

SECTION **AV**

AUDIO, VISUAL & NAVIGATION SYSTEM

CONTENTS

MULTI AV (DISPLAY AUDIO)	WIRING DIAGRAM	29	F
PRECAUTION	MULTI AV SYSTEM	29	G
PRECAUTIONS	Wiring Diagram	29	
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	REAR VIEW MONITOR SYSTEM	42	H
Precaution for Harness Repair	Wiring Diagram	42	
Precaution for Work	BASIC INSPECTION	48	I
PREPARATION	DIAGNOSIS AND REPAIR WORKFLOW	48	J
PREPARATION	Work Flow	48	
Special Service Tool	INSPECTION AND ADJUSTMENT	50	K
Commercial Service Tools	REGISTRATION (AUDIO UNIT)	50	L
SYSTEM DESCRIPTION	REGISTRATION (AUDIO UNIT) : Description	50	
COMPONENT PARTS	REGISTRATION (AUDIO UNIT) : Work Procedure	50	M
Component Parts Location	DTC/CIRCUIT DIAGNOSIS	52	
Audio Unit	POWER SUPPLY AND GROUND CIRCUIT	52	
Speakers	AUDIO UNIT	52	
USB Interface and AUX in Jack	AUDIO UNIT : Diagnosis Procedure	52	
Steering Switches	FRONT TWEETER	53	
Microphone	Diagnosis Procedure	53	
Rear View Camera	FRONT DOOR SPEAKER	55	
Steering Angle Sensor	Diagnosis Procedure	55	
Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder	REAR DOOR SPEAKER	57	
SYSTEM	Diagnosis Procedure	57	
System Description	REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT	59	
DIAGNOSIS SYSTEM (AUDIO UNIT)	Diagnosis Procedure	59	
Description	MICROPHONE SIGNAL CIRCUIT	61	
On Board Diagnosis Function	Diagnosis Procedure	61	
ECU DIAGNOSIS INFORMATION	STEERING SWITCH	63	
AUDIO UNIT			
Reference Value			

Diagnosis Procedure	63	Precaution for Trouble Diagnosis	82
USB CONNECTOR	65	Precaution for Harness Repair	82
Diagnosis Procedure	65	Precaution for Work	83
AUXILIARY INPUT JACK	66	PREPARATION	84
Diagnosis Procedure	66	PREPARATION	84
SYMPTOM DIAGNOSIS	67	Special Service Tool	84
AUDIO SYSTEM	67	Commercial Service Tools	84
Symptom Table	67	SYSTEM DESCRIPTION	85
NORMAL OPERATING CONDITION	70	COMPONENT PARTS	85
Description	70	Component Parts Location	85
REMOVAL AND INSTALLATION	72	AV Control Unit	86
AUDIO UNIT	72	Speakers	86
Exploded View	72	USB Interface and AUX In Jack	87
Removal and Installation	72	Steering Switches	87
STEERING SWITCHES	73	Microphone	87
Exploded View	73	Around View Monitor Control Unit	88
Removal and Installation	73	Rear View Camera	88
FRONT TWEETER	74	Side Cameras	88
Removal and Installation	74	Front Camera	88
FRONT DOOR SPEAKER	75	Steering Angle Sensor	89
Exploded View	75	Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder	89
Removal and Installation	75	GPS Antenna	90
REAR DOOR SPEAKER	76	SD Card	90
Exploded View	76	SYSTEM	91
Removal and Installation	76	System Description	91
USB INTERFACE AND AUX IN JACK	77	DIAGNOSIS SYSTEM (AV CONTROL UNIT)..	101
Removal and Installation	77	Description	101
MICROPHONE	78	On Board Diagnosis Function	101
Removal and Installation	78	CONSULT Function	102
REAR VIEW CAMERA	79	DIAGNOSIS SYSTEM (AROUND VIEW MON- ITOR CONTROL UNIT)	103
Removal and Installation	79	CONSULT Function	103
ANTENNA BASE	80	ECU DIAGNOSIS INFORMATION	106
Exploded View	80	AV CONTROL UNIT	106
Removal and Installation	80	Reference Value	106
Disassembly and Assembly	80	DTC Index	109
ANTENNA FEEDER	81	AROUND VIEW MONITOR CONTROL UNIT ..	110
Feeder Layout	81	Reference Value	110
MULTI AV (NAVI WITHOUT BOSE)		Fail-Safe	113
PRECAUTION	82	DTC Inspection Priority Chart	114
PRECAUTIONS	82	DTC Index	115
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER"	82	WIRING DIAGRAM	116
Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)	82	NAVIGATION WITHOUT BOSE	116
		Wiring Diagram	116
		AROUND VIEW MONITOR SYSTEM	129
		Wiring Diagram	129
		BASIC INSPECTION	141

DIAGNOSIS AND REPAIR WORKFLOW	141	U1000 CAN COMM CIRCUIT	155	A
Work Flow	141	AV CONTROL UNIT	155	B
INSPECTION AND ADJUSTMENT	143	AV CONTROL UNIT : DTC Logic	155	B
ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT	143	AV CONTROL UNIT : Diagnosis Procedure	155	C
ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description	143	AROUND VIEW MONITOR CONTROL UNIT	155	D
ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Work Procedure	143	AROUND VIEW MONITOR CONTROL UNIT :		D
ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT	144	DTC Logic	155	E
ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT :		AROUND VIEW MONITOR CONTROL UNIT : Di-		E
Description	144	agnosis Procedure	155	F
ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT :		U1010 CONTROL UNIT (CAN)	156	F
Work Procedure	144	AV CONTROL UNIT	156	G
CONFIGURATION (AV CONTROL UNIT)	145	AV CONTROL UNIT : DTC Logic	156	G
CONFIGURATION (AV CONTROL UNIT) : De-		AROUND VIEW MONITOR CONTROL UNIT	156	H
scription	145	AROUND VIEW MONITOR CONTROL UNIT :		H
CONFIGURATION (AV CONTROL UNIT) : Work		DTC Logic	156	I
Procedure	145	U111A REAR CAMERA IMAGE SIGNAL CIR-		I
CONFIGURATION (AV CONTROL UNIT) : Con-		CUIT	157	J
figuration List	146	DTC Logic	157	J
CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)	146	Diagnosis Procedure	157	K
CONFIGURATION (AROUND VIEW MONITOR		U111B SIDE CAMERA RH IMAGE SIGNAL		K
CONTROL UNIT) : Description	146	CIRCUIT	159	L
CONFIGURATION (AROUND VIEW MONITOR		DTC Logic	159	L
CONTROL UNIT) : Work Procedure	146	Diagnosis Procedure	159	M
REGISTRATION (AV CONTROL UNIT)	147	U111C FRONT CAMERA IMAGE SIGNAL		M
REGISTRATION (AV CONTROL UNIT) : Descrip-		CIRCUIT	161	N
tion	147	DTC Logic	161	N
REGISTRATION (AV CONTROL UNIT) : Work		Diagnosis Procedure	161	O
Procedure	147	U111D SIDE CAMERA LH IMAGE SIGNAL		O
PREDICTED COURSE LINE CENTER POSITION		CIRCUIT	163	P
ADJUSTMENT	148	DTC Logic	163	P
PREDICTED COURSE LINE CENTER POSI-		Diagnosis Procedure	163	Q
TION ADJUSTMENT : Description	148	U1217 AV CONTROL UNIT	165	Q
PREDICTED COURSE LINE CENTER POSI-		DTC Logic	165	R
TION ADJUSTMENT : Work Procedure	148	U1229 AV CONTROL UNIT	166	R
CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)	148	DTC Logic	166	S
CALIBRATING CAMERA IMAGE (AROUND		U122F AV CONTROL UNIT	167	S
VIEW MONITOR) : Description	148	DTC Logic	167	T
CALIBRATING CAMERA IMAGE (AROUND		U1232 STEERING ANGLE SENSOR	168	T
VIEW MONITOR) : Work Procedure	149	DTC Logic	168	T
DTC/CIRCUIT DIAGNOSIS	154	Diagnosis Procedure	168	U
U0428 STEERING ANGLE SENSOR	154	U1244 GPS ANTENNA	169	U
DTC Logic	154	DTC Logic	169	V
Diagnosis Procedure	154	Diagnosis Procedure	169	V
U1000 CAN COMM CIRCUIT	155	U1258 SATELLITE RADIO ANTENNA	170	W
AV CONTROL UNIT	155	DTC Logic	170	W
AV CONTROL UNIT : DTC Logic	155	Diagnosis Procedure	170	X
AV CONTROL UNIT : Diagnosis Procedure	155	U1263 USB	171	X
AROUND VIEW MONITOR CONTROL UNIT	155			Y
AROUND VIEW MONITOR CONTROL UNIT :				Z
DTC Logic	155			
AROUND VIEW MONITOR CONTROL UNIT : Di-				
agnosis Procedure	155			
U1010 CONTROL UNIT (CAN)	156			
AV CONTROL UNIT	156			
AV CONTROL UNIT : DTC Logic	156			
AROUND VIEW MONITOR CONTROL UNIT	156			
AROUND VIEW MONITOR CONTROL UNIT :				
DTC Logic	156			
U111A REAR CAMERA IMAGE SIGNAL CIR-				
CUIT	157			
DTC Logic	157			
Diagnosis Procedure	157			
U111B SIDE CAMERA RH IMAGE SIGNAL				
CIRCUIT	159			
DTC Logic	159			
Diagnosis Procedure	159			
U111C FRONT CAMERA IMAGE SIGNAL				
CIRCUIT	161			
DTC Logic	161			
Diagnosis Procedure	161			
U111D SIDE CAMERA LH IMAGE SIGNAL				
CIRCUIT	163			
DTC Logic	163			
Diagnosis Procedure	163			
U1217 AV CONTROL UNIT	165			
DTC Logic	165			
U1229 AV CONTROL UNIT	166			
DTC Logic	166			
U122F AV CONTROL UNIT	167			
DTC Logic	167			
U1232 STEERING ANGLE SENSOR	168			
DTC Logic	168			
Diagnosis Procedure	168			
U1244 GPS ANTENNA	169			
DTC Logic	169			
Diagnosis Procedure	169			
U1258 SATELLITE RADIO ANTENNA	170			
DTC Logic	170			
Diagnosis Procedure	170			
U1263 USB	171			

DTC Logic	171	MICROPHONE SIGNAL CIRCUIT	193
Diagnosis Procedure	171	Diagnosis Procedure	193
U12AA CONFIGURATION ERROR	172	STEERING SWITCH	195
DTC Logic	172	Diagnosis Procedure	195
Diagnosis Procedure	172	USB CONNECTOR	197
U12AB ANTENNA	173	Diagnosis Procedure	197
DTC Logic	173	AUXILIARY INPUT JACK	198
Diagnosis Procedure	173	Diagnosis Procedure	198
U12AC AV CONTROL UNIT	174	SYMPTOM DIAGNOSIS	199
DTC Logic	174	MULTI AV SYSTEM	199
U12AD AV CONTROL UNIT	175	Symptom Table	199
DTC Logic	175	NORMAL OPERATING CONDITION	204
U12AE AV CONTROL UNIT	176	Description	204
DTC Logic	176	REMOVAL AND INSTALLATION	213
U12AF AV CONTROL UNIT	177	AV CONTROL UNIT	213
DTC Logic	177	Exploded View	213
U12B0 POWER SUPPLY VOLTAGE	178	Removal and Installation	213
DTC Logic	178	STEERING SWITCH	215
Diagnosis Procedure	178	Exploded View	215
U12B1 POWER SUPPLY VOLTAGE	179	Removal and Installation	215
DTC Logic	179	FRONT TWEETER	216
Diagnosis Procedure	179	Removal and Installation	216
U1300 AV COMM CIRCUIT	180	FRONT DOOR SPEAKER	217
DTC Logic	180	Exploded View	217
Diagnosis Procedure	180	Removal and Installation	217
U1304 CAMERA IMAGE CALIBRATION	182	REAR DOOR SPEAKER	218
DTC Logic	182	Exploded View	218
Diagnosis Procedure	182	Removal and Installation	218
U1305 CONFIG UNFINISH	183	USB INTERFACE AND AUX IN JACK	219
DTC Logic	183	Removal and Installation	219
Diagnosis Procedure	183	MICROPHONE	220
U1310 CONTROL UNIT (AV)	184	Removal and Installation	220
DTC Logic	184	AROUND VIEW MONITOR CONTROL UNIT	221
POWER SUPPLY AND GROUND CIRCUIT ..	185	Exploded View	221
AV CONTROL UNIT	185	Removal and Installation	221
AV CONTROL UNIT : Diagnosis Procedure	185	FRONT CAMERA	222
AROUND VIEW MONITOR CONTROL UNIT	185	Exploded View	222
AROUND VIEW MONITOR CONTROL UNIT : Di-		Removal and Installation	222
agnosis Procedure	185	SIDE CAMERA	223
FRONT TWEETER	187	Removal and Installation	223
Diagnosis Procedure	187	REAR VIEW CAMERA	224
FRONT DOOR SPEAKER	189	Removal and Installation	224
Diagnosis Procedure	189	GPS ANTENNA	225
REAR DOOR SPEAKER	191	Removal and Installation	225
Diagnosis Procedure	191		

ANTENNA BASE	226	AV CONTROL UNIT	253	
Exploded View	226	Reference Value	253	A
Removal and Installation	226	DTC Index	256	
Disassembly and Assembly	226	BOSE SPEAKER AMP	258	B
ANTENNA FEEDER	227	Reference Value	258	
Feeder Layout	227	AROUND VIEW MONITOR CONTROL UNIT	261	C
MULTI AV (NAVI WITH BOSE)		Reference Value	261	
PRECAUTION	228	Fail-Safe	264	D
PRECAUTIONS	228	DTC Inspection Priority Chart	265	
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TEN- SIONER"	228	DTC Index	266	
Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)	228	WIRING DIAGRAM	267	E
Precaution for Trouble Diagnosis	228	NAVIGATION WITH BOSE	267	
Precaution for Harness Repair	228	Wiring Diagram	267	
Precaution for Work	229	AROUND VIEW MONITOR SYSTEM	285	F
PREPARATION	230	Wiring Diagram	285	
PREPARATION	230	BASIC INSPECTION	297	G
Special Service Tool	230	DIAGNOSIS AND REPAIR WORKFLOW	297	
Commercial Service Tools	230	Work Flow	297	
SYSTEM DESCRIPTION	231	INSPECTION AND ADJUSTMENT	299	H
COMPONENT PARTS	231	ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT	299	I
Component Parts Location	231	ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description	299	
AV Control Unit	232	ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Work Procedure	299	J
BOSE Speaker Amp.	232	ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT	300	K
Speakers	233	ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description	300	
USB Interface and AUX In Jack	234	ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Work Procedure	300	L
Steering Switches	234	CONFIGURATION (AV CONTROL UNIT)	301	M
Microphone (for Hands-free Phone/Voice Recog- nition)	234	CONFIGURATION (AV CONTROL UNIT) : De- scription	301	
Around View Monitor Control Unit	235	CONFIGURATION (AV CONTROL UNIT) : Work Procedure	301	
Rear View Camera	235	CONFIGURATION (AV CONTROL UNIT) : Con- figuration List	302	O
Side Cameras	235	CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)	302	P
Front Camera	235	CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Description	302	
Steering Angle Sensor	236	CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Work Procedure	302	
Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder	236	REGISTRATION (AV CONTROL UNIT)	303	
GPS Antenna	237	REGISTRATION (AV CONTROL UNIT) : Descrip- tion	303	
SD Card	237			
SYSTEM	238			
System Description	238			
DIAGNOSIS SYSTEM (AV CONTROL UNIT)..	248			
Description	248			
On Board Diagnosis Function	248			
CONSULT Function	249			
DIAGNOSIS SYSTEM (AROUND VIEW MON- ITOR CONTROL UNIT)	250			
CONSULT Function	250			
ECU DIAGNOSIS INFORMATION	253			

REGISTRATION (AV CONTROL UNIT) : Work Procedure	303	Diagnosis Procedure	319
PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT	304	U1217 AV CONTROL UNIT	321
PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Description	304	DTC Logic	321
PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure	304	U1229 AV CONTROL UNIT	322
CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)	304	DTC Logic	322
CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description	304	U122F AV CONTROL UNIT	323
CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure	305	DTC Logic	323
DTC/CIRCUIT DIAGNOSIS	310	U1232 STEERING ANGLE SENSOR	324
U0428 STEERING ANGLE SENSOR	310	DTC Logic	324
DTC Logic	310	Diagnosis Procedure	324
Diagnosis Procedure	310	U1244 GPS ANTENNA	325
U1000 CAN COMM CIRCUIT	311	DTC Logic	325
AV CONTROL UNIT	311	Diagnosis Procedure	325
AV CONTROL UNIT : DTC Logic	311	U1258 SATELLITE RADIO ANTENNA	326
AV CONTROL UNIT : Diagnosis Procedure	311	DTC Logic	326
AROUND VIEW MONITOR CONTROL UNIT	311	Diagnosis Procedure	326
AROUND VIEW MONITOR CONTROL UNIT : DTC Logic	311	U1263 USB	327
AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure	311	DTC Logic	327
U1010 CONTROL UNIT (CAN)	312	Diagnosis Procedure	327
AV CONTROL UNIT	312	U1265 BOSE AMP.	328
AV CONTROL UNIT : DTC Logic	312	DTC Logic	328
AROUND VIEW MONITOR CONTROL UNIT	312	Diagnosis Procedure	328
AROUND VIEW MONITOR CONTROL UNIT : DTC Logic	312	U12AA CONFIGURATION ERROR	329
U111A REAR CAMERA IMAGE SIGNAL CIRCUIT	313	DTC Logic	329
DTC Logic	313	Diagnosis Procedure	329
Diagnosis Procedure	313	U12AB ANTENNA	330
U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT	315	DTC Logic	330
DTC Logic	315	Diagnosis Procedure	330
Diagnosis Procedure	315	U12AC AV CONTROL UNIT	331
U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT	317	DTC Logic	331
DTC Logic	317	U12AD AV CONTROL UNIT	332
Diagnosis Procedure	317	DTC Logic	332
U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT	319	U12AE AV CONTROL UNIT	333
DTC Logic	319	DTC Logic	333
		U12AF AV CONTROL UNIT	334
		DTC Logic	334
		U12B0 POWER SUPPLY VOLTAGE	335
		DTC Logic	335
		Diagnosis Procedure	335
		U12B1 POWER SUPPLY VOLTAGE	336
		DTC Logic	336
		Diagnosis Procedure	336
		U1300 AV COMM CIRCUIT	337
		DTC Logic	337
		Diagnosis Procedure	337

U1304 CAMERA IMAGE CALIBRATION	339	Exploded View	381	
DTC Logic	339	Removal and Installation	381	A
Diagnosis Procedure	339			
U1305 CONFIG UNFINISH	340	STEERING SWITCH	383	
DTC Logic	340	Exploded View	383	B
Diagnosis Procedure	340	Removal and Installation	383	
U1310 CONTROL UNIT (AV)	341	BOSE SPEAKER AMP	384	
DTC Logic	341	Removal and Installation	384	C
POWER SUPPLY AND GROUND CIRCUIT ...	342	FRONT TWEETER	385	
AV CONTROL UNIT	342	Removal and Installation	385	D
AV CONTROL UNIT : Diagnosis Procedure	342	FRONT DOOR SPEAKER	386	
BOSE SPEAKER AMP	342	Exploded View	386	E
BOSE SPEAKER AMP : Diagnosis Procedure	342	Removal and Installation	386	
AROUND VIEW MONITOR CONTROL UNIT	343	CENTER SPEAKER	387	
AROUND VIEW MONITOR CONTROL UNIT : Di-		Removal and Installation	387	F
agnosis Procedure	343	REAR DOOR SPEAKER	388	
FRONT TWEETER	345	Exploded View	388	G
Diagnosis Procedure	345	Removal and Installation	388	
CENTER SPEAKER	348	SUBWOOFER	389	
Diagnosis Procedure	348	Removal and Installation	389	H
FRONT DOOR SPEAKER	350	USB INTERFACE AND AUX IN JACK	390	
Diagnosis Procedure	350	Removal and Installation	390	I
REAR DOOR SPEAKER	353	MICROPHONE	391	
Diagnosis Procedure	353	Removal and Installation	391	J
SUBWOOFER	356	AROUND VIEW MONITOR CONTROL UNIT .	392	
Diagnosis Procedure	356	Exploded View	392	K
AMP ON SIGNAL CIRCUIT	359	Removal and Installation	392	
Diagnosis Procedure	359	FRONT CAMERA	393	
MICROPHONE SIGNAL CIRCUIT	360	Exploded View	393	L
Diagnosis Procedure	360	Removal and Installation	393	
STEERING SWITCH	362	SIDE CAMERA	394	
Diagnosis Procedure	362	Removal and Installation	394	M
USB CONNECTOR	364	REAR VIEW CAMERA	395	
Diagnosis Procedure	364	Removal and Installation	395	
AUXILIARY INPUT JACK	365	GPS ANTENNA	396	
Diagnosis Procedure	365	Removal and Installation	396	AV
SYMPTOM DIAGNOSIS	366	ANTENNA BASE	397	
MULTI AV SYSTEM	366	Exploded View	397	O
Symptom Table	366	Removal and Installation	397	
NORMAL OPERATING CONDITION	372	Disassembly and Assembly	397	
Description	372	ANTENNA FEEDER	398	P
REMOVAL AND INSTALLATION	381	Feeder Layout	398	
AV CONTROL UNIT	381	TELEMATICS SYSTEM		
		PRECAUTION	399	
		PRECAUTIONS	399	

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	399	ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM FOR THE FIRST TIME/RE-SUBSCRIPTION : Description	422
Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)	399	ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM FOR THE FIRST TIME/RE-SUBSCRIPTION : Procedure	422
Precaution for Trouble Diagnosis	399	ADDITIONAL SERVICE WHEN REPLACING TCU. 423	
Precaution for Harness Repair	399	ADDITIONAL SERVICE WHEN REPLACING TCU : Description	423
Precaution for Work	400	ADDITIONAL SERVICE WHEN REPLACING TCU : Procedure	423
PREPARATION	401	ADDITIONAL SERVICE WHEN TCU DEACTIVATION	424
PREPARATION	401	ADDITIONAL SERVICE WHEN TCU DEACTIVATION : Description	424
Special Service Tool	401	ADDITIONAL SERVICE WHEN TCU DEACTIVATION : Procedure	425
Commercial Service Tools	401	DTC/CIRCUIT DIAGNOSIS	426
SYSTEM DESCRIPTION	402	B130D TCU	426
COMPONENT PARTS	402	DTC Description	426
Component Parts Location	402	Diagnosis Procedure	426
AV Control Unit	402	B1310 TCU	427
TCU	403	DTC Description	427
Telematics Antenna	403	Diagnosis Procedure	427
Telematics Switch	404	B13D9 TCU	428
Microphone	404	DTC Description	428
TELEMATICS SYSTEM	405	Diagnosis Procedure	428
TELEMATICS SYSTEM	405	B13E1 TCU	429
TELEMATICS SYSTEM : System Description	405	DTC Description	429
TELEMATICS SYSTEM : Fail-safe	407	Diagnosis Procedure	429
DIAGNOSIS SYSTEM (TCU)	408	B2E33 TELEMATICS SWITCH	430
CONSULT Function	408	DTC Description	430
ECU DIAGNOSIS INFORMATION	410	Diagnosis Procedure	430
TCU	410	U1000 CAN COMM CIRCUIT	431
Reference Value	410	TCU	431
Fail-safe	412	TCU : DTC Logic	431
DTC Inspection Priority Chart	413	TCU : Diagnosis Procedure	431
DTC Index	413	U1010 CONTROL UNIT (CAN)	432
WIRING DIAGRAM	415	TCU	432
TELEMATICS SYSTEM	415	TCU : DTC Logic	432
Wiring Diagram	415	TCU : DTC Logic	432
BASIC INSPECTION	420	U1A00 TCU	433
DIAGNOSIS AND REPAIR WORK FLOW	420	DTC Description	433
Work Flow	420	Diagnosis Procedure	433
INSPECTION AND ADJUSTMENT	422	U1A01 TCU	434
ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM (WORK STEP VIEW)	422	DTC Logic	434
ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM (WORK STEP VIEW) : Process Chart	422	U1A03 TCU	435
ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM FOR THE FIRST TIME/RE-SUBSCRIPTION	422	DTC Description	435
		Diagnosis Procedure	435

U1A04 TCU	436	DTC Logic	446	
DTC Description	436	Diagnosis Procedure	446	A
Diagnosis Procedure	436			
U1A06 TEL ANTENNA	437	POWER SUPPLY AND GROUND CIRCUIT ..	447	
DTC Description	437	TCU	447	B
Diagnosis Procedure	437	TCU : Diagnosis Procedure	447	
U1A09 GPS ANTENNA	438	SYMPTOM DIAGNOSIS	448	C
DTC Description	438	TELEMATICS SYSTEM	448	
Diagnosis Procedure	438	Symptom Table	448	
U1A10 TCU	439	NORMAL OPERATING CONDITION	449	D
DTC Description	439	Description	449	
Diagnosis Procedure	439	REMOVAL AND INSTALLATION	450	E
U1A11 TCU	440	AV CONTROL UNIT	450	
DTC Description	440	Exploded View	450	F
Diagnosis Procedure	440	Removal and Installation	450	
U1A0A TCU	441	TCU	452	G
DTC Description	441	Removal and Installation	452	
Diagnosis Procedure	441	TELEMATICS SWITCH	453	
U1A0B MICROPHONE	442	Removal and Installation	453	H
DTC Logic	442	TEL ANTENNA	454	
Diagnosis Procedure	442	Removal and Installation	454	I
U1A0C MICROPHONE	444	MICROPHONE	455	
DTC Logic	444	Removal and Installation	455	J
Diagnosis Procedure	444			
U1A0E TELEMATICS SWITCH	446			K
				L
				M
				AV
				O
				P

PRECAUTION

PRECAUTIONS

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

INFOID:000000012422066

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

WARNING:

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

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

WARNING:

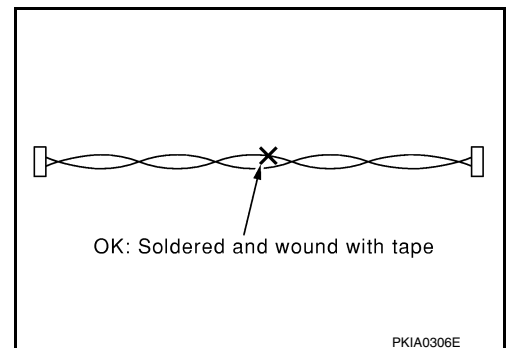
- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious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

Precaution for Harness Repair

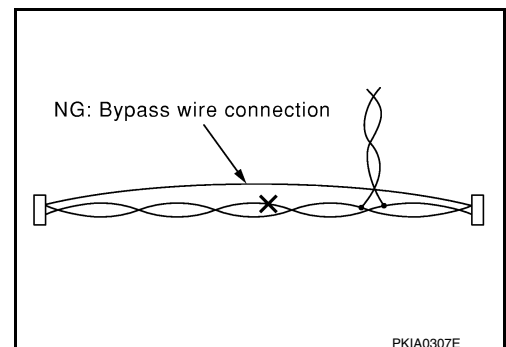
INFOID:000000012422067

AV COMMUNICATION SYSTEM

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



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



PRECAUTIONS

< PRECAUTION >

[MULTI AV (DISPLAY AUDIO)]

Precaution for Work

INFOID:000000012422068

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

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AV

PREPARATION

< PREPARATION >

[MULTI AV (DISPLAY AUDIO)]

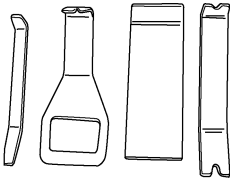
PREPARATION

PREPARATION

Special Service Tool

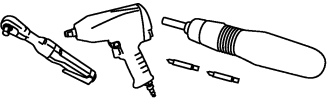
INFOID:000000012422069

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

Commercial Service Tools

INFOID:000000012422070

Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

COMPONENT PARTS

< SYSTEM DESCRIPTION >

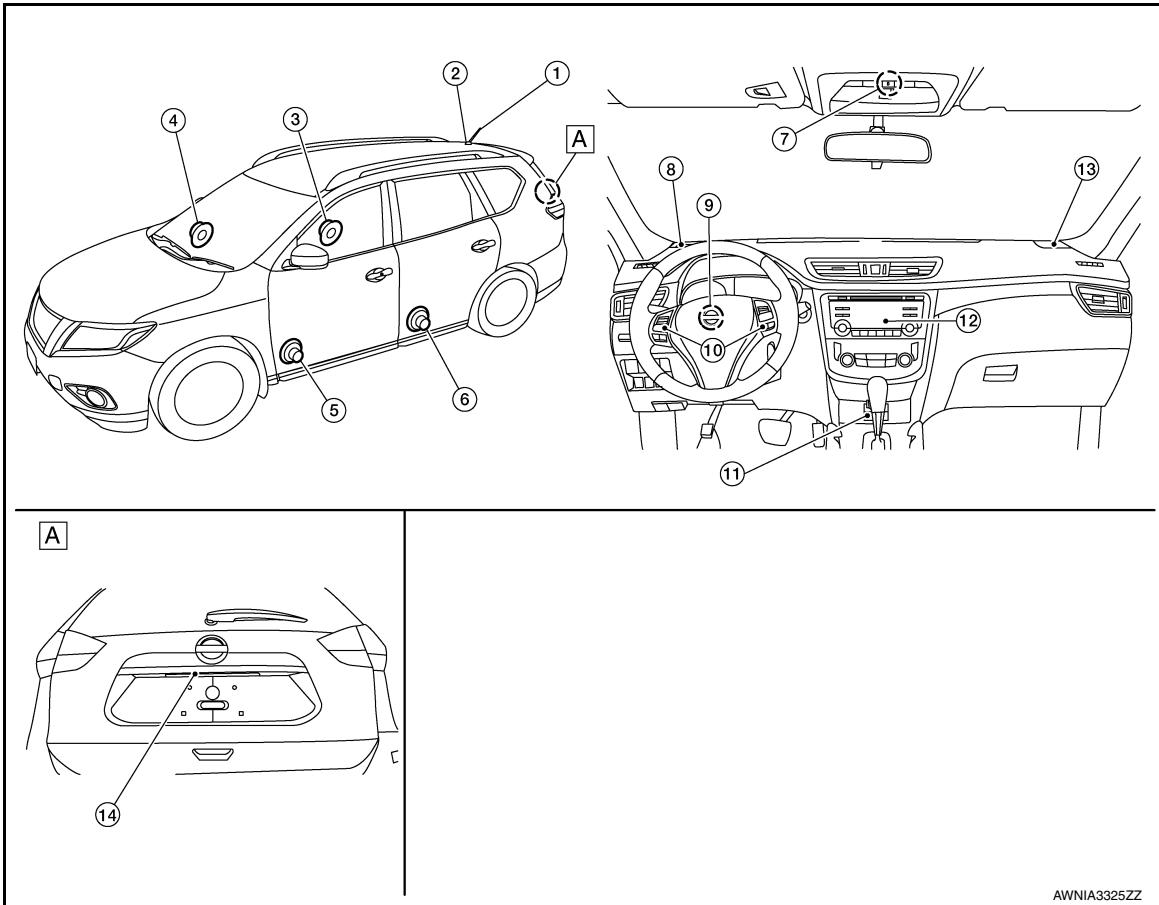
[MULTI AV (DISPLAY AUDIO)]

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000012422071



A. Center of back door

No.	Component	Function
1.	Rod antenna	Refer to AV-16, "Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder" .
2.	Antenna base (antenna amp. and satellite antenna)	
3.	Rear door speaker RH	Refer to AV-14, "Speakers" .
4.	Front door speaker RH	
5.	Front door speaker LH	
6.	Rear door speaker LH	
7.	Microphone	Refer to AV-15, "Microphone" .
8.	Front tweeter LH	Refer to AV-14, "Speakers" .
9.	Steering angle sensor	Refer to AV-16, "Steering Angle Sensor" .
10.	Steering switches	Refer to AV-15, "Steering Switches" .
11.	USB interface and AUX in jack	Refer to AV-15, "USB Interface and AUX in Jack" .
12.	Audio unit	Refer to AV-14, "Audio Unit" .
13.	Front tweeter RH	Refer to AV-14, "Speakers" .
14.	Rear view camera	Refer to AV-15, "Rear View Camera" .

COMPONENT PARTS

< SYSTEM DESCRIPTION >

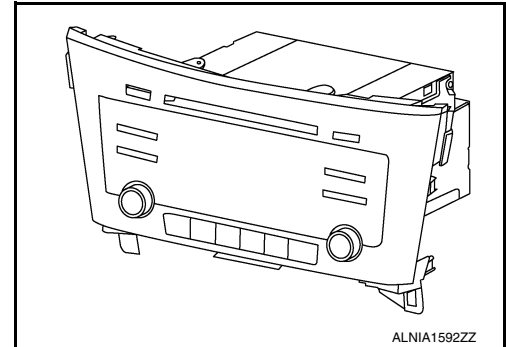
[MULTI AV (DISPLAY AUDIO)]

Audio Unit

INFOID:000000012422072

Description

- AM/FM electronic tuner radio, CD drive and camera controller are integrated into the audio unit.
 - The display can show audio status and rear view monitor images.
 - Music files stored in iPod®/USB memory can be played using the separate USB connector.
 - Music files stored in an external audio device can be played using the separate AUX in jack.
- *: iPod® is a registered trademark of Apple, Inc. All rights reserved.

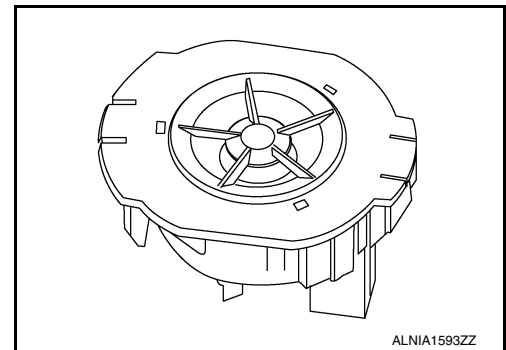


Speakers

INFOID:000000012422073

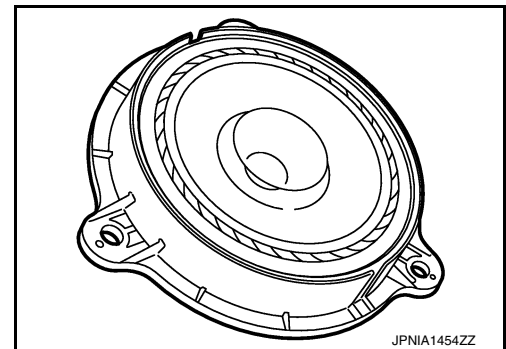
FRONT TWEETER

- 2.5 cm (1 in) tweeters are installed in the top front corners of the instrument panel.
- Sound signals are input from the audio unit to output high range sounds.



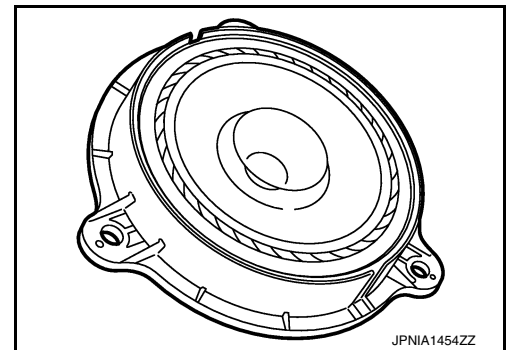
FRONT DOOR SPEAKER

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



REAR DOOR SPEAKER

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



COMPONENT PARTS

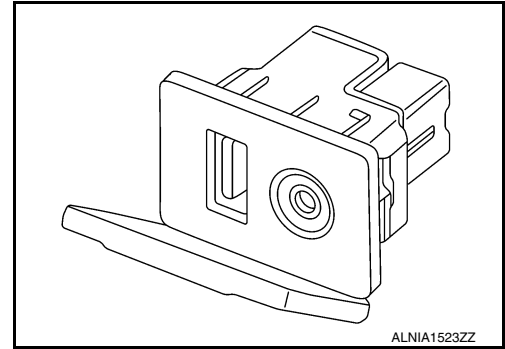
< SYSTEM DESCRIPTION >

[MULTI AV (DISPLAY AUDIO)]

USB Interface and AUX in Jack

INFOID:000000012422074

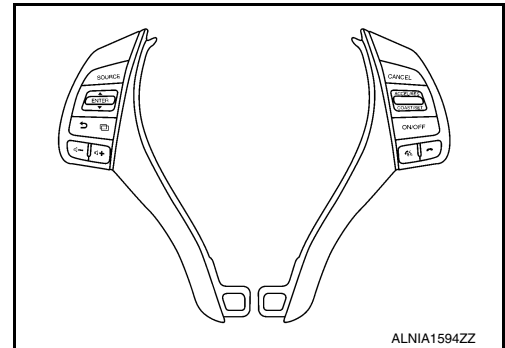
- USB Interface and AUX in jack is installed in the console.
- iPod® and USB memory can be connected to the audio unit through the USB interface.
- An external audio device can be connected to the audio unit through the AUX in jack.



Steering Switches

INFOID:000000012422075

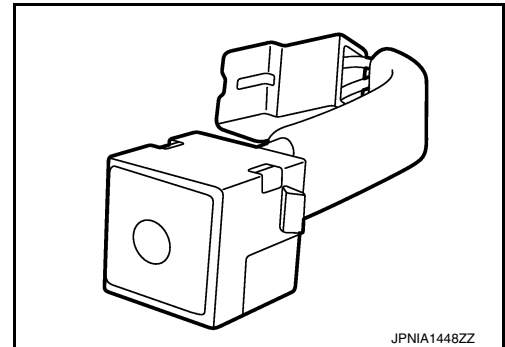
- Steering switches are installed in the steering wheel.
- Operations for audio and hands-free phone are possible.
- Switches are connected to the combination meter.
- Combination meter is connected to the audio unit via AV communication.



Microphone

INFOID:000000012422076

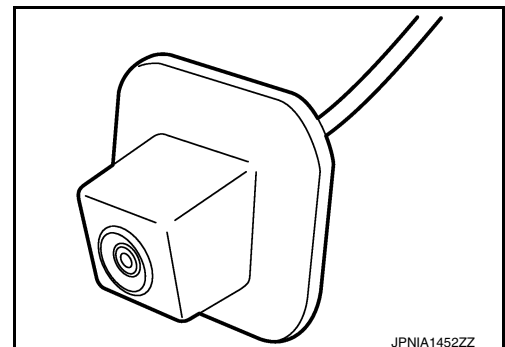
- The microphone is installed in the roof in the map lamp assembly.
- Power is supplied from the audio unit.



Rear View Camera

INFOID:000000012422077

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



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COMPONENT PARTS

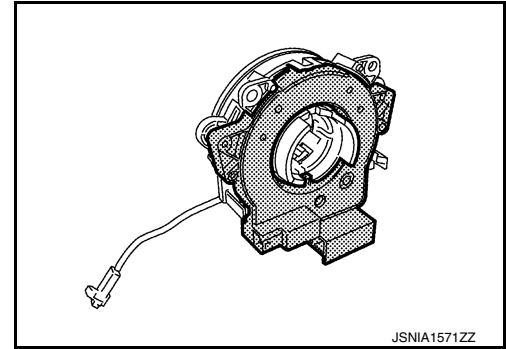
< SYSTEM DESCRIPTION >

[MULTI AV (DISPLAY AUDIO)]

Steering Angle Sensor

INFOID:000000012422078

- Steering sensor is installed to the spiral cable.
- Steering angle sends the steering signal necessary for predictive course line via CAN communication.

