
No voice guidance is available. Or The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
	Voice guidance is not provided for certain streets (roads displayed in gray).	This is not a malfunction.
No map is displayed on the screen.	A screen other than map screen is displayed.	Press “MAP”.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

NOTE:
Locations stored in the Address Book and other memory functions may be lost if the vehicle's battery is disconnected or becomes discharged. If this occurs, service the vehicle's battery as necessary and re-enter the information in the Address Book.

RELATED TO VOICE RECOGNITION

Related to Basic Operation

Symptom	Possible cause	Possible solution
The system does not recognize your command. or The system recognizes your command incorrectly	The interior of the vehicle is too noisy.	Close the windows or have other occupants quiet.
	The volume of your voice is too low.	Speak louder.
	The volume if your voice is too loud.	Speak softer.
	Your pronunciation is unclear.	Speak clearly.
	You are speaking before the voice recognition is ready	Press and release “” switch on the steering switch, and speak a command after the tone sounds.
	8 seconds or more have passed after you pressed and released “” switch on the steering switch.	Make sure to speak a command within 8 seconds after you press and release “” switch on the steering switch.
	Only a limited range of voice commands is usable for each screen.	Use a correct voice command appropriate for the current screen.
	The fan of the air conditioner is too loud.	Lower the fan speed as necessary as voice command can be recognized more easily.

Related to Item Choice
The system should respond correctly to all voice commands without difficulty. If problems are encountered, follow the solutions given in this guide for the appropriate error.

Where the solutions are listed by number, try each solution in turn, starting with number one, until the problem is resolved.

Symptom/ error message	Solution
Displays “COMMAND NOT RECOGNIZED” or the system fails to interpret the command correctly.	1. Ensure that the command format is valid.
	2. Speak clearly without pausing between words and at a level appropriate to the ambient noise level.
	3. Ensure that the ambient noise level is not excessive, for example, windows open or defrost on. **NOTE:** If it is too noisy to use the phone, it is likely that voice commands will not be recognized.
	4. If optional words of the command have been omitted, then command should be tried with these in place.
The system consistently selects the wrong voicetag	1. Ensure that the voicetag requested matches what was originally stored. This can be confirmed by giving the “Addressbook” Directory or Phone Directory command.
	2. Replace one of the voicetags being confused with a different voicetag.

Related to Telephone

The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. Refer to “Speaker adaptation (SA) mode” in “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- 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 then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA, AAC, M4A) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3 (.mp3)", ".WMA (.wma)", ".AAC (.aac)" or ".M4A (.m4a)" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA/AAC/M4A writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA/AAC CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA/AAC file has been given an extension of ".MP3 (.mp3)", ".WMA (.wma)", ".AAC (.aac)" or ".M4A (.m4a)" or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

NOTE:

- 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 a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

RELATED TO DVD

Symptom	Possible cause	Possible solution
Not working as operated	Some operations may be rejected or may not function as intended because of the manufacturer's intent, depending on DVD.	This is not a malfunction.
Operation not accepted	If a requested operation is prohibited, then a message is displayed on the screen. (Message display depends on DVD.)	This is not a malfunction.

Symptom	Possible cause	Possible solution
DVD can not be played	Check that the DVD is inserted in the right place.	Upturn the DVD (facing the title upward).
	Check that there is no condensation inside the player.	Wait until the condensation evaporates (approximately one hour).
	DVD menu is displayed.	Select item to touch “ENTER”.
	Insertion of a DVD with a different region code.	DVDs with a different region code can not be played. Check DVD.
	Some DVD softwares may not be played because not all DVD softwares fully comply in the standard.	This is not a malfunction.
DVD-AUDIO can not be played	DVD-AUDIO may not be playable depending on the vehicle specifications.	This is not a malfunction.
Interruption during playback or flicker in the display	Check that the DVD has no scratches and dirt.	Errors may not be corrected depending on the size of scratches.
		Wipe and clean the dirt on the disc.
Subtitles not shown	Subtitle setting is OFF.	Set subtitle.
	Subtitle is not included in the software.	Check DVD.
Not played in set language	If a language is not included in the DVD, then the DVD is played in a recommended language.	Check DVD.
Not played with set subtitle	If a set subtitle is not included in the DVD, then the DVD is played with a recommended subtitle.	Check DVD.
Angle unchangeable	Plural angles are not recorded in the software.	Check if the DVD is multi–angle capable.
Unusual screen display	Display mode to the output aspect ratio for the DVD software is inappropriate.	Switch to the appropriate display mode.
Distortion in picture	In the process of fast–forward or fast–reverse.	This is not a malfunction.
Low sound quality	Check that the DVD has no scratches and dirt.	Wipe and clean the dirt on the disc.
Subtitle and language not selectable (not played with set subtitle or in set language)	The DVD is not multilanguage–capable.	The inclusion of the number of languages depends on DVD. Languages may be selectable on the Menu screen. Check DVD.
	The DVD has a priority language or setting.	If the DVD has a priority language or settings, then settings changed with this device are not reflected.
Playback time is indicated, but no sound comes out.	Playback of Mix mode Truck 1. (Mix mode: Format including Truck 1 with data other than music and Trucks from Truck 2 with music data.)	Play music data included in trucks from Truck 2.

RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads differ between Plan View and Birdview™.	This is because the quantity of the displayed information is reduced so that the screen does not become too crowded. There is also a chance that names of the roads may be displayed multiple times, and the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was pressed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is traveling on a new road, the vehicle icon is located on another road nearby.	Because the new road is not stored in the map data, the system automatically places the vehicle icon on the nearest road available.	Updated road information will be included in the next version of the map data.

Symptom	Possible cause	Possible solution
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using <Day/Night> when you turn on the headlights.
The map does not scroll even when the vehicle is moving.	The current location map screen is not displayed.	Press “MAP”.
The vehicle icon is not displayed.	The current location map screen is not displayed.	Press “MAP”.
The location of the vehicle icon is misaligned from the actual position.	When using tire chains or replacing the tires, speed calculations based on the speed sensor may be incorrect.	Drive the vehicle for a while [at approximately 30 km/h (19 MPH) for about 30 minutes] to automatically correct the vehicle icon position. If this does not correct the vehicle icon position, contact an INFINITI dealer.
	The map data has a mistake or is incomplete (the vehicle icon position is always misaligned in the same area).	Updated road information will be included in the next version of the map data.

RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
Waypoints are not included in the auto reroute calculation.	Waypoints that you have already passed are not included in the auto reroute calculation.	If you want to go to that waypoint again, you need to edit the route.
Route information is not displayed.	Route calculation has not yet been performed.	Set the destination and perform route calculation.
	You are not driving on the suggested route.	Drive on the suggested route.
	Route guidance is set to off.	Turn on route guidance.
	Route information is not provided for certain types of roads (roads displayed in gray).	This is not a malfunction.
The auto reroute calculation (or detour calculation) suggests the same route as the one previously suggested.	Route calculations took priority conditions into consideration, but the same route was calculated.	This is not a malfunction.
A waypoint cannot be added.	Five waypoints are already set on the route, including ones that you have already passed.	A maximum of 5 waypoints can be set on the route. If you want to go to 6 or more waypoints, perform route calculations multiple times as necessary.
The suggested route is not displayed.	Roads near the destination cannot be calculated.	Reset the destination to a main or ordinary road, and recalculate the route.
	The starting point and destination are too close.	Set a more distant destination.
	The starting point and destination are too far away.	Divide your trip by selecting one or two intermediate destinations, and perform route calculations multiple times.
	There are time restricted roads (by the day of the week, by time) near the current vehicle location or destination.	Set [Use Time Restricted Roads] to off.
The part of the route that you have already passed is deleted.	A route is managed by sections between waypoints. If you passed the first waypoint, the section between the starting point and the waypoint is deleted. (It may not be deleted depending on the area.)	This is not a malfunction.
An indirect route is suggested.	If there are restrictions (such as one-way streets) on roads close to the starting point or destination, the system may suggest an indirect route.	Adjust the location of the starting of the starting point or destination.
	The system may suggest an indirect route because route calculation does not take into consideration some areas such as narrow streets (gray roads.)	Reset the destination to a main or ordinary road, and recalculate the route.

Symptom	Possible cause	Possible solution
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect map data.	Updated information will be included in the next version of the data.
The suggested route does not exactly connect to the starting point, waypoints, or destination.	There is no data for route calculation closes to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available	Voice guidance is only available at certain intersections marked with? In some case, voice guidance is not available even when the vehicle should make a turn.	This is not a malfunction.
	The vehicle has deviated from the suggested route.	Go back to the suggested route or request route calculation again
	Voice guide is set to off.	Turn on voice guidance.
	Route guidance is set to off.	Turn on voice guidance.
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.

RELATED TO TRAFFIC INFORMATION

Symptom	Possible cause	Possible solution
The traffic information is not displayed	The traffic information is not set to on.	Set the traffic information to on.
	You are in an area where traffic information is not available	Scroll to an area where traffic information is available
	You have not subscribed to XM NavTraffic or, your subscription to XM NavTraffic has expired.	Check your subscription status of XM NavTraffic.
	The map scale is set at a level where the display of icons is impossible.	Check that the map scale is set at a level in which the display of icons is possible.
With the automatic detour route search ON, no detour route is set to avoid congested areas.	There is no faster route compared to the current route, based on the road network and traffic information.	The automatic detour search is not intended for avoiding traffic jams. It searches for the fasted rote taking into consideration such things as traffic jams.
The route does not avoid road section with traffic information stating it is closed due to road construction.	The navigation system is designed not to avoid this event because the actual period of closure may differ from the declared roadwork period.	Observe the actual road condition and follow the instructions on road for detour when necessary. If the road closure is for certain, use detour function and set the detour distance to avoid the closed road section.
Traffic information displayed differs from information from other media (e.g. radio).	Other media may use different information sources.	Observe the actual road conditions and regulations. Always observe safe driving practices and follow all traffic regulations.

RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

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. Refer to “RELATED TO HANDS-FREE PHONE (Check Compatibility)” of MULTI AV SYSTEM SYMPTOM.
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. • The vehicle is outside of the telephone service area. • 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. • The cellular phone is locked to prevent it from being dialed. **NOTE:** 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.
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 HANDS-FREE PHONE (FOR MEXICO)

Symptom	Cause and Counter measure
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. • The vehicle is outside of the telephone service area. • 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. • The cellular phone is locked to prevent it from being dialed. **NOTE:** 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.
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

AV CONTROL UNIT

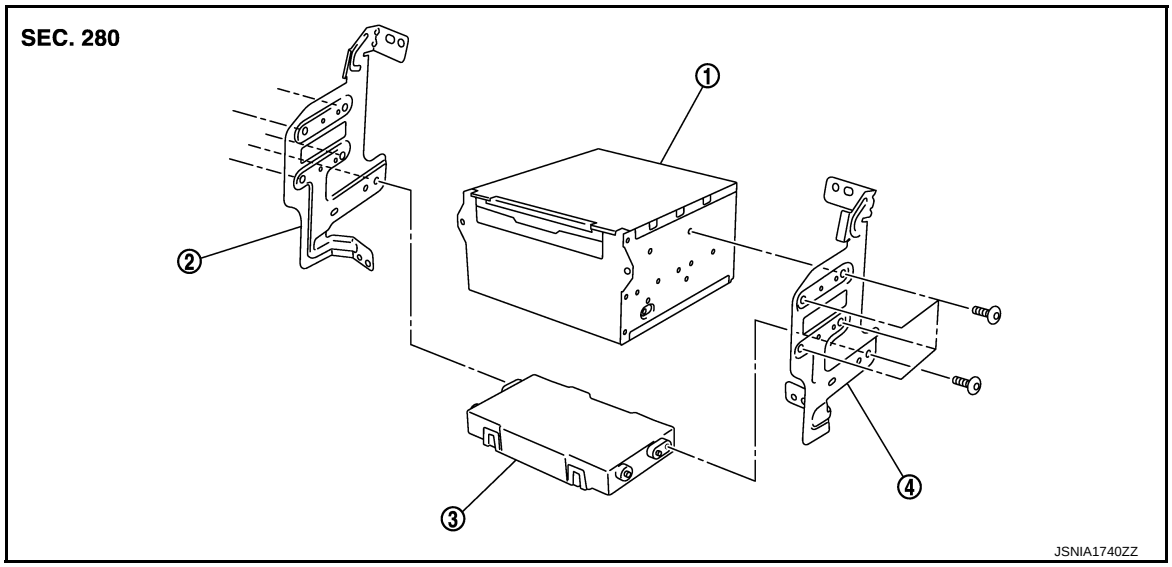
Exploded View

INFOID:0000000009721971

CAUTION:
Before replacing AV control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-375, "Description".

REMOVAL
Refer to IP-14, "Exploded View".

DISASSEMBLY



1. AV control unit
2. Bracket LH
3. A/C auto amp.
4. Bracket RH

Removal and Installation

INFOID:0000000009721972

REMOVAL
CAUTION:
Before replacing AV control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-375, "Description".

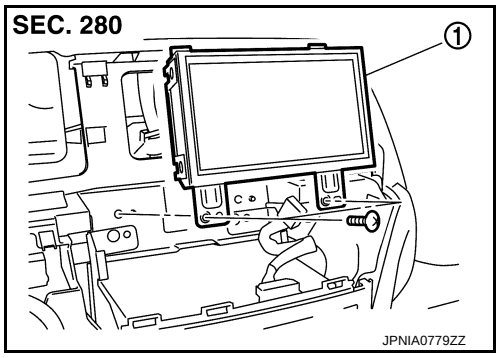
1. Remove cluster lid C. Refer to IP-14, "Exploded View".
2. Remove AV control unit with an A/C auto amp. as a single unit from the vehicle.
3. Remove bracket screws, and then remove AV control unit.

INSTALLATION
Install in the reverse order of removal.
CAUTION:
Be sure to perform “Read/Write Configuration” when replacing AV control unit. For details, refer to AV-376, "Work Procedure".

DISPLAY UNIT

Exploded View

INFOID:0000000009721973



1. Display unit

Removal and Installation

INFOID:0000000009721974

REMOVAL

1. Remove center ventilator assembly. Refer to IP-14, "Exploded View".
2. Remove display unit with bracket as a single unit.

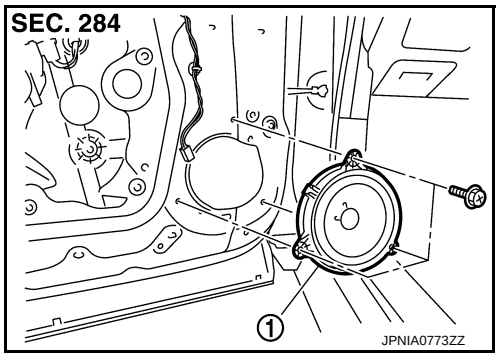
INSTALLATION

Install in the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000009721975



1. Front door speaker

Removal and Installation

INFOID:0000000009721976

REMOVAL

1. Remove front door finisher. Refer to INT-13, "FRONT DOOR FINISHER : Exploded View".
2. Remove front door speaker screws, then disconnect front door speaker connector and remove front door speaker.

