SECTION AV В AUDIO, VISUAL & NAVIGATION SYSTEM С

CONTENTS

ERA	
BASIC INSPECTION11	
DIAGNOSIS AND REPAIR WORKFLOW11 Work Flow	
SYSTEM DESCRIPTION13	
MULTI AV SYSTEM13System Diagram13System Description13Component Parts Location15Component Description16	
AUDIO SYSTEM	
DIAGNOSIS SYSTEM (AV CONTROL UNIT)20 Diagnosis Description	
DIAGNOSIS SYSTEM (AV CONTROL UNIT)20 Diagnosis Description	
DIAGNOSIS SYSTEM (AV CONTROL UNIT)20 Diagnosis Description 20 CONSULT - III Function (MULTI AV) 27 DTC/CIRCUIT DIAGNOSIS 30 U1000 CAN COMM CIRCUIT 30 DEscription 30 DTC Logic 30 Diagnosis Procedure 30	
DIAGNOSIS SYSTEM (AV CONTROL UNIT)20 Diagnosis Description 20 CONSULT - III Function (MULTI AV) 27 DTC/CIRCUIT DIAGNOSIS 30 U1000 CAN COMM CIRCUIT 30 DEscription 30 DTC Logic 30 U1010 CONTROL UNIT (CAN) 31 DTC Logic 31 Diagnosis Procedure 31 DTC Logic 31	
DIAGNOSIS SYSTEM (AV CONTROL UNIT)20 Diagnosis Description 20 CONSULT - III Function (MULTI AV) 27 DTC/CIRCUIT DIAGNOSIS 30 U1000 CAN COMM CIRCUIT 30 DEscription 30 DTC Logic 30 Diagnosis Procedure 30 DIGUOD CONTROL UNIT (CAN) 31 DEscription 31 DTC Logic 31 Diagnosis Procedure 31 DTC Logic 31 DIGUOD CONTROL UNIT 32 DTC Logic 32	

Description	F
U1216 AV CONTROL UNIT	G
U1243 DISPLAY UNIT	H
U1255 SATELLITE RADIO TUNER	J
U1300 AV COMM CIRCUIT	K
POWER SUPPLY AND GROUND CIRCUIT40	
AV CONTROL UNIT40 AV CONTROL UNIT : Diagnosis Procedure40	L
DISPLAY UNIT40 DISPLAY UNIT : Diagnosis Procedure40	M
MULTIFUNCTION SWITCH41 MULTIFUNCTION SWITCH : Diagnosis Proce- dure41	AV
SATELLITE RADIO TUNER	0
RGB (R: RED) SIGNAL CIRCUIT 43 Description 43 Diagnosis Procedure 43	Ρ
RGB (G: GREEN) SIGNAL CIRCUIT44 Description	

А

D

Е

RGB (B: BLUE) SIGNAL CIRCUIT	. 45
Description Diagnosis Procedure	. 45 . 45
RGB SYNCHRONIZING SIGNAL CIRCUIT	. 46
Description Diagnosis Procedure	. 46 . 46
RGB AREA (YS) SIGNAL CIRCUIT	. 47
Diagnosis Procedure	. 47 . 47
HORIZONTAL SYNCHRONIZING (HP) SIG- NAL CIRCUIT	. 48
Description Diagnosis Procedure	. 48 . 48
VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT	. 49
Description	. 49 49
AUX IMAGE SIGNAL CIRCUIT	. 50
Description	. 50
Diagnosis Procedure	. 50
CD EJECT SIGNAL CIRCUIT	. 52
Description	. 52
	. 52
Description	. 53 . 53
Diagnosis Procedure Component Inspection	. 53 . 53
STEERING SWITCH SIGNAL B CIRCUIT	. 55
Description	. 55
Diagnosis Procedure	. 55
Component Inspection	. 55
STEERING SWITCH SIGNAL GND CIRCUIT Description	. 57 . 57
Diagnosis Procedure	. 57
Component Inspection	. 57
ECU DIAGNOSIS INFORMATION	. 59
AV CONTROL UNIT	. 59
Reference Value DTC Index	. 59 . 65
DISPLAY UNIT	. 66 . 66
SATELLITE RADIO TUNER	. 69
WIRING DIAGRAM	. 71
BASE AUDIO WITHOUT REAR VIEW CAM-	
ERA	.71
vvining Diagrani	.71

SYMPTOM DIAGNOSIS83	3
MULTI AV SYSTEM SYMPTOMS	3
NORMAL OPERATING CONDITION	5
PRECAUTION87	7
PRECAUTIONS 87 Precaution for Supplemental Restraint System 87 (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- 87 SIONER" 87 Precaution for Trouble Diagnosis 87 Precaution for Harness Repair 87	7 7 7 7
PREPARATION 89	9
PREPARATION	9
REMOVAL AND INSTALLATION 90	D
AV CONTROL UNIT	0 0
DISPLAY UNIT	1 1 1
FRONT DOOR SPEAKER 92 Exploded View 92 Removal and Installation 92	2 2 2
REAR DOOR SPEAKER 93 Exploded View 93 Removal and Installation 93	3 3
TWEETER 94 Exploded View 94 Removal and Installation 94	4 4
ANTENNA AMP. 95 Exploded View 95 Removal and Installation 95	5 5
SATELLITE RADIO TUNER	6 6
SATELLITE RADIO ANTENNA	7 7 7
MULTIFUNCTION SWITCH 98 Exploded View 98 Removal and Installation 98	3 3 8
PRESET SWITCH	9 9

STEERING SWITCH	100
Removal and Installation	100
AUXILIARY INPUT JACKS	101
Exploded View Removal and Installation	101 101
ANTENNA FEEDER	102
Feeder Layout BASE AUDIO WITH REAR VIEW CAME	102 RA
PRECAUTION	103
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-	103
SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)	103 103
Precaution for Trouble Diagnosis	103
Precaution for Harness Repair	103
PREPARATION	105
PREPARATION Commercial Service Tools	105 105
SYSTEM DESCRIPTION	106
COMPONENT PARTS	106
Component Parts Location	106 107
SYSTEM	109
MULTI AV SYSTEM	109
MULTI AV SYSTEM : System Diagram MULTI AV SYSTEM : System Description	109 109
DIAGNOSIS SYSTEM (AV CONTROL UNIT).	112
Description	112
On Board Diagnosis Function	112
CONSULT - III Function	121
DIAGNOSIS SYSTEM (TEL ADAPTER UNIT). On Board Diagnosis Function	124 124
ECU DIAGNOSIS INFORMATION	126
AV CONTROL UNIT	126
Reference Value DTC Index	126 132
DISPLAY UNIT Reference Value	134 134
SATELLITE RADIO TUNER	137
Reference value	137
TEL ADAPTER UNIT	139

WIRING DIAGRAM141	
BASE AUDIO WITH REAR VIEW CAMERA 141 Wiring Diagram	А
BASIC INSPECTION157	В
DIAGNOSIS AND REPAIR WORKFLOW 157 Work Flow	С
ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)	D
CONFIGURATION (AV CONTROL UNIT) 160 Description	E
DTC/CIRCUIT DIAGNOSIS162	
U1000 CAN COMM CIRCUIT	G
U1010 CONTROL UNIT (CAN)	Η
U1200 AV CONTROL UNIT	I
U1216 AV CONTROL UNIT 165 DTC Logic	J
U1232 STEERING ANGLE SENSOR	K
U1243 DISPLAY UNIT	L
U1255 SATELLITE RADIO TUNER 169 DTC Logic	M
U1300 AV COMM CIRCUIT	٩V
U1310 AV CONTROL UNIT 172 DTC Logic	0
POWER SUPPLY AND GROUND CIRCUIT 173	Ρ
AV CONTROL UNIT	
DISPLAY UNIT	
SATELLITE RADIO TUNER174	

SATELLITE RADIO TUNER : Diagnosis Proce- dure	.174
	175
TEL ADAPTER UNIT : Diagnosis Procedure	.175
RGB (R: RED) SIGNAL CIRCUIT	176
Description	.176
Diagnosis Procedure	.176
RGB (G: GREEN) SIGNAL CIRCUIT	177
Description	.177
Diagnosis Procedure	.177
RGB (B: BLUE) SIGNAL CIRCUIT	178
Description	.178
Diagnosis Procedure	.178
	170
RGB STINCHRONIZING SIGNAL CIRCUIT Description	179
Diagnosis Procedure	179
RGB AREA (YS) SIGNAL CIRCUIT	180
Description	.180
Diagnosis Procedure	.180
CAMERA IMAGE SIGNAL CIRCUIT	181
Description	.181
Diagnosis Procedure	.181
	100
Description	183
Diagnosis Procedure	.183
HORIZONTAL SYNCHRONIZING (HP) SIG-	
NAL CIRCUIT	184
Description	.184
Diagnosis Procedure	.184
VERTICAL SYNCHRONIZING (VP) SIGNAL	
CIRCUIT	185
Description	.185
Diagnosis Procedure	.185
DISK EJECT SIGNAL CIRCUIT	186
Description	.186
Diagnosis Procedure	.186
MICROPHONE SIGNAL CIRCUIT	187
Description	.187
Diagnosis Procedure	.187
CONTROL SIGNAL CIRCUIT	189
Description	.189
Diagnosis Procedure	.189
STEERING SWITCH SIGNAL A CIRCUIT	190
Description	.190
Diagnosis Procedure	.190
Component Inspection	.190
-	

USB CONNECTOR	.214
Exploded View	. 214
	. 214
	. 215
Exploded View	. 215
	. 215
TEL ANTENNA	.216
Exploded View	. 216
Removal and Installation	. 216
TEL ADAPTER UNIT	. 217
Exploded View	. 217
Removal and Installation	. 217
REAR VIEW CAMERA	. 218
Exploded View	. 218
Removal and Installation	. 218
Adjustment	. 218
STEERING ANGLE SENSOR	. 220
Exploded View	. 220
Removal and Installation	. 220
ANTENNA FEEDER	. 221
Feeder Layout	. 221
BOSE AUDIO WITHOUT NAVIGATIO	N
PRECAUTION	. 222
PRECAUTIONS	. 222
PRECAUTIONS Precaution for Supplemental Restraint System	. 222
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-	. 222
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER"	. 222 . 222
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Capital Unit (Madela with AV Control Unit)	. 222
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis	. 222 . 222 . 222
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair	. 222 . 222 . 222 . 222 . 222
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair	. 222 . 222 . 222 . 222 . 222
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION	. 222 . 222 . 222 . 222 . 222 . 222
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION	. 222 . 222 . 222 . 222 . 222 . 224 . 224 . 224
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools	. 222 . 222 . 222 . 222 . 222 . 224 . 224 . 224
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION	. 222 . 222 . 222 . 222 . 222 . 224 . 224 . 224 . 225
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION	. 222 . 222 . 222 . 222 . 222 . 222 . 224 . 224 . 224 . 224
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts	. 222 . 222 . 222 . 222 . 222 . 224 . 224 . 224 . 225 . 225
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts Location Component Description	. 222 . 222 . 222 . 222 . 222 . 224 . 224 . 224 . 225 . 225 . 225 . 225
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts Location Component Description	. 222 . 222 . 222 . 222 . 222 . 222 . 222 . 224 . 224 . 225 . 225 . 225 . 225
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts Location Component Description SYSTEM	. 222 . 222 . 222 . 222 . 222 . 222 . 224 . 224 . 225 . 225 . 225 . 226 . 228
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts Location Component Description SYSTEM	. 222 . 222 . 222 . 222 . 222 . 222 . 224 . 224 . 225 . 226 . 226 . 226 . 225 . 226 . 2266 . 226 . 2266 . 226 . 226 . 226 . 226 . 226 . 226 . 226 . 226 . 22
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts Location Component Description SYSTEM MULTI AV SYSTEM MULTI AV SYSTEM	. 222 . 222 . 222 . 222 . 222 . 224 . 224 . 224 . 224 . 225 . 225 . 225 . 225 . 225 . 225 . 228 . 228 . 228
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts Location Component Description SYSTEM MULTI AV SYSTEM MULTI AV SYSTEM : System Diagram MULTI AV SYSTEM : System Description	. 222 . 222 . 222 . 222 . 222 . 222 . 224 . 224 . 225 . 225 . 225 . 225 . 225 . 225 . 225 . 228 . 228
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts Location Component Description SYSTEM MULTI AV SYSTEM MULTI AV SYSTEM : System Diagram MULTI AV SYSTEM : System Description DIAGNOSIS SYSTEM (AV CONTROL UNIT).	. 222 . 222 . 222 . 222 . 222 . 222 . 222 . 222 . 223 . 225 . 225 . 225 . 225 . 225 . 226 . 228 . 229 . 229
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts Location Component Description SYSTEM MULTI AV SYSTEM MULTI AV SYSTEM : System Diagram MULTI AV SYSTEM : System Description DIAGNOSIS SYSTEM (AV CONTROL UNIT). Description	. 222 . 222 . 222 . 222 . 222 . 222 . 224 . 224 . 225 . 225 . 225 . 225 . 225 . 225 . 226 . 228 . 229 . 228 . 2281. 2881
PRECAUTIONS Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER" Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit) Precaution for Trouble Diagnosis Precaution for Harness Repair PREPARATION PREPARATION Commercial Service Tools SYSTEM DESCRIPTION Component Parts Location Component Description SYSTEM MULTI AV SYSTEM MULTI AV SYSTEM MULTI AV SYSTEM SYSTEM (AV CONTROL UNIT). Description On Board Diagnosis Function	. 222 . 222 . 222 . 222 . 222 . 222 . 224 . 224 . 225 . 226 . 228 . 231 . 231 . 231 . 231

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT). 243 On Board Diagnosis Function	A
ECU DIAGNOSIS INFORMATION	
AV CONTROL UNIT	В
DISPLAY UNIT	С
BOSE AMP	D
SATELLITE RADIO TUNER	E
TEL ADAPTER UNIT 261 Reference Value 261	F
WIRING DIAGRAM 263	
BOSE AUDIO WITHOUT NAVIGATION	G
BASIC INSPECTION 282	Н
DIAGNOSIS AND REPAIR WORKFLOW 282 Work Flow	1
ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)	J
CONFIGURATION (AV CONTROL UNIT) 285 Description	K
DTC/CIRCUIT DIAGNOSIS	L
U1000 CAN COMM CIRCUIT	M
U1010 CONTROL UNIT (CAN)	AV
U1200 AV CONTROL UNIT	0
U1216 AV CONTROL UNIT	Ρ
U1232 STEERING ANGLE SENSOR	
U1243 DISPLAY UNIT	

Diagnosis Procedure292
U1255 SATELLITE RADIO TUNER 294 DTC Logic
U1300 AV COMM CIRCUIT 296 Description
U1310 AV CONTROL UNIT 297 DTC Logic
POWER SUPPLY AND GROUND CIRCUIT 298
AV CONTROL UNIT
DISPLAY UNIT
BOSE AMP
SATELLITE RADIO TUNER
TEL ADAPTER UNIT
RGB (R: RED) SIGNAL CIRCUIT 302 Description 302 Diagnosis Procedure 302
RGB (G: GREEN) SIGNAL CIRCUIT
RGB (B: BLUE) SIGNAL CIRCUIT 304 Description
RGB SYNCHRONIZING SIGNAL CIRCUIT 305 Description
RGB AREA (YS) SIGNAL CIRCUIT 306 Description
CAMERA IMAGE SIGNAL CIRCUIT
COMPOSITE IMAGE SIGNAL CIRCUIT 309 Description
HORIZONTAL SYNCHRONIZING (HP) SIG- NAL CIRCUIT

VERTICAL SYNCHRONIZING (VP) SIGNAL
UIRUUII
Description
Diagnosis Procedure 311
DISK EJECT SIGNAL CIRCUIT
Description 312
Diagnosis Procedure
MODE CHANGE SIGNAL CIRCUIT
Diagnosis Procedure 313
MICROPHONE SIGNAL CIRCUIT
Description
Diagnosis Procedure
CONTROL SIGNAL CIRCUIT
Description
Diagnosis Procedure
STEEKING SWITCH SIGNAL A CIKCUIT
Description
Diagnosis Procedure
Component Inspection
STEERING SWITCH SIGNAL B CIRCUIT319
Description
Diagnosis Procedure
Component Inspection
STEERING SWITCH GROUND CIRCUIT 321
Description 321
Diagnosis Procedure 321
Component Inspection
SYMPTOM DIAGNOSIS
MULTI AV SYSTEM SYMPTOMS
Symptom Table
NORMAL OPERATING CONDITION
Description
REMOVAL AND INSTALLATION
AV CONTROL UNIT
Exploded View
Removal and Installation
DISPLAY UNIT
Exploded View
Removal and Installation
Removal and Installation 222
1.000 and 110 115(allalion
FRONT DOOR WOOFER
Exploded View 333

REAR DOOR SPEAKER Exploded View	334 334
Removal and Installation	334
TWEETER	335
Removal and Installation	335
CENTER SPEAKER	336
Exploded View Removal and Installation	336 336
REAR WOOFER	337
Exploded View Removal and Installation	337 337
BOSE AMP	338
Exploded View Removal and Installation	338 338
ANTENNA AMP.	339
Exploded View	339
Removal and Installation	339
SATELLITE RADIO TUNER	340
Removal and Installation	340 340
SATELLITE RADIO ANTENNA	341
Exploded View	341
	341
Exploded View	342 342
Removal and Installation	342
PRESET SWITCH	343
Exploded View Removal and Installation	343 343
STEERING SWITCH	344
Exploded View	344
Removal and Installation	344
	345
Removal and Installation	345 345
MICROPHONE	346
Exploded View	346
	346
TEL ANTENNA	347
Removal and Installation	347 347
TEL ADAPTER UNIT	348
Exploded View	348 240
	348
Exploded View	349 349

Removal and Installation	349	Δ
SONAR CONTROL UNIT	. 351	
Exploded View	.351	
Removal and Installation	.351	В
STEERING ANGLE SENSOR	. 352	
Exploded View Removal and Installation	352	С
ANTENNA FEEDER	. 353	
Feeder Layout	.353	D
BOSE AUDIO WITH NAVIGATION		
PRECAUTION	. 354	E
PRECAUTIONS	. 354	
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN-		F
SIONER"	.354	
Cautions in Removing Battery Terminal and AV	354	G
Precaution for Trouble Diagnosis	354	0
Precaution for Harness Repair	.354	
PREPARATION	. 356	Η
PREPARATION	356	
Commercial Service Tools	356	
SYSTEM DESCRIPTION	. 357	
COMPONENT PARTS	. 357	J
Component Parts Location	.357	
Component Description	.358	K
SYSTEM	. 360	
MULTI AV SYSTEM	360	
MULTI AV SYSTEM : System Diagram	.360	L
MULTI AV SYSTEM : System Description	360	
		M
DIAGNOSIS STSTEM (AV CONTROL UNIT)	366	
On Board Diagnosis Function		
CONSULT - III Function	.378	AV
ECU DIAGNOSIS INFORMATION	. 382	
AV CONTROL UNIT	. 382	0
Reference Value	. 382	
Fail-Safe	.386	D
DICINDEX	387	F
DISPLAY UNIT	. 389	
Reference Value	389	
BOSE AMP	. 391	
Reference Value	391	

WIRING DIAGRAM
BOSE AUDIO WITH NAVIGATION
BASIC INSPECTION412
DIAGNOSIS AND REPAIR WORKFLOW 412 Work Flow
ADDITIONAL SERVICE WHEN REPLACING
(AV CONTROL UNIT)
Work Procedure414
CONFIGURATION (AV CONTROL UNIT) 415
Description415
Work Procedure
DTC/CIRCUIT DIAGNOSIS417
U1000 CAN COMM CIRCUIT 417
Description417
DTC Logic417
Diagnosis Procedure417
U1010 CONTROL UNIT (CAN) 418
DTC Logic418
U1200 AV CONTROL UNIT 419 DTC Logic
U1201 AV CONTROL UNIT 420 DTC Logic
U1202 AV CONTROL UNIT
DTC Logic
Description 422
DTC Logic
Diagnosis Procedure422
Description 423
DTC Logic
Diagnosis Procedure423
U1206 AV CONTROL UNIT
Description
DTC Logic424
Diagnosis Procedure424
U1207 AV CONTROL UNIT 425
Description
DTC Logic425
Diagnosis Procedure425
U1216 AV CONTROL UNIT
420
U1217 AV CONTROL UNIT

DTC Logic 427
U1218 AV CONTROL UNIT
U1219 AV CONTROL UNIT
U121A AV CONTROL UNIT
U121B AV CONTROL UNIT431 DTC Logic431 Diagnosis Procedure431
U121C AV CONTROL UNIT432 DTC Logic432 Diagnosis Procedure432
U121D AV CONTROL UNIT433 DTC Logic433 Diagnosis Procedure433
U121E AV CONTROL UNIT434 DTC Logic
U1225 AV CONTROL UNIT
U1227 AV CONTROL UNIT436 DTC Logic
U1228 AV CONTROL UNIT
U1229 AV CONTROL UNIT438 DTC Logic
U122A AV CONTROL UNIT439 DTC Logic439 Diagnosis Procedure439
U122E AV CONTROL UNIT
U1232 STEERING ANGLE SENSOR441 DTC Logic
U1243 DISPLAY UNIT
U1244 GPS ANTENNA
U1258 SATELLITE RADIO ANTENNA445

DTC Logic Diagnosis Procedure	445 445
U1263 USB DTC Logic Diagnosis Procedure	. 446 446 446
U1264 ANTENNA AMP DTC Logic Diagnosis Procedure	. . 447 447 447
U1265 BOSE AMP DTC Logic Diagnosis Procedure	. . 448 448 448
U1300 AV COMM CIRCUIT Description	. 449 449
U1310 AV CONTROL UNIT DTC Logic	. . 450 450
POWER SUPPLY AND GROUND CIRCUIT	. 451
AV CONTROL UNIT	451
AV CONTROL UNIT : Diagnosis Procedure	. 451
	451
	451
BOSE AMP BOSE AMP. : Diagnosis Procedure	. . 452 452
RGB DIGITAL IMAGE SIGNAL CIRCUIT Description Diagnosis Procedure	453 453 453
COMPOSITE IMAGE SIGNAL CIRCUIT	. 454
Description	454
Diagnosis Procedure	454
DISK EJECT SIGNAL CIRCUIT	. 455
Description Diagnosis Procedure	455 455
	AEG
Description	456
Diagnosis Procedure	. 456
MICROPHONE SIGNAL CIRCUIT	. 457
Description	. 457
	457
CAMERA IMAGE SIGNAL CIRCUIT	459
Diagnosis Procedure	459
STEERING SWITCH SIGNAL A CIRCUIT	. 461
Description	. 461
Diagnosis Procedure Component Inspection	461 461
	101
Description	403 463

Diagnosis Procedure463 Component Inspection463	A
STEERING SWITCH GROUND CIRCUIT 465 Description	В
SYMPTOM DIAGNOSIS467	С
MULTI AV SYSTEM SYMPTOMS	D
NORMAL OPERATING CONDITION	
REMOVAL AND INSTALLATION 477	E
AV CONTROL UNIT	F
DISPLAY UNIT	G
FRONT DOOR SQUAWKER480Exploded View480Removal and Installation480	Н
FRONT DOOR WOOFER481Exploded View481Removal and Installation481	
REAR DOOR SPEAKER482Exploded View482Removal and Installation482	J
TWEETER 483Exploded View483Removal and Installation483	L
CENTER SPEAKER484Exploded View484Removal and Installation484	M
REAR WOOFER485Exploded View485Removal and Installation485	AV
BOSE AMP	0
ANTENNA AMP. 487 Exploded View 487 Removal and Installation 487	Ρ
SATELLITE RADIO ANTENNA	
MULTIFUNCTION SWITCH 489	

Exploded View	489
Removal and Installation	489
PRESET SWITCH Exploded View Removal and Installation	490 490 490
STEERING SWITCH	491
Exploded View	491
	404
Removal and Installation	
USB CONNECTOR	
Removal and Installation USB CONNECTOR Exploded View Removal and Installation	491 492 492 492
Removal and Installation USB CONNECTOR Exploded View Removal and Installation MICROPHONE	
Removal and Installation USB CONNECTOR Exploded View Removal and Installation MICROPHONE Exploded View	
Removal and Installation USB CONNECTOR Exploded View Removal and Installation MICROPHONE Exploded View Removal and Installation	491 492 492 492 493 493 493

Exploded View	94 94 95
REAR VIEW CAMERA	96
Exploded View A	26
Removal and Installation	90 26
	90
Adjustment	96
SONAR CONTROL UNIT	98 98 98
STEERING ANGLE SENSOR	99
	20
Pomoval and Installation	99 20
	99
ANTENNA FEEDER	00 00

DIAGNOSIS AND REPAIR WORKFLOW [BASE AUDIO WITHOUT REAR VIEW CAMERA]

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000006210186 B

А





- Reference 1... Refer to AV-27, "CONSULT III Function (MULTI AV)".
- Reference 2... Refer to <u>AV-65, "DTC Index"</u>.
- Reference 3… Refer to <u>AV-83, "Symptom Table"</u>.

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-III

AV

< BASIC INSPECTION >

DIAGNOSIS AND REPAIR WORKFLOW

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

- Connect CONSULT-III and perform a self-diagnosis for "MULTI AV". Refer to <u>AV-27, "CONSULT III Func-tion (MULTI AV)"</u>. NOTE:
 - Skip to step 4 of the diagnosis procedure if "MULTI AV" is not displayed.
- 2. Check if any DTC is displayed in the self-diagnosis results.

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-65, "DTC Index".

>> GO TO 5.

4.TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-83, "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-III.
- 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

А

INFOID:000000006210187

< SYSTEM DESCRIPTION > SYSTEM DESCRIPTION MULTI AV SYSTEM

System Diagram



NOTE:

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

System Description

Multi AV system means that the following systems are integrated.

System name	System explanation	M
AUDIO SYSTEM	AV-17, "System Description"	
VEHICLE INFORMATION SYSTEM	 Indicates the status of audio, climate control system, fuel economy and maintenance. AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp and BCM. 	AV
SATELLITE RADIO SYSTEM	Refer to "SATELLITE RADIO SYSTEM" shown below.	0
AUXILIARY INPUT SYSTEM	Refer to "AUXILIARY INPUT SYSTEM" shown below.	

• AV control unit functions 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, unified meter and A/C amp. It 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.

Ρ

MULTI AV SYSTEM

< SYSTEM DESCRIPTION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

 AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from front display. Also, it is connected with satellite radio by serial communication, and it transmits the operating signal and receives the display signal.

NOTE:

AV control unit can perform CONSULT-III self-operating function and on board self-diagnosis.

- CONSULT-III self-diagnosis: refer to AV-27, "CONSULT III Function (MULTI AV)".
- On board self-diagnosis: refer to AV-20, "Diagnosis Description".

SATELLITE RADIO SYSTEM

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



AUXILIARY INPUT SYSTEM

- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- Operation can be performed with multifunction switch and steering switch. Multifunction switch transmits operation signal to AV control unit with communication.



MULTI AV SYSTEM [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Component Parts Location

INFOID:000000006210189

А



- 1. Tweeter LH
- 4. Antenna amp.
- 7. Satellite radio antenna
- 10. Tweeter RH
- 13. Preset switch
- A. Within rear pillar finisher LH
- 2. Front door speaker LH
- 5. Satellite radio tuner
- 8. Auxiliary input jacks
- 11. Display unit
- 14. AV control unit
- B. Rear parcel shelf lower part (left side)
- 3. Rear door speaker LH
- 6. Rear door speaker RH
- 9. Front door speaker RH
- 12. Steering switch
- 15. Multifunction switch

M

Κ

Ρ

< SYSTEM DESCRIPTION >

Component Description

MULTI AV SYSTEM [BASE AUDIO WITHOUT REAR VIEW CAMERA]

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. AV control unit includes audio function and vehicle information function. It is connected to ECM and unified meter and A/C amp. 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). Auxiliary image signal is input from the auxiliary input jacks.
DISPLAY UNIT	 Display image is controlled by the serial communication from AV control unit. RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). Synchronizing signal (HP, VP) is output to AV control unit. Auxiliary image signal is input from the AV control unit.
FRONT DOOR SPEAKER	Outputs sound signal from AV control unit.Outputs high, mid and low range sounds.
REAR DOOR SPEAKER	Outputs sound signal from AV control unit.Outputs high, mid and low range sounds.
TWEETER	Outputs sound signal from AV control unit.Outputs high range sound.
MULTIFUNCTION SWITCH	 Operation panel is equipped with the centralized switch where audio and auxiliary input operations are integrated. Connected with preset switch via cable, 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 operations are integrated. Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication. The CD ejection operating signal is performed by hardwire.
STEERING SWITCH	The operation of Audio, etc. can be performed.Steering switch signal (operation signal) is output to AV control unit.
AUXILIARY INPUT JACKS	The image signal of the auxiliary input is output via the AV control unit to the display, and it outputs the sound signal to the AV control unit.
ANTENNA AMP.	 Radio signal received by glass antenna is amplified and transmitted to AV control unit. Power (antenna amp. ON signal) is supplied from AV control unit.
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).
SATELLITE RADIO ANTENNA	Receives the satellite radio signal and outputs it to the satellite radio tuner.

AUDIO SYSTEM [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< SYSTEM DESCRIPTION > AUDIO SYSTEM

А System Diagram INFOID:000000006210191 GLASS Communication signal (CONT-DISP) ANTENNA (MAIN) Communication signal (DISP-CONT) Antenna amp. ON signal . . ANTENNA DISPLAY RGB signal UNIT AM/FM main AMP. RGB image synchronizing signal GLASS ANTENNA AV (SUB) RGB area (YS) signal CONTROL $\overline{}$ UNIT FM sub (CD) (AM/FM AV communication RADIO) MULTI-FUNCTION CD eject signal SWITCH Ε SPEAKER Steering switch signal Audio signal STEERING SWITCH JSNIA0208GB

System Description

INFOID:000000006210192

Н

L

AV

Ρ

The audio system is equipped with the following functions. Each function can be operated with the multifunction switch, preset switch or steering switch. It indicates the operation status of AUDIO to the display.

Function AM/FM radio CD

FUNCTION DESCRIPTION

Operating Signal

Operation of the audio system can be performed with the multifunction switch, preset switch or steering switch.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction
 K
 switch or preset switch. The CD 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

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

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by glass antenna, next it is amplified by antenna amp, and finally it is input to AV control unit. AV control unit outputs the audio signal to each speaker.

CD Mode

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

AUDIO SYSTEM [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Component Parts Location

INFOID:000000006210193



- 1. Tweeter LH
- 4. Antenna amp.
- 7. Satellite radio antenna
- 10. Tweeter RH
- 13. Preset switch
- A. Within rear pillar finisher LH

Component Description

- 2. Front door speaker LH
- 5. Satellite radio tuner
- 8. Auxiliary input jacks
- 11. Display unit
- 14. AV control unit
- B. Rear parcel shelf lower part (left side)
- Rear door speaker LH
- 6. Rear door speaker RH
- 9. Front door speaker RH
- 12. Steering switch

3.

15. Multifunction switch

Part name	Description
AV CONTROL UNIT	The AM/FM receiving function and the CD playing function are equipped.Outputs the audio signal from each function to each speaker.
DISPLAY UNIT	 Display image is controlled by the serial communication from AV control unit. RGB image signal (audio operation condition) is input from AV control unit.
FRONT DOOR SPEAKER	Outputs sound signal from AV control unit.Outputs high, mid and low range sounds.
REAR DOOR SPEAKER	Outputs sound signal from AV control unit.Outputs high, mid and low range sounds.
TWEETER	Outputs sound signal from AV control unit.Outputs high range sound.
MULTIFUNCTION SWITCH	 Each audio operation can be operated. Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.

AUDIO SYSTEM

< SYSTEM DESCRIPTION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Part name	Description	^
PRESET SWITCH	 Each audio and air conditioner operation can be operated. Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication. The CD ejection operating signal is performed by hardwire 	B
STEERING SWITCH	Each audio operation can be operated.Steering switch signal (operation signal) is output to AV control unit.	
ANTENNA AMP.	 Radio signal received by glass antenna is amplified and transmitted to AV control unit. Power (antenna amp. ON signal) is supplied from AV control unit. 	С

Е

F

G

J

Κ

L

Н

_

Μ

AV

0

Ρ

DIAGNOSIS SYSTEM (AV CONTROL UNIT) [BASE AUDIO WITHOUT REAR VIEW CAMERA] < SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Diagnosis Description

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 4-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. The buzzer sounds, all indicators of the preset switch illuminate, and the selfdiagnosis 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. **CAUTION:**

The hazard switch and CD eject switch cannot be checked.



Finishing Self-diagnosis Mode

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

MULTI AV SYSTEM ON BOARD DIAGNOSIS FUNCTION

- 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-III 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

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 actions generally require human intervention and judgment (the system cannot make judgment automatically).

On Board Diagnosis Item

Mode	Description
Self-Diagnosis	AV control unit diagnosis.Perform the connection diagnosis between each of the units.

DIAGNOSIS SYSTEM (AV CONTROL UNIT) < SYSTEM DESCRIPTION > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

	Mode	Description
Display Diagnosis		The confirmations of the tint with the color spectrum bar display and shading of color with the gradation bar display can be performed.
	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition switch, and reverse.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Climate Control	Start auto air conditioner system self-diagnosis.
Confirmation/ Adjustment	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.
Vet	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, a short beep will be heard.)
 - Shifting from current screen to previous screen is performed by pressing "BACK" button.







AV

F

Н

J

Κ

Μ

Ρ

SELF-DIAGNOSIS MODE

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



CONTROL UNIT) SYSTEM DESCRIPTION > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

 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	Con- nection line
lormal	Green	Green
Connection malfunction	Gray	Yellow
Jnit malfunction ^{Note}	Red	Green



NOTE:

- Only the 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.
- 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.



NOTE:

On board self-diagnosis cannot be started when an error occurs on the dotted-line part above.

SELF-DIAGNOSIS RESULTS

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

Self-diagnosis Result Chart

DIAGNOSIS SYSTEM (AV CONTROL UNIT) < SYSTEM DESCRIPTION > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Possible malfunction location / Action А Description Area with yellow connection lines to take E System Diagnostic Menu В ന്ന SAT (Front Display) C U Switches Control Unit AV control unit malfunction is detected. Replace the AV control unit. ∎ : Red JSNIA0211GB Е "Self-Diagnosis did not run because of a control unit malfunction" ESystem Diagnostic Menu F SAT ന Malfunction is detected in communication circuit between AV control unit Front Display -and display unit. Communication circuit between AV USwitches U Control Unit Malfunction is detected in communicontrol unit and display unit. cation signal between AV control unit and display unit. Н ■ : Gray •••• : Yellow JPNIA0464GB Satellite radio tuner power supply ESystem Diagnostic Menu and ground circuit malfunction is detected. · Satellite radio tuner power supply SAT Malfunction is detected in communication circuits between AV control and ground. (Front Display unit and satellite radio tuner. Communication circuit between AV U Switches Control Unit Malfunction is detected in communicontrol unit and satellite radio tuner. Κ cation signal between AV control unit ٠ Request signal circuit between AV and satellite radio tuner. control unit and satellite radio tuner. Malfunction is detected in request signal circuit between AV control unit L and satellite radio tuner. ■ : Gray •••• : Yellow JSNIA0212GB

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 "Inspection & Adjustment Mode" screen to display the relevant trouble diagnosis screen. Press the "RETURN" switch to return to the initial Inspection & Adjustment Mode screen.



Μ

Display Diagnosis



The tint of the color bar indication is as per the following list if RGB signal error is detected.

- R (red) signal error
- G (green) signal error
- B (blue) signal error

: Light blue (Cyan) tint

- : Purple (Magenta) tint
- r : Yellow tint

Vehicle Signals

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

📰 S	System Diagnostic N	Vlenu > Vehicle S	Signals
	Vehicle speed	OFF	
	Parking brake	ON	
	Lights	OFF	
	Ignition	ON	
	Reverse	OFF	
	<u> </u>		
			JSNIA0149GB

Diagnosis item	Display	Vehicle status	Remarks
Vahiela spood	ON	Vehicle speed > 0 km/h (0 MPH)	
venicie speed	OFF	Vehicle speed = 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal
Parking broke	ON	Parking brake is applied.	Changes in indication may be delayed. This is normal.
Faiking blake	OFF	Parking brake is released.	
Lights	ON	Light switch ON	
Lights	OFF	Light switch OFF	
Ignition	ON	Ignition switch ON	
Ignition	OFF	Ignition switch in ACC position	
Reverse	ON	Shift the selector lever to "R" posi- tion	Changes in indication may be delayed. This is normal
Nevelse	OFF	Shift the selector lever other than "R" position	onanges in indication may be delayed. This is normal.

Speaker Test

OIAGNOSIS SYSTEM (AV CONTROL UNIT) < SYSTEM DESCRIPTION > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Select "SPEAKER DIAGNOSIS" to display the Speaker Diagnosis E System Diagnostic Menu > Speaker Test screen. Press "START and NEXT" to generate a test tone in a speaker. Press "Start" to generate a test tone in the next speaker. Press "End" to stop the test tones. Speaker Testing Front Left Tweeter NOTE: Ō Start The frequency of test tone emitted from each speaker is as follows. End Speaker Settings Tweeter : 3 kHz Front door speaker : 300 Hz (i) Push start to test next speaker Rear door speaker : 1 kHz JSNIA0150GB

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 SW 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.

- Count up method A
- The counter resets to 0 if an error occurs when IGN switch is turned ON. The counter increases by 1 if the condition is normal at a next IGN 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-III.
 Count up method B
- The counter increases by 1 if an error occurs when IGN switch is ON. The counter will not decrease even if the condition is normal at the next IGN 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-III.

Display type of occur- rence frequency	Error history display item	•
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV communication)	-
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

А

Ε

F

Н

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	COMM CIRCUIT CAN communication malfunction is detected.	
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	Replace the AV control unit.
FLASH-ROM Error Of Control Unit	All control unit molfunction is data at a	
CAN Controller Memory Error	AV control unit mairunction is detected.	
Front Display Connection Error	 Display unit power supply and ground circuit malfunction is detected. Malfunction is detected in communication circuit between AV control unit and display unit. Malfunction is detected in communication signal between AV control unit and display unit. 	 Display unit power supply and ground circuit. Communication circuit between AV control unit and display unit.
SAT Connection Error	 Satellite radio tuner power supply and ground circuit malfunction is detected. Malfunction is detected in communication circuit between AV control unit and satellite radio tuner. Malfunction is detected in communication signal between AV control unit and satellite radio tuner. Malfunction is detected in request signal circuit between AV control unit and satellite radio tuner. 	 Satellite radio tuner power supply and ground circuit. Communication circuit 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 	 Multifunction switch power supply and ground circuit malfunction is detected. Malfunction is detected in AV communi- cation circuit between AV control unit and multifunction switch. Malfunction is detected in AV communi- cation signal between AV control unit and multifunction switch. 	 Multifunction switch power supply and ground circuits. AV communication circuit 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.

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

AV COMM Diagnosis

System Diag	nostic Menu	ı > Vehi	cle CAN (Эваск)
Signal Tx(HVAC) Rx(ECM) Rx(Cluster) Rx(BCM) Rx(HVAC) Rx(USM)	Status OK OK OK OK OK	Count OK OK OK OK OK	Checking Reset
			JSNIA0080GB

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

- 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.
- If it resets, the error counter is erased.

Items	Status (Current)	Counter (Past)
C Tx (ITM–SW)	OK / UNKWN	OK / 0 - 39
C Rx (PrimarySW–ITM)	OK / UNKWN	OK / 0 - 39
C Rx (XM–ITM)	—	—

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)



Signal Status Count C Tx(ITM-SW) OK OK C Rx(PrimarySW-ITM) OK OK C Rx(BTHF-ITM) - - -





CONSULT - III Function (MULTI AV)

INFOID:000000006210196

M

K

А

CONSULT-III FUNCTIONS

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

		AV
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.	0
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.	
		P

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.

DIAGNOSIS SYSTEM (AV CONTROL UNIT) [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT-III 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 Detection Range



Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detect- ed.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts accord- ing to the diagnosis results. Refer to <u>AV-30, "Diagnosis Procedure"</u> .
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	Replace the AV control unit.
Cont Unit FLASH-ROM [U1200]	AV control unit molfunction is detected	
CAN CONT [U1216]	Av control unit manufiction is detected.	
FRONT DISP CONN [U1243]	 Display unit power supply and ground circuit malfunction is detected. Malfunction is detected in communication circuit between AV control unit and display unit. Malfunction is detected in communication signal between AV control unit and display unit. 	 Display unit power supply and ground circuit. Communication circuit between AV control unit and display unit.

OIAGNOSIS SYSTEM (AV CONTROL UNIT) < SYSTEM DESCRIPTION > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Error item	Description	Possible malfunction factor/Action to take
SAT CONN [U1255]	 Satellite radio tuner power supply and ground circuit malfunction is detected. Malfunction is detected in communication circuit between AV control unit and satellite radio tuner. Malfunction is detected in communication signal between AV control unit and satellite radio tuner. Malfunction is detected in request signal circuit between AV control unit and satellite radio tuner. 	 Satellite radio tuner power supply and ground circuit. Communication circuit 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]	 Multifunction switch power supply and ground circuit malfunction is detected. Malfunction is detected in AV communi- cation circuit between AV control unit and multifunction switch. Malfunction is detected in AV communi- cation signal between AV control unit and multifunction switch. 	 Multifunction switch power supply and ground circuits. AV communication circuit between AV control unit and multifunction switch.

DATA MONITOR

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.

Dis-**Display Item** Vehicle status Remarks play On Vehicle speed >0 km/h (0 MPH) VHCL SPD SIG Off Vehicle speed =0 km/h (0 MPH) Changes in indication may be delayed. This is normal. On Parking brake is applied. PKB SIG Off Parking brake is released. Light switch ON On ILLUM SIG Κ Off Light switch OFF On Ignition switch ON IGN SIG Off Ignition switch in ACC position L On Shift the selector lever to "R" position Changes in indication may be delayed. This is nor-**REV SIG** Shift the selector lever other than "R" mal. Off Μ position

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	
PKB SIG	
ILLUM SIG	is selected.
IGN SIG	
REV SIG	

 \circ

Ρ

Н

DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

INFOID:000000006210197

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-26, "CAN Communication Signal Chart".

DTC Logic

INFOID:000000006210198

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	Diagnostic item is detected when	Probable malfunction location
U1000	CAN COMM CIRCUIT	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:000000006210199

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 system". Refer to <u>LAN-17, "Trouble Diagnosis Flow Chart"</u>.

NO >> Refer to GI section. Refer to GI-43, "Intermittent Incident".

U1010 CONTROL UNIT (CAN) [BASE AUDIO WITHOUT REAR VIEW CAMERA] < DTC/CIRCUIT DIAGNOSIS > U1010 CONTROL UNIT (CAN) А Description INFOID:000000006210200 Initial diagnosis of AV control unit. В **DTC** Logic INFOID:000000006210201 С DTC DETECTION LOGIC Display contents of CON-DTC Diagnostic item is detected when ... Probable malfunction location SULT-III D U1010 CONTROL UNIT (CAN) CAN initial diagnosis malfunction is detected. AV control unit. **Diagnosis Procedure** Е INFOID:000000006210202 **1.**REPLACE AV CONTROL UNIT When DTC U1010 is detected, replace AV control unit. F >> INSPECTION END Н Κ L Μ AV Ρ

U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1310 AV CONTROL UNIT

Description

INFOID:000000006210203

Replace the AV control unit if this DTC is displayed. Refer to AV-90, "Exploded View".

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. AV control unit includes audio function and vehicle information function. It is connected to ECM and unified meter and A/C amp. 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). Auxiliary image signal is input from the auxiliary input jacks.

DTC Logic

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace AV control unit.

U1200 AV CONTROL UNIT [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

U1200 AV CONTROL UNIT

Description

INFOID:000000006210205

А

Part name	Description
V 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. AV control unit includes audio function and vehicle information function. It is connected to ECM and unified meter and A/C amp. 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). Auxiliary image signal is input from the auxiliary input jacks

DTC Logic

INFOID:000000006210206

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take	F
U1200	Cont Unit FLASH- ROM [U1200]	An internal malfunction is detected in AV control unit (FLASH-ROM).	Replace AV control unit.	

Μ

L

J

Κ

G

AV

0

< DTC/CIRCUIT DIAGNOSIS >

U1216 AV CONTROL UNIT [BASE AUDIO WITHOUT REAR VIEW CAMERA]

U1216 AV CONTROL UNIT

Description

INFOID:000000006210207

Replace the AV control unit if this DTC is displayed. Refer to AV-90, "Exploded View".

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. AV control unit includes audio function and vehicle information function. It is connected to ECM and unified meter and A/C amp. 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). Auxiliary image signal is input from the auxiliary input jacks.

DTC Logic

DTC	Display contents of CONSULT-III	DTC Detection Condition	Action to take
U1216	CAN CONT [U1216]	Internal malfunction of AV control unit (CAN controller) is detected.	Replace AV control unit.

U1243 DISPLAY UNIT

Description

INFOID:000000006210209

А

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Part name	Description
DISPLAY UNIT	 Display image is controlled by the serial communication from AV control unit. Inputs the RGB image signal (RGB, RGB area and RGB synchronizing) from AV control unit and the auxiliary image signal from the auxiliary input jacks. Outputs the synchronizing signals (HP and VP) to the AV control unit.

U1243 DISPLAY UNIT

DTC Logic

INFOID:000000006210210

INFOID:000000006210211

Н

Κ

L

Μ

Ρ

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1243	FRONT DISP CONN [U1243]	 Display unit power supply and ground circuit malfunction is detected. Malfunction is detected in communication circuit between AV control unit and display unit. Malfunction is detected in communication signal between AV control unit and display unit. 	 Display unit power supply and ground circuit. Communication circuit between AV control unit and display unit.

Diagnosis Procedure

1. CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. F	Refer to A	<u>V-40, "</u>	'DISPLAY	UNIT :	Diagnosi	<u>s Procedure".</u>	_
Is the inspection result normal?							

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	Continuity	
M71	M71	11	M83	56	Existed
		22		44	LAISIEU

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

Displa	ay unit		Continuity	
Connector	Terminals	Ground	Continuity	
11	Ground	Not eviated		
IVI / I	Not existed	Not existed		

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.

< DTC/CIRCUIT DIAGNOSIS >

U1243 DISPLAY UNIT [BASE AUDIO WITHOUT REAR VIEW CAMERA]

(+) Display unit		()	Condition	Reference value	
Connector	Terminal				
M71	11	Ground	When adjusting display bright- ness.	(V) 6 4 2 0 •••••1ms PKiB5039J	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit.