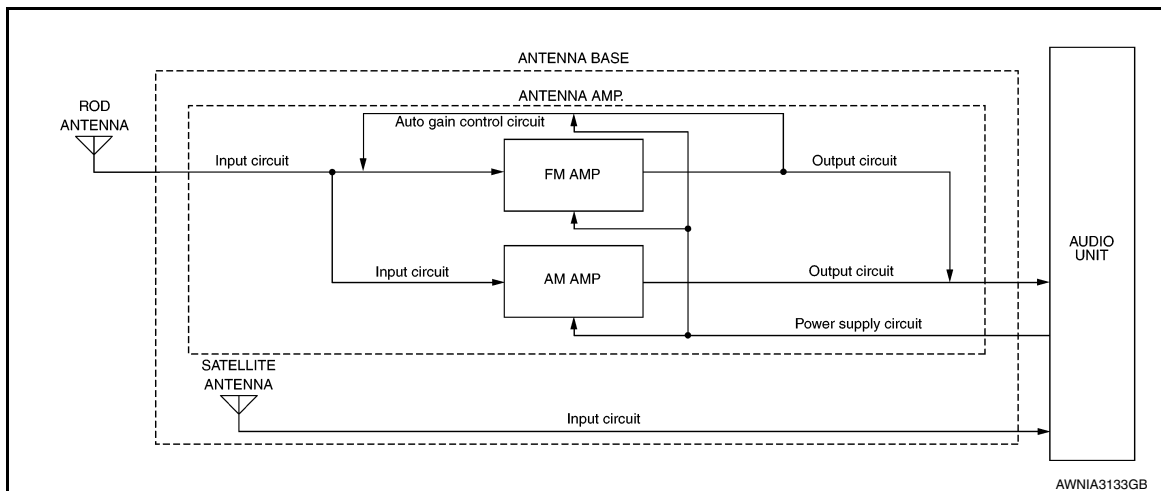


Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder

INFOID:000000012422079

RADIO ANTENNA AND SATELLITE ANTENNA

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

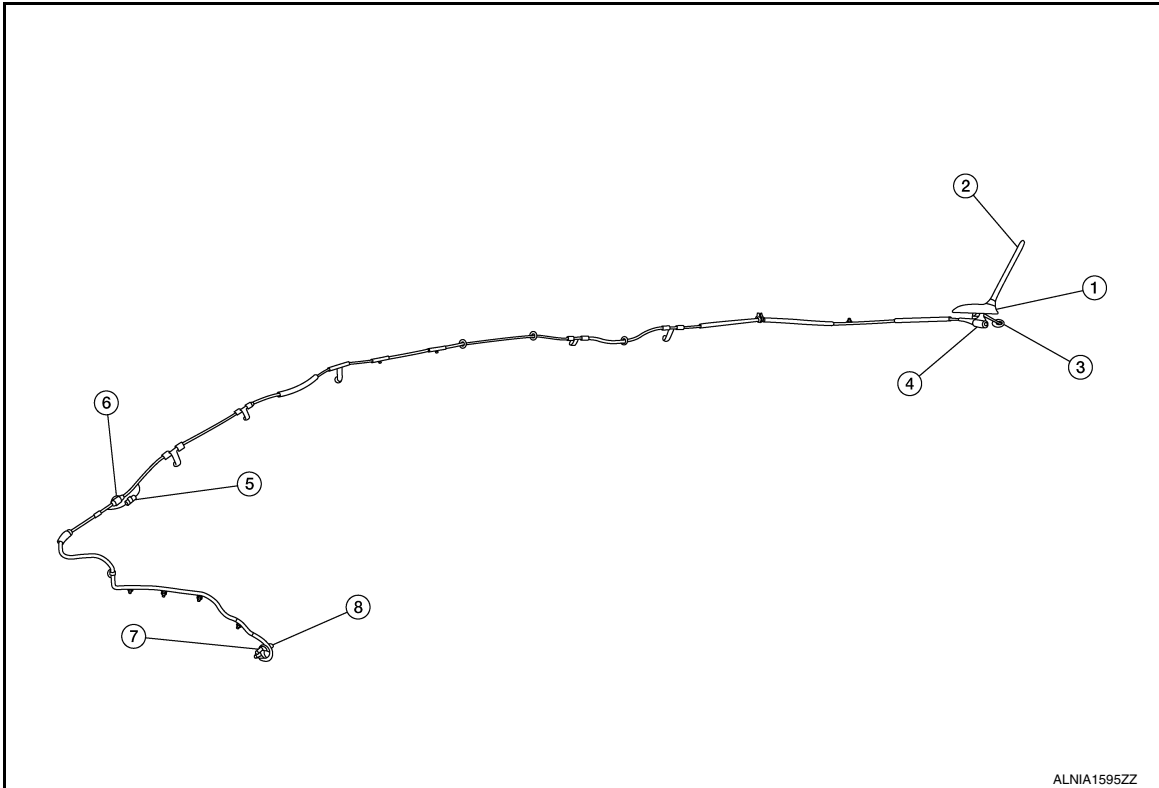


ANTENNA FEEDER LAYOUT

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV (DISPLAY AUDIO)]



- | | | |
|--|----------------|---------------|
| 1. Antenna base (antenna amp. and satellite antenna) | 2. Rod Antenna | 3. M503 |
| 4. M502 | 5. M130, M501 | 6. M129, M500 |
| 7. M126 | 8. M124 | |

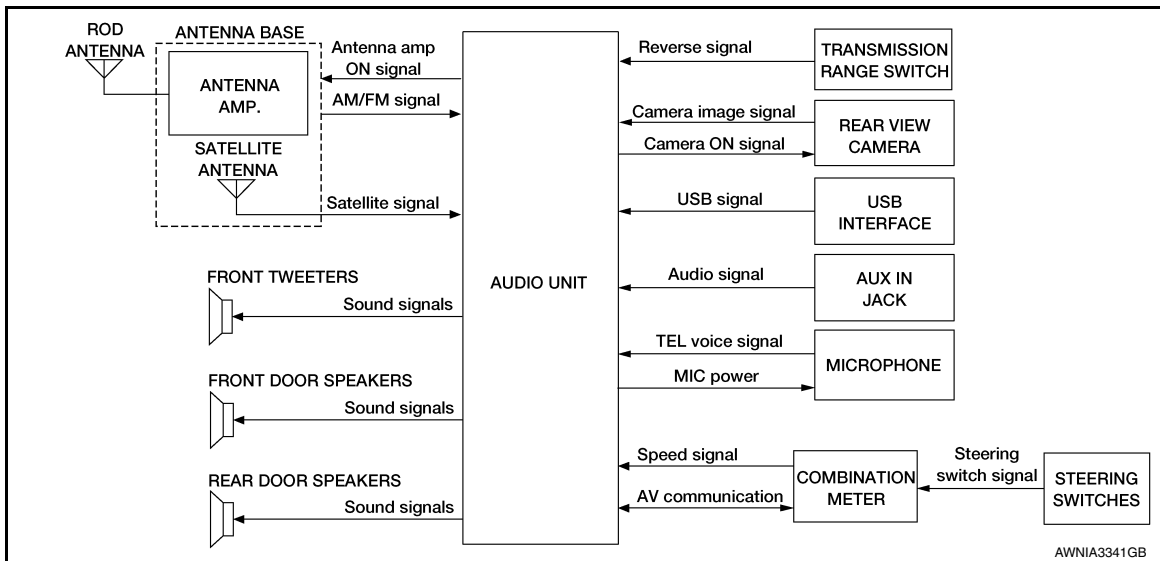
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SYSTEM

System Description

INFOID:000000012422080

SYSTEM DIAGRAM



AUDIO SYSTEM

The audio system consists of the following components:

- Audio unit
- Front tweeters
- Front door speakers
- Rear door speakers
- USB interface
- AUX in jack
- Steering switches
- Antenna base (rod antenna, antenna amp. and satellite antenna)

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

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

HANDS-FREE PHONE SYSTEM

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

When A Call Is Originated

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

SPEED SENSITIVE VOLUME SYSTEM

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

REAR VIEW MONITOR FUNCTION

Camera Image Operation Principle

SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV (DISPLAY AUDIO)]

- The audio unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the audio unit when power is supplied from the audio unit.
- The audio unit combines a warning message and fixed guide lines with an image received from the rear view camera to display a rear view camera image on the screen.

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DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (DISPLAY AUDIO)]

DIAGNOSIS SYSTEM (AUDIO UNIT)

Description

INFOID:000000012422081

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

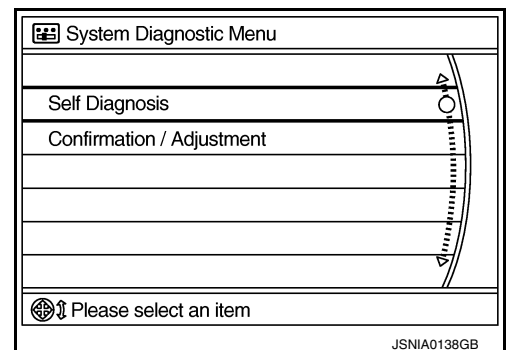
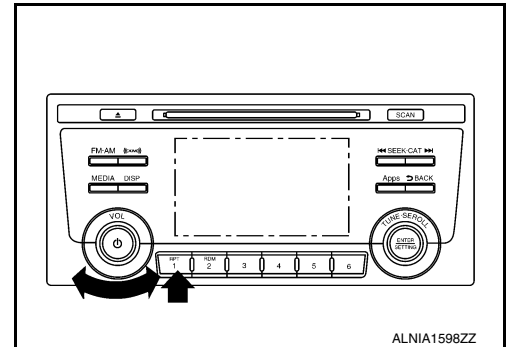
Mode		Description
Self Diagnosis		<ul style="list-style-type: none"> • Audio unit diagnosis. • Diagnoses the connections across system components.
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: color tone check by color bar display and white display, light and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

On Board Diagnosis Function

INFOID:000000012422082

METHOD OF STARTING

1. Turn the ignition ON.
2. Turn the audio system OFF.
3. While pressing the preset 1 button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. Shifting from current screen to previous screen is performed by pressing BACK button.
4. The trouble diagnosis initial screen is displayed, and Self Diagnosis or Confirmation/Adjustment can be selected.



SELF DIAGNOSIS MODE

Audio Unit Self Diagnosis

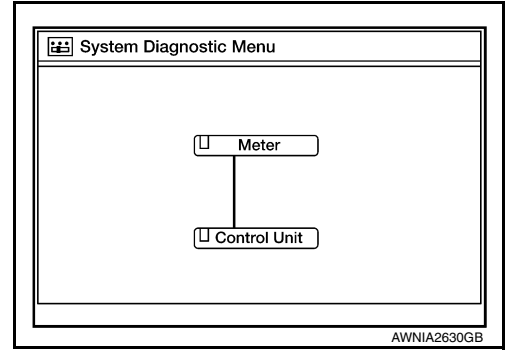
1. Select Self Diagnosis.

DIAGNOSIS SYSTEM (AUDIO UNIT)

[MULTI AV (DISPLAY AUDIO)]

< SYSTEM DESCRIPTION >

- Self diagnosis screen is displayed. The bar graph visible in center of screen indicates progress of self diagnosis.
- 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.

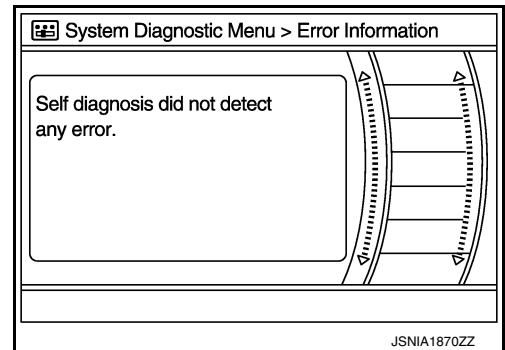


Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction ¹	Red	Green

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

- Replace audio unit if Self Diagnosis did not run because control unit malfunction is indicated. The symptom is audio unit internal error. Refer to [AV-72, "Removal and Installation"](#).
- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.

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



Audio Unit Self Diagnosis Results

Only Unit Part Is Displayed In Red		
Screen switch	Description	Possible cause
Control unit	Malfunction is detected in audio unit power supply and ground circuits.	<ul style="list-style-type: none"> Audio unit power supply or ground circuits. Refer to AV-52, "AUDIO UNIT : Diagnosis Procedure". If no malfunction is detected in audio unit power supply and ground circuits, replace audio unit. Refer to AV-72, "Removal and Installation".

A Connecting Cable Between Units Is Displayed In Yellow		
Area with yellow connection lines	Description	Possible cause
Control unit ↔ Meter	When one of the following is detected: <ul style="list-style-type: none"> malfunction is detected in combination meter power supply and ground circuits. malfunction is detected in AV communication circuits between audio unit and combination meter. 	<ul style="list-style-type: none"> Combination meter power supply or ground circuits. Refer to MWI-60, "COMBINATION METER : Diagnosis Procedure". AV communication circuits between audio unit and combination meter.

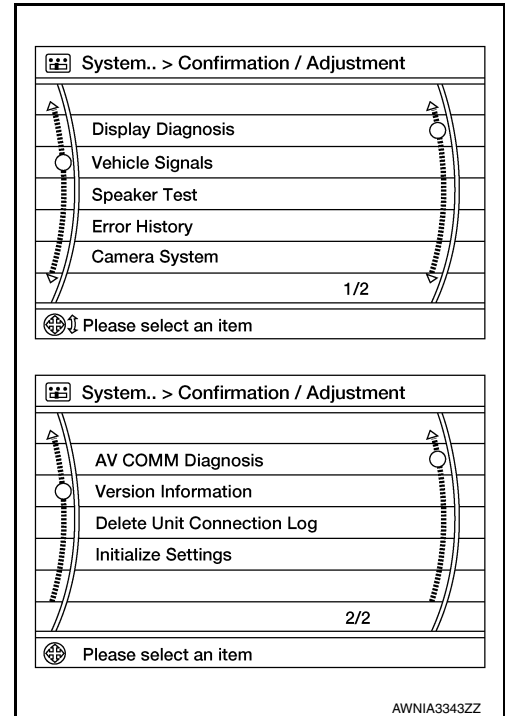
DIAGNOSIS SYSTEM (AUDIO UNIT)

[MULTI AV (DISPLAY AUDIO)]

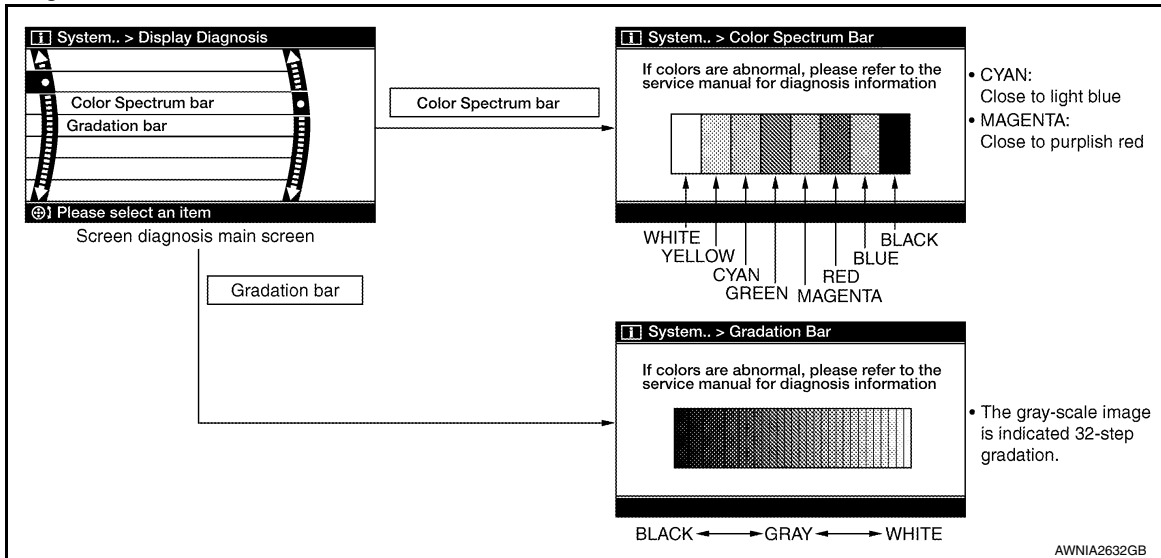
< SYSTEM DESCRIPTION >

Audio Unit Confirmation/Adjustment

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

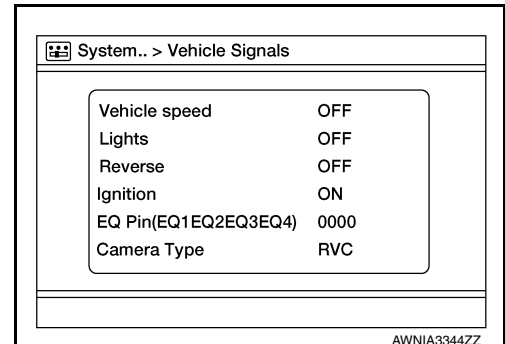


Display Diagnosis



Vehicle Signals

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



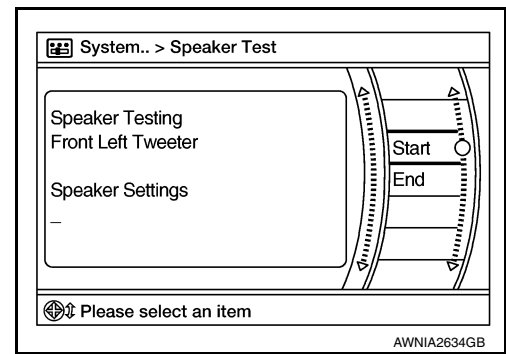
Speaker Test

DIAGNOSIS SYSTEM (AUDIO UNIT)

[MULTI AV (DISPLAY AUDIO)]

< SYSTEM DESCRIPTION >

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



Error History

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

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

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

Count up method A

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

Count up method B

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

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

Error item

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

Error item	Description	Possible cause
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	Replace the audio unit if the malfunction occurs constantly. Refer to AV-72. "Removal and Installation"
AV COMM CIRCUIT	When one of the following is detected: <ul style="list-style-type: none"> • malfunction is detected in combination meter power supply and ground circuits. • malfunction is detected in AV communication circuits between audio unit and combination meter. 	<ul style="list-style-type: none"> • Combination meter power supply or ground circuits. Refer to MWI-60. "COMBINATION METER : Diagnosis Procedure". • AV communication circuits between audio unit and combination meter.

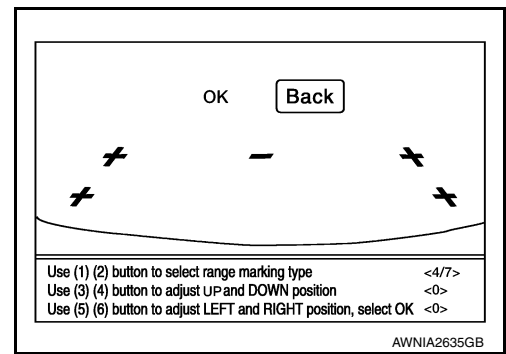
Camera System

DIAGNOSIS SYSTEM (AUDIO UNIT)

[MULTI AV (DISPLAY AUDIO)]

< SYSTEM DESCRIPTION >

This mode is used to adjust the guide line display position of the rear view camera.



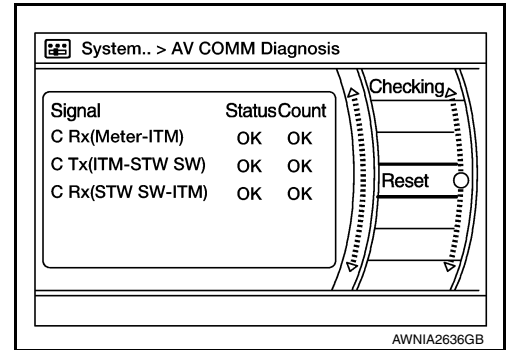
AV COMM Diagnosis

- Displays the communication status between audio 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 Rx(Meter-ITM)	OK / ???	OK / 0 – 39
C Tx(ITM-TW SW)	OK / ???	OK / 0 – 39
C Rx(STW SW-ITM)	OK / ???	OK / 0 – 39

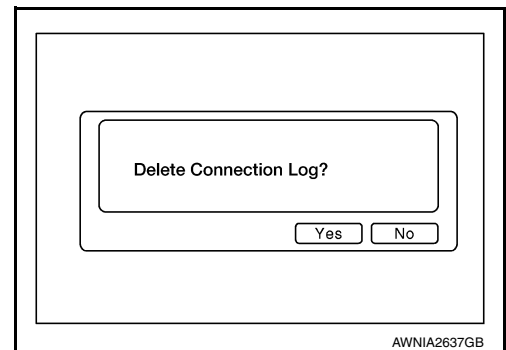
NOTE:

“???” indicates UNKWN.



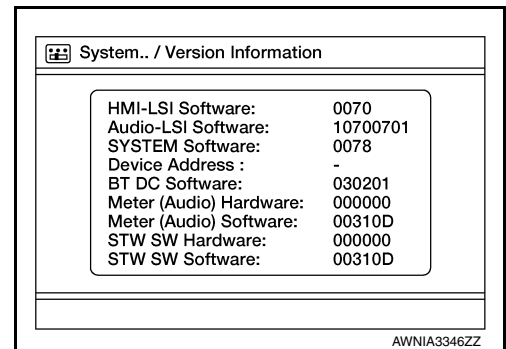
Delete Unit Connection Log

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



Version Information

Displays audio unit software and hardware version numbers.



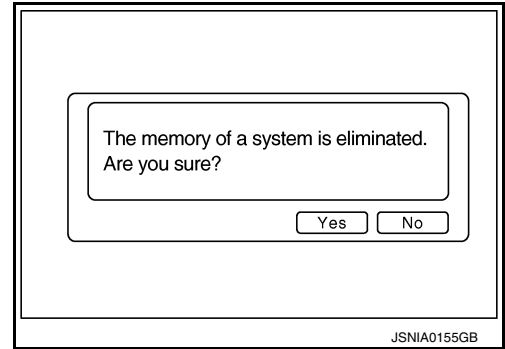
Initialize Settings

DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (DISPLAY AUDIO)]

Deletes data stored from the audio unit.



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AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (DISPLAY AUDIO)]

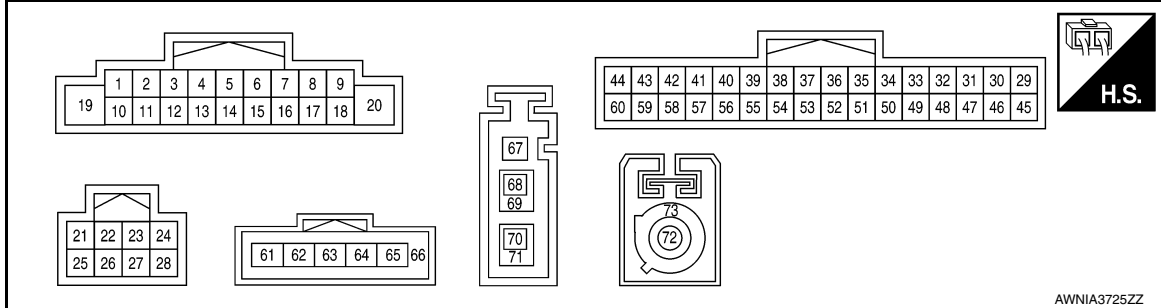
ECU DIAGNOSIS INFORMATION

AUDIO UNIT

Reference Value

INFOID:000000012422083

TERMINAL LAYOUT



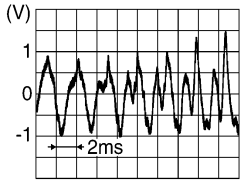
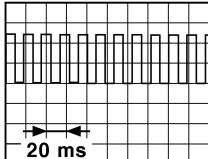
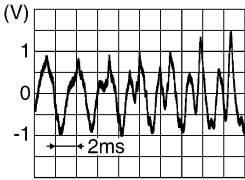
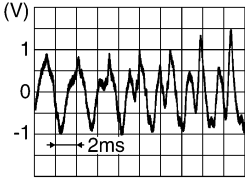
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
2 (W)	3 (P)	Sound signal front door speaker and front tweeter LH	Output	ON	Sound output	 SKIB3609E
4 (GR)	5 (BR)	Sound signal rear door speaker LH	Output	ON	Sound output	 SKIB3609E
7 (LG)	Ground	Ignition power supply	Input	ON	—	Battery voltage
9 (V)	8 (R)	Illumination control signal	Input	ON	Headlamps ON	Battery voltage
11 (G)	12 (V)	Sound signal front door speaker and front tweeter RH	Output	ON	Sound output	 SKIB3609E

AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (DISPLAY AUDIO)]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
13 (LG)	14 (Y)	Sound signal rear door speaker RH	Output	ON	Sound output	 SKIB3609E
18 (G)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 JSNIA0012GB
19 (L)	Ground	Battery power supply	Input	OFF	—	Battery voltage
20 (B)	Ground	Ground	—	ON	—	0 V
21 (L)	Ground	AUX jack audio signal LH	Input	ON	Received audio signal (AUX input)	 SKIB3609E
22 (G)	Ground	AUX jack audio signal RH	Input	ON	Received audio signal (AUX input)	 SKIB3609E
23 (Y)	Ground	AUX ground	—	ON	—	0V
24 (Shield)	—	AUX signal shield	—	—	—	—
35 (W)	Ground	ACC power supply	Input	ON	—	Battery voltage
36 (SB)	—	AV communication high	Input/ Output	—	—	—
37 (LG)	—	AV communication low	Input/ Output	—	—	—
39 (SB)	—	AV communication high	Input/ Output	—	—	—
40 (LG)	—	AV communication low	Input/ Output	—	—	—
41 (B)	Ground	Camera ground	—	ON	—	0 V

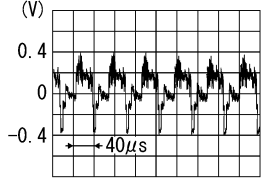
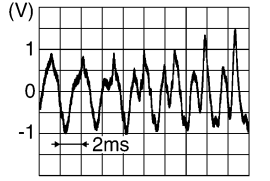
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AV

AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (DISPLAY AUDIO)]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
42 (R)	Ground	Camera power supply	Output	ON	Camera image displayed	6.0 V
					Except for above	0 V
43 (W)	44 (Shield)	Camera image signal	Input	ON	Camera image displayed	 SKIB2251J
45 (W)	47 (Shield)	Microphone signal	Input	ON	While speaking into microphone.	 SKIB3609E
46 (B)	—	MIC VCC	Input	ON	—	—
52 (B)	Ground	Camera detection	—	ON	—	0 V
58 (BR)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse)	Battery voltage
					Selector lever in any position other than R (reverse)	0 V
61 (R)	—	V BUS signal	—	—	—	—
62 (W)	—	USB D- signal	—	—	—	—
63 (G)	—	USB D+ signal	—	—	—	—
65 (B)	—	USB ground	—	—	—	—
66 (Shield)	—	USB shield	—	—	—	—
67 (B)	Ground	Antenna amp. ON signal	Output	ON	Audio unit ON, FM-AM selected.	Battery voltage
68 (B)	Ground	AM/FM antenna signal	Input	ON	Audio unit ON, FM-AM selected.	5.0 V
69 (Shield)	—	AM/FM antenna shield	—	—	—	—
72 (B)	Ground	Satellite antenna signal	Input	ON	Audio unit ON, XM selected.	5.0 V
73 (Shield)	—	Satellite antenna shield	—	—	—	—

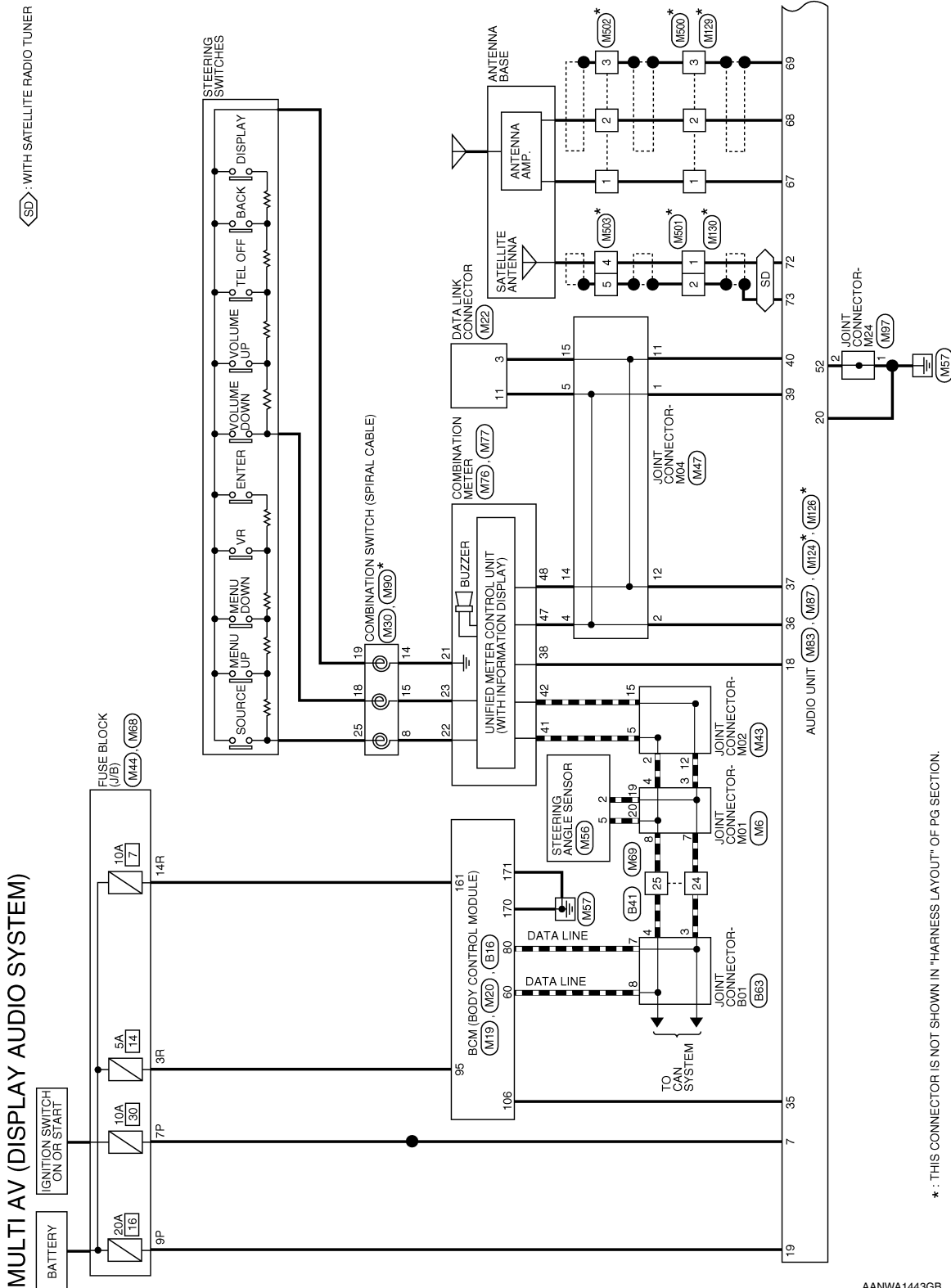
< WIRING DIAGRAM >

WIRING DIAGRAM

MULTI AV SYSTEM

Wiring Diagram

INFOID:0000000012422084



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

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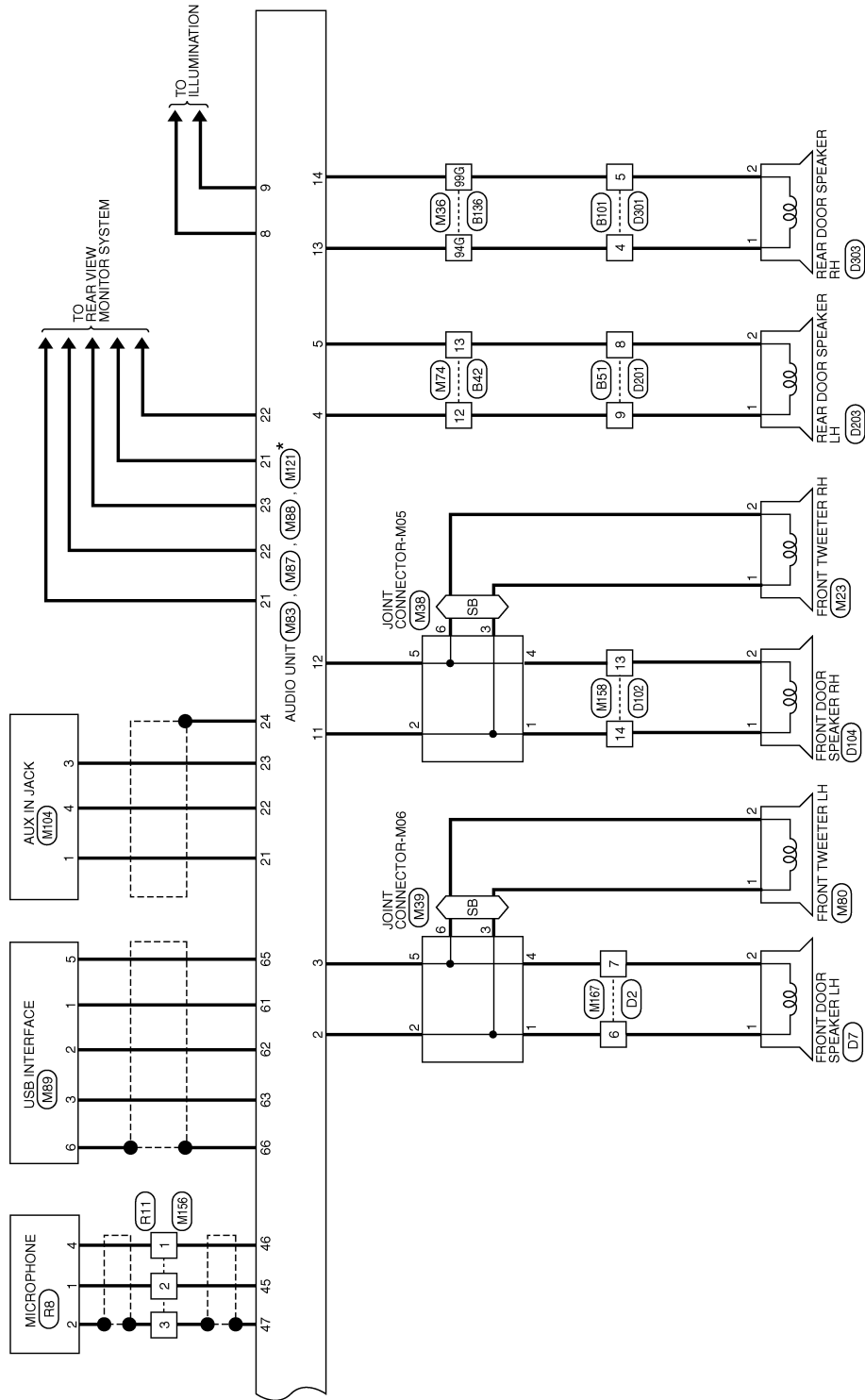
AV

MULTI AV SYSTEM

< WIRING DIAGRAM >

[MULTI AV (DISPLAY AUDIO)]

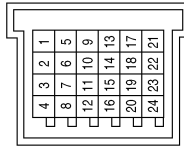
SB WITH 6 SPEAKERS



AANWA1444GB

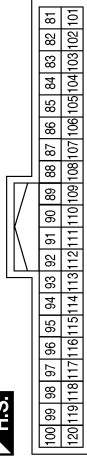
MULTI AV (DISPLAY AUDIO SYSTEM) CONNECTORS

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-
19	P	-
20	L	-

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



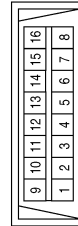
Terminal No.	Color of Wire	Signal Name
95	V	I SHORTING PIN
106	W	O AUTO ACC2

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
161	W	I PWR ECU
170	B	I GND 1
171	B	I GND 2

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



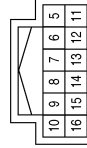
Terminal No.	Color of Wire	Signal Name
3	LG	-
11	SB	-

Connector No.	M23
Connector Name	FRONT TWEETER RH
Connector Color	WHITE



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

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8	Y	-
14	L	-
15	GR	-

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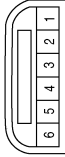
AV

MULTI AV SYSTEM

< WIRING DIAGRAM >

[MULTI AV (DISPLAY AUDIO)]

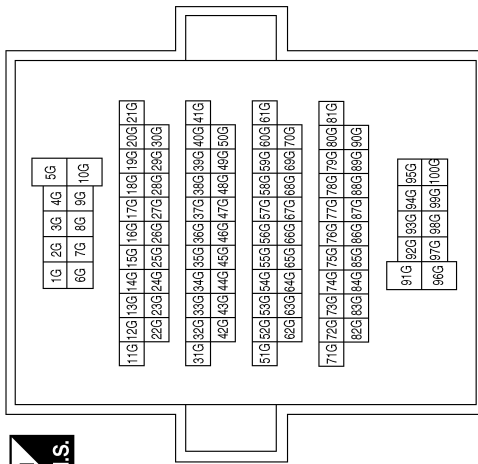
Connector No.	M38
Connector Name	JOINT CONNECTOR-M05
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	W	-
2	G	-
3	G	-
4	GR	-
5	V	-
6	R	-

Terminal No.	Color of Wire	Signal Name
94G	LG	-
99G	Y	-

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE

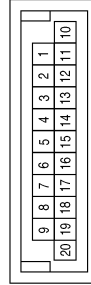


Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



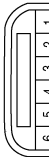
Terminal No.	Color of Wire	Signal Name
7P	Y	-
9P	L	-

Connector No.	M43
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
2	L	-
5	L	-
12	P	-
15	P	-

Connector No.	M39
Connector Name	JOINT CONNECTOR-M06
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	Y	-
2	W	-
3	W	-
4	R	-
5	P	-
6	GR	-

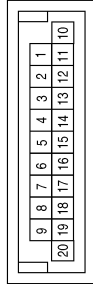
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MULTI AV SYSTEM

< WIRING DIAGRAM >

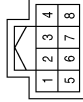
[MULTI AV (DISPLAY AUDIO)]

Connector No.	M47
Connector Name	JOINT CONNECTOR-M04
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	SB	-
4	SB	-
5	SB	-
11	LG	-
12	LG	-
14	LG	-
15	LG	-

Connector No.	M56
Connector Name	STEERING ANGLE SENSOR
Connector Color	GRAY



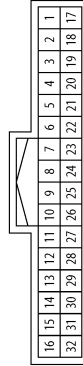
Terminal No.	Color of Wire	Signal Name
2	P	-
5	L	-

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



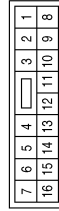
Terminal No.	Color of Wire	Signal Name
3R	V	-
14R	W	-

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



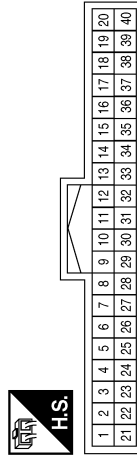
Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

Connector No.	M74
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
12	GR	-
13	BR	-

Connector No.	M76
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
21	L	STRG SW GND
22	Y	STRG SW A
23	GR	STRG SW B
38	G	8P/R OUTPUT

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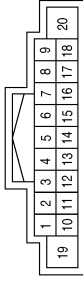


MULTI AV SYSTEM

< WIRING DIAGRAM >

[MULTI AV (DISPLAY AUDIO)]

Connector No.	M83
Connector Name	AUDIO UNIT
Connector Color	WHITE



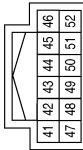
Terminal No.	Color of Wire	Signal Name
1	-	-
2	W	FR SP LH+
3	P	FR SP LH-
4	GR	RR SP LH+
5	BR	RR SP LH-
6	-	-
7	LG	IGN2
8	R	ILL-
9	V	ILL+, LIGHT SW
10	-	-
11	G	FR SP RH+
12	V	FR SP RH-
13	LG	RR SP RH+
14	Y	RR SP RH-
15	-	-
16	-	-
17	-	-
18	G	SPEED SIGNAL
19	L	+B
20	B	GND