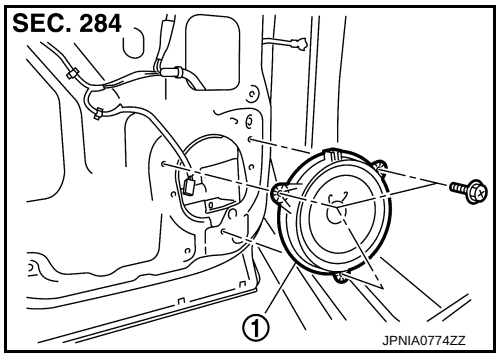
INSTALLATION

Install in the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000009721977



1. Rear door speaker

Removal and Installation

INFOID:0000000009721978

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "REAR DOOR FINISHER : Exploded View".
2. Remove rear door speaker screws, then disconnect rear door speaker connector and remove rear door speaker.

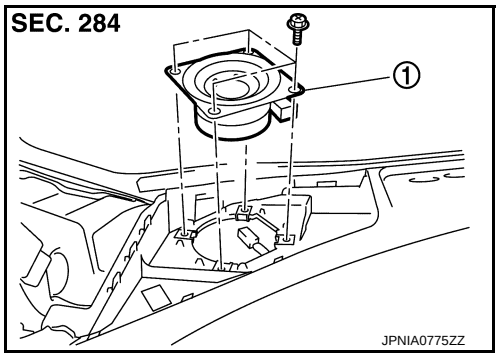
INSTALLATION

Install in the reverse order of removal.

FRONT SQUAWKER

Exploded View

INFOID:0000000009721979



1. Front squawker

Removal and Installation

INFOID:0000000009721980

REMOVAL

1. Remove speaker grille. Refer to IP-14, "Exploded View".
2. Remove front squawker screws, lift up the front squawker and disconnect front squawker connector. Then remove the front squawker.

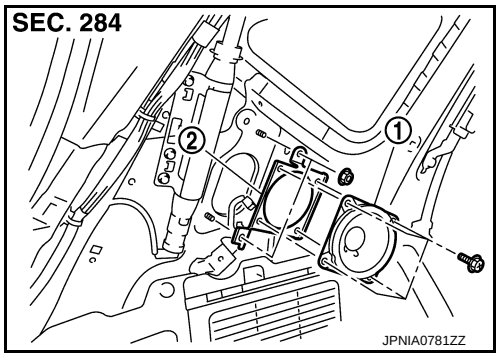
INSTALLATION

Install in the reverse order of removal.

REAR SPEAKER

Exploded View

INFOID:0000000009721981



1. Rear speaker
2. Rear speaker bracket

Removal and Installation

INFOID:0000000009721982

REMOVAL

1. Remove luggage side finisher upper. Refer to INT-34, "Exploded View".
2. Remove rear speaker screws, lift up the rear speaker and disconnect rear speaker connector. Then remove the rear speaker.

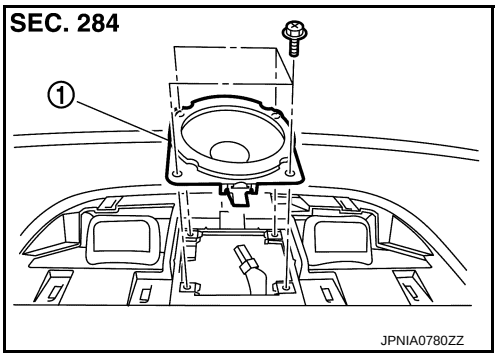
INSTALLATION

Install in the reverse order of removal.

CENTER SPEAKER

Exploded View

INFOID:0000000009721983



1. Center speaker

Removal and Installation

INFOID:0000000009721984

REMOVAL

1. Remove center speaker grille. Refer to IP-14, "Exploded View".
2. Remove center speaker screws, lift up the center speaker and disconnect center speaker connector. Then remove the center speaker.

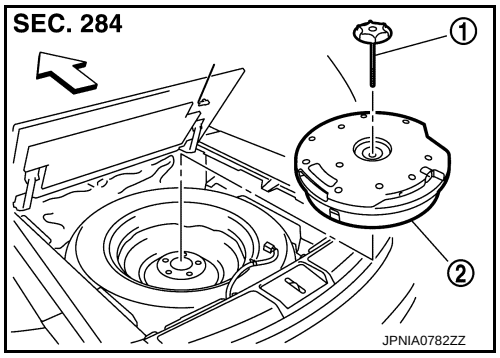
INSTALLATION

Install in the reverse order of removal.