4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+) Display unit		(-)	Condition	Reference value	
Connector	Terminal				
M71	22	Ground	When adjusting display bright- ness.	(V) 6 4 2 0 ++1ms PKiB5039J	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace display unit.
U1255 SATELLITE RADIO TUNER < DTC/CIRCUIT DIAGNOSIS > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

U1255 SATELLITE RADIO TUNER

Description

INFOID:000000006210212

А

Part name			Description					
SATELL	ITE RADIO	TUNER		 Input AV c It is from 	Inputs the satellite radio signal from satellite radio antenna and outputs it to the AV control unit. It is controlled with the communication (communication signal, request signal) from AV control unit.			
DTC L	ogic							INFOID:000000006210
DTC	Display CON	contents of		DTC De	etection Conditio	n		Possible causes
U1255	SAT CON [U1255]	N	 Satellite rad malfunction Malfunction tween AV cd Malfunction tween AV cd Malfunction tween AV cd 	 radio tuner power supply and ground circuit tion is detected. Satellite radio tuner power and ground circuit. Satellite radio tuner power and ground circuit. Communication circuit be-control unit and satellite radio tuner. V control unit and satellite radio tuner. Request signal circuit be-control unit and satellite radio tuner. Request signal circuit be-control unit and satellite radio tuner. Request signal circuit be-control unit and satellite radio tuner. 			ellite radio tuner power supply ground circuit. nmunication circuit between A\ trol unit and satellite radio tun- uest signal circuit between A\ trol unit and satellite radio tun-	
Diagno	osis Pro	cedure						INFOID:00000006210
1 .CHE	CK SATE	LLITE RAI		OWER	SUPPLY AND	GROUND	CIRCUIT	-
Check s <u>Diagnos</u> s the in	satellite ra	idio tuner <u>lure"</u> . result norn	power supply	and gro	ound circuit. F	Refer to <u>AV-</u>	<u>42, "SAT</u>	ELLITE RADIO TUNER
YES NO CHE	>> GO T >> Repa	O 2. ir malfunc	tioning parts.					
YES NO CHE . Turr . Disc . Che	>> GO T >> Repa CK CONT n ignition connect A eck contin	O 2. ir malfunc INUITY C switch OF V control u uity betwe	tioning parts. OMMUNICATI F. unit connector a en AV control u	ON CIR and sate	CUIT AND R ellite radio tur ness connecto	EQUEST S ner connecto or and satell	IGNAL C or. ite radio 1	IRCUIT tuner harness connector
YES NO CHE . Turr . Disc . Che	>> GO T >> Repa CK CONT n ignition : connect A eck contin	O 2. ir malfunc INUITY C switch OF V control u uity betwe	tioning parts. OMMUNICATI F. unit connector a en AV control u Satellite radio tu	ON CIR and sate unit hare	CUIT AND R ellite radio tur ness connecto	EQUEST S	IGNAL Cl or. ite radio f	IRCUIT tuner harness connector
YES NO . CHE . Turr . Disc . Che A ¹ Connec	>> GO T >> Repa CK CONT n ignition connect A eck contin	O 2. ir malfunc INUITY C switch OF V control u uity betwe it	tioning parts. OMMUNICATI F. unit connector a en AV control u Satellite radio tu Connector Terr	ON CIR and sate unit harr	CUIT AND R ellite radio tur ness connecto Continuity	EQUEST Siner connector	IGNAL C or. ite radio 1	IRCUIT tuner harness connector
YES NO 2.CHE . Turr 2. Disc 3. Che A' Connec	>> GO T >> Repa CK CONT n ignition connect A eck contin V control un ctor Ter	O 2. ir malfunc INUITY C switch OF V control uity betwe it minals 28 29 30	tioning parts. OMMUNICATI F. unit connector a en AV control u Satellite radio tu Connector Terr B236	ON CIR and sate unit harr minals 8 9 10	CUIT AND R ellite radio tur ness connecto Continuity Existed	EQUEST Some connector	IGNAL C	IRCUIT tuner harness connector
YES NO - CHE - Turr - Disc - Che - A' Connec - M82 - Che	>> GO T >> Repa CK CONT n ignition : connect A eck contin V control un ctor Ter	O 2. ir malfunc INUITY C switch OF V control u uity betwe it minals 28 29 30 uity betwe	tioning parts. OMMUNICATI F. unit connector a en AV control u Satellite radio tu Connector Terr B236 en AV control u	ON CIR and sate unit harr minals 8 9 10 unit harr	CUIT AND R ellite radio tur ness connecto Continuity Existed	EQUEST S her connector or and satell	IGNAL C or. ite radio t	IRCUIT tuner harness connector
YES NO . CHE . Turn . Disc . Che M82 . Che	>> GO T >> Repa CK CONT n ignition = connect A eck contin V control un ctor Ter 2 eck contin	O 2. ir malfunc INUITY C switch OF V control uity betwe it minals C 28 29 30 uity betwe	tioning parts. OMMUNICATI F. unit connector a en AV control u Satellite radio tu Connector Terr B236 en AV control u	ON CIR and sate unit harn minals 8 9 10 unit harn	CUIT AND R ellite radio tur ness connecto Continuity Existed	EQUEST Some connectors and satell	IGNAL C or. ite radio f	IRCUIT tuner harness connector
YES NO . CHE . Disc . Disc . Che M82 . Che	>> GO T >> Repa CK CONT n ignition connect A eck contin V control un ctor Ter eck contin AV contro	O 2. ir malfunc INUITY C switch OF V control uity betwe it minals C 28 29 30 uity betwe of unit	tioning parts. OMMUNICATI F. unit connector a en AV control u Satellite radio tu Satellite radio tu B236	ON CIR and sate unit harr minals 8 9 10 unit harr	CUIT AND R ellite radio tur ness connecto Continuity Existed ness connecto Continuity	EQUEST Since connector and satell	IGNAL C or. ite radio f	IRCUIT tuner harness connector
YES NO CHE Disc Disc Che M82 Che Che	>> GO T >> Repa CK CONT n ignition = connect A eck contin V control un ctor Ter 2 eck contin AV contro	O 2. ir malfunc INUITY C switch OF V control u uity betwe it minals 28 29 30 uity betwe d unit Terminals	tioning parts. OMMUNICATI F. unit connector a en AV control u Satellite radio tu Connector Terr B236 en AV control u	ON CIR and sate unit harr minals 8 9 10 unit harr	CUIT AND R ellite radio tur ness connecto Continuity Existed ness connecto Continuity	EQUEST Some connector and satell	IGNAL C	IRCUIT tuner harness connector
YES NO - CHE - Turr - Disc - Che - A Connec - M82 - Che	>> GO T >> Repa CK CONT n ignition = connect A eck contin V control un ctor Ter 2 eck contin AV contro nector	O 2. ir malfunc TNUITY C switch OF V control uity betwe it minals C 28 29 30 uity betwe d unit Terminals 28 29 30 0 0 0 0 0 0 0 0 0 0 0 0 0	tioning parts. OMMUNICATI F. unit connector a en AV control u Satellite radio tu Connector Terr B236 en AV control u Ground	ON CIR and sate unit harn minals 8 9 10 unit harn	CUIT AND R ellite radio tur ness connecto Continuity Existed ness connecto Continuity	EQUEST Siner connector for and satell	IGNAL C or. ite radio f	IRCUIT tuner harness connector
YES NO 2.CHE . Turr 2. Disc 3. Che Connec M82	>> GO T >> Repa CK CONT n ignition = connect A eck contin V control un ctor Ter 2 eck contin AV contro nector 82	O 2. ir malfunc INUITY C switch OF V control u uity betwe it minals 28 29 30 uity betwe d unit Terminals 28 29 30 29 30 10 10 10 10 10 10 10 10 10 1	tioning parts. OMMUNICATI F. unit connector a en AV control u Satellite radio tu Satellite radio tu B236 en AV control u Ground	ON CIR and sate unit harr minals 8 9 10 unit harr	CUIT AND R ellite radio turness connecto Continuity Existed ness connecto Continuity Not existed	EQUEST Siner connector or and satell	IGNAL C or. ite radio f	IRCUIT tuner harness connector

YES >> GO TO 3.

NO >> Repair harness or connector.

U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

$\overline{\mathbf{3.}}$ 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.



Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit.

4.CHECK SATELLITE RADIO TUNER

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



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace satellite radio tuner.

< DTC/CIRCUIT DIAGNOSIS >

U1300 AV COMM CIRCUIT

Description

INFOID:000000006210215

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

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.

U1300 AV COMM CIRCUIT

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1300 U1240	 AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] 	 Multifunction switch power supply and ground circuit malfunction is detected. Malfunction is detected in AV communication circuit between AV control unit and multifunction switch. Malfunction is detected in AV communication signal between AV control unit and multifunction switch. 	 Multifunction switch power supply and ground circuits. AV communication circuit between AV control unit and multifunction switch.

Н

J

Κ

M

L

0

Р

А

С

D

Е

F

POWER SUPPLY AND GROUND CIRCUIT

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:000000006210216

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
Ignition switch ACC or ON	19
Ignition switch ON or START	3

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	M81	19	OFF	Battery voltage
ACC power supply	M81	7	ACC	Battery voltage
Ignition signal	M85	104	ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between AV control unit and fuse.

${f 3.}$ 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
Cround	M81	20	OFF	Evistod
	M85	85		LAISICU

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

DISPLAY UNIT

DISPLAY UNIT : Diagnosis Procedure

INFOID:000000006210217

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	M71	2		9.V
Signal VCC		3	100	5 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

$\overline{2.}$ CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

- 1. Turn ignition switch OFF.
- 2. Disconnect the harness connector between display unit and AV control unit.
- 3. Check continuity between display unit harness connector M71 and AV control unit harness connector.

Signal name	Display unit (M71)	AV control unit (M83)	Continuity	-
Inverter VCC	2	59	Existed	_
Signal VCC	3	47	Existed	_ 0

4. Check continuity between display unit harness connector M71 and ground.

				D
Signal name	Display unit (M71)	_	Continuity	-
Inverter VCC	2	Ground	Not existed	-
Signal VCC	3	Ground	Not existed	E

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.

					- ŀ
Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)	
Inverter VCC	M83	59		9.V	-
Signal VCC	1000	47		3 V	_

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replacement of AV control unit.

4.CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect display unit connector.

3. Check continuity between display unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M71	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

MULTIFUNCTION SWITCH

MULTIFUNCTION SWITCH : Diagnosis Procedure

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.	P
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

INFOID:000000006210218

Μ

Κ

А

F

POWER SUPPLY AND GROUND CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Check voltage between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
ACC power supply	M72	3	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between multifunction switch and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect multifunction switch connector.

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M72	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Diagnosis Procedure

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
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	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B236	12	OFF	Battery voltage
ACC power supply	B236	16	ACC	Battery voltage

Is the inspection result normal?

YES >> INSPECTION END

NO >> Check harness between satellite radio tuner and fuse.

INFOID:000000006210219

RGB (R: RED) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

RGB (R:	RED) S	IGNAL C	IRCUIT				Λ
Descriptio	n					INFOID:000000006210220	A
Transmit the	image displ	layed with A	V control uni	t with RGE	3 signal to the display unit.		В
Diagnosis	Procedu	re				INFOID:000000006210221	
1.снеск с	CONTINUIT	Y RGB (R: R	ED) SIGNAI		ſ		С
1. Turn ign	ition switch	OFF.	,				
 Disconn Check c 	ect display u ontinuity bet	unit connecto tween displa	or and AV co y unit harnes	ntrol unit o ss connec	connector. tor and AV control unit harness con	nector.	D
Displa	ay unit	AV cor	ntrol unit	Conti	puity		_
Connector	Terminal	Connector	Terminal	Conti			E
M71	17	M83	40	Exis	ted		
4. Check c	ontinuity be	tween displa	y unit harnes	ss connec	tor and ground.		F
Displa	ay unit			Conti			
Connector	Terminal	Gro	bund	Conti			G
M71	17			Not ex	kisted		
Is the inspec	tion result n	ormal?					Н
YES >>0 NO >>	GO TO 2. Repair harn	ess or conne	ector.				
2.CHECK F	RGB (R: REI	D) SIGNAL					I
1. Connect	t display unit	t connector a	and AV contr	ol unit cor	nector.		
2. Turn ign	ition switch	ON.	oit harnaaa a	opportor	and around		
J. CHECKS	Igrial betwee	en uispiay ui	III HAIHESS C		and ground.		J
(+	+)						
Displa	ay unit	(–)	Condi	ition	Reference value		Κ
Connector	Terminal						
			0		(V)		L
			ment mode, a	nd then dis-			
M71	17	Ground	play color bar selecting "Col	[.] by lor Spec-			M
			trum Bar" on	DISPLAY			
			DIAGNUSIS	screen.	SKIB2238.J		
Is the inspec	tion result n	ormal?					AV
YES >>	Replace dis	play unit.					

NO >> Replace AV control unit.

Ρ

Ο

RGB (G: GREEN) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB (G: GREEN) SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210223

INFOID:000000006210222

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

1.CHECK CONTINUITY RGB (G: GREEN) 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.

Displa	ay unit	AV con	itrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	6	M83	39	Existed

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

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M71	6		Not existed
			•

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK RGB (G: GREEN) 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.

(+)			
Displa	ay unit	(-)	Condition	Reference value
Connector	Terminal			
M71	6	Ground	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spec- trum Bar" on DISPLAY DIAGNOSIS screen.	$ \begin{array}{c} (V) \\ 0.4 \\ 0 \\ + & + & + & + & + & + & + \\ 0 \\ -0.4 \\ \hline \end{array} $

Is the inspection result normal?

YES >> Replace display unit.

NO >> Replace AV control unit.

RGB (B: BLUE) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

BLUE) S	SIGNAL	CIRCUIT				Λ
n					INFOID:000000006210224	~
image displ	layed with A	V control unit	t with RGE	B signal to the display unit.		В
Procedu	re				INFOID:000000006210225	
		LUE) SIGNA		т		C
ition switch	OFF.			•		0
ect display u continuity bet	unit connecte tween displa	or and AV co y unit harnes	ntrol unit o ss connec	connector. tor and AV control unit harness	connector.	D
ay unit	AV cor	ntrol unit	0			_
Terminal	Connector	Terminal	Conti	nuity		E
18	M83	38	Exis	ted		
continuity be	tween displa	y unit harnes	ss connec	tor and ground.		F
av unit						
Terminal	Gro	ound	Conti	nuity		G
18			Not ex	risted		
tion result n	ormal?					Н
GO TO 2.						
Repair harn		ector.				
	JE) SIGNAL		-1 14			
ition switch	i connector a	and AV contro	oi unit cor	nector.		
ignal betwee	en display u	nit harness c	onnector a	and ground.		J
+) av unit	()	Condi	tion	Reference value		K
Terminal						
		Start confirma	tion/adjust-	(V)		
18	Ground	play color bar	by			
10	Cround	selecting "Col trum Bar" on I	or Spec- DISPLAY			M
		DIAGNOSIS	screen.	$-0.4 \rightarrow 40\mu s$		
tion reault -				SKIB2237J		AV
<u>Developed dia</u>	<u>ormar?</u>					
	BLUE) Son image display Procedu ONTINUIT ition switch ect display unit ay unit Terminal 18 ontinuity best ay unit Terminal 18 ction result n GO TO 2. Repair harne GGB (B: BLU t display unit ition switch ignal betwee +) ay unit Terminal	BLUE) SIGNAL image displayed with All image displayed with All Procedure CONTINUITY RGB (B: B ition switch OFF. ect display unit connector ay unit AV cor Terminal Connector 18 M83 ontinuity between displa ay unit Ground Terminal Ground ay unit Ground Terminal Ground ay unit Ground tion result normal? GO TO 2. Repair harness or connector a ition switch ON. ignal between display unit (-) thisplay unit connector a ition switch ON. ignal between display unit (-) Terminal Ground 18 Ground 18 Ground 18 Ground	BLUE) SIGNAL CIRCUIT image displayed with AV control unit Procedure CONTINUITY RGB (B: BLUE) SIGNA ition switch OFF. ect display unit connector and AV co ontinuity between display unit harnes ay unit AV control unit Terminal Connector 18 M83 38 ontinuity between display unit harnes ay unit Connector 18 M83 38 ontinuity between display unit harnes ay unit Ground 18 ction result normal? GO TO 2. Repair harness or connector. RGB (B: BLUE) SIGNAL t t t display unit connector and AV controlition switch ON. Ignal between display unit harness c the store of	BLUE) SIGNAL CIRCUIT image displayed with AV control unit with RGE Procedure CONTINUITY RGB (B: BLUE) SIGNAL CIRCUI ition switch OFF. ect display unit connector and AV control unit continuity between display unit harness connect ay unit AV control unit Terminal Control 18 M83 38 ontinuity between display unit harness connect ay unit Control 18 M83 38 ontinuity between display unit harness connect ay unit Ground Continuity Terminal Ground Continuity ay unit Ground Continuity Terminal Ground Continuity B(B: BLUE) SIGNAL Continuity Not exition result normal? GO TO 2. Repair harness or connector. RGB (B: BLUE) SIGNAL t display unit connector and AV control unit connition switch ON. Condition ignal between display unit harness connector and AV control unit connition switch ON. Start confirmation/adjust-ment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen. 18 Ground Start confirmation/adjust-ment mode,	BLUE) SIGNAL CIRCUIT image displayed with AV control unit with RGB signal to the display unit. Procedure CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT ition switch OFF. ect display unit connector and AV control unit connector. ontinuity between display unit harness connector and AV control unit harness ay unit AV control unit Terminal Continuity 18 M83 ay unit Ground 18 Ground Continuity 18 Ground Continuity 18 Ground Continuity 18 Ground display unit connector and AV control unit connector. RCB (B: BLUE) SIGNAL clippaly unit connector and AV control unit connector. ition result normal? ay unit (-) Condition Reference value thypeint (-) 18 Ground Start confirmation/adjust- 0 play unit connector for DISPLAY 0 18 Ground Start confirmation/adjust- play unit for bar by sele	BLUE) SIGNAL CIRCUIT Image displayed with AV control unit with RGB signal to the display unit. Procedure wonnecessed CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT ition switch OFF. ect display unit connector and AV control unit connector. avguint Continuity 18 M83 94 unit to connector. 18 Ground 18 Ground 18 Ground 18 Ground 18 Ground 19 Start confirmation/adjust- ment mode, and then dis- play color bar by splacetor by adector by AUGNOSIS screen.

NO >> Replace AV control unit.

Ρ

Ο

RGB SYNCHRONIZING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB SYNCHRONIZING SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210227

INFOID:000000006210226

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

1. CHECK CONTINUITY RGB SYNCHRONIZING 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.

Displa	ay unit	AV cor	ntrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	19	M83	41	Existed

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

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M71	19		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK RGB SYNCHRONIZING 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.

(Displa	+) ay unit	()	Reference value
Connector	Terminal		
M71	19	Ground	(V) 4 0 + + 20 µs SKIB3603E

Is the inspection result normal?

YES >> Replace display unit.

NO >> Replace AV control unit.

RGB AREA (YS) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB AREA (YS) SIGNAL CIRCUIT

Description

Transmits the display area of RGB image displayed by AV control unit with RGB area (YS) signal to display $_{\rm B}$ unit.

Diagnosis Procedure

1.CHECK CONTINUITY RGB AREA (YS) 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.

Displa	ay unit	AV con	trol unit	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M71	9	M83	43	Existed	
4. Check c	ontinuity bet	tween displa	y unit harness co	onnector and	ground.
Displa	ay unit			0 11 11	_
Connector	Terminal	Ground		Continuity	
M71	9			Not existed	
Is the inspec	ction result n	ormal?			
 CHECK F Connect Turn ign Check s 	RGB AREA (t display unit ition switch ignal betwee	(YS) SIGNAL t connector a ON. en display ur	- ind AV control ur it harness conne	nit connector. ector and gro	und.
(•	+)				
Displa	ay unit	(-)	Condition		Reference value
Connector	Terminal				(//pprox.)
			At RGB image disp	blayed	5 V
				(V)	

Is the inspection result normal?

YES >> Replace display unit.

M71

NO >> Replace AV control unit.

9

Ground

At AUX image is dis-

played.

PKIB4948.I

А

С

D

INFOID:000000006210228

INFOID-000000006210229

AV

Ρ

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

Description

In composite image (AUX image, 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:000000006210231

INFOID:000000006210230

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 con	itrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	8	M83	45	Existed

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

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M71	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.

(+) Display unit		(-)	Reference value
Connector	Terminal		
M71	8	Ground	(V) 4 0 + 20µs 5KIB3601E

Is the inspection result normal?

YES >> Replace AV control unit.

NO >> Replace display unit.

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

Description

In composite image (AUX image, 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

$1. \mathsf{CHECK} \ \mathsf{CONTINUITY} \ \mathsf{VERTICAL} \ \mathsf{SYNCHRONIZING} \ \mathsf{(VP)} \ \mathsf{SIGNAL} \ \mathsf{CIRCUIT}$

- 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.

•	ay unit	AV con	trol unit Continuity			
Connector	Terminal	Connector	Terminal	Continuity		
M71	20	M83	57	Existed		F
Check c	ontinuity be	tween displa	y unit harne	ss connector a	nd ground.	
						(
Displa	ay unit			Continuity		
Connector	Terminal	Gro	ound			
M71	20			Not existed		ŀ
the inspec	tion result n	ormal?				
′ES >>	GO TO 2.		-1			
<pre>>> Or >></pre>	Repair nam	ess or conne				
.CHECK \	/ERTICAL S	SYNCHRONI	ZING (VP) S	SIGNAL		
Connect	t display uni	t connector a	and AV contr	ol unit connect	or.	
. Turn ign	ition switch	ON				
Chock	ianal hotwo	on dieplov ur	vit harnoss o	opportor and (round	
Check s	ignal betwee	en display ur	nit harness c	onnector and g	round.	
. Check s	ignal betwee	en display ur	nit harness c	onnector and g	round.	k
. Check s	ignal betwee	en display ur	hit harness c	onnector and g	round.	h
Check s (- Displa	ignal betwee +) ay unit	(-)	nit harness c Refe	onnector and g	round.	ŀ
Check s (- Displa Connector	ignal betwee +) ay unit Terminal	(-)	nit harness c Refe	onnector and g	round.	ŀ
Check s (- Displa Connector	ignal betwee +) ay unit Terminal	(-)	nit harness c Refe	onnector and g	round.	ŀ
Check s (- Displa Connector	ignal betwee +) ay unit Terminal	(-)	nit harness c Refe	erence value	round.	k L
Check s (- Displa Connector M71	ignal betwee +) ay unit Terminal 20	(-) Ground	nit harness c Refe	erence value	round. 	k L
Check s (- Displa Connector M71	ignal betwee +) ay unit Terminal 20	(-) Ground	Nit harness c Refe		round. 	H L N
Check s (- Displa Connector M71	ignal betwee +) ay unit Terminal 20	(-) Ground	nit harness c Refe	erence value	round.	k L N
Check s (- Displa Connector M71	ignal betwee +) ay unit Terminal 20	(-) Ground	(V) 4 0 4 4 4 4 4 4 4 4 4	erence value	round.	H L N A
Check s (- Displa Connector M71 the inspec	ignal betwee +) ay unit Terminal 20 20	Ground	nit harness c Refe	erence value	round.	k L A
Check s (- Displa Connector M71 the inspec (ES >>	ignal betwee +) ay unit Terminal 20 <u>etion result n</u> Replace AV	Ground Ground Ormal? control unit.	(V) 4 0 4 4 0 4 4 4 4	erence value	round. 	H L M A
. Check s (- Displa Connector M71 ; the inspec YES >> NO >>	ignal betwee +) ay unit Terminal 20 <u>ction result n</u> Replace AV Replace dis	Ground Ground Ormal? control unit. play unit.	nit harness c Refe	erence value	round. 	k L A A

А

D

INFOID:000000006210232

INFOID:000000006210233

< DTC/CIRCUIT DIAGNOSIS > [BA

AUX IMAGE SIGNAL CIRCUIT

Description

• Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.

• AV control unit transmits the image signal that is inputted to the display unit.

Diagnosis Procedure

INFOID:000000006210235

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	Auxiliary input jacks		itrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M154	7	M84	66	Existed

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

Auxiliary i	input jacks		Continuity
Connector	Terminal	Ground	Continuity
M154	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.

(+) Auxiliary input jacks		(–)	Condition	Reference value
M154	7	Ground	At AUX image displayed.	(V) 0.4 −0.4 ++40µs SKIB2251J

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check that there is no malfunction in the external device.

${f 3.}$ CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT (AV CONTROL UNIT AND DISPLAY UNIT)

1. Turn ignition switch OFF.

2. Disconnect auxiliary input jacks connector and AV control unit connector.

3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV con	itrol unit	Continuity
Connector	Terminal	al Connector Tern		Continuity
M71	15	M83	36	Existed

INFOID:000000006210234

< DTC/CIRCUIT DIAGNOSIS >

AUX IMAGE SIGNAL CIRCUIT [BASE AUDIO WITHOUT REAR VIEW CAMERA]

4. Check continuity between display unit harness connector and ground. А Display unit Continuity Ground Connector Terminal В M71 15 Not existed Is the inspection result normal? YES >> GO TO 4. С NO >> Repair harness or connector. **4.**CHECK AUX IMAGE SIGNAL D 1. Connect AV control unit connector and display unit connector. 2. Turn ignition switch ON. Check signal between display unit harness connector and ground. 3. Е (+) Display unit (-) Condition Reference value F Connector Terminal (V) 0. M71 15 Ground At AUX image displayed. Н -0 SKIB2251J Is the inspection result normal? YES >> Replace display unit. NO >> Replace AV control unit. Κ

Μ

L

AV

0

Ρ

CD EJECT SIGNAL CIRCUIT [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

CD EJECT SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210237

INFOID:000000006210236

1. CHECK CONTINUITY CD 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 con	itrol unit	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M72	14	M85	103	Existed	

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

Multifunc	tion switch		Continuity
Connector	Terminal	Ground	Continuity
M72	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.

(+) AV control unit					
		(–)	Condition	Voltage (Approx.)	
Connector	Terminal			()	
M85	103	Ground	Pressing the eject switch	0 V	
NIO5	105	Ground	Except for above	3.3 V	

Is the inspection result normal?

YES >> Replace preset switch.

NO >> Replace AV control unit.

STEERING SWITCH SIGNAL A CIRCUIT SIS > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL A CIRCUIT

Descriptio	F INFOID:000000006210238				
Transmits th	e steering s	witch signal t	o AV control	unit.	F
Diagnosis	Procedu	re			INFOID:00000006210239
1					
I.CHECK	STEERINGS	SWITCH SIG	INAL A CIRC		(
 Disconn Check of 	ect AV contr continuity bet	ol unit conne ween AV co	ector and spir ntrol unit har	ral cable connector ness connector ar	or. nd spiral cable harness connector.
AV con	ntrol unit	Spiral	cable	Oractionsity	-
Connector	Terminal	Connector	Terminal	Continuity	F
M81	6	M36	24	Existed	-
3. Check c	continuity bet	ween AV co	ntrol unit har	ness connector a	nd ground.
					F
AV con	ntrol unit			Continuity	
Connector	Terminal	Gro	und		-
M81	6			Not existed	-
Is the inspec	<u>ction result n</u>	ormal?			
NO >> 2.CHECK S	Repair harne SPIRAL CAE	ess or conne BLE	ctor.		
Check spiral	l cable.				1
Is the inspec	<u>ction result n</u>	ormal?			
YES >>	GO TO 3. Replace spir	al cable			
3 CHECK			TAGE		
	t AV control			able connector	
 Connec Turn ign Check y 	nition switch (ON.	ol unit harne	ss connector	r
	onago born				1
(-	+)	(-	-)	Voltago	-
AV con	ntrol unit	AV con	trol unit	(Approx.)	
Connector	Terminal	Connector	Terminal		_
M81	6	M81	15	3.3 V	_
Is the inspec	<u>ction result n</u>	ormal?			AV
YES >>	GO TO 4.	a antral unit			
	SIEERING				(
 Turn ign Check s 	nition switch (Steering swite	OFF. ch. Refer to /	AV-53. "Comi	oonent Inspection	".
Is the inspec	ction result n	ormal?			- F
YES >> NO >>	INSPECTIO Replace ste	N END ering switch.			
Compone	nt Inspec	tion			INFOID:00000006210240
Measure the	e resistance l	between the	steering swit	tch connector tern	ninals 14 to 17 and 15 to 17.

STEERING SWITCH SIGNAL A CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Standard		
Between terminals 14 and 17		Approx.
MENU DOWN switch ON	: 318 – 324 Ω	
MENU UP switch ON	: 120 – 122 Ω	Approx.
SOURCE switch ON	: 0 Ω	
Between terminals 15 and 17		
VOL UP switch ON	: 120 – 122 Ω	
VOL DOWN switch ON	: 0 Ω	

STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[BASE AUDIO WITHOUT REAR VIEW CAMERA]
STEERING SWITCH SIGNAL B CIRC	UIT
Description	INFOID:00000006210241
Transmits the steering switch signal to AV control unit.	

Diagnosis Procedure

1. CHECK STEERING SWITCH SIGNAL B CIRCUIT

Disconnect AV control unit connector and spiral cable connector. 1.

2. Check continuity between AV control unit harness connector and spiral cable harness connector.

						D
AV cor	ntrol unit	Spiral	cable	Continuity		
Connector	Terminal	Connector	Terminal			E
M81	16	M36	31	Existed		
3. Check of	continuity be	tween AV cor	ntrol unit har	rness connector and	d ground.	F
AV cor	ntrol unit			Continuity		
Connector	Terminal	Gro	und	Continuity		
M81	16	-		Not existed		G
Is the inspec	ction result n	ormal?				
YES >> NO >>	GO TO 2. Repair harn	ess or conne	ctor.			Н
Z.CHECK	SPIRAL CAE	BLE				
Check spira	l cable.					1
Is the inspec	<u>ction result n</u>	ormal?				
YES >>	GO TO 3.	ral aabla				J
3 outrov			TAOF			
J.CHECK /	AV CONTRO	DL UNIT VOL	IAGE			
 Connec Turn igr Check v 	nition switch voltage betwo	ON. een AV contr	of and spiral	ess connector.		K
(+)	(-	-)			
AV cor	ntrol unit	AV con	AV control unit Voltage			
Connector	Terminal	Connector	Terminal			Μ
M81	16	M81	15	3.3 V		
Is the inspect YES >> NO >> 4.CHECKS	ction result n GO TO 4. Replace AV STEERING S	ormal? control unit. SWITCH				AV
1. Turn iar	nition switch	OFF.				
2. Check s	steering swite	ch. Refer to <u>/</u>	V-55, "Com	ponent Inspection"		
Is the inspec	ction result n	ormal?				Р
YES >>	INSPECTIO	NEND				
NO >>	Replace ste	ering switch.				
Compone	ent Inspec	tion				INFOID:000000006210243

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

Revision: 2011 November

AV-55

INFOID:000000006210242

А

В

С

STEERING SWITCH SIGNAL B CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Standard		
Between terminals 14 and 17		SOURCE
MENU DOWN switch ON	: 318 – 324 Ω	
MENU UP switch ON	: 120 – 122 Ω	Approx.
SOURCE switch ON	:0Ω	
Between terminals 15 and 17		
VOL UP switch ON	: 120 – 122Ω	
VOL DOWN switch ON	: 0 Ω	
		17

		STEERIN	IG SWITC	CH SIGNAL GN	ND CIRCUIT	
< DTC/CIRC	CUIT DIAGN	NOSIS >		[BASE AUD	NO WITHOUT REAR VIEW CAMERA]	
STEERI	NG SWIT	CH SIG	NAL GNI	D CIRCUIT		Δ
Descriptio	n				INFOID:000000006210244	/ \
Transmits th	e steering sv	witch signal t	o AV control	unit.		R
Diagnosis	Procedu	re			INFOID:00000006210245	D
						C
			otor and ani			0
2. Check c	continuity bet	ween AV co	ntrol unit har	ness connector and	d spiral cable harness connector.	
						D
AV con	trol unit	Spiral	cable	Continuity		
Connector	Ierminal	Connector	Ierminal	Eviated		Ε
	15 t AV control	IVIJO	ىن مە	Existed		
Is the inspec	tion result n	ormal?	JI.			F
YES >>	GO TO 2.	<u>onnar:</u>				1
NO >>	Repair harne	ess or conne	ctor.			
2.CHECK 8	SPIRAL CAE	BLE				G
Check spiral	cable.					
Is the inspec	<u>ction result n</u>	ormal?				Н
YES >>	GO TO 3. Baplaga api	al appla				
						1
						I
 Connect Check c 	c AV control	ween AV co	or. htrol unit har	ness connector and	d around.	
	,					J
AV con	trol unit			Continuity		
Connector	Terminal	Gro	ound	Continuity		Κ
M81	15			Existed		
Is the inspec	tion result n	ormal?				
YES >> NO >>	GO TO 4. Replace AV	control unit				L
4.CHECKS	STEERING S	SWITCH				
1 Turn ion	ition switch	OFF				M
2. Check s	teering swite	ch. Refer to /	AV-57, "Com	ponent Inspection".		
Is the inspec	<u>ction result n</u>	ormal?				A۱/
YES >>	INSPECTIO	N END				
	nt Ineneo	tion				~
Compone	in inspec				INFOID:000000006210246	0

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

Ρ

STEERING SWITCH SIGNAL GND CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Standard		
Between terminals 14 and 17		SOURCE Approx.
MENU DOWN switch ON	: 318 – 324 Ω	
MENU UP switch ON	: 120 – 122 Ω	Approx.
SOURCE switch ON	: 0 Ω	
Between terminals 15 and 17		
VOL UP switch ON	: 120 – 122 Ω	
VOL DOWN switch ON	: 0 Ω	
		17JSNIA0215GB

ECU DIAGNOSIS INFORMATION AV CONTROL UNIT

Reference Value

INFOID:00000006210247 B

А

С

J

Κ

L

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item		Condition	Value/Status	
	Ignition switch	Vehicle speed > 0 km/h (0 MPH)	On	
VICE SPD SIG	ON	Vehicle speed = 0 km/h (0 MPH)	Off	D
	Ignition switch	Parking brake is applied.	On	
PKB SIG	ON	Parking brake is released.	Off	E
	Ignition switch	Light switch ON	On	
ILLOW SIG	ON	Light switch OFF	Off	
	Ignition switch ON	_	On	F
	Ignition switch ACC	_	Off	G
DEV SIC	Ignition switch	Selector lever in R position	On	
REV SIG	ON	Selector lever in any position other than R	Off	

TERMINAL LAYOUT



PHYSICAL VALUES

Terr (Wire	minal e color)	Description			Condition Reference value		D. A
+	_	Signal name	Input/ Output	Condition		(Approx.)	IVI
2	3	Sound signal front LH	Output	Ignition switch	Sound output		AV
(Ľ)	(**)			ON			O P
4 (LG)	5 (SB)	Sound signal rear LH	Output	Ignition switch ON	Sound output	(V) 1 -1 -2ms SKIB3609E	

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Terminal (Wire color)		Description			Condition	Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
				Ignition	Keep pressing SOURCE switch.	0 V	
6 (P)	15 (B)	Steering switch signal A	Input	switch	Keep pressing Δ switch.	0.7 V	
()				ON	Keep pressing $ abla$ switch.	1.3 V	
. <u> </u>					Except for above.	3.3 V	
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage	
9	Ground	Illumination signal	Input	Ignition	Lighting switch is OFF.	0 V	
(L)	Giouna	nurnination signal	input	OFF	Lighting switch is ON.	12 V	
11 (BR)	12 (R)	Sound signal front RH	Output	lgnition switch ON	Sound output	(V) 1 0 -1 • 2ms SKiB3609E	
13 (L)	14 (P)	Sound signal rear speaker RH	Output	lgnition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E	
15 (B)	Ground	Steering switch signal GND	_	Ignition switch ON	_	0 V	
				Ignition	Keep pressing VOL DOWN switch.	0 V	
16 (L)	15 (B)	Steering switch signal B	Input	switch	Keep pressing VOL UP switch.	0.7 V	
					Except for above.	3.3 V	
19 (Y)	Ground	Battery power supply	Input	lgnition switch OFF	_	Battery voltage	
20 (B)	Ground	Ground	_	Ignition switch ON	_	0 V	
22 (B)	21 (W)	Satellite radio sound signal LH	Input	lgnition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 • • 2ms SKIB3609E	

< ECU DIAGNOSIS INFORMATION >

Terminal

(Wire	color)	Description				Reference value	А
+	_	Signal name	Input/ Output		Condition	(Approx.)	
24 (G)	23 (R)	Satellite radio sound signal RH	Input	Ignition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 + 2ms SKIB3609E	B
25		Shield			_	_	
26		Shield			—	_	F
28 (P)	Ground	Request signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • • 10ms SKIA9299J	F
29 (G)	Ground	Communication signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 -10 -10 -10 -10 -10 -	H
30 (L)	Ground	Communication signal (CONT→SAT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • • 1ms SKIA9301J	J K L
36 (BR)	Ground	Composite image signal	Output	Ignition switch ON	At AUX image is displayed	(V) 0.4 0 −0.4 ++40µs SKIB2251J	M
37 (Y)	Ground	Composite image ground	_	Ignition switch ON	_	0 V	0
38 (P)	Ground	RGB signal (B: blue)	Output	Ignition switch ON	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	(V) 0.4 0 411	Ρ

< ECU DIAGNOSIS INFORMATION >

AV CONTROL UNIT [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Terr (Wire	minal color)	Description				Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
39 (L)	Ground	RGB signal (G: green)	Output	Ignition switch ON	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	(V) 0.4 0 -0.4 -0.4 -0.4 -0.5 KIB2236J	
40 (G)	Ground	RGB signal (R: red)	Output	lgnition switch ON	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	(V) 0.4 0 + + + + + + + + + + + + + + + + + + +	
41 (W)	Ground	RGB synchronizing signal	Output	Ignition switch ON		(V) 4 0 + 20 µs SKIB3603E	
42	—	Shield			—	_	
43 (B)	Ground	RGB area (YS) signal	Output	Ignition switch ON	At RGB image is displayed At AUX image is displayed	5 V	
44 (L)	Ground	Communication signal (DISP→CONT)	Input	lgnition switch ON	When adjusting display brightness.	(V) 6 4 2 0 •••••1ms •••••1ms ••••••1ms ••••••1ms	
45 (R)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	_	(V) 4 0 → + 20µs SKIB3601E	
46 (LG)	Ground	Signal ground		Ignition switch ON	_	0 V	

< ECU DIAGNOSIS INFORMATION >

Terminal (Wire color)		Description			Condition	Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
47 (BG)	Ground	Signal VCC	Output	Ignition switch ACC	_	9 V	В
48 (BR)	Ground	Composite synchronizing signal	Output	Ignition switch ON		(V) 6 2 0 20 µ s KIA0187E	C D E
49 (Y)	_	Shield	—	—	_	_	
50		Shield	—	—	_	_	F
55 (B)	_	Shield	_	_	_	_	
56 (LG)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	(V) 6 4 2 0 •••••1ms •••••1ms ••••••1ms •••••••••••	G H
57 (G)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON		(V) 4 0 ++4ms SKIB3598E	K
58 (BR)	Ground	Inverter ground	_	Ignition switch ON		0 V	L
59 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	_	9 V	M
66 (G)	Ground	AUX image signal	Input	Ignition switch ON	When AUX mode is select- ed	(V) 0.4 0 −0.4 ++40µs SKIB2251J	AV O
73	_	Shield		_	—	—	Ρ
74 (R)	Ground	AUX image signal ground		Ignition switch ON		0 V	
85 (B)	Ground	Ground		Ignition switch ON	_	0 V	

< ECU DIAGNOSIS INFORMATION >

Terminal

(Wire color)		Description			Condition	Reference value
+	_	Signal name	Input/ Output		Condition	(Approx.)
86 (L)		CAN-H	Input/ Output	_	_	_
87 (P)	—	CAN-L	Input/ Output	_	_	_
88 (SB)	—	AV communication signal (H)	Input/ Output	_	—	_
89 (LG)		AV communication signal (L)	Input/ Output		_	_
90 (SB)		AV communication signal (H)	Input/ Output		_	_
91 (LG)		AV communication signal (L)	Input/ Output		_	_
95 (R)	Ground	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is select- ed	(V) 1 0 -1 • 2ms SKIB3609E
96 (W)	Ground	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is select- ed	(V) 1 -1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2
97 (B)	Ground	AUX sound signal ground	_	Ignition switch ON	_	0 V
101 (BR)	Ground	SW ground	_	Ignition switch ON	_	0 V
103	Ground	Eiect signal	Input		Pressing the eject switch	0 V
(V)					Except for above	3.3 V
104 (G)	Ground	Ignition signal	Input	Ignition switch ON	_	Battery voltage
105	Oracia	Daviana alamak	Innut	Ignition	R position	12 V
(BG)	Ground	Reverse signal	Input	ON	Other than R position	0 V
					Parking brake ON	0 V
106 (SB)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake OFF	(V) 8 4 0 10 ms JSNIA0007GB

Terminal Description (Wire color) Reference value Condition (Approx.) Input/ Signal name + _ Output NOTE: Maximum voltage may be 12 V due to specifications (connected units). (V)Ignition Vehicle speed signal When vehicle speed is ap-107 Ground Input switch prox. 40 km/h (25 MPH) (R) (8-pulse) ON Jms SKIA6649J 137 FM sub Input ____ ____ ____ AM-FM main 138 Input

Ignition

switch ACC

Output

DTC Index

139

Ground

INFOID:000000006210248

12 V

А

В

С

D

Е

F

G

Н

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

Antenna amp. ON signal

< ECU DIAGNOSIS INFORMATION >

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-30, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [U1010]	AV-31, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-32, "DTC Logic"
U1200	Cont Unit FLASH-ROM [U1200]	AV-33, "DTC Logic"
U1216	CAN CONT [U1216]	AV-34, "DTC Logic"
U1243	FRONT DISP CONN [U1243]	AV-35, "Diagnosis Procedure"
U1255	SAT CONN [U1255]	AV-37, "Diagnosis Procedure"
U1300 U1240	AV COMM CIRCUIT [U1300]SWITCH CONN [U1240]	AV-39, "Description"

Μ

AV

0

Ρ

< ECU DIAGNOSIS INFORMATION >

DISPLAY UNIT

Reference Value

TERMINAL LAYOUT

INFOID:000000006210249



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value	
+	-	Signal name	Input/ Output		Condition	(Approx.)	
1 (B)	Ground	Ground	_	Ignition switch ON	_	0 V	
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	_	9 V	
3 (BG)	Ground	Signal VCC	Input	Ignition switch ACC	_	9 V	
4 (Y)	Ground	Composite image ground		Ignition switch ON	_	0 V	
5 (Y)		Shield		_	_	_	
6 (L)	Ground	RGB signal (G: green)	Input	lgnition switch ON	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	(V) 0.4 0 −0.4 + 40µs SKIB2236J	
7	—	Shield			_	_	
8 (R)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON		(V) 4 0 → + 20µs SKIB3601E	

DISPLAY UNIT [HOUT REAR VIEW CAMERA]

AGNO	SIS INFORMATION >	[BASE AUDIO WITHOU	JT REA
nal plor)	Description		

SIS	GNO	SIS INFORMATION >		[[BASE AUDIO WITHOU	IT REAR VIEW CAMERA]	
Terminal Desc (Wire color)		Description			Condition	Reference value	A
	-	Signal name	Input/ Output		Contailion	(Approx.)	
					At RGB image is displayed	5 V	В
RC	iround	RGB area (YS) signal	Input	Ignition switch ON	At AUX image is displayed	(V) 6 4 2 0 ★ + 200,4 s FKIB4948J	C
						(V)	E
Cc (C	iround	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	6 4 2 0 • • • 1ms PKIE5039J	F
In۱	iround	Inverter ground		Ignition switch ON	_	0 V	G
Się	iround	Signal ground	_	Ignition switch ON	_	0 V	П
Сс	iround	Composite image signal	Input	Ignition switch ON	At AUX image is displayed	(V) 0.4 0 -0.4 -0.4 -0.4	J
						(/)	
Cc	round	Composite synchronizing	Input	Ignition			L
sig		signal	mput	ON		20 20μs SKIA0187E	M
					Start confirmation/adjust-	(V) <u></u>	AV
RC	iround	RGB signal (R: red)	Input	lgnition switch ON	ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	0.4 0 -0.4 -0.4 -0.4 -0.4	0
							P

DISPLAY UNIT [BASE AUDIO WITHOUT REAR VIEW CAMERA]

(V) 6

Terminal Description (Wire color) Reference value Condition (Approx.) Input/ Signal name + _ Output (V) Start confirmation/adjustment mode, and then dis-0.4 Ignition 18 play color bar by selecting RGB signal (B: blue) Ground Input switch (P) "Color Spectrum Bar" on ON DISPLAY DIAGNOSIS -0. ากร screen. SKIB2237J (V) Ignition 19 RGB synchronizing signal switch Ground Input (W) ON +20µs SKIB3603E (V) Ignition 20 Vertical synchronizing (VP) Ground Output switch signal (G) ON 4ms SKIB3598E 21 Shield ____ ____

Ignition

switch

ON

Output

_

When adjusting display

brightness.

22

(L)

23

(B)

Ground

Communication signal

(DISP→CONT)

Shield

< ECU DIAGNOSIS INFORMATION >

PKIB5039J

_

< ECU DIAGNOSIS INFORMATION >

SATELLITE RADIO TUNER

Reference Value

TERMINAL LAYOUT

ASE AUDIO WITHOUT	REAR	VIEW	CAMERA	7]

INFOID:000000006210250



PHYSICAL VALUES

Terminal		Description				Poforonco valuo	
+	_	Signal name	Input/ Output		Condition	(Approx.)	G
2 (R)	1 (G)	Satellite radio sound signal LH	Output	lgnition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 • 2ms SKIB3609E	H
4 (B)	3 (W)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 -1 -2ms SKIB3609E	J K
5		Shield			_	_	- L
6	—	Shield		—	—	—	-
8 (G)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected.	(V) 10 0 -10 + 10ms SKIA9299J	M AV O
9 (L)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected.	(V) 10 0 -10 • • 1ms SKIA9300J	Ρ

F

SATELLITE RADIO TUNER < ECU DIAGNOSIS INFORMATION > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Terminal		Description				Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
10 (P)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected.	(V) 10 0 -10 • • 1ms SKIA9301J	
12 (Y)	Ground	Battery power supply	Input	lgnition switch OFF	_	Battery voltage	
16 (BG)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
33	—	Satellite antenna	Input	_	—	—	
34	—	Shield			—	_	

BASE AUDIO WITHOUT REAR VIEW CAMERA _ [BASE AUDIO WITHOUT REAR VIEW CAMERA]

WIRING DIAGRAM BASE AUDIO WITHOUT REAR VIEW CAMERA

Wiring Diagram

INFOID:000000006210251 B

А

С

NOTE:

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





*: This connector is not shown in "Harness Layout".
BASE AUDIO WITHOUT REAR VIEW CAMERA [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< WIRING DIAGRAM >



JCNWM5221GB



JCNWM5222GB

BASE AUDIO WITHOUT REAR VIEW CAMERA [BASE AUDIO WITHOUT REAR VIEW CAMERA]



JCNWM5223GB



JCNWM5224GB

BASE AUDIO WITHOUT REAR VIEW CAMERA [BASE AUDIO WITHOUT REAR VIEW CAMERA]



JCNWM5225GB

Ρ

BASE AUDIO WITHOUT REAR VIEW CAMERA

< WIRING DIAGRAM >

[BASE AUDIO WITHOUT REAR VIEW CAMERA] 2 53 54 55 56 8 69 70 71 72 Signal Name [Specification] UNIFIED METER AND A/C AMP 52 68 5 47 48 49 50 51 5 63 64 65 66 67 6 د LAN (EACH DOOR MOTOR IGNIT 8 8 41 42 43 44 45 4 57 58 59 60 61 6 **V67** Color of Wire nnector Name ype g SB щ в ЖЖ nnector No. H.S. ermina No. Connec 倨 ပိ 5 17 18 19 20 Signal Name [Specification] Signal Name [Specification] COMBINATION SWITCH (SPIRAL CABLE) UNIFIED METER AND A/C AMP. ICLE SPEED AAGG Color of Wire Color of Wire R G × B ⊢ GR g Vpe Connector Name Connector Name Connector No. Terminal No. HS. H.S. erminal No. 14 ß 倨 Signal Name [Specification] ω 9 10 11 12 13 14 15 16 1 2 3 4 5 6 7 8 DATA LINK CONNECTOR B SHIELD Color of Wire LG BG≻ <u>ط</u> 8

8. R 0 8 8 0 8 nector Name ector Type H.S. 8 Š G Signal Name [Specification] *** 3 2 3 5 5 5 3 3 3 5 5 5 WIRE TO WIRE 1 (0 (0 **4** (0 **0**) **4** Color of Wire Connector Name 띬 뚭굅 H.S. rminal No. E

JCNWM5226GB

BASE AUDIO WITHOUT REAR VIEW CAMERA

BASE AUDIO WITHOUT REAR VIEW CAMERA < WIRING DIAGRAM > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

 33
 P
 RGB (CORFEND) SIGNAL 4

 40
 C
 RGB (CORFEND) SIGNAL 4

 41
 NU
 FILE
 SIRELD 5
 SIRELD 5

 43
 E
 COB (CORFEND) SIGNAL 4
 FILE
 SIRELD 5
 SIRELD 5
 SIRELD 5

 43
 E
 COB (CORFEND) SIGNAL 4
 FILE
 SIRELD 5
 SIRELD 5



JCNWM5227GB

Ρ

Ο

А

В

С

D

Ε

F

G

Н

J

Κ

L

Μ

AV

< WIRING DIAGRAM >

BASE AUDIO WITHOUT REAR VIEW CAMERA [BASE AUDIO WITHOUT REAR VIEW CAMERA]



JCNWM5228GB

BASE AUDIO WITHOUT REAR VIEW CAMERA [BASE AUDIO WITHOUT REAR VIEW CAMERA]



JCNWM5229GB

Ρ



JCNWM5230GB

MULTI AV SYSTEM SYMPTOMS [BASE AUDIO WITHOUT REAR VIEW CAMERA]

SYMPTOM DIAGNOSIS MULTI AV SYSTEM SYMPTOMS

Symptom Table

OPERATION

INFOID:00000006210252

Symptoms	Check items	Possible malfunction location / Action to take
Multifunction switch and preset switch operation does not work.	 All switches cannot be operated. "MULTI AV" is displayed with CON- SULT-III. 	Perform CONSULT-III self-diagnosis. Refer to <u>AV-27.</u> "CONSULT - III Function (MULTI AV)".
	 All switches cannot be operated. "MULTI AV" is not displayed on system selection screen the CONSULT- III is initialized. 	AV control unit power supply and ground circuit mal- function. Refer to <u>AV-40</u> , " <u>AV CONTROL UNIT : Diag-</u> <u>nosis Procedure</u> ".
	Only specified switch cannot be oper- ated.	Multifunction switch or preset switch malfunction. Per- form multifunction switch and preset switch self-diagno- sis function. Refer to <u>AV-20, "Diagnosis Description"</u> .