Connector No.	M80
Connector Name	FRONT TWEETER LH
Connector Color	WHITE



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

Connector No.	M77
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
47	SB	M-CAN H
48	LG	M-CAN L

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MULTI AV SYSTEM

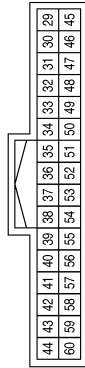
< WIRING DIAGRAM >

[MULTI AV (DISPLAY AUDIO)]

Terminal No.	Color of Wire	Signal Name
46	B	MIC V+
47	SHIELD	MIC GND
48	-	-
49	-	-
50	-	-
51	-	-
52	B	CAM DET
53	-	-
54	-	-
55	-	-
56	-	-
57	-	-
58	BR	REV (FOR RR VIEW)
59	-	-
60	-	-

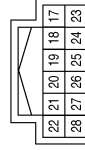
Terminal No.	Color of Wire	Signal Name
33	-	-
34	-	-
35	W	AUTO ACC
36	SB	MCAN2 H
37	LG	MCAN2 L
38	-	-
39	SB	MCAN1 H
40	LG	MCAN1 L
41	B	CAM GND
42	R	CAM 6.2V
43	W	COMPOSITE+ (CAM NTSC)
44	SHIELD	COMPOSITE- (CAM GND)
45	W	MIC +

Connector No.	M87
Connector Name	AUDIO UNIT
Connector Color	WHITE

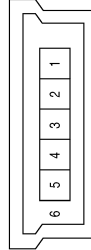


Terminal No.	Color of Wire	Signal Name
29	-	-
30	-	-
31	-	-
32	-	-

Connector No.	M90
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	WHITE



Connector No.	M89
Connector Name	USB INTERFACE
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
18	L	-
19	G	-
25	P	-

Terminal No.	Color of Wire	Signal Name
1	R	-
2	W	-
3	G	-
5	B	-
6	SHIELD	-

Connector No.	M88
Connector Name	AUDIO UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
21	L	AUXIN-L
22	G	AUXIN-R
23	Y	AUXIN-GND
24	SHIELD	AUXIN-SHIELD
25	-	-
26	-	-
27	-	-
28	-	-

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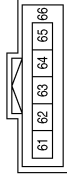
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MULTI AV SYSTEM

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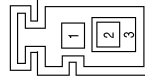
[MULTI AV (DISPLAY AUDIO)]

Connector No.	M121
Connector Name	AUDIO UNIT
Connector Color	BLACK



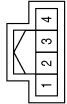
Terminal No.	Color of Wire	Signal Name
61	R	V BUS
62	W	USB D-
63	G	USB D+
64	-	-
65	B	USB GND
66	SHIELD	USB SHIELD

Connector No.	M129
Connector Name	WIRE TO WIRE
Connector Color	GRAY



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

Connector No.	M104
Connector Name	AUX IN JACK
Connector Color	WHITE



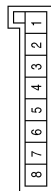
Terminal No.	Color of Wire	Signal Name
1	L	-
3	Y	-
4	G	-

Connector No.	M126
Connector Name	AUDIO UNIT
Connector Color	PINK



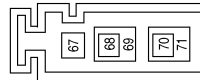
Terminal No.	Color of Wire	Signal Name
72	B	SAT ANT
73	SHIELD	SAT SHIELD

Connector No.	M97
Connector Name	JOINT CONNECTOR-M24
Connector Color	WHITE



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

Connector No.	M124
Connector Name	AUDIO UNIT
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
67	B	ANT+B
68	B	ANT MAIN
69	SHIELD	MAIN GND
70	-	-
71	-	-

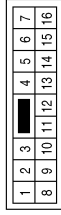
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MULTI AV SYSTEM

< WIRING DIAGRAM >

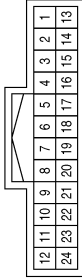
[MULTI AV (DISPLAY AUDIO)]

Connector No.	M158
Connector Name	WIRE TO WIRE
Connector Color	WHITE



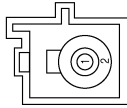
Terminal No.	Color of Wire	Signal Name
13	GR	-(WITHOUT BOSE AUDIO SYSTEM)
14	W	-(WITHOUT BOSE AUDIO SYSTEM)

Connector No.	M156
Connector Name	WIRE TO WIRE
Connector Color	WHITE



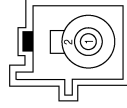
Terminal No.	Color of Wire	Signal Name
1	B	-
2	W	-
3	SHIELD	-

Connector No.	M130
Connector Name	WIRE TO WIRE
Connector Color	BROWN



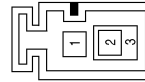
Terminal No.	Color of Wire	Signal Name
1	B	-
2	SHIELD	-

Connector No.	M501
Connector Name	WIRE TO WIRE
Connector Color	BROWN



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

Connector No.	M500
Connector Name	WIRE TO WIRE
Connector Color	GRAY



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

Connector No.	M167
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6	Y	-(WITHOUT BOSE AUDIO SYSTEM)
7	R	-(WITHOUT BOSE AUDIO SYSTEM)

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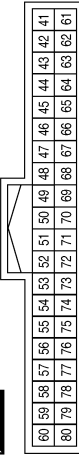
AV

MULTI AV SYSTEM

< WIRING DIAGRAM >

[MULTI AV (DISPLAY AUDIO)]

Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN

Terminal No.	Color of Wire	Signal Name
60	L	CAN-H
80	P	CAN-L

Connector No.	M503
Connector Name	ANTENNA BASE (SATELLITE RADIO ANTENNA)
Connector Color	GREEN




Terminal No.	Color of Wire	Signal Name
4	B	-
5	SHIELD	-

Connector No.	M502
Connector Name	ANTENNA BASE (ANTENNA AMP)
Connector Color	GRAY




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

Connector No.	B51
Connector Name	WIRE TO WIRE
Connector Color	WHITE




Connector No.	B42
Connector Name	WIRE TO WIRE
Connector Color	WHITE




Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Color	WHITE




Terminal No.	Color of Wire	Signal Name
8	LA/R	-(WITHOUT BOSE AUDIO SYSTEM; KOREA BUILT)
8	LA/GR	-(WITHOUT BOSE AUDIO SYSTEM; US BUILT)
9	LA/L	-(WITHOUT BOSE AUDIO SYSTEM; KOREA BUILT)
9	LA/Y	-(WITHOUT BOSE AUDIO SYSTEM; US BUILT)

Terminal No.	Color of Wire	Signal Name
12	LA/L	-(KOREA BUILT)
12	LA/Y	-(US BUILT)
13	LA/R	-(KOREA BUILT)
13	LA/GR	-(US BUILT)

Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

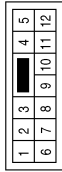
AANIA4174GB

MULTI AV SYSTEM

< WIRING DIAGRAM >

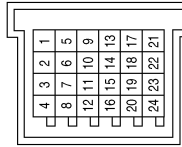
[MULTI AV (DISPLAY AUDIO)]

Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



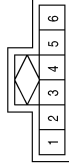
Terminal No.	Color of Wire	Signal Name
4	LA/V	-(WITHOUT BOSE AUDIO SYSTEM)
5	LA/Y	-(WITHOUT BOSE AUDIO SYSTEM)

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	GRAY

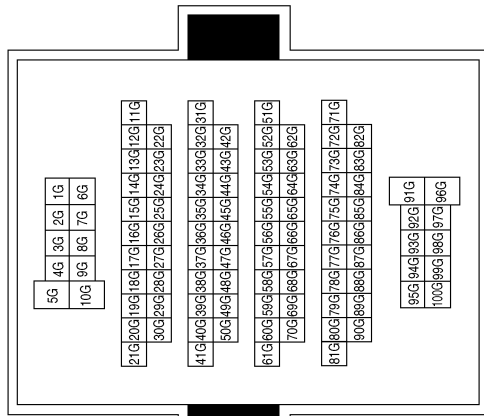


Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	R8
Connector Name	MICROPHONE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
94G	LA/V	-
99G	LA/Y	-



AANIA4223GB

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AV

MULTI AV SYSTEM

< WIRING DIAGRAM >

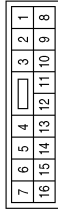
[MULTI AV (DISPLAY AUDIO)]

Connector No.	D7
Connector Name	FRONT DOOR SPEAKER LH (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



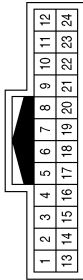
Terminal No.	Color of Wire	Signal Name
1	LA/L	-
2	LA/BR	-

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	WHITE



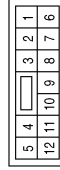
Terminal No.	Color of Wire	Signal Name
6	LA/L	-
7	LA/BR	-

Connector No.	R11
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

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



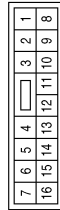
Terminal No.	Color of Wire	Signal Name
8	LA/R	-
9	LA/L	-

Connector No.	D104
Connector Name	FRONT DOOR SPEAKER RH (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LA/G	-
2	LA/R	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
13	LA/R	-
14	LA/G	-

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MULTI AV SYSTEM

< WIRING DIAGRAM >

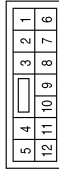
[MULTI AV (DISPLAY AUDIO)]

Connector No.	D303
Connector Name	REAR DOOR SPEAKER RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LAV	-
2	LAY	-

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



Terminal No.	Color of Wire	Signal Name
4	LAV	-
5	LAY	-

Connector No.	D203
Connector Name	REAR DOOR SPEAKER LH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LA/L	-
2	LA/R	-

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AV

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REAR VIEW MONITOR SYSTEM

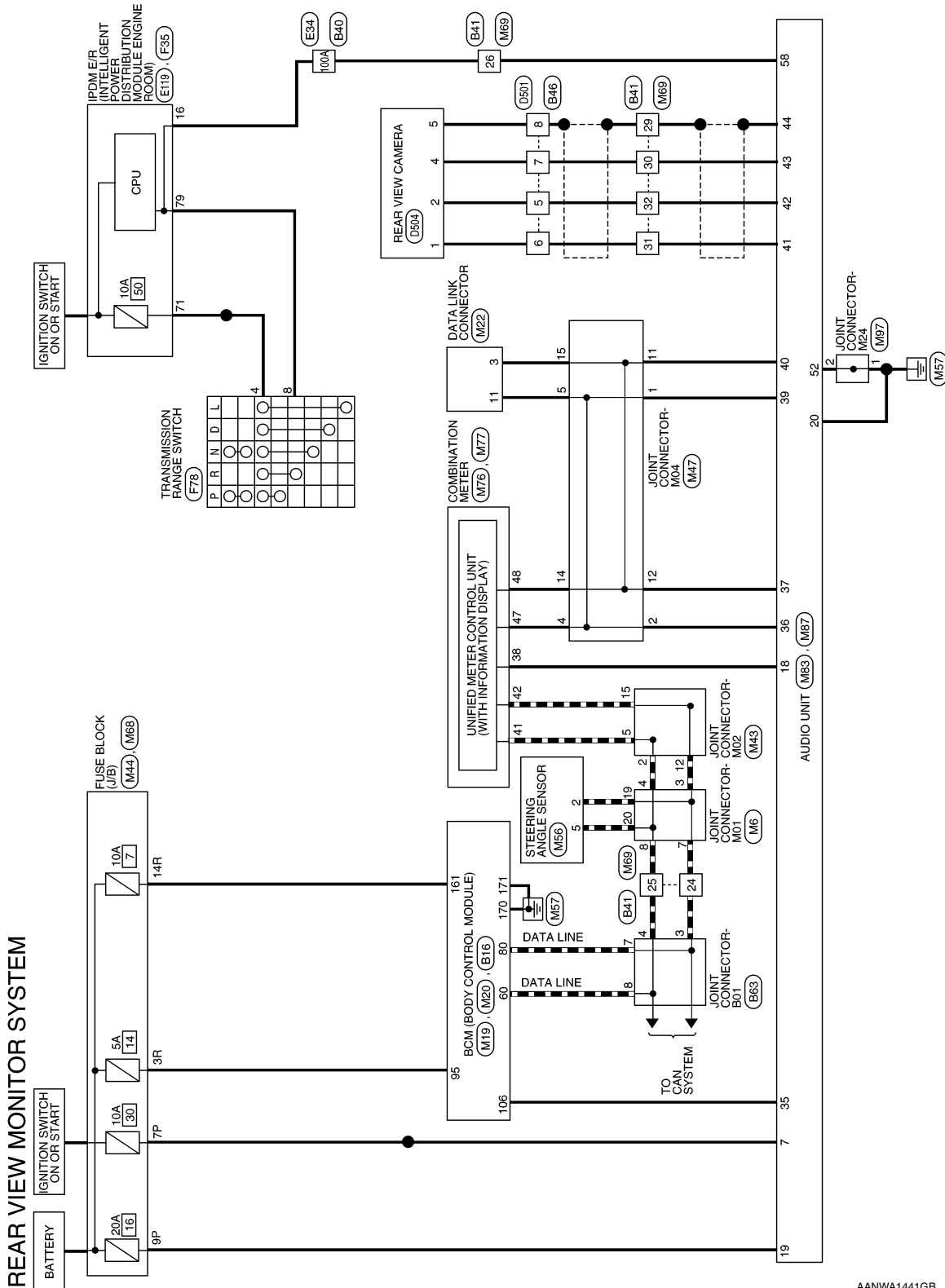
[MULTI AV (DISPLAY AUDIO)]

< WIRING DIAGRAM >

REAR VIEW MONITOR SYSTEM

Wiring Diagram

INFOID:000000012709909



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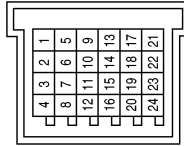
REAR VIEW MONITOR SYSTEM

[MULTI AV (DISPLAY AUDIO)]

< WIRING DIAGRAM >

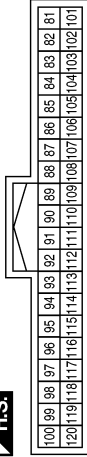
REAR VIEW MONITOR SYSTEM CONNECTORS

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-
19	P	-
20	L	-

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



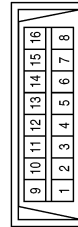
Terminal No.	Color of Wire	Signal Name
95	V	I SHORTING PIN
106	W	O AUTO ACC2

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BROWN



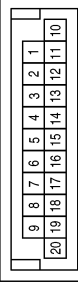
Terminal No.	Color of Wire	Signal Name
161	W	I PWR ECU
170	B	I GND 1
171	B	I GND 2

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	LG	-
11	SB	-

Connector No.	M43
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
2	L	-
5	L	-
12	P	-
15	P	-

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7P	Y	-
9P	L	-

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AV

REAR VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

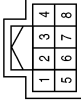
[MULTI AV (DISPLAY AUDIO)]

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



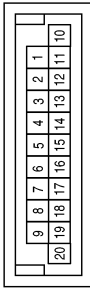
Terminal No.	Color of Wire	Signal Name
3R	V	-
14R	W	-

Connector No.	M56
Connector Name	STEERING ANGLE SENSOR
Connector Color	GRAY



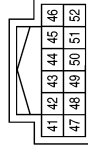
Terminal No.	Color of Wire	Signal Name
2	P	-
5	L	-

Connector No.	M47
Connector Name	JOINT CONNECTOR-M04
Connector Color	BLUE



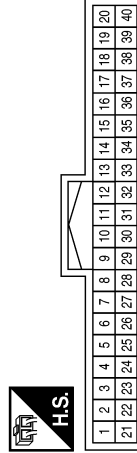
Terminal No.	Color of Wire	Signal Name
1	SB	-
2	SB	-
4	SB	-
5	SB	-
11	LG	-
12	LG	-
14	LG	-
15	LG	-

Connector No.	M77
Connector Name	COMBINATION METER
Connector Color	WHITE



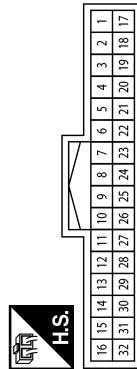
Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
47	SB	M-CAN H
48	LG	M-CAN L

Connector No.	M76
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
38	G	8P/R OUTPUT

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



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-
26	BR	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

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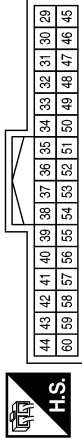
REAR VIEW MONITOR SYSTEM

[MULTI AV (DISPLAY AUDIO)]

< WIRING DIAGRAM >

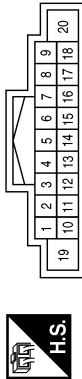
Terminal No.	Color of Wire	Signal Name
39	SB	MCAN1 H
40	LG	MCAN1 L
41	B	CAM GND
42	R	CAM 6.2V
43	W	COMPOSITE+ (CAM NTSC)
44	SHIELD	COMPOSITE- (CAM GND)
52	B	CAM DET
58	BR	REV (FOR RR VIEW)

Connector No.	M87
Connector Name	AUDIO UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
35	W	AUTO ACC
36	SB	MCAN2 H
37	LG	MCAN2 L

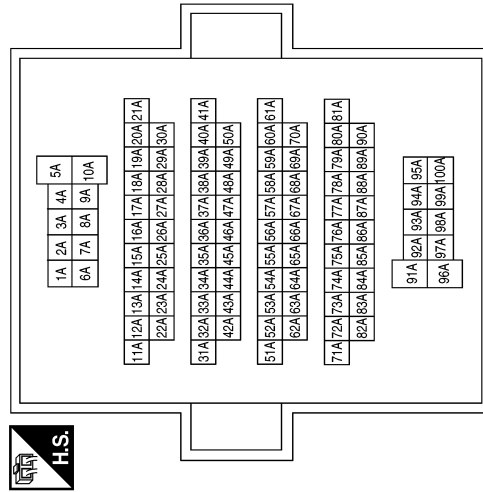
Connector No.	M83
Connector Name	AUDIO UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	LG	IGN2
18	G	SPEED SIGNAL
19	L	+B
20	B	GND

Terminal No.	Color of Wire	Signal Name
100A	G	-

Connector No.	E34
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Connector No.	M97
Connector Name	JOINT CONNECTOR-M24
Connector Color	WHITE



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

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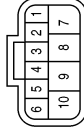
AV

REAR VIEW MONITOR SYSTEM

[MULTI AV (DISPLAY AUDIO)]

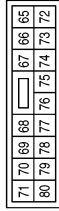
< WIRING DIAGRAM >

Connector No.	F78
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	BLACK



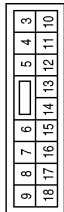
Terminal No.	Color of Wire	Signal Name
4	W	-
8	G	-

Connector No.	F35
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



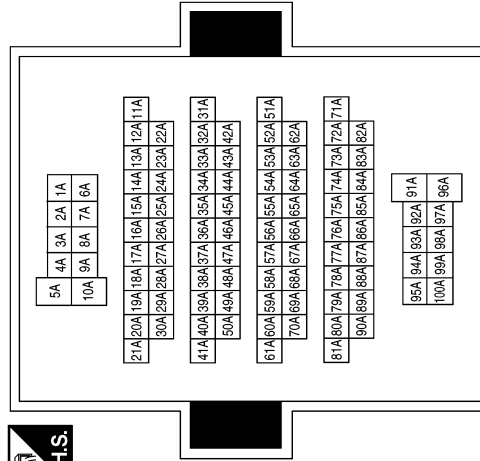
Terminal No.	Color of Wire	Signal Name
71	SB	O IGN REVERSE SW AC VALVE
79	G	L LIGHT REVERSE SW

Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	GRAY



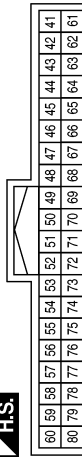
Terminal No.	Color of Wire	Signal Name
16	G	O LIGHT REVERSE LAMP

Connector No.	B40
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
100A	G	-

Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
60	L	CAN-H
80	P	CAN-L

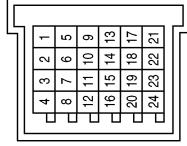
AANIA168GB

REAR VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

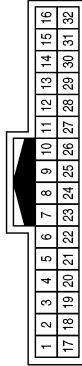
[MULTI AV (DISPLAY AUDIO)]

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	GRAY



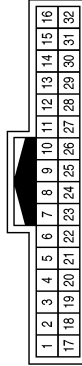
Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	B46
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5	R	-
6	B	-
7	W	-
8	SHIELD	-

Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Color	WHITE



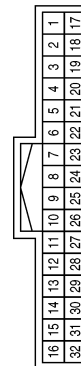
Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-
26	G	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

Connector No.	D504
Connector Name	REAR VIEW CAMERA (WITHOUT DRIVER ASSISTANCE SYSTEM)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
2	R	-
4	W	-
5	V	-

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5	R	-
6	B	-
7	W	-
8	V	-

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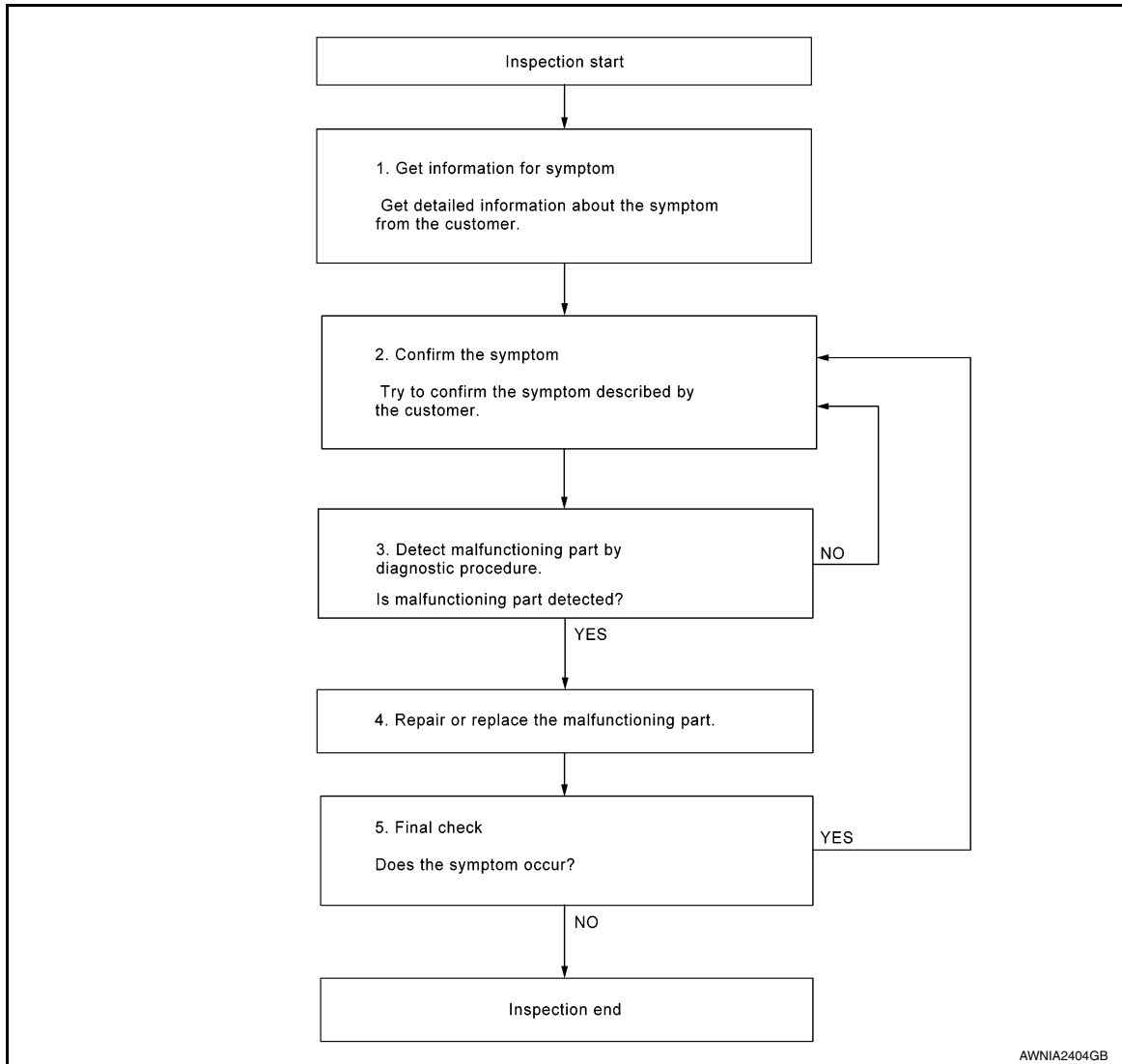
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000012422085

OVERALL SEQUENCE



DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

2.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected. Refer to [AV-67. "Symptom Table"](#).

>> GO TO 3.

3.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[MULTI AV (DISPLAY AUDIO)]

Is malfunctioning part detected?

YES >> GO TO 4.

NO >> GO TO 2.

4.REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 5.

5.FINAL CHECK

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

Was the repair confirmed?

YES >> Inspection End.

NO >> GO TO 2.

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (DISPLAY AUDIO)]

INSPECTION AND ADJUSTMENT REGISTRATION (AUDIO UNIT)

REGISTRATION (AUDIO UNIT) : Description

INFOID:000000012422086

AFTER REPLACEMENT

If the audio unit is replaced with a new audio unit, the new audio unit must be registered using the Bluetooth D/C(serial #).

CAUTION:

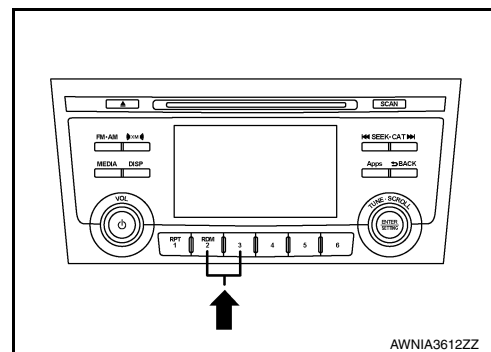
If the new audio unit Bluetooth D/C(serial #) is not registered, the “APPS” mode will not function.

REGISTRATION (AUDIO UNIT) : Work Procedure

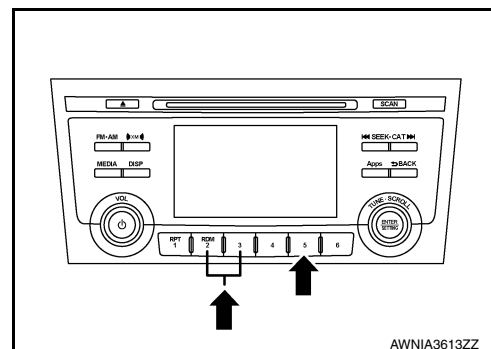
INFOID:000000012422087

1. RECORD BLUETOOTH D/C(SERIAL #) FOR REPLACEMENT AUDIO UNIT

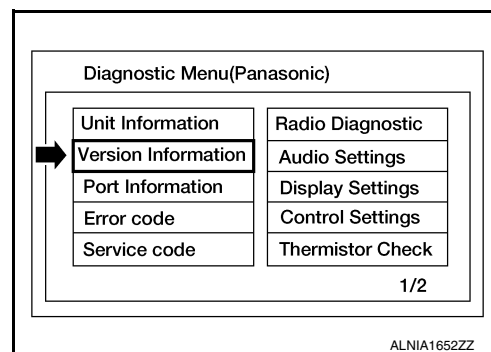
1. Turn ignition switch ON.
2. Turn audio unit OFF.
3. Access the diagnostic menu as follows:
 - Press and hold preset buttons 2 and 3.



- While holding preset buttons 2 and 3, press preset button 5 three times.



4. Select Version Information from the Diagnostic Menu.

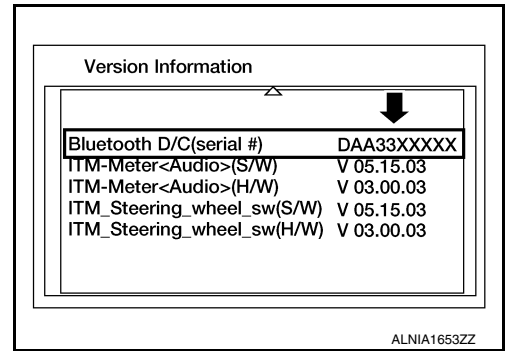


INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (DISPLAY AUDIO)]

5. Scroll through the menu pages to Bluetooth D/C(serial #) and record the number displayed.



>> GO TO 2.

2. REGISTER REPLACEMENT AUDIO UNIT

Register the replacement audio unit by contacting NISSAN Owner Services. Refer to TSB.

>> GO TO 3.

3. OPERATION CHECK

Verify that the audio unit "APPS" function operates normally.

>> Work End.

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AV

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT

AUDIO UNIT : Diagnosis Procedure

INFOID:0000000012422088

Regarding Wiring Diagram information, refer to [AV-29, "Wiring Diagram"](#).

1.CHECK FUSE

Check that the following fuses are not blown:

Terminal No.	Signal name	Fuse No.
7	Ignition power supply	30 (10A)
19	Battery power supply	16 (20A)

Are the fuses blown?

- YES >> Replace the blown fuse after repairing the affected circuit.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M83.
3. Check voltage between audio unit connector M83 and ground.

Audio unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M83	7	—	Ignition switch: ON	Battery voltage
	19		Ignition switch: OFF	

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair or replace harness or connectors.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M87.
3. Check continuity between audio unit connectors and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M83	20	—	Yes
M87	52		

Is the inspection result normal?

- YES >> Inspection End.
NO >> Repair or replace harness or connectors.

FRONT TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

FRONT TWEETER

Diagnosis Procedure

INFOID:000000012422089

Regarding Wiring Diagram information, refer to [AV-29. "Wiring Diagram"](#).

1. CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

2. CHECK FRONT TWEETER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M83 and suspect front tweeter connector.
2. Check continuity between audio unit connector M83 and suspect front tweeter connector.

Audio unit		Front tweeter		Continuity
Connector	Terminal	Connector	Terminal	
M83	2	M80 (LH)	1	Yes
	3		2	
	11	M23 (RH)	1	
	12		2	

3. Check continuity between audio unit connector M83 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M83	2	—	No
	3		
	11		
	12		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK FRONT TWEETER SIGNAL

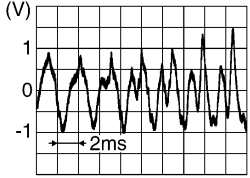
1. Connect audio unit connector M83 and suspect front tweeter connector.
2. Turn ignition switch to ON.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M83.

Audio unit connector M83		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

FRONT TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

2	3		
11	12	Audio signal output	

Is the inspection result normal?

- YES >> Replace front tweeter. Refer to [AV-74. "Removal and Installation"](#).
- NO >> Replace audio unit. Refer to [AV-72. "Removal and Installation"](#).

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:000000012422090

Regarding Wiring Diagram information, refer to [AV-29. "Wiring Diagram"](#).

1. CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

2. CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M83 and suspect front door speaker connector.
2. Check continuity between audio unit connector M83 and suspect front door speaker connector.

Audio unit		Front door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M83	2	D7 (LH)	1	Yes
	3		2	
	11	D104 (RH)	1	
	12		2	

3. Check continuity between audio unit connector M83 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M83	2	—	No
	3		
	11		
	12		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK FRONT DOOR SPEAKER SIGNAL

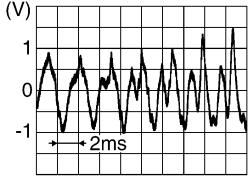
1. Connect audio unit connector M83 and suspect front door speaker connector.
2. Turn ignition switch to ON.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M83.

Audio unit connector M83		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

2	3	Audio signal output	
11	12		

SKIB3609E

Is the inspection result normal?

- YES >> Replace front door speaker. Refer to [AV-75. "Removal and Installation"](#).
- NO >> Replace audio unit. Refer to [AV-72. "Removal and Installation"](#).

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

REAR DOOR SPEAKER

Diagnosis Procedure

INFOID:0000000012422091

Regarding Wiring Diagram information, refer to [AV-29. "Wiring Diagram"](#).

1. CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

2. CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect audio unit connector M83 and suspect rear door speaker connector.
2. Check continuity between audio unit connector M83 and suspect rear door speaker connector.

Audio unit		Rear speaker		Continuity
Connector	Terminal	Connector	Terminal	
M83	4	D203 (LH)	1	Yes
	5		2	
	13	D303 (RH)	1	
	14		2	

3. Check continuity between audio unit connector M83 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M83	4	—	No
	5		
	13		
	14		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK REAR DOOR SPEAKER SIGNAL

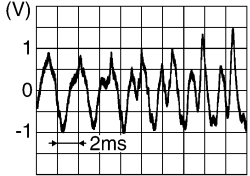
1. Connect audio unit connector M83 and suspect rear door speaker connector.
2. Turn ignition switch to ON.
3. Push audio unit POWER switch.
4. Check signal between the terminals of audio unit connector M83.

Audio unit connector M83		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

4	5	Audio signal output	
13	14		

SKIB3609E

Is the inspection result normal?

- YES >> Replace rear door speaker. Refer to [AV-76. "Removal and Installation"](#).
- NO >> Replace audio unit. Refer to [AV-72. "Removal and Installation"](#).

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:000000012422092

Regarding Wiring Diagram information, refer to [AV-29. "Wiring Diagram"](#).

1. CHECK REVERSE INPUT SIGNAL

1. Turn ignition switch ON.
2. Shift the selector lever to R (reverse).
3. Check voltage between audio unit connector M87 and ground.

Audio unit		Ground	Condition	Voltage (Approx.)
(+)		(-)		
Connector	Terminal			
M87	58	—	Selector lever in R (reverse)	Battery Voltage

Is inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace harness or connectors.

2. CHECK CAMERA POWER SUPPLY CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M87 and rear view camera connector D504.
3. Check continuity between audio unit connector M87 and rear view camera connector D504.

Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M87	42	D504	2	Yes

4. Check continuity between audio unit connector M87 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M87	42		No

Is inspection result normal?

- YES >> GO TO 3.
NO >> Repair or replace harness or connectors.

3. CHECK CAMERA POWER SUPPLY VOLTAGE

1. Connect audio unit connector M87 and rear view camera connector D504.
2. Turn ignition switch ON.
3. Shift the selector lever to R (reverse).
4. Check voltage between audio unit connector M87 and ground.

Audio unit		Ground	Condition	Voltage (Approx.)
(+)		(-)		
Connector	Terminal			
M87	42	—	Selector lever is in "R".	6.0 V

Is inspection result normal?

- YES >> GO TO 4.
NO >> Replace audio unit. Refer to [AV-72. "Removal and Installation"](#).

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REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

4. CHECK CAMERA IMAGE SIGNAL CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M87 and rear view camera connector D504.
3. Check continuity between audio unit connector M87 and rear view camera connector D504.

Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M87	43	D504	4	Yes

4. Check continuity between audio unit connector M87 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M87	43		No

Is inspection result normal?

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

5. CHECK CAMERA GROUND CIRCUIT CONTINUITY

Check continuity between audio unit connector M87 and rear view camera connector D504.

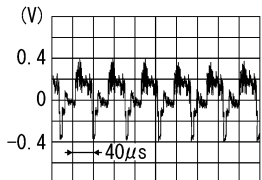
Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M87	41	D504	1	Yes

Is inspection result normal?

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

6. CHECK CAMERA IMAGE SIGNAL

1. Connect audio unit connector M87 and rear view camera connector D504.
2. Turn ignition switch ON.
3. Shift the selector lever to R (reverse).
4. Check signal between audio unit connector M87 and ground.

Audio unit		Ground	Condition	Reference value
(+)		(-)		
Connector	Terminal			
M87	43	—	Camera image displayed.	 <p>(V)</p> <p>0.4</p> <p>0</p> <p>-0.4</p> <p>40µs</p> <p>SKIB2251J</p>

Is inspection result normal?

- YES >> Replace audio unit. Refer to [AV-72, "Removal and Installation"](#).
 NO >> Replace rear view camera. Refer to [AV-79, "Removal and Installation"](#).

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:000000012422093

Regarding Wiring Diagram information, refer to [AV-29. "Wiring Diagram"](#).

1. CHECK HARNESS BETWEEN AUDIO UNIT AND MICROPHONE

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M87 and microphone connector R8.
3. Check continuity between audio unit connector M87 and microphone connector R8.

Audio unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M87	45	R8	1	Yes
	46		4	
	47		2	

4. Check continuity between audio unit connector M87 and ground.

Audio unit		Ground	Continuity
Connector	Terminal		
M87	45	—	No
	46		

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair harness or connectors.

2. CHECK MICROPHONE POWER SUPPLY

1. Connect audio unit connector M87 and microphone connector R8.
2. Turn ignition switch ON.
3. Check voltage between microphone connector R8 and ground.

Microphone (+)		Ground (-)	Voltage (Approx.)
Connector	Terminal		
R8	4	—	5V

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace audio unit. Refer to [AV-72. "Removal and Installation"](#).

3. CHECK MICROPHONE SIGNAL

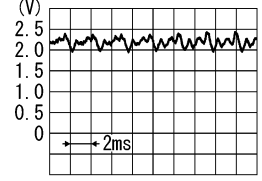
Check signal between terminals of audio unit connector M87.

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MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

Audio unit connector M87		Condition	Reference value
(+)	(-)		
Terminal	Terminal		
45	47	Speak into microphone.	 <p style="text-align: right;">PKIB5037J</p>

Is the inspection result normal?

- YES >> Replace audio unit. Refer to [AV-72. "Removal and Installation"](#).
- NO >> Replace microphone. Refer to [AV-78. "Removal and Installation"](#).

STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

STEERING SWITCH






Diagnosis Procedure

INFOID:000000012422094

Regarding Wiring Diagram information, refer to [AV-29. "Wiring Diagram"](#).

1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch connector M90.
3. Check resistance between the terminals of combination switch connector M90.

Combination switch connector M88		Condition	Resistance Ω (Approx.)
Terminal	Terminal		
25	19	Depress SOURCE switch.	1
		Depress Δ switch.	121
		Depress ∇ switch.	321
		Depress  switch.	723
		Depress ENTER switch.	2023
18		Depress -  switch.	1
		Depress  + switch.	121
		Depress  switch.	321
		Depress  switch.	723
		Depress DISPLAY switch.	2023

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to [AV-73. "Removal and Installation"](#).

2. CHECK HARNESS BETWEEN COMBINATION METER AND COMBINATION SWITCH

1. Disconnect combination meter connector M76 and combination switch connector M30.
2. Check continuity between combination meter connector M76 and combination switch connector M30.

Combination meter		Combination switch		Continuity
Connector	Terminal	Connector	Terminal	
M76	22	M30	8	Yes
	23		15	
	21		14	

3. Check continuity between combination meter connector M76 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M76	22	—	No
	23		
	21		

Is the inspection result normal?

STEERING SWITCH

[MULTI AV (DISPLAY AUDIO)]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 3.
NO >> Repair or replace harness or connectors.

3.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M90 and M30.

Combination switch				Continuity
Connector	Terminal	Connector	Terminal	
M90	25	M30	8	Yes
	18		15	
	19		14	

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace spiral cable. Refer to [SR-15. "Removal and Installation"](#).

4.CHECK HARNESS BETWEEN COMBINATION METER AND AUDIO UNIT

1. Disconnect combination meter connector M77 and audio unit connector M87.
2. Check continuity between combination meter connector M77 and audio unit connector M87.

Combination meter		Audio unit		Continuity
Connector	Terminal	Connector	Terminal	
M77	47	M87	36	Yes
	48		37	

3. Check continuity between combination meter connector M77 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M77	47	—	No
	48		

Is the inspection result normal?

- YES >> Replace audio unit. Refer to [AV-72. "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

USB CONNECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

USB CONNECTOR

Diagnosis Procedure

INFOID:000000012422095

Regarding Wiring Diagram information, refer to [AV-29. "Wiring Diagram"](#).

1. CHECK USB INTERFACE HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M121 and USB interface connector M89.
3. Check continuity between audio unit connector M121 and USB interface connector M89.

Audio unit		USB interface		Continuity
Connector	Terminal	Connector	Terminal	
M121	61	M89	1	Yes
	62		2	
	63		3	
	65		5	
	66		6	

4. Check continuity between audio unit connector M121 and ground.

Audio unit		—	Continuity
Connector	Terminal		
M121	61	Ground	No
	63		

Is the inspection result normal?