WOOFER

Exploded View

INFOID:0000000009721985



⇦: Vehicle front
1. Clamp
2. Woofer

Removal and Installation

INFOID:0000000009721986

REMOVAL

1. Remove luggage floor center finisher rear. Refer to INT-34, "Exploded View".
2. Remove clamp, disconnect woofer connector and remove the woofer.

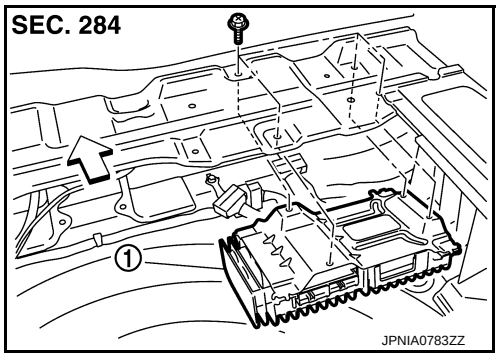
INSTALLATION

Install in the reverse order of removal.

BOSE AMP.

Exploded View

INFOID:0000000009721987



⇦: Vehicle front
1. BOSE amp.

Removal and Installation

INFOID:0000000009721988

REMOVAL

1. Remove luggage floor center finisher front. Refer to INT-34, "Exploded View".
2. Remove BOSE amp. screws, disconnect BOSE amp. connector and remove the BOSE amp.

INSTALLATION

Install in the reverse order of removal.

MULTIFUNCTION SWITCH

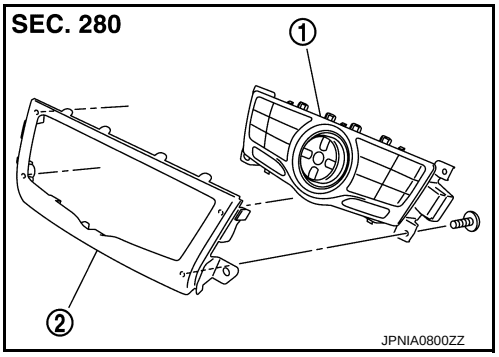
Exploded View

INFOID:0000000009721989

REMOVAL

Refer to IP-14, "Exploded View".

DISASSEMBLY



1. Multifunction switch
2. Cluster lid D

Removal and Installation

INFOID:0000000009721990

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "Exploded View".
2. Remove multifunction switch with center ventilator grille as a single unit.
3. Remove multifunction switch screws, remove multifunction switch from cluster lid D.

INSTALLATION

Install in the reverse order of removal.

PRESET SWITCH

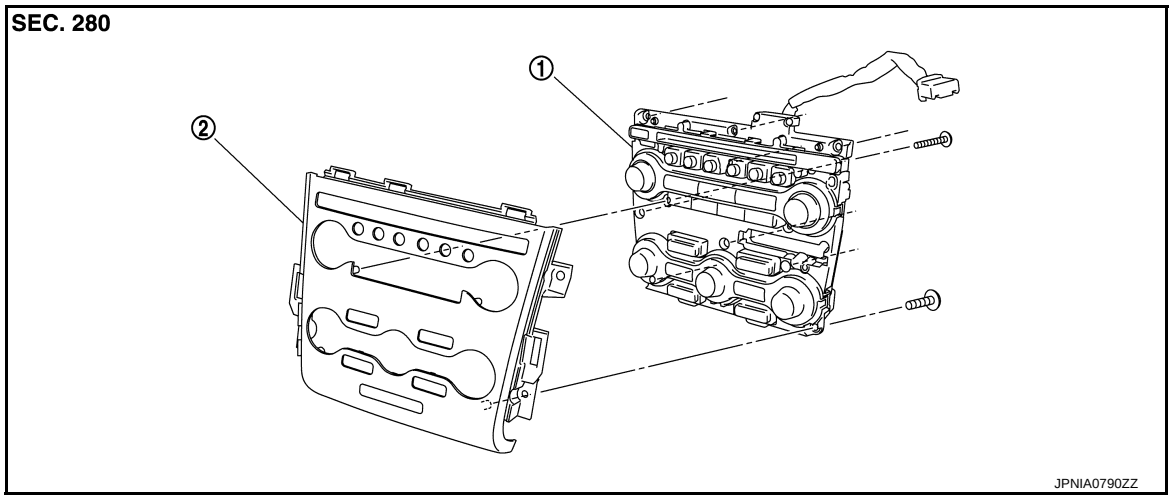
Exploded View

INFOID:0000000009721991

REMOVAL

Refer to IP-14, "Exploded View".

DISASSEMBLY



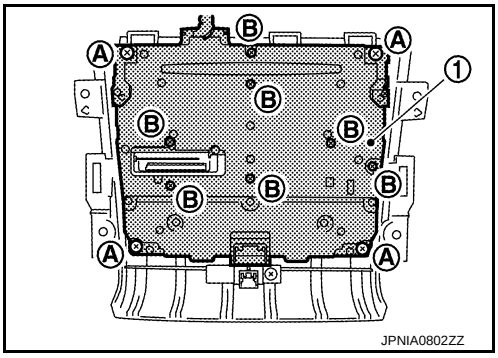
1. Preset switch
2. Cluster lid C

Removal and Installation

INFOID:0000000009721992

REMOVAL

1. Remove cluster lid C. Refer to IP-14, "Exploded View".
2. Remove preset switch screws (A) (B), remove preset switch (1) from cluster lid C.