RELATED TO RGB IMAGE

Symptoms	Check items	Possible malfunction location / Action to take
	There is malfunction in the CONSULT- III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-27, "CONSULT - III Function (MULTI AV)"
RGB image is not shown.	There is no malfunction in CONSULT-III self-diagnosis results.	 Display unit power supply circuit. Refer to <u>AV-40, "DISPLAY UNIT : Diagnosis Proce-dure"</u>. Vertical synchronizing (VP) signal circuit. Refer to <u>AV-49, "Diagnosis Procedure"</u>.
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to <u>AV-43, "Diagnosis Procedure"</u> .
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to <u>AV-44, "Diagnosis Procedure"</u> .
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to <u>AV-45. "Diagnosis Procedure"</u> .
RGB screen is rolling.	_	RGB synchronizing signal circuit. Refer to <u>AV-46, "Diagnosis Procedure"</u> .
Fuel economy display is mal- functioning.	There is malfunction in the CONSULT- III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to AV-27, "CONSULT - III Function (MULTI AV)".
	There is no malfunction in CONSULT-III self-diagnosis results.	Ignition signal circuit malfunction. Refer to <u>AV-40, "AV CONTROL UNIT : Diagnosis Procedure"</u> .

RELATED TO AUDIO

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
The CD cannot be removed.	_	CD eject signal circuit. Refer to <u>AV-52</u> , "Diagnosis Pro- cedure".
	No sound from all speakers.	AV control unit. Refer to AV-90, "Exploded View".
Audio sound is not heard.	Sound is not heard only from the specif- ic places (RH front, RH rear, LH front and LH rear).	Sound signal circuit of malfunctioning system.

А

Ο

Ρ

< SYMPTOM DIAGNOSIS >

MULTI AV SYSTEM SYMPTOMS [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Symptoms	Check items	Possible malfunction location / Action to take
Satallita radio io pot rocciurad	"ANTENNA" is not displayed even when the channel is turned to 0 in Satellite ra- dio mode.	 Perform the following inspection procedure. 1. Check satellite radio antenna mounting nut for looseness. NOTE: Tightening torque: 6.5 N·m (0.66 kg-m, 58 in-lb.) 2. Visually check for satellite radio antenna feeder. 3. Replace the satellite radio antenna. Refer to <u>AV-97</u>, "<u>Exploded View</u>". 4. Replace the satellite radio tuner. Refer to <u>AV-96</u>, "<u>Exploded View</u>".
Saleinte faulo is not received.	"ANTENNA" is displayed when the channel is turned to 0 in Satellite radio mode.	 Perform the following inspection procedure. Check the connection between Satellite radio tuner and antenna feeder. Check the connection between Satellite radio antenna and antenna feeder. Check Antenna feeder for open circuit. Replace the satellite radio antenna. Refer to <u>AV-97, "Exploded View"</u>. Replace the satellite radio tuner. Refer to <u>AV-96, "Exploded View"</u>.
The sound of Satellite radio is not heard.	Other audio sounds are normal.	Satellite radio sound signal circuit malfunction between satellite radio tuner and AV control unit.
It does not change to Satellite radio mode.	There is malfunction in the CONSULT- III self-diagnosis result.	Perform CONSULT-III self-diagnosis. Refer to <u>AV-27, "CONSULT - III Function (MULTI AV)"</u> .
AM/FM radio is not received.	Other audio sounds are normal.	Antenna amp. ON signal circuit.Antenna feeder.

RELATED TO STEERING SWITCH

Trouble diagnosis chart by symptom

Symptoms	Inspection location / Probable malfunction location
None of the steering switch operations work.	Steering switch signal GND circuit. Refer to <u>AV-57, "Diagnosis Procedure"</u> .
Only specified switch cannot be operated.	Steering switch. Refer to AV-100, "Exploded View".
"SOURCE", "MENU UP", "MENU DOWN" switches of steering switch are not operated.	Steering switch signal A circuit. Refer to <u>AV-53</u> , "Diagnosis Procedure".
"VOL UP", "VOL DOWN" switches of steering switch are not operated.	Steering switch signal B circuit. Refer to <u>AV-55, "Diagnosis Procedure"</u> .

RELATED TO AUXILIARY INPUT **NOTE**:

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

Trouble diagnosis chart by symptom

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 circuits malfunction between auxilia- ry input jacks and AV control unit.
Image is not displayed when AUX mode is selected.		 AUX image signal circuit malfunction between auxiliary input jacks and AV control unit. Refer to <u>AV-50</u>. "<u>Diagnosis Procedure</u>". Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and display unit. Refer to <u>AV-48</u>. "<u>Diagnosis Procedure</u>". RGB area (YS) signal circuit malfunction between AV control unit and display unit. Refer to <u>AV-47</u>. "<u>Diagnosis Procedure</u>".
It does not change from AUX mode to other modes.	_	Vertical synchronizing (VP) signal circuit malfunction between AV control unit and display unit. Refer to <u>AV-49, "Diagnosis Procedure"</u> .

NORMAL OPERATING CONDITION [BASE AUDIO WITHOUT REAR VIEW CAMERA]

NORMAL OPERATING CONDITION

Description

BASIC OPERATIONS

A

В

Н

INFOID:000000006210253

Symptom	Possible cause	Possible solution
	The brightness is at the lowest setting.	Adjust the brightness of the display.
No image is displayed.	The system in the video mode.	Press <disc></disc> to change the mode.
	The display is turned off.	Press <day night=""> to turn on the display.</day>
The screen is too dim. The move- ment 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 dark- er or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be se- lected.	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 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	
	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.	Κ
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.	L
Cannot play	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", ".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.	M
	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.	AV
	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.	0
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.	Ρ
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.	

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION [BASE AUDIO WITHOUT REAR VIEW CAMERA]

Symptom	Cause and Counter measure
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, 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.

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 >

А

Е

F

Н

J

Κ

L

M

AV

INFOID:000000006210255

INFOID:000000006210256

PRECAUTIONS

PRECAUTION

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

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.

Precaution for Trouble Diagnosis

AV COMMUNICATION SYSTEM

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

Precaution for Harness Repair

AV COMMUNICATION SYSTEM

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



< PRECAUTION >

PRECAUTIONS [BASE AUDIO WITHOUT REAR VIEW CAMERA]

• 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

PREPARATION

Commercial Service Tools

INFOID:000000006210257 B

А

G

Н

J

Κ

L

Power tool	screws
PBIC0191E	E

Μ

AV

0

Р

< REMOVAL AND INSTALLATION > [B4 REMOVAL AND INSTALLATION AV CONTROL UNIT

Exploded View

INFOID:000000006210258

REMOVAL

Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MODELS : Exploded View"</u> (M/T models).

DISASSEMBLY



1. Unified meter and A/C amp. 2. Bracket LH

3. AV control unit

4. Bracket RH

Removal and Installation

REMOVAL

- 1. Remove display unit.
- 2. Remove AV control unit with a unified meter and A/C amp. as a single unit from the body.
- 3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

Since AV control unit connector and unified meter and A/C amp. connector have the same form, be careful not to insert them wrongly.

INFOID:000000006210259

DISPLAY UNIT

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

DISPLAY UNIT	Δ
Exploded View	A
Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MODELS : Exploded View" (M/T models).	В
Removal and Installation	С
 REMOVAL Remove cluster lid D. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MOD-ELS : Exploded View"</u> (M/T models). Remove display unit with bracket as a single unit. 	D
INSTALLATION Installation is the reverse order of removal.	Е
	F
	G
	Н
	I
	J
	Κ
	L
	Μ
	AV
	0
	Ρ

< REMOVAL AND INSTALLATION >

FRONT DOOR SPEAKER

Exploded View



- 1. Front door speaker
- 2. Speaker bracket

Removal and Installation

REMOVAL

- 1. Remove front door finisher. Refer to INT-12, "Exploded View".
- 2. Remove the front door speaker from speaker bracket.

INSTALLATION

Installation is the reverse order of removal.

INFOID:000000006210263

REAR DOOR SPEAKER [BASE AUDIO WITHOUT REAR VIEW CAMERA]

REAR DOOR SPEAKER

Exploded View



REMOVAL

- 1. Remove rear door finisher. Refer to INT-12, "Exploded View".
- 2. Remove rear door speaker from rear door.

INSTALLATION

1.

Installation is the reverse order of removal.

Rear door speaker

Removal and Installation

Μ

Н

J

Κ

0

< REMOVAL AND INSTALLATION >

TWEETER

Exploded View



- 1. Door finisher
- 2. Tweeter

Removal and Installation

REMOVAL

- 1. Remove front door finisher. Refer to INT-12, "Exploded View".
- 2. Remove the tweeter from the front door finisher.

INSTALLATION

Installation is the reverse order of removal.

INFOID:000000006210267

< REMOVAL AND INSTALLATION >

ANTENNA AMP.

1.

2.

REMOVAL

1. 2.



Μ

А

В

С

D

Ε

F

Н

J

Κ

AV

Ο

SATELLITE RADIO TUNER IN > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< REMOVAL AND INSTALLATION > SATELLITE RADIO TUNER

Exploded View

INFOID:000000006210270



1. TEL antenna

- Satellite radio tuner
 Bracket (rear)
- Bracket (front)

4. TEL adapter unit

Removal and Installation

INFOID:000000006210271

REMOVAL

- 1. Remove trunk front finisher. Refer to <u>INT-30, "Exploded View"</u>.
- 2. Remove rear parcel shelf finisher. Refer to INT-20, "Exploded View".
- 3. Remove screws (A) from inside the cabin, and remove TEL adapter unit and TEL antenna as a single unit from trunk room side.
- 4. Remove bracket screws and remove TEL adapter unit and satellite radio tuner.



INSTALLATION Installation is the reverse order of removal.

SATELLITE RADIO ANTENNA < REMOVAL AND INSTALLATION > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

SATELLITE RADIO ANTENNA



Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when satellite radio antenna mounting nut tightening torque is loose.

M

Κ

L

AV

0

MULTIFUNCTION SWITCH [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< REMOVAL AND INSTALLATION >

MULTIFUNCTION SWITCH

Exploded View

INFOID:000000006210274

REMOVAL

Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MODELS : Exploded View"</u> (M/T models).

DISASSEMBLY



- 1. Center ventilator grille
- 2. Multifunction switch

Removal and Installation

INFOID:000000006210275

REMOVAL

- 1. Remove cluster lid D. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MOD-ELS : Exploded View"</u> (M/T models).
- 2. Remove multi function switch with center ventilator grille as a single unit.
- 3. Remove multi function switch from center ventilator.

INSTALLATION

Installation is the reverse order of removal.

PRESET SWITCH [BASE AUDIO WITHOUT REAR VIEW CAMERA]

PRESET SWITCH	
Exploded View	INFOID:00000006210276
REMOVAL Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models models).) or <u>IP-23. "M/T MODELS : Exploded View"</u> (M/T

DISASSEMBLY

< REMOVAL AND INSTALLATION >



Removal and Installation

REMOVAL

- 1. Remove cluster lid C. Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MOD-ELS : Exploded View" (M/T models).
- Remove preset switch screws (A), (B), and (C), and then 2. remove preset switch (2) from cluster lid C.
 - Clock 1.



INSTALLATION

Installation is the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between AV control unit and preset switch.

Ρ

J

А

В

С

INFOID:000000006210277

< REMOVAL AND INSTALLATION >

STEERING SWITCH

Exploded View

Refer to ST-17, "Exploded View".

Removal and Installation

REMOVAL Refer to <u>ST-17, "Removal and Installation"</u>.

INSTALLATION Installation is the reverse order of removal. INFOID:000000006210278

INFOID:000000006210279

AUXILIARY INPUT JACKS | > [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< REMOVAL AND INSTALLATION >

AUXILIARY INPUT JACKS

Exploded View

INFOID:000000006210280

INFOID:000000006210281

А

В

REMOVAL

Refer to <u>IP-34, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-39, "M/T MODELS : Exploded View"</u> (M/T models).

DISASSEMBLY



1. Auxiliary input jacks

Removal and Installation

RE	MOVAL
1.	Remove center console. (M/T models) Refer to IP-34, "A/T MODELS : Exploded View". Remove center console cup. (A/T models) Refer to IP-34, "A/T MODELS : Exploded View".
2.	Remove auxiliary input jacks from center console. (M/T models) Remove auxiliary input jacks from center console cup. (A/T models)
INS Inst	STALLATION tallation is the reverse order of removal.

_

Μ

Н

J

Κ

AV

0

ANTENNA FEEDER



[BASE AUDIO WITH REAR VIEW CAMERA]

< PRECAUTION > PRECAUTION

A

В

Е

F

Н

PRECAUTIONS

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

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.

Cautions in Removing Battery	Terminal and	AV Control Unit	(Models with AV Con	itrol
Unit)			INFOID:000000	0007933561

CAUTION:

Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

Precaution for Trouble Diagnosis

AV COMMUNICATION SYSTEM

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

Precaution for Harness Repair

AV COMMUNICATION SYSTEM

INFOID:000000006210285

AV

Μ

Κ

L

INFOID:000000006210284



< PRECAUTION >

PRECAUTIONS

[BASE AUDIO WITH REAR VIEW CAMERA]

• 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 [BASE AUDIO WITH REAR VIEW CAMERA]

< PREPARATION >	
PREPARATION	

PREPARATION

Commercial Service Tools

INFOID:00000006210286 B

А

F

G

Н

J

Κ

L

	C
Power tool Loosening screws	D

M

AV

0

Ρ

[BASE AUDIO WITH REAR VIEW CAMERA]

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000006210287



- 1. Tweeter LH
- 4. Antenna amp.
- 7. TEL adapter unit
- 10. Satellite radio antenna
- 13. Microphone
- 16. Preset switch
- 19. Multifunction switch
- A. Within rear pillar finisher LH

- 2. Front door speaker LH
- 5. TEL antenna
- 8. Satellite radio tuner
- 11. Front door speaker RH
- 14. Steering switch
- 17. USB connector
- 20. Display unit
- B. Lower part of rear parcel shelf (on the right side)

- 3. Rear door speaker LH
- 6. Rear view camera
- 9. Rear door speaker RH
- 12. Tweeter RH
- 15. Steering angle sensor
- 18. AV control unit
- C. Spiral cable removed condition

< SYSTEM DESCRIPTION >

Component Description

[BASE AUDIO WITH REAR VIEW CAMERA]

INFOID:000000006210288

А

Part name	Description	
	 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, USB connection and vehicle information 	В
AV control unit	 functions. It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. It is connected to the steering angle sensor and receives the steering angle sensor and receives the steering angle sensor 	D
	 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). TEL voice signal and voice guidance signal are input from TEL adapter unit. 	E
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 image, RGB area and RGB synchronizing). Composite image signals are input from AV control unit. Synchronizing signal (HP, VP) is output to AV control unit. 	F
Front door speaker	Outputs sound signal from AV control unit.Outputs high, mid and low range sounds.	Ц
Rear door speaker	Outputs sound signal from AV control unit.Outputs high, mid and low range sounds.	
Tweeter	Outputs sound signal from AV control unit.Outputs high range sound.	I
Multifunction switch	 Operation panel is equipped with the centralized switch where audio operations are integrated. Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication. 	J
Preset switch	 Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication. The disk ejection operating signal is performed by hardwire. 	K
Rear view camera	Camera power supply is input from AV control unit.The image of vehicle rear view is transmitted to AV control unit.	L
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle sensor signal via CAN communication.	M
Steering switch	Operations for audio, hands-free phone and voice control, etc. are possible.Steering switch signal (operation signal) is output to AV control unit.	
Microphone	 Used for hands-free phone operation and voice recognition. Microphone signal is transmitted to TEL adapter unit. Power (Microphone VCC) is supplied from TEL adapter unit. 	٩V
Antenna amp.	 Radio signal received by glass antenna is amplified and transmitted to AV control unit. Power (antenna amp. ON signal) is supplied from AV control unit. 	0
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). 	Ρ
Satellite radio antenna	Satellite radio signal is received and transmitted to satellite radio tuner.	
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. 	

COMPONENT PARTS

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

Part name	Description
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.
USB connector	Image signal ^{*1} and sound signal of USB input is transmitted to AV control unit.

*1: Image signals cannot be received from $iPod^{\mathbb{R}}$.
SYSTEM [BASE AUDIO WITH REAR VIEW CAMERA]

А

< SYSTEM DESCRIPTION >

SYSTEM MULTI AV SYSTEM



NOTE:

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

MULTI AV SYSTEM : System Description

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Audio function
Hands-free phone 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, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information.
- AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

AUDIO FUNCTION

INFOID:000000006210290

L

M

AV

Ρ

SYSTEM

< SYSTEM DESCRIPTION >

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 function

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.
- Audio signal is received by glass antenna, next it is amplified by antenna amp, and finally it is input to AV
 control unit. AV control unit outputs the sound 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 antenna and transmitted to AV control unit. 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 the sound signal to each speaker when inserting the CD to AV control unit.

USB Connection Function

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

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

NOTE:

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 when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to AV-124, "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.

REAR VIEW MONITOR FUNCTION

• The AV control unit supplies power to the rear view camera when receiving a reverse signal.

AV-110

SYSTEM	
< SYSTEM DESCRIPTION > [BASE AUDIO WITH REAR VIEW CAMERA]	
The rear view camera transmits camera images to the AV control unit when power is supplied from the AV control unit.	A
• The AV control unit transmits a warning message, fixed guide lines, and predictive course lines to the display unit by RGB image signal. Rear view monitor images are displayed by combining the RGB image signal and	
 Predictive course lines are controlled by a steering angle sensor signal received the AV control unit via CAN communication. 	В
 VEHICLE INFORMATION FUNCTION Status of audio, climate control system, fuel economy and maintenance are displayed. 	С
 AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM unified meter and A/C amp 	
 AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. 	D
	Е
	F
	I
	G
	Н
	I
	J
	К
	L
	Μ
	AV
	0

Ρ

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

- 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-III 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

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 4-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.



[BASE AUDIO WITH REAR VIEW CAMERA]

Finishing Self-diagnosis Mode

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

ON BOARD DIAGNOSIS ITEM

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 unit.
- 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.

INFOID:000000006210291

INFOID:000000006210292

DIAGNOSIS SYSTEM (AV CONTROL UNIT) < SYSTEM DESCRIPTION > [BASE AUDIO WITH REAR VIEW CAMERA]

Description

А

В

С

D

Е

F

Н

Κ

Ρ

	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.
Confirmation/ Adjustment	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 mon- itored.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Initialize Settings	Initializes the AV control unit memory.

METHOD OF STARTING

- 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, a short beep will be heard.)
 - Shifting from current screen to previous screen is performed by pressing "BACK" button.



4. The trouble diagnosis initial screen is displayed, and then the items of "Self Diagnosis" and "Confirmation/Adjustment" can be selected.



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.

Revision: 2011 November

CONTROL UNIT)
 SYSTEM DESCRIPTION > [BASE AUDIO WITH REAR VIEW CAMERA]

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 <u>AV-202. "Exploded View"</u>.
- 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 mal- function in those components, replace AV control unit. Refer to <u>AV-202</u> , "Exploded <u>View</u> ".

A Connecting Cable Between Units Is Displayed In Yellow.

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BASE AUDIO WITH REAR VIEW CAMERA]

Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Malfunction is detected in serial communi- cation 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. 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. 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.

E System Diagnostic Menu > Confirmation / Adjustment				
4	UP			
	Display Diagnosis Ō			
Ō	Vehicle Signals			
	Speaker Test			
	Climate Control			
	Error History			
	1/9 DOWN			
@ 1	Please select an item			
	JSNIA0147GB			

L

Κ

Н

M

0

Ρ

> DIAGNOC

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BASE AUDIO WITH REAR VIEW CAMERA]

Display Diagnosis



Vehicle Signals

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

System Diagnostic Menu > Vehicle Signals				
		055		
	venicie speed	OFF		
	Parking brake	ON		
	Lights	OFF		
	Ignition	ON		
	Reverse	OFF		
JSNIA0149GB				

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

DIAGNOSIS SYSTEM (AV CONTROL UNIT) < SYSTEM DESCRIPTION > [BASE AUDIO WITH REAR VIEW CAMERA]

Diagnosis item Display Vehicle status Remarks Reverse ON Shift the selector lever to "R" position Changes in indication may be delayed. This is normal. OFF Shift the selector lever other than "R" position Changes in indication may be delayed. This is normal.

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 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-III.

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-III.

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

J

Κ

А

В

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BASE AUDIO WITH REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >



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 detect- ed.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts accord- ing to the diagnosis results. Refer to <u>AV-121, "CONSULT - III Function"</u> .
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunc- tion occurs constantly.
FLASH-ROM Error Of Control Unit	All control unit molfunction is detected	Relef to <u>AV-202, Exploded view</u> .
CAN Controller Memory Error	AV control unit mairunction is detected.	
Steer. Angle Sensor Calibration	Predictive course line center position ad- justment of the steering angle sensor is in- complete.	Adjust the predictive course line center po- sition of the steering angle sensor. Refer to <u>AV-121, "CONSULT - III Function"</u> .
Front Display Connection Error	 When either one of the following items is detected: display unit power supply and ground circuits are malfunctioning. communication circuits between AV control unit and display unit are malfunctioning. 	 Display unit power supply and ground circuits. 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 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. Communication circuit between AV control unit and satellite radio tuner. Request signal circuit between AV control unit and satellite radio tuner.
AV COMM CIRCUITSwitches Connection Error	 When either one of the following items is 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.

DIAGNOSIS SYSTEM (AV CONTROL UNIT) < SYSTEM DESCRIPTION > [BASE AUDIO WITH REAR VIEW CAMERA]

Error item	Description	Possible malfunction factor/Action to take	^
 AV COMM CIRCUIT H/F Unit Connection Error 	 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. AV communication circuits between AV control unit and TEL adapter unit. 	E
 AV COMM CIRCUIT Switches Connection Error H/F Unit Connection Error 	Malfunction is detected in AV communica- tion circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.	C

Camera Cont.

The two functions of "Correct Draw Line of Rear view Cam", "Confirm Configuration" are available.



Adjust Offset 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.

CAUTION:

After the adjustment, never perform other operations for one minute.



Factory Configuration Confirmation

Configuration stored in the AV control unit can be checked.



Ρ

D

Ε

F

Н

Κ

L

Vehicle CAN Diagnosis

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BASE AUDIO WITH REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

- 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-SW)	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.)

Delete connection log?
JSNIA0154GB

Initialize Settings



DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BASE AUDIO WITH REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

"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 <u>AV-160, "Description"</u>.



INFOID:000000006210293

E

Κ

Μ

CONSULT - III Function

CONSULT-III FUNCTIONS

CONSULT-III 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&N	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-III 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	AV
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is de- tected.	Refer to AV-162, "Diagnosis Procedure".	
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is de- tected.		0
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunc- tion occurs constantly.	P
Cont Unit [U1200]	A)/ control unit molfunction is detected	Refer to Av-202, Exploded view.	1
CAN CONT [U1216]			
ST ANGLE SEN CALIB [U1232]	Predictive course line center position ad- justment of the steering angle sensor is in- complete.	Adjust the predictive course line center position of the steering angle sensor. Refer to <u>BRC-8</u> , "ADJUSTMENT OF <u>STEERING ANGLE SENSOR NEUTRAL</u> POSITION : Special Repair Requirement".	

DIAGNOSIS SYSTEM (AV CONTROL UNIT) < SYSTEM DESCRIPTION > [BASE AUDIO WITH REAR VIEW CAMERA]

Error item Description Possible malfunction factor/Action to take When either one of the following items is detected: · Display unit power supply and ground · display unit power supply and ground circuits. FRONT DISP CONN [U1243] circuits are malfunctioning. • Communication circuits between AV · communication circuits between AV control unit and display unit. control unit and display unit are malfunctioning. When either one of the following items is detected: · satellite radio tuner power supply and · Satellite radio tuner power supply and ground circuit are malfunctioning. ground circuit. · communication circuits between AV Communication circuit between AV con-SAT CONN [U1255] control unit and satellite radio tuner are trol unit and satellite radio tuner. · Request signal circuit between AV conmalfunctioning. · request signal circuit between AV control unit and satellite radio tuner. trol unit and satellite radio tuner are malfunctioning. When either one of the following items is detected: · Multifunction switch power supply and multifunction switch power supply and AV COMM CIRCUIT [U1300] ground circuits. ground circuits are malfunctioning. SWITCH CONN [U1240] AV communication circuits between AV AV communication circuits between AV control unit and multifunction switch. control unit and multifunction switch are malfunctioning. When either one of the following items is detected: · TEL adapter unit power supply and · TEL adapter unit power supply and AV COMM CIRCUIT [U1300] ground circuits. ground circuits are malfunctioning. HAND FREE CONN [U1256] AV communication circuits between AV AV communication circuits between AV control unit and TEL adapter unit. control unit and TEL adapter unit are malfunctioning. • AV COMM CIRCUIT [U1300] Malfunction is detected in AV communica-AV communication circuits between AV SWITCH CONN [U1240] tion circuits between AV control unit and

HAND FREE CONN [U1256] DATA MONITOR

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.

multifunction switch.

Display Item	Display	Vehicle status	Remarks	
VHCL SPD SIG	On	Vehicle speed > 0 km/h (0 MPH)		
	Off	Vehicle speed = 0 km/h (0 MPH)	Changes in indication may be delayed. This is	
	On	Parking brake is applied.	normal.	
PKB SIG	Off	Parking brake is released.		
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.		
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.		
	On	Ignition switch ON		
IGN SIG	Off	Ignition switch in ACC position		
	On	Selector lever in R position	Changes in indication may be delayed. This is	
REV SIG	Off	Selector lever in any position other than R	normal.	

control unit and multifunction switch.

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BASE AUDIO WITH REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

SELECTION FROM MENU

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

Item to be selected	Description
VHCL SPD SIG	
PKB SIG	1
ILLUM SIG	The same as when "ALL SIGNALS" is selected.
IGN SIG	
REV SIG	1

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 has three functions as follows.

Function	Description	F
READ CONFIGURATION	Reads the vehicle configuration of current AV control unit.Saves the read vehicle configuration.	
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.	1
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.	

L

J

Е

AV

Μ

0

Ρ

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

On Board Diagnosis Function

HANDS-FREE PHONE SYSTEM ON BOARD DIAGNOSIS

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 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 indi- cates them on the display.		
STED2	Speaker adaptation data deleting	The speaker adaptation data deleting mode can delete the speaker adaptation data.		
STEF2	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		
DTC 00100	ANT. SHORT TO GROUND		
DTC 00010	STEERING REMOTE BUTTON STUCK A	Stearing owitch	
DTC 00001	STEERING REMOTE BUTTON STUCK B	Steering Switch	
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.

INFOID:000000006210294

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

(BASE AUDIO WITH REAR VIEW CAMERA]

FLOW CHART OF TROUBLE DIAGNOSIS



[BASE AUDIO WITH REAR VIEW CAMERA]

ECU DIAGNOSIS INFORMATION AV CONTROL UNIT

Reference Value

INFOID:000000006210295

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item		Condition	Value/Status
	Ignition switch	Vehicle speed > 0 km/h (0 MPH)	On
VIICE OF DISIG	ON	Vehicle speed = 0 km/h (0 MPH)	Off
	Ignition switch	Parking brake is applied.	On
FKB SIG	ON	Parking brake is released.	Off
	Ignition switch	Light switch ON	On
	ON	Light switch OFF	Off
	Ignition switch ON	_	On
	Ignition switch ACC	Parking brake is applied. Parking brake is released. h Light switch ON Light switch OFF h	Off
REV SIG	Ignition switch	Selector lever in R position	On
	ON	Selector lever in any position other than R	Off

TERMINAL LAYOUT



PHYSICAL VALUES

< ECU DIAGNOSIS INFORMATION >

Terr (Wire)	minal e color)	Description		Condition		Condition Reference value		А
+	-	Signal name	Input/ Output		Condition	(Approx.)	В	
2 (L)	3 (W)	Sound signal front LH	Output	lgnition switch ON	Sound output	(V) 1 0 -1 • 2ms SKIB3609E	C	
4 (LG)	5 (SB)	Sound signal rear LH	Output	lgnition switch ON	Sound output	(V) 1 0 -1 • 2ms SKIB3609E	E F	
6 (P)	15 (B)	Steering switch signal A	Input	lgnition switch ON	Keep pressing SOURCE switch.	0 V	G	
					Keep pressing MENU UP switch.	0.7 V	Н	
					Keep pressing MENU DOWN switch.	1.3 V	I	
					Keep pressing 💉 🕻 switch	2.0 V		
					Except for above.	3.3 V	J	
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	K	
9				Ignition	Lighting switch is OFF.	0 V		
(L)	Ground	Illumination signal	Input	switch OFF	Lighting switch is ON.	12.0 V	L	
11 (BR)	12 (R)	Sound signal front RH	Output	lgnition switch ON	Sound output	(V) 1 0 -1 • • 2ms SKIB3609E	M	
13 (L)	14 (P)	Sound signal rear RH	Output	lgnition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E	O P	

< ECU DIAGNOSIS INFORMATION >

+ - Signal name Input Output Condition (Approx.) 16 (L) 15 (B) Steering switch signal B Input Input Input Steering switch signal B 0 V 16 (L) 15 (B) Steering switch signal B Input Input Input Steering switch 0.7 V 18 (G) Ground Ground - Input Input Keep pressing VOL UP 0.7 V 18 (G) Ground Ground Ground - Input Input Keep pressing VOL UP 0.7 V 19 (G) Ground Ground Ground - Input Input Keep pressing VOL UP 0.7 V 19 (G) Ground Ground Ground - Input Input Input Input Input Input 19 (G) Ground Battery power supply Input Ignition NC - 0 V 0 V 36 (G) Ground Signal ground - Ignition NC - 0 V 38 (R) Ground Communication signal (D)SPCONT) Input Ignition N - - 0 V 39 (G) Ground Communication signal (B) Input Input Ignition N -	Terr (Wire)	minal e color)	Description		Condition		Reference value	
16 (L) 15 (B) Steering switch signal B Input Input Reep pressing VOL DOWN writch. ON 0.V 18 (G) Ground Ground - Imput Imput Keep pressing VOL UP writch. ON 0.7 V 18 (G) Ground Ground - Imput Imput Imput Imput Imput Keep pressing VOL UP writch. ON 0.7 V 18 (G) Ground Ground Ground - 0.7 V 0.7 V 19 (P) Ground Battery power supply Input Imput Imput Switch OFF - 0.V 20 (B) Ground Battery power supply Input Imput Impu	+	-	Signal name	Input/ Output			(Approx.)	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $						Keep pressing VOL DOWN switch.	0 V	
Image: Construction of the second	16 (L)	15 (B)	Steering switch signal B	Input	Ignition switch	Keep pressing VOL UP switch.	0.7 V	
Image: transformed basic					ON	Keep pressing 🗪 switch.	1.3 V	
18 (G) Ground Ground Ground Ignition NN 0 V 19 (Y) Ground Battery power supply Input Ignition Switch OFF Battery voltage 20 (B) Ground Ground Ignition Switch ON 0 V 36 (BG) Ground Signal VCC Output Ignition Switch OFF 9.0 V 37 (LC) Ground Signal ground Ignition Switch ON 0 V 38 (R) Ground Horizontal synchronizing (HP) signal Input Ignition Switch ON						Except for above.	3.3 V	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	18 (G)	Ground	Ground	_	Ignition switch ON	_	0 V	
20 (B) Ground Ground - Ignition switch ACC - 0 V 36 (BG) Ground Signal VCC Output Ignition switch OFF - 9.0 V 37 (LG) Ground Signal ground - Ignition switch OFF - 0 V 38 (R) Ground Horizontal synchronizing (HP) signal Input Ignition Switch ON - 0 V 38 (R) Ground Horizontal synchronizing (L) Input Ignition Switch ON - - 0 V 38 (R) Ground Communication signal (DISP->CONT) Input Ignition Switch ON - - 0 V 40 (B) Ground Communication signal (DISP->CONT) Input Ignition Switch ON When adjusting display (V) (I) Imput	19 (Y)	Ground	Battery power supply	Input	lgnition switch OFF	_	Battery voltage	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	20 (B)	Ground	Ground		lgnition switch ON	_	0 V	
37 (LG) Ground Signal ground - Ignition switch OFF - 0 V 38 (R) Ground Horizontal synchronizing (HP) signal Input Ignition switch ON - - 0 V 39 (L) Ground Communication signal (DISP-sCONT) Input Ignition switch ON When adjusting display brightness. 40 (B) Ground RGB area (YS) signal Output Ignition switch ON At RGB image is displayed. 5.0 V 41 - Shield - - - - -	36 (BG)	Ground	Signal VCC	Output	Ignition switch ACC	_	9.0 V	
38 (R) Ground Horizontal synchronizing (HP) signal Input Ignition switch ON - $\begin{pmatrix} V \\ 4 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	37 (LG)	Ground	Signal ground	_	Ignition switch OFF	_	0 V	
$\begin{array}{ c c c c c }\hline 39\\ (L) \\ \hline 39\\ (L) \\ \hline 60\\ (D) \\ \hline 9\\ (L) \\ \hline 9\\ (D) \\ \hline 9$	38 (R)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON		(V) 4 0 ★ ★ 20µs 5KIB3601E	
40 (B) Ground RGB area (YS) signal Output Ignition switch ON At RGB image is displayed. 5.0 V 40 (B) Ground RGB area (YS) signal Output Ignition switch ON At DVD image is displayed. (V) 4 2 0 Image: Signal Image: Signal Image: Signal 41 — Shield — — — — —	39 (L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	(V) 6 2 0 •••••1ms •••••1ms •••••••••••••••••••••	
40 (B) Ground RGB area (YS) signal Output Ignition switch ON At DVD image is displayed. (V) 6 2 0 ++200 µ s 41 — Shield — — — —						At RGB image is displayed.	5.0 V	
41 — Shield — — — — —	40 (B)	Ground	RGB area (YS) signal	Output	lgnition switch ON	At DVD image is displayed.	(V) 6 4 2 0 +++200,4/s −−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−−	
	41	_	Shield				_	

< ECU DIAGNOSIS INFORMATION >

Terr (Wire)	minal color)	Description		Condition		Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
42 (W)	Ground	RGB synchronizing signal	Output	lgnition switch ON		(V) 4 0 → 20µs SKIB3603E	B C D
43 (G)	Ground	RGB signal (R: red)	Output	lgnition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 •••40µs JSNIA1029ZZ	E
44 (L)	Ground	RGB signal (G: green)	Output	lgnition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 + 40μs JSNI41030ZZ	G
45 (P)	Ground	RGB signal (B: blue)	Output	lgnition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 ++40µs JSNIA1031ZZ	J
46 (Y)	Ground	Composite image ground	_	Ignition switch ON	_	0 V	L
47 (BR)	Ground	Composite image signal	Output	Ignition switch ON	At rear view camera image is displayed.	(V) 0.4 −0.4 + + 40µs	M
48 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC		9.0 V	0
49 (BR)	Ground	Inverter ground		lgnition switch OFF		0 V	Ρ

< ECU DIAGNOSIS INFORMATION >

Terr (Wire)	minal color)	Description		Condition		Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
50 (G)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON		(V) 4 0 •••4ms 5KIB3598E	
51 (LG)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	(V) 6 4 2 0 •••••••••••••••••••••••••••••••••	
52	—	Shield	_	—	—	_	
57		Shield			_	_	
58	—	Shield			_	_	
62 (W)	Ground	Camera image signal	Input	Ignition switch ON	At rear view camera image is displayed.	(V) 0.4 0 -0.4 • 40µs SKIB2251J	
71	—	Shield		—	—	_	
72 (W)	Ground	Camera ground	_	Ignition switch ON	_	0 V	
73 (R)	Ground	Camera power supply	Output	Ignition switch ON	At rear view camera image is displayed.	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				
82 (BR)	Ground	Switch ground	_	Ignition switch ON	_	0 V	
86		Shield					

< ECU DIAGNOSIS INFORMATION >

Terr (Wire)	ninai color)	Description		Condition		Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
87 (L)	88 (P)	TEL voice signal	Input	lgnition switch ON	During voice guide output with the w≨ € switch pressed.	(V) 1 0 -1 • 2ms SKIB3609E	D C B
92 (R)	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).	E F
					Parking brake is ON.	0 V	
93 (SB)	Ground	Parking brake signal	Input	lgnition switch ON	Parking brake is OFF.	(V) 8 4 0 10 ms JSNIA0007GB	H I J
94	Ground	Reverse signal	Input	Ignition switch	R position	12.0 V	
(BG)	Cround	Kororoo olgilar	mpar	ON	Other than R position	0 V	Κ
95 (G)	Ground	Ignition signal	Input	lgnition switch ON	_	Battery voltage	L
96	Ground	Disk eject signal	Input	Ignition switch	Pressing the eject switch.	0 V	
(V)	Croana	Disk ejeet signal	mput	ON	Except for above.	3.3 V	NЛ
120 (B)	124 (W)	Satellite radio sound signal LH	Input	lgnition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 * 2ms SKiB3609E	AV
121 (G)	125 (R)	Satellite radio sound signal RH	Input	lgnition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 * 2ms SKIB3609E	Ρ

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

leri Wire)	minal e color)	Description				Reference value
+	-	Signal name	Input/ Output		Condition	(Approx.)
122 (L)	Ground	Communication signal (CONT→SAT)	Output	lgnition switch ON	When satellite radio mode is selected.	(V) 10 0 -10 → 1ms SKIA9301J
126	_	Shield			_	_
127	—	Shield			—	_
129 (P)	Ground	Request signal (SAT→CONT)	Input	lgnition switch ON	When satellite radio mode is selected.	(V) 10 0 -10 • + 10ms SKIA9299J
130 (G)	Ground	Communication signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	(V) 10 -10 -10 -10 -10 -10 -10 -10
132 (G)		USB ground	_		_	_
133 (R)		USB D– signal	_		_	_
134 (W)		V BUS signal		_	_	_
135 (L)		USB D+ signal			_	_
136	—	Shield			—	—
137	—	FM sub	Input	—	—	—
138	—	AM-FM main	Input	—	—	_
139	Ground	Antenna amp. ON signal	Output	Ignition switch ACC	_	12.0 V

DTC Index

INFOID:000000006210296

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-162, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-163, "DTC Logic"
U1200	Cont Unit [U1200]	AV-164, "DTC Logic"
U1216	CAN CONT [U1216]	AV-165, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-166, "Diagnosis Procedure"

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

DTC	Display item	Refer to	-
U1243	FRONT DISP CONN [U1243]	AV-167, "Diagnosis Procedure"	A
U1255	SAT CONN [U1255]	AV-169, "Diagnosis Procedure"	-
U1310	CONTROL UNIT (AV) [U1310]	AV-172, "DTC Logic"	В
U1300 U1240	AV COMM CIRCUIT [U1300] SWITCH CONN [U1240]	AV-171, "Description"	-
U1300 U1256	AV COMM CIRCUIT [U1300]HAND FREE CONN [U1256]	AV-171, "Description"	С
U1300 U1240 U1256	 AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] HAND FREE CONN [U1256] 	AV-171, "Description"	D

Е

F

G

Н

J

Κ

L

Μ

AV

0

Ρ

< ECU DIAGNOSIS INFORMATION >

DISPLAY UNIT

Reference Value

TERMINAL LAYOUT



JPNIA0006ZZ

INFOID:000000006210297

PHYSICAL VALUES

Terr (Wire	minal color)	Description		Oce dition		Reference value
+	_	Signal name	Input/ Output		Condition	(Approx.)
1 (B)	Ground	Ground	_	Ignition switch ON	_	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	_	9.0 V
3 (BG)	Ground	Signal VCC	Input	Ignition switch ACC	_	9.0 V
4 (Y)	Ground	Composite image ground	_	Ignition switch ON	_	0 V
5		Shield			_	_
6 (L)	Ground	RGB signal (G: green)	Input	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 •••40µs JSNIA1030ZZ
7		Shield		—	_	—
8 (R)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	_	(V) 4 0 + 20µs 5KiB3601E

DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

Terminal (Wire color)		Description		Condition		Reference value	
+	-	Signal name	Input/ Output		Condition	(Approx.)	
9 (B)	Ground	RGB area (YS) signal	Input	lgnition switch ON	At RGB image is displayed. At DVD image is displayed.	5.0 V	B C D
11 (LG)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	(V) 6 4 2 0 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	E F
13 (BR)	Ground	Inverter ground	_	Ignition switch ON	_	0 V	
14 (LG)	Ground	Signal ground	_	Ignition switch ON	_	0 V	Η
15 (BR)	Ground	Composite image signal	Input	Ignition switch ON	At rear view camera image is displayed.	(V) 0.4 0 −0.4 ••••40µs SKIB2251J	I J K
17 (G)	Ground	RGB signal (R: red)	Input	lgnition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 •••40µs JSNIA1029ZZ	L
18 (P)	Ground	RGB signal (B: blue)	Input	lgnition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 1.6 0.4 0 + 40µs JSNIA10312Z	AV O P

DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

Terminal (Wire color)		Description			Condition	Reference value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
19 (W)	Ground	RGB synchronizing signal	Input	Ignition switch ON		(V) 4 0 → 20µs SKIB3603E	
20 (G)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch On		(V) 4 0 + 4ms SKIB3598E	
21	—	Shield			_	_	
22 (L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	(V) 6 2 0 +++1ms 	
23	—	Shield	—	—	—		

< ECU DIAGNOSIS INFORMATION >

SATELLITE RADIO TUNER

Reference Value

TERMINAL LAYOUT

INFOID:000000006210298



PHYSICAL VALUES

Terminal		Description				Deference volue	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
2 (R)	1 (G)	Satellite radio sound signal LH	Output	lgnition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 + 2ms SKIB3609E	H
4 (B)	3 (W)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	J K
5		Shield	—	—	—	—	
6		Shield			—	_	-
8 (G)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 + 10ms SKIA9299J	M AV O
9 (L)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • • 1ms SKIA9300J	Ρ

F

SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

Terminal		Description				Reference value (Approx.)	
+	_	Signal name	Input/ Output	Condition			
10 (P)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • 1 Ims SKIA9301J	
12 (Y)	Ground	Battery power supply	Input	lgnition switch OFF	_	Battery voltage	
16 (BG)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
33	—	Satellite antenna	Input	—	—	—	
34	—	Shield	—	—	_	_	

TEL ADAPTER UNIT [BASE AUDIO WITH REAR VIEW CAMERA]

TEL ADAPTER UNIT

Reference Value

TERMINAL LAYOUT

INFOID:000000006210299



PHYSICAL VALUES

Teri	minal	Description					
(Wire +	e color)	Signal name	Input/ Output	Condition		Reference value (Approx.)	
1 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
2 (LG)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
3 (BG)	Ground	Ignition signal	Input	Ignition switch ON	_	Battery voltage	
4 (B)	Ground	Ground	_	Ignition switch ON	_	0 V	
5	_	Shield	—		—	_	
7 (R)	8	Microphone signal	Input	lgnition switch ON	Give a voice	(V) 2.5 1.5 1.0 0.5 0 • • • 2ms	
9 (Y)	10 (G)	TEL voice signal	Output	Ignition switch ON	During voice guide output with the ູູ 🗲 🗲 switch pressed	(V) 1 0 −1 + 2ms SKIB3609E	
23 (B)	Ground	Control signal	Input	Ignition switch ON	_	0 V	
24 (B)	Ground	Control signal	Input	Ignition switch ON	_	0 V	

TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

(Wire color)		Description			Condition	Reference value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
28 (W)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	NOTE: The maximum voltage varies de- pending on the specification (destination unit). 0 0 0 20 ms JSNIA0012GB	
29 (G)	8	Microphone VCC	Output	Ignition switch ON	_	5.0 V	
33	—	TEL antenna	Input		_	_	
34	—	Shield	_	—	—	_	
35 (SB)		AV communication signal (H)	Input/ Output		_	_	
36 (LG)		AV communication signal (L)	Input/ Output	_	_	_	

BASE AUDIO WITH REAR VIEW CAMERA [BASE AUDIO WITH REAR VIEW CAMERA]

WIRING DIAGRAM BASE AUDIO WITH REAR VIEW CAMERA

Wiring Diagram

А

С

INFOID:000000006210300 B

NOTE:

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







IGNITION SWITCH ON or START

A BASE AUDIO WITH REAR VIEW CAMERA < WIRING DIAGRAM > [BASE AUDIO WITH REAR VIEW CAMERA]





< WIRING DIAGRAM >


JCNWM5235GB

0

А

В

С

D

Ε

F

G

Н

J

Κ

L

Μ

AV

BASE AUDIO WITH REAR VIEW CAMERA [BASE AUDIO WITH REAR VIEW CAMERA]

Signal Name [Specification] Signal Name [Specification] <u>+</u> 4 321 765 TEL ADAPTER UNIT 40 WIRE TO WIRE 4 00 35 36 LINGEN. nector Name Connector Name Color B ۳ nnector Tvpe HS. H.S. **,** 4 erminal No. 29 °. 碈 ſ ပိ 24 26 28 30 32 23 25 27 29 31 5 Signal Name [Specification] Signal Name [Specification] SATELLITE RADIO TUNER GNITIO 14 16 18 20 13 15 17 19 TEL ADAPTER UNIT TELLITE RAI 2 4 6 8 10 12 1 3 5 7 9 11 ~ ~ Color of Wire Color of Wire Connector Name BG Connector Name ЧG nector No tor No H.S. H.S. Terminal No. erminal No Æ 倨 k - \sim Signal Name [Specification] Signal Name [Specification] N œ ო Ξ 16 WIRE TO WIRE WIRE TO WIRE 4 <u>6</u> B221 ß 19 20 9 Color of Wire 9 H H nector Name Color of Wire ЯB Ж о rector Name No. ype nector No. H.S. H.S. erminal No. 10 No. ß ſ BASE AUDIO WITH REAR VIEW CAMERA Signal Name [Specification] WIRE TO WIRE

JCNWM5236GB

BG

Connector Name

ALS.

E

GR R G

R G G G SHIELD W R

BG SHIELD G P P L L L SHIELD G G W

Color of Wire

rminal No.

ВR

r G < r





JCNWM5237GB

BASE AUDIO WITH REAR VIEW CAMERA

< WIRING DIAGRAM >



[BASE AUDIO WITH REAR VIEW CAMERA]

JCNWM5238GB

BASE AUDIO WITH REAR VIEW CAMERA [BASE AUDIO WITH REAR VIEW CAMERA]



JCNWM5239GB

Ρ



JCNWM5240GB

ŏ

BASE AUDIO WITH REAR VIEW CAMERA [BASE AUDIO WITH REAR VIEW CAMERA]

< WIRING DIAGRAM >

А Signal Name [Specification] JNIFIED METER AND A/C AMP. В С 2 3 22 23 Color of Wire - Name ctor H.S. D nin Su E Ε Signal Name [Specification] Signal Name [Specification] MBINATION SWITCH (SPIRAL CABLE) STEERING ANGLE SENSOR CAN-5 8 NA NG S F Э 0 4 24 31 THORFV G Color of Wire ype of Wire Color Connector Name B Connector Name шÇ For Type nector HS. HS. 2 ß ß Н Signal Name [Specification] 1234567 DATA LINK CONNECTOR J 6 Color of Wire 'o B (B). BG nector Name tor Type SB Щ Ц BG SHEL Κ H.S. Ŝ ß L

 Image: Second Second

JCNWM5241GB

0

Μ

AV

BASE AUDIO WITH REAR VIEW CAMERA

WIRE TO WIRE

ctor Name



JCNWM5242GB

BASE AUDIO WITH REAR VIEW CAMERA [BASE AUDIO WITH REAR VIEW CAMERA]



JCNWM5243GB

ББ

≥ ¤

×Β

≥ß

srminal No

Ρ

Ο

А

В

С

D

Ε

F

G

Н

J

Κ

L

Μ

AV

ΗS

ß

rmina No.

S.

BASE AUDIO WITH REAR VIEW CAMERA

< WIRING DIAGRAM >

[BASE AUDIO WITH REAR VIEW CAMERA]



JCNWM5244GB

BASE AUDIO WITH REAR VIEW CAMERA [BASE AUDIO WITH REAR VIEW CAMERA]



JCNWM5245GB

Ρ



JCNWM5246GB

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000006210301 В





- Reference 1... Refer to AV-121, "CONSULT III Function".
- Reference 2... Refer to <u>AV-132, "DTC Index"</u>.
- Reference 3... Refer to AV-196, "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 malfunc-Ρ tion occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.

NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

AV

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

- Connect CONSULT-III and perform a self-diagnosis for "MULTI AV". Refer to <u>AV-121, "CONSULT III</u> <u>Function"</u>. NOTE:
 - Skip to step 4 of the diagnosis procedure if "MULTI AV" is not displayed.
- 2. Check if any DTC is displayed in the "Self-Diagnosis Results".

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-132, "DTC Index".

>> GO TO 5.

4.TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to <u>AV-196</u>, "Symptom <u>Table"</u>.