- YES >> Replace the USB interface. Refer to [AV-77. "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

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AV

AUXILIARY INPUT JACK

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

AUXILIARY INPUT JACK

Diagnosis Procedure

INFOID:000000012422096

Regarding Wiring Diagram information, refer to [AV-29. "Wiring Diagram"](#).

1. CHECK AUX JACK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio control unit connector M88 and AUX in jack connector M104.
3. Check continuity between audio control unit connector M88 and AUX in jack connector M104.

Audio control unit		AUX in jack		Continuity
Connector	Terminal	Connector	Terminal	
M88	21	M104	1	Yes
	22		4	
	23		3	

4. Check continuity between audio control unit connector M88 and ground.

Audio control unit		—	Continuity
Connector	Terminal		
M88	21	Ground	No
	22		

Is the inspection result normal?

- YES >> Replace the AUX in jack. Refer to [AV-77. "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

SYMPTOM DIAGNOSIS

AUDIO SYSTEM

Symptom Table

INFOID:0000000012422097

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	Audio unit	Malfunction in audio unit. Refer to AV-20, "On Board Diagnosis Function" .
No sound comes out or the level of the sound is low.	No sound from all speakers.	<ul style="list-style-type: none"> • Speaker circuit shorted to ground. Refer to AV-29, "Wiring Diagram". • Audio unit power supply and ground circuits malfunction. Refer to AV-52, "AUDIO UNIT : Diagnosis Procedure".
	Only a certain speaker (front tweeter LH, front tweeter RH, front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH) does not output sound.	<ul style="list-style-type: none"> • Poor connector connection of speaker. • Sound signal circuit malfunction between audio unit and speaker. Refer to: <ul style="list-style-type: none"> - AV-53, "Diagnosis Procedure" (front tweeter). - AV-55, "Diagnosis Procedure" (front door speaker). - AV-57, "Diagnosis Procedure" (rear door speaker). • Malfunction in speaker. Refer to: <ul style="list-style-type: none"> - AV-74, "Removal and Installation" (front tweeter). - AV-75, "Removal and Installation" (front door speaker). - AV-76, "Removal and Installation" (rear door speaker). • Malfunction in audio unit. Refer to AV-20, "On Board Diagnosis Function".

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AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

Symptoms	Check items	Probable malfunction location
Noise is mixed with audio.	Noise comes out from all speakers.	Malfunction in audio unit. Refer to AV-20, "On Board Diagnosis Function" .
	Noise comes out only from a certain speaker (front tweeter LH, front tweeter RH, front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH).	<ul style="list-style-type: none"> • Poor connector connection of speaker. • Sound signal circuit malfunction between audio unit and speaker. Refer to: <ul style="list-style-type: none"> - AV-53, "Diagnosis Procedure" (front tweeter). - AV-55, "Diagnosis Procedure" (front door speaker). - AV-57, "Diagnosis Procedure" (rear door speaker). • Malfunction in speaker. • Poor Installation of speaker (e.g. backlash and looseness). Refer to: <ul style="list-style-type: none"> - AV-74, "Removal and Installation" (front tweeter). - AV-75, "Removal and Installation" (front door speaker). - AV-76, "Removal and Installation" (rear door speaker). • Malfunction in audio unit. Refer to AV-20, "On Board Diagnosis Function".
	Noise is mixed with radio only (when the vehicle hits a bump or while driving over bad roads)	Poor connector connection of antenna or antenna feeder. Refer to AV-81, "Feeder Layout" .
No radio reception or poor reception.	<ul style="list-style-type: none"> • Other audio sounds are normal. • Any radio station cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises). 	<ul style="list-style-type: none"> • Antenna amp. ON signal circuit malfunction. Refer to AV-26, "Reference Value". • Poor connector connection of antenna or antenna feeder. Refer to AV-81, "Feeder Layout".
No satellite radio reception.	Satellite radio antenna malfunction.	<ul style="list-style-type: none"> • Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. • Loose satellite radio antenna mounting nut. Refer to AV-81, "Feeder Layout".
Buzz/rattle sound from speaker	The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the buzz/rattle.	Refer to "SQUEAK AND RATTLE TROUBLE DIAGNOSIS" in the appropriate interior trim section.

RELATED TO HANDS-FREE PHONE

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

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.

NOTE:

The customer's phone may be required, depending upon their concern.

3. Write down the customer's phone brand, model and service provider.

NOTE:

AUDIO SYSTEM

[MULTI AV (DISPLAY AUDIO)]

< SYMPTOM DIAGNOSIS >

It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.

4. Go to “www.nissanusa.com/bluetooth/”.
 - a. Using the website’s search engine, find out if the customer’s phone is on the approved list.
 - b. If the customer’s phone is NOT on the approved list:

Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.
 - c. If the feature related to the customer’s concern shows as “N” (not compatible):

Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as “Y” (compatible) in the “Basic Features”.
 - d. If the feature related to the customer’s concern shows as “Y” (compatible):

Perform diagnosis as per the following table.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection (no connection is displayed on the display at the guide).	Repeat the registration of cellular phone.	
Hands-free phone cannot be established.	<ul style="list-style-type: none"> • 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. 	Malfunction in audio unit. Replace audio unit. Refer to AV-72, "Removal and Installation" .
The other party's voice cannot be heard by hands-free phone.	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is heard.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-61, "Diagnosis Procedure" .
The system cannot be operated.	<ul style="list-style-type: none"> • The voice recognition can be controlled. • Steering switch's , , and switch works, but does not work. 	Steering switch malfunction. Replace steering switch. Refer to AV-73, "Removal and Installation" .
	Steering switch's , , and switches do not work.	Steering switch signal circuit malfunction. Refer to AV-63, "Diagnosis Procedure" .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-63, "Diagnosis Procedure" .

RELATED TO REAR VIEW CAMERA

Symptoms	Check items	Probable malfunction location
Rear view camera is inoperative.	Reverse signal circuit malfunction.	Reverse signal circuit malfunction between BCM and audio unit. Refer to AV-59, "Diagnosis Procedure" .
	Camera image signal circuit malfunction.	Camera image signal circuit malfunction between rear view camera and audio unit. Refer to AV-59, "Diagnosis Procedure" .
	Rear view camera malfunction.	Replace rear view camera. Refer to AV-79, "Removal and Installation" .

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

NORMAL OPERATING CONDITION

Description

INFOID:000000012422098

RELATED TO NOISE

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

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

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

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

NOTE:

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

Type of Noise and Possible Cause

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

RELATED TO HANDS-FREE PHONE

Symptom	Cause and Counter measure
Does not recognize cellular phone connection (No connection is displayed on the display at the guide).	<p>Some Bluetooth[®] enabled cellular phones may not be recognized by the in-vehicle phone module.</p> <p>Refer to "RELATED TO HANDS-FREE PHONE (Check Compatibility)" in AV-67, "Symptom Table".</p>
Cannot use hands-free phone.	<p>Customer will not be able to use a hands-free phone under the following conditions:</p> <ul style="list-style-type: none"> • The vehicle is outside of the telephone service area. • The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area. • The cellular phone is locked to prevent it from being dialed. <p>NOTE:</p> <p>While a cellular phone is connected through the Bluetooth[®] wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth[®] Hands-Free Phone System cannot charge cellular phones.</p>

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (DISPLAY AUDIO)]

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

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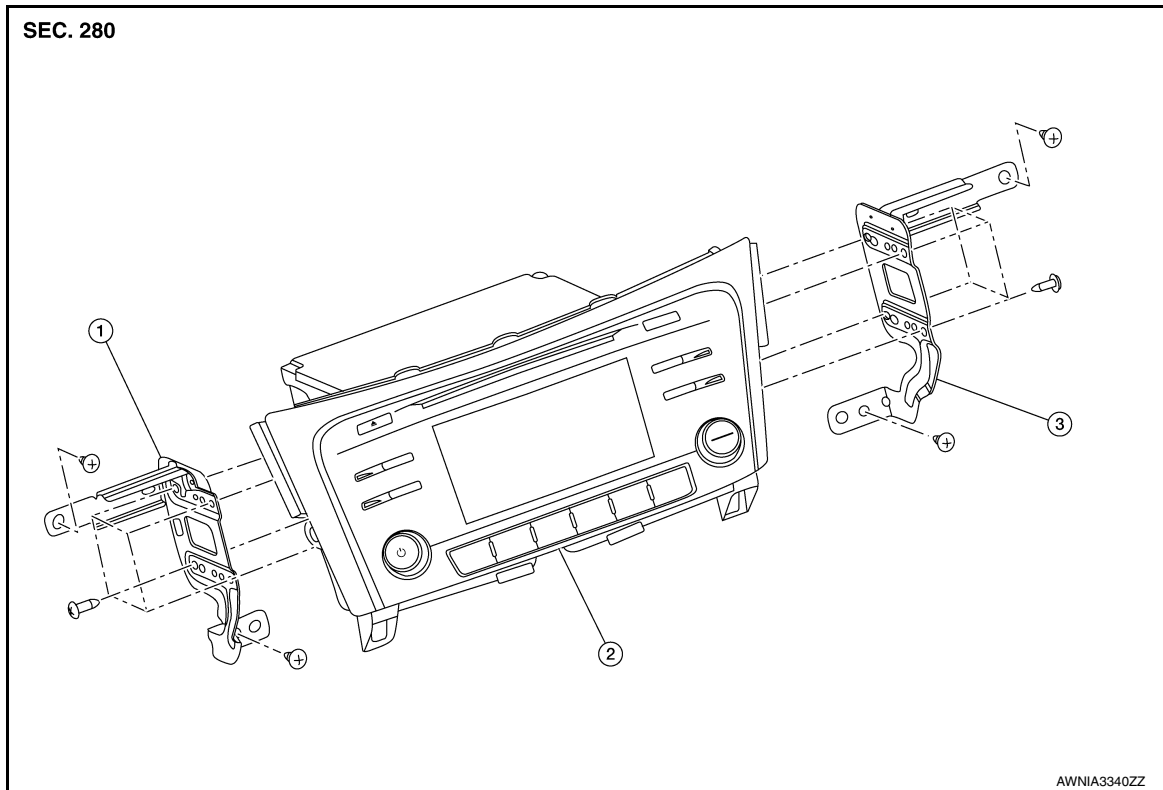
AV

REMOVAL AND INSTALLATION

AUDIO UNIT

Exploded View

INFOID:000000012422099



1. Audio unit bracket (LH)

2. Audio unit

3. Audio unit bracket (RH)

Removal and Installation

INFOID:000000012422100

REMOVAL

1. Disconnect the negative battery terminal. Refer to [PG-80, "Removal and Installation \(Battery\)"](#).
2. Remove cluster lid C. Refer to [JP-22, "Removal and Installation"](#).
3. Remove instrument finisher B. Refer to [JP-16, "INSTRUMENT FINISHER B : Removal and Installation"](#).
4. Remove instrument finisher E. Refer to [JP-16, "INSTRUMENT FINISHER E : Removal and Installation"](#).
5. Remove the audio unit screws, then pull out the audio unit.
6. Disconnect the harness connectors from the audio unit and remove.
7. Remove the audio unit bracket (LH/RH) screws and the audio unit brackets (LH/RH) (if necessary).

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

When replacing audio unit, the audio unit must be registered. Refer to [AV-50, "REGISTRATION \(AUDIO UNIT\) : Description"](#).

STEERING SWITCHES

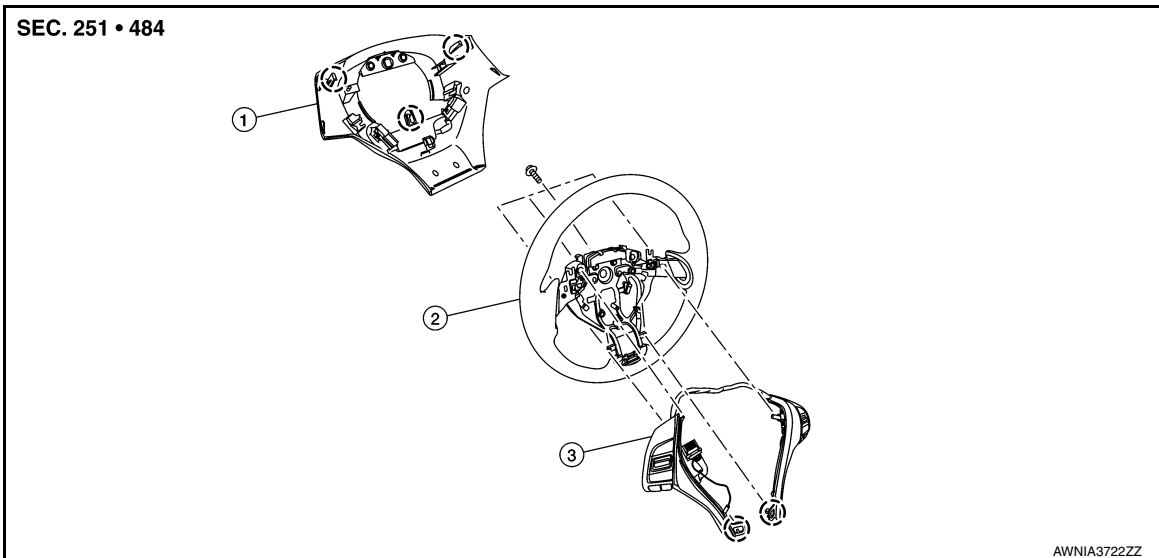
< REMOVAL AND INSTALLATION >

[MULTI AV (DISPLAY AUDIO)]

STEERING SWITCHES

Exploded View

INFOID:000000012422101



1. Steering wheel rear finisher
2. Steering wheel
3. Steering switches

○ Pawl

Removal and Installation

INFOID:000000012422102

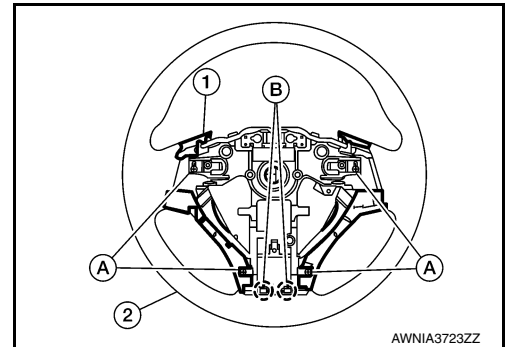
REMOVAL

NOTE:

The steering switches are serviced as an assembly.

1. Remove steering wheel. Refer to [ST-11, "Removal and Installation"](#).
2. Release pawls on the steering wheel rear finisher and remove.
3. Remove screws (A) and release pawls (B) and remove steering switches (1) from steering wheel (2).

○: Pawls



INSTALLATION

Installation is in the reverse order of removal.

FRONT TWEETER

< REMOVAL AND INSTALLATION >

[MULTI AV (DISPLAY AUDIO)]

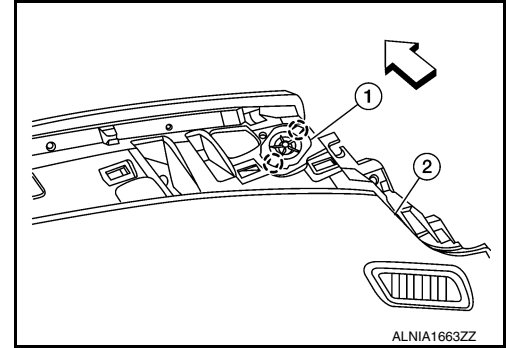
FRONT TWEETER

Removal and Installation

INFOID:000000012422103

REMOVAL

1. Remove defroster grille. Refer to [VTL-12. "DEFROSTER GRILLE : Removal and Installation"](#).
 2. Release pawls and pull out the front tweeter (1) from the instrument panel assembly (2).
- : Pawl
⇐ : Front
3. Disconnect the harness connector from the front tweeter and remove.



INSTALLATION

Installation is in the reverse order of removal.

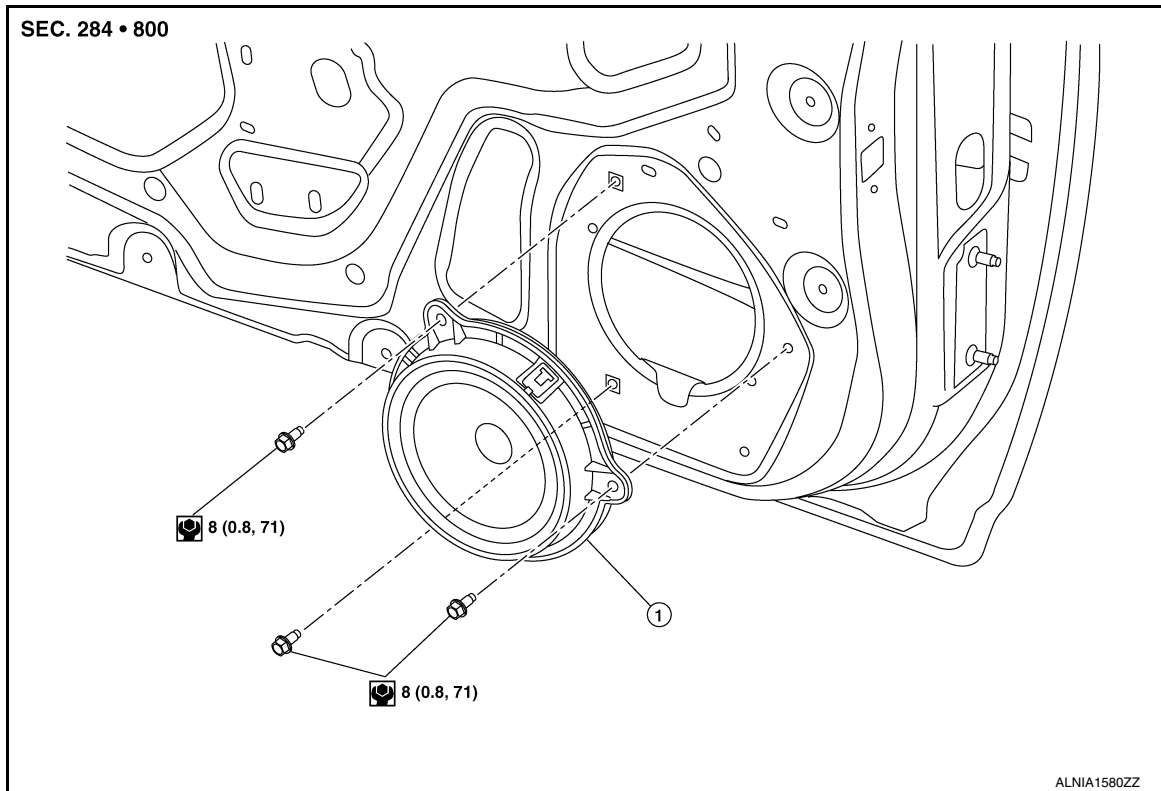
FRONT DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[MULTI AV (DISPLAY AUDIO)]

FRONT DOOR SPEAKER

Exploded View



1. Front door speaker

Removal and Installation

INFOID:000000012422105

REMOVAL

1. Remove front door finisher. Refer to [INT-15. "Removal and Installation"](#).
2. Remove front door speaker bolts, then pull out front door speaker.
3. Disconnect the harness connector from front door speaker and remove.

INSTALLATION

Installation is in the reverse order of removal.

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REAR DOOR SPEAKER

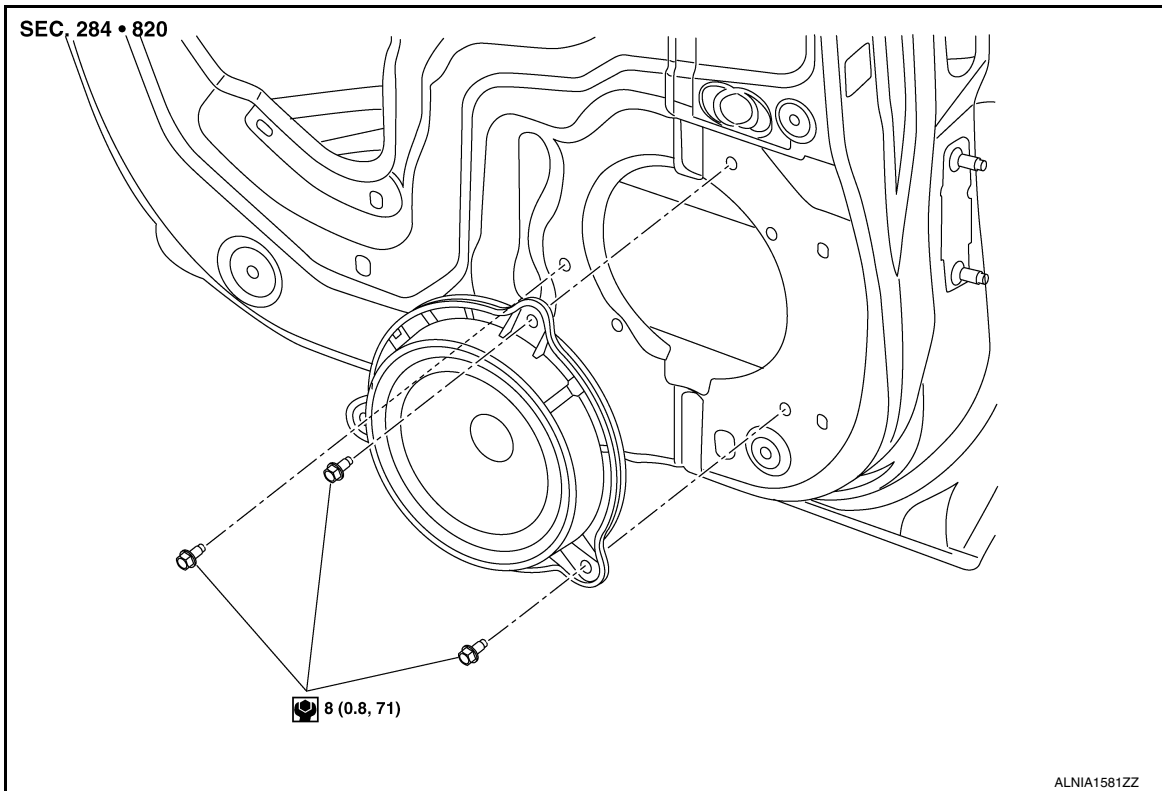
< REMOVAL AND INSTALLATION >

[MULTI AV (DISPLAY AUDIO)]

REAR DOOR SPEAKER

Exploded View

INFOID:000000012422106



1. Rear door speaker

Removal and Installation

INFOID:000000012422107

REMOVAL

1. Remove rear door finisher. Refer to [INT-18. "Removal and Installation"](#).
2. Remove rear door speaker bolts, then pull out rear door speaker.
3. Disconnect the harness connector from the rear door speaker and remove.

INSTALLATION

Installation is in the reverse order of removal.

USB INTERFACE AND AUX IN JACK

< REMOVAL AND INSTALLATION >

[MULTI AV (DISPLAY AUDIO)]

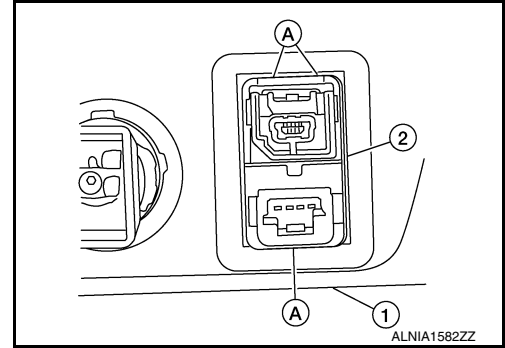
USB INTERFACE AND AUX IN JACK

Removal and Installation

INFOID:000000012422108

REMOVAL

1. Remove cluster lid C. Refer to [IP-22. "Removal and Installation"](#).
2. Release the pawls (A) on the back of USB interface and AUX in jack (2), then remove from the front of cluster lid C (1).



INSTALLATION

Installation is in the reverse order of removal.

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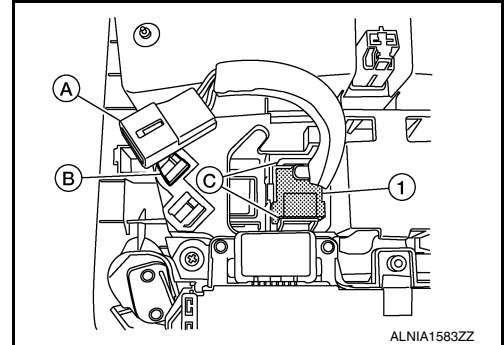
MICROPHONE

Removal and Installation

INFOID:000000012422109

REMOVAL

1. Remove the map lamp assembly. Refer to [INL-55. "Removal and Installation"](#).
2. Release harness connector (A) by sliding rearward to remove from the pawl (B).
3. Release pawls (C) and remove the microphone (1) from the front room/map lamp assembly.



INSTALLATION

Installation is in the reverse order of removal.

REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[MULTI AV (DISPLAY AUDIO)]

REAR VIEW CAMERA

Removal and Installation

INFOID:0000000012422110

REMOVAL

1. Remove the back door outer finisher. Refer to [EXT-50. "Removal and Installation"](#).
2. Release pawl, disconnect harness connector from rear view camera and remove.

INSTALLATION

Installation is in the reverse order of removal.

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ANTENNA BASE

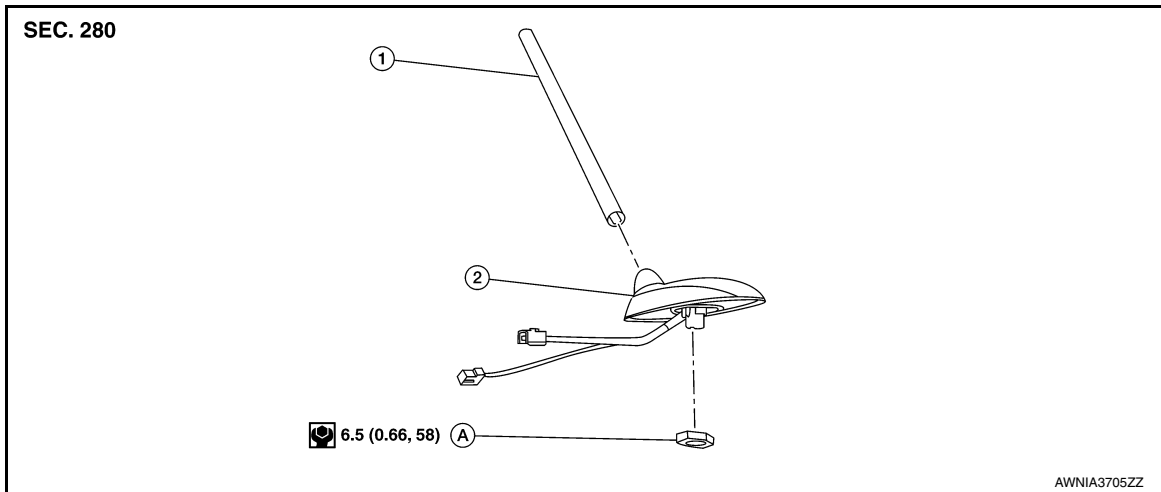
< REMOVAL AND INSTALLATION >

[MULTI AV (DISPLAY AUDIO)]

ANTENNA BASE

Exploded View

INFOID:0000000012422111



1. Antenna rod

2. Antenna base

A. Antenna nut

Removal and Installation

INFOID:0000000012422112

REMOVAL

1. Remove the luggage side upper finisher (RH). Refer to [INT-36. "LUGGAGE SIDE UPPER FINISHER : Removal and Installation"](#).
2. Partially lower headlining (rear). Refer to [INT-30. "Removal and Installation"](#).
3. Disconnect harness connectors from antenna feeder.
4. Remove nut from antenna base and remove.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

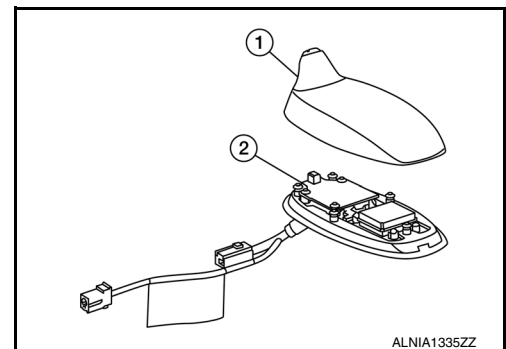
If the antenna base nut is not properly tightened, lower sensitivity of the antenna may be experienced. If the nut is over tightened, this will deform the roof panel.

Disassembly and Assembly

INFOID:0000000012422113

DISASSEMBLY

Insert a suitable tool into gaps between antenna base (2) and the cover (1), then remove the cover (1) from antenna base (2).



ASSEMBLY

Assembly is in the reverse order of disassembly.

ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

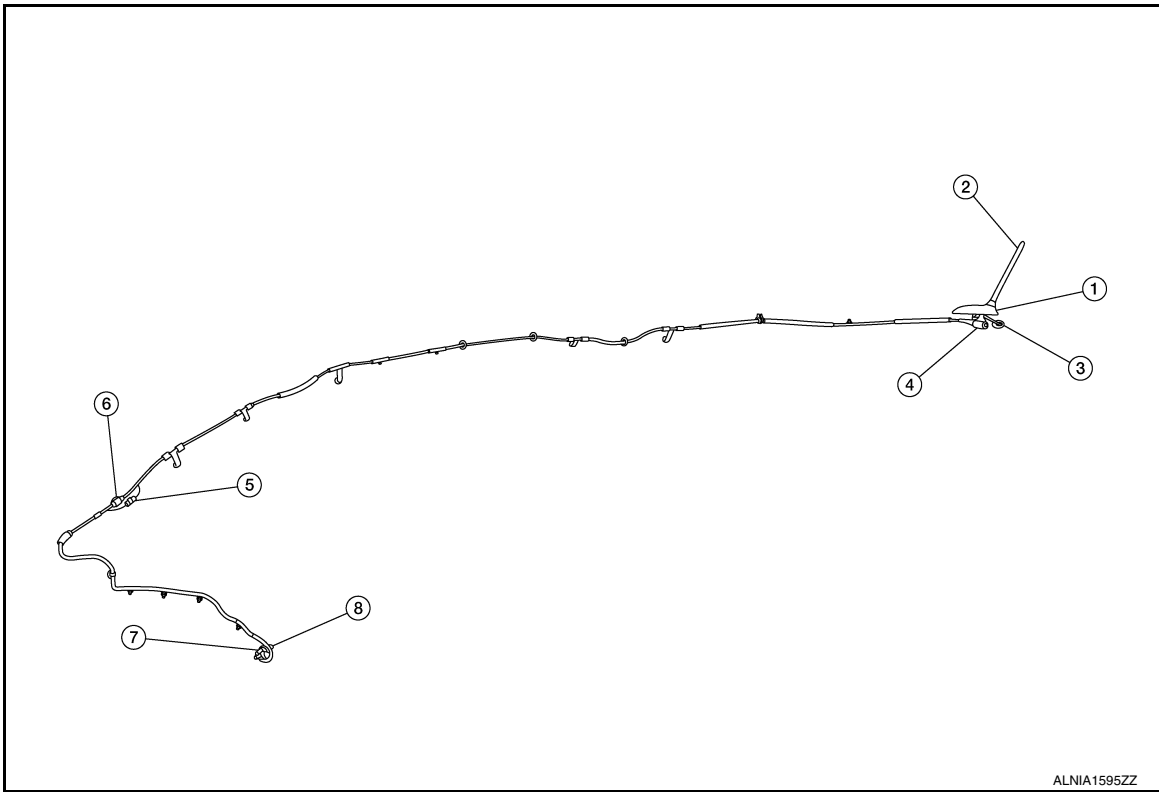
[MULTI AV (DISPLAY AUDIO)]

ANTENNA FEEDER

Feeder Layout

INFOID:0000000012422114

ANTENNA FEEDER LAYOUT



- | | | |
|--|----------------|---------------|
| 1. Antenna base (antenna amp. and satellite antenna) | 2. Rod Antenna | 3. M503 |
| 4. M502 | 5. M130, M501 | 6. M129, M500 |
| 7. M126 | 8. M124 | |

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AV

PRECAUTION

PRECAUTIONS

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

INFOID:000000012422115

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

WARNING:

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

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

WARNING:

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

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

INFOID:000000012422116

CAUTION:

Remove battery terminal and AV control unit 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:000000012422117

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:000000012422118

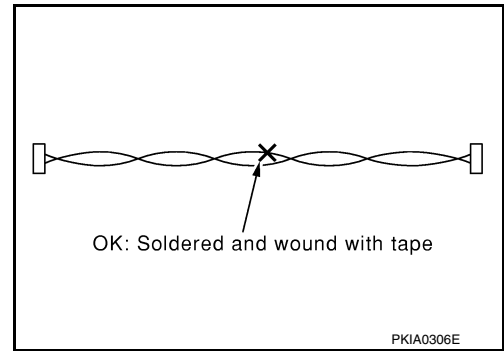
AV COMMUNICATION SYSTEM

PRECAUTIONS

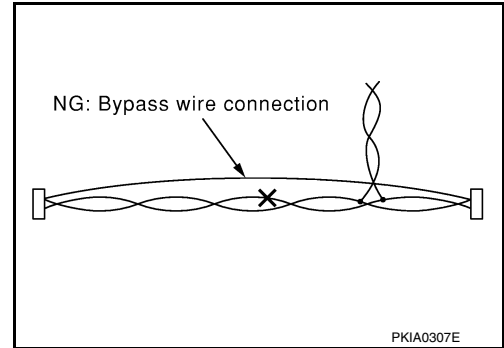
< PRECAUTION >

[MULTI AV (NAVI WITHOUT BOSE)]

- 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.)



Precaution for Work

INFOID:000000012422119

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

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AV

PREPARATION

< PREPARATION >

[MULTI AV (NAVI WITHOUT BOSE)]

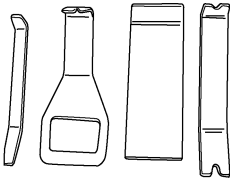
PREPARATION

PREPARATION

Special Service Tool

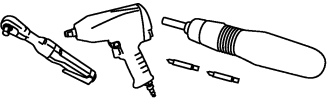
INFOID:000000012422120

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
<p>— (J-46534) Trim Tool Set</p>  <p style="text-align: center;">AWJIA0483ZZ</p>	<p>Removing trim components</p>

Commercial Service Tools

INFOID:000000012422121

Tool name	Description
<p>Power tool</p>  <p style="text-align: center;">PIIB1407E</p>	<p>Loosening nuts, screws and bolts</p>

COMPONENT PARTS

< SYSTEM DESCRIPTION >

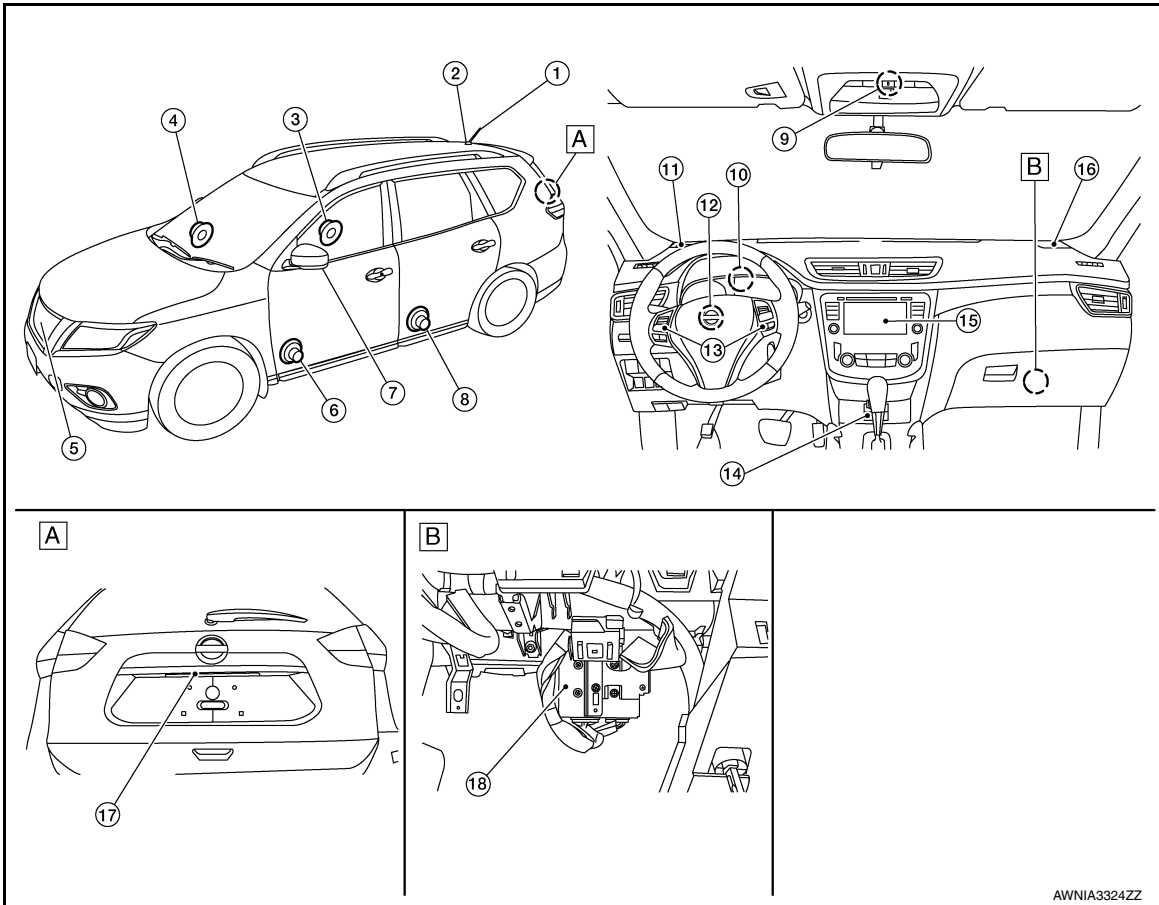
[MULTI AV (NAVI WITHOUT BOSE)]

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000012422122



A. Center of back door

B. View with glove box removed

No.	Component	Function
1.	Rod antenna	Refer to AV-236, "Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder" .
2.	Antenna base (antenna amp. and satellite antenna)	
3.	Rear door speaker RH	Refer to AV-233, "Speakers" .
4.	Front door speaker RH	
5.	Front camera	Refer to AV-235, "Front Camera" .
6.	Front door speaker LH	Refer to AV-233, "Speakers" .
7.	Side camera	Refer to AV-235, "Side Cameras" .
8.	Rear door speaker LH	Refer to AV-233, "Speakers" .
9.	Microphone	Refer to AV-87, "Microphone" .
10.	GPS antenna	Refer to AV-237, "GPS Antenna" .
11.	Front tweeter LH	Refer to AV-233, "Speakers" .
12.	Steering angle sensor	Refer to AV-236, "Steering Angle Sensor" .
13.	Steering switches	Refer to AV-234, "Steering Switches" .
14.	USB interface and AUX in jack	Refer to AV-234, "USB Interface and AUX In Jack" .

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

No.	Component	Function
15.	AV control unit	Refer to AV-232. "AV Control Unit" .
16.	Front tweeter RH	Refer to AV-233. "Speakers" .
17.	Rear view camera	Refer to AV-235. "Rear View Camera" .
18.	Around View [®] * Monitor control unit	Refer to AV-235. "Around View Monitor Control Unit" .

*: Around View[®] Monitor is a parking aid/convenience feature. Around View Monitor cannot completely eliminate blind spots. Around View[®] Monitor may not detect every object. Always check surroundings before moving vehicle. Around View Monitor is not a substitute for proper backing procedures. Always turn to check what is behind you before backing up.