1. Preset switch
A. Screw
B. Screw

INSTALLATION

Install in the reverse order of removal.

STEERING SWITCH

Exploded View

INFOID:0000000009721993

Refer to ST-36, "Exploded View".

Removal and Installation

INFOID:0000000009721994

REMOVAL

Refer to ST-36, "Removal and Installation".

INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Removal and Installation

INFOID:0000000009721995

REMOVAL

1. Remove center console assembly. Refer to IP-22, "Exploded View".
2. Remove auxiliary input jacks mounting screws.
3. Disconnect connector to remove auxiliary input jacks from lower console assembly.

INSTALLATION

Install in the reverse order of removal.

USB CONNECTOR

Removal and Installation

INFOID:0000000009721996

REMOVAL

1. Remove console finisher assembly. Refer to IP-22, "Exploded View".
2. Press the pawl from the back of lower console assembly to remove USB connector.

INSTALLATION

Install in the reverse order of removal.

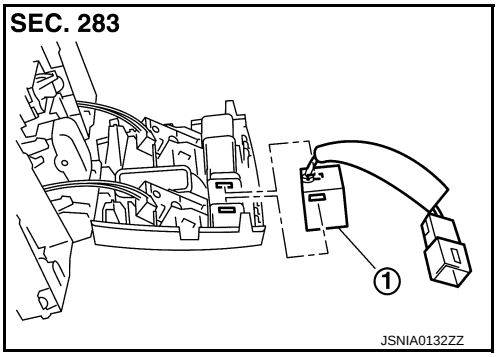
MICROPHONE

Exploded View

INFOID:0000000009721997

REMOVAL
Refer to INL-123, "Exploded View".

DISASSEMBLY



1. Microphone

Removal and Installation

INFOID:0000000009721998

REMOVAL

1. Remove map lamp. Refer to INL-123, "Exploded View".
2. Remove microphone from map lamp.

INSTALLATION
Install in the reverse order of removal.

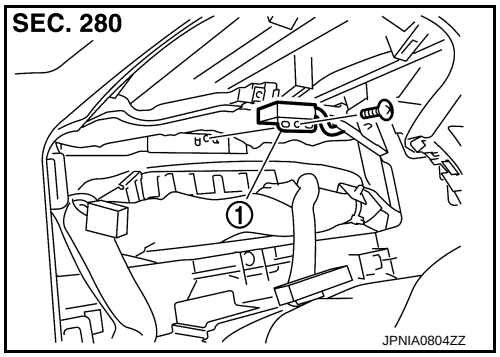
GPS ANTENNA

Removal and Installation

INFOID:0000000009721999

REMOVAL

1. Remove combination meter. Refer to MWI-105, "Exploded View".
2. Disconnect GPS antenna connector from AV control unit.
3. Remove GPS antenna (1) from instrument panel.



INSTALLATION

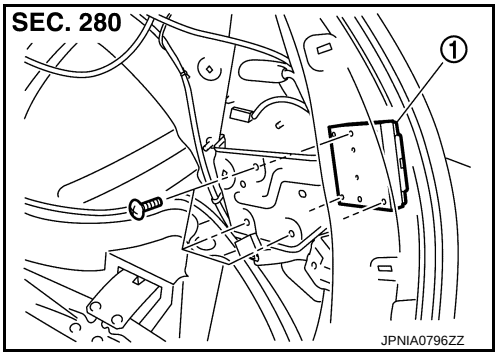
Install in the reverse order of removal.

CAMERA CONTROL UNIT

Exploded View

INFOID:0000000009722000

① Camera control unit



Removal and Installation

INFOID:0000000009722001

REMOVAL

CAUTION:

Before replacing camera control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to DAS-52, "Description".

1. Remove luggage side finisher lower (RH). Refer to INT-35, "Removal and Installation".
2. Disengage air tube clip from camera control unit bracket.
3. Remove camera control unit screws, disconnect camera control unit connector and remove the camera control unit.

INSTALLATION

Install in the reverse order of removal.