>> 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-III.
- 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) < BASIC INSPECTION > [BASE AUDIO WITH REAR VIEW CAMERA]
ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)
Description
BEFORE REPLACEMENT When replacing AV control unit, save or print current vehicle specification with CONSULT-III configuration before replacement.
AFTER REPLACEMENT
CAUTION: When replacing AV control unit, you must perform "WRITE CONFIGURATION" with CONSULT-III. • Complete the procedure of "WRITE CONFIGURATION" in order. • If you set incorrect "WRITE CONFIGURATION", incidents might occur. • Configuration is different for each vehicle model. Confirm configuration of each vehicle model.
Work Procedure
1.SAVING VEHICLE SPECIFICATION
-CONSULT-III Configuration Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>AV-160</u> , " <u>Descrip-</u> tion"
NOTE: If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection".
>> GO TO 2.
2.REPLACE AV CONTROL UNIT
Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u> .
>> GO TO 3.
3.WRITING VEHICLE SPECIFICATION
Perform "WRITE CONFIGURATION - Config file" or "WRITE CONFIGURATION - Manual selection" to write vehicle specification. Refer to <u>AV-160. "Work Procedure"</u> .
>> 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

Ρ

CONFIGURATION (AV CONTROL UNIT) [BASE AUDIO WITH REAR VIEW CAMERA]

< BASIC INSPECTION >

CONFIGURATION (AV CONTROL UNIT)

Description

INFOID:000000006210304

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

Function	Description
READ CONFIGURATION	Reads the vehicle configuration of current AV control unit.Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

Work Procedure

INFOID:000000006210305

NOTE:

If "WRITE CONFIGURATION" is unsuccessful, perform "Accessory Number Initialization". For details, refer to <u>AV-112, "On Board Diagnosis Function"</u>.

After performing "Accessory Number Initialization", reboot the AV control unit to perform "WRITE CONFIGU-RATION".

1.WRITING MODE SELECTION

CONSULT-III Configuration
 Select "CONFIGURATION" of "MULTI AV".

When writing saved data>>GO TO 2.

When writing manually>>GO TO 3.

2.PERFORM "WRITE CONFIGURATION-CONFIG FILE"

CONSULT-III Configuration
 Perform "WRITE CONFIGURATION-Config file".

>> WORK END

3. PERFORM "WRITE CONFIGURATION-MANUAL SELECTION"

CONSULT-III Configuration

Select "WRITE CONFIGURATION-Manual selection" to write vehicle specifications into the AV control unit. For data to write, refer to <u>AV-160, "Configuration List"</u>.

>> 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

CAUTION:

Check vehicle specifications before servicing.

INFOID:000000006210306

< BASIC INSPECTION >

CONFIGURATION (AV CONTROL UNIT) [BASE AUDIO WITH REAR VIEW CAMERA]

MANUAL SETTING ITEM		NOTE	
Items	Setting value	- NOTE	
STEERING	LHD	_	
	RHD	_	
GRADE	MODE 1	SPORT premium grade with 4WAS	
	MODE 3	SPORT premium grade 2WD models without 4WAS	
	MODE 2	Except for above	
AWAS	WITHOUT	_	
4VVAS	WITH	_	
	BASE	—	
SCORE CTOTEM	BOSE	_	

L

G

Н

J

Κ

M

AV

0

Ρ

[BASE AUDIO WITH REAR VIEW CAMERA]

DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

INFOID:000000006210307

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-26, "CAN Communication Signal Chart".

DTC Logic

INFOID:000000006210308

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	DTC detection condition	Probable malfunction location
U1000	0 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:000000006210309

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 system". Refer to LAN-17, "Trouble Diagnosis Flow Chart".

NO >> Refer to GI section. Refer to GI-43, "Intermittent Incident".

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	DTC detection condition	Probable malfunction factor	С
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to <u>AV-202, "Exploded View"</u> .	D

Μ

0

Ρ

U1010 CONTROL UNIT (CAN) [BASE AUDIO WITH REAR VIEW CAMERA]

INFOID:000000006210310

А

В

Е

F

G

Н

J

Κ

L

U1200 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1200 AV CONTROL UNIT

[BASE AUDIO WITH REAR VIEW CAMERA]

INFOID:000000006210311

DTC I	_ogic
-------	-------

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the mal- function occurs constantly. Refer to <u>AV-202, "Exploded View"</u> .

U1216 AV CONTROL UNIT [BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

U1216 AV CONTROL UNIT

DTC Logic

INFOID:000000006210312

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1216 CAN CONT [U1216]		AV control unit malfunction is detected.	Replace the AV control unit if the mal- function occurs constantly. Refer to <u>AV-202. "Exploded View"</u> .

А

U1232 STEERING ANGLE SENSOR [BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

U1232 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000006210313

DTC	Display contents of CONSULT-III	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 cen- ter position of the steering angle sen- sor.

Diagnosis Procedure

INFOID:000000006210314

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 <u>BRC-8</u>, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : <u>Special Repair Requirement</u>".

U1243 DISPLAY UNIT [BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

U1243 DISPLAY UNIT

DTC Logic

INFOID:000000006210315

			1			
DTC	Display co CONSI	ontents of JLT-III		DTC detection condition		Possible malfunction factor
U1243	FRONT DISI [U1243]	P CONN	 When either one of the following items is detected: display unit power supply and ground circuit are malfunctioning. communication circuit between AV control unit and display unit are malfunctioning. 		following items is detected: upply and ground circuit are mal- it between AV control unit and dis ctioning.	 Display unit power supply and ground circuit. Communication circuit between AV control unit and display unit.
Diagno	osis Proc	edure				INFOID:00000006210316
.CHE	CK DISPLA	Y UNIT P	OWER	SUPPLY AN	D GROUND CIRCUIT	
heck c the in YES NO CHE Turn Disc Che	lisplay unit p spection res >> GO TO >> Repair CK CONTIN n ignition sw connect disp eck continui	oower sup sult norma 2. malfunction NUITY CC vitch OFF olay unit c ty betwee	oply and al? oning pa OMMUN connecto n displa	ground circu arts. ICATION CIF or and AV co y unit harnes	uit. Refer to <u>AV-173, "DISPL</u> RCUIT ntrol unit connector. ss connector and AV control	AY UNIT : Diagnosis Procedure".
	Display unit		AV cor	trol unit		
Conne	ctor Termi	nals Co	onnector	Terminals	Continuity	
M71	11	2	M202	51 39	Existed	
. Che	eck continui	ty betwee	n displa	y unit harnes	ss connector and ground.	
	Display unit				0	
Conne	ctor Termi	nals	Gro	bund	Continuity	
M71	11	2	U.C.		Not existed	
<u>₃ the in</u> YES NO	spection re >> GO TO >> Repair	sult norma 3. harness o	<u>al?</u> or conne	ector.		
5. CHE	CK COMM		N SIGN	IAL	al unit connector	
. Cor	n ignition sv	vitch ON.				
. Che	eck signal b	etween di	splay ur	hit harness c	onnector and ground.	

А

U1243 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

(+)				
Display unit		(-)	Condition	Reference value
Connector	Terminal			
M71	11	Ground	When adjusting display bright- ness.	(V) 6 4 2 0 •••••1ms PKiB5039J

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)				
Display unit		(–)	Condition	Reference value
Connector	Terminal			
M71	22	Ground	When adjusting display bright- ness.	(V) 6 4 2 0 ••••1ms PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace display unit. Refer to <u>AV-204, "Exploded View"</u>.

U1255 SATELLITE RADIO TUNER [BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

U1255 SATELLITE RADIO TUNER

DTC Logic

INFOID:000000006210317

DTC	Displ	lay contents	of				otaction Candi	tion	Possible courses
ыс	Ċ	ONSULT-III			וט				r ussibile Gauses
U1255	SAT CC [U1255	DNN]		 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. Communication circuit between AV control unit and satellite radio tun- er. Request signal circuit between AV control unit and satellite radio tun- er. 	
iagno	osis P	rocedu	re						INFOID:00000006210318
.CHE	CK SAT	ELLITE F	RADIO) TUN	ER POWI	ER	SUPPLY AN	ND GROUND CI	RCUIT
heck s	atellite	radio tun edure".	er po	wer su	pply and	gro	und circuit.	Refer to <u>AV-174</u>	, "SATELLITE RADIO TUNER :
s the in	spectio	n result n	ormal	?					
YES	>> GC) TO 2.							
NO	>> Re	pair malfu	Inctio	ning pa	arts.				
CHE	CK COI	NTINUITY		ИMUN	ICATION	CIF	RCUIT AND	REQUEST SIG	NAL CIRCUIT
. Turr	n ignitio	n switch (OFF.						
. Disc	connect	AV contr	ol uni	t conne	ector and	sat	ellite radio t	uner connector.	radia tupar barnasa connactor
. Che	CK COM	inuity bet	ween	AV CO		nan		stor and satellite	radio tuner namess connector.
A	V control	unit	S	atellite r	adio tuner				
Connec	ctor 1	Ferminals	Con	nector Terminals		ls	- Continuity		
		129			8				
M206	6	122	B	236	10		Existed		
		130		9			-		
. Che	eck cont	tinuity bet	ween	AV co	ntrol unit	har	ness conne	ctor.	
		-							
	AV con	trol unit					Continuity		
Conn	ector	Termin	als				Continuity		
		129		G	Fround				
M2	06	122					Not existed		
		130)	1					
s the ins	spectio	n result n	ormal	?					
YES	>> GC) TO 3.							
NO	>> Re	pair harne	ess or	conne	ector.				
).CHE	CK AV		L UN		TAGE				
. Con . Turr . Che	nect A n ignitio eck sign	/ control (n switch (al betwee	unit co ON. en AV	onnect contro	or. I unit harr	nes	s connector	and ground.	
	(-	+)							
	AV con	trol unit		-	()		Referer	ice value	
Conn	ector	Termin	als	-	. /		(App	prox.)	
5 6. 11				1		L			

А

U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

M206	129	Ground	7.0 V
IVI200	130	Ground	7.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

4.CHECK SATELLITE RADIO TUNER VOLTAGE

1. Turn ignition switch OFF.

2. Disconnect AV control unit connector.

3. Connect satellite radio tuner.

4. Turn ignition switch ON.

5. Check signal between satellite radio tuner harness connector and ground.

(Satellite r	+) adio tuner	()	Reference value	
Connector Terminal			(Approx.)	
B236	10	Ground	7.0 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace satellite radio tuner. Refer to <u>AV-209, "Exploded View"</u>.

U1300 AV COMM CIRCUIT [BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

U1300 AV COMM CIRCUIT

Description

INFOID:000000006210319

А

С

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-III	DTC detection condition	Possible malfunction factor
U1300 U1240	 AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] 	 When either one of the following items is 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 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. 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] 	Malfunction is detected in AV communication circuits be- tween AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.

L

Κ

0

Ρ

U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1310 AV CONTROL UNIT

[BASE AUDIO WITH REAR VIEW CAMERA]

INFOID:000000006210320

DTC I	_ogic
-------	-------

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace AV control unit. If the mal- function occurs constantly. Refer to <u>AV-202, "Exploded View"</u> .

	POWER SUPI	PLY AND	GRO	JND CIRCUIT	
< DTC/CIRCUIT DIA	GNOSIS >		[BA	SE AUDIO WITH REA	R VIEW CAMERA]
POWER SUPPI	Y AND GROUI	ND CIRC	CUIT		
AV CONTROL U	NIT				
AV CONTROL UN	NIT : Diagnosis Pi	rocedure			INFOID:000000006210321
1.CHECK FUSE					
Check for blown fuses					
	Power source			Fuse No.	
	Battery			34	
Ignitio	n switch ACC or ON			19	
YES >> GO TO 2. NO >> Be sure to 2.CHECK POWER S Check voltage betwee	eliminate cause of ma UPPLY CIRCUIT	alfunction be	fore inst	alling new fuse. ground.	
Signal name	Connector No	Termina	l No	Ignition switch position	Value (Approx.)
Battery power supply	M201	19	INO.	OFF	Battery voltage
ACC power supply	M201	7		ACC	Battery voltage
le the inspection result	normal?				, , , , , , , , , , , , , , , , , , , ,
 Turn ignition switc Disconnect AV con Check continuity b 	h OFF. htrol unit connectors. between AV control uni	t harness co	onnectors	s and ground.	
Signal name	Connector No.	Termina	l No.	Ignition switch position	Continuity
Ground	M201	20		OFF	Existed
Is the inspection result YES >> INSPECT NO >> Repair ha DISPLAY UNIT DISPLAY UNIT : I	<u>normal?</u> ION END rness or connector. Diagnosis Proced	ure			INF01D:000000006210322
1.CHECK POWER S	UPPLY CIRCUIT (DIS	PLAY SIDE))		
Check voltage betwee	n display unit harness	connector a	nd grour	nd.	
Signal name	Connector No.	Terminal	l No.	Ignition switch position	Value (Approx.)
Inverter VCC	N/71	2		100	0.0.1/
Signal VCC	IVI7 I	3		ACC	9.0 v
Is the inspection result YES >> GO TO 4. NO >> GO TO 2.	normal?				
∠.CHECK POWER S		NTINUITY)			
1. Turn ignition switc	h OFF.				

Disconnect the harness connector between display unit and AV control unit.
 Check continuity between display unit harness connector M71 and AV control unit harness connector.

POWER SUPPLY AND GROUND CIRCUIT DSIS > [BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

Signal name	Display unit (M71)	AV control unit (M202)	Continuity
Inverter VCC	2	48	Existed
Signal VCC	3	36	Existed

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

Signal name	Display unit (M71)	_	Continuity
Inverter VCC	2	Ground	Not existed
Signal VCC	3	Ground	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.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Inverter VCC	M202	48		0.0.1/
Signal VCC	WIZ0Z	36	ACC	9.0 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replacement of AV control unit.

4.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect display unit connector.

3. Check continuity between display unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M71	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:000000006210323

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
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.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

Battery power supply		Terrinite		ignition switch position	value (rippiexi)
	B236	12		OFF	Battery voltage
ACC power supply	B236	B236 16 ACC		ACC	Battery voltage
Is the inspection resul YES >> INSPECT NO >> Check ha TEL ADAPTER U TEL ADAPTER U	<u>t normal?</u> ION END rness between satellite JNIT INIT : Diagnosis I	e radio tunei Procedure	r and fuse	9.	INF0ID:00000006210324
1.CHECK FUSE					
Check for blown fuses	S.				
	Power source			Fuse No.	
	Battery			34	
Ignitic	on switch ACC or ON			19	
YES $>>$ GO TO 2. NO $>>$ Be sure to 2 CHECK POWER S	eliminate cause of m	alfunction be	efore inst	alling new fuse.	
YES >> GO TO 2. NO >> Be sure to 2.CHECK POWER S Check voltage betwee	o eliminate cause of m SUPPLY CIRCUIT In TEL adapter unit ha	alfunction be	efore inst	alling new fuse. ground.	
YES >> GO TO 2. NO >> Be sure to 2.CHECK POWER S Check voltage betwee Signal name	o eliminate cause of m SUPPLY CIRCUIT en TEL adapter unit ha Connector No.	alfunction be rness conne Termina	efore inst ector and al No.	alling new fuse. ground.	Value (Approx.)
YES >> GO TO 2. NO >> Be sure to 2.CHECK POWER S Check voltage betwee Signal name Battery power supply ACC power supply	eliminate cause of m SUPPLY CIRCUIT In TEL adapter unit ha Connector No. B237 B237	alfunction be rness conne Termina 1 2	efore inst ector and al No.	alling new fuse. ground. Ignition switch position OFF ACC	Value (Approx.) Battery voltage Battery voltage
YES >> GO TO 2. NO >> Be sure to 2.CHECK POWER S Check voltage betwee Signal name Battery power supply ACC power supply ACC power supply Is the inspection resul YES >> GO TO 3. NO >> Check has 3 CHECK GROUND	o eliminate cause of m SUPPLY CIRCUIT on TEL adapter unit ha Connector No. B237 B237 t normal? rness between TEL ac CIRCUIT	alfunction be rness conne Termina 1 2 dapter unit a	efore insta ector and al No.	alling new fuse. ground. Ignition switch position OFF ACC	Value (Approx.) Battery voltage Battery voltage
YES >> GO TO 2. NO >> Be sure to 2.CHECK POWER S Check voltage betwee Signal name Battery power supply ACC power supply ACC power supply Is the inspection result YES >> GO TO 3. NO >> Check hat 3.CHECK GROUND 1. Turn ignition switc 2. Disconnect TEL a 3. Check continuity b	e eliminate cause of m SUPPLY CIRCUIT en TEL adapter unit ha <u>Connector No.</u> <u>B237</u> <u>B237</u> <u>t normal?</u> rness between TEL ad CIRCUIT ch OFF. dapter unit connector. petween TEL adapter	alfunction be rness conne Termina 1 2 dapter unit a unit harness	efore insta ector and al No. nd fuse.	alling new fuse. ground. Ignition switch position OFF ACC or and ground.	Value (Approx.) Battery voltage Battery voltage
YES >> GO TO 2. NO >> Be sure to 2.CHECK POWER S Check voltage betwee Signal name Battery power supply ACC power supply ACC power supply Is the inspection resul YES >> GO TO 3. NO >> Check hat 3.CHECK GROUND 1. Turn ignition swite 2. Disconnect TEL a 3. Check continuity to Signal name	e eliminate cause of m SUPPLY CIRCUIT en TEL adapter unit ha <u>Connector No.</u> B237 B237 t normal? rness between TEL ad CIRCUIT ch OFF. dapter unit connector. petween TEL adapter <u>Connector No.</u>	alfunction be rness conne Termina 1 2 dapter unit a unit harness Termina	efore insta ector and al No. nd fuse.	alling new fuse. ground. Ignition switch position OFF ACC or and ground. Ignition switch position	Value (Approx.) Battery voltage Battery voltage

Ο

RGB (R: RED) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB (R: RED) SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210326

INFOID:000000006210325

[BASE AUDIO WITH REAR VIEW CAMERA]

1.CHECK CONTINUITY RGB (R: RED) 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 con	itrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	17	M202	43	Existed

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

Display unit			Continuity
Connector	Terminal	Ground	Continuity
M71	17		Not existed
	•		

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK RGB (R: RED) 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.

(+) Display unit		(-)	Condition	Reference value
Connector	Terminal			
M71	17	Ground	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spec- trum Bar" on DISPLAY DIAGNOSIS screen.	(V) 0.8 0.4 0 • • • 40µs

Is inspection result normal?

YES >> Replace display unit. Refer to <u>AV-204, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

RGB (G: GREEN) SIGNAL CIRCUIT

[BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

RGB (G: GREEN) SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

1. CHECK CONTINUITY RGB (G: GREEN) 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.

Disp	lay unit	AV con	trol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	6	M202	44	Existed

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

Displa	ay unit		Conti	inuity	
Connector	Terminal	Gro	ound	nuty	G
M71	6		Not ex	xisted	
Is inspection	n result norm	al?			L
YES >>	GO TO 2.				1
NO >>	Repair harn	ess or conne	ector.		
2.CHECK	RGB (G: GR	EEN) SIGN/	AL		
1. Connec	t display uni	t connector a	and AV control unit cor	nector.	
 Turn igr Check s 	nition switch signal betwee	ON. en display u	nit harness connector a	and ground.	L
(1	+)				
Displa	ay unit	(-)	Condition	Reference value	k
Connector	Terminal				
			Start confirmation/adjust-		L
M71	6	Ground	play color bar by selecting "Color Spec- trum Bar" on DISPLAY DIAGNOSIS screen.	$0.8 \qquad 0.4 $	N
				JSNIA1030ZZ	41

Is inspection result normal?

YES >> Replace display unit. Refer to <u>AV-204, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

А

В

С

D

F

INFOID:000000006210327

INFOID:000000006210328

Ρ

RGB (B: BLUE) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB (B: BLUE) SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210330

INFOID:000000006210329

1.CHECK CONTINUITY RGB (B: BLUE) 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 con	trol unit	Continuity
Connector	Terminal	Connector Terminal		Continuity
M71	18	M202	45	Existed

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

Display unit			Continuity
Connector	Terminal	Ground	Continuity
M71	18		Not existed
	• .		

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK RGB (B: BLUE) 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.

(+)					
Display unit		(-)	Condition	Reference value	
Connector	Terminal				
M71	18	Ground	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spec- trum Bar" on DISPLAY DIAGNOSIS screen.	(V) 0.8 0.4 0 ••••40µs JSNIA1031ZZ	

Is inspection result normal?

YES >> Replace display unit. Refer to <u>AV-204, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-202</u>, "Exploded View".

RGB SYNCHRONIZING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB SYNCHRONIZING SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

1. CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

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

Displa	ay unit	AV control unit		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M71	19	M202	42	Existed	

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

Continuity
Connector Terminal Ground
M71 19 Not existed

ne inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect display unit connector and AV control unit connector.

2. Turn ignition switch ON.

Check signal between display unit harness connector and ground. 3.

Displa	+) ay unit	()	Reference value		
Connector	reminal				
M71	19	Ground	(V) 4 0 + + 20 µs SKIB3603E		
a the increation result normal?					

is the inspection result normal?

YES >> Replace display unit. Refer to AV-204, "Exploded View".

NO >> Replace AV control unit. Refer to AV-202, "Exploded View".

А

D

Е

F

Н

INEOID-000000006210332

INFOID:000000006210331

[BASE AUDIO WITH REAR VIEW CAMERA]

Μ

Κ

L

AV



RGB AREA (YS) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB AREA (YS) SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210334

INFOID:000000006210333

[BASE AUDIO WITH REAR VIEW CAMERA]

1.CHECK CONTINUITY RGB AREA (YS) 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	Continuity
M71	9	M202	40	Existed

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

Display unit			Continuity	
Connector	Terminal	Ground	Continuity	
M71	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 display unit connector and AV control 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			
			At RGB image is displayed.	5.0 V
M71	9	Ground	At camera image is dis- played.	(V) 6 4 2 0 ++200 µ s −++200 µ s −++200 µ s

Is the inspection result normal?

YES >> Replace display unit. Refer to <u>AV-204, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.
CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

CAMERA IMAGE SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

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 con	trol unit	Rear view	w camera	Continuity
Conne	ector	Terminal	Connector	Terminal	Continuity
M20	03	73	B305	1	Existed

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

AV cor	ntrol unit		Continuity
Connector	Terminal	Ground	Continuity
M203	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.

(·	+)			
AV con	trol unit	(–)	Condition	Voltage (Approx.)
Connector	Terminal			
M203	73	Ground	Shift position is "R".	6.0 V

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

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 cor	ntrol unit	Rear vie	w camera	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M203	62	B305	3	Existed

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

[BASE AUDIO WITH REAR VIEW CAMERA]

 \sim

AV

Κ

А

В

D

E

F

INFOID:000000006210335

CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV con	trol unit		Continuity
Connector	Terminal	Ground	Continuity
M203	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.

(AV cor	+) ntrol unit	()	Condition	Reference value
Connector	Terminal			
M203	62	Ground	At rear view camera im- age is displayed.	(V) 0. 4 -0. 4 • • 40μs skiB2251J

Is inspection result normal?

YES >> Replace AV control unit. Refer to <u>AV-202</u>, "Exploded View".

NO >> Replace rear view camera. Refer to <u>AV-218, "Exploded View"</u>.

COMPOSITE IMAGE SIGNAL CIRCUIT

[BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

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 cor	trol unit	unit	play unit	Continuity
Connector	Terminal	Terminal Con	Terminal	Continuity
M202	47	47 N	15	Existed

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

AV cor	ntrol unit			Continu	ity			
Connector	Terminal	Gr	ound	Continu	ity			
M202	47			Not exis	ted			
s the inspec	ction result n	ormal?						
YES >>	GO TO 2.							
NO >>	Repair harne	ess or conne	ector.					
CHECK (COMPOSITE	E IMAGE SI	GNAL					
. Connec	t AV control	unit connect	tor and displa	y unit conn	ector.			_
. Turn igr . Check s	nition switch signal betwee	ON. en AV contro	ol unit harnes	s connector	and around			
					ana groanai			
((+)						_	
(AV cor	(+) htrol unit	(-)	Cond	lition	Reference	value	_	
(AV cor Connector	(+) htrol unit Terminal	(-)	Cond	lition	Reference	value		
(AV cor Connector	(+) ntrol unit Terminal	()	Cond	lition		value		
(AV cor Connector M202	(+) htrol unit Terminal 47	(–) Ground	Cond At camera ima played.	lition age is dis-	(V) 0.4 -0.4	value		

Is the inspection result normal?

YES >> Replace display unit. Refer to <u>AV-204, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

А

В

С

D

F

INFOID:000000006210337

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [BASE AUDIO WITH REAR VIEW CAMERA]

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

Description

In composite image (AUX image 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:000000006210340

INFOID:000000006210339

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.

Displa	ay unit	AV con	itrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	8	M202	38	Existed

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

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M71	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.

(Displa	+) av unit	()	Reference value
Connector	Terminal		
M71	8	Ground	(V) 4 0 +→20µs SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

NO >> Replace display unit. Refer to <u>AV-204, "Exploded View"</u>.

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

Description

In composite image (AUX image 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

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.

Displa	ay unit	AV con	trol unit			
Connector	Terminal	Connector	Terminal	Continuity		
M71	20	M202	50	Existed		
Check c	ontinuity be	tween displa	y unit harnes	ss connector and	d ground.	
Displa	ay unit					
Connector	Terminal	Gro	ound	Continuity		
M71	20	-		Not existed		
the inspec	tion result n	ormal?				
YES >> NO >>	GO TO 2. Repair harn	ess or conne	ector.			
				1 11 1		
. Connect	t display uni	t connector a	and AV contro	ol unit connecto	r.	
. Connect . Turn ign	t display unitition switch	t connector a ON.	and AV contro	ol unit connecto	r.	
. Connect . Turn ign . Check s	t display uni ition switch ignal betwee	t connector a ON. en display ur	and AV contro nit harness c	ol unit connecto onnector and gr	r. ound.	
. Connect . Turn ign . Check s	t display uni ition switch ignal betwee +)	t connector a ON. en display ur	and AV contro hit harness c	ol unit connecto onnector and gr	r. ound. —	
Connect Turn ign Check s	t display unit ition switch ignal betwee +) ay unit	t connector a ON. en display ur (-)	nd AV contro nit harness co Refe	ol unit connecto onnector and gr rence value	r. ound. 	
. Connect . Turn ign . Check s (+ Displa	t display uni ition switch ignal betwee +) ay unit Terminal	t connector a ON. en display ur (-)	nd AV contro nit harness co Refe	ol unit connecto onnector and gr rence value	r. ound. —	
Connect Turn ign Check s (+ Displa Connector	t display uni ition switch ignal betwee +) ay unit Terminal	t connector a ON. en display ur (–)	and AV contro nit harness co Refe	ol unit connecto onnector and gr rence value	r. ound. 	
. Connect . Turn ign . Check s (+ Displa Connector	t display unit ition switch ignal betwee +) ay unit Terminal	t connector a ON. en display ur (-) Ground	nd AV contro nit harness c Refe	ol unit connecto onnector and gr rence value	r. ound. 	
. Connect . Turn ign . Check s (+ Displa Connector	t display unit ition switch ignal betwee +) ay unit Terminal 20	t connector a ON. en display ur (–) Ground	nd AV contro nit harness co Refe	ol unit connecto onnector and gr rence value	r. ound. 	
. Connect . Turn ign . Check s (+ Displa Connector M71	t display unit ition switch ignal betwee +) ay unit Terminal 20	t connector a ON. en display ur (-) Ground	nd AV contro nit harness co Refe	ol unit connecto onnector and gr rence value	r. ound. 	
. Connect . Turn ign . Check s (+ Displa Connector M71 . the inspec	t display unit ition switch ignal betwee +) ay unit Terminal 20 20	t connector a ON. en display ur (-) Ground ormal?	nd AV contro nit harness co Refe	ol unit connecto onnector and gr rence value	r. ound. 	

А

D

INFOID:000000006210341

DISK EJECT SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DISK EJECT SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210344

INFOID:000000006210343

[BASE AUDIO WITH REAR VIEW CAMERA]

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	Continuity
M72	14	M204	96	Existed

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

Multifunc	tion switch		Continuity
Connector	Terminal	Ground	
M72	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.

(+) AV control unit		(–) Condition		Voltage
Connector	Terminal		Condition	(Approx.)
M204	96	Ground	Pressing the eject switch	0 V
101204	90	Giouna	Except for above	3.3 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to <u>AV-212, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-202</u>, "Exploded View".

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MICROPHONE SIGNAL CIRCUIT

Description

Supply power from TEL adapter unit to microphone. The microphone transmits the sound/voice to the micro- $$_{\rm B}$$ phone.

Diagnosis Procedure

INFOID:000000006210346

INFOID:000000006210345

А

D

Н

Κ

Μ

AV

Ρ

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.

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

TEL adapter unit			Continuity
Connector	Terminals	Ground	Continuity
M007	7	Ground	Not ovisted
11/237	29		NUL EXISIED

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.

(+)	(-)		
TEL ada	apter unit	TEL adapter unit		Voltage (Approx.)
Connector	Terminal	Connector	Terminal	(TT -)
B237	29	B237	8	5.0 V

Is the inspection result normal?

YES	>> GO TO 3.
-----	-------------

NO >> Replace TEL adapter unit. Refer to <u>AV-217, "Exploded View"</u>.

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.

2. Check signal between TEL adapter unit harness connector.

< DTC/CIRCUIT DIAGNOSIS >

MICROPHONE SIGNAL CIRCUIT [BASE AUDIO WITH REAR VIEW CAMERA]

(·	+)	(–)			
TEL ada	apter unit	TEL adapter unit		Condition	Reference value
Connector	Terminal	Connector	Terminal		
B237	7	B237	8	give a voice.	(V) 2.5 2.0 1.5 1.5 0.5 0 ••••2ms PKIB5037J

Is the inspection result normal?

>> Replace TEL adapter unit. Refer to <u>AV-217, "Exploded View"</u>.
>> Replace microphone. Refer to <u>AV-215, "Exploded View"</u>. YES

NO

CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

escription				INFOID:0000000621034
EL adapter un	it identifies the	vehicle model a	according to the control signal and	performs the control.
iagnosis P	rocedure			INFOID:0000000621034
		INOL SIGNAL		
Disconnect	TEL adapter u	nit connector.		
Check cont	inuity between	IEL adapter ur	hit harness connector and ground.	
TEL ada	pter unit			
Connector	Terminals	Ground	Continuity	
B237	23	Ground	Existed	
5201	24			
the inspection	<u>n result normal</u>	<u>?</u>		
′ES >> Rej √O >> Rej	place TEL adap	oter unit. Refer	to AV-217, "Exploded View".	

STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL A CIRCUIT

Description

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:000000006210350

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

- 1. Disconnect AV control unit connector and spiral cable connector.
- 2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M201	6	M36	24	Existed

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

AV control unit			Continuity
Connector	Terminal	Ground	Continuity
M201	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 <u>SR-14, "Exploded View"</u>.

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.

(+)		(-)		
AV cor	ntrol unit	AV control unit		Voltage (Approx.)
Connector	Terminal	Connector	Terminal	
M201	6	M201	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.

2. Check steering switch. Refer to AV-190, "Component Inspection".

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace steering switch. Refer to <u>ST-17</u>, "Exploded View".

Component Inspection

INFOID:000000006210351

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

AV-190

INFOID:000000006210349

[BASE AUDIO WITH REAR VIEW CAMERA]

STEERING SWITCH SIGNAL A CIRCUIT OSIS > [BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

Standard

Between terminals 14 and 17

🔬 🌈 switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	:0Ω
Between terminals 15 and 17	
 switch ON 	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	:0Ω



AV

Μ

Ε

F

G

Н

J

Κ

L

0

Ρ

STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH SIGNAL B CIRCUIT

Description

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:000000006210353

INFOID:000000006210352

[BASE AUDIO WITH REAR VIEW CAMERA]

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

- 1. Disconnect AV control unit connector and spiral cable connector.
- 2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spira	cable	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M201	16	M36	31	Existed

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

AV con	itrol unit		Continuity
Connector	Terminal	Ground	Continuity
M201	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 <u>SR-14, "Exploded View"</u>.

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.

(+)	(-)	
AV cor	ntrol unit	AV control unit		Voltage (Approx.)
Connector	Terminal	Connector	Terminal	(TT -)
M201	16	M201	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.

2. Check steering switch. Refer to AV-192, "Component Inspection".

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace steering switch. Refer to <u>ST-17, "Exploded View"</u>.

Component Inspection

INFOID:000000006210354

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

AV-192

STEERING SWITCH SIGNAL B CIRCUIT SIS > [BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

Standard

Between terminals 14 and 17

🔬 🌈 switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	:0Ω
Between terminals 15 and 17	
 switch ON 	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	:0Ω

SOURCE	Δ
MENU UP ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
MENU DOWN SApprox.	
<u>, (√≤</u> € € 3 402Ω	В
VOL DOWN	
	С
Δ 200Ω [14]15 17]	
JSNIA0216GB	
	- C

AV

Μ

Е

F

G

Н

J

Κ

L

0

Ρ

STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

STEERING SWITCH GROUND CIRCUIT

Description

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:000000006210356

INFOID:000000006210355

[BASE AUDIO WITH REAR VIEW CAMERA]

1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

- 1. Disconnect AV control unit connector and spiral cable connector.
- 2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spira	cable	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M201	15	M36	33	Existed

3. 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 <u>SR-14, "Exploded View"</u>.

- ${f 3.}$ CHECK GROUND CIRCUIT
- 1. Connect AV control unit connector.
- 2. Check continuity between AV control unit harness connector and ground.

AV control unit			Continuity
Connector	Terminal	Ground	Continuity
M201	15		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to <u>AV-202, "Exploded View"</u>.

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.

2. Check steering switch. Refer to AV-194, "Component Inspection".

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace steering switch. Refer to <u>ST-17, "Exploded View"</u>.

Component Inspection

INFOID:000000006210357

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

STEERING SWITCH GROUND CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [BASE AUDIO WITH REAR VIEW CAMERA]

Standard Between terminals 14 and 17 🔬 🌈 switch ON $:716 - 730 \Omega$ MENU DOWN switch ON : 318 – 324 Ω MENU UP switch ON : 120 – 122 Ω SOURCE switch ON :0Ω Between terminals 15 and 17 : 318 – 324 Ω switch ON VOL UP switch ON : 120 – 122 Ω VOL DOWN switch ON :0Ω



AV

Μ

Е

F

Н

J

Κ

0

Ρ

SYMPTOM DIAGNOSIS MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:000000006210358

OPERATION

Symptoms	Check items	Possible malfunction location / Action to take
Multifunction switch and preset switch operation does not work.	 All switches cannot be operated. "MULTI AV" is displayed on system selection screen when the CON-SULT-III is started. 	 Multifunction switch power supply and ground circuit. AV communication circuit between AV control unit and multifunction switch. Perform "Self diagnosis Result" of "MULTI AV" with CONSULT-III. Refer to <u>AV-121, "CONSULT - III Func- tion"</u>.
	 All switches cannot be operated. "MULTI AV" is not displayed on system selection screen when the CON-SULT-III is initialized. 	AV control unit power supply and ground circuit malfunc- tion. Refer to <u>AV-173</u> , " <u>AV CONTROL UNIT</u> : <u>Diagnosis</u> <u>Procedure</u> ".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Per- form multifunction switch and preset switch self-diagno- sis function. Refer to <u>AV-112</u> , " <u>On Board Diagnosis</u> <u>Function</u> ".
Fuel economy display, vehicle set- ting operation is abnormal.	There is malfunction in the CONSULT- III self-diagnosis result. Refer to <u>AV-121</u> , "CONSULT - III Func- tion".	Perform detected DTC diagnosis. Refer to <u>AV-132, "DTC Index"</u> .
	There is no malfunction in the self-diag- nosis results. Refer to <u>AV-121, "CONSULT - III Func-</u> <u>tion"</u> .	Ignition signal circuit malfunction. (AV control unit)

RELATED TO HANDS-FREE PHONE

Simple Check for Bluetooth™ Communication

If cellular phone and AV control unit cannot be connected with Bluetooth[™] communication, following procedure allows the technician to judge which device has malfunction.

- 1. Turn on a cellular phone, not connecting Bluetooth[™] communication.
- 2. Start CONSULT-III, then start Windows[®].
- 3. Set CONSULT-III near a cellular phone.
- 4. When operated Bluetooth[™] registration by cellular phone, check if CONSULT-III^{*} would be displayed on the device name. (If other Bluetooth[™] device is located near cellular phone, a name of the device would be displayed also.) NOTE:

*:Displayed device name is "NISSAN-*******.".

- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal. Perform diagnosis as per the following table.

Trouble Diagnosis Chart by Symptom



MULTI AV SYSTEM SYMPTOMS [BASE AUDIO WITH REAR VIEW CAMERA]

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (No con- nection is displayed on the dis- play at the guide.)	Repeat the registration of cellular phone.	TEL adapter unit malfunction. Refer to <u>AV-217, "Exploded View"</u> .
Hands-free phone cannot be established.	Both the reception and the speech cannot be performed	 Perform "Self diagnosis Result" of "MULTI AV" with CONSULT-III. Refer to <u>AV-121, "CONSULT - III Function"</u>. No malfunction. TEL adapter unit malfunction. Refer to <u>AV-217, "Exploded View"</u>. Malfunction is detected. Perform detected DTC diagnosis. Refer to <u>AV-132, "DTC Index"</u>.
The other party's voice cannot be heard by hands-free phone.	The operation of the " $\sqrt{2}$ \checkmark " switch can be performed.	TEL voice signal circuit malfunction between TEL adapt- er unit and AV control unit.
	The operation of the " 🖋 🌈 " switch can- not be performed.	Control signal circuit.
Originating sound is not heard	Sound operation function is normal.	TEL adapter unit. Refer to <u>AV-217, "Exploded View"</u> .
free phone communication.	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <u>AV-187, "Diagnosis Procedure"</u> .
The system cannot be operat- ed.	"SOURCE", "MENU UP", and "MENU DOWN" switches are operated. But "ψ≨	 Check steering switch. Refer to <u>AV-190</u>, "Component Inspection". Malfunction is detected. Replace steering switch. Refer to <u>AV-213</u>, "Exploded <u>View"</u>.
	"SOURCE", "MENU UP", "MENU DOWN" and "	Steering switch signal A circuit malfunction. Refer to <u>AV-190, "Diagnosis Procedure"</u> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <u>AV-194, "Diagnosis Procedure"</u> .

RELATED TO RGB IMAGE

Symptoms	Check items	Possible malfunction location / Action to take	_
RGB image is not shown.	There is malfunction in the CONSULT-III self-diagnosis result. Refer to <u>AV-121, "CONSULT - III Func-</u> <u>tion"</u> .	Perform detected DTC diagnosis. Refer to <u>AV-132, "DTC Index"</u> .	L
	There is no malfunction in CONSULT-III self-diagnosis results. Refer to <u>AV-121, "CONSULT - III Func-</u> <u>tion"</u> .	Vertical synchronizing (VP) signal circuit. Refer to <u>AV-185, "Diagnosis Procedure"</u> .	M
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to <u>AV-176, "Diagnosis Procedure"</u> .	AV
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to <u>AV-177, "Diagnosis Procedure"</u> .	0
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to <u>AV-178, "Diagnosis Procedure"</u> .	
RGB screen is rolling.	_	RGB synchronizing signal circuit. Refer to <u>AV-179, "Diagnosis Procedure"</u> .	P

RELATED TO AUDIO

Κ

MULTI AV SYSTEM SYMPTOMS [BASE AUDIO WITH REAR VIEW CAMERA]

Symptoms	Check items	Possible malfunction location / Action to take
The disk cannot be removed.	_	Disk eject signal circuit. Refer to <u>AV-186. "Diagnosis Pro-</u> cedure".
Audio sound is not heard.	No sound from all speakers.	AV control unit malfunction. Refer to <u>AV-202, "Exploded View"</u> .
	Sound is heard only from specific places.	Sound signals circuit of suspect system.
Satellite radio is not received.	There is no malfunction in CONSULT-III self-diagnosis results. Refer to <u>AV-121, "CONSULT - III Func-</u> <u>tion"</u> .	 Perform the following inspection procedure. 1. Check satellite radio antenna mounting nut for looseness. NOTE: Tightening torque: 6.5 N·m (0.66 kg-m, 58 in-lb.) 2. Visually check for satellite radio antenna feeder.
	self-diagnosis result. Refer to <u>AV-121, "CONSULT - III Func-</u> tion".	Perform detected DTC diagnosis. Refer to <u>AV-132, "DTC Index"</u> .
The sound of satellite radio is not heard.	Other audio sounds are normal.	Satellite radio sound signal circuit between AV control unit and satellite radio tuner.
It does not change to satellite radio mode.	There is malfunction in the CONSULT-III self-diagnosis result. Refer to <u>AV-121, "CONSULT - III Func-tion"</u> .	Perform detected DTC diagnosis. Refer to <u>AV-132, "DTC Index"</u> .
AM/FM radio is not received.	Other audio sounds are normal.	Antenna amp. ON signal circuit.Antenna feeder.

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.

 $\mathsf{iPod}^{\texttt{®}}$ 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 <u>AV-194, "Diagnosis Procedure"</u> .
Only specified switch cannot be operated.	 Check steering switch. Refer to <u>AV-190, "Component Inspection"</u>. Malfunction is detected. Replace steering switch. Refer to <u>AV-213, "Exploded View"</u>.
"SOURCE", "MENU UP", "MENU DOWN" and " ⊮≨	Steering switch signal A circuit. Refer to <u>AV-190, "Diagnosis Procedure"</u> .
"VOL UP", "VOL DOWN" and " " " switches are not operated.	Steering switch signal B circuit. Refer to <u>AV-192, "Diagnosis Procedure"</u> .

RELATED TO CAMERA

Trouble Diagnosis Chart by Symptom

MULTI AV SYSTEM SYMPTOMS [BASE AUDIO WITH REAR VIEW CAMERA]

Symptoms	Check items	Probable malfunction location	4
Camera image is not shown. (Vehicle width and possible route line is displayed.)	_	 Camera image signal circuit. Refer to <u>AV-181. "Diagnosis Procedure"</u>. Composite image signal circuit. Refer to <u>AV-183. "Diagnosis Procedure"</u>. 	E
Camera image does not switch.	"Reverse" is not turned ON on "Vehicle Signals" screen of "Confirmation/Adjust- ment".	Reverse signal circuit malfunction.	C
	"Reverse" is turned ON on "Vehicle Sig- nals" screen of "Confirmation/Adjust- ment".	AV control unit malfunction. Replace AV control unit. Refer to <u>AV-202, "Exploded</u> <u>View"</u> .	D

AV

Μ

Е

F

G

Н

J

Κ

L

0

Ρ

NORMAL OPERATING CONDITION

[BASE AUDIO WITH REAR VIEW CAMERA]

NORMAL OPERATING CONDITION

Description

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
	The brightness is at the lowest setting.	Adjust the brightness of the display.
No image is displayed.	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.
The screen is too dim. The move- ment 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 se- lected.	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 com- mand 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, 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.

NORMAL OPERATING CONDITION

[BASE AUDIO WITH REAR VIEW CAMERA]

Symptom	Cause and Counter measure
	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.
Connet alay	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC/M4A files on a CD, only the music CD files (CD-DA data) will be played.
Cannot play	Files with extensions other than ".MP3", ".WMA", ".AAC", ".M4A", ".mp3", ".wma", ".aac" or ".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.
	Discs 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/M4A 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/M4A file has been given an extension of ".MP3", ".WMA", ".AAC", ".M4A", ".mp3", ".wma", ".aac" or ".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.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other K 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.

Μ

AV

0

REMOVAL AND INSTALLATION

AV CONTROL UNIT

Exploded View

INFOID:000000006210360

CAUTION:

- Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to <u>AV-159, "Description"</u>.
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

REMOVAL

Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MODELS : Exploded View"</u> (M/T models).

DISASSEMBLY



- 1. Unified meter and A/C amp.
 2. Bracket LH
 3. AV control unit
- 4. Bracket RH

Removal and Installation

INFOID:000000006210361

REMOVAL

CAUTION:

- Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to <u>AV-159, "Description"</u>.
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

- 1. Remove display unit. Refer to AV-204, "Exploded View".
- 2. Remove AV control unit with a unified meter and A/C amp. as a single unit from the body.
- 3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

• Since AV control unit connector and unified meter and A/C amp. connector have the same form, be careful not to insert them wrongly.

Revision: 2011 November

AV-202

AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

- Be sure to perform "WRITE CONFIGURATION" when replacing AV control unit.
- Install AV control unit between connector (1) and connector (2) with the ferrite core (USB) orientated sideways to the vehicle. Incorrect installation may cause damage to the AV control unit.



G

Н

J

Κ

L

А

В

С

D

Е

F

AV

0

Ρ

< REMOVAL AND INSTALLATION > DISPLAY UNIT

Exploded View

Refer to <u>IP-12</u>, "A/T MODELS : Exploded View" (A/T models) or <u>IP-23</u>, "M/T MODELS : Exploded View" (M/T models).

Removal and Installation

REMOVAL

- 1. Remove cluster lid D. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MOD-ELS : Exploded View"</u> (M/T models).
- 2. Remove display unit with bracket as a single unit.

INSTALLATION

Installation is the reverse order of removal.

[BASE AUDIO WITH REAR VIEW CAMERA]

FRONT DOOR SPEAKER [BASE AUDIO WITH REAR VIEW CAMERA]

< REMOVAL AND INSTALLATION >

FRONT DOOR SPEAKER

Exploded View



INSTALLATION

1.

2.

REMOVAL

1. 2.

Installation is the reverse order of removal.

AV

Μ

J

Κ

L

Ο

REAR DOOR SPEAKER

Exploded View



1. Rear door speaker

Removal and Installation

REMOVAL

- 1. Remove rear door finisher. Refer to INT-12, "Exploded View".
- 2. Remove rear door speaker from rear door.

INSTALLATION

Installation is the reverse order of removal.

А

В

С

D

Ε

F

Н

J

Κ

Μ

AV

Ο

Ρ

< REMOVAL AND INSTALLATION >

TWEETER

1.

2.

REMOVAL

2.





< REMOVAL AND INSTALLATION >

ANTENNA AMP.

Exploded View



- 1. AM-FM main connector
- 2. Antenna amp.

Removal and Installation

REMOVAL

- 1. Remove rear pillar finisher LH. Refer to INT-15, "Exploded View".
- 2. Remove antenna amp. from rear pillar LH.

INSTALLATION

Installation is the reverse order of removal.

SATELLITE RADIO TUNER

< REMOVAL AND INSTALLATION > SATELLITE RADIO TUNER

[BASE AUDIO WITH REAR VIEW CAMERA]

Exploded View

INFOID:000000006210372

INFOID:000000006210373

А



Removal and Installation

REMOVAL

- 1. Remove trunk front finisher. Refer to INT-30, "Exploded View".
- 2. Remove rear parcel shelf finisher. Refer to INT-20, "Exploded View".
- 3. Remove screws (A) from inside the cabin, and remove TEL adapter unit and TEL antenna as a single unit from trunk room side.
- 4. Remove bracket screws and remove TEL adapter unit and satellite radio tuner.



INSTALLATION Installation is the reverse order of removal.

AV

J

SATELLITE RADIO ANTENNA

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

SATELLITE RADIO ANTENNA

Exploded View



- 1. Satellite radio antenna
- <a>: Vehicle front

Removal and Installation

INFOID:000000006210375

REMOVAL

- 1. Remove head lining assembly (rear) to secure work space between vehicle and headlining. Refer to <u>INT-24, "NORMAL ROOF : Exploded View"</u> (normal roof models) or <u>INT-27, "SUNROOF : Exploded View"</u> (sunroof models).
- 2. Remove nut, and then remove satellite radio antenna from roof panel.

INSTALLATION

Installation is the reverse order of removal.

Satellite radio antenna mounting nut 🕑 : 6.5 N·m (0.66 kg-m, 58 in-lb)

CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when satellite radio antenna mounting nut tightening torque is loose.

MULTIFUNCTION SWITCH

< REMOVAL AND INSTALLATION >

MULTIFUNCTION SWITCH

Exploded View

3.

[BASE AUDIO WITH REAR VIEW CAMERA]

А INFOID:000000006210376 REMOVAL В Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MODELS : Exploded View" (M/T models). С DISASSEMBLY SEC. 280 D Ε $^{\circ}$ 2 F JSNIA0126ZZ Center ventilator grille 1. 2. Multifunction switch Removal and Installation INFOID:000000006210377 Н REMOVAL 1. Remove cluster lid D. Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MOD-ELS : Exploded View" (M/T models). 2. Remove multi function switch with center ventilator grille as a single unit. Remove multi function switch from center ventilator. **INSTALLATION** Installation is the reverse order of removal. Κ L

Μ

Ρ

PRESET SWITCH

< REMOVAL AND INSTALLATION > PRESET SWITCH

[BASE AUDIO WITH REAR VIEW CAMERA]

Exploded View

INFOID:000000006210378

REMOVAL

Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MODELS : Exploded View" (M/T models).

DISASSEMBLY



Removal and Installation

INFOID:000000006210379

REMOVAL

- 1. Remove cluster lid C. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MOD-ELS : Exploded View"</u> (M/T models).
- 2. Remove preset switch screws (A), (B), and (C), and then remove preset switch (2) from cluster lid C.