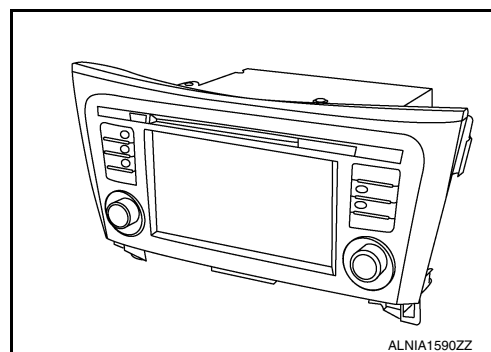
AV Control Unit

INFOID:000000012422123

Description

- A 7-inch WVGA display, an AM/FM electronic tuner radio, CD drive, audio amplifier, camera controller and navigation unit are integrated into the AV control unit.
- The 7-inch display is a high resolution monitor that includes touch panel functions.
- Music files stored in iPod[®]*/USB memory can be played using the separate USB interface.
- Music files stored in an external audio device can be played using the separate AUX in jack.

*: iPod[®] is a registered trademark of Apple, Inc. All rights reserved.

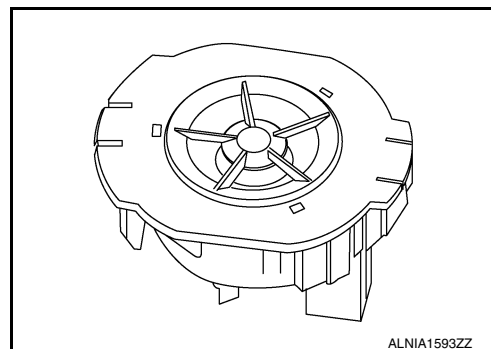


Speakers

INFOID:000000012422124

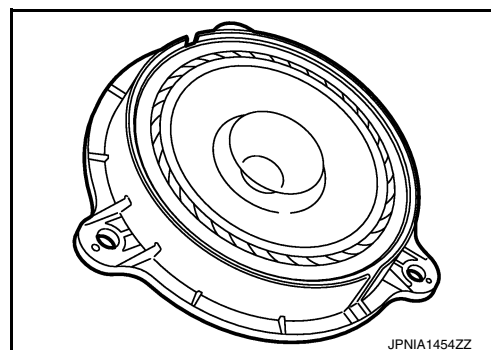
FRONT TWEETER

- 2.5 cm (1 in) tweeters are installed in the top front corners of the instrument panel.
- Sound signals are input from the AV control unit to output high range sounds.



FRONT DOOR SPEAKER

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



REAR DOOR SPEAKER

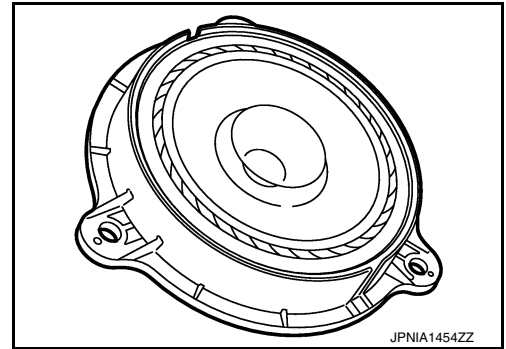
- 16.5 cm (6.5 in) speakers are installed in the bottom of the rear doors.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

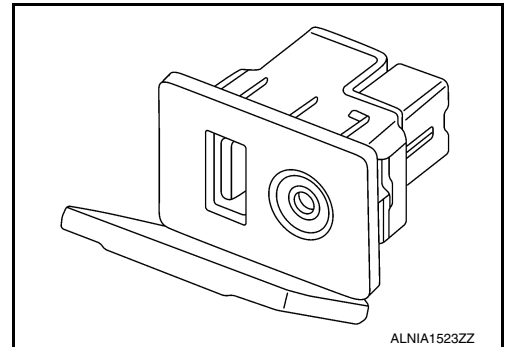
- Sound signals are input from the AV control unit to output high, mid and low range sounds.



INFOID:0000000012422125

USB Interface and AUX In Jack

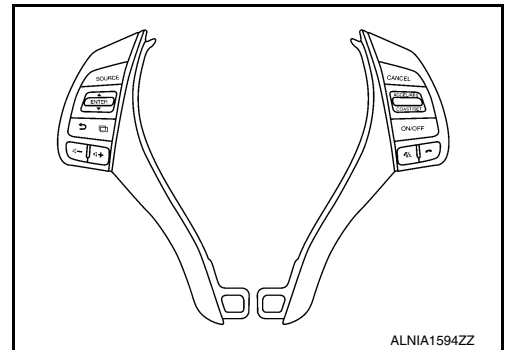
- USB Interface and AUX in jack is installed in the console.
- iPod® and USB memory can be connected to the AV control unit through the USB interface.
- An external audio device can be connected to the AV control unit through the AUX in jack.



INFOID:0000000012422126

Steering Switches

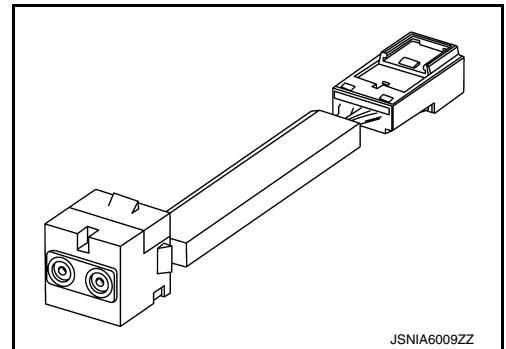
- Steering switches are installed in the steering wheel.
- Operations for audio and hands-free phone are possible.
- Switches are connected to the combination meter.
- Combination meter is connected to the AV control unit via AV communication.



INFOID:0000000012735190

Microphone

- The microphone is installed on the map lamp assembly.
- The power is supplied from the AV control unit to the microphone, transmitting sound signals to the AV control unit at the during hands-free phone communication, or voice recognition.



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COMPONENT PARTS

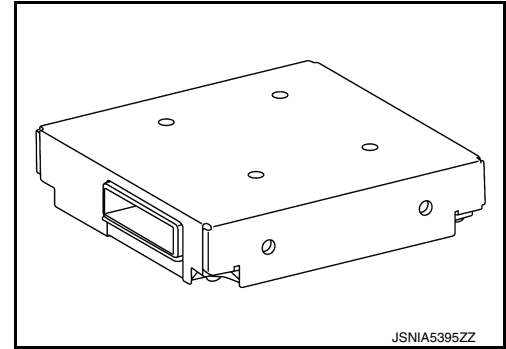
< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

Around View Monitor Control Unit

INFOID:000000012422128

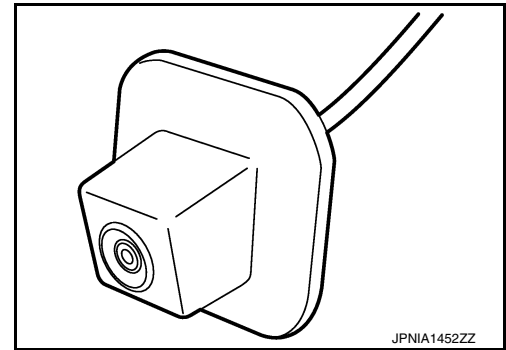
- The around view monitor control unit is installed behind the glove box.
- Vehicle width guide lines, predicted course line, vehicle front guiding line and vehicle side line, and vehicle icon are displayed and combined with camera images.



Rear View Camera

INFOID:000000012422129

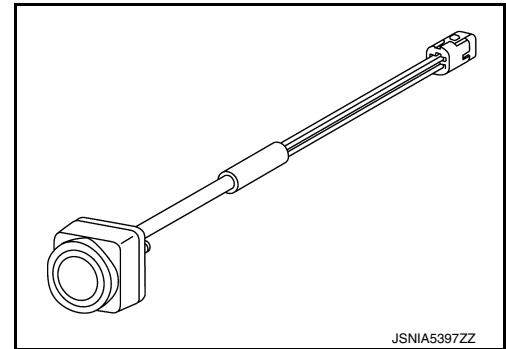
- The rear view camera is installed in the back door finisher.
- Power is supplied from the around view monitor control unit.



Side Cameras

INFOID:000000012422130

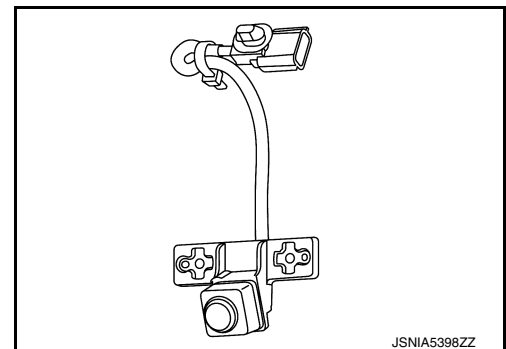
- The side cameras are installed in the door mirrors.
- Power is supplied from the around view monitor control unit.



Front Camera

INFOID:000000012422131

- The front camera is installed in the front grille.
- Power is supplied from the around view monitor control unit.



COMPONENT PARTS

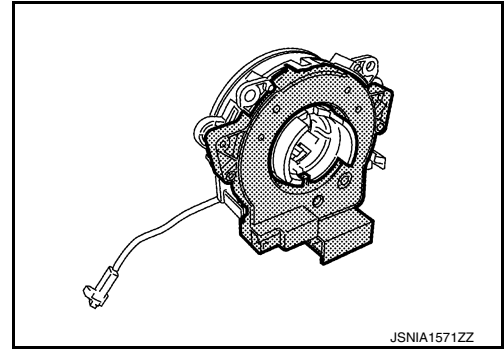
< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

Steering Angle Sensor

INFOID:000000012422132

- Steering sensor is installed to the spiral cable.
- Steering angle sends the steering signal necessary for predictive course line via CAN communication.

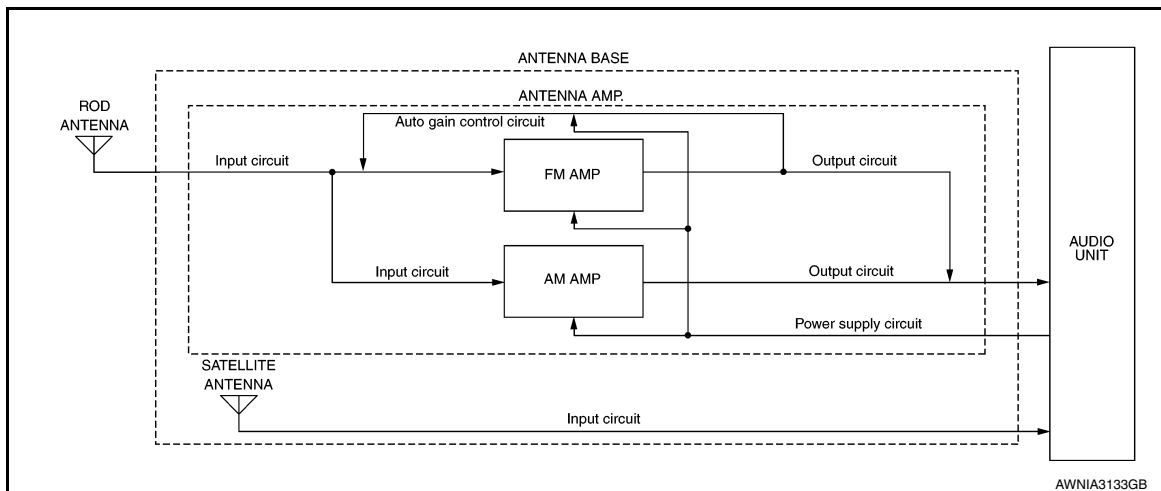


Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder

INFOID:000000012422133

RADIO ANTENNA AND SATELLITE ANTENNA

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



ANTENNA FEEDER LAYOUT

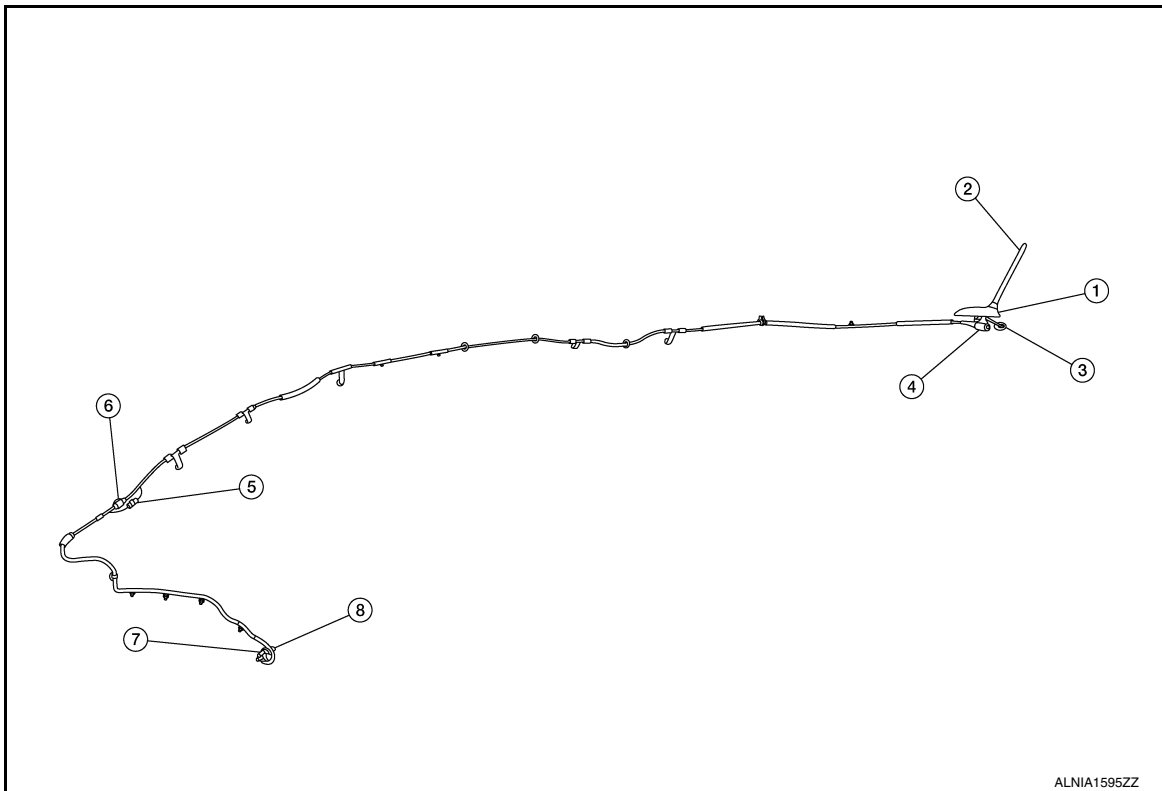
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AV

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

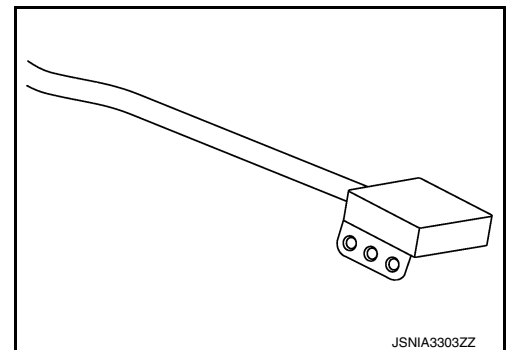


- | | | |
|--|----------------|---------------|
| 1. Antenna base (antenna amp. and satellite antenna) | 2. Rod Antenna | 3. M503 |
| 4. M502 | 5. M130, M501 | 6. M129, M500 |
| 7. M142 | 8. M139 | |

GPS Antenna

INFOID:000000012422134

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



INFOID:000000012422135

SD Card

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

SYSTEM

< SYSTEM DESCRIPTION >

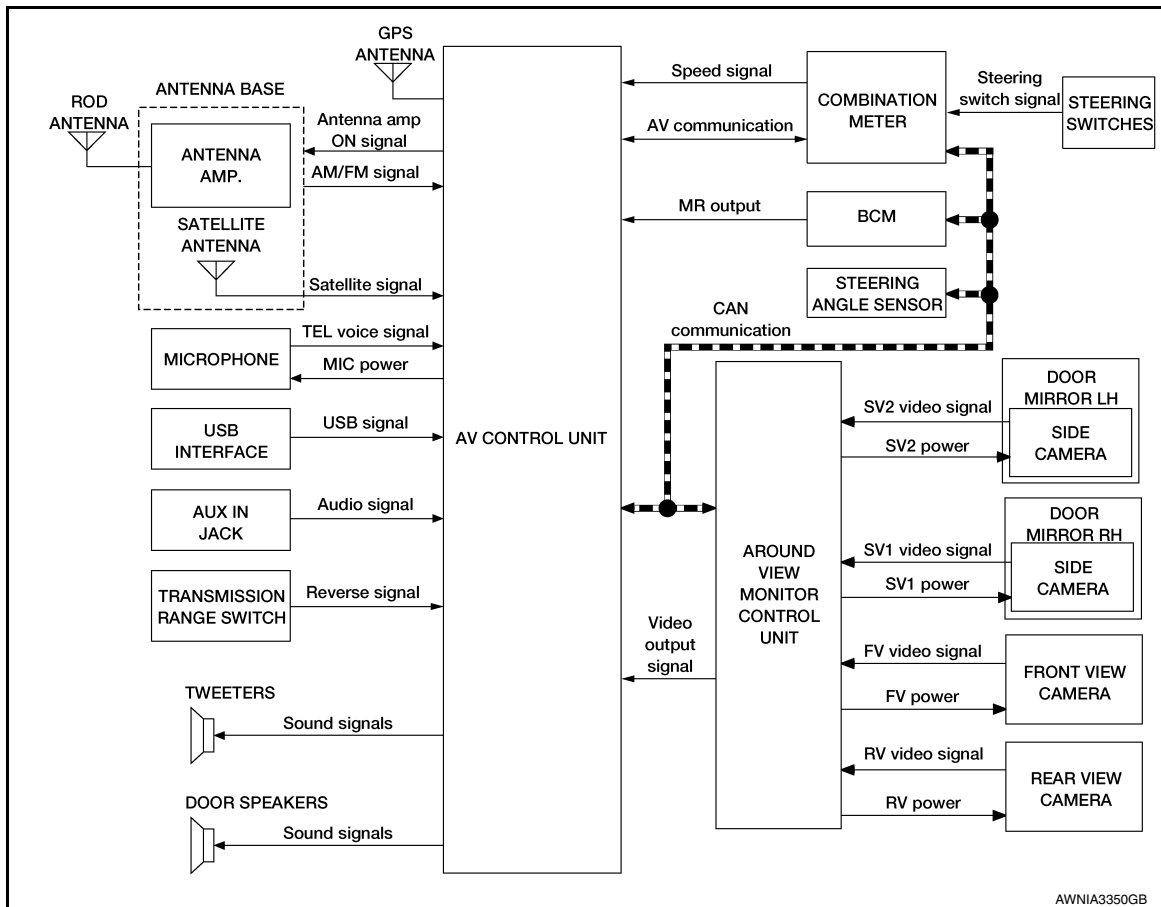
[MULTI AV (NAVI WITHOUT BOSE)]

SYSTEM

System Description

INFOID:000000012422136

SYSTEM DIAGRAM



AUDIO SYSTEM

The audio system consists of the following component:

- AV control unit
- Front tweeters
- Front door speakers
- Rear door speakers
- USB interface
- AUX in jack
- Steering switches
- Antenna base (rod antenna, antenna amp. and satellite antenna)

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

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

NAVIGATION SYSTEM

Description

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

POSITION DETECTION PRINCIPLE

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SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

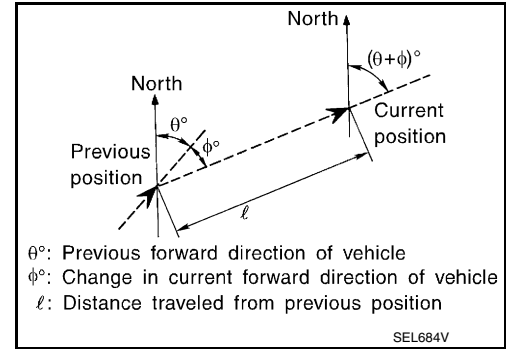
The navigation system periodically calculates the vehicle's current position according to the following three signals:

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

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

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

- Travel distance
Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance correction function has been adopted.
- Travel direction
Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). They have both advantages and disadvantages.



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

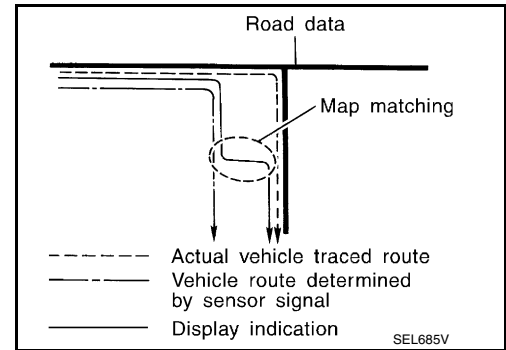
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

MAP-MATCHING

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

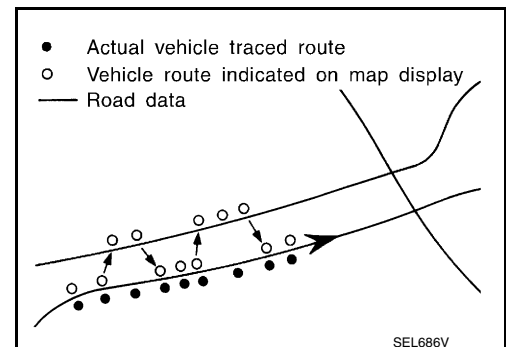
NOTE:

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



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

- In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the vehicle mark has been repositioned. Alternative routes will be shown in different order of priority, and the incorrect road can be avoided if there is an error in distance and/or direction. Routes are of the same priority if two roads are running in parallel. Therefore, the vehicle mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.

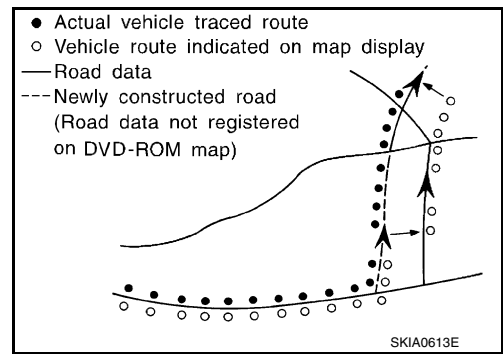


SYSTEM

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[MULTI AV (NAVI WITHOUT BOSE)]

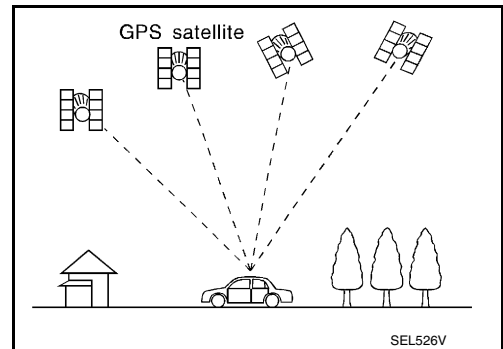
- Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD-card, or when road pattern stored in the map data and the actual road pattern are different due to repair. The map-matching function may find another road and position the vehicle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



GPS (Global Positioning System)

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

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



Accuracy of the GPS will deteriorate under the following conditions:

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

NOTE:

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

USB INTERFACE

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

AUX IN JACK

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

SPEED SENSITIVE VOLUME SYSTEM

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

HANDS-FREE PHONE SYSTEM

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

When A Call Is Originated

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AV

SYSTEM

[MULTI AV (NAVI WITHOUT BOSE)]

< SYSTEM DESCRIPTION >

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

When Receiving A Call

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

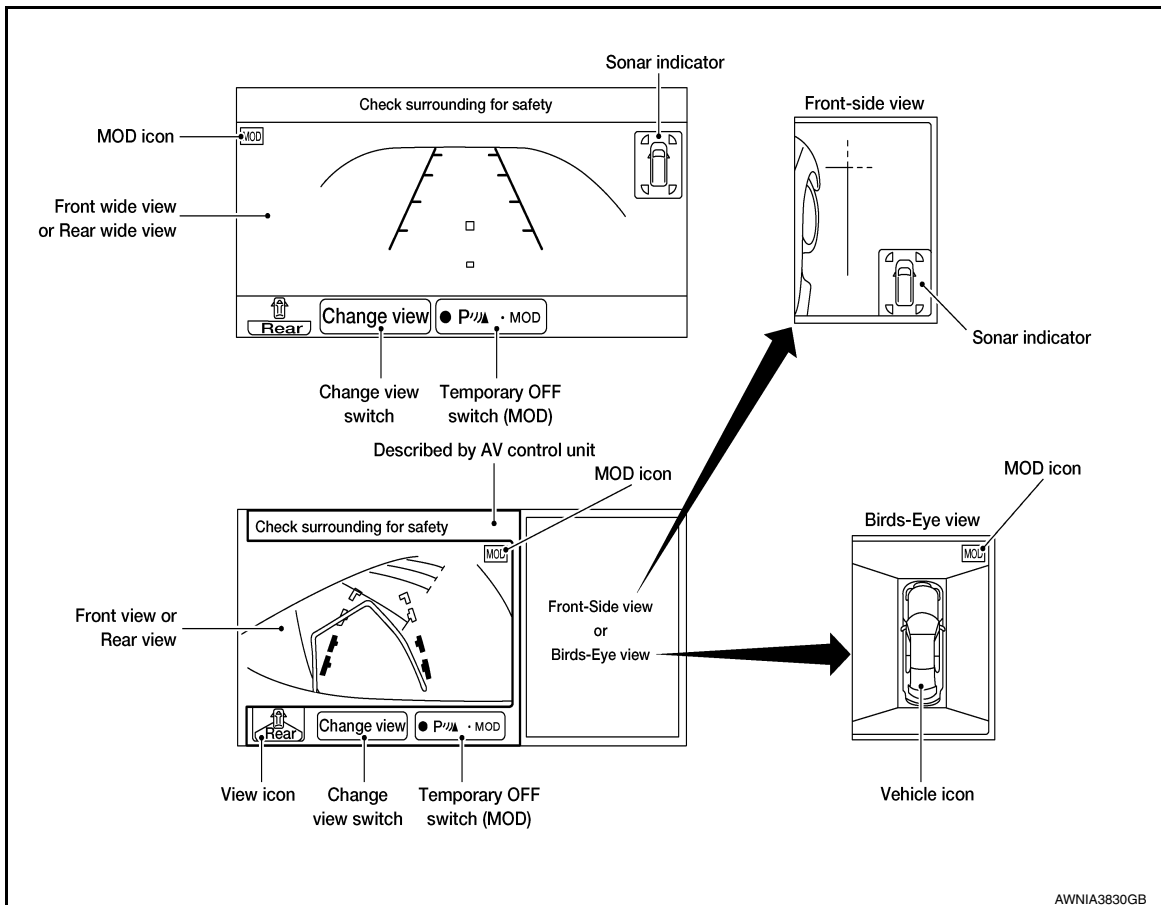
AROUND VIEW MONITOR FUNCTION

- This system is equipped with wide-angle cameras on the front, rear and right and left door mirrors.
- Images from front view, rear view, front-side view (RH side), and birds-eye view are displayed to monitor the vehicle surroundings.
- Around view monitor control unit expands the image received from each camera to create each view.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are displayed.
- In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.
- Birds-eye view converts the images from the cameras into an overhead view and displays the status of the vehicle on the display. The vehicle icon that is displayed in the birds-eye view is depicted by the around view monitor control unit.

Display

- Around view monitor combines and displays the travel direction view and Birds-Eye view, Front-side view, and then it displays the sonar indicator on the Bird's-Eye view, Front-side view, Rear wide view.
- AV control unit renders the "Change View" switch, view icon, and warning message on display.

Screen constitution



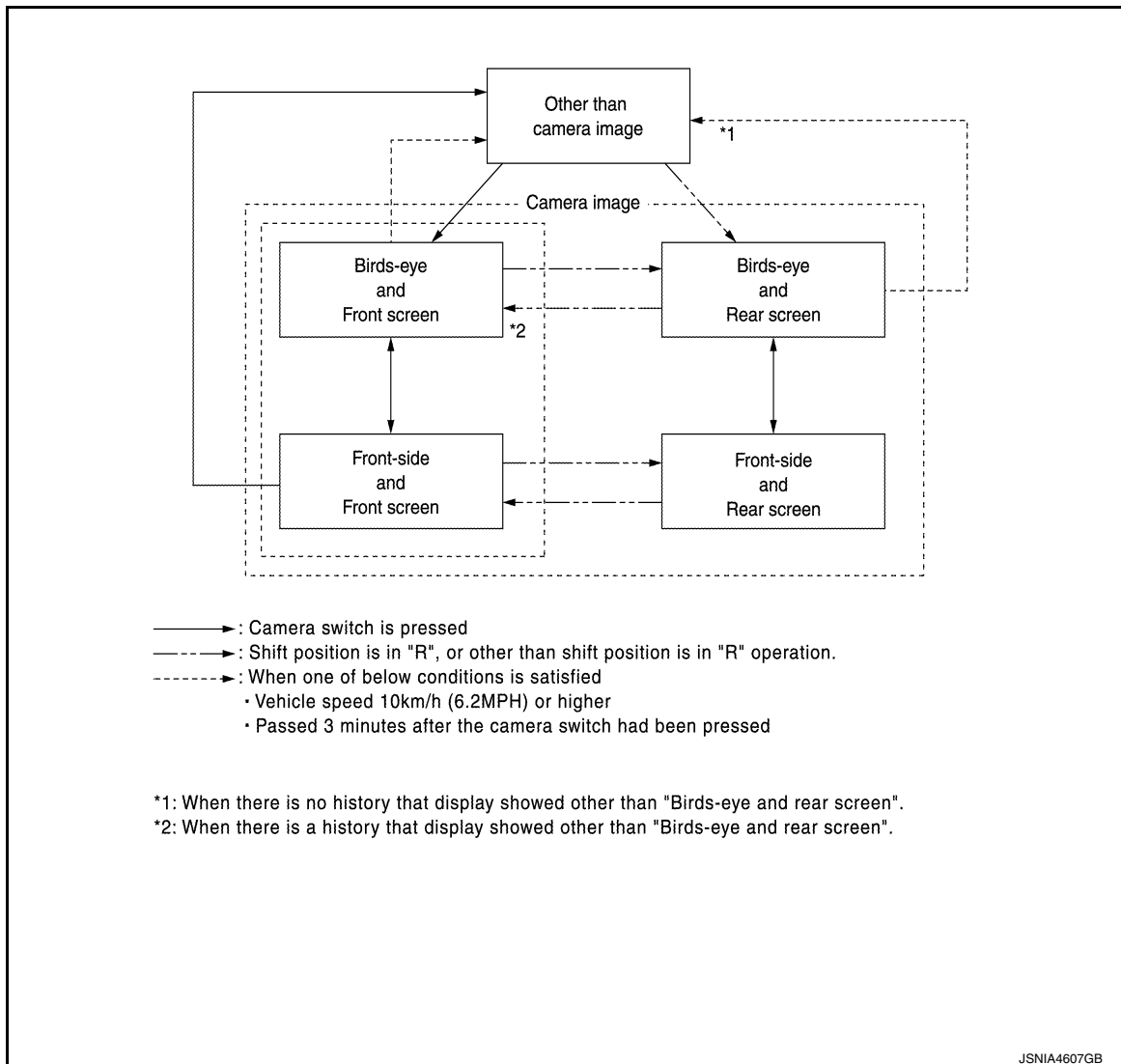
Operation

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[MULTI AV (NAVI WITHOUT BOSE)]

Around view monitor screen transition



- Around view monitor is displayed on the display when "CAMERA" switch is pressed, when shifting position is reverse.
- Bird's-Eye view, Front-side view, and front/rear wide view can be switched by "Change View" switch (touch switch) or "CAMERA" switch while around view monitor is displayed.
- Priority of view to be displayed can be set by "Settings" screen.
- While shift position is other than reverse, around view monitor is canceled when approximately 3 minutes are passed after "CAMERA" switch is pressed or when vehicle speed is approximately 10 km/h (6 MPH) or more. The screen returns to the screen before displaying around view monitor.
- Setting of Moving Object Detection (MOD) can be switched ON/OFF by temporary OFF switch of AV control unit (Temporary OFF).
- In temporary OFF, around view monitor is canceled. Temporary OFF is canceled when around view monitor is displayed once again. MOD is switched to operation-ready status.
- In permanent OFF, MOD is not operative until MOD is switched to ON by "Settings" screen.
- In Bird's-Eye view, an enhanced boundary is displayed on the image indicating the invisible area and clearly indicating the boundary of the four cameras. The invisible area is displayed in yellow when Bird's-Eye view is displayed after the ignition switch is turned ON.
- If information of camera and information written to around view monitor control unit are not the same, error indicator of applicable camera position is displayed when Bird's-Eye view is displayed.
- When "CAMERA" switch is pressed, it receives camera switch signal from AV control unit via CAN communication.
- When around view monitor control unit receives camera switch signal around view monitor control unit reads the image signal from each camera.
- When around view monitor control unit receives reverse signal, while shift position is R position, around view monitor control unit reads image signal from each camera.

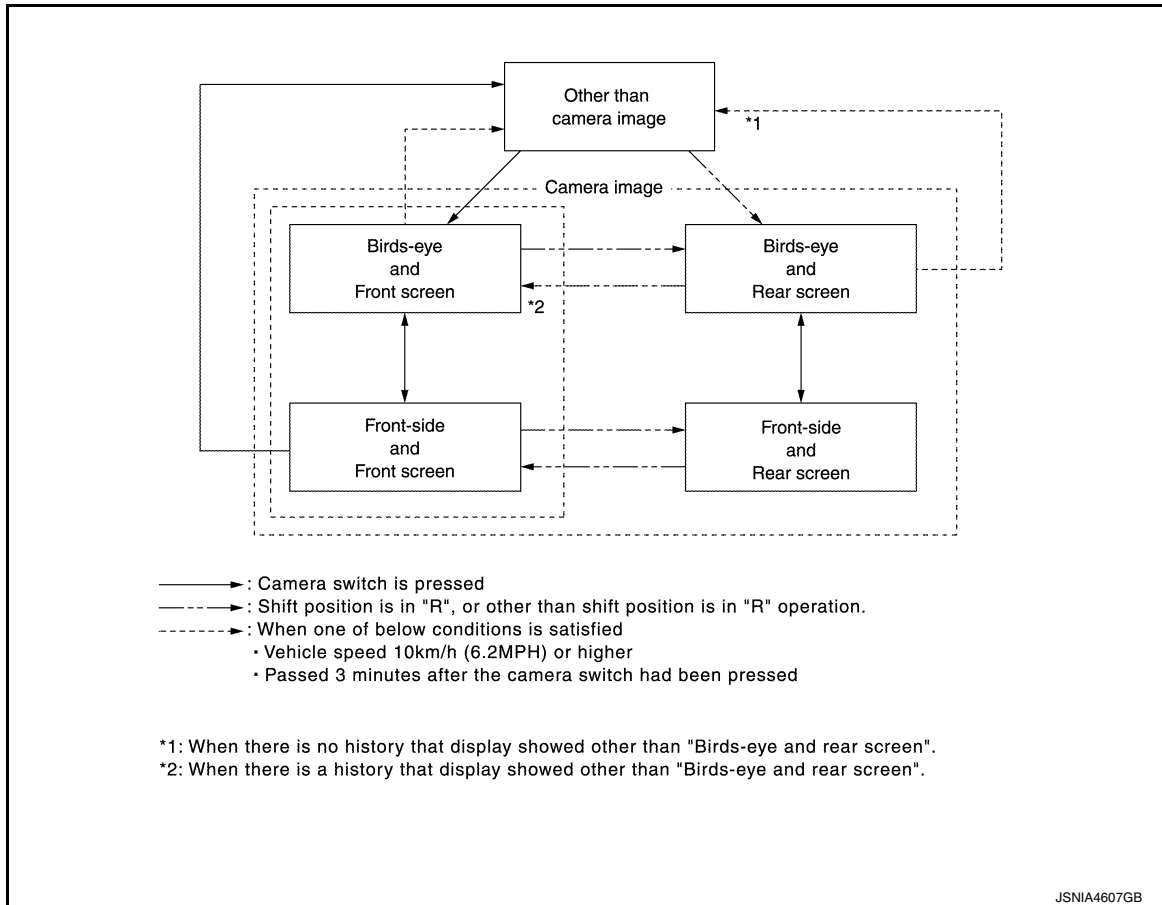
SYSTEM

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[MULTI AV (NAVI WITHOUT BOSE)]

- When around view monitor control unit reads image signal from each camera, it cuts out the required screen for each view, superimposes camera image, vehicle icon, guiding lines, predicted course line, and "MOD" icon and then outputs them to AV control unit.

Around view monitor screen transition



Front View

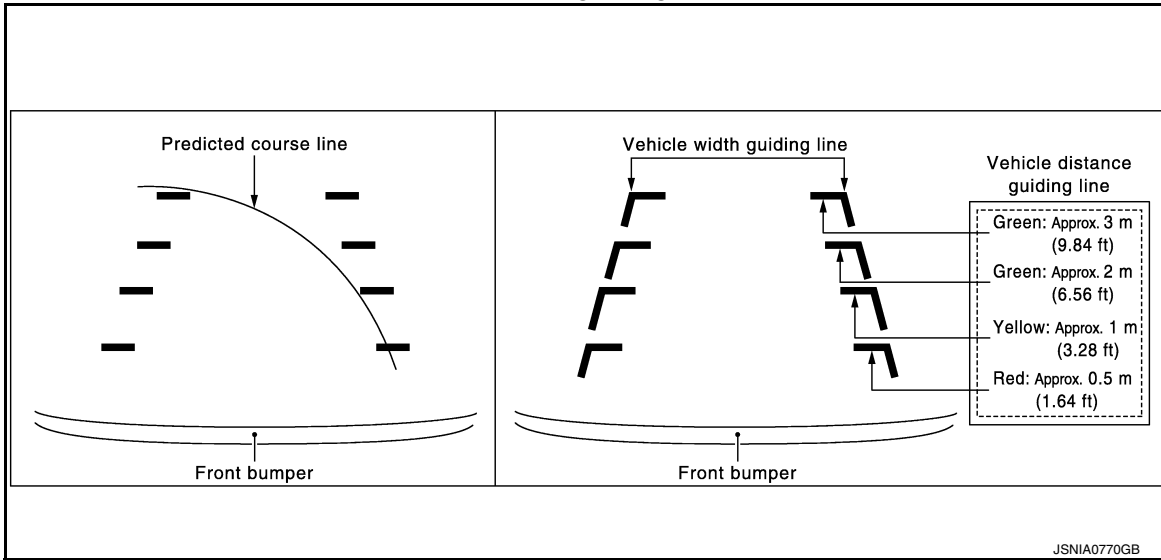
- The front view image improves the visibility of obstacles in front of the vehicle and assists driving by displaying images from birds-eye view and front-side view.
- The front view image displays the vehicle width guiding line and vehicle distance guiding line, in addition to the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle exceeds approximately 90 degrees, only the predictive course line on the outside is displayed (opposite side of steering direction).
- The around view monitor control unit receives the steering angle signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed using CONSULT.

SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

Front view guiding lines



Rear View

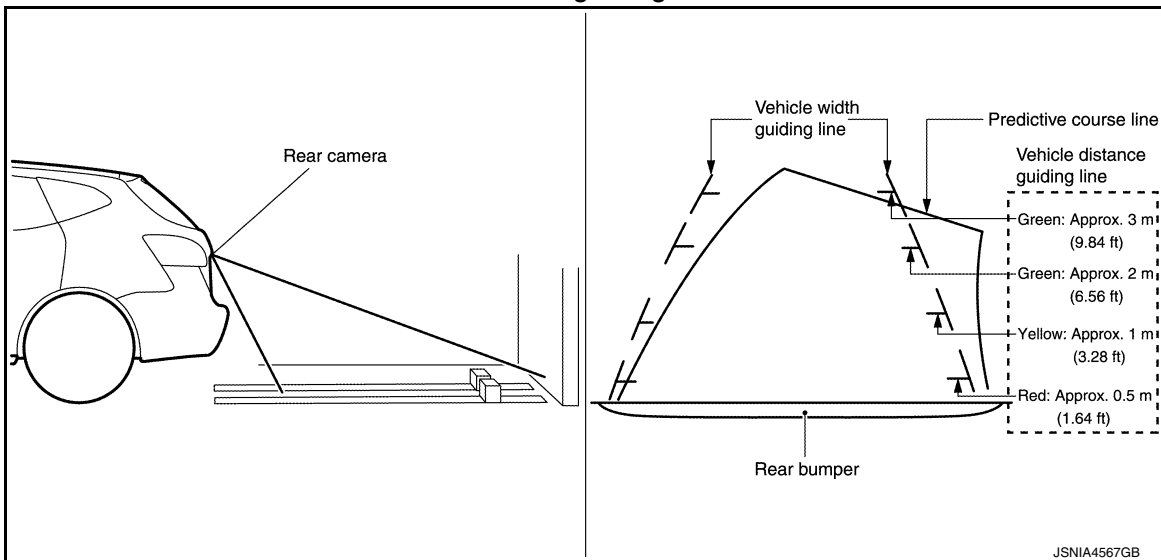
- The rear view image improves the visibility of obstacles in the rear of the vehicle and assists backing and parking by displaying images from birds-eye view and front side view.
- The rear view image displays the vehicle width guiding line and vehicle distance guiding line, in addition to the predictive course line according to the steering angle.

NOTE:

The predictive course line is not displayed at the steering neutral position.

- The around view monitor control unit receives the steering angle signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed using CONSULT.

Rear view guiding lines



Front-Side View

- The front-side view image improves the visibility of obstacles in the front RH side of the vehicle and assists backing and parking.
- The front-side view image displays the vehicle distance guiding line and vehicle width guiding line.

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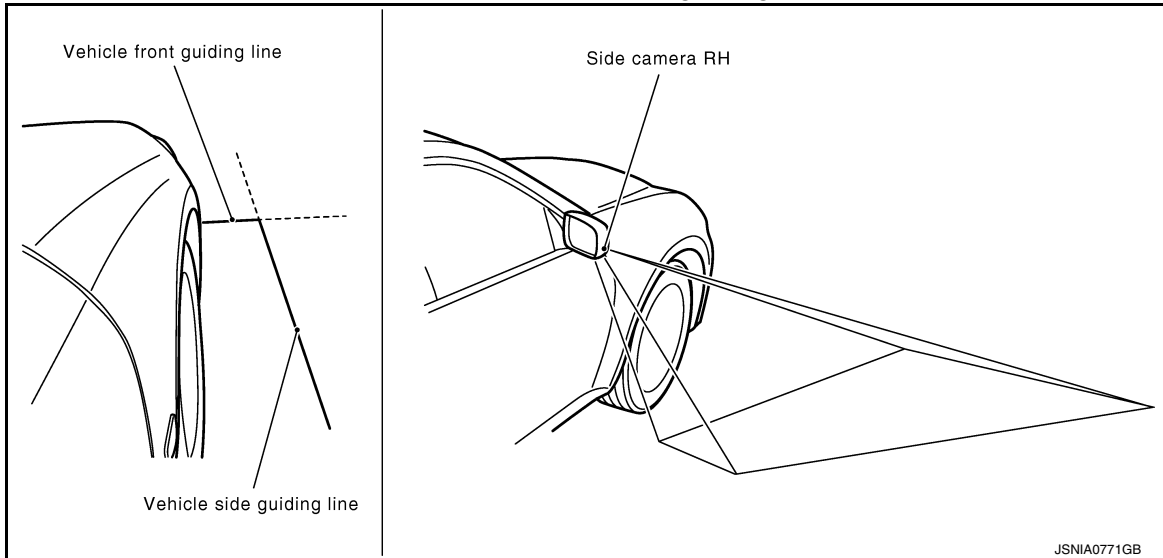
AV

SYSTEM

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[MULTI AV (NAVI WITHOUT BOSE)]

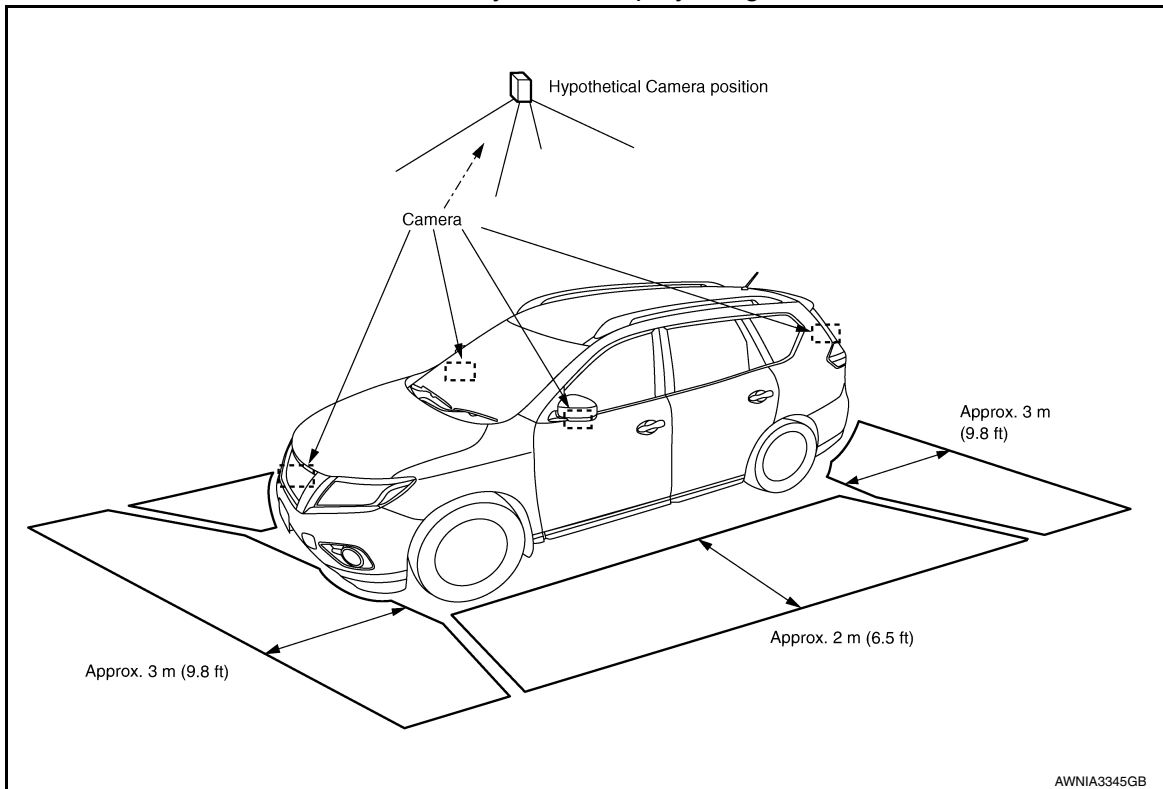
Front-side view area and guiding line



Birds-Eye View

- The birds-eye view image improves the visibility of obstacles all around the vehicle and assists backing and parking.
- The images from the four cameras are converted into an overhead view, and the surroundings of the vehicle are displayed.
- The blind spot area is displayed on the image to specify the boundary of the four cameras.

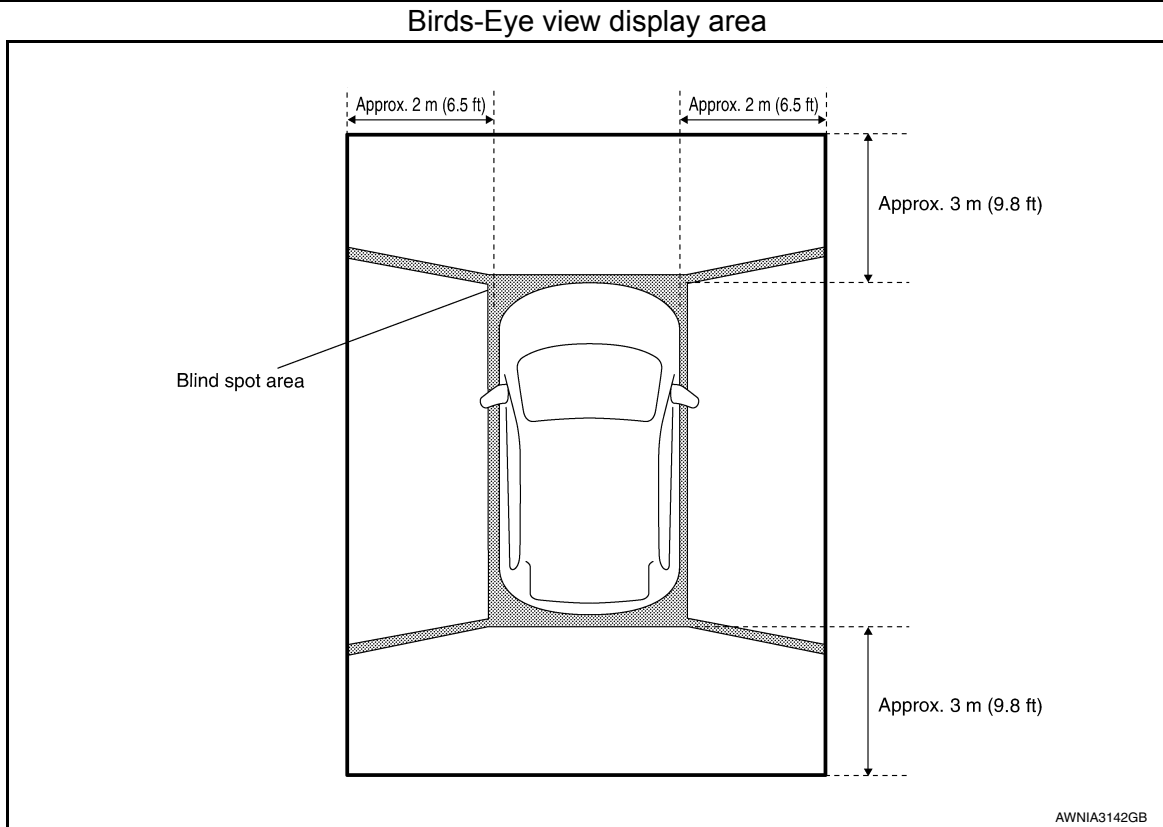
Birds-Eye view display image



SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]



Moving Object Detection (MOD)

- Moving Object Detection (MOD) is a function that notifies the driver of the presence of moving objects in the area around the vehicle. MOD detects moving objects from camera image, illuminates frame of view in yellow whenever “MOD” icon is displayed in blue, and sounds chime.
- MOD detects moving objects while camera image is displayed on AV control unit.
- Around view monitor control unit performs the following process when moving objects are detected:
 - Superimposes yellow frame line on camera image signal and outputs it to AV control unit.
 - Transmits MOD chime sound output request signal to the AV control unit via CAN communication.
 - The combination meter receives the MOD beep sound output request signal from around view monitor control unit and outputs chime.
- Around view monitor control unit detects moving objects from camera image according to an image recognition method called optical flow.
- MOD does not detect a background as a moving object when the vehicle moves (when whole screen moves) but detects a moving object when an actual moving object is displayed on screen.
- MOD can be set to temporary OFF or permanent OFF by the following operations:
 - Temporary off: MOD is switched to OFF with a switch on the AV control unit (touch switch) while camera image is displayed on AV control unit.
 - Permanent off: MOD is switched to OFF by “Settings”.
- Color of “MOD” icon indicates whether or not MOD is operative. “MOD” icon is displayed as shown in the following table. when MOD is operative, “MOD” icon is displayed in blue. when MOD is not operative, “MOD” icon is displayed in gray. MOD icon is not displayed when MOD is off (permanent OFF) by “Settings”, or when MOD is OFF (temporary OFF) by switch of AV control unit (touch switch):

View		Shift position		
		P or N position	D position	R position
“MOD” icon display				
Birds-Eye view and rear view	Birds-Eye view	Blue	—	Gray
	Rear view	Gray		Blue
Birds-Eye view and front view	Birds-Eye view	Blue	Gray	—
	Front view	Gray	Blue	

SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

View		Shift position		
		P or N position	D position	R position
		"MOD" icon display		
Side view and rear view	Side view	×	—	×
	Rear view	Gray	—	Blue
Side view and front view	Side view	×	×	—
	Front view	Gray	Blue	
Rear wide view		Gray	—	Blue
Front wide view		Gray	Blue	—

×: Icon is not displayed.

—: View is not displayed in each shift position (D position and R position).

- MOD illuminates frame of view in yellow and sounds chime when any of the conditions in the following table are satisfied:

Operation Condition		View where MOD is operative
Shift position	Vehicle speed	
P or N position	0 km/h	Birds-Eye view
D position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	<ul style="list-style-type: none"> • Front view • Front wide view
R position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	<ul style="list-style-type: none"> • Rear view • Rear wide view

- MOD does not operate or stops operation when any of the conditions in the following table are satisfied:

Operation stop condition	Note
Door open	<ul style="list-style-type: none"> • MOD does not stop operation for front view and front wide view. • Operation stops for rear view and rear wide view while back door is open. • Operation stops for Bird's-Eye view when any door is open.
Door mirror expanding/retracting	Expanding/retracting status of door mirror is judged according to operation signal of door mirror motor transmitted from door mirror (driver side) to around view monitor control unit.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

INFOID:000000012422137

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

Mode	Item	Content	
Version	—	Version data of the AV control unit is displayed.	
User Configuration	Touch Display Calibration	Allows correction of the position detection accuracy of the touch panel.	
Radio	FM monitor	Monitors the dynamic values of the current tuner	
	AM monitor		
	SXM monitor	Version data is displayed.	
System State	Running System Status	<ul style="list-style-type: none"> • SD card slot Access • Power Supply • Speed Signal • Direction Signal • Illumination Signal • GPS Antenna • GPS Tracking • Satellites Visible • Satellites Tracked • Microphone Current • Steering wheel key • Radio Antenna • SXM Antenna • USB Device • iPod® firmware version • BT Status 	The current system status is displayed.
	Speaker Test 4kHz	—	This activates a sequence of test tone outputs to the audio circuits one after the other for 1 second.
	Speaker Test 100Hz		
	Display-Test	—	This provides a test sequence where test displays (plain colored display: e.g. white, black, red, blue, green) are shown one after the other. The respective color is shown for an indicated period of time (parameter). After the display test, the design of the display previously available is stored. While the screen shows a plain colored display, a pixel malfunction may be detected.
Self Test	<ul style="list-style-type: none"> • SD Card Access • BT Module Access • Radio Antenna • GPS Antenna • SXM Antenna 	A system self test is executed and the results are stored into the error memory.	

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

On Board Diagnosis Function

INFOID:000000012422138

METHOD OF STARTING

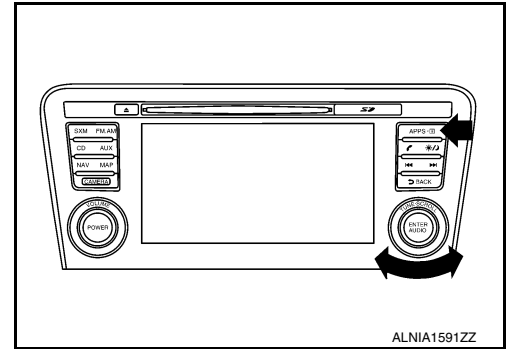
1. Turn the ignition ON.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

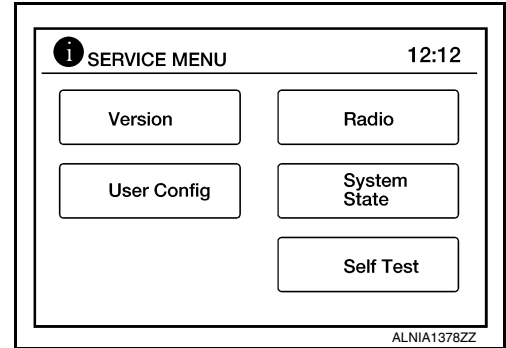
[MULTI AV (NAVI WITHOUT BOSE)]

< SYSTEM DESCRIPTION >

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



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



CONSULT Function

INFOID:000000012422139

CONSULT FUNCTIONS

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

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

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSTIC RESULT

Refer to [AV-109. "DTC Index"](#).

DATA MONITOR

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

CONFIGURATION

Refer to [AV-145. "CONFIGURATION \(AV CONTROL UNIT\) : Description"](#).

CAN DIAG SUPPORT MNTR

Refer to [LAN-17. "CAN Diagnostic Support Monitor"](#).

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

CONSULT Function

INFOID:000000012742354

CONSULT FUNCTIONS

CONSULT performs the following functions via the communication with the around view monitor control unit:

Diagnosis mode	Description
Self Diagnostic Result	Around view monitor control unit and CAN communication circuit connection diagnosis is performed. Current and previous malfunctions are displayed collectively.
Data Monitor	Diagnosis of vehicle signal that is received by around view monitor control unit can be performed.
Work Support	<ul style="list-style-type: none"> • Calibration and initialization of each camera can be performed. • Fine tuning of Birds-Eye view can be performed. • Target line calibration of front wide view and rear wide view can be performed. • Display of predicted course line can be switched to ON/OFF. • Language of warning message can be selected. • Neutral position adjustment of steering angle sensor can be performed. • Camera screen activation enhancing display can be switched to ON/OFF. • Calibration of turning radius display can be performed. • Setting change can be performed depending on the vehicle specification with/without door mirror automatic retracting function. • Camera zoom ratio can be changed and used for fine tuning.
ECU Identification	Around view monitor control unit part number, software version, and hardware version can be identified.
Configuration	<ul style="list-style-type: none"> • The vehicle specification that is written in around view monitor control unit can be displayed or stored. • The vehicle specification can be written when around view monitor control unit is replaced.

SELF DIAGNOSTIC RESULT

Refer to [AV-115. "DTC Index"](#).

- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT:

Item name	Display content
IGN COUNTER (0 to 39)	<p>Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected.</p> <ul style="list-style-type: none"> • When "0" is displayed, it indicates that the system is presently malfunctioning. • When any numerical number other than "0" is displayed, it indicates that system malfunction in the past was detected, but the system is presently normal. <p>NOTE: Each time when ignition switch turns OFF→ON, numerical number increases from 1→2→3...38→39. When number of times exceeds 39, numeric display does not increase and 39 is displayed until self-diagnosis is erased.</p>

DATA MONITOR

NOTE:

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

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

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

Display item	Remarks
ST ANGLE SENSOR SIGNAL [On/Off]	Receiving status of steering angle signal received from steering angle sensor is displayed by ON/OFF.
REVERSE SIGNAL [On/Off]	Receiving status of reverse signal received from AV control unit is displayed by ON/OFF.
VEHICLE SPEED SIGNAL [On/Off]	Receiving status of vehicle speed signal received from ABS actuator control unit is displayed by ON/OFF.
CAMERA SWITCH SIGNAL [On/Off]	Receiving status of camera switch signal received from AV control unit is displayed by ON/OFF.
CAMERA OFF SIGNAL [On/Off]	Receiving status of camera OFF signal received from AV control unit is displayed by ON/OFF.
ST ANGLE SENSOR TYPE [Absolute]	Input type of steering angle sensor is displayed. NOTE: For this vehicle, "Absolute" is displayed.
STEERING GEAR RATIO TYPE [TYPE1]	Type of steering gear ratio is displayed. NOTE: For this vehicle, "TYPE 1" is displayed.
STEERING POSITION [LHD/RHD]	Steering position is displayed.
REAR CAMERA IMAGE SIGNAL [OK/NG]	Input status of rear view camera image signal is displayed by OK/NG in real time.
F-CAMERA IMAGE SIGNAL [OK/NG]	Input status of front view camera image signal is displayed by OK/NG in real time.
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera LH image signal is displayed by OK/NG in real time.
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera RH image signal is displayed by OK/NG in real time.
ILL [ON/OFF]	Input status of illumination signal condition.
TURN SIGNAL [ON/OFF]	Input status of turn signal condition.

WORK SUPPORT

Work support items	Description
NON-VIEWABLE AREA REMINDER	ON/OFF setting of the non-viewable area reminder can be performed.
INITIALIZE CAMERA IMAGE CALIBRATION	The calibration can be initialized to factory shipment condition. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.
STEERING ANGLE SENSOR ADJUSTMENT	Steering angle sensor neutral position can be adjusted and registered. CAUTION: For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side. Refer to BRC-72. "Work Procedure".
CALIBRATING CAMERA IMAGE (FRONT CAMERA)	Performs the calibration of front camera. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.
CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)	Performs the calibration of side camera RH. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITHOUT BOSE)]

Work support items	Description
CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)	Performs the calibration of side camera LH. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.
CALIBRATING CAMERA IMAGE (REAR CAMERA)	Performs the calibration of rear camera. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.
FINE TUNING OF BIRDS-EYE VIEW	The confirmation and adjustment of the difference between each camera can be performed. The fine adjustment function of camera calibration can check and adjust the difference between each camera.
REAR WIDE VIEW FIXED GUIDE LINE CORRECTION	The position of rear wide view guiding line can be changed.
CAUSE OF ENTRY CANCEL	Displays cancel cause item.
MOD FUNCTION	Allows turning ON/OFF of MOD function.
PREDICTIVE COURSE LINE DISPLAY	ON/OFF setting of non-viewable area can be performed.

ECU IDENTIFICATION

Around view monitor control unit part number, software version, and hardware version can be identified.

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AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

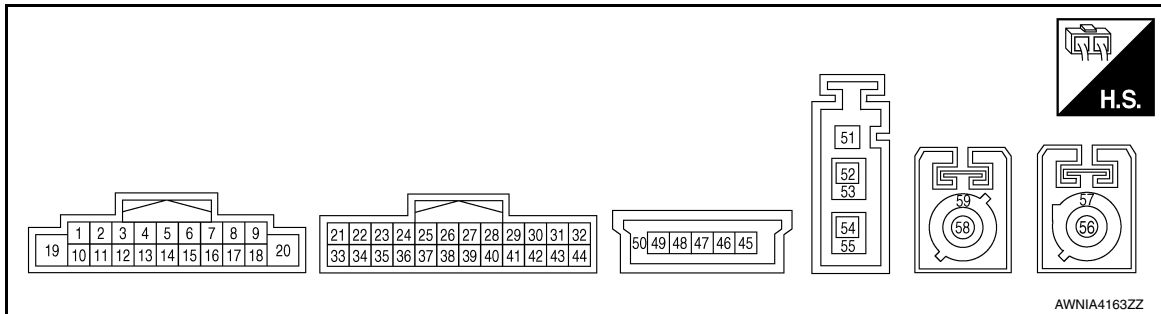
Reference Value

INFOID:000000012422141

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
VHCL SPD SIG	Vehicle speed = 0 km/h (0 MPH).	Off
	Vehicle speed > 0 km/h (0 MPH).	On
ILLUM SIG	Illumination signal is not received.	Off
	Illumination signal is received.	On
IGN SIG	Ignition switch OFF.	Off
	Ignition switch ON.	On
REV SIG	Selector lever in any position other than R.	Off
	Selector lever in R position.	On

TERMINAL LAYOUT



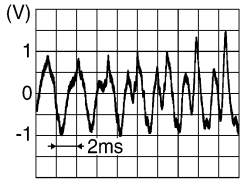
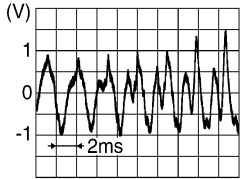
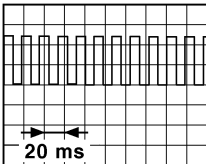
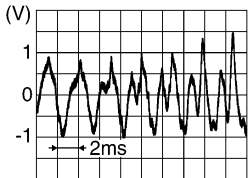
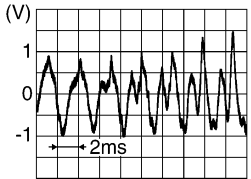
PHYSICAL VALUES

Terminal (Wire color)		Description	Input/Output	Condition		Reference value (Approx.)
+	-			Ignition switch	Operation	
2 (W)	3 (P)	Sound signal front speaker and tweeter LH	Output	ON	Sound output	<p>SKIB3609E</p>
4 (GR)	5 (BR)	Sound signal rear speaker LH	Output	ON	Sound output	<p>SKIB3609E</p>
7 (W)	Ground	ACC power supply	Input	ON	—	Battery voltage
8 (L)	—	CAN high	Input/Output	—	—	—

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
9 (V)	Ground	Illumination control signal	Input	ON	Headlamps ON	Battery voltage
11 (G)	12 (V)	Sound signal front speaker and tweeter RH	Output	ON	Sound output	 SKIB3609E
13 (LG)	14 (Y)	Sound signal rear speaker RH	Output	ON	Sound output	 SKIB3609E
17 (R)	—	CAN low	Input/ Output	—	—	—
18 (G)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 JSNIA0012GB
19 (L)	Ground	Battery power supply	Input	OFF	—	Battery voltage
20 (B)	Ground	Ground	—	ON	—	0 V
21 (G)	Ground	AUX jack audio signal RH	Input	ON	Received audio signal (AUX input)	 SKIB3609E
22 (Y)	Ground	AUX ground	—	ON	—	0V
23 (L)	Ground	AUX jack audio signal LH	Input	ON	Received audio signal (AUX input)	 SKIB3609E
25 (BR)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse)	Battery voltage
					Selector lever in any position other than R (reverse)	0 V

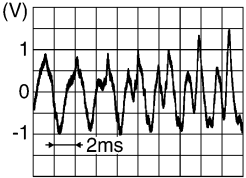
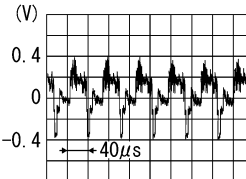
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AV

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

Terminal (Wire color)		Description	Input/ Output	Condition		Reference value (Approx.)
+	-			Signal name	Ignition switch	
30 (BG)	—	MR output	Output	—	—	—
31 (SB)	—	AV communication high	Input/ Output	—	—	—
32 (LG)	—	AV communication low	Input/ Output	—	—	—
34 (W)	36 (Shield)	Microphone signal	Input	ON	While speaking into microphone.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
35 (B)	—	MIC VCC	Input	ON	—	—
37 (Shield)	—	AUX signal shield	—	—	—	—
38 (SB)	—	AV communication high	Input/ Output	—	—	—
39 (LG)	—	AV communication low	Input/ Output	—	—	—
40 (LG)	Ground	Ignition power supply	Input	ON	—	Battery voltage
41 (W)	Ground	Camera image signal	Input	ON	When camera image is displayed	 <p style="text-align: right; font-size: small;">SKIB2251J</p>
42 (Shield)	—	Camera image signal shield	—	—	—	—
45 (R)	—	V BUS signal	—	—	—	—
46 (W)	—	USB D- signal	—	—	—	—
47 (G)	—	USB + signal	—	—	—	—
49 (B)	—	USB ground	—	—	—	—
50 (Shield)	—	USB shield	—	—	—	—
51 (B)	Ground	Antenna amp. ON signal	Output	ON	AV control unit ON, FM-AM selected.	Battery voltage
52 (B)	Ground	AM-FM main antenna	Input	ON	AV control unit ON, FM-AM selected.	5.0 V
53 (Shield)	—	Antenna amp. Shield	—	—	—	—

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
56 (B)	Ground	Satellite antenna signal	Input	ON	AV control unit ON, SXM selected.	5.0 V
57 (Shield)	—	Satellite antenna shield	—	—	—	—
58 (B)	Ground	GPS antenna signal	Input	ON	AV control unit ON, NAV selected.	5.0 V
59 (Shield)	—	GPS antenna shield	—	—	—	—

DTC Index

INFOID:0000000012422142

CONSULT Display	Reference Page
U1000: CAN COMM CIRCUIT	AV-155, "AV CONTROL UNIT : DTC Logic"
U1010: CONTROL UNIT (CAN)	AV-156, "AV CONTROL UNIT : DTC Logic"
U1217: BLUETOOTH MODULE	AV-165, "DTC Logic"
U1229: iPod CERTIFICATION	AV-166, "DTC Logic"
U122F: Digital broadcasting connection error	AV-167, "DTC Logic"
U1244: GPS ANTENNA CONN	AV-169, "DTC Logic"
U1258: SXM ANTENNA CONN	AV-170, "DTC Logic"
U1263: USB OVERCURRENT	AV-171, "DTC Logic"
U12AA: Configuration Error	AV-172, "DTC Logic"
U12AB: FM Antenna error	AV-173, "DTC Logic"
U12AC: Display Temperature too High	AV-174, "DTC Logic"
U12AD: ECU Temperature too High	AV-175, "DTC Logic"
U12AE: Internal Amplifier temperature Warning	AV-176, "DTC Logic"
U12AF: CD Mechanism Temperature Warning	AV-177, "DTC Logic"
U12B0: Supply Voltage Goes below 9V > 20s	AV-178, "DTC Logic"
U12B1: Supply Voltage Goes High > 16V for 20s	AV-179, "DTC Logic"
U1300: AV COMM CIRCUIT	AV-180, "DTC Logic"
U1310: CONTROL UNIT(AV)	AV-184, "DTC Logic"

AV

AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

AROUND VIEW MONITOR CONTROL UNIT

Reference Value

INFOID:000000012739537

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

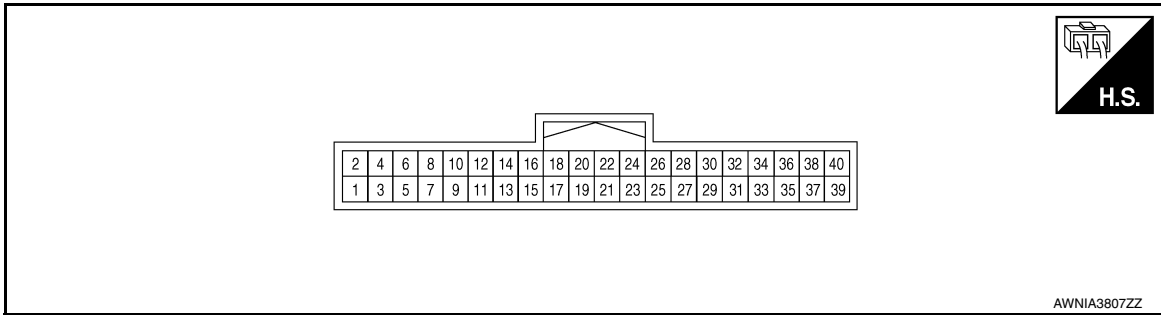
Monitor Item	Condition		Value/Status
ST ANGLE SENSOR SIGNAL [On/Off]	Ignition switch ON	When steering angle sensor signal is inputted	On
		Other than the above	Off
REVERSE SIGNAL [On/Off]	Ignition switch ON	R position	On
		Other than R position	Off
VEHICLE SPEED SIGNAL [On/Off]	Ignition switch ON	When vehicle speed is inputted	On
		Other than the above	Off
CAMERA SWITCH SIGNAL [On/Off]	Ignition switch ON	When camera switch signal is inputted	On
		Other than the above	Off
CAMERA OFF SIGNAL [On/Off]	Ignition switch ON	When camera OFF signal is inputted	On
		Other than the above	Off
ST ANGLE SENSOR TYPE [Absolute]	Ignition switch ON	—	Absolute
STEERING GEAR RATIO TYPE [TYPE1]	Ignition switch ON	—	TYPE1
STEERING POSITION [LHD]	Ignition switch ON	LHD models	LHD
REAR CAMERA IMAGE SIGNAL [OK/NG]	Ignition switch ON	When rear camera image signal input status is normal	OK
		When rear view camera image signal input status is not normal	NG
F-CAMERA IMAGE SIGNAL [OK/NG]	Ignition switch ON	When front camera image signal input status is normal	OK
		When front camera image signal input status is not normal	NG
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Ignition switch ON	When side camera LH image signal input status is normal	OK
		When side camera LH image signal input status is not normal	NG
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Ignition switch ON	When side camera RH image signal input status is normal	OK
		When side camera RH image signal input status is not normal	NG
ILL [ON/OFF]	Illumination ON		On
	Illumination OFF		Off

AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/Output		
3 (Shield)	—	Video output shield	—	—	—
4 (G)	Ground	Video output signal	Output	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	<p style="text-align: right; font-size: small;">JSNIA0834GB</p>
5 (V)	—	Front camera ground	—	[Ignition switch ON]	0 V
6 (L)	5 (V)	Front camera power supply	Output	[Ignition switch ON]	6.0 V
7 (Shield)	—	Front camera video ground	—	[Ignition switch ON]	0 V
8 (LG)	7 (Shield)	Front camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	<p style="text-align: right; font-size: small;">JSNIA0834GB</p>
9 (L)	—	Door mirror RH camera ground	—	[Ignition switch ON]	0 V
10 (B)	9 (L)	Door mirror RH camera power supply	Output	[Ignition switch ON]	6.0 V
11 (Shield)	—	Door mirror RH camera video ground	—	[Ignition switch ON]	0 V
12 (Y)	11 (Shield)	Door mirror RH camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	<p style="text-align: right; font-size: small;">JSNIA0834GB</p>

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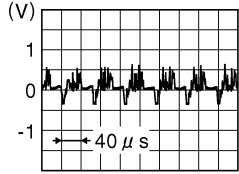
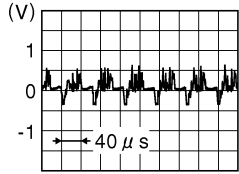
AV

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AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
13 (Y)	—	Door mirror LH camera ground	—	[Ignition switch ON]	0 V
14 (L)	13 (Y)	Door mirror LH camera power supply	Output	[Ignition switch ON]	6.0 V
15 (Shield)	—	Door mirror LH camera video ground	—	[Ignition switch ON]	0 V
16 (G)	15 (Shield)	Door mirror LH camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	
17 (B)	—	Rear view camera ground	—	[Ignition switch ON]	0 V
18 (R)	17 (B)	Rear view camera power supply	Output	[Ignition switch ON]	6.0 V
19 (Shield)	—	Rear view camera video ground	—	[Ignition switch ON]	0 V
20 (W)	19 (Shield)	Rear view camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	
24 (Y)	—	ITS CAN low (with driver assistance system)	Input/ Output	—	—
24 (R)	—	CAN low (without driver assistance system)	Input/ Output	—	—
26 (L)	—	ITS CAN high (with driver assistance system)	Input/ Output	—	—
26 (L)	—	CAN high (without driver assistance system)	Input/ Output	—	—
39 (B)	—	Ground	—	[Ignition switch ON]	0 V
40 (BG)	39 (B)	Ignition signal	Input	[Ignition switch ON or START]	12.0 V

AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

Fail-Safe

INFOID:000000012739538

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U0428: ST ANGLE SENSOR CALIBRATION	Neutral position adjustment of steering angle sensor is not complete.	<ul style="list-style-type: none"> • Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • Front tire angle display is stopped. • Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.
U1000: CAN COMM CIRCUIT	When around view monitor control unit cannot transmit/receive CAN communication signal continuously for 2 seconds or more.	<p>The following functions are stopped</p> <ul style="list-style-type: none"> • When communication of steering angle sensor signal is not normal: <ul style="list-style-type: none"> - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - Front tire angle display is stopped. - Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed. • When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal: <ul style="list-style-type: none"> - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.
U111A: REAR CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (gray screen display).
U111B: SIDE CAMERA RH IMAGE SIGNAL	No-signal status of side camera RH image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	
U111C: FRONT CAMERA IMAGE SIGNAL	No-signal status of front camera image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	
U111D: SIDE CAMERA LH IMAGE SIGNAL	No-signal status of side camera LH image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	

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

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AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U1232: ST ANGLE SEN CALIB	Neutral position adjustment of steering angle sensor is performed. NG signal from steering angle sensor is received.	<ul style="list-style-type: none"> • Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • Tire icon is stopped. • Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.
U1302: CAMERA POWER VOLT	Camera power supply voltage does not satisfy the following conditions for 2 seconds or more when ignition switch is turned ON: <ul style="list-style-type: none"> • When supplemental lighting power supply output is ON: 5.9 – 6.5 V. • When OFF: 0 V by camera power supply measurement. 	Camera power output is stopped.
U1304: CAMERA IMAGE CALIB	<ul style="list-style-type: none"> • When camera calibration is incomplete. • When camera information in around view monitor control unit and information read from camera are not the same. NOTE: Current malfunction is displayed only and is not saved.	Unmatched icon  display (red) is displayed (applicable for unmatched camera only).
U1305: CONFIG UNFINISH	The vehicle setting of around view monitor control unit is incomplete. NOTE: Current malfunction is displayed only and is not saved.	Operation is according to the vehicle setting value as default value.
Other	When around view monitor control unit is not normal.	Switch to camera screen is not allowed.
	When communication between around view monitor control unit and each camera is not normal.	On applicable camera screen,  marking (Red) is displayed.
	When communication line between around view monitor control unit and each camera image line is affected by electromagnetic noises.	On applicable camera image screen,  display (Blue) is displayed.