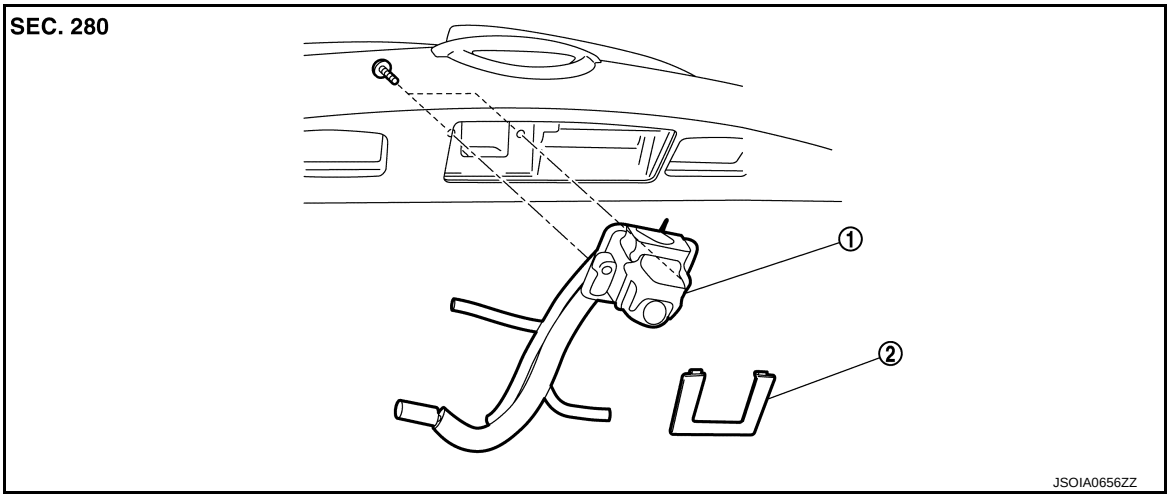
CAUTION:

Must be perform additional service when replacing camera control unit. Refer to DAS-51, "Work Procedure".

REAR VIEW CAMERA

Exploded View (Models with BSW and LDW)

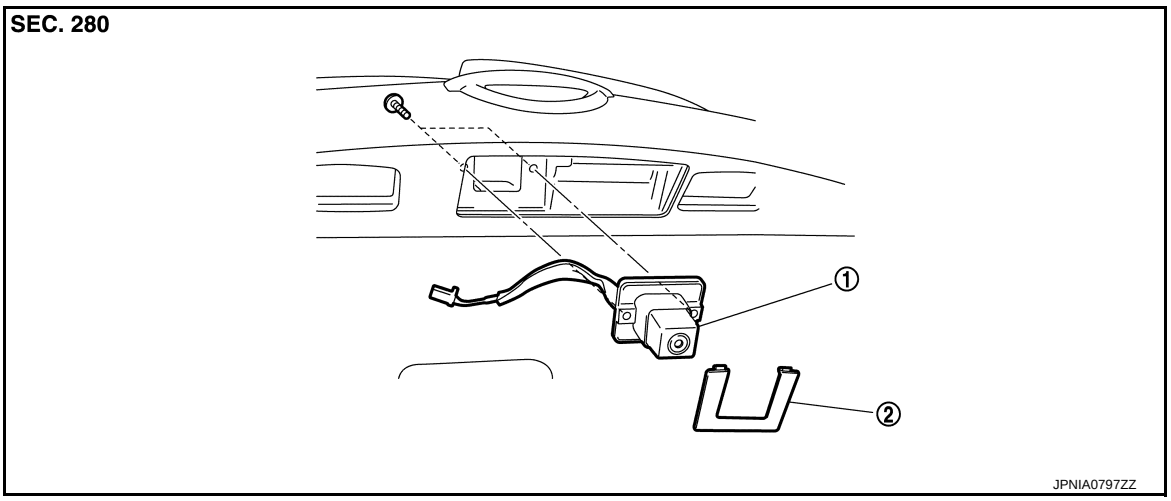
INFOID:0000000009722002



① Rear view camera ② Finisher

Exploded View (Models without BSW and LDW)

INFOID:0000000009722003



1. Rear view camera 2. Finisher

Removal and Installation (Models with BSW and LDW)

INFOID:0000000009722004

REMOVAL

1. Remove back door finisher inner. Refer to INT-38, "Exploded View".
2. Remove finisher.
3. Disconnect air tube and washer tube from rear view camera.
4. Remove rear view camera screws, disconnect rear view camera connector and remove rear view camera from back door assembly.

CAUTION:

To prevent a malfunction resulting from a short circuit, never allow washer fluid to drip from tube to rear view camera and connector.

INSTALLATION

Install in the reverse order of removal.

Removal and Installation (Models without BSW and LDW)

INFOID:0000000009722005

REMOVAL

1. Remove back door finisher inner. Refer to INT-38, "Exploded View".
2. Remove finisher.
3. Remove rear view camera screws, disconnect rear view camera connector and remove rear view camera from back door assembly.

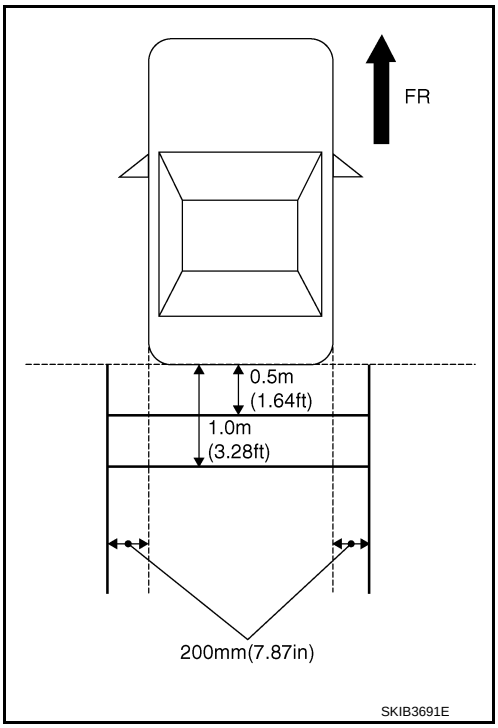
INSTALLATION

Install in the reverse order of removal.