1. Clock



INSTALLATION

Installation is the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between AV control unit and preset switch.

< REMOVAL AND INSTALLATION >

	•
STEERING SWITCH	٨
Exploded View	INFOID:00000006210380
Refer to <u>ST-17, "Exploded View"</u> .	В
Removal and Installation	INFOID:000000006210381
REMOVAL Refer to <u>ST-17, "Removal and Installation"</u> .	С
INSTALLATION Installation is the reverse order of removal.	D

AV

Μ

Е

F

G

Н

J

Κ

L

0

Ρ

< REMOVAL AND INSTALLATION >

Exploded View

USB CONNECTOR



1. USB connector

Removal and Installation

REMOVAL

- 1. Remove center console. Refer to <u>IP-34</u>, "<u>A/T MODELS</u> : <u>Exploded View</u>" (A/T models) or <u>IP-39</u>, "<u>M/T</u> <u>MODELS</u> : <u>Exploded View</u>" (M/T models).
- 2. Push the pawl from the back of center console to remove USB connector.

INSTALLATION

Install in the reverse order of removal.

MICROPHONE

< REMOVAL AND INSTALLATION > **MICROPHONE**

Exploded View

REMOVAL Refer to INL-109, "Exploded View". DISASSEMBLY



	1. Microphone		
Rem	oval and Installation	INFOID:000000006210385	G
REM	OVAL		
1. R	emove map lamp. Refer to INL-109, "Exploded View".		Н
2. R	emove microphone from map lamp.		
INST/	ALLATION		
Install	lation is the reverse order of removal.		
			I
			J

Μ

Κ

L

AV

Ο

Ρ

[BASE AUDIO WITH REAR VIEW CAMERA]

INFOID:000000006210384

А

В

С

D

Ε

F

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

TEL ANTENNA Exploded View

INFOID:000000006210386



1. TEL antenna

- 2. Satellite radio tuner
- 5. Bracket (rear)

3. Bracket (front)

Removal and Installation

TEL adapter unit

REMOVAL

4.

- 1. Remove trunk front finisher. Refer to <u>INT-30, "Exploded View"</u>.
- 2. Remove rear parcel shelf finisher. Refer to INT-20, "Exploded View".
- 3. Remove screws and clip (A) from inside the cabin and remove TEL antenna (1) connector from trunk room side.



INSTALLATION Installation is the reverse order of removal.
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

TEL ADAPTER UNIT Exploded View

INFOID:000000006210388

INFOID:000000006210389

А



Removal and Installation

REMOVAL

- 1. Remove trunk front finisher. Refer to INT-30, "Exploded View".
- 2. Remove rear parcel shelf finisher. Refer to INT-20, "Exploded View".
- 3. Remove screws (A) from inside the cabin, and remove TEL adapter unit and TEL antenna as a single unit from trunk room side.
- 4. Remove bracket screws and remove TEL adapter unit and satellite radio tuner.



INSTALLATION Installation is the reverse order of removal.

AV

J

REAR VIEW CAMERA

[BASE AUDIO WITH REAR VIEW CAMERA]

INFOID:000000006210390

SEC. 280

1. Rear view camera

< REMOVAL AND INSTALLATION >

REAR VIEW CAMERA

Refer to EXT-41, "Exploded View".

Exploded View

DISASSEMBLY

REMOVAL

Removal and Installation

REMOVAL

- 1. Remove trunk lid finisher outer. Refer to EXT-41, "Exploded View".
- 2. Remove rear view camera from trunk lid finisher outer.

INSTALLATION

Installation is the reverse order of removal.

Adjustment

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.



INFOID:000000006210392

INFOID:000000006210391

REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

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

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.

: 7

Up/Down adjustment range	: 20° to 20°
Left/Right adjustment range	: 20° to 20°

CAUTION:

After the adjustment, never perform other operations for one minute.



AV

Μ

Κ

L

Е

F

Н

0

Ρ

STEERING ANGLE SENSOR

< REMOVAL AND INSTALLATION >

STEERING ANGLE SENSOR

Exploded View

REMOVAL Refer to SR-14, "Exploded View". DISASSEMBLY



ᡅ

- 1. Spiral cable
- 2. Steering angle sensor

Removal and Installation

REMOVAL

- Remove spiral cable. Refer to SR-14, "Exploded View". 1.
- 2. Remove steering angle sensor from spiral cable.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

After work, make sure to adjust neutral position of steering angle sensor. Refer to BRC-8, "ADJUST-MENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description".

[BASE AUDIO WITH REAR VIEW CAMERA]

INFOID:000000006210393

2

JSNIA0135ZZ

INFOID:000000006210394

ANTENNA FEEDER

1

Satellite radio tuner

Clip

(M378)

/ / Screw

Antenna feeder

< REMOVAL AND INSTALLATION > ANTENNA FEEDER

Connector (M375)

Clip

Antenna amp.

0

AM/FM main (OUT) Amp. ON AM/FM main (IN)

With clip connector

, A

(M376)

Clip

R

Clip

Instrument panel driver side

[BASE AUDIO WITH REAR VIEW CAMERA]

Feeder Layout

(A)

SEC. 280



F Н

< PRECAUTION > PRECAUTION PRECAUTIONS

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

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.

Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)

CAUTION:

Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

Precaution for Trouble Diagnosis

INFOID:000000006210397

AV COMMUNICATION SYSTEM

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

Precaution for Harness Repair

INFOID:000000006210398

AV COMMUNICATION SYSTEM

PRECAUTIONS

< PRECAUTION >

[BOSE AUDIO WITHOUT NAVIGATION]

 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.)

L

Μ

AV

Ο

Ρ

Κ

J

Н

Revision: 2011 November

< PREPARATION > PREPARATION

PREPARATION

Commercial Service Tools

INFOID:000000006210399



< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000006210400 B



- 1. Center speaker
- 4. Front door woofer LH
- 7. BOSE amp.
- 10. Rear view camera
- 13. Rear door speaker RH
- 16. Front door squawker RH
- 19. Sonar control unit
- 22. Preset switch
- 25. Multifunction switch
- A. Within rear pillar finisher LH

- 2. Tweeter LH
- 5. Rear door speaker LH
- 8. Rear woofer
- 11. TEL adapter unit
- 14. Satellite radio antenna
- 17. Tweeter RH
- 20. Steering switch
- 23. USB connector
- 26. Display unit
- B. Lower part of rear parcel shelf (on the left side)

- 3. Front door squawker LH
- 6. Antenna amp.
- 9. TEL antenna
- 12. Satellite radio tuner
- 15. Front door woofer RH
- 18. Microphone
- 21. Steering angle sensor
- 24. AV control unit
- C. Lower part of rear parcel shelf (on the right side)

AV-225

А

С

D

Ε

F

Н

Κ

L

Μ

AV

Ρ

< SYSTEM DESCRIPTION >

COMPONENT PARTS

- D. Instrument driver lower panel removed condition
- E. Spiral cable removed condition
- C: Vehicle front

Component Description

INFOID:000000006210401

Part name	Description
AV control unit	 Integrates flash memory allowing music data to be stored. 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, USB connection and vehicle information functions. It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. It is connected to the steering angle sensor and receives the steering angle sensor signal via CAN communication. 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). Amp. ON signal, sound signal and mode change signal transmitted to BOSE amp. TEL voice signal and voice guidance signal are 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 image, RGB area and RGB synchronizing). Composite image signals 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. Input mode change signal from AV control unit.
Front door woofer	Outputs sound signal from BOSE amp.Outputs low range sound.
Front door squawker	Outputs sound signal from BOSE amp.Outputs mid range sound.
Rear door speaker	Outputs sound signal from BOSE amp.Outputs high, mid and low range sounds.
Tweeter	Outputs sound signal from BOSE amp.Outputs high range sound.
Center speaker	Outputs sound signal from BOSE amp.Outputs high, mid and low range sounds.
Rear woofer	 Outputs sound signal from BOSE amp. Outputs low-pitched sound. Power (woofer amp. ON signal) is supplied from BOSE amp.
Multifunction switch	 Operation panel is equipped with the centralized switch where audio operations are integrated. Connected with preset switch via cable, 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 cable, 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.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Part name	Description	٨
Sonar control unit	 Controlled by AV communication transmitted from AV control unit. Trouble diagnosis is supported with CONSULT-III (K-LINE). 	A
Steering switch	 Operations for audio, hands-free phone and voice control, etc. are possible. Steering switch signal (operation signal) is output to AV control unit. 	В
Microphone	 Used for hands-free phone operation and voice recognition. Microphone signal is transmitted to AV control unit. Power (Microphone VCC) is supplied from AV control unit. 	С
Antenna amp.	 Radio signal received by glass antenna is amplified and transmitted to AV control unit. Power (antenna amp. ON signal) is supplied from AV control unit. 	D
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). 	E
Satellite radio antenna	Satellite radio signal is received and transmitted to AV control unit.	
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. 	F
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.	0
USB connector	Image signal ^{*1} and sound signal of USB input is transmitted to AV control unit.	G

*1: Image signals cannot be received from $iPod^{\mathbb{R}}$.

Н

J

Κ

L

Μ

AV

0

Ρ

< SYSTEM DESCRIPTION > SYSTEM

MULTI AV SYSTEM



NOTE:

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

MULTI AV SYSTEM : System Description

INFOID:000000006210403

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Audio function
Hands-free phone function
Rear view monitor function
Sonar 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, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information.
- AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

< SYSTEM DESCRIPTION >

AUDIO FUNCTION

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

	_
FUNCTION	В
AM/FM radio	
Satellite radio	С
CD	
Music Box (flash memory)	
USB connection function	D
Driver's Audio Stage	
 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. 	E
 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. 	G
AM/FM Radio Mode	Н
 AM/FM radio tuner is built into AV control unit. Audio signal is received by glass antenna, next it is amplified by antenna amp, and finally it is input to AV control unit. Audio signal is input to BOSE amp., and BOSE amp. outputs to each speaker. 	I
 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 antenna and transmitted to AV control unit. AV control unit is output the sound signal (satellite radio) to each speaker. 	J
CD ModeCD function is built into AV control unit.AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to each speaker when CD is inserted to AV control unit.	K
Music Box Mode	L
 Music CD data is stored on flash memory that is built into AV control unit, and it can be played. AV control unit outputs music (sound signal) that is stored on flash memory to BOSE amp., and BOSE amp. outputs to each speaker. 	M
 USB Connection Function iPod or music files in USB memory can be played. iPod sound signals are transmitted from USB connector to the AV control unit and to each speaker. iPod[®] is recharged when connected to USB connector. 	AV
iPod [®] is a trademark of Apple inc., registered in the U.S. and other countries. NOTE:	0
Use the enclosed USB harness when connecting iPod $^{\textcircled{R}}$ to USB connector.	
 Driver's Audio Stage Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds. ON/OFF signals of Driver's Audio Stage are transmitted from AV control unit to BOSE amp. using mode change signal. 	Ρ
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.

AV-229

SYSTEM

< SYSTEM DESCRIPTION >

- The voice guidance signal is input from the TEL adapter unit to the AV control unit and output via BOSE amp. to the front speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to AV-243, "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 via BOSE amp. to front speaker.

REAR VIEW MONITOR FUNCTION

- 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 signal. Rear view monitor images are displayed by combining the RGB image signal 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.

SONAR SYSTEM

For further information about the sonar system, refer to SN-7, "System Description".

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, unified meter and A/C amp.
- AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

- 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-III 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

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 4-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 ITEM

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 unit.
- 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. 	AV



L

M

А

D

Е

Н

INFOID:000000006210404

INFOID:000000006210405

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Mode		Description
	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.
Confirmation/ Adjustment	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 mon- itored.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Initialize Settings	Initializes the AV control unit memory.

METHOD OF STARTING

- 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, a short beep will be heard.)
 - Shifting from current screen to previous screen is performed by pressing "BACK" button.



4. The trouble diagnosis initial screen is displayed, and then the items of "Self Diagnosis" and "Confirmation/Adjustment" can be selected.



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.

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >

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 <u>AV-329</u>, "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	N
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 mal- function in those components, replace AV control unit. Refer to <u>AV-329</u> , "Exploded <u>View</u> ".	AV

A Connecting Cable Between Units Is Displayed In Yellow.

C

А

Ε

F

Н

Κ

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BOSE AUDIO WITHOUT NAVIGATION]

Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Malfunction is detected in serial communi- cation 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. Communication circuit between AV control unit and satellite radio tuner. Request signal circuit between AV control unit and satellite radio tuner.
Control unit ⇔ Sonar	 When either one of the following items is detected: sonar control unit power supply and ground circuits are malfunctioning. AV communication circuits between AV control unit and sonar control unit are malfunctioning. 	 Sonar control unit power supply and ground circuits. AV communication circuits between AV control unit and sonar control unit.
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. 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.



DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Display Diagnosis



Vehicle Signals

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

E System Diagnostic Menu > Vehicle Signals			
	Vehicle speed	OFF	
	Parking brake	ON	
	Lights	OFF	
	Ignition	ON	
	Reverse	OFF	
		JSNIA0149G	в

Κ

L

Μ

Diagnosis item	Display	Vehicle status	Remarks	AV
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)		
	OFF	Vehicle speed = 0 km/h (0 MPH)		0
Parking brake	ON	Parking brake is applied.		
Parking brake	OFF	Parking brake is released.		
Lights	ON	Light switch ON		Ρ
	OFF	Light switch OFF		
Ignition	ON	Ignition switch ON		
	OFF	Ignition switch in ACC position		

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Diagnosis item	Display	Vehicle status	Remarks
Reverse	ON	Shift the selector lever to "R" position	Changes in indication may be delayed. This is normal
	OFF	Shift the selector lever other than "R" position	Changes in indication may be delayed. This is notifial.

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 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-III.

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-III.

Display type of occur- rence 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

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >



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	0
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts accord- ing to the diagnosis results. Refer to <u>AV-240, "CONSULT - III Function"</u> .	Н
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.		
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunc- tion occurs constantly.	
FLASH-ROM Error Of Control Unit	A)/ control unit molfunction is detected	Refer to <u>AV-329, Exploded view</u> .	J
CAN Controller Memory Error	Av control unit manufiction is detected.		
Steer. Angle Sensor Calibration	Predictive course line center position ad- justment of the steering angle sensor is in- complete.	Adjust the predictive course line center po- sition of the steering angle sensor. Refer to <u>AV-240, "CONSULT - III Function"</u> .	Κ
Front Display Connection Error	 When either one of the following items is detected: display unit power supply and ground circuits are malfunctioning. communication circuits between AV control unit and display unit are malfunctioning. 	 Display unit power supply and ground circuits. Communication circuits between AV control unit and display unit. 	L
XM Connection Error	 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. Communication circuit between AV control unit and satellite radio tuner. Request signal circuit between AV control unit and satellite radio tuner. 	AV O P
AV COMM CIRCUITSwitches Connection Error	 When either one of the following items is 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-237

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
AV COMM CIRCUITSonar Connection Error	 When either one of the following items are detected: sonar control unit power supply and ground circuits are malfunctioning. AV communication circuits between AV control unit and sonar control unit are malfunctioning. 	 Sonar control unit power supply and ground circuits. AV communication circuits between AV control unit and sonar control unit.
AV COMM CIRCUITH/F Unit Connection Error	 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. AV communication circuits between AV control unit and TEL adapter unit.
 AV COMM CIRCUIT Switches Connection Error Sonar Connection Error H/F Unit Connection Error 	Malfunction is detected in AV communica- tion 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 "Correct Draw Line of Rear view Cam", "Confirm Configuration" are available.



Adjust Offset of Rear view Camera

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

CAUTION:

After the adjustment, never perform other operations for one minute.



Factory Configuration Confirmation

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



Vehicle CAN Diagnosis

DIAGNOSIS SYSTEM (AV CONTROL UNIT) [BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >

- 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



"???" 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-SW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 – 39
C Rx(BTHF-ITM)	OK / ???	OK / 0 – 39
C Rx(Sonar-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



System Diagnostic Menu > AV COMM Diagnosis Checking_e Signal StatusCount CTx(ITM-SW) OK OK C Rx(PrimarySW-ITM) OK OK Reset C Rx(BTHF-ITM) OK OK C Rx(Sonar-ITM) OK OK JPNIA1827ZZ



Κ

Е

F

Н

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >

"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 <u>AV-285, "Description"</u>.



INFOID:000000006210406

APPLICATION ITEMS

CONSULT - III Function

CONSULT-III 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-III 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 de- tected.	Refer to AV-287, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is de- tected.	
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunc- tion occurs constantly.
Cont Unit [U1200]	A)/ control unit molfunction is detected	Kelel to AV-323, Exploded view.
CAN CONT [U1216]		
ST ANGLE SEN CALIB [U1232]	Predictive course line center position ad- justment of the steering angle sensor is in- complete.	Adjust the predictive course line center position of the steering angle sensor. Refer to <u>BRC-8, "ADJUSTMENT OF</u> <u>STEERING ANGLE SENSOR NEUTRAL</u> POSITION : Special Repair Requirement".

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
FRONT DISP CONN [U1243]	 When either one of the following items is detected: display unit power supply and ground circuits are malfunctioning. communication circuits between AV control unit and display unit are malfunctioning. 	 Display unit power supply and ground circuits. 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 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. Communication circuit 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 is 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] SONAR CONN [U125C] 	 When either one of the following items are detected: sonar control unit power supply and ground circuits are malfunctioning. AV communication circuits between AV control unit and sonar control unit are malfunctioning. 	 Sonar control unit power supply and ground circuits. AV communication circuits between AV control unit and sonar control unit.
 AV COMM CIRCUIT [U1300] HAND FREE CONN [U1256] 	 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. AV communication circuits between AV control unit and TEL adapter unit.
 AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] SONAR CONN [U125C] HAND FREE CONN [U1256] 	Malfunction is detected in AV communica- tion circuits between AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

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

AV

Μ

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Display Item	Display	Vehicle status	Remarks
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.	
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	On	Ignition switch ON	
	Off	Ignition switch in ACC position	
REV SIG	On	Selector lever in R position	Changes in indication may be delayed. This is
	Off	Selector lever in any position other than R	normal.

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	
PKB SIG	
ILLUM SIG	I he same as when "ALL SIGNALS" is selected.
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.

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

CONFIGURATION

Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	Reads the vehicle configuration of current AV control unit.Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

[BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

On Board Diagnosis Function

HANDS-FREE PHONE SYSTEM ON BOARD DIAGNOSIS

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 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.

• 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 indi- cates 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	DTC 01000 ANT. SHORT TO BATT OR OPEN				
DTC 00100	ANT. SHORT TO GROUND	I EL america	1		
DTC 00010	Stooring switch	_			
DTC 00001	Steering Switch	L			
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.

Ρ

А

В

С

D

INFOID:000000006210407

F

Н

Μ

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

FLOW CHART OF TROUBLE DIAGNOSIS



< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION AV CONTROL UNIT

Reference Value

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item		Value/Status		
	Ignition switch	Vehicle speed > 0 km/h (0 MPH)	On	
VHCL SPD SIG	ON	Vehicle speed = 0 km/h (0 MPH)	Off	D
	Ignition switch	Parking brake is applied.	On	
FKD SIG	ON	Parking brake is released.	Off	E
	Ignition switch	Light switch ON	On	
	ON	Light switch OFF	Off	
	Ignition switch ON	—	On	F
	Ignition switch ACC	_	Off	G
REV SIC	Ignition switch	Selector lever in R position	On	
	ON	Selector lever in any position other than R	Off	

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description			Condition	Reference value	Av
+	_	Signal name	Input/ Output	Condition		(Approx.)	С
					Keep pressing SOURCE switch.	0 V	
6 (P) (Steering switch signal A	Input	Ignition switch ON	Keep pressing MENU UP switch.	0.7 V	P
	15 (B)				Keep pressing MENU DOWN switch.	1.3 V	
					Keep pressing 💉 🌈 switch	2.0 V	
					Except for above.	3.3 V	

INFOID:000000006210408

А

С

Μ

Κ

L

< ECU DIAGNOSIS INFORMATION >

Terı (Wire)	minal e color)	Description		- Condition		Reference value
+	_	Signal name	Input/ Output			(Approx.)
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage
9	Ground	Illumination signal	Input	Ignition switch	Lighting switch is OFF.	0 V
(L)	Cround			OFF	Lighting switch is ON.	12.0 V
					Keep pressing VOL DOWN switch.	0 V
16 (L)	15 (B)	Steering switch signal B	Input	Ignition switch	Keep pressing VOL UP switch.	0.7 V
				UN	Keep pressing 🗪 switch.	1.3 V
					Except for above.	3.3 V
18 (G)	Ground	Ground	_	Ignition switch ON	_	0 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage
20 (B)	Ground	Ground	_	Ignition switch ON	_	0 V
36 (BG)	Ground	Signal VCC	Output	Ignition switch ACC	_	9.0 V
37 (LG)	Ground	Signal ground	_	lgnition switch OFF	_	0 V
38 (R)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON		(V) 4 0 + + 20//s 5KIB3601E
39 (L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	(V) 6 4 2 0 •••••1ms PKIB5039J
					At RGB image is displayed.	5.0 V
40 (B)	Ground	RGB area (YS) signal	Output	lgnition switch ON	At DVD image is displayed.	(V) 6 4 2 0 • • • 200 µ s • • • 200 µ s • • • 200 µ s
41	_	Shield	_	_	_	_

< ECU DIAGNOSIS INFORMATION >

lerr Wire)	minal e color)	Description		Condition		Reference value (Approx.)	
+	-	Signal name	Input/ Output				
42 (W)	Ground	RGB synchronizing signal	Output	Ignition switch ON		(V) 4 0 + 20µs 5KIB3603E	B C D
43 (G)	Ground	RGB signal (R: red)	Output	lgnition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 •••40µs JSNIA1029ZZ	E
44 (L)	Ground	RGB signal (G: green)	Output	lgnition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 • • 40µs	G
45 (P)	Ground	RGB signal (B: blue)	Output	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 ← 40µs JSNIA1031ZZ	J
46 (Y)	Ground	Composite image ground	_	Ignition switch ON	_	0 V	L
47 (BR)	Ground	Composite image signal	Output	Ignition switch ON	At rear view camera image is displayed.	(V) 0.4 0 −0.4 ++40µs SKiB2251J	M
48 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	_	9.0 V	0
49 (BR)	Ground	Inverter ground	_	lgnition switch OFF	_	0 V	Ρ

< ECU DIAGNOSIS INFORMATION >

(Wire	color)	Description		- Condition		Reference value
+	_	Signal name	Input/ Output			(Approx.)
50 (G)	Ground	Vertical synchronizing (VP) signal	Input	lgnition switch ON		(V) 4 0 • • • 4ms SKIB3598E
51 (LG)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	(V) 6 2 0 ••••1ms PKIB5039J
52	—	Shield	_	—	_	_
57	—	Shield	_	—	_	_
58		Shield	—		_	_
62 (W)	Ground	Camera image signal	Input	Ignition switch ON	At rear view camera image is displayed.	(V) 0.4 0 -0.4 ••••40µs skiB2251J
71	_	Shield	_	—	_	_
72 (W)	Ground	Camera ground	—	Ignition switch ON	_	0 V
73 (R)	Ground	Camera power supply	Output	Ignition switch ON	At rear view camera image is displayed.	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	—	_	_
82 (BR)	Ground	Switch ground	_	Ignition switch ON	_	0 V
86		Shield			_	_

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

(Wire	color)	Description		Condition		Reference value	А
+	_	Signal name	Input/ Output			(Approx.)	_
87 (L)	88 (P)	TEL voice signal	Input	Ignition switch ON	During voice guide output with the w≨ € switch pressed.	(V) 1 0 -1 + 2ms SKIB3609E	В С D
92 (R)	Ground	Vehicle speed signal (8-pulse)	Input	lgnition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	NOTE: The maximum voltage varies depending on the specification (destination unit).	E F
					Parking brake is ON.	0 V	
93 (SB)	Ground	Parking brake signal	Input	lgnition switch ON	Parking brake is OFF.	(V) 8 4 0 10 ms JSNIA0007GB	H I J
94	Ground	Reverse signal	Input	Ignition switch	R position	12.0 V	
(BG)	Cround	Noverbe bighti	input	ON	Other than R position	0 V	Κ
95 (G)	Ground	Ignition signal	Input	lgnition switch ON	_	Battery voltage	L
96	Cround	Diek eiget eigenel	loput	Ignition	Pressing the eject switch.	0 V	
(V)	Giouna	DISK eject signal	Input	ON	Except for above.	3.3 V	Ъ./
108 (BR)	114 (Y)	Sound signal rear RH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 +2ms SKIB3609E	AV
109 (R)	115 (G)	Sound signal front RH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 + + 2ms SKiB3609E	Ρ

< ECU DIAGNOSIS INFORMATION >

(Wire color)		Description			O an dition	Reference value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
110 (GR)	Ground	Amp. ON signal	Output	Ignition switch ON	_	10.0 V	
111 (B)	_	Shield	_	—	_	_	
112 (V)	118 (LG)	Sound signal rear LH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 • 2ms SKIB3609E	
113 (O)	119 (W)	Sound signal front LH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E	
120 (B)	124 (W)	Satellite radio sound signal LH	Input	Ignition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 + 2ms SKIB3609E	
121 (G)	125 (R)	Satellite radio sound signal RH	Input	lgnition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 • • 2 ms SKIB3609E	
122 (L)	Ground	Communication signal (CONT→SAT)	Output	lgnition switch ON	When satellite radio mode is selected.	(V) 10 0 -10 -10 -10 -10 -10 -10 -	
126		Shield	_	_	_		
127	—	Shield	—	_		<u> </u>	
128	Ground	Mode change signal	Output	Ignition switch	Driver's Audio Stage ON	0 V	
(30)				ON	Driver's Audio Stage OFF	8.5 V	

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

(Wire color)		Description		Condition		Reference value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
129 (P)	Ground	Request signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	(V) 10 -10 + 10ms SKIA9299J	B C D
130 (G)	Ground	Communication signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	(V) 10 0 -10 -10 -10 -10 -10 -10 -	E
132 (G)	_	USB ground	-	—	—	_	G
133 (R)	_	USB D– signal	_		_	_	
134 (W)	_	V BUS signal	_	_	—	—	Н
135 (L)	_	USB D+ signal	_	_	—	—	I
136		Shield	_		—	_	
137	—	FM sub	Input	—	_		J
138		AM-FM MAIN	Input		_		
139	Ground	Antenna amp. ON signal	Output	Ignition switch ACC	—	12.0 V	K

DTC Index

INFOID:000000006210409

L

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC)	Display item	Refer to	M
U100	00	CAN COMM CIRCUIT [U1000]	AV-287, "Diagnosis Procedure"	
U101	0	CONTROL UNIT (CAN) [1010]	AV-288, "DTC Logic"	A) /
U120	00	Cont Unit [U1200]	<u>AV-289, "DTC Logic"</u>	AV
U121	6	CAN CONT [U1216]	<u>AV-290, "DTC Logic"</u>	-
U123	32	ST ANGLE SEN CALIB [1232]	AV-291, "Diagnosis Procedure"	0
U124	13	FRONT DISP CONN [U1243]	AV-292, "Diagnosis Procedure"	
U125	55	SAT CONN [U1255]	AV-294, "Diagnosis Procedure"	
U131	0	CONTROL UNIT (AV) [U1310]	AV-297, "DTC Logic"	Р
U130 U124	00 40	AV COMM CIRCUIT [U1300] SWITCH CONN [U1240]	AV-296, "Description"	-
U130 U125	00 6C	AV COMM CIRCUIT [U1300] SONAR CONN [U125C]	AV-296, "Description"	-

< ECU DIAGNOSIS INFORMATION >

DTC	Display item	Refer to
U1300 U1256	AV COMM CIRCUIT [U1300]HAND FREE CONN [U1256]	AV-296, "Description"
U1300 U1240 U125C U1256	 AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] SONAR CONN [U125C] HAND FREE CONN [U1256] 	AV-296, "Description"
< ECU DIAGNOSIS INFORMATION >

DISPLAY UNIT

Reference Value

TERMINAL LAYOUT

B 121110987654321 242322212019181716151413 E JPNIA0006ZZ

А

INFOID:000000006210410

PHYSICAL VALUES

Terr (Wire	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output		Condition	(Approx.)
1 (B)	Ground	Ground	_	Ignition switch ON	_	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	_	9.0 V
3 (BG)	Ground	Signal VCC	Input	Ignition switch ACC	_	9.0 V
4 (Y)	Ground	Composite image ground	_	Ignition switch ON	_	0 V
5		Shield			_	_
6 (L)	Ground	RGB signal (G: green)	Input	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 •••40µs JSNIA10302Z
7	—	Shield			_	
8 (R)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON		(V) 4 0 • • • 20µs 5KiB3601E

DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value	
+	-	Signal name	Input/ Output	Condition		(Approx.)	
				At RGB image is displayed.		5.0 V	
9 (B)	Ground	RGB area (YS) signal	Input	Ignition switch ON	At DVD image is displayed.	(V) 6 4 2 0 +++200µ\$ +KiB4948J	
11 (LG)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	(V) 6 2 0 	
13 (BR)	Ground	Inverter ground	_	Ignition switch ON	_	0 V	
14 (LG)	Ground	Signal ground	_	Ignition switch ON	_	0 V	
15 (BR)	Ground	Composite image signal	Input	Ignition switch ON	At rear view camera image is displayed.	(V) 0.4 0 -0.4 •••40µs skiB2251J	
17 (G)	Ground	RGB signal (R: red)	Input	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0 •••40µs JSNIA1029ZZ	
18 (P)	Ground	RGB signal (B: blue)	Input	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	(V) 0.8 0.4 0.4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	

DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

(Wire color)		Description			Condition	Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
19 (W)	Ground	RGB synchronizing signal	Input	Ignition switch ON		(V) 4 0 → + 20 µs SKIB3603E	B C D
						SKIBJBUJE	
20 (G)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch On		(V) 4 0 + 4ms SKIB3598E	E
21	_	Shield		—	—	_	G
22 (L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	(V) 6 4 2 0 •••••1ms PKIB5039J	H
23		Shield			_	_	
						1	J

Κ

L

M

AV

0

< ECU DIAGNOSIS INFORMATION >

BOSE AMP.

Reference Value

INFOID:000000006210411





PHYSICAL VALUES

Terr (Wire	ninal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output	Condition		(Approx.)
1 (L)	2 (W)	Sound signal front LH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 • 2ms SKIB3609E
4 (V)	3 (LG)	Sound signal front RH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 * 2ms SKIB3609E
5 (G)	6 (R)	Sound signal door woofer RH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
7 (B)	Ground	Ground	_	Ignition switch ON	_	0 V
10 (Y)	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

BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
14 (B)	9 (W)	Sound signal front door woofer LH	Output	lgnition switch ON	Sound output	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1	B C D
16 (SB)	17 (V)	Sound signal woofer	Output	lgnition switch ON	Sound output	(V) 1 0 -1 • 2ms SKIB3609E	E
18 (L)	19 (P)	Sound signal rear door speaker LH	Output	lgnition switch ON	Sound output	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	G
20 (W)	Ground	Amp. ON signal	Input	Ignition switch ACC	_	10.0 V	
21		Shield			—	_	J
22 (GR)	Ground	Woofer Amp. ON signal	Output	Ignition switch ACC	_	10.0 V	K
24 (V)	23 (SB)	Sound signal rear LH	Input	Ignition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E	L
26 (BR)	25 (Y)	Sound signal rear RH	Input	lgnition switch ON	Sound output	(V) 1 0 -1 • 2ms SKIB3609E	AV O P

BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terr (Wire)	ninal color)	Description		- Condition		Reference value
+	_	Signal name	Input/ Output			(Approx.)
29 (L)	30 (BG)	Sound signal center speak- er	Output	Ignition switch ON	Sound output	(V) 1 0 -1 •••2ms SKIB3609E
31 (LG)	32 (Y)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
33 (R)	34 (G)	Sound signal front RH	Input	Ignition switch ON	Sound output	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
35 (P)	36 (L)	Sound signal front LH	Input	Ignition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E
37 (SB)	Ground	Mode change signal	Input	Ignition switch	Driver's Audio Stage ON	0 V
(00)				ON	Driver's Audio Stage OFF	8.5 V

< ECU DIAGNOSIS INFORMATION >

SATELLITE RADIO TUNER

Reference Value

TERMINAL LAYOUT

INFOID:000000006210412



PHYSICAL VALUES

Terr	minal	Description					
+	_	Signal name	Input/ Output		Condition	(Approx.)	G
2 (R)	1 (G)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected.	(V) 1 0 -1 + 2ms SKIB3609E	H
4 (B)	3 (W)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 0 -1 -1 -1 -1 -1 SKIB3609E	J
5		Shield					. L
6	—	Shield			—	_	
8 (G)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 + 10ms SKIA9299J	M AV O
9 (L)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • • 1ms SKIA9300J	Ρ

F

SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terminal		Description				Reference value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
10 (P)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • 1 Ims SKIA9301J	
12 (Y)	Ground	Battery power supply	Input	lgnition switch OFF	_	Battery voltage	
16 (BG)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
33	—	Satellite antenna	Input	_	—	_	
34	—	Shield		_	_		

< ECU DIAGNOSIS INFORMATION >

TEL ADAPTER UNIT

Reference Value

INFOID:000000006210413

А



PHYSICAL VALUES

Ter	minal						
(Wire	e color)	Description			Condition	Reference value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
1 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
2 (LG)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
3 (BG)	Ground	Ignition signal	Input	Ignition switch ON	_	Battery voltage	
4 (B)	Ground	Ground	_	Ignition switch ON	_	0 V	
5	_	Shield	—	—	—	_	
7 (R)	8	Microphone signal	Input	lgnition switch ON	Give a voice	(V) 2. 5 2. 0 1. 5 1. 0 0. 5 0 • • • 2ms • • • • • • • • • • • • • • • • • • •	
9 (Y)	10 (G)	TEL voice signal	Output	lgnition switch ON	During voice guide output with the v ♀ ♥ switch pressed	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	
23 (B)	Ground	Control signal	Input	Ignition switch ON	_	0 V	
24 (B)	Ground	Control signal	Input	Ignition switch ON	_	0 V	

TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terr (Wire)	minal color)	Description			Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output	Contantion			
28 (W)	Ground	Vehicle speed signal (8-pulse)	Input	lgnition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	NOTE: The maximum voltage varies de- pending on the specification (destination unit).	
29 (G)	8	Microphone VCC	Output	Ignition switch ON	_	5.0 V	
33		TEL antenna	Input	_	_	_	
34	—	Shield		_	—	_	
35 (SB)	_	AV communication signal (H)	Input/ Output	_	_	_	
36 (LG)	_	AV communication signal (L)	Input/ Output	_	_	—	

NOTE:

SWITCH virtually.

A : With A/T M : With M/T

[BOSE AUDIO WITHOUT NAVIGATION]

WIRING DIAGRAM А BOSE AUDIO WITHOUT NAVIGATION Wiring Diagram INFOID:000000006210414 В The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION С MICROPHONE R17 (111) TEL ADAPTER UNIT (B237), (B238), (B471) B201 D 42 B201 *: This connector is not shown in "Harness Layout". μ 6 41 4 Е F TCM (TRANSMISSION CONTROL MODULE) JOINT CONNECTOR A/T ASSEMBLY (F51): (A) F157 : A 8 BACK-UP AMP RELAY ◄ M69 Н [≥ . M207). (M370) B14): M206 F56): < M BACK-UF Ľ M116 (M205), M116 F103 F103 [∢ 10A J



Revision: 2011 November

2011 G Sedan

BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >



BOSE AUDIO WITHOUT NAVIGATION

[BOSE AUDIO WITHOUT NAVIGATION]





BOSE AUDIO WITHOUT NAVIGATION [BOSE AUDIO WITHOUT NAV

BOSE AUDIO WITHOUT NAVIGATION [BOSE AUDIO WITHOUT NAVIGATION]

CLASS ANTENNA (SUB) M375***** M376 б ANTENNA AMP. M378 ANTENNA ANTENNA T (MAIN) M381 *: This connector is not shown in "Harness Layout". ~ 1 ÷ END 팊 0 To illumination VOLUME COMBINATION SWITCH (SPIRAL CABLE) VOLUME V STEERING SWITCH M36, M303 M370 VOICE / TEL M206, M207, ⊕ 33 MENU DOWN 7 MENU € M204), (M205), 15 31 SOURCE 24 O 14 AV CONTROL UNIT (M201), (M202), (M203), (M B243 M149 B27 B221) B66 REAR VIEW CAMERA (B305) N ო σ - - i 9 4 ო N ŝ ω 4 M92 JSB CONNECTOR ⊵ (M192): USB CONNECTOR g R JCNWA4112GB

(M): With A/T (M): With M/T

< WIRING DIAGRAM >

А

В

С

D

Ε

F

G

Н

J

Κ

L

Μ

AV

0

BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

- \sim

N ω

С

ß 19

9 20

WIRE TO WIRE

15

9

2 2 4 ς β

[BOSE AUDIO WITHOUT NAVIGATION] Signal Name [Specification] Signal Name [Specification] 10 < WIRE TO WIRE ¢ 2 9 327 - 00 Color of Wire Color of Wire B RIELC SHIELC nector Name r 7 R R ا BG onnector No.



JCNWM5252GB

[BOSE AUDIO WITHOUT NAVIGATION]



JCNWM5253GB

[BOSE AUDIO WITHOUT NAVIGATION]



JCNWM5254GB

< WIRING DIAGRAM >

BOSE AUDIO WITHOUT NAVIGATION

[BOSE AUDIO WITHOUT NAVIGATION]





JCNWM5256GB

BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[BOSE AUDIO WITHOUT NAVIGATION]





JCNWM5258GB

[BOSE AUDIO WITHOUT NAVIGATION]



BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >



JCNWM5260GB

< WIRING DIAGRAM >

BOSE AUDIO WITHOUT NAVIGATION

[BOSE AUDIO WITHOUT NAVIGATION]



JCNWM5261GB

BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >



JCNWM5262GB

BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[BOSE AUDIO WITHOUT NAVIGATION]



JCNWM5263GB



JCNWM5264GB

< WIRING DIAGRAM >	[BOSE AUDIO WITHOUT NAVIGATION]	
	Ą	7
	E	3
	C	2
	E)
cation] SVAL	E	-
ONE Signal Name (Specifi MIGROPHONE SIG	F	-
No. No. R17 Name MICROPH Type Trougen		3
Commettor Commettor Commettor		-
No. MIRE Signal Name [So	Signal Name (SS 3 4 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	J
tor No. R2 tor Name WIRE Color B Color B Color B Color C	N N N N N N N	<
MAVIGAT		Л
S ANTENNA (MAIN S ANTENNA (MAIN Signal Name (S	V O WIFE	,
AUDIO tem Mast span PolFE	A define the second sec	

JCNWM5265GB

Ρ

Ο

BOSE AUDIO WITHOUT NAVIGATION

H.S.

Æ

Terminal No. 1

Terminal No.

Connector Connector H.S

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000006210415

OVERALL SEQUENCE



- Reference 1... Refer to AV-240. "CONSULT III Function".
- Reference 2... Refer to <u>AV-251, "DTC Index"</u>.
- Reference 3... Refer to <u>AV-323, "Symptom Table"</u>.

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-III

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BOSE AUDIO WITHOUT NAVIGATION]

 Connect CONSULT-III and perform a self-diagnosis for "MULTI AV". Refer to <u>AV-240, "CONSULT - III</u> <u>Function"</u>. NOTE: 	A
 Skip to step 4 of the diagnosis procedure if "MULTI AV" is not displayed. Check if any DTC is displayed in the "Self-Diagnosis Results". <u>Is DTC displayed?</u> 	В
YES \Rightarrow GO TO 3. NO \Rightarrow GO TO 4. 3. TROUBLE DIAGNOSIS FOR DTC	С
 Check the DTC indicated in the "Self-Diagnosis Results". Perform the relevant diagnosis referring to the DTC Index. Refer to <u>AV-251</u>. "DTC Index". 	D
>> GO TO 5. 4.TROUBLE DIAGNOSIS FOR SYMPTOMS	E
Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to <u>AV-323. "Symptom</u> <u>Table"</u> .	F
>> GO TO 5. 5.ERROR PART REPAIR	G
 Repair or replace the identified malfunctioning parts. Perform a self-diagnosis for "MULTI AV" with CONSULT-III. NOTE: Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC 	Н
 has been indicated in the "Self-Diagnosis Results". 3. Check that the symptom does not occur. <u>Does the symptom occur?</u> 	I
YES >> GO TO 1. NO >> INSPECTION END	J
	K
	L

M

AV

0

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT) < BASIC INSPECTION > [BOSE AUDIO WITHOUT NAVIGATION]

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

Description

INFOID:000000006210416

BEFORE REPLACEMENT

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

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform "WRITE CONFIGURATION" with CONSULT-III.

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

Work Procedure

INFOID:000000006210417

1.SAVING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>AV-285</u>, "<u>Descrip-</u><u>tion</u>".

NOTE:

If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection".

>> GO TO 2.

2.REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-329, "Exploded View".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT-III Configuration
 Perform "WRITE CONFIGURATION - Config file" or "WRITE CONFIGURATION - Manual selection" to write
 vehicle specification. Refer to <u>AV-285, "Work Procedure"</u>.

>> 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)

< BASIC INSPECTION >

CONFIGURATION (AV CONTROL UNIT)

Description

• Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT-III.

Configuration has three functions as follows.

Function	Description	С
READ CONFIGURATION	Reads the vehicle configuration of current AV control unit.Saves the read vehicle configuration.	
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.	D
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.	

Work Procedure

INFOID:000000006210419

INFOID:000000006210418

NOTE: If "WRITE CONFIGURATION" is unsuccessful, perform "Accessory Number Initialization". For details, refer to F AV-231, "On Board Diagnosis Function". After performing "Accessory Number Initialization", reboot the AV control unit to perform "WRITE CONFIGU-RATION". **1**.WRITING MODE SELECTION CONSULT-III Configuration Select "CONFIGURATION" of "MULTI AV". Н When writing saved data>>GO TO 2. When writing manually>>GO TO 3. 2.PERFORM "WRITE CONFIGURATION-CONFIG FILE" CONSULT-III Configuration Perform "WRITE CONFIGURATION-Config file". >> WORK END Κ **3.** PERFORM "WRITE CONFIGURATION-MANUAL SELECTION" CONSULT-III Configuration L Select "WRITE CONFIGURATION-Manual selection" to write vehicle specifications into the AV control unit. For data to write, refer to AV-285, "Configuration List". Μ >> GO TO 4. **4.**OPERATION CHECK Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course AV lines) are normal. >> WORK END Configuration List INFOID:000000006210420 Ρ **CAUTION:** Check vehicle specifications before servicing.

А

В

< BASIC INSPECTION >

MANUAL SE	NOTE	
Items	Setting value	NOTE
STEEDING	LHD	—
STEERING	RHD	_
	MODE 1	SPORT premium grade with 4WAS
GRADE	MODE 3	SPORT premium grade 2WD models without 4WAS
	MODE 2	Except for above
AWAS	WITHOUT	—
41170	WITH	_
	BASE	_
SCORE STOLEM	BOSE	—

DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

INFOID:000000006210421

INFOID:000000006210422

INFOID:000000006210423

А

Ε

Н

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.

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	DTC detection condition	Probable malfunction location	F
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.	0

Diagnosis Procedure

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 system". Refer to LAN-17, "Trouble Diagnosis Flow Chart".

NO >> Refer to GI section. Refer to GI-43, "Intermittent Incident".

AV

Μ

Κ

L

0

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:000000006210424

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	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 <u>AV-329</u> , "Exploded View".
U1200 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1200 AV CONTROL UNIT

DTC Logic

DTC

U1200

INFOID:000000006210425

А

Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the mal- function occurs constantly. Refer to <u>AV-329. "Exploded View"</u> .

[BOSE AUDIO WITHOUT NAVIGATION]

U1216 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1216 AV CONTROL UNIT

DTC Logic

INFOID:000000006210426

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the mal- function occurs constantly. Refer to <u>AV-329, "Exploded View"</u> .

U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

U1232 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000006210427

DTC	Display contents of CONSULT-III	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 cen- ter position of the steering angle sen- sor.
Diagno	osis Procedure		INFOID:000000006210428
.ADJI	JST THE PREDICTIV	E COURSE LINE CENTER POSITION OF THE	STEERING ANGLE SENSOR
Vhen U	11232 is detected, adj	ust the predictive course line center position of t	he steering angle sensor.
	>> Adjusts the steeri side. Refer to <u>BR</u> <u>Special Repair R</u>	ing angle sensor neutral position on ABS actuato C-8. "ADJUSTMENT OF STEERING ANGLE S equirement".	or and electrical unit (control unit) ENSOR NEUTRAL POSITION :

А

U1243 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1243 DISPLAY UNIT

DTC Logic

INFOID:000000006210429

[BOSE AUDIO WITHOUT NAVIGATION]

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	 When either one of the following items is detected: display unit power supply and ground circuit are mal- functioning. communication circuit between AV control unit and dis- play unit are malfunctioning. 	 Display unit power supply and ground circuit. Communication circuit between AV control unit and display unit.

Diagnosis Procedure

INFOID:000000006210430

1. CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to <u>AV-298, "DISPLAY UNIT : Diagnosis Procedure"</u>. 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		
Connector	Terminals	Connector	Terminals	Continuity
N 74	11	14000	51	Eviete d
IVI7 1	22	M202	39	Existed

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

Display unit			Continuity
Connector	Terminals	Ground	Continuity
1474	11	Not	Not ovicted
1017 1	22		NOT EXISTED

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.

U1243 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

(+)				1
Displa	ay unit	(-)	Condition	Reference value	
Connector	Terminal				F
M71	11	Ground	When adjusting display bright- ness.	(V) 6 4 2 0 •••••••••••••••••••••••••••••••••	(

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(•	+)				(
Displa	ay unit	(-)	Condition	Reference value	
Connector	Terminal				
M71	22	Ground	When adjusting display bright- ness.	(V) 6 4 2 0 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	F

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace display unit. Refer to <u>AV-331, "Exploded View"</u>.

M

L

Κ

Е

F

AV

0

U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

U1255 SATELLITE RADIO TUNER

DTC Logic

INFOID:000000006210431

[BOSE AUDIO WITHOUT NAVIGATION]

DTC	Display contents of CONSULT-III	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. Communication circuit between AV control unit and satellite radio tun- er. Request signal circuit between AV control unit and satellite radio tun- er.

Diagnosis Procedure

INFOID:000000006210432

1. CHECK SATELLITE RADIO TUNER POWER SUPPLY AND GROUND CIRCUIT

Check satellite radio tuner power supply and ground circuit. Refer to <u>AV-300, "SATELLITE RADIO TUNER :</u> <u>Diagnosis Procedure"</u>.

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	Continuity
	129		8	
M206	122	B236	10	Existed
	130		9	

4. Check continuity between AV control unit harness connector.

AV cor	ntrol unit		Continuity
Connector	Terminals	*	Continuity
	129	Ground	
M206	122		Not existed
	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.

(+) AV control unit		()	Reference value (Approx.)
Connector	Terminals		

U1255 SATELLITE RADIO TUNER

< DTC/CIRCUI	IT DIAGNOSIS	5 >	[BOSE AU	DIO WITHOUT NAVIGATION]
Made	129	Ground	7.0 V	
M206	130	Ground	7.0 V	
Is the inspection	n result normal	?		
YES >> GC NO >> Re 4. CHECK SAT) TO 4. place AV contro FELLITE RADIO	ol unit. Refer to <u>a</u> TUNER VOLT	AV-329, "Exploded View". AGE	l
 Turn ignitio Disconnect Connect sa 	n switch OFF. AV control unit atellite radio tun	connector. er.		(
5. Check sign	al between sate	ellite radio tuner	harness connector and groun	d.
Satellite r	adio tuner	()	Reference value	
Connector	Terminal		(Αρριοχ.)	
B236	10	Ground	7.0 V	
Is the inspection YES >> INS NO >> Re	n result normal SPECTION ENI place satellite ra	<u>?</u> D adio tuner. Refe	r to <u>AV-340, "Exploded View"</u> .	(
				I

M

J

Κ

L

AV

0

Ρ

< DTC/CIRCUIT DIAGNOSIS >

U1300 AV COMM CIRCUIT

Description

INFOID:000000006210433

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-III	DTC detection condition	Possible malfunction factor
U1300 U1240	 AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] 	 When either one of the following items is 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 U125C	 AV COMM CIRCUIT [U1300] SONAR CONN [U125C] 	 When either one of the following items are detected: sonar control unit power supply and ground circuits are malfunctioning. AV communication circuits between AV control unit and sonar control unit are malfunctioning. 	 Sonar control unit power supply and ground circuits. AV communication circuits between AV control unit and sonar control unit.
U1300 U1256	 AV COMM CIRCUIT [U1300] HAND FREE CONN [U1256] 	 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. AV communication circuits between AV control unit and TEL adapter unit.
U1300 U1240 U125C U1256	 AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] SONAR CONN [U125C] HAND FREE CONN [U1256] 	Malfunction is detected in AV communication circuits be- tween AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.