DTC Inspection Priority Chart

INFOID:0000000012739539

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart:

Priority	Detected items (DTC)
1	U1305: CONFIG UNFINISH
2	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> • U0428: ST ANGLE SENSOR CALIBRATION • U111A: REAR CAMERA IMAGE SIGNAL • U111B: SIDE CAMERA RH IMAGE SIGNAL • U111C: FRONT CAMERA IMAGE SIGNAL • U111D: SIDE CAMERA LH IMAGE SIGNAL • U1232: ST ANGLE SEN CALIB • U1304: CAMERA IMAGE CALIB

AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITHOUT BOSE)]

DTC Index

INFOID:000000012739540

DTC	CONSULT display	Refer to
U0428	ST ANGLE SENSOR CALIBRATION	AV-154. "DTC Logic"
U1000	CAN COMM CIRCUIT	AV-155. "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"
U1010	CONTROL UNIT (CAN)	AV-156. "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"
U111A	REAR CAMERA IMAGE SIGNAL	AV-157. "DTC Logic"
U111B	SIDE CAMERA RH IMAGE SIGNAL	AV-159. "DTC Logic"
U111C	FRONT CAMERA IMAGE SIGNAL	AV-161. "DTC Logic"
U111D	SIDE CAMERA LH IMAGE SIGNAL	AV-163. "DTC Logic"
U1232	ST ANGLE SEN CALIB	AV-168. "DTC Logic"
U1304	CAMERA IMAGE CALIB	AV-182. "DTC Logic"
U1305	CONFIG UNFINISH	AV-183. "DTC Logic"

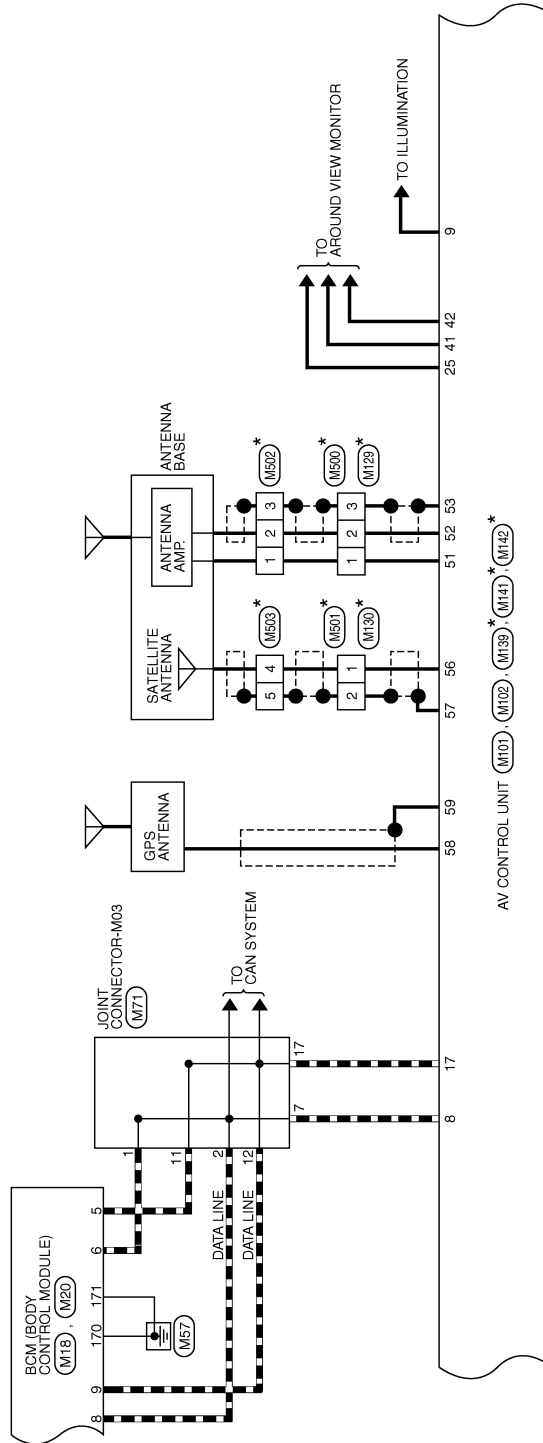
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AV

NAVIGATION WITHOUT BOSE

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[MULTI AV (NAVI WITHOUT BOSE)]



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

AANWA1446GB

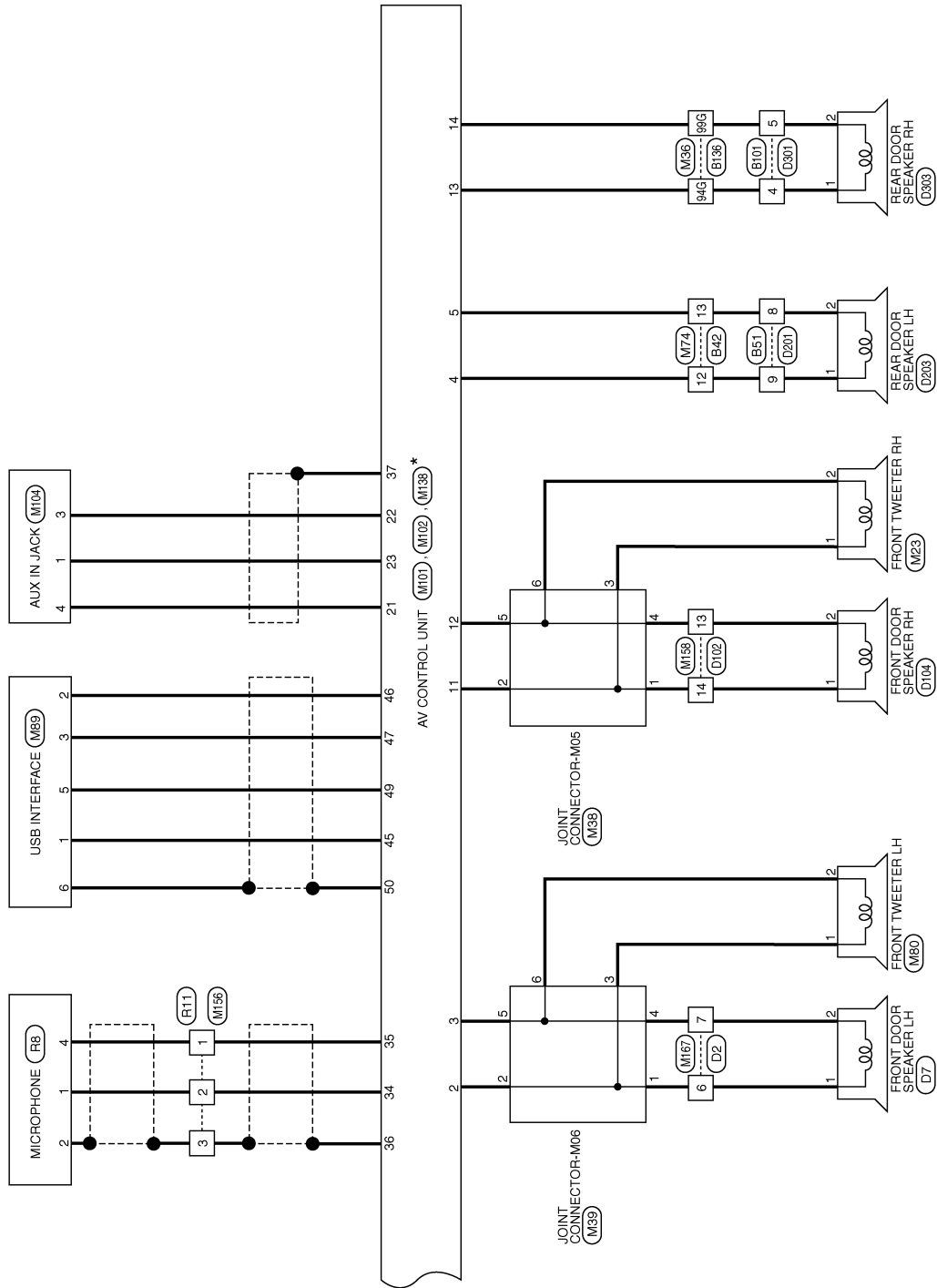
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NAVIGATION WITHOUT BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITHOUT BOSE)]

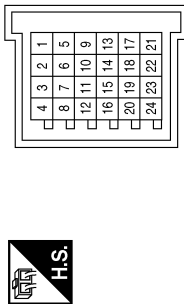


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

AANWA1014GB

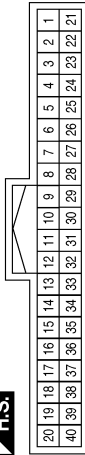
MULTI AV (NAVIGATION WITHOUT BOSE AUDIO SYSTEM) CONNECTORS

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



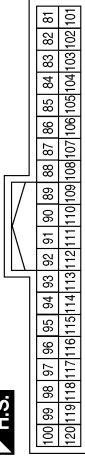
Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
5	R	CAN-L
6	L	CAN-H
8	L	CAN-H
9	R	CAN-L

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



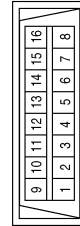
Terminal No.	Color of Wire	Signal Name
95	V	I SHORTING PIN
106	W	O AUTO ACC2
110	BG	O MR OUTPUT

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
161	W	I PWR ECU
170	B	I GND 1
171	B	I GND 2

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	LG	-
11	SB	-

Connector No.	M23
Connector Name	FRONT TWEETER RH
Connector Color	WHITE



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

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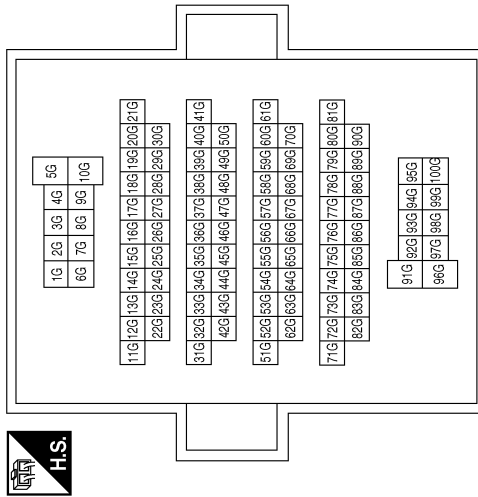
NAVIGATION WITHOUT BOSE

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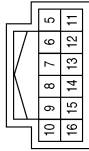
[MULTI AV (NAVI WITHOUT BOSE)]

Terminal No.	Color of Wire	Signal Name
94G	LG	-
99G	Y	-

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE

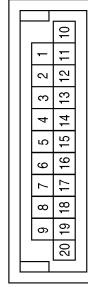


Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	WHITE

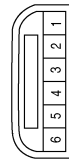


Terminal No.	Color of Wire	Signal Name
8	Y	-
14	L	-
15	GR	-

Connector No.	M43
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE



Connector No.	M39
Connector Name	JOINT CONNECTOR-M06
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	L	-
5	L	-
12	P	-
15	P	-

Terminal No.	Color of Wire	Signal Name
1	Y	-
2	W	-
3	W	-
4	R	-
5	P	-
6	GR	-

Terminal No.	Color of Wire	Signal Name
1	W	-
2	G	-
3	G	-
4	GR	-
5	V	-
6	R	-



AANIA4176GB

NAVIGATION WITHOUT BOSE

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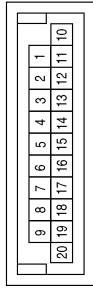
[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
3R	V	-
14R	W	-

Connector No.	M47
Connector Name	JOINT CONNECTOR-M04
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	SB	-
4	SB	-
5	SB	-
11	LG	-
12	LG	-
14	LG	-
15	LG	-

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



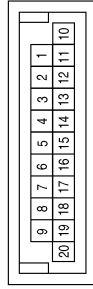
Terminal No.	Color of Wire	Signal Name
7P	Y	-
9P	L	-

Connector No.	M74
Connector Name	WIRE TO WIRE
Connector Color	WHITE



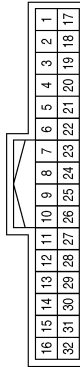
Terminal No.	Color of Wire	Signal Name
12	GR	-
13	BR	-

Connector No.	M71
Connector Name	JOINT CONNECTOR-M03
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
7	L	-
11	R	-
12	R	-
17	R	-

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



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

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NAVIGATION WITHOUT BOSE

< WIRING DIAGRAM >

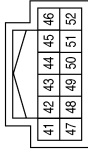
[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	M80
Connector Name	FRONT TWEETER LH
Connector Color	WHITE



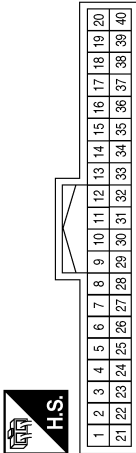
Terminal No.	Color of Wire	Signal Name
1	W	-
2	GR	-

Connector No.	M77
Connector Name	COMBINATION METER
Connector Color	WHITE



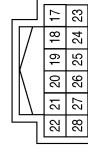
Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
47	SB	M-CAN H
48	LG	M-CAN L

Connector No.	M76
Connector Name	COMBINATION METER
Connector Color	WHITE



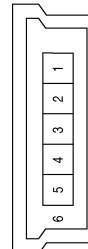
Terminal No.	Color of Wire	Signal Name
21	L	STRG SW GND
22	Y	STRG SW A
23	GR	STRG SW B
38	G	8P/R OUTPUT

Connector No.	M90
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
18	L	-
19	G	-
25	P	-

Connector No.	M89
Connector Name	USB INTERFACE
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	R	-
2	W	-
3	G	-
5	B	-
6	SHIELD	-

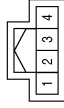
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NAVIGATION WITHOUT BOSE

[MULTI AV (NAVI WITHOUT BOSE)]

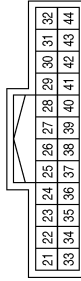
< WIRING DIAGRAM >

Connector No.	M104
Connector Name	AUX IN JACK
Connector Color	WHITE



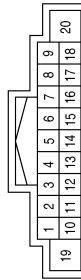
Terminal No.	Color of Wire	Signal Name
1	L	-
3	Y	-
4	G	-

Connector No.	M102
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
21	G	AUX R
22	Y	AUX GND
23	L	AUX L
24	-	-
25	BR	REVERSE
26	-	-
27	-	-
28	-	-
29	-	-
30	BG	MR OUTPUT
31	SB	M-CAN TERMINATION
32	LG	M-CAN TERMINATION
33	-	-
34	W	MIC SIGNAL
35	B	MIC VCC
36	SHIELD	MIC GND
37	SHIELD	SUB OUT/AUX SHIELD
38	SB	MCAN +
39	LG	MCAN -
40	LG	IGNITION
41	G	CAMERA+
42	SHIELD	CAMERA- (SHIELD)
43	-	-
44	-	-

Connector No.	M101
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



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

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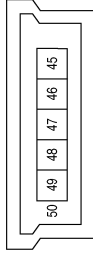
AV

NAVIGATION WITHOUT BOSE

[MULTI AV (NAVI WITHOUT BOSE)]

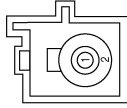
< WIRING DIAGRAM >

Connector No.	M138
Connector Name	AV CONTROL UNIT
Connector Color	BLACK



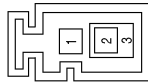
Terminal No.	Color of Wire	Signal Name
45	R	V BUS
46	W	USB D-
47	G	USB D+
48	-	-
49	B	USB GND
50	SHIELD	USB SHIELD

Connector No.	M130
Connector Name	WIRE TO WIRE
Connector Color	BROWN



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

Connector No.	M129
Connector Name	WIRE TO WIRE
Connector Color	GRAY



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

Connector No.	M142
Connector Name	AV CONTROL UNIT
Connector Color	PINK



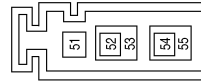
Terminal No.	Color of Wire	Signal Name
56	B	SAT ANT
57	SHIELD	SAT SHIELD

Connector No.	M141
Connector Name	AV CONTROL UNIT
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
58	B	GPS ANT
59	SHIELD	GPS SHIELD

Connector No.	M139
Connector Name	AV CONTROL UNIT
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
51	B	ANT +B
52	B	ANT MAIN
53	SHIELD	MAIN GND
54	-	-
55	-	-

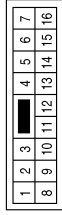
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NAVIGATION WITHOUT BOSE

< WIRING DIAGRAM >

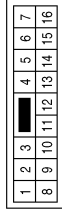
[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	M167
Connector Name	WIRE TO WIRE
Connector Color	WHITE



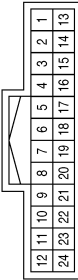
Terminal No.	Color of Wire	Signal Name
6	Y	-(WITHOUT BOSE AUDIO SYSTEM)
7	R	-(WITHOUT BOSE AUDIO SYSTEM)

Connector No.	M158
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
13	GR	-(WITHOUT BOSE AUDIO SYSTEM)
14	W	-(WITHOUT BOSE AUDIO SYSTEM)

Connector No.	M156
Connector Name	WIRE TO WIRE
Connector Color	WHITE



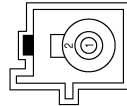
Terminal No.	Color of Wire	Signal Name
1	B	-
2	W	-
3	SHIELD	-

Connector No.	M502
Connector Name	ANTENNA BASE (ANTENNA AMP)
Connector Color	GRAY



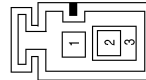
Terminal No.	Color of Wire	Signal Name
1	B	-
2	B	-
3	SHIELD	-

Connector No.	M501
Connector Name	WIRE TO WIRE
Connector Color	BROWN



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

Connector No.	M500
Connector Name	WIRE TO WIRE
Connector Color	GRAY



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

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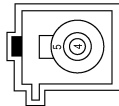
AV

NAVIGATION WITHOUT BOSE

< WIRING DIAGRAM >

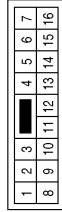
[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	M503
Connector Name	ANTENNA BASE (SATELLITE RADIO ANTENNA)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
4	B	-
5	SHIELD	-

Connector No.	B42
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
12	LA/Y	-(US BUILT)
12	LA/L	-(KOREA BUILT)
13	LA/GR	-(US BUILT)
13	LA/R	-(KOREA BUILT)

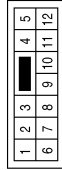
Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
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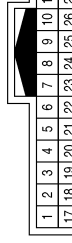
Terminal No.	Color of Wire	Signal Name
60	L	CAN-H
80	P	CAN-L

Connector No.	B51
Connector Name	WIRE TO WIRE
Connector Color	WHITE



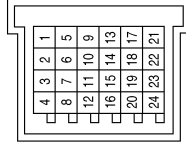
Terminal No.	Color of Wire	Signal Name
8	LA/GR	-(WITHOUT BOSE AUDIO SYSTEM, US BUILT)
8	LA/R	-(WITHOUT BOSE AUDIO SYSTEM, KOREA BUILT)
9	LA/Y	-(WITHOUT BOSE AUDIO SYSTEM, US BUILT)
9	LA/L	-(WITHOUT BOSE AUDIO SYSTEM, KOREA BUILT)

Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	GRAY



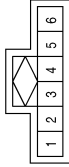
Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

NAVIGATION WITHOUT BOSE

< WIRING DIAGRAM >

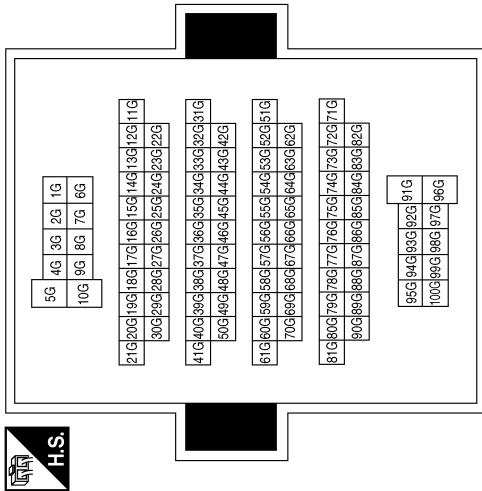
[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	F8
Connector Name	MICROPHONE
Connector Color	WHITE

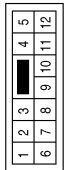


Terminal No.	Color of Wire	Signal Name
1	W	-
2	SHIELD	-
4	B	-

Connector No.	B136
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



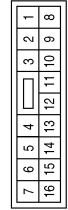
Terminal No.	Color of Wire	Signal Name
4	LAV	-(WITHOUT BOSE AUDIO SYSTEM)
5	LAY	-(WITHOUT BOSE AUDIO SYSTEM)

Connector No.	D7
Connector Name	FRONT DOOR SPEAKER LH (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



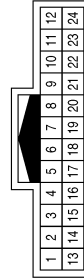
Terminal No.	Color of Wire	Signal Name
1	LA/L	-
2	LA/BR	-

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6	LAL	-
7	LA/BR	-

Connector No.	R11
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

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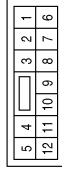
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NAVIGATION WITHOUT BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITHOUT BOSE)]

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



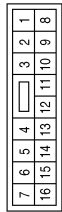
Terminal No.	Color of Wire	Signal Name
8	LA/R	-
9	LA/L	-

Connector No.	D104
Connector Name	FRONT DOOR SPEAKER RH (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LA/G	-
2	LA/R	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Color	WHITE



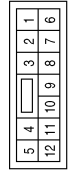
Terminal No.	Color of Wire	Signal Name
13	LA/R	-
14	LA/G	-

Connector No.	D303
Connector Name	REAR DOOR SPEAKER RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LA/V	-
2	LA/Y	-

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



Terminal No.	Color of Wire	Signal Name
4	LA/V	-
5	LA/Y	-

Connector No.	D203
Connector Name	REAR DOOR SPEAKER LH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LA/L	-
2	LA/R	-

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AROUND VIEW MONITOR SYSTEM

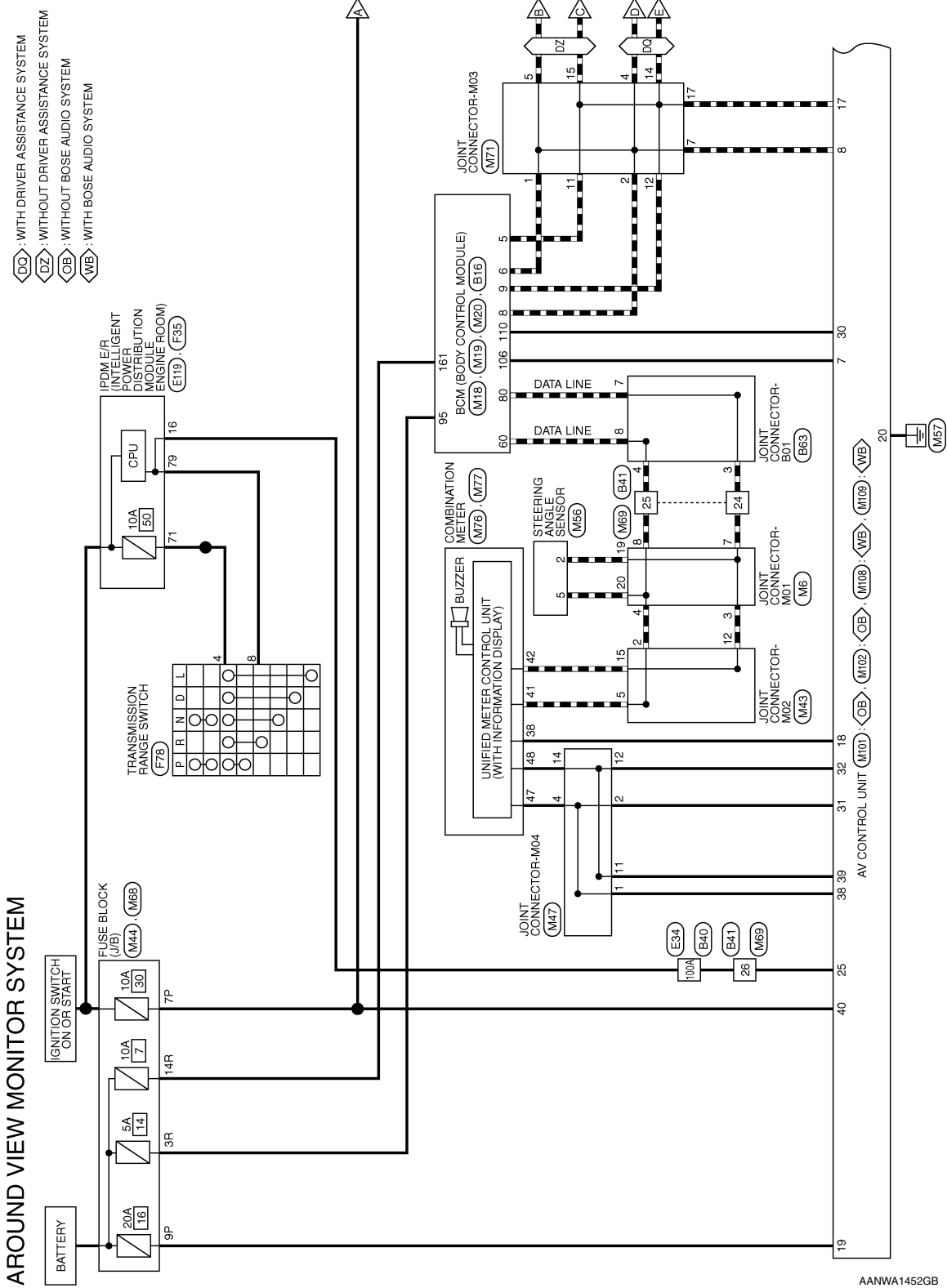
< WIRING DIAGRAM >

[MULTI AV (NAVI WITHOUT BOSE)]

AROUND VIEW MONITOR SYSTEM

Wiring Diagram

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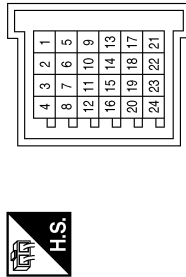
AROUND VIEW MONITOR SYSTEM

[MULTI AV (NAVI WITHOUT BOSE)]

< WIRING DIAGRAM >

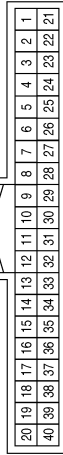
AROUND VIEW MONITOR SYSTEM CONNECTORS

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-
19	P	-
20	L	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
5	R	CAN-L
6	L	CAN-H
8	L	CAN-H
9	R	CAN-L

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
95	V	I SHORTING PIN
106	W	O AUTO ACC2
110	BG	O MR OUTPUT

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
161	W	I PWR ECU

Connector No.	M27
Connector Name	JOINT CONNECTOR-M13
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	SB	-
3	SB	-

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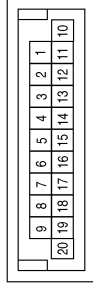
AV

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	M43
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE

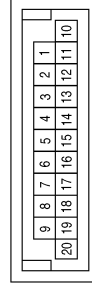


Terminal No.	Color of Wire	Signal Name
2	L	-
5	L	-
12	P	-
15	P	-

Terminal No.	Color of Wire	Signal Name
22J	SHIELD	-
23J	LG	-
24J	V	-
25J	L	-

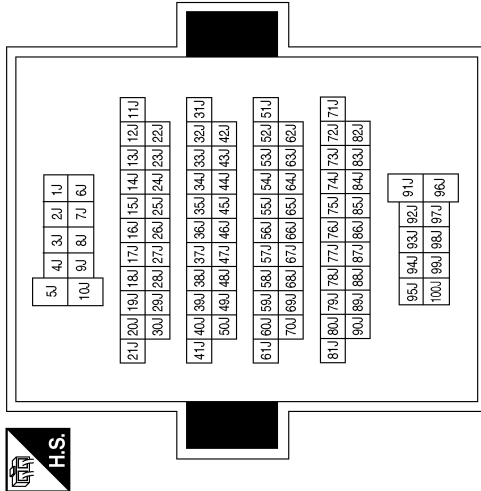
Terminal No.	Color of Wire	Signal Name
11	LG	-
12	LG	-
14	LG	-

Connector No.	M47
Connector Name	JOINT CONNECTOR-M04
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	SB	-
4	SB	-

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7P	Y	-
9P	L	-
14P	SB	-
15P	L	-

AANIA4203GB

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	M56
Connector Name	STEERING ANGLE SENSOR
Connector Color	GRAY



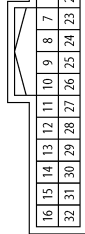
Terminal No.	Color of Wire	Signal Name
2	P	-
5	L	-

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



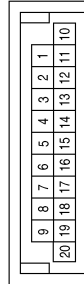
Terminal No.	Color of Wire	Signal Name
3R	V	-
14R	W	-

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



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-
26	BR	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

Connector No.	M71
Connector Name	JOINT CONNECTOR-M03
Connector Color	BLUE



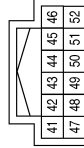
Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
4	L	-
5	L	-
7	L	-
11	R	-
12	R	-
14	R	-
15	R	-
17	R	-

Connector No.	M76
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
38	G	8P/R OUTPUT

Connector No.	M77
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
47	SB	M-CAN H
48	LG	M-CAN L

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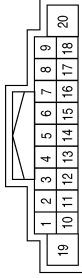
AV

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	M101
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



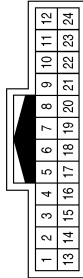
Terminal No.	Color of Wire	Signal Name
7	W	ACC
8	L	CAN-H
17	R	CAN-L
18	G	SPEED SIGNAL
19	L	BAT
20	B	G

Connector No.	M97
Connector Name	JOINT CONNECTOR-M24
Connector Color	WHITE



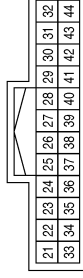
Terminal No.	Color of Wire	Signal Name
1	B	-
4	B	-

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE



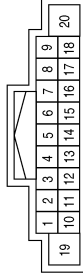
Terminal No.	Color of Wire	Signal Name
7	B	-
8	L	-
9	Y	-
10	SHIELD	-

Connector No.	M109
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



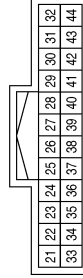
Terminal No.	Color of Wire	Signal Name
25	BR	REVERSE
30	BG	MR OUTPUT
31	SB	M-CAN TERMINATION
32	LG	M-CAN TERMINATION
38	SB	MCAN+
39	LG	MCAN-
40	LG	IGNITION
41	G	CAMERA+
42	SHIELD	SHIELD

Connector No.	M108
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	W	ACC
8	L	CAN-H
17	R	CAN-L
18	G	SPEED SIGNAL
19	L	BAT
20	B	G

Connector No.	M102
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
25	BR	REVERSE
30	BG	MR OUTPUT
31	SB	M-CAN TERMINATION
32	LG	M-CAN TERMINATION
38	SB	MCAN+
39	LG	MCAN-
40	LG	IGNITION
41	G	CAMERA+
42	SHIELD	SHIELD

AANIA4205GB

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITHOUT BOSE)]

Terminal No.	Color of Wire	Signal Name
26	L	CAN-H (WITHOUT DRIVER ASSISTANCE SYSTEM)
27	-	-
28	-	-
29	-	-
30	-	-
31	-	-
32	-	-
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	-	-
39	B	GND
40	SB	IGN

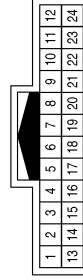
Terminal No.	Color of Wire	Signal Name
12	Y	SV1 VIDEO SIGNAL
13	Y	SV2 POWER GND
14	L	SV2 POWER 6.2V
15	SHIELD	SV2 VIDEO GND
16	G	SV2 VIDEO SIGNAL
17	B	RV POWER GND
18	R	RV POWER 6.2V
19	SHIELD	RV VIDEO GND
20	W	RV VIDEO SIGNAL
21	-	-
22	-	-
23	-	-
24	Y	ITS CAN-L (WITH DRIVER ASSISTANCE SYSTEM)
24	R	CAN-L (WITHOUT DRIVER ASSISTANCE SYSTEM)
25	-	-
26	L	ITS CAN-H (WITH DRIVER ASSISTANCE SYSTEM)

Connector No.	M112
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Color	WHITE



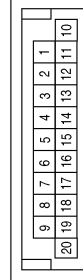
Terminal No.	Color of Wire	Signal Name
1	-	-
2	-	-
3	SHIELD	VIDEO OUTPUT GND
4	G	VIDEO OUTPUT SIGNAL
5	V	FV POWER GND
6	L	FV POWER 6.2V
7	SHIELD	FV VIDEO GND
8	LG	FV VIDEO SIGNAL
9	L	SV1 POWER GND
10	B	SV1 POWER 6.2V
11	SHIELD	SV1 VIDEO GND

Connector No.	M168
Connector Name	WIRE TO WIRE
Connector Color	WHITE



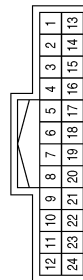
Terminal No.	Color of Wire	Signal Name
7	L	-
8	Y	-
9	G	-
10	SHIELD	-

Connector No.	M150
Connector Name	JOINT CONNECTOR-M07
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
6	Y	-
9	Y	-
17	L	-
20	L	-

Connector No.	M148
Connector Name	ADAS CONTROL UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	L	ITS CAN-H
5	Y	ITS CAN-L
9	L	CAN-H
10	R	CAN-L

AANIA4206GB

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



AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITHOUT BOSE)]

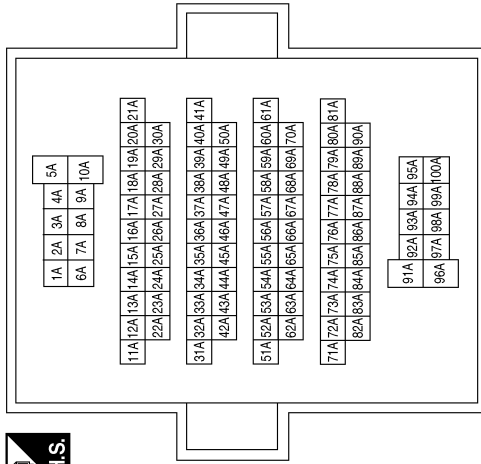
Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	GRAY



9	8	7	6
18	17	16	15
14	13	12	11
10	3	4	5

Terminal No.	Color of Wire	Signal Name
16	G	O LIGHT REVERSE LAMP

Connector No.	E34
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
100A	G	-

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
1	V	-
2	L	-
13	SHIELD	-
14	LG	-

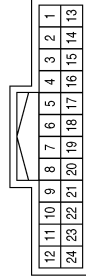
AANIA4207GB

AROUND VIEW MONITOR SYSTEM

[MULTI AV (NAVI WITHOUT BOSE)]

< WIRING DIAGRAM >

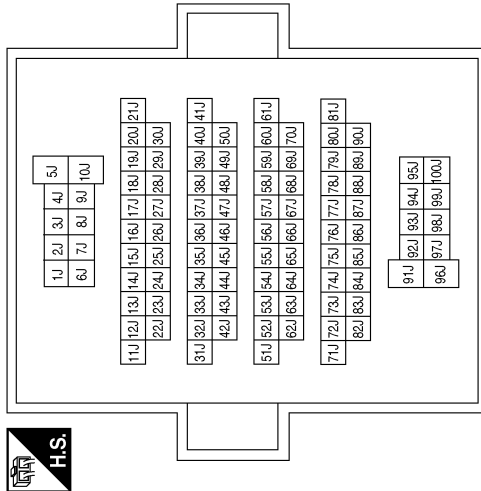
Connector No.	E209
Connector Name	WIRE TO WIRE
Connector Color	WHITE



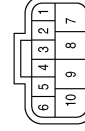
Terminal No.	Color of Wire	Signal Name
1	V	-
2	L	-
13	SHIELD	-
14	LG	-

Terminal No.	Color of Wire	Signal Name
22J	SHIELD	-
23J	LG	-
24J	V	-
25J	L	-

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	F78
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
4	W	-
8	G	-

Connector No.	F35
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
71	SB	O IGN REVERSE SW AC VALVE
79	G	LI LIGHT REVERSE SW

Connector No.	E226
Connector Name	FRONT CAMERA
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	V	-
2	L	-
4	LG	-
5	SHIELD	-

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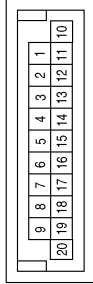
AV

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	B36
Connector Name	JOINT CONNECTOR-B06
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
11	Y	-
12	Y	-

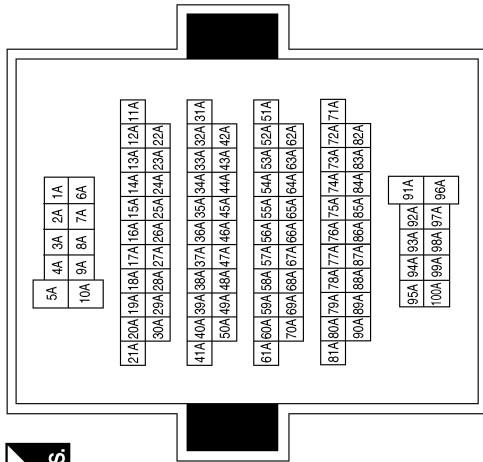
Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
60	L	CAN-H
80	P	CAN-L

Terminal No.	100A
Color of Wire	G
Signal Name	-

Connector No.	B40
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-
26	G	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

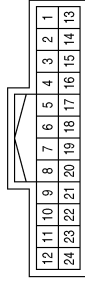
AANIA4209GB

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

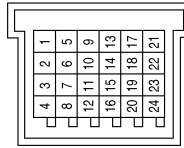
[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	D3
Connector Name	WIRE TO WIRE
Connector Color	WHITE



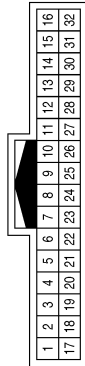
Terminal No.	Color of Wire	Signal Name
7	GR	-
8	G	-
9	Y	-
10	B	-

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	B46
Connector Name	WIRE TO WIRE
Connector Color	WHITE



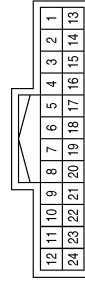
Terminal No.	Color of Wire	Signal Name
5	R	-
6	B	-
7	W	-
8	SHIELD	-

Connector No.	D107
Connector Name	DOOR MIRROR RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	L	-
8	V	-
15	B	-
16	Y	-

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	L	-
8	V	-
9	Y	-
10	B	-

Connector No.	D14
Connector Name	DOOR MIRROR LH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	GR	-
8	G	-
15	B	-
16	Y	-

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AV

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

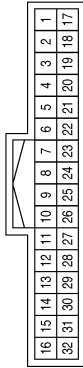
[MULTI AV (NAVI WITHOUT BOSE)]

Connector No.	D504
Connector Name	REAR VIEW CAMERA (WITHOUT DRIVER ASSISTANCE SYSTEM)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
2	R	-
4	W	-
5	V	-

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5	R	-
6	B	-
7	W	-
8	V	-

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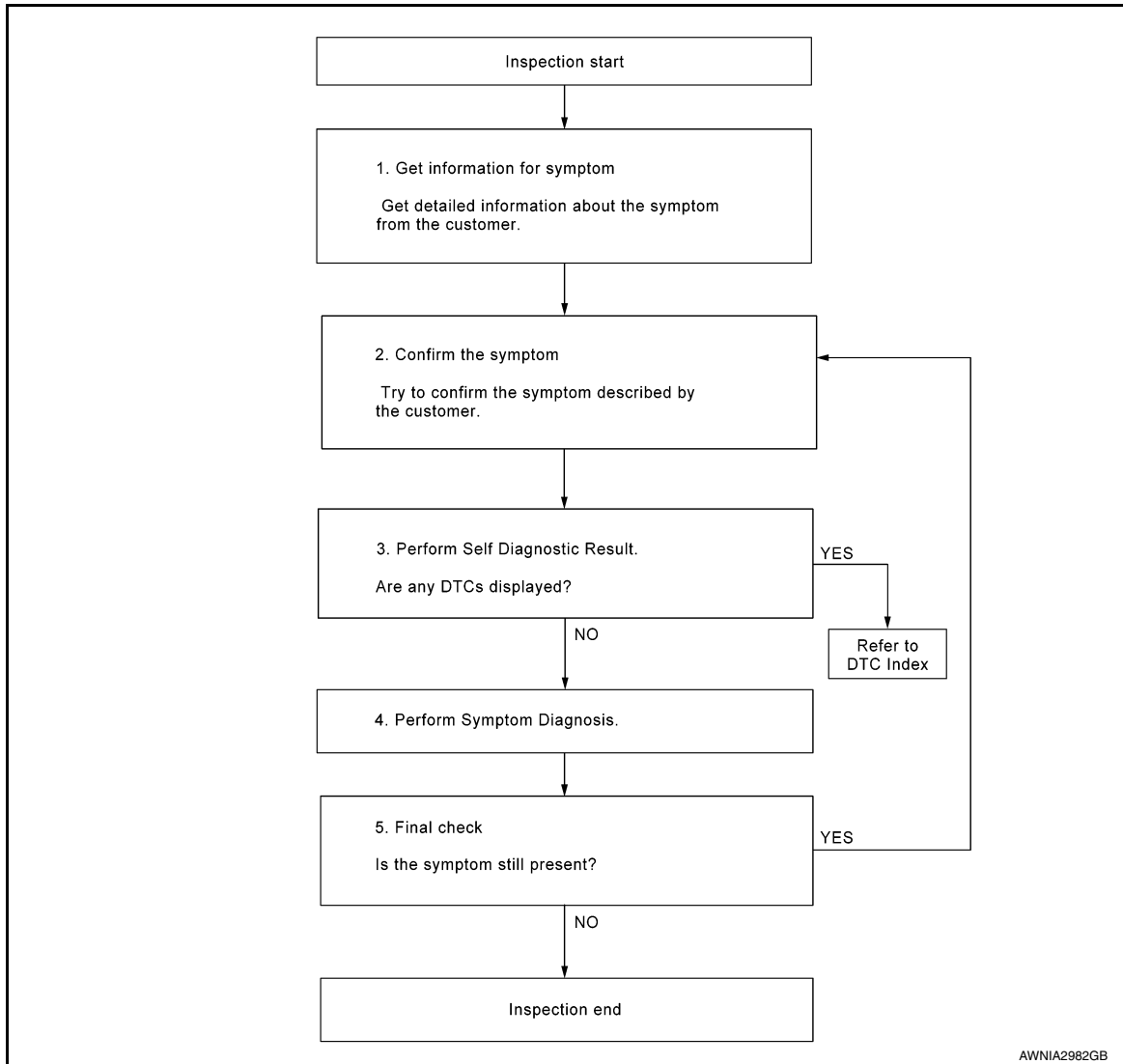
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000012422146

OVERALL SEQUENCE



DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

2.CONFIRM THE SYMPTOM

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

>> GO TO 3.

3.PERFORM SELF DIAGNOSTIC RESULT

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

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[MULTI AV (NAVI WITHOUT BOSE)]

2. Depending on system being diagnosed, perform Self Diagnostic Result for:

- MULTI AV.
- AVM.

Are any DTCs displayed?

YES >> Refer to [AV-109, "DTC Index"](#) (MULTI AV) or [AV-115, "DTC Index"](#) (AVM).