Adjustment (Models without BSW and LDW)

INFOID:0000000009722006

1. Draw lines on rearward area of the vehicle passing through the following points: 200 mm (7.87 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into “Correct Draw Line of Rear view Camera” mode of “Confirmation/Adjustment” mode.

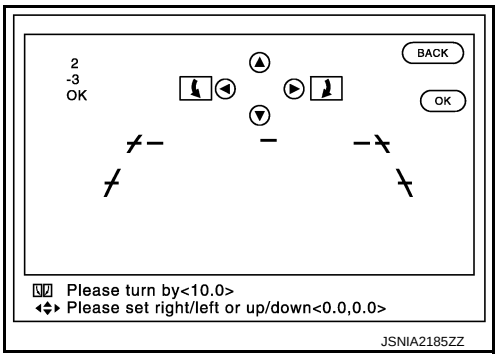


3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.

Selected pattern	: (–10°) – (+10°)

4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press “OK” switch and record the adjusted guiding line position to the AV control unit.

Up/Down adjustment range	: (–10°) – (+10°)
Left/Right adjustment range	: (–10°) – (+10°)



CAUTION:

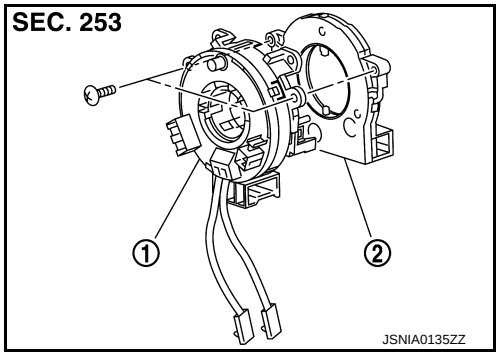
Never operate other function such as pressing BACK while writing index data.

STEERING ANGLE SENSOR

Exploded View

INFOID:0000000009722007

DISASSEMBLY



1. Spiral cable
2. Steering angle sensor

Removal and Installation

INFOID:0000000009722008

REMOVAL

1. Remove spiral cable. Refer to SR-15, "Exploded View".
2. Remove steering angle sensor from spiral cable.

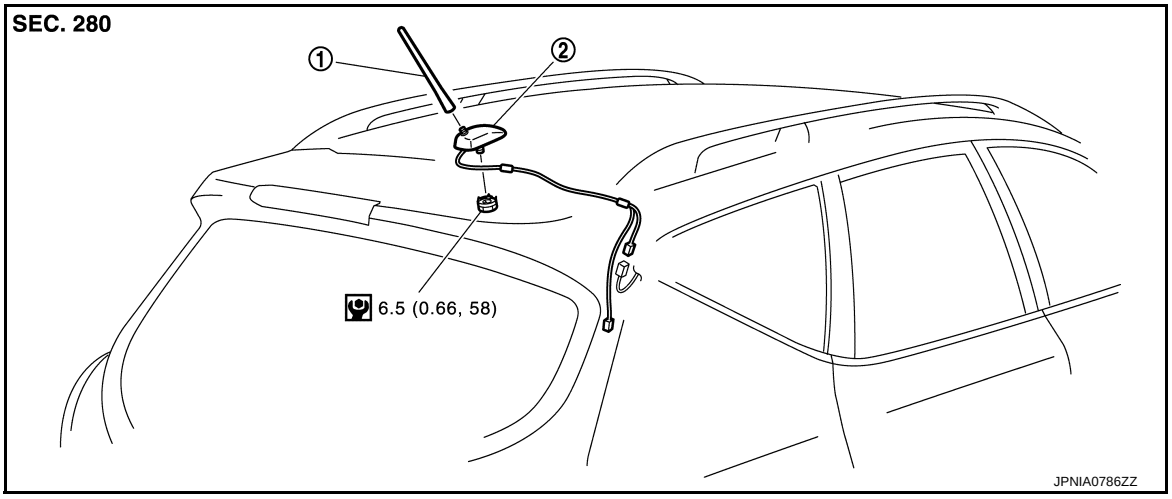
INSTALLATION

1. Install in the reverse order of removal.
2. Perform steering angle sensor neutral position adjustment. Refer to AV-327, "CONSULT Function".

ROOF ANTENNA

Exploded View

INFOID:0000000009722009



1. Rod antenna
2. Antenna base

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

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REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to INT-26, "NORMAL ROOF : Exploded View" [normal roof] or INT-30, "SUNROOF : Exploded View" [sunroof].
2. Disconnect antenna feeder connectors.
3. Remove antenna base mounting nut, and then remove antenna base from roof panel.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.

ANTENNA FEEDER

Feeder Layout

INFOID:0000000009722011

SEC. 280