U1310 AV CONTROL UNIT [BOSE AUDIO WITHOUT NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U1310 AV CONTROL UNIT

DTC Logic

DTC

U1310

INFOID:000000006210434

Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace AV control unit. If the mal- function occurs constantly. Refer to <u>AV-329, "Exploded View"</u> .

А

[BOSE AUDIO WITHOUT NAVIGATION]

INFOID-000000006210435

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
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	M201	19	OFF	Battery voltage
ACC power supply	M201	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	M201	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

DISPLAY UNIT

DISPLAY UNIT : Diagnosis Procedure

INFOID:000000006210436

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	M71	2		9.0.1/
Signal VCC		3		5.0 V

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 the harness connector between display unit and AV control unit.

3. Check continuity between display unit harness connector M71 and AV control unit harness connector.



< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

Signal name	Display unit	(M71)	AV cor	ntrol unit (M202)	Continuity
Inverter VCC	2			48	Existed
Signal VCC	3			36	Existed
4. Check continuity I	oetween display unit h	arness conr	nector and	d ground.	
Signal name	Display unit	(M71)		_	Continuity
Inverter VCC	2			Ground	Not existed
Signal VCC	Signal VCC 3 Ground		Not existed		
Is the inspection resul	t normal?				
YES >> GO TO 3. NO >> Repair ha					
J.CHECK POWER S	SUPPLY CIRCUIT (AV	CONTROL	UNIT SIL)E)	
 Connect the AV c Turn ignition switc Check voltage bet 	ontrol unit harness col ch ACC. tween AV control unit	nnector. harness cor	nnector an	d ground.	
Signal name	Connector No.	Termin	al No.	Ignition switch position	Value (Approx.)
Inverter VCC	Maaa	48	3	100	0.0.1/
Signal VCC	M202	36	6	ACC	9.0 V
NO >> Replacem 4.CHECK GROUND 1. Turn ignition swite 2. Disconnect displa	CIRCUIT ch OFF. y unit connector.			ad around	
3. Check continuity i					
Signal name	Connector No.	Termin	al No.	Ignition switch position	Continuity
Ground	M71	1		OFF	Existed
YES >> INSPECT NO >> Repair ha BOSE AMP.	t normal? ION END rness or connector.				
BOSE AMP. : Dia	ignosis Procedure	e			INFOID:00000006210437
1. CHECK FUSE					
Check for blown fuses	5.				
	Power source			Fuse No.	
	Battery			5, 8	
Is the inspection resul YES >> GO TO 2. NO >> Be sure to 2.CHECK POWER S	<u>t normal?</u> o eliminate cause of m SUPPLY CIRCUIT	alfunction b	efore inst	alling new fuse.	
Check voltage betwee	en BOSE amp. harnes	s connector	and grou	nd.	

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B42	10, 11	OFF	Battery voltage

< DTC/CIRCUIT DIAGNOSIS >

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	B42	7, 12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:000000006210438

[BOSE AUDIO WITHOUT NAVIGATION]

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
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	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B236	12	OFF	Battery voltage
ACC power supply	B236	16	ACC	Battery voltage

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:000000006210439

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
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.

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B237	1	OFF	Battery voltage
ACC power supply	B237	2	ACC	Battery voltage
	. 10			

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	E
Ground	B237	4	OFF	Existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

Η

J

Κ

L

С

D

F

Μ

AV

0

Р

< DTC/CIRCUIT DIAGNOSIS >

RGB (R: RED) SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210441

INFOID:000000006210440

1.CHECK CONTINUITY RGB (R: RED) 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.

Displa	ay unit	AV con	itrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	17	M202	43	Existed

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

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M71	17		Not existed
		10	

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK RGB (R: RED) 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.

(Displa	+) ay unit	(-)	Condition	Reference value
Connector	Terminal			
M71	17	Ground	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spec- trum Bar" on DISPLAY DIAGNOSIS screen.	(V) 0.8 0.4 0 → 40µs JSNIA1029ZZ

Is inspection result normal?

YES >> Replace display unit. Refer to <u>AV-331, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

RGB (G: GREEN) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB (G: GREEN) SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

1. CHECK CONTINUITY RGB (G: GREEN) 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.

Disp	lay unit	AV con	trol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	6	M202	44	Existed

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

Displa	ay unit		Conti	inuity	
Connector	Terminal	Gro	ound	nuty	G
M71	6		Not ex	xisted	
Is inspection	n result norm	al?			L
YES >>	GO TO 2.				1
NO >>	Repair harn	ess or conne	ector.		
2.CHECK	RGB (G: GR	EEN) SIGN/	AL		
1. Connec	t display uni	t connector a	and AV control unit cor	nector.	
 Turn igr Check s 	nition switch signal betwee	ON. en display u	nit harness connector a	and ground.	L
(1	+)				
Displa	ay unit	(-)	Condition	Reference value	k
Connector	Terminal				
			Start confirmation/adjust-		L
M71	6	Ground	play color bar by selecting "Color Spec- trum Bar" on DISPLAY DIAGNOSIS screen.	$0.8 \qquad 0.4 \qquad 0.4 \qquad 0 \qquad $	N
				JSNIA1030ZZ	41

Is inspection result normal?

YES >> Replace display unit. Refer to <u>AV-331, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

INFOID:000000006210442

А

В

С

D

F

[BOSE AUDIO WITHOUT NAVIGATION]

INFOID:000000006210443

AV

< DTC/CIRCUIT DIAGNOSIS >

RGB (B: BLUE) SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210445

INFOID:000000006210444

1.CHECK CONTINUITY RGB (B: BLUE) 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.

Displa	ay unit	AV con	itrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	18	M202	45	Existed

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

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M71	18		Not existed
	•.	10	•

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK RGB (B: BLUE) 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.

(-	+)			
Displa	ay unit	(-)	Condition	Reference value
Connector	Terminal			
M71	18	Ground	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spec- trum Bar" on DISPLAY DIAGNOSIS screen.	(V) 0.8 0.4 0 ••••40µs JSNIA1031ZZ

Is inspection result normal?

YES >> Replace display unit. Refer to <u>AV-331, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

RGB SYNCHRONIZING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS > RGB SYNCHRONIZING SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

1. CHECK CONTINUITY RGB SYNCHRONIZING 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.

Displa	ay unit	AV con	itrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	19	M202	42	Existed

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

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M71	19		Not existed
Is the inspec	ction result n	ormal?	

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK RGB SYNCHRONIZING 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.

(· Displa Connector	+) ay unit Terminal	(-)	Reference value
M71	19	Ground	(V) 4 0 + 20 \mu s 5KIB3603E
In the increase	stion recult n	ormol2	

Is the inspection result normal?

YES >> Replace display unit. Refer to <u>AV-331, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

Р

D

Е

F

Н

Κ

L

Μ

AV

INFOID:000000006210446

INEOID:000000006210447

RGB AREA (YS) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB AREA (YS) SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

1.CHECK CONTINUITY RGB AREA (YS) 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.

Displa	ay unit	AV con	itrol unit	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M71	9	M202	40	Existed

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

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M71	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 display unit connector and AV control unit connector.

2. Turn ignition switch ON.

3. Check signal between display unit harness connector and ground.

(· Displa	+) ay unit	()	Condition	Reference value (Approx.)
Connector	Terminal			
			At RGB image is displayed.	5.0 V
M71	9	Ground	At camera image is dis- played.	(V) 6 4 2 0 ++200 µ s −++200 µ s −++200 µ s

Is the inspection result normal?

YES >> Replace display unit. Refer to <u>AV-331, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

INFOID:000000006210448

INFOID:000000006210449

CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

CAMERA IMAGE SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

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 cor	ntrol unit	Rear vie	w camera	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M203	73	B305	1	Existed

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

AV cor	ntrol unit		Continuity
Connector	Terminal	Ground	Continuity
M203	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.

(· AV con	+) htrol unit	(-)	Condition	Voltage
Connector	Terminal			(Approx.)
M203	73	Ground	Shift position is "R".	6.0 V

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace AV control unit. Refer to <u>AV-329</u>, "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 cor	ntrol unit	Rear vie	w camera	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M203	62	B305	3	Existed

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

[BOSE AUDIO WITHOUT NAVIGATION]

AV

Κ

А

D

E

F

INFOID:000000006210450

INFOID:000000006210451

CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

AV con	trol unit		Continuity
Connector	Terminal	Ground	Continuity
M203	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.

(· AV cor	+) Itrol unit	(-)	Condition	Reference value
Connector	Terminal			
M203	62	Ground	At rear view camera im- age is displayed.	(V) 0. 4 0 −0. 4 • • 40μs SkiB2251J

Is inspection result normal?

YES >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

NO >> Replace rear view camera. Refer to <u>AV-349</u>, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

1. CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

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

AV cor	ntrol unit	unit	Display unit		Continuity
Connector	Terminal	Terminal Co	ector	Terminal	Continuity
M202	47	47	1	15	Existed

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

AV cor	ntrol unit			Continu	uity /		
Connector	Terminal	Gro	Ground		Continuity		G
M202	47			Not exist	ted		
Is the inspec	ction result n	ormal?					Ľ
YES >> GO TO 2.							11
NO >>	Repair harn	ess or conne	ector.				
2.CHECK	COMPOSITE	E IMAGE SIG	GNAL				
1. Connec	t AV control	unit connect	or and displa	ay unit conne	ector.		
 Turn ign Check s 	nition switch signal betwee	ON. en AV contro	ol unit harnes	s connector	[.] and gr	round.	J
(1	+)						
AV cor	ntrol unit	(-)	Conc	dition		Reference value	K
Connector	Terminal						
					(V)		L
M202	47	Ground At camera i played.		image is dis- -0.4 -0.4 $+40\mu$ s		• • • 40µs	Μ
						SKIB2251J	AV
Is the inspec	ction result n	ormal?					

YES >> Replace display unit. Refer to AV-331, "Exploded View".

NO >> Replace AV control unit. Refer to AV-329, "Exploded View".

[BOSE AUDIO WITHOUT NAVIGATION]

А

В

С

D

F

INFOID:000000006210452

INFOID:000000006210453

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT < DTC/CIRCUIT DIAGNOSIS > [BOSE AUDIO WITHOUT NAVIGATION]

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

Description

In composite image (AUX image 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:000000006210455

INFOID:00000006210454

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.

Displa	ay unit	AV con	itrol unit	Continuity
Connector	Connector Terminal		Terminal	Continuity
M71	8	M202	38	Existed

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

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M71	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			
M71	8	Ground	(V) 4 0 +→20µs SKIB3601E	

Is the inspection result normal?

YES >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

NO >> Replace display unit. Refer to <u>AV-331, "Exploded View"</u>.

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

[BOSE AUDIO WITHOUT NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

Description

In composite image (AUX image and camera image), transmit the vertical synchronizing (VP) signal and hori-В zontal 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

1. CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

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

Displa	ay unit	AV con	trol unit	Continuiti		
Connector	Terminal	Connector	Terminal	Continuity		
M71	20	M202	50	Existed	-	
. Check c	ontinuity be	tween displa	y unit harnes	ss connector and	round.	
Displa	ay unit			Quetinuitu		
Connector	Terminal	Gro	ound	Continuity		
M71	20			Not existed	-	
s the inspec	tion result n	ormal?			-	
YES >> (NO >> (GO TO 2. Repair harn	ess or conne	ector.			
			· · · ·			
. Connect	display unit	t connector a	and AV contr	ol unit connector.		
. Connect . Turn ign . Check s	t display unit ition switch ignal betwee	t connector a ON. en display ur	and AV contr nit harness c	ol unit connector. onnector and grou	nd.	
. Connect . Turn ign . Check s	t display unit ition switch ignal betwee	t connector a ON. en display ur	and AV contra hit harness c	ol unit connector. onnector and grou	ind.	
. Connect . Turn ign . Check s (+ Displa	t display unit ition switch ignal betwee +) ay unit	t connector a ON. en display ur (-)	and AV contr nit harness c Refe	ol unit connector. onnector and grou rence value	ind.	
. Connect . Turn ign . Check s (+ Displa Connector	t display unit ition switch ignal betwee +) ay unit Terminal	t connector a ON. en display ur (-)	and AV contra hit harness c Refe	ol unit connector. onnector and grou rence value	ind.	
. Connect . Turn ign . Check s (+ Displa Connector	t display unit ition switch ignal betwee +) ay unit Terminal	t connector a ON. en display ur (–) Ground	and AV contra hit harness c Refe	ol unit connector. onnector and grou rence value	ind.	
. Connect Turn ign Check s (+ Displa Connector	t display unit ition switch ignal betwee +) ay unit Terminal	t connector a ON. en display ur (–) Ground	and AV contra hit harness c Refe	ol unit connector. onnector and grou rence value	ınd.	
. Connect . Turn ign . Check s (+ Displa Connector M71	t display unit ition switch ignal betwee +) ay unit Terminal 20	t connector a ON. en display ur (-) Ground ormal?	and AV contra hit harness c Refe	ol unit connector. onnector and grou rence value	ınd.	

Ρ

А

D

INFOID:000000006210456

INFOID:000000006210457

DISK EJECT SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DISK EJECT SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210459

INFOID:000000006210458

[BOSE AUDIO WITHOUT NAVIGATION]

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.

Multifunct	tion switch	AV con	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M72	14	M204	96	Existed

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

Multifunc	tion switch		Continuity	
Connector	Terminal	Ground	Continuity	
M72	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.

(+) AV control unit		(-)	Condition	Voltage	
Connector	Terminal			(Approx.)	
M204	96	Ground	Pressing the eject switch	0 V	
1012-04	90	Giouna	Except for above	3.3 V	

Is the inspection result normal?

YES >> Replace preset switch. Refer to <u>AV-343, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

MODE CHANGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MODE CHANGE SIGNAL CIRCUIT

Description

- AV control unit transmits the mode change signal to BOSE amp.
- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.

Diagnosis Procedure

1. CHECK CONTINUITY MODE CHANGE SIGNAL CIRCUIT

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

	AV control unit BOSE amp.		Continuity		
Conn	nector	Terminal	Connector	Terminal	Continuity
M2	206	128	B41	37	Existed
4. Cl	heck c	ontinuity bet	ween BOSE	amp. harne	ess connector and

BOSE	E amp.		Continuity
Connector	Terminal	Ground	Continuity
B41	37	-	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK MODE CHANGE SIGNAL

1. Connect BOSE amp. connector and AV control unit connector.

2. Turn ignition switch ON.

3. Check voltage between BOSE amp. harness connector and ground.

(+) BOSE amp.		(-)	Condition	Voltage (Approx.)	
Connector	Terminal			(• + + • • • •)	
D/1	27	Ground	Driver's Audio Stage ON.	0 V	
D41	31	Ground	Driver's Audio Stage OFF.	8.5 V	

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to AV-338, "Exploded View".

NO >> Replace AV control unit. Refer to <u>AV-329</u>, "Exploded View".

AV

А

D

Н

Κ

L

Μ

INFOID:000000006210460

INFOID:000000006210461

0

Ρ

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MICROPHONE SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210463

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			Micro	phone	Continuity
	Connector	Terminals	Connector	Terminals	Continuity
		7		1	
	B237	8	R17	2	Existed
		29		4	

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

TEL ada	apter unit		Continuity	
Connector	Terminals	Ground	Continuity	
MOOT	7	Clound	Not existed	
101237	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.

(+)	(-)	
TEL ada	apter unit	TEL ada	Voltage (Approx.)	
Connector	Terminal	Connector	Terminal	(********
B237	29	B237	8	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace TEL adapter unit. Refer to <u>AV-348. "Exploded View"</u>.

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.

2. Check signal between TEL adapter unit harness connector.

[BOSE AUDIO WITHOUT NAVIGATION]

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

(-	+)	(-	-)			A
TEL ada	apter unit	TEL ada	pter unit	Condition	Reference value	
Connector	Terminal	Connector	Terminal	_		В
B237	7	B237	8	give a voice.	(V) 2. 0 1. 5 1. 0 0. 5 0 • • • 2ms PKIB5037J	C
Is the inspec	ction result n	ormal?				
YES >>	Replace TE	L adapter un	it. Refer to	AV-348, "Exploded	d View".	E

NO >> Replace microphone. Refer to <u>AV-346. "Exploded View"</u>.

Μ

F

G

Н

J

Κ

L

AV

0

< DTC/CIRCUIT DIAGNOSIS >

CONTROL SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210465

INFOID:000000006210464

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 ada	apter unit		Continuity	
Connector	Terminals	Ground		
B227	23	Glound	Evisted	
D231	24		EXISTED	

Is the inspection result normal?

YES >> Replace TEL adapter unit. Refer to <u>AV-348, "Exploded View"</u>.

NO >> Repair harness or connector.

STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >				[BOSE AUDIO WITHOUT NAVIGATION]	
STEERI	NG SWIT	TCH SIGI	NAL A C	IRCUIT	
Descriptio	n				F INFOID:00000006210466
Transmits th	e steering s	witch signal t	o AV control	unit.	F
Diagnosis	Procedu	re			INFOID:00000006210467
1.снеск в	STEERING	SWITCH SIG	NAL A CIRC	CUIT	C
 Disconn Check c 	ect AV controntion of the sected and the sected at the sec	ol unit conne ween AV cor	ector and spi ntrol unit har	ral cable conne ness connecto	ector. r and spiral cable harness connector.
AV con	trol unit	Spiral	cable	Continuity	
Connector	Terminal	Connector	Terminal		E
M201	6	M36	24	Existed	
3. Check c	ontinuity be	ween AV cor	ntrol unit har	ness connecto	r and ground.
AV con	trol unit			Continuity	
Connector	Terminal	Gro	und	Continuity	
M201	6		-	Not existed	(
Is the inspec	tion result n	ormal?	I		—
YES >> NO >>	GO TO 2. Repair harn	ess or conne	ctor.		F

2.CHECK SPIRAL CABLE

Check spiral cable.

<u>Is the inspection result normal?</u> YES >> GO TO 3.

NO >> Replace spiral cable. Refer to <u>SR-14, "Exploded View"</u>.

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.

(+)		(
AV cor	trol unit	AV control unit		Voltage (Approx.)
Connector	Terminal	Connector	Terminal	(TF -)
M201	6	M201	15	3.3 V

Is the inspection result normal?

YES	>> GO TO 4.
NO	>> Replace AV control unit. Refer to <u>AV-329</u> , "Exploded View".
4.сне	CK STEERING SWITCH

1. Turn ignition switch OFF.

2. Check steering switch. Refer to AV-317, "Component Inspection".

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace steering switch. Refer to <u>ST-17, "Exploded View"</u>.

Component Inspection

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

INFOID:000000006210468

Κ

L

Μ

AV

Ρ

STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

Standard	
Between terminals 14 and 17	
📈 🌾 switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	:0Ω
Between terminals 15 and 17	
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω

SOURCE	Approx.
MENU UP	$ = \begin{cases} 121\Omega \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$
MENU DOWN	¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯¯
(115	_ ₩ \$402Ω
VOL DOWN	Approx.
VOL UP	² 121Ω
	≥200Ω 1415 17

STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >	[BOSE AUDIO WITHOU
STEERING SWITCH SIGNAL B CIRCUIT	
Description	
Transmits the steering switch signal to AV control unit.	
Diagnosis Procedure	

1. CHECK STEERING SWITCH SIGNAL B CIRCUIT

- Disconnect AV control unit connector and spiral cable connector. 1.
- Check continuity between AV control unit harness connector and spiral cable harness connector. 2.

	-					D
AV cor	ntrol unit	Spira	cable	Continuity		
Connector	Terminal	Connector	Terminal	Continuity		E
M201	16	M36	31	Existed	-	
3. Check of	continuity be	tween AV co	ntrol unit hai	rness connector ar	nd ground.	F
AV cor	ntrol unit			Continuity		
Connector	Terminal	Gro	ound		_	G
M201	16			Not existed	-	0
Is the inspect YES >> NO >> 2.CHECKS	<u>ction result n</u> GO TO 2. Repair harn SPIRAL CAF	ormal? ess or conne 31 F	ector.			Н
	l cable					
Is the inspec	ction result n	ormal?				
YES >> NO >> 3. CHECK	GO TO 3. Replace spi AV CONTRC	ral cable. Re	fer to <u>SR-14</u> .TAGE	I, "Exploded View"		J
 Connect Turn igr Check v 	nition switch voltage betwo	ON. een AV contr	ol unit harne	ess connector.		L
(+)	(-	-)	Vallans	•	
AV cor	ntrol unit	AV con	trol unit	(Approx.)		
Connector	Terminal	Connector	Terminal		_	M
M201	16	M201	15	3.3 V	-	_
Is the inspec YES >> NO >> 4.CHECK S	ction result n GO TO 4. Replace AV STEERING \$	<u>ormal?</u> control unit. SWITCH	Refer to <u>AV</u>	-329, "Exploded Vi	<u>ew"</u> .	AV
1. Turn igr 2. Check s <u>Is the inspec</u> YES >> NO >>	nition switch steering switc <u>ction result n</u> INSPECTIO Replace ste	OFF. ch. Refer to <u>/</u> ormal? N END ering switch.	<u>AV-319, "Co</u> Refer to <u>ST</u>	mponent Inspection	<u>n"</u> . <u>ew"</u> .	P
Compone	ent Inspec	tion				INFOID:000000006210471
Measure the	e resistance	between the	steering sw	itch connector term	ninals 14 to 17 and 15 to 17	

AV-319

А

В

С

INFOID:000000006210469

INFOID:000000006210470

STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

Standard	
Between terminals 14 and 17	
🔬 🌾 switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	:0Ω
Between terminals 15 and 17	
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	:0Ω

SOURCE	Approx.	14
MENU UP	≷121Ω ≪Approx	
MENU DOWN		
(112	^{402Ω}	
VOL DOWN		15
VOL UP		
	∑200Ω [14 15 17
		17JSNIA0216GB

STEERING SWITCH GROUND CIRCUIT

[BOSE AUDIO WITHOUT NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >		
		7

STEERING SWITCH GROUND CIRCUIT А Description INFOID:000000006210472 Transmits the steering switch signal to AV control unit. В **Diagnosis** Procedure INFOID:000000006210473 1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT 1. Disconnect AV control unit connector and spiral cable connector. 2. Check continuity between AV control unit harness connector and spiral cable harness connector. D AV control unit Spiral cable Continuity Connector Connector Terminal Terminal Ε M201 15 M36 33 Existed 3. Connect AV control unit connector. Is the inspection result normal? F YES >> GO TO 2. NO >> Repair harness or connector. 2. CHECK SPIRAL CABLE Check spiral cable. Is the inspection result normal? Н YES >> GO TO 3. NO >> Replace spiral cable. Refer to SR-14, "Exploded View". ${f 3}.$ CHECK GROUND CIRCUIT Connect AV control unit connector. 1. Check continuity between AV control unit harness connector and ground. 2. AV control unit Continuity Connector Terminal Ground Κ M201 15 Existed Is the inspection result normal? YES >> GO TO 4. NO >> Replace AV control unit. Refer to AV-329, "Exploded View". **4.**CHECK STEERING SWITCH M Turn ignition switch OFF. 1. Check steering switch. Refer to AV-321, "Component Inspection". 2. Is the inspection result normal? AV YES >> INSPECTION END NO >> Replace steering switch. Refer to ST-17, "Exploded View". Component Inspection INFOID:000000006210474 Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

Standard	
Between terminals 14 and 17	
🔬 🌈 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 	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	:0Ω

SOURCE	Approx.	14
MENU UP	≷121Ω ≪Approx	
MENU DOWN		
(112	^{402Ω}	
VOL DOWN		15
VOL UP		
	∑200Ω [14 15 17
		17JSNIA0216GB

MULTI AV SYSTEM SYMPTOMS [BOSE AUDIO WITHOUT NAVIGATION]

SYMPTOM DIAGNOSIS MULTI AV SYSTEM SYMPTOMS

Symptom Table

OPERATION

INFOID:000000006210475

А

L

Symptoms	Check items	Possible malfunction location / Action to take
Multifunction switch and preset switch operation does not work.	 All switches cannot be operated. "MULTI AV" is displayed on system selection screen when the CON- SULT-III is started. 	 Multifunction switch power supply and ground circuit. AV communication circuit between AV control unit and multifunction switch. Perform "Self diagnosis Result" of "MULTI AV" with CONSULT-III. Refer to <u>AV-240, "CONSULT - III Func- tion"</u>.
	 All switches cannot be operated. "MULTI AV" is not displayed on system selection screen when the CON-SULT-III is initialized. 	AV control unit power supply and ground circuit malfunc- tion. Refer to <u>AV-298, "AV CONTROL UNIT : Diagnosis</u> <u>Procedure"</u> .
	Only specified switch cannot be operat- ed.	Multifunction switch or preset switch malfunction. Per- form multifunction switch and preset switch self-diagno- sis function. Refer to <u>AV-231, "On Board Diagnosis</u> <u>Function"</u> .
Fuel economy display, vehicle set- ting operation is abnormal.	There is malfunction in the CONSULT- III self-diagnosis result. Refer to <u>AV-240, "CONSULT - III Func-</u> tion".	Perform detected DTC diagnosis. Refer to <u>AV-251, "DTC Index"</u> .
	There is no malfunction in the self-diag- nosis results. Refer to <u>AV-240, "CONSULT - III Func-</u> tion".	Ignition signal circuit malfunction. (AV control unit)

RELATED TO HANDS-FREE PHONE

Simple Check for Bluetooth™ Communication

If cellular phone and AV control unit cannot be connected with Bluetooth[™] communication, following proce-K dure allows the technician to judge which device has malfunction.

- 1. Turn on a cellular phone, not connecting Bluetooth[™] communication.
- 2. Start CONSULT-III, then start Windows[®].
- 3. Set CONSULT-III near a cellular phone.
- 4. When operated Bluetooth[™] registration by cellular phone, check if CONSULT-III^{*} would be displayed on the device name. (If other Bluetooth[™] device is located near cellular phone, a name of the device would be displayed also.) NOTE:

*:Displayed device name is "NISSAN-********.".

- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal. Perform diagnosis as per the following table.

Trouble Diagnosis Chart by Symptom



< SYMPTOM DIAGNOSIS >

MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITHOUT NAVIGATION]

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (No con- nection is displayed on the dis- play at the guide.)	Repeat the registration of cellular phone.	TEL adapter unit malfunction. Refer to <u>AV-348, "Exploded View"</u> .
Hands-free phone cannot be established.	Both the reception and the speech cannot be performed	 Perform "Self diagnosis Result" of "MULTI AV" with CONSULT-III. Refer to <u>AV-240, "CONSULT - III Function"</u>. No malfunction. TEL adapter unit malfunction. Refer to <u>AV-348, "Exploded View"</u>. Malfunction is detected. Perform detected DTC diagnosis. Refer to <u>AV-251, "DTC Index"</u>.
The other party's voice cannot be heard by hands-free phone.	The operation of the " $\sqrt{2}$ (" switch can be performed.	TEL voice signal circuit malfunction between TEL adapter unit and AV control unit.
	The operation of the "v 🖉 🌈 " switch can- not be performed.	Control signal circuit. Refer to <u>AV-316. "Diagnosis Procedure"</u> .
Originating sound is not heard by the other party with hands- free phone communication.	Sound operation function is normal.	TEL adapter unit. Refer to <u>AV-348, "Exploded View"</u> .
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <u>AV-314</u> , "Diagnosis Procedure".
The system cannot be operat- ed.	"SOURCE", "MENU UP", and "MENU DOWN" switches are operated. But "w∕ź ✔" switch is not operated.	 Check steering switch. Refer to <u>AV-317, "Component Inspection"</u>. Malfunction is detected. Replace steering switch. Refer to <u>AV-344, "Exploded</u> <u>View"</u>.
	"SOURCE", "MENU UP", "MENU DOWN" and "	Steering switch signal A circuit malfunction. Refer to <u>AV-317, "Diagnosis Procedure"</u> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <u>AV-321, "Diagnosis Procedure"</u> .

RELATED TO RGB IMAGE

Symptoms	Check items	Possible malfunction location / Action to take
RGB image is not shown.	There is malfunction in the CONSULT-III self-diagnosis result. Refer to <u>AV-240, "CONSULT - III Func-tion"</u> .	Perform detected DTC diagnosis. Refer to <u>AV-251, "DTC Index"</u> .
	There is no malfunction in CONSULT-III self-diagnosis results. Refer to <u>AV-240, "CONSULT - III Func-tion"</u> .	Vertical synchronizing (VP) signal circuit. Refer to <u>AV-311, "Diagnosis Procedure"</u> .
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to <u>AV-302, "Diagnosis Procedure"</u> .
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to <u>AV-303, "Diagnosis Procedure"</u> .
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to <u>AV-304, "Diagnosis Procedure"</u> .
RGB screen is rolling.	_	RGB synchronizing signal circuit. Refer to <u>AV-305, "Diagnosis Procedure"</u> .

RELATED TO AUDIO
< SYMPTOM DIAGNOSIS >

MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITHOUT NAVIGATION]

Symptoms	Check items	Possible malfunction location / Action to take
The disk cannot be removed.	disk cannot be removed. — Disk eject signal circuit. Refer to <u>AV-312, "Dia</u> <u>cedure"</u> .	
	No sound from all speakers.	 Amp. ON signal circuit malfunction. BOSE amp. power supply and ground circuits malfunction. Refer to <u>AV-299</u>, "BOSE AMP. : Diagnosis Procedure".
Audio sound is not heard.	Sound is not heard from rear woofer.	 Sound signal woofer circuit between BOSE amp. and rear woofer. Woofer amp. ON signal circuit between BOSE amp. and rear woofer.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.
Satellite radio is not received.	There is no malfunction in CONSULT-III self-diagnosis results. Refer to <u>AV-240, "CONSULT - III Func-</u> <u>tion"</u> .	 Perform the following inspection procedure. 1. Check satellite radio antenna mounting nut for looseness. NOTE: Tightening torque: 6.5 N·m (0.66 kg-m, 58 in-lb.) 2. Visually check for satellite radio antenna feeder.
	There is malfunction in the CONSULT-III self-diagnosis result. Refer to <u>AV-240, "CONSULT - III Func-</u> <u>tion"</u> .	Perform detected DTC diagnosis. Refer to <u>AV-251, "DTC Index"</u> .
The sound of satellite radio is not heard.	Other audio sounds are normal.	Satellite radio sound signal circuit between AV control unit and satellite radio tuner.
It does not change to satellite radio mode.	There is malfunction in the CONSULT-III self-diagnosis result. Refer to <u>AV-240, "CONSULT - III Func-</u> <u>tion"</u> .	Perform detected DTC diagnosis. Refer to <u>AV-251, "DTC Index"</u> .
AM/FM radio is not received. Other audio sounds are normal.		Antenna amp. ON signal circuit.Antenna feeder.

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	A) /
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to <u>AV-321, "Diagnosis Procedure"</u> .	AV
Only specified switch cannot be operated.	 Check steering switch. Refer to <u>AV-317, "Component Inspection"</u>. Malfunction is detected. Replace steering switch. Refer to <u>AV-344, "Exploded View"</u>. 	0
"SOURCE", "MENU UP", "MENU DOWN" and " ↓ ← " switches are not operated.	Steering switch signal A circuit. Refer to <u>AV-317, "Diagnosis Procedure"</u> .	Ρ
"VOL UP", "VOL DOWN" and " " switches are not operated.	Steering switch signal B circuit. Refer to <u>AV-319, "Diagnosis Procedure"</u> .	_

RELATED TO CAMERA

Trouble Diagnosis Chart by Symptom

Κ

< SYMPTOM DIAGNOSIS >

MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITHOUT NAVIGATION]

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (Vehicle width and possible route line is displayed.)	_	 Camera image signal circuit. Refer to <u>AV-307, "Diagnosis Procedure"</u>. Composite image signal circuit. Refer to <u>AV-309, "Diagnosis Procedure"</u>.
	"Reverse" is not turned ON on "Vehicle Signals" screen of "Confirmation/Adjust- ment".	Reverse signal circuit malfunction.
Camera mage does not switch.	"Reverse" is turned ON on "Vehicle Sig- nals" screen of "Confirmation/Adjust- ment".	AV control unit malfunction. Replace AV control unit. Refer to <u>AV-329</u> , " <u>Exploded</u> <u>View</u> ".

NORMAL OPERATING CONDITION [BOSE AUDIO WITHOUT NAVIGATION]

NORMAL OPERATING CONDITION

Description

BASIC OPERATIONS

В

Н

INFOID:000000006210476

Symptom	Possible cause	Possible solution
	The brightness is at the lowest setting.	Adjust the brightness of the display.
No image is displayed.	The systems in the video mode.	Press "DISC-AUX" to change the mode.
	The display is turned off.	Press "☀/ఎ OFF" to turn on the display.
The screen is too dim. The move- ment 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 dark- er or brighter than others.This condition is an inherent characteristic of liquid crystal displays.This is not a malfunction.		This is not a malfunction.
Some menu items cannot be se- lected.	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 com- mand 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 poisy 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	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.
the wrong voicetag	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.

AV

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

Symptom	Cause and Counter measure
	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.
Cannot play	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC/M4A files on a CD, only the music CD files (CD-DA data) will be played.
Cannot play	Files with extensions other than ".MP3", ".WMA", ".AAC", ".M4A", ".mp3", ".wma", ".aac" or ".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.
	Discs 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/M4A 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/M4A file has been given an extension of ".MP3", ".WMA", ".AAC", ".M4A", ".mp3", ".wma", ".aac" or ".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.

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.

[BOSE AUDIO WITHOUT NAVIGATION]

А

D

Ε

F

INFOID:000000006210477

REMOVAL AND INSTALLATION

AV CONTROL UNIT

Exploded View

CAUTION:

- Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to <u>AV-284, "Description"</u>.
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

REMOVAL

Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MODELS : Exploded View" (M/T models).

DISASSEMBLY



4. Bracket RH

Removal and Installation

REMOVAL

CAUTION:

- Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to <u>AV-284, "Description"</u>.
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

- 1. Remove display unit. Refer to AV-331, "Exploded View".
- 2. Remove AV control unit with a unified meter and A/C amp. as a single unit from the body.
- 3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

• Since AV control unit connector and unified meter and A/C amp. connector have the same form, be careful not to insert them wrongly.

INFOID-00000006210478

Μ

C

- Be sure to perform "WRITE CONFIGURATION" when replacing AV control unit.
- Install AV control unit between connector (1) and connector (2) with the ferrite core (USB) orientated sideways to the vehicle. Incorrect installation may cause damage to the AV control unit.



DISPLAY UNIT	Δ
Exploded View	A
Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MODELS : Exploded View" (M/T models).	В
Removal and Installation	C
REMOVAL 1. Remove cluster lid D. Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MOD-	0
ELS : Exploded View" (M/T models). 2. Remove display unit with bracket as a single unit.	D
INSTALLATION Installation is the reverse order of removal.	Е
	F
	G
	Н
	I
	J
	Κ
	L
	Μ
	AV
	0
	Ρ

FRONT DOOR SQUAWKER

Exploded View



- 1. Door finisher
- 2. Front door squawker

Removal and Installation

REMOVAL

- 1. Remove front door finisher. Refer to INT-12, "Exploded View".
- 2. Remove front door squawker from door finisher.

INSTALLATION

Installation is the reverse order of removal.

FRONT DOOR WOOFER

[BOSE AUDIO WITHOUT NAVIGATION]

< REMOVAL AND INSTALLATION > FRONT DOOR WOOFER

Exploded View

1.

2.



Μ

А

В

С

D

Е

F

Н

J

Κ

L

AV

Ο

REAR DOOR SPEAKER

Exploded View



1. Rear door speaker

Removal and Installation

REMOVAL

- 1. Remove rear door finisher. Refer to INT-12, "Exploded View".
- 2. Remove rear door speaker from rear door.

INSTALLATION

Installation is the reverse order of removal.

[BOSE AUDIO WITHOUT NAVIGATION]

< REMOVAL AND INSTALLATION >

TWEETER



1.

2.

Tweeter

Removal and Installation

Corner cover inner



REMOVAL
Remove front door finisher, and then remove corner cover inner. Refer to <u>INT-12, "Exploded View"</u>.
Remove tweeter from corner cover inner.
INSTALLATION
Installation is the reverse order of removal.

M

Н

J

Κ

L

AV

0

CENTER SPEAKER



1. Center speaker

Removal and Installation

INFOID:000000006210490

REMOVAL

1. Remove upper grille, and then remove center speaker. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MODELS : Exploded View"</u> (M/T models).

INSTALLATION

Installation is the reverse order of removal.

[BOSE AUDIO WITHOUT NAVIGATION]

REAR WOOFER





2. Remove rear woofer from rear parcel shelf.

INSTALLATION

REMOVAL

1.

Rear woofer

Removal and Installation

Installation is the reverse order of removal.

AV

Μ

Н

J

Κ

Ο

BOSE AMP.

Exploded View



- 1. BOSE amp.
- <⊐: Vehicle front

Removal and Installation

REMOVAL

- 1. Remove trunk front finisher. Refer to <u>INT-30, "Exploded View"</u>.
- 2. Remove BOSE amp. from rear parcel shelf.

INSTALLATION

Installation is the reverse order of removal.

[BOSE AUDIO WITHOUT NAVIGATION]

< REMOVAL AND INSTALLATION > ANTENNA AMP.

Exploded View



1. AM-FM main connector	
2. Antenna amp.	
Removal and Installation	INFOID:000000006210496
REMOVAL	
1. Remove rear pillar finisher LH. Refer to INT-15, "Exploded View".	
2. Remove antenna amp. from rear pillar LH.	
INSTALLATION	
Installation is the reverse order of removal.	

M

F

G

Н

J

Κ

L

AV

0

SATELLITE RADIO TUNER

Exploded View

INFOID:000000006210497



1. TEL antenna

- 2. Satellite radio tuner
- 3. Bracket (front)

- 4. TEL adapter unit
- 5. Bracket (rear)
- Removal and Installation

REMOVAL

- 1. Remove trunk front finisher. Refer to <u>INT-30, "Exploded View"</u>.
- 2. Remove rear parcel shelf finisher. Refer to INT-20, "Exploded View".
- 3. Remove screws (A) from inside the cabin, and remove TEL adapter unit and TEL antenna as a single unit from trunk room side.
- 4. Remove bracket screws and remove TEL adapter unit and satellite radio tuner.



INSTALLATION Installation is the reverse order of removal.

SATELLITE RADIO ANTENNA

< REMOVAL AND INSTALLATION >

SATELLITE RADIO ANTENNA





2. Remove nut, and then remove satellite radio antenna from roof panel.

INSTALLATION

1.

<⊃:

Installation is the reverse order of removal.

Satellite radio antenna

Vehicle front

Removal and Installation

(sunroof models).

Satellite radio antenna mounting nut ● : 6.5 N·m (0.66 kg-m, 58 in-lb)

CAUTION:

REMOVAL

1.

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when satellite radio antenna mounting nut tightening torque is loose.

Μ

L

Κ

MULTIFUNCTION SWITCH

< REMOVAL AND INSTALLATION >

MULTIFUNCTION SWITCH

Exploded View

INFOID:000000006210501

REMOVAL

Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MODELS : Exploded View"</u> (M/T models).

DISASSEMBLY



[BOSE AUDIO WITHOUT NAVIGATION]

- 1. Center ventilator grille
- 2. Multifunction switch

Removal and Installation

INFOID:000000006210502

REMOVAL

- 1. Remove cluster lid D. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MOD-ELS : Exploded View"</u> (M/T models).
- 2. Remove multi function switch with center ventilator grille as a single unit.
- 3. Remove multi function switch from center ventilator.

INSTALLATION

Installation is the reverse order of removal.

PRESET SWITCH

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

2

B

ⓓ

B

(A) ፼-⊑®



ELS : Exploded View" (M/T models).

- 2. Remove preset switch screws (A), (B), and (C), and then remove preset switch (2) from cluster lid C.
 - 1. Clock



Installation is the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between AV control unit and preset switch.

Κ

L

Μ

AV

2

JSNIA012777

STEERING SWITCH

Exploded View

Refer to ST-17, "Exploded View".

Removal and Installation

REMOVAL Refer to <u>ST-17, "Removal and Installation"</u>.

INSTALLATION Installation is the reverse order of removal. INFOID:000000006210505

< REMOVAL AND INSTALLATION > **USB CONNECTOR**

Exp

Exploded View	SEC. 280	
		В
		С
	D JPNIA1789ZZ	D
		Е
1. USB connector		
Removal and Installation	INFOID:00000006210508	F
REMOVAL		
1. Remove center console. Refer to <u>IP-34, "A/T MODELS : Explo MODELS : Exploded View" (M/T models).</u>	oded View" (A/T models) or IP-39, "M/T	G
2. Push the pawl from the back of center console to remove USB c	onnector.	
INSTALLATION		Н
Install in the reverse order of removal.		
		J

Μ

Κ

L

А

AV

Ο

< REMOVAL AND INSTALLATION > **MICROPHONE**

Exploded View

REMOVAL Refer to INL-109, "Exploded View". DISASSEMBLY

SEC. 283 JSNIA0132Z

1. Microphone

Removal and Installation

INFOID:000000006210510

REMOVAL

- Remove map lamp. Refer to INL-109, "Exploded View". 1.
- Remove microphone from map lamp. 2.

INSTALLATION

Installation is the reverse order of removal.

Revision: 2011 November

[BOSE AUDIO WITHOUT NAVIGATION]

Exploded View

INFOID:000000006210511

INFOID:000000006210512

А



Removal and Installation

REMOVAL

- 1. Remove trunk front finisher. Refer to INT-30, "Exploded View".
- 2. Remove rear parcel shelf finisher. Refer to INT-20, "Exploded View".
- 3. Remove screws and clip (A) from inside the cabin and remove TEL antenna (1) connector from trunk room side.



INSTALLATION Installation is the reverse order of removal.

AV

J

TEL ADAPTER UNIT

[BOSE AUDIO WITHOUT NAVIGATION]

Exploded View

INFOID:000000006210513



TEL antenna 1.

- 2. Satellite radio tuner
- Bracket (front) 3.

- TEL adapter unit 4.
- 5. Bracket (rear)
- Removal and Installation

REMOVAL

- 1. Remove trunk front finisher. Refer to INT-30, "Exploded View".
- 2. Remove rear parcel shelf finisher. Refer to INT-20, "Exploded View".
- 3. Remove screws (A) from inside the cabin, and remove TEL adapter unit and TEL antenna as a single unit from trunk room side.
- Remove bracket screws and remove TEL adapter unit and sat-4. ellite radio tuner.



INSTALLATION Installation is the reverse order of removal.

REAR VIEW CAMERA

Exploded View

REMOVAL Refer to <u>EXT-41, "Exploded View"</u>. DISASSEMBLY



[BOSE AUDIO WITHOUT NAVIGATION]



А

В

SEC. 280 C C D D JSNIA0134ZZ

1. Rear view camera

Removal and Installation

REMOVAL

- 1. Remove trunk lid finisher outer. Refer to EXT-41, "Exploded View".
- 2. Remove rear view camera from trunk lid finisher outer.

INSTALLATION

Installation is the reverse order of removal.

Adjustment

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.





INFOID:000000006210516

```
INFOID:000000006210517
```

J

Н

REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

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

Make fine adjustment to the correction line of the rear of the 4. 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.

: 7

Up/Down adjustment range	: 20 $^{\circ}$ to 20 $^{\circ}$
Left/Right adjustment range	: 20° to 20°



CAUTION:

After the adjustment, never perform other operations for one minute.

< REMOVAL AND INSTALLATION > SONAR CONTROL UNIT





control unit.

REMOVAL

1.

INSTALLATION

Install in the reverse order of removal.

1. Sonar control unit

Removal and Installation

Μ

Κ

L

0

STEERING ANGLE SENSOR

< REMOVAL AND INSTALLATION >

STEERING ANGLE SENSOR

Exploded View

REMOVAL Refer to SR-14, "Exploded View". DISASSEMBLY



- 1. Spiral cable
- 2. Steering angle sensor

Removal and Installation

REMOVAL

- Remove spiral cable. Refer to SR-14, "Exploded View". 1.
- 2. Remove steering angle sensor from spiral cable.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

After work, make sure to adjust neutral position of steering angle sensor. Refer to BRC-8, "ADJUST-MENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Description".

[BOSE AUDIO WITHOUT NAVIGATION]

INFOID:000000006210520

ANTENNA FEEDER

< REMOVAL AND INSTALLATION > ANTENNA FEEDER

[BOSE AUDIO WITHOUT NAVIGATION]





< PRECAUTION > PRECAUTION PRECAUTIONS

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

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.

Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)

CAUTION:

Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

Precaution for Trouble Diagnosis

INFOID:000000006210524

AV COMMUNICATION SYSTEM

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

Precaution for Harness Repair

INFOID:000000006210525

AV COMMUNICATION SYSTEM

PRECAUTIONS

< PRECAUTION >

[BOSE AUDIO WITH NAVIGATION]

 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.)



J

Κ

M

AV

0

< PREPARATION > PREPARATION

PREPARATION

Commercial Service Tools



[BOSE AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION COMPONENT PARTS

Component Parts Location

INFOID:000000006210527 B



- 1. Center speaker
- 4. Front door woofer LH
- 7. BOSE amp.
- 10. Rear door speaker RH
- 13. Front door squawker RH
- 16. GPS antenna
- 19. Steering angle sensor
- 22. AV control unit
- A. Within rear pillar finisher LH

- 2. Tweeter LH
- 5. Rear door speaker LH
- 8. Rear woofer
- 11. Satellite radio antenna
- 14. Tweeter RH
- 17. Sonar control unit
- 20. Preset switch
- 23. Multifunction switch
- B. Lower part of rear parcel shelf

- 3. Front door squawker LH
- 6. Antenna amp.
- 9. Rear view camera
- 12. Front door woofer RH
- 15. Microphone
- 18. Steering switch
- 21. USB connector
- 24. Display unit
- C. Instrument panel rear side

A

С

D

Ε

F

Н

Κ

L

Μ

AV

COMPONENT PARTS

< SYSTEM DESCRIPTION >

- D. Instrument driver lower panel removed condition
- C: Vehicle front

Component Description

[BOSE AUDIO WITH NAVIGATION]

E. Spiral cable removed condition

Part name	Description
AV control unit	 Integrates hard disk drive (HDD) allowing map data and music data to be stored. 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, hands-free phone, voice control, navigation, USB connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. It is connected to the steering angle sensor and receives the steering angle sensor signal via CAN communication. 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. Amp. ON signal, sound signal and mode change signal 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. Touch panel function can be operated for each system by touching a display directly.
BOSE amp.	 Inputs sound signal from AV control unit, and outputs sound signal to each speaker. Input mode change signal from AV control unit.
Front door woofer	Outputs sound signal from BOSE amp.Outputs low range sound.
Front door squawker	Outputs sound signal from BOSE amp.Outputs mid range sound.
Rear door speaker	Outputs sound signal from BOSE amp.Outputs high, mid and low range sounds.
Tweeter	Outputs sound signal from BOSE amp.Outputs high range sound.
Center speaker	Outputs sound signal from BOSE amp.Outputs high, mid and low range sounds.
Rear woofer	 Outputs sound signal from BOSE amp. Outputs low-pitched sound. Power (woofer amp. ON signal) is supplied from BOSE amp.
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 cable, 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 cable, 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 display unit.
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle sensor signal via CAN communication.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Part name	Description	Δ
Sonar control unit	 Controlled by AV communication transmitted from AV control unit. Trouble diagnosis is supported with CONSULT-III (K-LINE). 	A
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. 	В
Microphone	 Used for hands-free phone operation and voice recognition. Microphone signal is transmitted to AV control unit. Power (Microphone VCC) is supplied from AV control unit. 	С
GPS antenna	GPS signal is received and transmitted to AV control unit.	
Antenna amp.	 Radio signal received by glass antenna is amplified and transmitted to AV control unit. Power (antenna amp. ON signal) is supplied from AV control unit. 	D
Satellite radio antenna	Satellite radio signal is received and transmitted to AV control unit.	Ε
USB connector	Image signal ^{*1} and sound signal of USB input is transmitted to AV control unit.	

*1: Image signals cannot be received from $iPod^{\mathbb{R}}$.



J

Κ

G

F

M

L

0

INFOID-000000006210529

< SYSTEM DESCRIPTION >

SYSTEM MULTI AV SYSTEM

MULTI AV SYSTEM : System Diagram



NOTE:

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

MULTI AV SYSTEM : System Description

INFOID:000000006210530

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Navigation system function
Audio function
DVD play function
Hands-free phone function
USB connection function
Voice recognition function
Touch panel function
Rear view monitor function
Sonar system
Vehicle information function

COMMUNICATION SIGNAL
< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

- 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, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information.
- AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

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.





AV

M

А

В

С

Н

Туре	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	The turning angle is precisely detected.	Errors are accumulated when driving a long dis- tance without stopping.
GPS antenna (GPS informa- tion)	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

2011 G Sedan

< SYSTEM DESCRIPTION >

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.

[BOSE AUDIO WITH NAVIGATION]









AV-362

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

В

С

D

Ε

Κ

L

Ρ

 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 А 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 audio recognition. Operation status of audio is indicated at display.

FUNCTION
AM/FM radio
Satellite radio
CD
Bluetooth [™] audio
Music Box (Hard Disk Drive)
Driver's Audio Stage

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch, steering switch, touch Н 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.
- · Audio signal is received by glass antenna, next it is amplified by antenna amp, and finally it is input to AV control unit. Audio signal is input to BOSE amp., and BOSE amp. outputs to each speaker.

Satellite Radio Mode

- Satellite radio tuner is built into AV control unit.
- Audio signal (satellite radio) is received by satellite antenna, and it is input to AV control unit. AV control unit outputs audio signal to BOSE amp. The signal is also outputted from BOSE amp. to both woofer and each Μ speaker.

CD Mode

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

Bluetooth[™] Audio Mode

- Bluetooth[™] audio function is built into AV control unit.
- Bluetooth[™] audio can play music data in the portable audio by means of Bluetooth[™] communications between the portable audio and the AV control unit.
- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to each speaker.

Music Box Mode

- 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 each speaker.

Driver's Audio Stage

AV-363

< SYSTEM DESCRIPTION >

- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.
- ON/OFF signals of Driver's Audio Stage are transmitted from AV control unit to BOSE amp. using mode change signal.

DVD PLAY FUNCTION

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the display unit and DVD sound signals are transmitted to 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.

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 BluetoothTM 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 door speaker, and the signal is input to BOSE amp. via AV control unit by establishing Bluetooth[™] communication from cellular phone.

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 the 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.

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

- 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.

[BOSE AUDIO WITH NAVIGATION]

< SYSTEM DES	CRIPTION	>	[BOSE AUDIO WITH NAVIGATION]
 The AV control unit by RGB dig image signal an Predictive cours 	unit transm gital image d the came se lines are	its a war signal. era imag controll	ning message, fixed guide lines, and predictive course lines to the display Rear view monitor images are displayed by combining the RGB digital e signals from the rear view camera. ed by a steering angle sensor signal received the AV control unit via CAN
communication.			
SONAR SYSTE	M		
For further inform	ation abou	t the sor	ar system, refer to <u>SN-7, "System Description"</u> .
VEHICLE INFO	RMATION	FUNC	FION
 Status of audio, AV control unit of from ECM, unifi AV control unit of function. 	climate co displays the ed meter a is connecte	ntrol sys e fuel co nd A/C a ed to BC	tem, fuel economy, maintenance and navigation are displayed. Insumption status while receiving data signal through CAN communication amp. M via CAN communication transmitting/receiving for the vehicle settings
MULTI AV SY	STEM :	Fail-Sa	afe INFOID:00000006210531
When the ambian sage and limits th	ce tempera e AV contro	ature be ol unit fu	comes extremely low or extremely high, AV control unit displays the mes- nction.
FAIL-SAFE CON	NDITIONS	; ature is -	-20°C (–4°E) or lower, or when it is 70°C (158°E) or higher
Display			
The messages dis	splayed on	fail-safe	conditions are as shown below:
Fail-sa	afe 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 highHDD system is experiencing problems due to extreme high to Normal operation will resume when temperature drops.		HDD system is experiencing problems due to extreme high temperature. Normal operation will resume when temperature drops.	
DESCRIPTION	OF CONT	ROLS	
Function			When Fail-safe Function is activated
	Operation	Only mu	Itifunction switch (preset switch) can be operated.
Air conditioner		• FD (f multifunction switch (preset switch) illuminates.

	operation	Chily manufactor switch (preset switch) sur be operated.	N
Air conditioner	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.	L
Addio	Display	No display ("Fail-safe mode" is displayed)	
Camera	Operation	Image tone cannot be controlled.	в. Л
Camera	Display	Cannot be superimposed. (warning display, tone control display)	IVI
Hands-free phone	Operation	Cannot be operated.	
Navigation	Operation	Cannot be operated.	AV
Self diagnosis		The display in simplified mode of fail-safe condition	
CONSULT-III diagnosis		Cannot be operated.	
			<u> </u>

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.

AV-365

Ρ

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

- 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-III 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

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 ITEM

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. 	

[BOSE AUDIO WITH NAVIGATION]

INFOID:00000006210532

INFOID:000000006210533

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Mode			Description
	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 dis- play and touch panel calibration response check.
	Vehicle Signals		Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition, reverse, side view switch and room lamp.
	Climate Control		Start auto air conditioner system self-diagnosis.
		Steering Angle Ad- justment	When there is a difference between the actual turning angle and the vehicle mark turning angle, it can be adjusted.
	Navigation	Speed Calibration	When there is a difference between the current location mark and the ac- tual location, it can be adjusted.
		XM SAT Subscrip- tion 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		_
Confirmation/	Speaker Test		The connection of a speaker can be confirmed by test tone.
Adjustment	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.
	Hands-free Phone		The received volume adjustment of hands-free phone, microphone speaker check, and erase memory can be performed.
	Camera Cont.		The signal connected to camera control unit can be checked and the guiding line position that overlaps rear view camera image can be adjusted.
		XM NaviTrffic	Change Channel
		XM NavWeather	Any necessary channels required to receive traffic information from the satellite radio system can be set.
	XM	XM CGS	Change Application ID
		Diag	 Any application ID'-s required to receive traffic information from the satellite radio system can be set.
	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.

METHOD OF STARTING

- 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, a short beep will be heard.)
 - Shifting from current screen to previous screen is performed by pressing "BACK" button.



Μ

< SYSTEM DESCRIPTION >

4. The trouble diagnosis initial screen is displayed, and then the items of "Self Diagnosis" and "Confirmation/Adjustment" can be selected.

System Diagnostic Menu Deark
Self Diagnosis
Comfirmation/Adjustment
1/2
ISNI 4047077

[BOSE AUDIO WITH NAVIGATION]

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 <u>AV-477</u>, "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.

System Diagnostic Menu Error Inform	ation (SBACK)
Detected connection error(s) are shown below. Please refer to the Confirmation /Adjustment function or service manual for more detailed diagnosis information. Control unit	
	JPNIA1787ZZ

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.

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BOSE AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

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	E
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 mal- function 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 communi- cation circuits between AV control unit and display unit.	Serial communication circuits between AV control unit and display unit.
Control unit ⇔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna
Control unit ⇔ SAT Antenna	Satellite radio antenna connection malfunc- tion is detected.	Satellite radio antenna disconnection
Control unit ⇔ Sonar	 When either one of the following items are detected: sonar control unit power supply and ground circuits are malfunctioning. AV communication circuits between AV control unit and sonar control unit are malfunctioning. 	 Sonar control unit power supply and ground circuits. AV communication circuits between AV control unit and sonar control 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.
- 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.

System Diagnostic Menu≻ _{Confirmation/Ad} ,
Display Diagnosis
Vehicle Signals
Climate Control
Navigation
Error History
//Synchronise FES Clock • ON// 🖗
1/13
JSNIA2175ZZ

 \cap

AV

J

Κ

L

Μ

А

D

< SYSTEM DESCRIPTION >

Display Diagnosis



Vehicle Signals

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

Vehicle speed Parking brake Lights Ignition Reverse Side view Switch Room Lamp	OFF ON OFF OFF - OFF	
--	-------------------------------------	--

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Diagnosis item	Display	Vehicle status	Remarks	
Vahiela spood	ON	Vehicle speed > 0 km/h (0 MPH)		
venicie speed	OFF	Vehicle speed = 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal	
Parking brake	ON	Parking brake is applied.		
Faiking blake	OFF	Parking brake is released.	-	
Lighte	ON	Light switch ON		
Lights	OFF	Light switch OFF		
lapition	ON	Ignition switch ON		
Ignition	OFF	Ignition switch in ACC position		
Poverse	ON	Shift the selector lever to "R" position	Changes in indication may be delayed. This is normal	
Nevelse	OFF	Shift the selector lever other than "R" position	onanges in indication may be delayed. This is normal.	
SIDE VIEW SW	—	—	This item is displayed, but cannot be monitored.	
ROOM LAMP	OFF		This item is displayed, but cannot be monitored.	

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.

System Diagnosti	c Menu⊳Steering Angle_ ⊕Back
Left turn	
Right turn Set	
	1/3
	JSNIA2179ZZ

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.

System Diagnostic Menu > speed Calibration Baco Speed Calibration (- 2.5% +) Set () () () () () () () () () () () () ()	
JSNIA2180ZZ	

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.

Н

Κ

Μ

AV



< SYSTEM DESCRIPTION >

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-III.

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-III.

Display type of occur- rence 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 detect- ed.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to <u>AV-378, "CONSULT - III Function"</u> .

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take	^
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detect- ed.		A
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.		В
FLASH-ROM Error Of Control Unit			
Connection Of Gyro		Replace the AV control unit if the malfunc-	C
Connection of G Sensor	_	tion occurs constantly.	0
CAN Controller Memory Error	All control unit molfunction is detected	Refer to <u>AV-477, Exploded view</u> .	
Bluetooth Module Connection Error			D
Sub CPU Connection Error			
iPod authentification chip error			
Audio connection error			
DSP Connection Error		• If a disc can be played, then there is a	
DSP Communication Error	AV control unit malfunction is detected.	 possibility of the detection of a temporary malfunction. Replace the AV control unit if the malfunction occurs constantly. Defects AV (477, "Evaluated View") 	F
		Reler to <u>AV-4//, "Exploded VIEW"</u> .	G
HDD Bood Error	_	• If the music box function has no malfunc-	
		tection of a temporary malfunction.	H
HDD Communication Error		 Replace the AV control unit if the mal- function occurs constantly. Refer to <u>AV-477</u>, "Exploded View". 	
	_		
GPS Communication Error		An intermittent error caused by strong radio	
GPS ROM Error	_	interference may be detected unless any	
GPS RAM Error	GPS malfunction is detected.	symptom (GPS reception error, etc.) oc- curs.	J
GPS RTC Error		Replace the AV control unit if the malfunc- tion occurs constantly. Refer to <u>AV-477, "Exploded View"</u> .	
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III. Refer to <u>AV-378, "CONSULT - III Function"</u> .	K
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB con- nector is normal.	L
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 <u>AV-477</u>, "Exploded View". 	N
Steer. Angle Sensor Calibration	Predictive course line center position ad- justment of the steering angle sensor is in- complete.	Adjust the predictive course line center po- sition of the steering angle sensor. Refer to <u>AV-378, "CONSULT - III Function"</u> .	Av
Front Display Connection Error	 When either one of the following items are detected: display unit power supply and ground circuits are malfunctioning. communication circuits between AV control unit and display unit are malfunctioning. 	 Display unit power supply and ground circuits. Communication circuits between AV control unit and display unit. 	P
GPS Antenna Error	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.	
XM Antenna Connection Error	Satellite radio antenna connection malfunc- tion is detected.	Satellite radio antenna disconnection.	

Revision: 2011 November

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take	
USB electric current Error Detection of overcurrent in USB con		Check USB harness between the AV con- trol unit and USB connector.	
AM/FM antenna amplifier short to ground	Radio antenna amp. ON signal circuit mal-	Radio antenna amp. ON signal circuit be-	
AM/FM antenna amplifier open	function is detected.	tween AV control unit and antenna amp.	
Ext_Amp_ON output terminal short to ground	BOSE amp. ON signal circuit malfunction is	BOSE amp. ON signal circuit between AV	
Ext_Amp_ON output terminal :open		control unit and BOSE amp.	
AV COMM CIRCUITSwitches 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. 	
AV COMM CIRCUITSonar Connection Error	 When either one of the following items are detected: sonar control unit power supply and ground circuits are malfunctioning. AV communication circuits between AV control unit and sonar control unit are malfunctioning. 	 Sonar control unit power supply and ground circuits. AV communication circuits between AV control unit and sonar control unit. 	
 AV COMM CIRCUIT Switches Connection Error Sonar Connection Error 	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.	

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.

System Diagnostic Menu⊳ _{spe}	eaker Test Back
Speaker Testing Front Left Tweeter Speaker Settings —	Start Stop
	JPNIA1828ZZ

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(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

System Diagnostic Menu ⊳vehicle CAN Dia.. (→BACK) Checking Signal Status Count. OK OK Tx(HVAC) οк Rx(ECM) ΟK OK OK Reset Rx(Cluster) ΟK Rx(HVAC) Rx(USM) ΟK OK ΟK Rx(STRG) ОΚ OK \checkmark JSNIA2181ZZ

NOTE:

"???" indicates UNKWN.

< SYSTEM DESCRIPTION >

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.

and speaker test functions are also available.

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

C Tx(ITM-PrimarySW) OK

C Rx(PrimarySW-ITM) OK

C Rx(Sonar-ITM)

Signal

System Diagnostic Menu > AV COMM Diagn.. (SBACK)

Status

OK

Count.

OK

OK

OK

System Diagnostic Menu >Hands-free phone SBACK € ۵ Hands-free Volume Adjustment Voice Microphone Test • OK (\mathbf{r}) Ē 1/2 JSNIA2183ZZ

NOTE:

Hands-Free Phone

"???" indicates UNKWN

Camera Cont.

The four functions of "Correct Draw Line of Rear view Camera", "Alter/Confirm Configuration", "Reset Configuration" and "Camera Syst Type" are available.

The hands-free phone reception volume adjustment and microphone

System Diagnostic Menu > Camera Cont Correct Draw Line of Rear view Camera Alter/Confirm Configuration Reset Configuration Camera Syst Type Rear Camera

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



[BOSE AUDIO WITH NAVIGATION]

Revision: 2011 November

В

Checking

Reset

JSNIA261277

Эваск

€

۵

℗ ۲

JSNIA218477

1/4

Κ

Μ

AV

А

D

Ε

F

DIAGNOSIS SYSTEM (AV CONTROL UNIT) [BOSE AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

• Configuration stored in the AV control unit can be checked and modified.

System Diagnostic Mon	
Predi. Course Lines	With
Rear Coeff. K	-133446.7
Rear Coeff. F	0.0016960
Rear Coeff. P1	0.000046
// Rear Coeff. P2	0.000056 // 🖉
	1/37
	JSNIA2186ZZ

Configuration list

Setting item	Setting	Setting item	Setting
Predi. Course Lines	With	Wheelbase	2.8499999
Rear Coeff. K	-38009.06	Total Length	0.0000000
Rear Coeff. F	0.0014620		13.715999 ^{*1}
Rear Coeff. P1	0.0000062	Steering Gear Ratio	14.939999 ^{*2}
Rear Coeff. P2	0.0000056		16.884000 ^{*3}
Rear Coeff. C1	823.00000	Side Coeff. K	0.0000000
Rear Coeff. C2	480.00000	Side Coeff. F	0.0000000
Rear Coeff. D1	800.00000	Side Coeff. P1	0.0000000
Rear Coeff. D2	494.00000	Side Coeff. P2	0.0000000
Car Width	1.7729000	Side Coeff. C1	0.0000000
Rear Offset	0.0000000	Side Coeff. C2	0.0000000
Rear Height	1.0200800	Side Coeff. D1	0.0000000
Rear L/R Angle	0.0000000	Side Coeff. D2	0.0000000
Rear Up/Dn Angle	46.330001	Side Offset	0.0000000
Rear Roll Angle	0.0000000	Overall Height	0.0000000
Bumper Rear Dist.	0.1384900	Side L/R Angle	0.0000000
Bumper Rear Ax Dist	1.0918000	Side Up/Dn Angle	0.0000000
	457.84008 ^{*1}	Side Roll Angle	0.0000000
Steer. Max Angle	498.69720 ^{*2}	Side Front End Dist	0.0000000
	563.58789 ^{*3}	Total Width	0.0000000
Min. Turning Red.	5.5000000	—	_

-

*1: SPORT premium grade with 4WAS *2: SPORT premium grade 2WD models without 4WAS

- *3: Except for above.

Reset Configuration

• Configuration stored in the AV control unit can be initialized.

	_
System Diagnostic > Camera Cont.)
C Do you want to initialise camera system? A F Yes No Camera Syst Type Rear Camera	
3/4	1
JSNIA2187ZZ	

< SYSTEM DESCRIPTION >

Camera Syst Type

• Type of camera system is selectable.



XM

- 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.

System Diagnostic Menu⊳xм
XM NavTraffic
XM NavWeather
XM CGS
Diag
1/4
JSNIA2484ZZ

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 <u>AV-415, "Description"</u>.

User Data Initialisation]
Accessory Number Initialisation	
//	ŏ
!/	<u> </u>)
	1/2

А

В

D

Ε

F

Н

Κ

Μ

AV

Version Information

Ρ

DIAGNOSIS SYSTEM (AV CONTROL UNIT) ON > [BOSE AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

Version information of the AV control unit is displayed.

\ F	LASH Ware : X	1E10035	
F	LASH Applicati	on : X1E12035	
M	lap Version : 20	00905	
D	VD-Mechanism	: 000215	
/ S	ub CPU Soft :1	5	1
1		$\overline{}$	1

CONSULT - III Function

INFOID:000000006210534

APPLICATION ITEMS

CONSULT-III 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&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-III 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-417, "Diagnosis Procedure".

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take	Δ
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.		A
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.		В
Cont Unit [U1200]			
GYRO NO CONN [U1201]		Replace the AV control unit if the malfunc-	C
G-SENSOR NO CONN [U1202]		tion occurs constantly. Refer to <u>AV-477.</u>	0
CAN CONT [U1216]	AV control unit malfunction is detected		
BLUETOOTH MODULE [U1217]	Av control unit manufaction is detected.		D
SUB CPU CONN [U1228]			
iPod CERTIFICATION [U1229]			
Built-in AUDIO CONN [U122E]			
HDD CONN [U1218]		• If the music box function has no mal-	
HDD READ [U1219]		tunctions, then there is a possibility of the detection of a temporary malfunc-	F
HDD WRITE [U121A]	AV control unit malfunction is detected.	tion.	
HDD COMM [U121B]		Replace the AV control unit if the mal- function occurs constantly.	
HDD ACCESS [U121C]		Refer to <u>AV-477, "Exploded View"</u> .	G
GPS COMM [U1204]		An intermittent error caused by strong ra-	
GPS ROM [U1205]		dio interference may be detected unless any symptom (GPS reception error, etc.)	Н
GPS RAM [U1206]	GPS malfunction is detected.	occurs.	
GPS RTC [U1207]		Replace the AV control unit if the malfunc- tion occurs constantly. Refer to <u>AV-477, "Exploded View"</u> .	I
USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.	1
DSP CONN [U121D]		• If a disc can be played, then there is a	J
DSP COMM [U121E]	AV control unit malfunction is detected.	 Possibility of the detection of a temporary malfunction. Replace the AV control unit if the malfunction occurs constantly. Refer to <u>AV-477, "Exploded View"</u>. 	K
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 <u>AV-477, "Exploded View"</u>. 	L
CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT- III. Refer to <u>AV-415, "Description"</u> .	۸\/
ST ANGLE SEN CALIB [U1232]	Predictive course line center position ad- justment of the steering angle sensor is in- complete.	Adjust the predictive course line center po- sition of the steering angle sensor. Refer to <u>BRC-8</u> , "ADJUSTMENT OF <u>STEERING ANGLE SENSOR NEUTRAL</u> POSITION : Special Repair Requirement".	0
FRONT DISP CONN [U1243] GPS ANTENNA CONN [U1244]	 When either one of the following items are detected: display unit power supply and ground circuits are malfunctioning. communication circuits between AV control unit and display unit are malfunctioning. GPS antenna connection malfunction is 	 Display unit power supply and ground circuits. Communication circuits between AV control unit and display unit. Check the connection of the GPS antenna 	Ρ
	detected.	connector.	

Revision: 2011 November

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
XM ANTENNA CONN [U1258]	Satellite radio antenna connection mal- function is detected.	Satellite radio antenna disconnection.
USB OVERCURRENT [U1263]	Detection of overcurrent in USB connecter.	Check USB harness between the AV con- trol unit and USB connector.
ANTENNA AMP TERMINAL [OPEN or SHORT] [U1264]	Radio antenna amp. ON signal circuit mal- function is detected.	Radio antenna amp. ON signal circuit be- tween 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.
 AV COMM CIRCUIT [U1300] SONAR CONN [U125C] 	 When either one of the following items are detected: sonar control unit power supply and ground circuits are malfunctioning. AV communication circuits between AV control unit and sonar control unit are malfunctioning. 	 Sonar control unit power supply and ground circuits. AV communication circuits between AV control unit and sonar control unit.
 AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] SONAR CONN [U125C] 	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

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)		
	Off	Vehicle speed = 0 km/h (0 MPH)	Changes in indication may be delayed. This is	
	On	Parking brake is applied.	normal.	
FKD SIG	Off	Parking brake is released.		
	On	Block the light beam from the auto light optical sensor when the light SW is ON.		
ILLUM SIG	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.		
	On	Ignition switch ON		
IGN SIG	Off	Ignition switch in ACC position		
REV SIG	On	Selector lever in R position	Changes in indication may be delayed. This is	
	Off	Selector lever in any position other than R	normal.	
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

[BOSE AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

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	
PKB SIG	_
ILLUM SIG	_
IGN SIG	The same as when "ALL SIGNALS" is selected.
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 has three functions as follows.		F
Function	Description	-
READ CONFIGURATION	Reads the vehicle configuration of current AV control unit.Saves the read vehicle configuration.	
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.	_
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.	J

Κ

L

А

Е

F

0

< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION AV CONTROL UNIT

Reference Value

INFOID:000000006210535

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

Monitor Item		Condition	Value/Status
	Ignition switch	Vehicle speed > 0 km/h (0 MPH)	On
VIICE OF D SIG	ON	Vehicle speed = 0 km/h (0 MPH)	Off
	Ignition switch	Parking brake is applied.	On
FKB SIG	ON	Parking brake is released.	Off
	Ignition switch	Light switch ON	On
	ON	Light switch OFF	Off
	Ignition switch ON	_	On
	Ignition switch ACC	_	Off
PEV SIC	Ignition switch	Selector lever in R position	On
	ON	Selector lever in any position other than R	Off
SIDE VIEW SW*	Ignition switch ON	_	Off
ROOM LAMP [*]	Ignition switch ON	—	Off

*: This item is displayed, but cannot be monitored.

TERMINAL LAYOUT



PHYSICAL VALUES

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terr (Wire	minal color)	Description		Condition		A Reference value
+	_	Signal name	Input/ Output			(Approx.)
1 (GR)	Ground	Amp. ON signal	Output	Ignition switch ON	_	10.0 V
2 (O)	3 (W)	Sound signal front LH	Output	lgnition switch ON	Sound output	(V) 1 0 -1 +2ms SKIB3609E
4 (V)	5 (LG)	Sound signal rear LH	Output	lgnition switch ON	Sound output	(V) 1 0 −1 + 2ms SKIB3609E
					Keep pressing SOURCE switch.	0 V H
					Keep pressing MENU UP switch.	1.0 V
6 15 (P) (B)	Steering switch signal A	Input	Ignition switch	Keep pressing MENU DOWN switch.	2.0 V	
(*)	(-)			ON	Keep pressing 🏑 switch	3.0 V
					Keep pressing ENTER switch.	4.0 V
_					Except for above.	5.0 V k
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage
10	_	Shield	_		—	—
11 (R)	12 (G)	Sound signal front RH	Output	lgnition switch ON	Sound output	
13 (BR)	14 (Y)	Sound signal rear RH	Output	lgnition switch ON	Sound output	(V) 1 0 -1 → 2ms SKIB3609E

Revision: 2011 November

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value
+	_	Signal name	Input/ Output	Condition		(Approx.)
				Ignition	Keep pressing VOL DOWN switch.	0 V
16	15	Steering switch signal B	Input		Keep pressing VOL UP switch.	1.0 V
(L)	(B)		mpar	ON	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	lgnition switch OFF	_	Battery voltage
20 (B)	Ground	Ground		Ignition switch ON	_	0 V
22	Ground	Camera power supply	Output	Ignition switch	At rear view camera image is displayed.	6.0 V
(R)	Cround		Output	ON	Except for above.	0 V
29		-		Ignition	Pressing the eject switch.	0 V
(V)	Ground	Disk eject signal	Input switch ON		Except for above.	5.0 V
30	lgn		Ignition	Driver's Audio Stage ON	0 V	
(SB)	Ground	Mode change signal	Output switch ON		Driver's Audio Stage OFF	8.5 V
42 (W)	Ground	Camera ground		Ignition switch ON	_	0 V
49 (BR)	Ground	Switch ground		Ignition switch ON	_	0 V
					Parking brake is ON.	0 V
65 (SB)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is OFF.	(V) 8 4 0 10 ms JSNIA0007GB
67 (P)	Ground	Composite image signal ground		Ignition switch ON	_	0 V
68 (L)	Ground	Composite image signal	Output	Ignition switch ON	At DVD image is displayed.	(V) 0.4 0 −0.4 •••40μs SKIB2251J
72 (G)	Ground	Microphone VCC	Output	Ignition switch ON	_	5.0 V

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terr (Wire	minal color)	Description		Condition		Reference value	
+	_	Signal name	Input/ Output			(Approx.)	
73 (LG)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	(V) 6 2 0 •••••1ms •••••1ms •••••••••••••••••••••	B C D
74 (P)		CAN-L	Input/ Output	_	_	_	
75 (LG)	_	AV communication signal (L)	Input/ Output	_	_	_	E
76 (LG)		AV communication signal (L)	Input/ Output		_	_	F
79	<u> </u>	<i>.</i>		Ignition	Lighting switch is OFF.	0 V	
(L)	Ground	Illumination signal	Input	Switch	Lighting switch is ON.	12.0 V	G
80 (G)	Ground	Ignition signal	Input	Ignition switch ON	_	Battery voltage	Н
81	Oneveral	Daviana alamak	Innut	Ignition	R position	12.0 V	
(BG)) Ground Reverse signal		input	Switch	Other than R position	0 V	
82 (R)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	NOTE: The maximum voltage varies depending on the specification (destination unit).	JK
83	_	Shield	_	_	—		
87 (R)	71	Microphone signal	Input	Ignition switch ON	Give a voice	(V) 2.5 2.0 1.5 1.5 0.5 0 • • • 2ms PKIB5037J	M
88 (B)		Shield	_	_	_	_	0
89 (L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	(V) 6 4 2 0 0 +++1ms 	Ρ

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

(Wire color)			Condition		Reference value	
+	-	Signal name	Input/ Output		Condition	(Approx.)
90 (L)	_	CAN-H	Input/ Output		_	_
91 (SB)		AV communication signal (H)	Input/ Output		_	_
92 (SB)	_	AV communication signal (H)	Input/ Output		_	_
129 (G)		USB ground			_	_
130 (R)		USB D– signal			_	_
131 (W)		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 anten- na connector.	5.0 V
154	_	Shield	—	—	—	—
157	Ground	RGB digital image signal (–)	Output	Ignition switch ON	Not connected connector.	1.3 V
158	Ground	RGB digital image signal (+)	Output	Ignition switch ON	Not connected connector.	1.3 V
159	Ground	Satellite antenna signal	Input	lgnition switch ON	Not connected satellite an- tenna connector.	5.0 V
160	—	Shield	—	—	—	—

Fail-Safe

INFOID:000000006210536

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

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Function		When Fail-safe Function is activated	А
	Operation	Only multifunction switch (preset switch) can be operated.	
Air conditioner 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.	
Audio	Display	No display ("Fail-safe mode" is displayed)	0
Comoro	Operation	Image tone cannot be controlled.	C
Camera	Display	Cannot be superimposed. (warning display, tone control display)	
Hands-free phone	Operation	Cannot be operated.	D
Navigation	Operation	Cannot be operated.	
Self diagnosis		The display in simplified mode of fail-safe condition	
CONSULT-III diagno	sis	Cannot be operated.	E

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

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to	
U1000	CAN COMM CIRCUIT [U1000]	AV-417, "Diagnosis Procedure"	0
U1010	CONTROL UNIT (CAN) [1010]	AV-418, "DTC Logic"	
U1200	Cont Unit [U1200]	AV-419, "DTC Logic"	K
U1201	GYRO NO CONN [U1201]	AV-420, "DTC Logic"	
U1202	G-SENSOR NO CONN [U1202]	AV-421, "DTC Logic"	
U1204	GPS COMM [U1204]	AV-422, "Diagnosis Procedure"	L
U1205	GPS ROM [U1205]	AV-423, "Diagnosis Procedure"	
U1206	GPS RAM [U1206]	AV-424, "Diagnosis Procedure"	M
U1207	GPS RTC [U1207]	AV-425, "Diagnosis Procedure"	
U1216	CAN CONT [U1216]	AV-426, "DTC Logic"	
U1217	BLUETOOTH MODULE [U1217]	AV-427, "DTC Logic"	AV
U1218	HDD CONN [U1218]	AV-428, "Diagnosis Procedure"	
U1219	HDD READ [U1219]	AV-429, "Diagnosis Procedure"	0
U121A	HDD WRITE [U121A]	AV-430, "Diagnosis Procedure"	
U121B	HDD COMM [U121B]	AV-431, "Diagnosis Procedure"	
U121C	HDD ACCESS [U121C]	AV-432, "Diagnosis Procedure"	P
U121D	DSP CONN [U121D]	AV-433, "Diagnosis Procedure"	
U121E	DSP COMM [U121E]	AV-434, "Diagnosis Procedure"	
U1225	USB CONTROLLER [U1225]	AV-435, "DTC Logic"	
U1227	DVD COMM [U1227]	AV-436, "Diagnosis Procedure"	
U1228	SUB CPU CONN [U1228]	AV-437, "DTC Logic"	

Н

INFOID:000000006210537

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

DTC	Display item	Refer to
U1229	iPod CERTIFICATION [U1229]	AV-438, "DTC Logic"
U122A	CONFIG UNFINISH [U122A]	AV-439, "Diagnosis Procedure"
U122E	Built-in AUDIO CONN [U122E]	AV-440, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-441, "Diagnosis Procedure"
U1243	FRONT DISP CONN [U1243]	AV-442, "Diagnosis Procedure"
U1244	GPS ANTENNA CONN [U1244]	AV-444, "Diagnosis Procedure"
U1258	XM ANTENNA CONN [U1258]	AV-445, "Diagnosis Procedure"
U1263	USB OVERCURRENT [U1263]	AV-446, "Diagnosis Procedure"
U1264	ANTENNA AMP TERMINAL [OPEN or SHORT] [U1264]	AV-447, "Diagnosis Procedure"
U1265	AMP ON TERMINAL [GND-SHORT or VB-SHORT] [U1265]	AV-448, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-450, "DTC Logic"
U1300 U1240	AV COMM CIRCUIT [U1300] SWITCH CONN [U1240]	AV-449, "Description"
U1300 U125C	AV COMM CIRCUIT [U1300] SONAR CONN [U125C]	AV-449, "Description"
U1300 U1240 U125C	AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] SONAR CONN [U125C]	AV-449, "Description"

< ECU DIAGNOSIS INFORMATION >

DISPLAY UNIT

Reference Value

TERMINAL LAYOUT

B 1211109 8 7 6 5 4 3 2 1 242322212019181716151413 2827 E JSNIA2241ZZ

PHYSICAL VALUES

Terr (Wire	minal e color)	Description		Condition		Reference value
+	-	Signal name	Input/ Output		Condition	(Approx.)
6	_	Shield	—	—	—	—
7 (B)	_	Shield			_	_
8 (G)	Ground	Camera image signal	Input	lgnition switch ON	At rear view camera image is displayed.	(V) 0.4 0 −0.4 • • 40µs SKIB2251J
9 (L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	(V) 6 4 2 0 ••••1ms ••••1ms ••••1ms
10 (LG)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	(V) 6 4 2 0 • • • 1ms PKiB5039J
11 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage
12 (B)	Ground	Ground	_	Ignition switch ON	_	0 V

А

INFOID:000000006210538

DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

(Wire color)		Description		Condition		Reference value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
18 (L)	Ground	Composite image signal	Input	Ignition switch ON	At DVD image is displayed.	(V) 0.4 0 -0.4 • 40,45 SKIB2251J	
19 (P)	Ground	Composite image ground		lgnition switch ON	_	0 V	
22 (B)	_	Shield			_	_	
23 (LG)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
27	_	RGB digital image signal (–)	Input	_	_	_	
28		RGB digital image signal (+)	Input	—		_	

[BOSE AUDIO WITH NAVIGATION]

А





PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
1 (L)	2 (W)	Sound signal front LH	Output	Ignition switch ON	Sound output	(V) 1 -1 -2ms SKIB3609E	H
4 (V)	3 (LG)	Sound signal front RH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 **2ms SKIB3609E	J K
5 (G)	6 (R)	Sound signal door woofer RH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 2ms SKIB3609E	M
7 (B)	Ground	Ground	_	Ignition switch ON	_	0 V	0
10 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	P
11 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
12 (B)	Ground	Ground		Ignition switch ON		0 V	

Revision: 2011 November

BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value	
+	_	Signal name	Input/ Output	Condition		(Approx.)	
14 (B)	9 (W)	Sound signal front door woofer LH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E	
16 (SB)	17 (V)	Sound signal woofer	Output	Ignition switch ON	Sound output	(V) 1 0 -1 • + 2ms SKIB3609E	
18 (L)	19 (P)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E	
20 (W)	Ground	Amp. ON signal	Input	Ignition switch ACC	_	10.0 V	
21	—	Shield	_		—		
22 (GR)	Ground	Woofer Amp. ON signal	Output	Ignition switch ACC	_	10.0 V	
24 (V)	23 (SB)	Sound signal rear LH	Input	Ignition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E	
26 (BR)	25 (Y)	Sound signal rear RH	Input	Ignition switch ON	Sound output	(V) 1 0 -1 • • 2ms SKIB3609E	

BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

(Wire color)		Description		Condition		Reference value	
+	_	Signal name	Input/ Output	Contaition		(Approx.)	
29 (L)	30 (BG)	Sound signal center speak- er	Output	Ignition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E	B C D
31 (LG)	32 (Y)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	E
33 (R)	34 (G)	Sound signal front RH	Input	Ignition switch ON	Sound output	(V) 1 0 -1 * 2ms SKIB3609E	G
35 (P)	36 (L)	Sound signal front LH	Input	Ignition switch ON	Sound output	(V) 1 0 -1 + 2ms SKIB3609E	J K
37 (SB)	Ground	Mode change signal	Input	Ignition switch	Driver's Audio Stage ON	0 V	
(00)				ON	Univer's Audio Stage OFF	8.5 V	_

M

AV

0

Ρ

WIRING DIAGRAM BOSE AUDIO WITH NAVIGATION

Wiring Diagram

INFOID:000000006210540

NOTE:

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



< WIRING DIAGRAM >

BOSE AUDIO WITH NAVIGATION

[BOSE

[BOSE AUDIO WITH NAVIGATION]



Revision: 2011 November



< WIRING DIAGRAM >

Mith A/T




JCNWM5270GB

[BOSE AUDIO WITH NAVIGATION]



JCNWM5271GB



JCNWM5272GB

Signal Name [Specification]

2 1

< WIRING DIAGRAM >



JCNWM5273GB



JCNWM5274GB

C

倨



JCNWM5275GB

Ρ

Ο

А

В

С

D

Ε

F

G

Н

J

Κ

L

Μ



JCNWM5276GB

[BOSE AUDIO WITH NAVIGATION]



BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >



JCNWM5278GB

[BOSE AUDIO WITH NAVIGATION]



JCNWM5279GB



JCNWM5280GB

BOSE AUDIO WITH NAVIGATION

[BOSE AUDIO WITH NAVIGATION]

E



[BOSE AUDIO WITH NAVIGATION]



JCNWM5281GB



JCNWM5282GB



BOSE AUDIO WITH NAVIGATION

[BOSE AUDIO WITH NAVIGATION]

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000006210541

OVERALL SEQUENCE



- Reference 1... Refer to AV-378. "CONSULT III Function".
- Reference 2... Refer to <u>AV-387, "DTC Index"</u>.
- Reference 3... Refer to <u>AV-467, "Symptom Table"</u>.

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-III

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >	[BOSE AUDIO WITH NAVIGATION]
1. Connect CONSULT-III and perform a self-diagnosis for "MULTI <u>Function"</u> . NOTE:	AV". Refer to <u>AV-378, "CONSULT - III</u> A
Skip to step 4 of the diagnosis procedure if "MULTI AV" is not displayed in the "Self-Diagnosis Results"	blayed.
Is DTC displayed?	В
YES >> GO TO 3. NO >> GO TO 4.	C
3. TROUBLE DIAGNOSIS FOR DTC	
 Check the DTC indicated in the "Self-Diagnosis Results". Perform the relevant diagnosis referring to the DTC Index. Refer 	to <u>AV-387, "DTC Index"</u> .
>> GO TO 5.	
4. TROUBLE DIAGNOSIS FOR SYMPTOMS	E
Perform the relevant diagnosis referring to the diagnosis chart by	symptom. Refer to AV-467, "Symptom
Table".	F
>> GO TO 5.	
5. ERROR PART REPAIR	G
1. Repair or replace the identified malfunctioning parts.	
2. Perform a self-diagnosis for "MULTI AV" with CONSULT-III.	Н
Erase the stored self-diagnosis results after repairing or replaci	ng the relevant components if any DTC
has been indicated in the "Self-Diagnosis Results".	5
3. Check that the symptom does not occur.	I
YES $>>$ GO TO 1.	
NO >> INSPECTION END	J
	K
	1 X

Μ

L

AV

0

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT) < BASIC INSPECTION > [BOSE AUDIO WITH NAVIGATION]

ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

Description

INFOID:000000006210542

BEFORE REPLACEMENT

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

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform "WRITE CONFIGURATION" with CONSULT-III.

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

Work Procedure

INFOID:000000006210543

1.SAVING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>AV-415</u>, "<u>Descrip-</u><u>tion</u>".

NOTE:

If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection".

>> GO TO 2.

2.REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-477, "Exploded View".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT-III Configuration
 Perform "WRITE CONFIGURATION - Config file" or "WRITE CONFIGURATION - Manual selection" to write
 vehicle specification. Refer to <u>AV-415, "Work Procedure"</u>.

>> 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) [BOSE AUDIO WITH NAVIGATION]

< BASIC INSPECTION >

CONFIGURATION (AV CONTROL UNIT)

Description

- A) (construct unit often real-construct it is required to units

INFOID:000000006210544

А

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

Function	Description	С
READ CONFIGURATION	Reads the vehicle configuration of current AV control unit.Saves the read vehicle configuration.	
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.	D
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.	-

Work Procedure

INFOID:000000006210545

NOTE: If "WRITE CONFIGURATION" is unsuccessful, perform "Accessory Number Initialization". For details, refer to	F			
<u>.V-366, "On Board Diagnosis Function"</u> . .fter performing "Accessory Number Initialization", reboot the AV control unit to perform "WRITE CONFIGL RATION".				
1.WRITING MODE SELECTION	G			
CONSULT-III Configuration Select "CONFIGURATION" of "MULTI AV".	Н			
When writing saved data>>GO TO 2. When writing manually>>GO TO 3.	I			
2. PERFORM "WRITE CONFIGURATION-CONFIG FILE"				
CONSULT-III Configuration Perform "WRITE CONFIGURATION-Config file".	J			
>> WORK END	K			
3. PERFORM "WRITE CONFIGURATION-MANUAL SELECTION"				
CONSULT-III Configuration Select "WRITE CONFIGURATION-Manual selection" to write vehicle specifications into the AV control unit. For data to write, refer to <u>AV-415</u> , "Configuration List".	L			
>> GO TO 4.	M			
4. OPERATION CHECK				
Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.	AV			
>> WORK END	0			
Configuration List				
CAUTION: Check vehicle specifications before servicing.	Ρ			

< BASIC INSPECTION >

MANUAL SE	NOTE	
Items	Setting value	NOTE
STEEDING	LHD	_
STEEKING	RHD	_
GRADE	MODE 1	SPORT premium grade with 4WAS
	MODE 3	SPORT premium grade 2WD models without 4WAS
	MODE 2	Except for above
AWAS	WITHOUT	_
41170	WITH	_
	BASE	_
SCORE STOLEM	BOSE	—

DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

INFOID:000000006210547 B

INFOID:000000006210548

INFOID:000000006210549

А

Е

Н

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.

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	DTC detection condition	Probable malfunction location	F
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.	0

Diagnosis Procedure

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 system". Refer to LAN-17, "Trouble Diagnosis Flow Chart".

NO >> Refer to GI section. Refer to <u>GI-43, "Intermittent Incident"</u>.

Μ

Κ

L

AV

0

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:000000006210550

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	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 <u>AV-477, "Exploded View"</u> .

U1200 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1200 AV CONTROL UNIT

DTC Logic

DTC

U1200

INFOID:000000006210551

Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the mal- function occurs constantly. Refer to <u>AV-477, "Exploded View"</u> .

А

U1201 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1201 AV CONTROL UNIT

[BOSE AUDIO WITH NAVIGATION]

INFOID:000000006210552

D	ГС	Logic
	_	- 3 -

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1201	GYRO NO CONN [U1201]	AV control unit malfunction is detected.	Replace the AV control unit if the mal- function occurs constantly. Refer to <u>AV-477, "Exploded View"</u> .

U1202 AV CONTROL UNIT [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U1202 AV CONTROL UNIT

Display contents of

CONSULT-III

G-SENSOR NO CONN

[U1202]

DTC Logic

DTC

U1202

INFOID:000000006210553

DTC detection condition	Possible malfunction factor	
AV control unit malfunction is detected.	Replace the AV control unit if the mal- function occurs constantly. Refer to <u>AV-477, "Exploded View"</u> .	

А

< DTC/CIRCUIT DIAGNOSIS >

U1204 AV CONTROL UNIT

Description

INFOID:000000006210554

[BOSE AUDIO WITH NAVIGATION]

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 <u>AV-477</u>. "<u>Exploded View</u>".

DTC Logic

INFOID:000000006210555

DTC	Display contents of CONSULT-III	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 <u>AV-477, "Explod- ed View"</u> .

Diagnosis Procedure

INFOID:000000006210556

1.PERFORM THE SELF-DIAGNOSIS

- 1. Delete the "Self-Diagnosis 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 <u>AV-477, "Exploded View"</u>.
- NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

< DTC/CIRCUIT DIAGNOSIS >

U1205 AV CONTROL UNIT

Description

INFOID:000000006210557

А

[BOSE AUDIO WITH NAVIGATION]

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 <u>AV-477</u>. "<u>Exploded View</u>".

DTC Logic

INFOID:00000006210558

INFOID:000000006210559

DTC	Display contents of CONSULT-III	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 <u>AV-477</u> , "Explod- ed View".	Ē

Diagnosis Procedure

1.PERFORM THE SELF-DIAGNOSIS

- 1. Delete the "Self-Diagnosis 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 <u>AV-477, "Exploded View"</u>.
- NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

J

Н

Κ

L

M

AV

 \sim

< DTC/CIRCUIT DIAGNOSIS >

U1206 AV CONTROL UNIT

Description

INFOID:000000006210560

[BOSE AUDIO WITH NAVIGATION]

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 <u>AV-477</u>. "<u>Exploded View</u>".

DTC Logic

INFOID:000000006210561

DTC	Display contents of CONSULT-III	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 <u>AV-477, "Explod- ed View"</u> .

Diagnosis Procedure

INFOID:000000006210562

1.PERFORM THE SELF-DIAGNOSIS

- 1. Delete the "Self-Diagnosis 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 <u>AV-477, "Exploded View"</u>.
- NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1207 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1207 AV CONTROL UNIT

Description

INFOID:000000006210563

А

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 <u>AV-477</u>. "<u>Exploded View</u>".

DTC Logic

INFOID:000000006210564

INFOID:000000006210565

DTC	Display contents of CONSULT-III	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 <u>AV-477</u> , "Explod- ed View".	E

Diagnosis Procedure

1.PERFORM THE SELF-DIAGNOSIS

- 1. Delete the "Self-Diagnosis 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 <u>AV-477</u>, "Exploded View".
- NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

J

Н

Κ

Μ

AV

P

2011 G Sedan

U1216 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1216 AV CONTROL UNIT

[BOSE AUDIO WITH NAVIGATION]

DTC Logic

INFOID:000000006210566

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the mal- function occurs constantly. Refer to <u>AV-477, "Exploded View"</u> .

U1217 AV CONTROL UNIT [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U1217 AV CONTROL UNIT

Display contents of

CONSULT-III

BLUETOOTH MODULE

[U1217]

DTC Logic

DTC

U1217

INFOID:000000006210567

DTC detection condition	Possible malfunction factor
AV control unit malfunction is detected.	place the AV control unit if the mal- ction occurs constantly. fer to <u>AV-477, "Exploded View"</u> .

A

U1218 AV CONTROL UNIT [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U1218 AV CONTROL UNIT

DTC Logic

INFOID:000000006210568

DTC	Display contents of CONSULT-III	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 <u>AV-477</u>, "Exploded View".

Diagnosis Procedure

INFOID:000000006210569

1. CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

U1219 AV CONTROL UNIT [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U1219 AV CONTROL UNIT

DTC Logic

А

DTC	Display contents of CONSULT-III	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 <u>AV-477</u>, "Exploded View".
Diagn	osis Procedure		INFOID:0000000621057
1.сне	CK MUSIC BOX FUN	ICTION	
	box function normal	0	
YES NO	>> Malfunction may >> Replace AV cont	<u>.</u> be detected transitory. rol unit. Refer to <u>AV-477, "Exploded View"</u> .	

Ρ

Ο

U121A AV CONTROL UNIT [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U121A AV CONTROL UNIT

DTC Logic

INFOID:000000006210572

DTC	Display contents of CONSULT-III	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 <u>AV-477</u>, "Exploded View".

Diagnosis Procedure

INFOID:000000006210573

1. CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

U121B AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U121B AV CONTROL UNIT

DTC Logic

INFOID:000000006210574

А

	-		
DTC	Display contents of CONSULT-III	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 <u>AV-477</u>, "Exploded View".
Diagn	osis Procedure		INFOID:000000006210575
1. CHE	CK MUSIC BOX FUN	ICTION	
s music	c box function normal	?	
YES NO	>> Malfunction may >> Replace AV cont	be detected transitory. rol unit. Refer to <u>AV-477, "Exploded View"</u> .	

Р

Ο

U121C AV CONTROL UNIT [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U121C AV CONTROL UNIT

DTC Logic

INFOID:000000006210576

DTC	Display contents of CONSULT-III	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 <u>AV-477</u>, "Exploded View".

Diagnosis Procedure

INFOID:000000006210577

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.
U121D AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U121D AV CONTROL UNIT

DTC Logic

INFOID:000000006210578

А

F

Н

J

Κ

[BOSE AUDIO WITH NAVIGATION]

				B
DTC	Display contents of CONSULT-III	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 <u>AV-477</u>, "Exploded View". 	C
Diagn	osis Procedure		INF01D:00000006210579	_
1. CHE	CK PLAYBACK OF A	DISK (CD)		E

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

Μ

AV

0

U121E AV CONTROL UNIT [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U121E AV CONTROL UNIT

DTC Logic

INFOID:000000006210580

INFOID:000000006210581

DTC	Display contents of CONSULT-III	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 <u>AV-477</u>, "Exploded View".

Diagnosis Procedure

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.

>> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>. NO

U1225 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1225 AV CONTROL UNIT

DTC Logic

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	DTC detection condition	Possible malfunction factor	С
U1225	USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB con- nector is normal.	

Μ

0

Ρ

[BOSE AUDIO WITH NAVIGATION]

INFOID:000000006210582

А

В

D

Е

F

G

Н

J

Κ

L

U1227 AV CONTROL UNIT [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U1227 AV CONTROL UNIT

DTC Logic

INFOID:000000006210583

INFOID:000000006210584

DTC	Display contents of CONSULT-III	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 <u>AV-477, "Exploded View"</u>.

Diagnosis Procedure

1.CHECK PLAYBACK OF A DISK (DVD)

Can a disc (DVD) be played?

YES >> Malfunction may be detected transitory.

>> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>. NO

U1228 AV CONTROL UNIT [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U1228 AV CONTROL UNIT

DTC Logic

INFOID:000000006210585

А

В

Е

F

G

Н

J

Κ

L

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	DTC detection condition	Possible malfunction factor	С
U1228	SUB CPU CONN [U1228]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to <u>AV-477, "Exploded View"</u> .	D

AV

Μ

0

Ρ

U1229 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1229 AV CONTROL UNIT

DTC Logic

INFOID:000000006210586

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	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 <u>AV-477, "Exploded View"</u> .

U122A AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U122A AV CONTROL UNIT

DTC Logic

INFOID:000000006210587

DTC	Display contents of	DTC detection condition	Action to take
U122A	CONSULT-III CONFIG UNFINISH	The writing of configuration data is incomplete.	Write configuration data with "MULTI
Jiago			AV" of CONSULT-III.
Jagni			INFOID:0000000621058
I.PER	FORM THE SELF-DI	AGNOSIS	
vnen U	1122A IS detected, wri	te configuration data with "MULTI AV" of CON	NSULT-III.
	>> Write configuration	on data with "MULTI AV" of CONSULT-III. Ref	er to <u>AV-414, "Description"</u> .

А

U122E AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U122E AV CONTROL UNIT

DTC Logic

INFOID:000000006210589

DTC DETECTION LOGIC

DTC	Display contents of CON- SULT-III	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 <u>AV-477, "Exploded View"</u> .

U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

U1232 STEERING ANGLE SENSOR

DTC Logic

DTC	Display contents of CONSULT-III	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 cen- ter position of the steering angle sen- sor.

Diagnosis Procedure

INFOID:000000006210591

INFOID:000000006210590

1. 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 <u>BRC-8, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION :</u> <u>Special Repair Requirement"</u> .	F
	G
	Н
	I
	J
	K
	L
	M
	AV

Ο

[BOSE AUDIO WITH NAVIGATION]

А

В

С

U1243 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1243 DISPLAY UNIT

DTC Logic

INFOID:000000006210592

[BOSE AUDIO WITH NAVIGATION]

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	 When either one of the following items is detected: display unit power supply and ground circuit are mal- functioning. communication circuit between AV control unit and dis- play unit are malfunctioning. 	 Display unit power supply and ground circuit. Communication circuit between AV control unit and display unit.

Diagnosis Procedure

INFOID:000000006210593

1. CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to <u>AV-451, "DISPLAY UNIT : Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

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.

Displ	av unit	AV control unit			
Display unit				Continuity	
Connector	Terminals	Connector Terminals			
M75	9	M210	89	Existed	
1017 5	10	IVIZ I U	73	LAISted	

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

Display unit			Continuity
Connector	Terminals	Ground	Continuity
9		Olouna	Not existed
1017 5	10		NOT EXISTED

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.

U1243 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

(+)				Α
Displ	ay unit	(-)	Condition	Reference value	
Connector	Terminal				P
M75	9	Ground	When adjusting display bright- ness.	(V) 6 4 7 0 0 0 0 0 0 0 0 0 0 0 0 0	C

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+ Displa	+)	(-)	Condition	Reference value
Disple		(-)	Condition	Reference value
Connector	Terminal			
M75	10	Ground	When adjusting display bright- ness.	$(V) \\ 6 \\ 4 \\ 2 \\ 0 \\ 0 \\ \bullet \bullet \bullet 1 ms$

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace display unit. Refer to <u>AV-479, "Exploded View"</u>.

Μ

L

Κ

Е

F

AV

0

Ρ

U1244 GPS ANTENNA [BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

U1244 GPS ANTENNA

DTC Logic

INFOID:000000006210594

INFOID:000000006210595

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS an- tenna connector.

Diagnosis Procedure

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. Disconnect GPS antenna connector.

2. Turn ignition switch ON.

3. 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 <u>AV-477, "Exploded View"</u>.

U1258 SATELLITE RADIO ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

U1258 SATELLITE RADIO ANTENNA

DTC Logic

DTC	Display contents of CONSULT-III	DTC	Detection Condition	Possible causes
U1258	XM ANTENNA CONN [U1258]	Satellite radio anten ed.	na connection malfunction is detect-	Satellite radio antenna disconnection.
Diagno	osis Procedure			INFOID:00000006210597
1.SATI	ELLITE RADIO ANTE	NNA CHECK		
/isually <u>s the in</u> YES	check satellite radio spection result norma >> GO TO 2.	antenna (antenna al?	base) and antenna feeder.	
NO 2.CHE	>> Repair malfuncti CK AV CONTROL UI	oning parts. NIT VOLTAGE		
. Disc 2. Turi 3. Che	connect satellite radio n ignition switch ON. eck voltage between a	o antenna connect	or. d ground.	
	(+)		Voltage	
A	V control unit	()	(Approx.)	
	159	Ground	5.0 V	
s the in	spection result norma	al?		
YES NO	>> INSPECTION EI >> Replace AV cont	ND rol unit. Refer to <u>A</u>	V-477. "Exploded View".	

Μ

Ο

Р

[BOSE AUDIO WITH NAVIGATION]

А

< DTC/CIRCUIT DIAGNOSIS >

U1263 USB

DTC Logic

INFOID:000000006210598

[BOSE AUDIO WITH NAVIGATION]

DTC	Display contents of CONSULT-III	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:000000006210599

1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

YES >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

NO >> Replace USB harness.

U1264 ANTENNA AMP.

< DTC/CIRCUIT DIAGNOSIS >

U1264 ANTENNA AMP.

DTC Logic

INFOID:000000006210600

DTC	Display CON	SULT-III	DTC detection condition		condition	Possible malfunction factor
U1264	ANTENNA MINAL [OPEN or \$ [U1264]	A AMP TER-	Radio antenna amp. ON circuit is open or shorted.		Check antenna amp. ON signal circuit between the AV control unit and an- tenna amp.	
Diagno	osis Pro	ocedure				INFOID:0000000621060
.CHE	CK CONT		ETWEEN AV	CONTROL UN	IT AND ANTENNA	AMP.
. Turi 2. Dise 3. Che	n ignition s connect ar eck continu	switch OFF ntenna am uity betwee	<u>-</u> p. connector a en AV control	and AV control unit harness c	unit connector. onnector and antenna	a amp. harness connector.
	AV control u	unit	Antenr	na amp	Continuity	
Conne	ector 7	Terminals	Connector	Terminals	Continuity	
M31	71	152	M378	1	Existed	
. Che	eck continu	uity betwee	en AV control	unit harness c	onnector and ground.	
Conne	AV control u	uity betwee unit Terminals	en AV control	unit harness c	onnector and ground. Continuity	
Conne	AV control u actor 1 71	uity betwee unit Terminals 152	en AV control	unit harness c	onnector and ground. Continuity Not existed	
4. Che Conne <u>S the in</u> YES NO 2.CHE . Cor 2. Tur	AV control u ector 1 71 spection r >> GO T >> Repai CK VOLTA nnect AV c n ignition s	uity betwee unit Terminals 152 result norm TO 2. air harness AGE AV Co control unit switch ON	en AV control Gro al? or connector. ONTROL UNI connector.	unit harness c	onnector and ground. Continuity Not existed	
A. Che Conne M3 S the in YES NO 2.CHE I. Cor 2. Che 3. Che	AV control u ector 1 71 spection r >> GO T >> Repai CK VOLTA nnect AV c n ignition s eck voltage	uity betwee unit Terminals 152 result norm O 2. air harness AGE AV C control unit switch ON e between	en AV control Gro al? or connector. ONTROL UNI connector. AV control un	unit harness con	onnector and ground. Continuity Not existed	
4. Che Conne M3 s the in YES NO 2.CHE 1. Cor 2. Turi 3. Che	AV control u ector 1 71 spection r >> GO T >> Repai CK VOLTA nect AV c n ignition s eck voltage	uity between unit Terminals 152 result norm TO 2. air harness AGE AV Co control unit switch ON e between unit	en AV control Gro al? or connector. ONTROL UNI connector. AV control un	unit harness co bund T -)	nector and ground.	
4. Che Conne M3 <u>s the in</u> YES NO 2.CHE 1. Cor 2. Tur 3. Che Conne	AV control u ector 1 71 spection r >> GO T >> Repai CK VOLTA nect AV c n ignition s eck voltage AV control u	uity betwee unit Terminals 152 result norm TO 2. air harness AGE AV C control unit switch ON e between unit Terminals	en AV control Gro al? or connector. ONTROL UNI connector. AV control un	unit harness c	onnector and ground. Continuity Not existed nector and ground. Voltage (Approx.)	

Ο

А

< DTC/CIRCUIT DIAGNOSIS >

U1265 BOSE AMP.

DTC Logic

INFOID:000000006210602

[BOSE AUDIO WITH NAVIGATION]

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1265	AMP ON TERMINAL [GND-SHORT or VB- SHORT] [U1265]	BOSE amp. ON circuit is open or shorted.	Check BOSE amp. ON signal circuit between the AV control unit and BOSE amp.

Diagnosis Procedure

INFOID:000000006210603

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND BOSE AMP.

- 1. Turn ignition switch OFF.
- 2. Disconnect BOSE amp. connector and AV control unit 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	Continuity
M208	1	B41	20	Existed

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

AV control unit			Continuity
Connector	Terminals	Ground	Continuity
M208	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.

(AV cor	+) ntrol unit	()	Voltage (Approx.)
Connector	Terminals		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
M208	1	Ground	10.0 V

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to <u>AV-486, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

< DTC/CIRCUIT DIAGNOSIS >

U1300 AV COMM CIRCUIT

Description

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-III	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 U125C	 AV COMM CIRCUIT [U1300] SONAR CONN [U125C] 	 When either one of the following items are detected: sonar control unit power supply and ground circuits are malfunctioning. AV communication circuits between AV control unit and sonar control unit are malfunctioning. 	 Sonar control unit power supply and ground circuits. AV communication circuits between AV control unit and sonar control unit.
U1300 U1240 U125C	 AV COMM CIRCUIT [U1300] SWITCH CONN [U1240] SONAR CONN [U125C] 	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

L

J

Κ

AV

0

Ρ

В

С

А

U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

U1310 AV CONTROL UNIT

[BOSE AUDIO WITH NAVIGATION]

DTC Logic

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace AV control unit. If the mal- function occurs constantly. Refer to <u>AV-477, "Exploded View"</u> .

< DTC/CIRCUIT DIAGNOSIS > [BOSE AUDIO WITH NAVIGAT POWER SUPPLY AND GROUND CIRCUIT AV CONTROL UNIT	
POWER SUPPLY AND GROUND CIRCUIT AV CONTROL UNIT	ION]
AV CONTROL UNIT	
AV CONTROL UNIT : Diagnosis Procedure	006210606
1.CHECK FUSE	
Check for blown fuses.	
Power source Fuse No.	
Battery 34	
Ignition switch ACC or ON 19	
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 M208 19 OFF Battery voltage	Э
ACC power supply M208 7 ACC Battery voltage	Э
 Turn ignition switch OFF. Disconnect AV control unit connectors. Check continuity between AV control unit harness connectors and ground. 	
Signal name Connector No. Terminal No. Ignition switch position Continuity	
Ground M208 20 OFF Existed	
Is the inspection result normal? YES >> INSPECTION END NO >> Repair harness or connector. DISPLAY UNIT DISPLAY UNIT : Diagnosis Procedure	006210607
1.CHECK FUSE	/
1.CHECK FUSE Check for blown fuses.	
1.CHECK FUSE Check for blown fuses. Power source Fuse No.	
1.CHECK FUSE Check for blown fuses. Power source Fuse No. Battery 34	
1.CHECK FUSE Check for blown fuses. Power source Fuse No. Battery 34 Ignition switch ACC or ON 19	
1.CHECK FUSE Check for blown fuses. Power source Fuse No. Battery 34 Ignition switch ACC or ON 19 Is the inspection result normal? YES YES >> GO TO 2. NO >> Be sure to eliminate cause of malfunction before installing new fuse. 2.CHECK POWER SUPPLY CIRCUIT	

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M75	11	OFF	Battery voltage
ACC power supply	M75	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	M75	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector. BOSE AMP.

BOSE AMP. : Diagnosis Procedure

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	5, 8

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	B42	10, 11	OFF	Battery voltage

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	B42	7, 12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

Revision: 2011 November

RGB DIGITAL IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

RGB DIGITAL IMAGE SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

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.

Displa	ay unit	AV con	trol unit	Continuity
Connector	Terminals	Connector	Terminals	Continuity
M386	27	M385	157	Existed
101000	28	101000	158	LNSIEU

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

Displa	ay unit		Continuity
Connector	Terminals	Ground	Continuity
M386	27	Gibana	Not oxisted
101300	28		NOT EXISTED

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.

(+) Display unit		(-)	Condition	Voltage	1
Connector	Terminals			(Αρρισκ.)	
M296	27	Ground		1.2.1/	
101300	28	Giouna	_	1.5 V	M

Is the inspection result normal?

YES >> Replace display unit. Refer to <u>AV-479, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

Κ

А

В

D

INFOID:000000006210609

INFOID:000000006210610

0

Ρ

< DTC/CIRCUIT DIAGNOSIS >

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

AV control unit transmits the playback DVD image signal to the display unit.

Diagnosis Procedure

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 con	trol unit	Displa	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M210	68	M75	18	Existed

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

AV cor	ntrol unit		Continuity
Connector	Terminal	Ground	Continuity
M210	68		Not existed
		10	•

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					
M210	68	Ground	At DVD image is displayed.	(V) 0.4 0 -0.4 -0.4 -0.4 -0.4 -0.5 -0.4 -0.4 -0.4 -0.4 -0.5 -0.4 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	

Is the inspection result normal?

YES >> Replace display unit. Refer to <u>AV-479</u>, "Exploded View".

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

INFOID:000000006210611

DISK EJECT SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DISK EJECT SIGNAL CIRCUIT

Description

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

Diagnosis Procedure

INFOID:000000006210614

INFOID:000000006210613

А

В

С

F

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.

Multifund	Multifunction switch		AV con	trol unit	Continuity
Connector	Terminal	Terminal	Connector	Terminal	Continuity
M72	14	14	M209	29	Existed

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

Multifunct	ion switch			Continuity				
Connector	Terminal	Ground		Continuity				
M72	14			Not existed				
Is the inspection result normal?								
YES >> GO TO 2.								
NO >>	Repair harne	ess or connector.						
2.CHECK A	AV CONTRC	L UNIT VOLTAG	θE					
1. Connect	t multifunctio	n switch connec	tor and AV c	ontrol unit con	nector.			
 Turn ign Check v 	ition switch oltage betwo	ON. een AV control ur	nit harness o	connector and	ground.	J		
(·	+)							
AV con	trol unit	(-)	Co	Condition Voltage	Voltage	K		
Connector	Terminal				(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
M200	20	Ground	Pressing the	eject switch	0 V	L		
M209 29 Ground		Ground	Except for ab	ove	5.0 V			
Is the inspec	tion result n	ormal?						

YES >> Replace preset switch. Refer to <u>AV-490, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

Μ

 \cap

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

MODE CHANGE SIGNAL CIRCUIT

Description

- AV control unit transmits the mode change signal to BOSE amp.
- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.

Diagnosis Procedure

1. CHECK CONTINUITY MODE CHANGE SIGNAL CIRCUIT

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

AV cor	ntrol unit	BOSE	E amp.	Continuity
Connector	Terminal	Connector Terminal		Continuity
M209	30	B41	37	Existed

4. Check continuity between BOSE amp. harness connector and ground.

BOSE	amp.		Continuity	
Connector	Terminal	Ground	Continuity	
B41	37		Not existed	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK MODE CHANGE SIGNAL

1. Connect BOSE amp. connector and AV control unit connector.

2. Turn ignition switch ON.

3. Check voltage between BOSE amp. harness connector and ground.

(+) BOSE amp.		(-)	Condition	Voltage (Approx.)	
Connector	Terminal			() I I -)	
B/1	27	Ground	Driver's Audio Stage ON.	0 V	
D41	57	Giodila	Driver's Audio Stage OFF.	8.5 V	

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to <u>AV-486, "Exploded View"</u>.

NO >> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u>.

INFOID:000000006210615

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

MICROPHONE SIGNAL CIRCUIT

Description

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

Diagnosis Procedure

INFOID:000000006210618

INFOID:000000006210617

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 con	trol unit	Micro	phone	Continuity
Connector	Terminals	Connector	Terminals	Continuity
	71		2	
M210	72	R17	4	Existed
	87		1	

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

AV cor	trol unit		Continuity
Connector	Terminals	Ground	Continuity
M210	72	Cround	Not ovicted
M210	87		Not existed

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.

(+)	(-)			
AV cor	trol unit	AV control unit		AV control unit		Voltage (Approx.)
Connector	Terminal	Connector	Terminal			
M210	72	M210	71	5.0 V		

Is the inspection result normal?

(

YES	>> GO TO 3.	
NO	>> Replace AV control unit. Refer to <u>AV-477, "Exploded View"</u> .	
3.сне	CK MICROPHONE SIGNAL	

1. Connect microphone connector.

2. Check signal between AV control unit harness connector.

[BOSE AUDIO WITH NAVIGATION]

А

D

Н

Κ

Μ

AV

Ρ

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

(+)		(-	-)			
AV con	trol unit	t AV control unit		Condition	Reference value	
Connector	Terminal	Connector	Terminal			
M210	87	M210	71	Give a voice.	(V) 2.5 2.0 1.5 1.0 0.5 0 0 → + 2ms PKIB5037J	

Is the inspection result normal?

>> Replace AV control unit. Refer to <u>AV-477</u>, "<u>Exploded View</u>".
>> Replace microphone. Refer to <u>AV-493</u>, "<u>Exploded View</u>". YES

NO

CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

CAMERA IMAGE SIGNAL CIRCUIT

Description

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.

Diagnosis Procedure

1. CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

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

						E
AV cont	trol unit	Rear vie	w camera	Continuity		
Connector	Terminal	Connector	Terminal	Continuity		_
M209	22	B305	1	Existed		F
4. Check c	ontinuity bet	tween AV co	ntrol unit har	ness connector	and ground.	G
AV cont	trol unit				_	0
Connector	Terminal	Gro	ound	Continuity		
M209	22	-	-	Not existed		Н
Is inspection	result norm	al?			_	
YES >> 0 NO >> 1 2.CHECK V	GO TO 2. Repair harn /OLTAGE C.	ess or conne AMERA PO\	ector. WER SUPPL	Y		1
 Connect Turn ign Shift the Check ve 	AV control ition switch selector lev oltage betwe	unit connect ON. /er to "R". een AV conti	or and rear v	iew camera con ss connector an	nector. d around.	J
	5					K
(+	+)	-			Voltage	
AV cont	trol unit	(-)	Condit	tion	(Approx.)	L
Connector	Terminal					
M209	22	Ground	Shift position i	s "R".	6.0 V	Б. Л.
Is inspection	result norm	al?				IVI
YES >> 0 NO >> 1 3. CHECK 0	GO TO 3. Replace AV CONTINUIT`	control unit. Y CAMERA	IMAGE SIGN	IAL CIRCUIT		AV
 Turn igni Disconne Check ce 	ition switch ect display u ontinuity bet	OFF. unit connecto tween displa	or and rear vi y unit harnes	ew camera conr s connector and	nector. I rear view camera harness o	connector.

Displa	ay unit	Rear vie	w camera	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M75	8	B305	3	Existed	

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

Ρ

А

В

С

D

INFOID:000000006210619

CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Displa	ay unit		Continuity
Connector	Terminal	Ground	Continuity
M75	8		Not existed

Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4. CHECK CAMERA IMAGE SIGNAL

- 1. Connect display unit connector and rear view camera connector.
- 2. Turn ignition switch ON.
- 3. Shift the selector lever to "R".

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

(+) Display unit		(-)	Condition	Reference value
	Torrinda			
M75	8	Ground	At rear view camera im- age is displayed.	(V) 0.4 −0.4 ••40µs ski82251J

Is inspection result normal?

YES >> Replace display unit. Refer to <u>AV-479</u>, "Exploded View".

NO >> Replace rear view camera. Refer to <u>AV-496, "Exploded View"</u>.

STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT D	AGNOSIS >			[BOSE AUDIO WITH NAVIGATION]
STEERING S	WITCH S	IGNAL A C	CIRCUIT	
Description				INFOID:00000006210621
Transmits the steer	ng switch sig	nal to AV contro	ol unit.	E
Diagnosis Proc	edure			INFOID:00000006210622
1.CHECK STEER	NG SWITCH	SIGNAL A CIR	CUIT	(
 Disconnect AV Check continuit 	control unit co y between A\	onnector and sp ' control unit ha	biral cable connector arness connector ar	or. Id spiral cable harness connector.
AV control unit	Ś	piral cable	Continuity	
Connector Term	nal Connec	tor Terminal	Continuity	E
M208 6	M36	24	Existed	-
3. Check continuit	y between A\	control unit ha	arness connector ar	id ground.
AV control unit				- · · · · · · · · · · · · · · · · · · ·
Connector Term	nal	Ground	Continuity	
M208 6			Not existed	-
Is the inspection res	ult normal?			
NO >> Repair 2.CHECK SPIRAL Check spiral cable. Is the inspection res	harness or co CABLE sult normal?	nnector.		
NO >> Replac	s. e spiral cable.	Refer to SR-14	4. "Exploded View"	
3.CHECK AV CON	TROL UNIT	/OLTAGE		
 Connect AV con Turn ignition sw Check voltage 	ntrol unit conr itch ON. between AV c	ector and spira	al cable connector. ess connector.	ŀ
(+)		(-)		
AV control unit	A	control unit	Voltage (Approx.)	
Connector Term	nal Connec	tor Terminal		N
M208 6	M208	15	5.0 V	
Is the inspection res YES >> GO TO NO >> Replac 4.CHECK STEER 1. Turn ignition sw 2. Check steering	sult normal? 4. AV control u NG SWITCH ritch OFF. switch. Refer	nit. Refer to AV	/-477, "Exploded Vi	<u>ew"</u> .
Is the inspection res YES >> INSPEC NO >> Replac Component Ins	sult normal? CTION END e steering swi pection	tch. Refer to <u>S</u>	T-17, "Exploded Vie	₽₩".

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

AV-461

STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]



Between terminals 14 and 17	
ENTER switch ON	: 2003 – 2043 Ω
ແ∕ຊ໌ 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

-	
SOURCE	
MENU UP	
MENU DOWN	
((15	Approx.
ENTER	Approx. 1300Q
VOL DOWN	Approx
VOL UP	
- r	
- D	402Ω 17
'	JSNIA0112GB

STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRC	UIT DIAGN	IOSIS >			[BOSE AUDIO WITH NAVIGATION]
STEERIN	NG SWIT	CH SIG	NAL B C	IRCUIT	
Descriptio	n				r INFOID:00000006210624
Transmits the	e steering sv	witch signal t	o AV control	l unit.	F
Diagnosis	Procedu	re			INFOID:00000006210625
1.снеск в		SWITCH SIG	NAL B CIRC	CUIT	(
 Disconne Check ce 	ect AV contr ontinuity bet	ol unit conne ween AV co	ector and spi ntrol unit har	iral cable connector ness connector ar	r. Id spiral cable harness connector.
AV cont	trol unit	Spiral	cable	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M208	16	M36	31	Existed	
3. Check c	ontinuity bet	ween AV co	ntrol unit har	ness connector ar	id ground.
	trol unit				
Connector	Terminal	Gro	und	Continuity	
M208	16	0.0		Not existed	
Is the inspec	tion result n	ormal?			
NO >> I 2.CHECK S Check spiral Is the inspec YES >> 0	Repair harne PIRAL CAB cable. tion result ne GO TO 3.	ess or conne LE ormal?	ctor.		
NO >> I	Replace spir	al cable. Re	fer to <u>SR-14</u> TAGE	, "Exploded View".	
				cable connector	
 Connect Turn ign Check version 	ition switch (oltage betwe	ON. een AV contr	ol unit harne	ess connector.	r
(+	+)	(-	-)		
AV cont	trol unit	AV con	trol unit	Voltage	
Connector	Terminal	Connector	Terminal	(//pp/0x.)	Ν
M208	16	M208	15	5.0 V	
Is the inspectYES>> 0NO>> 14.CHECK S1. Turn igni2. Check si	tion result n GO TO 4. Replace AV TEERING S ition switch (teering switch	ormal? control unit. SWITCH OFF. ch. Refer to <u>/</u>	Refer to <u>AV-</u>	477, "Exploded Vi	<u>ew"</u> . (
Is the inspec YES >> I NO >> I Compone	tion result n INSPECTIO Replace stee nt Inspect	o <u>rmal?</u> N END ering switch. t iON	Refer to <u>ST</u>	-17, "Exploded Vie	₽ <mark>₩"</mark> . INF0ID:00000006210626

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

AV-463

STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]



Between terminals 14 and 17	
ENTER switch ON	: 2003 – 2043 Ω
ແ∕ຊ 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
Switch ON	: 318 – 324 Ω : 120 – 122 Ω

SOURCE	Approx.
MENU UP	
MENU DOWN	
(1)	-
ENTER	$\square \stackrel{\text{Approx.}}{=} \frac{3}{1300\Omega}$
VOL DOWN	Approx
VOL UP	
(
5	$\square \leq 402\Omega _{17}$
	JSNIA0112GB

STEERING SWITCH GROUND CIRCUIT [BOSE AUDIO WITH NAVIGATION]

<	D	TC/C	CIRCU	IT DIA	AGNOS	SIS >	

STEERING SWITCH GROUND CIRCUIT

Descriptio	n				H	
Transmits the	e steering sv	witch signal t	o AV control	l unit.	F	
Diagnosis						
		SWITCH SIG	NAL GROU		C	
				iral cable connector		
2. Check co	ontinuity bet	ween AV co	ntrol unit har	ness connector and spiral cable	harness connector.	
AV cont	rol unit	Spiral	cable			
Connector	Terminal	Connector	Terminal	Continuity	F	
M208	15	M36	33	Existed	L	
3. Connect	AV control	unit connecte	or.			
Is the inspect	<u>tion result n</u>	ormal?			F	
YES >> (GO TO 2.					
NO >> H	Repair harne	ess or conne	ctor.		G	
Z.CHECK S	PIRAL CAE	SLE				
Check spiral	cable.	10				
Is the inspect	tion result n	ormal?			H	
NO >> F	Replace spir	al cable. Re	fer to SR-14	. "Exploded View".		
3.CHECK G	ROUND CI	RCUIT		·		
1 Connect	AV control	unit connecto)r			
2. Check co	ontinuity bet	ween AV co	ntrol unit har	mess connector and ground.		
					J	
AV cont	rol unit			Continuity		
Connector	Terminal	Gro	und		K	
M208	15			Existed		
Is the inspect	<u>tion result n</u>	ormal?				
YES >> (NO >> F	JO IO 4. Replace AV	control unit	Refer to AV-	477 "Exploded View"	L	
4 CHECKS		SWITCH				
	tion owitch				N	
2. Check st	eering swite	ch. Refer to <u>/</u>	AV-465, "Cor	mponent Inspection".		
Is the inspect	tion result n	ormal?		· · · · ·		
YES >> I	NSPECTIO	NEND			AV	
NO >> F	Replace ste	ering switch.	Refer to ST	-17, "Exploded View"		
Componer	nt Inspec	tion			INFOID:00000006210629	

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

Ρ

STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]



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

-		
ſ	SOURCE	
	MENU UP	
	MENU DOWN	
		Approx.
	ENTER (Approx.
	VOL DOWN	
	VOL UP	Approx.
	C	Approx.
	•	Approx.
		JSNIA0112GB

< SYMPTOM DIAGNOSIS > SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:000000006210630

А

L

Μ

[BOSE AUDIO WITH NAVIGATION]

RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
	 All switches cannot be operated. "MULTI AV" is displayed on system selection screen when the CON-SULT-III is started. 	 Multifunction switch power supply and ground circuit malfunction. AV communication circuit between AV control unit and multifunction switch. Perform CONSULT-III self-diagnosis. Refer to <u>AV-378. "CONSULT - III Function"</u>.
Multifunction switch and preset switch operation does not work.	 All switches cannot be operated. "MULTI AV" is not displayed on system selection screen when the CON-SULT-III is initialized. 	AV control unit power supply and ground circuit malfunc- tion. Refer to <u>AV-451, "AV CONTROL UNIT : Diagnosis</u> <u>Procedure"</u> .
	Only specified switch cannot be operat- ed.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-di- agnosis function. Refer to <u>AV-366. "On Board Diagnosis</u> <u>Function"</u> .
Fuel economy display, vehicle se ting operation is abnormal.	There is malfunction in the CONSULT- III "self-diagnosis result" of "MULTI AV". Refer to <u>AV-378. "CONSULT - III Func-</u> tion".	Perform detected DTC diagnosis. Refer to <u>AV-387, "DTC Index"</u> .
	There is no malfunction in the CON- SULT-III "self-diagnosis results" of "MULTI AV". Refer to <u>AV-378, "CONSULT - III Func-</u> tion".	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 <u>AV-477, "Exploded</u> <u>View"</u> .

RELATED TO HANDS-FREE PHONE

Simple Check for Bluetooth[™] Communication

If cellular phone and AV control unit cannot be connected with Bluetooth[™] communication, following procedure allows the technician to judge which device has malfunction.

- 1. Turn ON cellular phone, not connecting Bluetooth[™] communication.
- 2. Start CONSULT-III, then start Windows[®].
- 3. Set CONSULT-III near a cellular phone.
- When operated Bluetooth[™] registration by cellular phone, check if CONSULT-III^{*} would be displayed on the device name. (If other Bluetooth[™] device is located near cellular phone, a name of the device would be displayed also.)
 NOTE:

*:Displayed device name is "NISSAN-*******.".

- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal. Perform diagnosis as per the following table.



< SYMPTOM DIAGNOSIS >

MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITH NAVIGATION]

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (no connec- tion is displayed on the display at the guide.)	Repeat the registration of cellular phone.	AV control unit malfunction. Replace AV control unit. Refer to <u>AV-477, "Exploded</u> <u>View"</u> .
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 In- spection & 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 <u>AV-457, "Diagnosis Procedure"</u> .
The system cannot be operat- ed.	Steering switch's "VOL UP", "VOL DOWN", " ` '' switch works, but " '' it does not work.	Steering switch malfunction. Replace steering switch. Refer to <u>AV-491, "Exploded</u> <u>View"</u> .
	Steering switch's " ," "VOL UP", "VOL DOWN", " Switches do not work.	Steering switch signal B circuit malfunction. Refer to <u>AV-463, "Diagnosis Procedure"</u> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <u>AV-465</u> , "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 <u>AV-453</u> , "Diagnosis Procedure".

RELATED TO VOICE CONTROL

Symptoms	Check items	Probable malfunction location
The voice cannot be controlled	Voice sounds at "Voice Microphone Test" of Confirmation/Adjustment mode.	AV control unit malfunction. Replace AV control unit. Refer to <u>AV-477, "Exploded</u> <u>View"</u> .
is displayed.	Voice does not sound at "Voice Micro- phone Test" of Confirmation/Adjustment mode.	Microphone circuit malfunction. Refer to <u>AV-457, "Diagnosis Procedure"</u> .
	Steering switch's "SOURCE", "MENU UP", "MENU DOWN", "ENTER" switch works, but "v5" it does not work.	Steering switch malfunction. Replace steering switch. Refer to <u>AV-491. "Exploded</u> <u>View"</u> .
Voice control screen is not displayed).	Steering switch's "SOURCE", "MENU UP", "MENU DOWN", "v√∑", "ENTER" switches do not work.	Steering switch signal A circuit malfunction. Refer to <u>AV-461, "Diagnosis Procedure"</u> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <u>AV-465</u> , "Diagnosis Procedure".

RELATED TO AUDIO
MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	_	Disk eject signal circuit malfunction. Refer to <u>AV-455, "Diagnosis Procedure"</u> .
	No sound from all speakers.	 Amp. ON signal circuit malfunction. BOSE amp. power supply and ground circuits malfunction. Refer to <u>AV-452, "BOSE AMP. : Diagnosis Procedure"</u>.
Audio sound is not heard.	Sound is not heard from woofer.	 Woofer power supply and ground circuit malfunction. Sound signal (rear woofer) circuit malfunction. Woofer amp. ON signal circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.
It does not change to "Driver's Audio Stage" mode.	_	Mode change signal circuit malfunction. Refer to <u>AV-456, "Diagnosis Procedure"</u> .
Satellite radio is not received.	There is malfunction in the CONSULT-III self-diagnosis result. Refer to <u>AV-378, "CONSULT - III Func-tion"</u> .	Perform detected DTC diagnosis. Refer to <u>AV-387, "DTC Index"</u> .
	There is no malfunction in the CON- SULT-III self-diagnosis result. Refer to <u>AV-378, "CONSULT - III Func-</u> tion".	 Perform the following inspection procedure. 1. Check satellite radio antenna mounting nut for looseness. NOTE: Tightening torque: 6.5 N-m (0.66 kg-m, 58 in-lb) 2. Visually check for satellite radio antenna feeder.
AM/FM radio is not received.	Other audio sounds are normal.	Antenna amp. ON signal circuit malfunction.Antenna feeder malfunction.

RELATED TO DVD MODE

Symptoms	Check items	Probable malfunction location	
The disk cannot be removed.	_	Disk eject signal circuit malfunction. Refer to <u>AV-455</u> , "Diagnosis Procedure".	J
DVD image is not displayed.		 Perform CONSULT-III self-diagnosis. Refer to <u>AV-378</u>, <u>"CONSULT - III Function"</u>. When detecting no malfunction in those components, the following items are a possible cause. Composite image signal circuits malfunction. Refer to <u>AV-454</u>, "<u>Diagnosis Procedure</u>". 	K
DVD sound is not heard.	No sound from all speakers.	 Amp. ON signal circuit malfunction. BOSE amp. power supply and ground circuits malfunction. Refer to <u>AV-452</u>, "<u>BOSE AMP.</u>: <u>Diagnosis Procedure</u>". 	M
	Sound is not heard from rear woofer.	 Woofer power supply and ground circuit malfunction. Sound signal (rear woofer) circuit malfunction. Woofer amp. ON signal circuit malfunction. 	AV
	Sound is heard only from specific places.	Sound signals circuit of suspect system.	

RELATED TO CAMERA

Trouble Diagnosis Chart by Symptom

Symptoms	Check items	Probable malfunction location	Р
Camera image is not shown. (Vehicle width and predictive course line are displayed.)	_	Camera image signal circuit. Refer to <u>AV-459, "Diagnosis Procedure"</u> .	

Revision: 2011 November

Ο

MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptoms	Check items	Probable malfunction location
Camora imago doos pot switch	Select "Camera Cont." of Confirmation/ Adjustment mode, Reverse Sensor is not turned ON at "Connection Confirmation".	Reverse signal circuit malfunction.
Camera image does not switch.	Select "Camera Cont." of Confirmation/ Adjustment mode, Reverse Sensor is turned ON at "Connection Confirmation".	AV control unit malfunction. Replace AV control unit. Refer to <u>AV-477, "Exploded</u> <u>View"</u> .

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.

 $\mathsf{iPod}^{\texttt{®}}$ 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 <u>AV-465</u> , "Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to <u>AV-491, "Exploded View"</u> .
Steering switch's "SOURCE", "MENU UP", "MENU DOWN"," v (", "ENTER"switches do not work.	Steering switch signal A circuit malfunction. Refer to <u>AV-461, "Diagnosis Procedure"</u> .
Steering switch's ", "VOL UP", "VOL DOWN", "	Steering switch signal B circuit malfunction. Refer to <u>AV-463, "Diagnosis Procedure"</u> .

NORMAL OPERATING CONDITION < SYMPTOM DIAGNOSIS > [BOSE]

NORMAL OPERATING CONDITION

Description

[BOSE AUDIO WITH NAVIGATION]

INFOID:000000006210631

А

В

J

Κ

NOTE:

For Navigation system operation information, refer to Navigation system Owner's Manual. BASIC OPERATIONS

Symptom	Possible cause	Possible solution
	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.
No image is displayed.	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 move- ment 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 se- lected.	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	L
	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.	N/
	The volume if your voice is too loud.	Speak softer.	IV
	Your pronunciation is unclear.	Speak clearly.	
The system does not recognize your com- mand. or The system recognizes your command incor- rectly	You are speaking before the voice recognition is ready	Press and release " $\sqrt{2}$ " switch on the steering switch, and speak a command after the tone sounds.	AV
	8 seconds or more have passed after you pressed and released " $_{w} \leq$ " switch on the steering switch.	Make sure to speak a command within 8 seconds after you press and release " \sqrt{k} " switch on the steering switch.	С
	Only a limited range of voice commands is usable for each screen.	Use a correct voice command appropriate for the current screen.	Ρ
	The fan of the air conditioner is too loud.	Lower the fan speed as necessary as voice com- mand 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.



< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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 REC- OGNIZED" or the system fails to in- terpret 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 com- mand 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, 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 DIAGNOSIS >

Symptom	Cause and Counter measure
	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/M4A files on a CD, only the music CD files (CD-DA data) will be played.
Cannot play	Files with extensions other than ".MP3", ".WMA", "AAC", ".M4A", ".mp3", ".wma", ".aac" or ".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/M4A 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/M4A file has been given an extension of ".MP3", ".WMA", "AAC", ".M4A" ".mp3", ".wma", ".aac" or ".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.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other K 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	AV
Not working as operated	Some operations may be rejected or may not function as intended because of the manufacturer's intent, de- pending on DVD.	This is not a malfunction.	0
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.	D

Μ

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptom	Possible cause	Possible solution
	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 (approx- imately one hour).
DVD can not be played	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.
Interruption during play- back or flicker in the dis-	Check that the DVD has no scratches and dirt.	Errors may not be corrected depending on the size of scratches.
play		Wipe and clean the dirt on the disc.
Subtitles not shown	Subtitle setting is OFF.	Set subtitle.
Sublities not shown	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	The DVD is not multilanguage-capable.	The inclusion of the number of languages de- pends on DVD. Languages may be selectable on the Menu screen. Check DVD.
set subtitle or in set lan- guage)	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 re- flected.
Playback time is indicated, but no sound comes out.	Playback of Mix mode Truck 1. (Mix mode: Format in- cluding 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 in- formation is reduced so that the screen does not become too crowded. There is also a chance that names of the roads may be dis- played multiple times, and the names appear- ing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in	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 correct position.	The position and direction of the vehicle icon may be incorrect depending on the driving en- vironments and the levels of positioning accu- racy 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 vehi- cle icon on the nearest road available.	Updated road information will be included in the next version of the map data.

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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.</day>
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 posi- tion. If this does not correct the vehicle icon posi- tion, 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 calculation has not yet been performed.	Set the destination and perform route calculation.
Route information is not dis-	You are not driving on the suggested route.	Drive on the suggested route.
played.	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 consider- ation, 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 calcu- lations multiple times as necessary.
	Roads near the destination cannot be calculated.	Reset the destination to a main or or- dinary road, and recalculate the route.
The suggested route is not dis- played.	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 per- form 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.
An maneor route is suggested.	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 or- dinary road, and recalculate the route.

F

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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 destina- tion.	There is no data for route calculation closes to these loca- tions.	Set the starting point, waypoints and destination on a main road, and per- form 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 avail- able 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.

А

D

Ε

F

INFOID:000000006210632

REMOVAL AND INSTALLATION AV CONTROL UNIT

Exploded View

CAUTION:

- Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to <u>AV-414, "Description"</u>.
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

REMOVAL

Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MODELS : Exploded View" (M/T models).

DISASSEMBLY



Unified meter and A/C amp.
 Bracket RH

Removal and Installation

REMOVAL

CAUTION:

- Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to <u>AV-414, "Description"</u>.
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

- 1. Remove display unit. Refer to <u>AV-479, "Exploded View"</u>.
- 2. Remove AV control unit with a unified meter and A/C amp. as a single unit from the body.
- 3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

• Since AV control unit connector and unified meter and A/C amp. connector have the same form, be careful not to insert them wrongly.

INFOID:000000006210633

Μ

C

Ρ

- Be sure to perform "WRITE CONFIGURATION" when replacing AV control unit.
- Install AV control unit between connector (1) and connector (2) with the ferrite core (USB) orientated sideways to the vehicle. Incorrect installation may cause damage to the AV control unit.



DISPLAY UNIT	Δ
Exploded View	A
Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MODELS : Exploded View" (M/T models).	В
Removal and Installation	0
REMOVAL	C
1. Remove cluster lid D. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MOD-ELS : Exploded View"</u> (M/T models).	D
2. Remove display unit with bracket as a single unit.	
INSTALLATION Installation is the reverse order of removal.	E
	F
	0
	G
	Н
	I
	J
	K
	L
	M
	AV
	<u> </u>
	0
	Ρ

FRONT DOOR SQUAWKER

Exploded View



- 1. Door finisher
- 2. Front door squawker

Removal and Installation

REMOVAL

- 1. Remove front door finisher. Refer to INT-12, "Exploded View".
- 2. Remove front door squawker from door finisher.

INSTALLATION

Installation is the reverse order of removal.

INFOID:000000006210637

FRONT DOOR WOOFER

[BOSE AUDIO WITH NAVIGATION]

А

В

С

D

Ε

F

Н

J

Κ

L

Μ

AV

Ο

Ρ

< REMOVAL AND INSTALLATION > FRONT DOOR WOOFER

Exploded View

1.

REMOVAL

2.

2.



REAR DOOR SPEAKER

Exploded View



1. Rear door speaker

Removal and Installation

REMOVAL

- 1. Remove rear door finisher. Refer to INT-12, "Exploded View".
- 2. Remove rear door speaker from rear door.

INSTALLATION

Installation is the reverse order of removal.

INFOID:000000006210641

TWEETER



1.

2.

Tweeter

Removal and Installation

Corner cover inner



RE	MOVAL	G
1. 2.	Remove front door finisher, and then remove corner cover inner. Refer to <u>INT-12. "Exploded View"</u> . Remove tweeter from corner cover inner.	0
INS Inst	STALLATION tallation is the reverse order of removal.	Η

AV

Μ

J

Κ

L

0

CENTER SPEAKER

Exploded View



1. Center speaker

Removal and Installation

INFOID:000000006210645

REMOVAL

1. Remove upper grille, and then remove center speaker. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MODELS : Exploded View"</u> (M/T models).

INSTALLATION

Installation is the reverse order of removal.

REAR WOOFER Exploded View



INSTALLATION

REMOVAL

2.

1.

Installation is the reverse order of removal.

AV

Μ

Κ

Ο

Ρ

BOSE AMP.

Exploded View



- 1. BOSE amp.
- <⊐: Vehicle front

Removal and Installation

REMOVAL

- 1. Remove trunk front finisher. Refer to <u>INT-30, "Exploded View"</u>.
- 2. Remove BOSE amp. from rear parcel shelf.

INSTALLATION

Installation is the reverse order of removal.

INFOID:000000006210649

[BOSE AUDIO WITH NAVIGATION]

< REMOVAL AND INSTALLATION > ANTENNA AMP.

Exploded View



AM-FM main connector
 Antenna amp.

Removal and Installation
INFOID:00000022:10651
REMOVAL

 Remove rear pillar finisher LH. Refer to <u>INT-15, "Exploded View"</u>.
 Remove antenna amp. from rear pillar LH.

INSTALLATION
Installation is the reverse order of removal.

M

F

Н

J

Κ

AV

0

Ρ

SATELLITE RADIO ANTENNA

< REMOVAL AND INSTALLATION >

SATELLITE RADIO ANTENNA

Exploded View



- 1. Satellite radio antenna
- <a>: Vehicle front

Removal and Installation

INFOID:000000006210653

REMOVAL

- 1. Remove head lining assembly (rear) to secure work space between vehicle and headlining. Refer to <u>INT-24, "NORMAL ROOF : Exploded View"</u> (normal roof models) or <u>INT-27, "SUNROOF : Exploded View"</u> (sunroof models).
- 2. Remove nut, and then remove satellite radio antenna from roof panel.

INSTALLATION

Installation is the reverse order of removal.

Satellite radio antenna mounting nut 🕑 : 6.5 N·m (0.66 kg-m, 58 in-lb)

CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when satellite radio antenna mounting nut tightening torque is loose.

MULTIFUNCTION SWITCH

< REMOVAL AND INSTALLATION >

MULTIFUNCTION SWITCH

Exploded View

1. 2.

3.

models).

[BOSE AUDIO WITH NAVIGATION]

А INFOID:000000006210654 REMOVAL В Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MODELS : Exploded View" (M/T С DISASSEMBLY SEC. 280 D Ε $^{\circ}$ 2 F JSNIA0126ZZ Center ventilator grille Multifunction switch Removal and Installation INFOID:000000006210655 Н REMOVAL 1. Remove cluster lid D. Refer to IP-12, "A/T MODELS : Exploded View" (A/T models) or IP-23, "M/T MOD-ELS : Exploded View" (M/T models). 2. Remove multi function switch with center ventilator grille as a single unit. Remove multi function switch from center ventilator. **INSTALLATION** Installation is the reverse order of removal. Κ L Μ AV

PRESET SWITCH

< REMOVAL AND INSTALLATION > PRESET SWITCH

[BOSE AUDIO WITH NAVIGATION]

Exploded View

INFOID:000000006210656

REMOVAL

Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MODELS : Exploded View"</u> (M/T models).

DISASSEMBLY



Removal and Installation

INFOID:000000006210657

REMOVAL

- 1. Remove cluster lid C. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MOD-ELS : Exploded View"</u> (M/T models).
- 2. Remove preset switch screws (A), (B), and (C), and then remove preset switch (2) from cluster lid C.

1. Clock



INSTALLATION

Installation is the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between AV control unit and preset switch.

STEERING SWITCH		Λ
Exploded View	INFOID:000000006210658	A
Refer to <u>ST-17, "Exploded View"</u> . Removal and Installation	INFOID:000000006210659	В
REMOVAL Refer to <u>ST-17, "Removal and Installation"</u> .		С
INSTALLATION Installation is the reverse order of removal.		D
		Ε
		F
		G

Μ

Н

J

Κ

L

AV

0

Ρ

< REMOVAL AND INSTALLATION > USB CONNECTOR

Exploded View



1. USB connector

Removal and Installation

REMOVAL

- 1. Remove center console. Refer to <u>IP-34</u>, "<u>A/T MODELS</u> : <u>Exploded View</u>" (A/T models) or <u>IP-39</u>, "<u>M/T MODELS</u> : <u>Exploded View</u>" (M/T models).
- 2. Push the pawl from the back of center console to remove USB connector.

INSTALLATION

Install in the reverse order of removal.

INFOID:000000006210661

< REMOVAL AND INSTALLATION > MICROPHONE

Exploded View

1.

REMOVAL Refer to <u>INL-109, "Exploded View"</u>. DISASSEMBLY

Microphone



IBOSE	AUDIO	with	NAVIG	ATION1

SEC. 283 C D JSNIA0132ZZ

Removal and Installation	INFOID:000000006210663	G
REMOVAL		
1. Remove map lamp. Refer to INL-109, "Exploded View".		Н
2. Remove microphone from map lamp.		
INSTALLATION		I
Installation is the reverse order of removal.		1
		J

Μ

Κ

L

А

В

INFOID:000000006210662

AV

0

Ρ

GPS ANTENNA





1. GPS antenna

Removal and Installation

REMOVAL

- 1. Remove instrument panel. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23, "M/T MODELS : Exploded View"</u> (M/T models).
- 2. Remove GPS antenna (1) from instrument panel.



INFOID:000000006210665

INSTALLATION Installation is the reverse order of removal.

GPS ANTENNA

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]



Revision: 2011 November

REAR VIEW CAMERA

Exploded View

REMOVAL Refer to <u>EXT-41, "Exploded View"</u>. DISASSEMBLY



[BOSE AUDIO WITH NAVIGATION]

1. Rear view camera

Removal and Installation

REMOVAL

- 1. Remove trunk lid finisher outer. Refer to EXT-41, "Exploded View".
- 2. Remove rear view camera from trunk lid finisher outer.

INSTALLATION

Installation is the reverse order of removal.

Adjustment

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 offset of rear view camera" mode of Confirmation / Adjustment mode.



INFOID:000000006210669

INFOID:000000006210668

REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

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° to 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 camera control unit.

Up/Down adjustment range	: -10° to 10°
Left/Right adjustment range	: -10° to 10°

CAUTION:

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



AV

А

В

С

D

Е

F

Н

J

Κ

L

Μ

JSNIA2185ZZ

0

Ρ

SONAR CONTROL UNIT

Exploded View



1. Sonar control unit

Removal and Installation

REMOVAL

- 1. Remove the instrument finisher A. Refer to <u>IP-12, "A/T MODELS : Exploded View"</u> (A/T models) or <u>IP-23,</u> <u>"M/T MODELS : Exploded View"</u> (M/T models).
- 2. Remove sonar control unit screw, then disconnect sonar control unit connector and remove the sonar control unit.

INSTALLATION

Install in the reverse order of removal.

INFOID:000000006210671

STEERING ANGLE SENSOR

< REMOVAL AND INSTALLATION >

STEERING ANGLE SENSOR

Exploded View

REMOVAL Refer to <u>SR-14, "Exploded View"</u>. DISASSEMBLY



	1. 2.	Spiral cable Steering angle sensor	0
Rem	oval	and Installation	G
REMO	DVAL		Н
1. R	emov	e spiral cable. Refer to <u>SR-14, "Exploded View"</u> .	
INSTA		TION	I
Installa CAUT	ation ION:	is the reverse order of removal.	
After v MENT	work	, make sure to adjust neutral position of steering angle sensor. Refer to <u>BRC-8, "ADJUST-</u> STEERING ANGLE SENSOR NEUTRAL POSITION : Description".	J
			K
			L

M

AV

0

Ρ

INFOID:000000006210672

А

В

Revision: 2011 November

ANTENNA FEEDER

Feeder Layout

INFOID:000000006210674

[BOSE AUDIO WITH NAVIGATION]