NO >> GO TO 4.

4. PERFORM SYMPTOM DIAGNOSIS

Refer to [AV-199, "Symptom Table"](#).

>> GO TO 5.

5. FINAL CHECK

Refer to symptom described by the customer in step 1.

Is the symptom still present?

YES >> GO TO 2.

NO >> Inspection End.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITHOUT BOSE)]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description

INFOID:000000012422147

BEFORE REPLACEMENT

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

NOTE:

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

AFTER REPLACEMENT

CAUTION:

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

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

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Work Procedure

INFOID:000000012422148

1. SAVING VEHICLE SPECIFICATION

CONSULT

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

NOTE:

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

>> GO TO 2.

2. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to [AV-213, "Removal and Installation"](#).

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

CONSULT

1. Enter "Re/Programming, Configuration".
2. If "Before Replace ECU" operation was performed, automatically an "Operation Log Selection" screen will be displayed. Select the applicable file from the "Saved Data List" and press "Confirm" to write vehicle specification. Refer to [AV-145, "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).
3. If "Before Replace ECU" operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to [AV-145, "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).

>> GO TO 4.

4. REGISTER AV CONTROL UNIT

Perform AV control unit registration. Refer to [AV-147, "REGISTRATION \(AV CONTROL UNIT\) : Work Procedure"](#).

>> GO TO 5.

5. OPERATION CHECK

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

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>> Work End.

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description

INFOID:000000012422149

BEFORE REPLACEMENT

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

NOTE:

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

AFTER REPLACEMENT

CAUTION:

When replacing around view monitor control unit, you must perform "After Replace ECU" with CONSULT.

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

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Work Procedure

INFOID:000000012422150

1. SAVING VEHICLE SPECIFICATION

ⓑ-CONSULT

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

NOTE:

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

>> GO TO 2.

2. REPLACE AROUND VIEW MONITOR CONTROL UNIT

Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

ⓑCONSULT

1. Enter "Re/Programming, Configuration".
2. If "Before Replace ECU" operation was performed, automatically an "Operation Log Selection" screen will be displayed. Select the applicable file from the "Saved Data List" and press "Confirm" to write vehicle specification. Refer to [AV-146, "CONFIGURATION \(AROUND VIEW MONITOR CONTROL UNIT\) : Work Procedure"](#).
3. If "Before Replace ECU" operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to [AV-146, "CONFIGURATION \(AROUND VIEW MONITOR CONTROL UNIT\) : Work Procedure"](#).

>> GO TO 4.

4. OPERATION CHECK

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

>> Work End.

CONFIGURATION (AV CONTROL UNIT)

CONFIGURATION (AV CONTROL UNIT) : Description

INFOID:000000012422151

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

Configuration has three functions as follows:

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

CAUTION:

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

CONFIGURATION (AV CONTROL UNIT) : Work Procedure

INFOID:000000012422152

1. WRITING MODE SELECTION

ⓂCONSULT

Select "Reprogramming, Configuration" of AV control unit.

When writing saved data>>GO TO 2.

When writing manually>>GO TO 3.

2. PERFORM "SAVED DATA LIST"

ⓂCONSULT

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

>> Work End.

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

ⓂCONSULT

1. Select "After Replace ECU" or "Manual Configuration".
2. Identify the correct model and configuration list. Refer to [AV-146. "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).
3. Confirm and/or change setting value for each item.

CAUTION:
Thoroughly read and understand the vehicle specification. ECU control may not operate normally if the setting is not correct.
4. Select "Next".

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

>> GO TO 4.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITHOUT BOSE)]

4. OPERATION CHECK

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

>> Work End.

CONFIGURATION (AV CONTROL UNIT) : Configuration List

INFOID:0000000012422153

CAUTION:

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

MANUAL SETTING ITEM	
Items	Setting value
SOUND SYSTEM	BASE ↔ BOSE
CAMERA SYSTEM	NONE/AVM ↔ REAR CAMERA

↔: Items which confirm vehicle specifications

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Description

INFOID:0000000012775905

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

Configuration has three functions as follows

Function	Description
READ CONFIGURATION	<ul style="list-style-type: none">• Reads the vehicle configuration of current around view monitor control unit.• Saves the read vehicle configuration.
WRITE CONFIGURATION - Manual setting	Writes the vehicle configuration with manual setting.
WRITE CONFIGURATION - Config file	Writes the vehicle configuration with saved data.

CAUTION:

- When replacing around view monitor control unit, you must perform “WRITE CONFIGURATION” with CONSULT.
- Never perform “WRITE CONFIGURATION” except for new around view monitor control unit.

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Work Procedure

INFOID:0000000012775906

1. WRITING MODE SELECTION

ⓅCONSULT Configuration

Select “CONFIGURATION” of AVM.

When writing saved data>>GO TO 2.

When writing manually>>GO TO 3.

2. PERFORM “WRITE CONFIGURATION - CONFIG FILE”

ⓅCONSULT Configuration

Perform “WRITE CONFIGURATION - Config file”.

>> Work End.

3. PERFORM “MANUAL CONFIGURATION”

ⓅCONSULT Configuration

Select “MANUAL CONFIGURATION” to write vehicle specifications into the around view monitor control unit.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITHOUT BOSE)]

CAUTION:

- Thoroughly read and understand the vehicle specification. Incorrect settings may result in abnormal control of ECU.
- Make sure to select “NEXT” even if the default settings displayed on the CONSULT are the desired settings. If “NEXT” is not selected, the configuration process will be incomplete.

NOTE:

If manual configuration items are not displayed, touch “NEXT”.

>> GO TO 4.

4. OPERATION CHECK

Confirm that each function controlled by around view monitor control unit operates normally.

>> Work End.

REGISTRATION (AV CONTROL UNIT)

REGISTRATION (AV CONTROL UNIT) : Description

INFOID:000000012422157

AFTER REPLACEMENT

If the AV control unit is replaced with a new AV control unit, the new AV control unit must be registered using the registration code.

CAUTION:

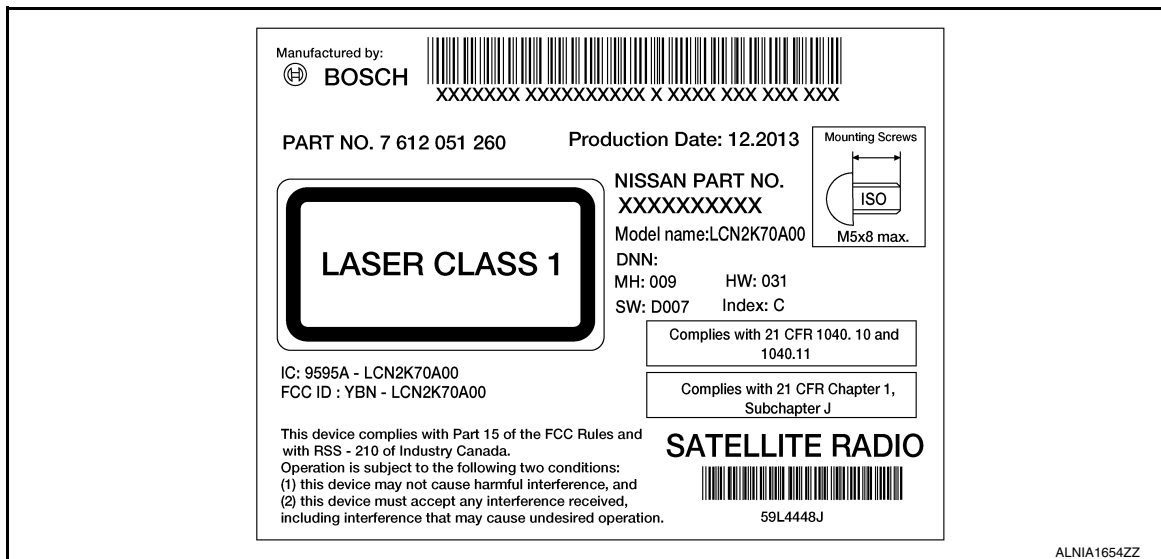
If the new AV control unit registration code is not registered, the “APPS” mode will not function.

REGISTRATION (AV CONTROL UNIT) : Work Procedure

INFOID:000000012422158

1. RECORD REGISTRATION CODE FOR REPLACEMENT AV CONTROL UNIT

1. Refer to the replacement AV control unit's label located on the top of the AV control unit.

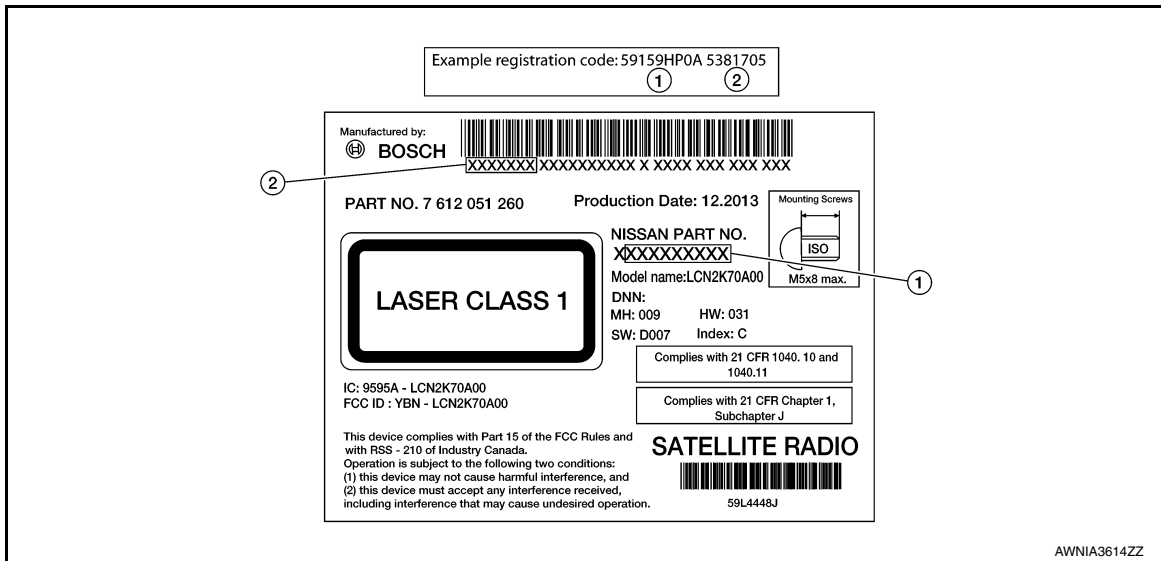


2. Create a registration code to supply to NISSAN Owner Services by combining the last 9 digits of the NISSAN PART NO. (1) and the first 7 digits of the bar code number (2).

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITHOUT BOSE)]



3. Record the registration code.

>> GO TO 2.

2. REGISTER REPLACEMENT AV CONTROL UNIT

Register the replacement AV control unit by contacting NISSAN Owner Services. Refer to TSB.

>> GO TO 3.

3. OPERATION CHECK

Verify that the AV control unit "APPS" function operates normally.

>> Work End.

PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT

PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:000000012422159

Adjust the center position of the predictive course line of the rear view monitor if it is shifted.

PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure

INFOID:000000012422160

1. DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

>> End.

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description

INFOID:000000012422161

- Calibration must be performed after removing/replacing the cameras, removing parts (e.g. front grille, door mirror, and others) mounted on the cameras, or replacing the Around view monitor control unit.
- The use of CONSULT is required to perform calibration or writing of calibration results to the Around view monitor control unit.
- Align the white lines on the road near the vehicle at the boundary of each camera image by this camera calibration. The white lines far from the vehicle may not be aligned at the boundary of each camera image. The farther the line, the greater the difference is.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

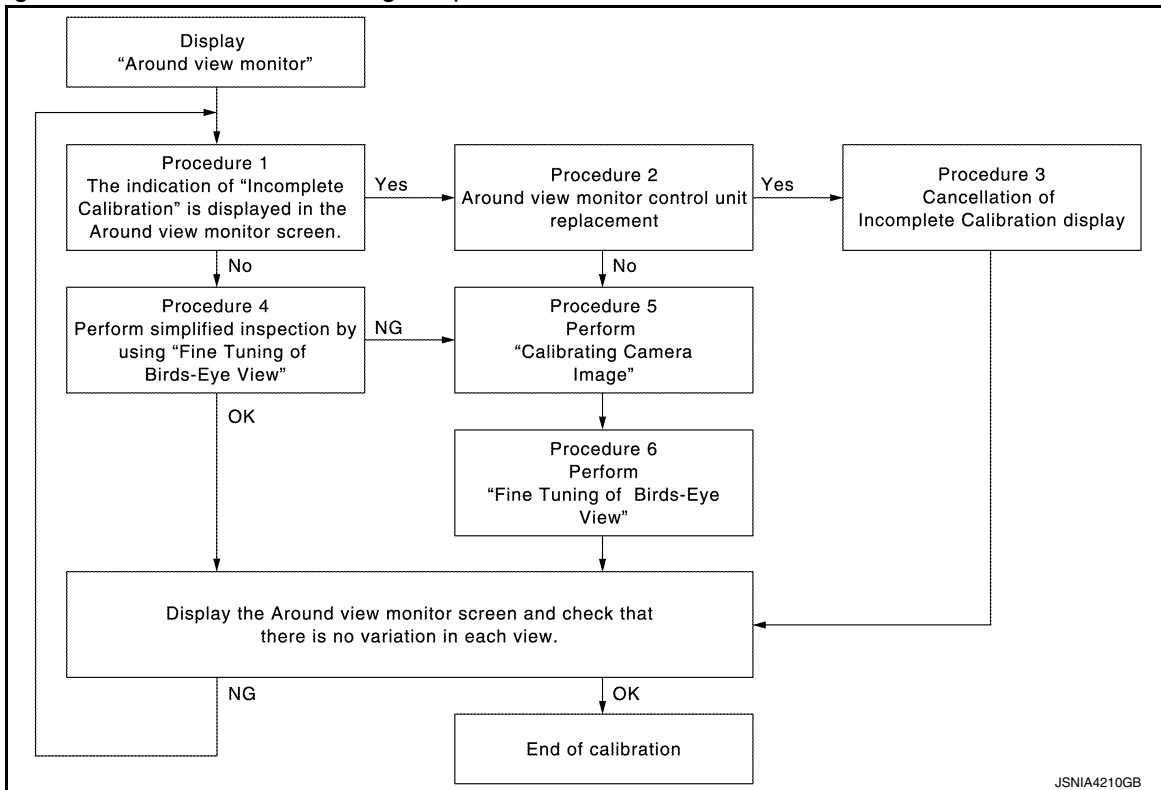
[MULTI AV (NAVI WITHOUT BOSE)]

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure

INFOID:000000012422162

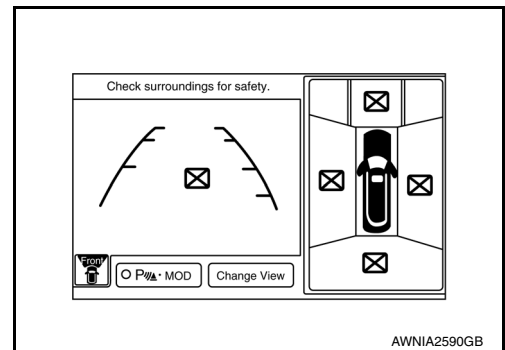
CALIBRATION FLOWCHART

Following the flowchart shown in the figure, perform the calibration.



NOTE:

View in the incomplete calibration state is indicated by on the around view monitor.



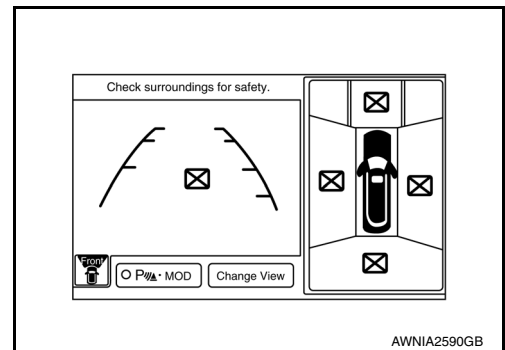
CALIBRATION PROCEDURE

1. AROUND VIEW MONITOR SCREEN CONFIRMATION

Check that there is no indication of "Incomplete calibration".

Is the "Incomplete calibration" display visible?

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



2. CHECK THAT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITHOUT BOSE)]

Check that the around view monitor control unit is replaced.

Is the around view monitor control unit replaced?

- YES >> GO TO 3.
- NO >> GO TO 5.

3. CANCEL THE INDICATION OF INCOMPLETE CALIBRATION (PERFORM THIS ONLY AFTER REPLACING AROUND VIEW MONITOR CONTROL UNIT.)

CONSULT work support

1. On the CONSULT screen, touch “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”, “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”, “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”, or “CALIBRATING CAMERA IMAGE (REAR CAMERA)” to accept the selection.

NOTE:

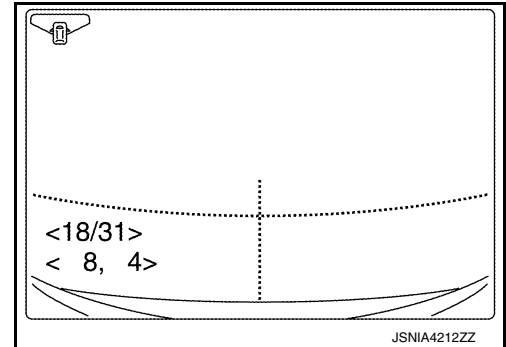
To cancel the indication of Incomplete calibration, select items based on the target camera.

2. On the adjustment screen of each camera, touch “APPLY” button. After this, touch “OK” button.

CAUTION:

- Never perform operations other than those mentioned above.
- Never perform “Initialize Camera Image Calibration”.

3. Display the around view monitor screen to check that there is no errors, such as deviations among the camera images.



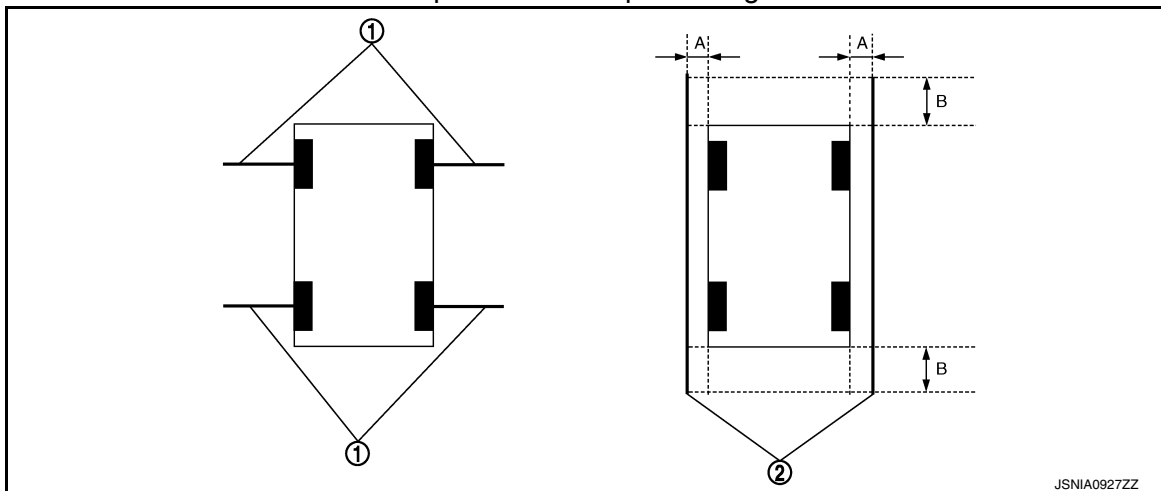
Is there a malfunction?

- YES >> Calibration End.
- NO >> GO TO 1.

4. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY “FINE TUNING OF BIRDS-EYE VIEW”

1. Put target line 1 on the ground beside each axle using packing tape, etc.
2. Put target lines 2 equal to the vehicle total length + approximately 1.0 m (39.3 in) from the vehicle side (right and left) at approximately 30 cm (11.8 in) away from the vehicle (make the line as parallel with the vehicle as possible)

Preparation of simplified target line



- | | |
|----------------------------|----------------------------|
| 1. Target lines 1 | 2. Target lines 2 |
| A. Approx. 30 cm (11.8 in) | B. Approx. 1.0 m (39.3 in) |

CONSULT work support

Touch “FINE TUNING OF BIRDS-EYE VIEW” on the CONSULT screen.

4. On the CONSULT screen, touch “SELECT” button to select right or left camera and perform camera calibration as instructed below:
 - If the marker on the screen deviates from Target line 1, touch “AXIS X” button and “AXIS Y” button to adjust so that the marker is placed on the Target line 1.
 - If Target line 2 is misaligned among the cameras, adjust each camera image to bring Target line 2 into a straight line.

CAUTION:

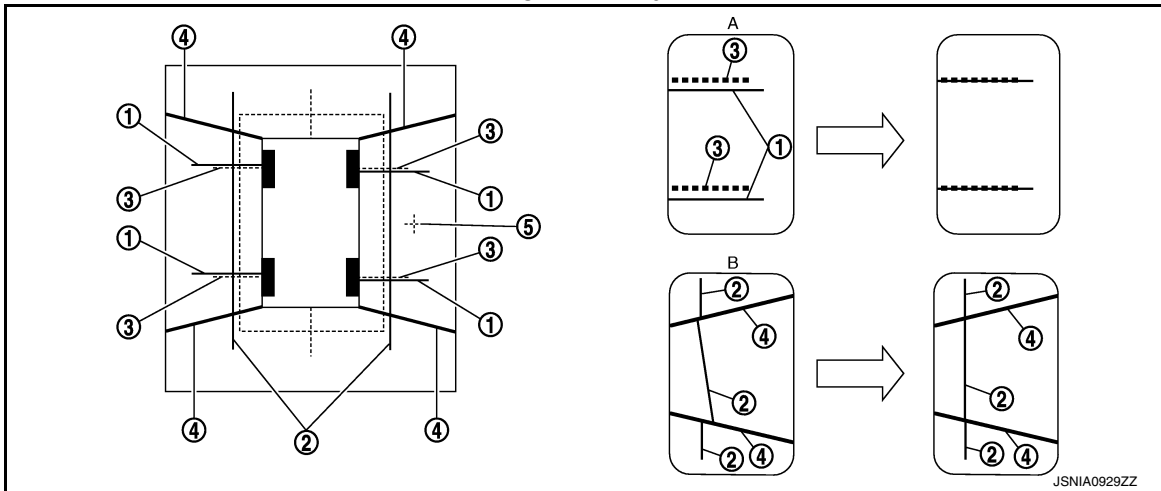
INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITHOUT BOSE)]

Never adjust the front camera and rear camera. Only adjust the right and left cameras.

Simplified target line adjustment method



- | | | |
|---|---|-----------------------------|
| 1. Target lines 1 | 2. Target lines 2 | 3. Marker for target line 1 |
| 4. Boundary between cameras | 5. Crosshairs cursor (mark indicated the selected camera) | |
| A. Adjustment method for target lines 1 (right) | B. Adjustment method for target lines 2 (right) | |

- Adjust right and left cameras. Touch "APPLY" on the CONSULT screen to display adjustment results.
- After adjusting right and left cameras, check that the marker is properly placed on the screen and there is no deviation in Target line 1.

NOTE:

- It can be initialized to the NISSAN factory default condition with "Initialize Camera Image Calibration".
- The adjustment value is cancelled on this mode by performing "Initialize Camera Image Calibration".

Is the difference corrected?

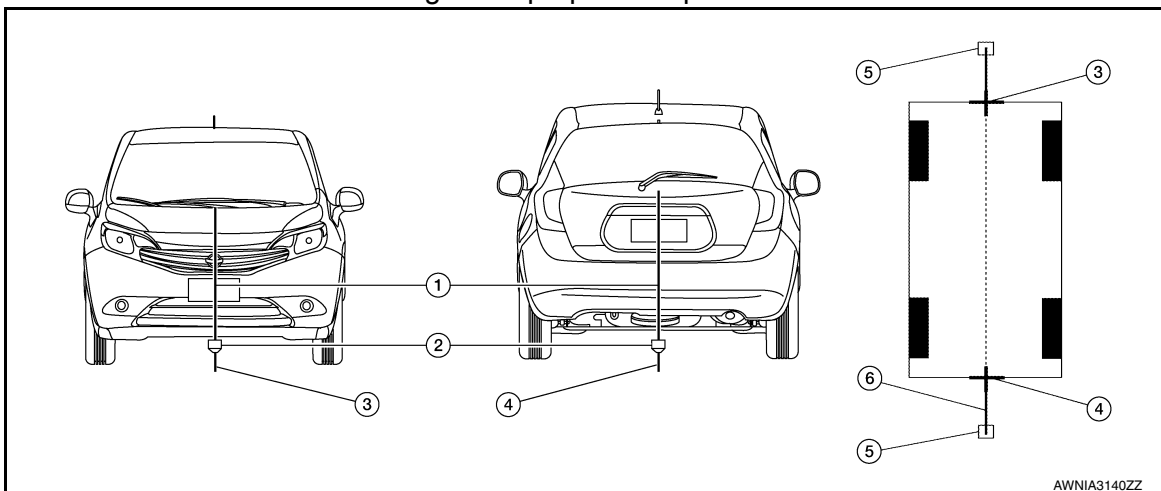
- YES >> On the CONSULT screen, touch "OK" button to complete writing to the around view monitor control unit.
- NO >> GO TO 5.

5.PERFORM "CALIBRATING CAMERA IMAGE"

Preparation of target line

- Hang a string with a weight as shown in the figure. Put the points FM0, RM0 (mark) on the ground at the center of the vehicle front end and rear end with white packing tape or a pen.
- Route the vinyl string under the vehicle, and then pull and fix it on the point approximately 1.0 m (39.9 in) to the front and rear of the vehicle through the points FM0 and RM0 using packing tape.

Target line preparation procedure 1



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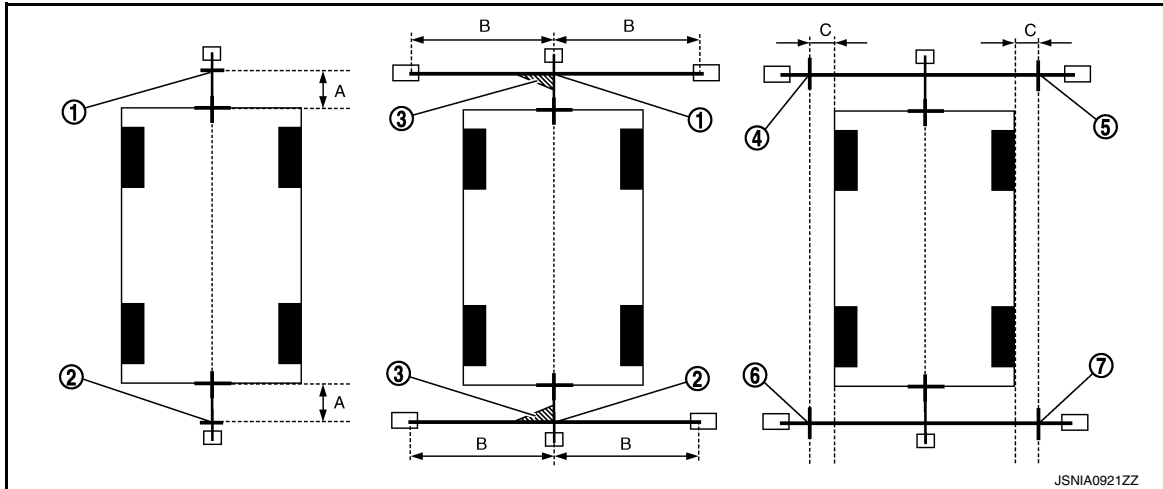
INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITHOUT BOSE)]

- | | | |
|---------------------|---|---------------------|
| 1. Thread | 2. Weight | 3. Point FM0 (mark) |
| 4. Point RM0 (mark) | 5. Packing tape (to fix the vinyl string) | 6. Vinyl string |
3. Put the points FM and RM (mark) 75 cm (29.5 in) from the points FM0 and RM0 individually.
 4. Route the vinyl string through the points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59 in) on both sides with packing tape.
 5. Put the points FL, FR, RL, and RR (mark) to both right and left [vehicle width / 2 + 30 cm (11.8 in)] from the points FM and RM.

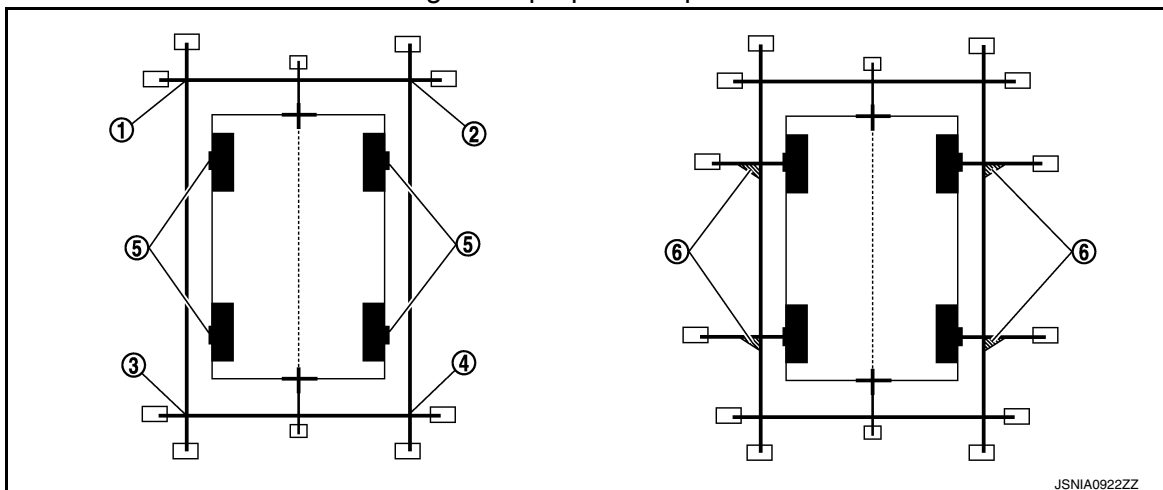
Target line preparation procedure 2



- | | | |
|--------------------|--------------------|--------------------|
| 1. Point FM | 2. Point RM | 3. Triangle scale |
| 4. Point FL (mark) | 5. Point FR (mark) | 6. Point RL (mark) |
| 7. Point RR (mark) | | |
- A. 75 cm (29.5 in) B. Approx. 1.5 m (59 in) C. 30 cm (11.8 in)
[Vehicle width / 2 + 30 cm (11.8 in) from the points FM and RM]

6. Draw the lines of the points FL – RL and FR – RR with vinyl string, and fix it with packing tape.
7. Put a mark on the center of each axle, draw vertical lines to the lines of the points FL – RL and FR – RR from the marks on the center of the axle using a triangle scale, and then fix the lines using packing tape.

Target line preparation procedure 3



- | | | |
|-------------|----------------------------|-------------------|
| 1. Point FL | 2. Point FR | 3. Point RL |
| 4. Point RR | 5. Center position of axle | 6. Triangle scale |

Perform “Calibrating Camera Image”

CONSULT work support

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITHOUT BOSE)]

1. On the CONSULT screen, touch “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”, “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”, “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”, or “CALIBRATING CAMERA IMAGE (REAR CAMERA)” to accept the selection.

NOTE:

To cancel the indication of Incomplete calibration, select items based on the target camera.

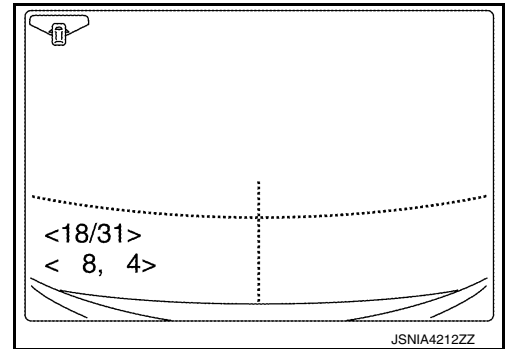
2. On the adjustment screen of each camera, adjust the parameter by touching the “AXIS X” button, “AXIS Y” button, and “ROTATE” button to place the calibration marker shown on the camera screen on the target line drawn on the ground.

Adjustment range

Rotation direction (Center dial) : 31 patterns (16 on the center)

Upper/lower direction (upper/lower switch) : -22 – 22

Left/right direction (left/right switch) : -22 – 22



3. Touch “APPLY” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are shown on the camera screen.

CAUTION:

Check that “PRCSNG” is displayed. Never perform other operations while “PRCSNG” is displayed.

4. Touch “OK” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are written to the around view monitor control unit.

CAUTION:

Check that “PRCSNG” is displayed. Never perform other operations while “PRCSNG” is displayed.

>> GO TO 6.

6.PERFORM “FINE TUNING OF BIRDS-EYE VIEW”

This mode is designed to align the boundary between each camera image that could not be aligned in the “Calibrating Camera Image” mode.

ⓂCONSULT work support

1. Select “FINE TUNING OF BIRDS-EYE VIEW” by touching CONSULT screen.

2. On the adjustment screen of each camera, adjust the parameter by touching the “AXIS X” button, “AXIS Y” button”, and “ROTATE” button to place the calibration marker shown on the camera screen on the target line drawn on the ground.

NOTE:

Touch “SELECT” button on the CONSULT screen to select the target camera.

3. Touch “APPLY” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are shown on the camera screen.

CAUTION:

Check that “PRCSNG” is displayed. Never perform other operations while “PRCSNG” is displayed.

4. Touch “OK” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are written to the around view monitor control unit.

CAUTION:

• **Check that “PRCSNG” is displayed. Never perform other operations while “PRCSNG” is displayed.**

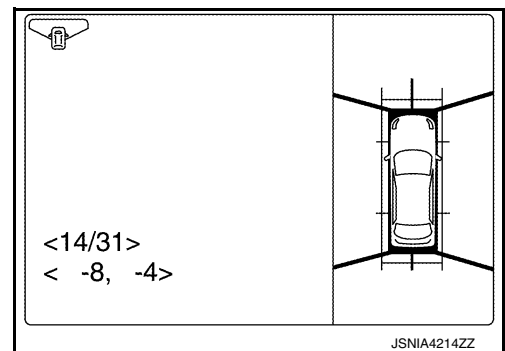
• **After pressing the “OK” button, never press buttons other than the “BACK” button.**

NOTE:

• It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration”.

• The adjustment value is cancelled in this mode by performing “Initialize Camera Image Calibration”.

>> Calibration End.



U0428 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

DTC/CIRCUIT DIAGNOSIS

U0428 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000012422163

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ST ANG SEN CALIB [U0428]	The neutral position adjustment of the steering angle sensor is incomplete.	Adjust neutral position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000012422164

1. ADJUST THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

When U0428 is detected, adjust the neutral position of the steering angle sensor.

>> Perform adjustment of the neutral position of the steering angle sensor. Refer to [AV-103, "CONSULT Function"](#).

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1000 CAN COMM CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:0000000012422165

DTC DETECTION LOGIC

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

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000012422166

1.PERFORM SELF DIAGNOSTIC RESULT

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

Is CAN COMM CIRCUIT displayed?

YES >> Refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-45, "Intermittent Incident"](#).

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000012422167

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CAN COMM CIRCUIT [U1000]	Around view monitor control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000012422168

1.PERFORM SELF DIAGNOSTIC RESULT

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

Is CAN COMM CIRCUIT displayed?

YES >> Refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-45, "Intermittent Incident"](#).

AV

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1010 CONTROL UNIT (CAN)

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:000000012422169

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (CAN) [U1010]	Error during CAN controller hardware initialization (VCAN).	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-213 , "Removal and Installation".

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:000000012422170

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (CAN) [U1010]	Error during CAN controller hardware initialization (VCAN).	Replace the Around view monitor control unit if the malfunction occurs constantly. Refer to AV-221 , "Removal and Installation".

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012422171

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Rear display output signal diagnosis (Harness disconnection) [U111A]	Rear view camera image signal circuit open or short.	Check rear view camera image signal circuit.

Diagnosis Procedure

INFOID:000000012422172

Regarding Wiring Diagram information, refer to [AV-116, "Wiring Diagram"](#).

1. CHECK REAR VIEW CAMERA POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M112 and rear view camera connector D504.
3. Check continuity between around view monitor control unit connector M112 and rear view camera connector D504.

Around view monitor control unit		Rear view camera		Continuity
Connector	Terminals	Connector	Terminals	
M112	17	D504	1	Yes
	18		2	

4. Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	18		No

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace harness or connectors.

2. CHECK REAR VIEW CAMERA POWER SUPPLY VOLTAGE

1. Connect around view monitor control unit connector M112 and rear view camera connector D504.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	18	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

3. CHECK REAR VIEW CAMERA IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M112 and rear view camera connector D504.
3. Check continuity between around view monitor control unit connector M112 and rear view camera connector D504.

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U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

Around view monitor control unit		Rear view camera		Continuity
Connector	Terminals	Connector	Terminals	
M112	20	D504	4	Yes
	19		5	

4. Check continuity between around view monitor control unit connector M112 and ground.

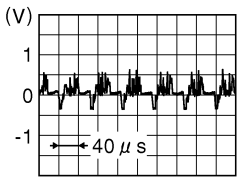
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	20		No

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace harness or connectors.

4. CHECK REAR VIEW CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector M112 and rear view camera connector D504.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector M112.

Around view monitor control unit connector M112		Condition	Reference value
(+) Terminal	(-) Terminal		
20	19	CAMERA switch is ON or selector lever in R (reverse).	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).
- NO >> Replace rear view camera. Refer to [AV-224, "Removal and Installation"](#).

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012422173

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Right side display output signal diagnosis (Harness disconnection) [U111B]	Right side camera image signal circuit open or short.	Check right side camera image signal circuit.

Diagnosis Procedure

INFOID:000000012422174

Regarding Wiring Diagram information, refer to [AV-116, "Wiring Diagram"](#).

1. CHECK DOOR MIRROR RH POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit M112 and door mirror RH connector D107.
3. Check continuity between around view monitor control unit connector M112 and door mirror RH connector D107.

Around view monitor control unit		Door mirror RH		Continuity
Connector	Terminals	Connector	Terminals	
M112	9	D107	8	Yes
	10		7	

4. Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	9		No

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

2. CHECK DOOR MIRROR RH POWER SUPPLY VOLTAGE

1. Connect around view monitor control unit connector M112 and door mirror RH connector D107.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	9	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

3. CHECK DOOR MIRROR RH IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M112 and door mirror RH connector D107.

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

3. Check continuity between around view monitor control unit connector M112 and door mirror RH connector D107.

Around view monitor control unit		Door mirror RH		Continuity
Connector	Terminals	Connector	Terminals	
M112	12	D107	16	Yes
	11		15	

4. Check continuity between around view monitor control unit connector M112 and ground.

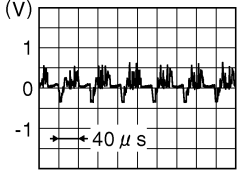
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	12		No

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair or replace harness or connectors.

4. CHECK DOOR MIRROR RH IMAGE SIGNAL

1. Connect around view monitor control unit connector M112 and door mirror RH connector D107.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector M112.

Around view monitor control unit connector M112		Condition	Reference value
(+) Terminal	(-) Terminal		
12	11	CAMERA switch is ON or selector lever in R (reverse).	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).
 NO >> Replace door mirror RH. Refer to [AV-223, "Removal and Installation"](#).

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012422175

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Front display output signal diagnosis (Harness disconnection) [U111C]	Front camera image signal circuit open or short.	Check front camera image signal circuit.

Diagnosis Procedure

INFOID:000000012422176

Regarding Wiring Diagram information, refer to [AV-116, "Wiring Diagram"](#).

1. CHECK FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M112 and front camera connector E226.
3. Check continuity between around view monitor control unit connector M112 and front camera connector E226.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
M112	6	E226	2	Yes
	5		1	

4. Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	6		No

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connectors.

2. CHECK FRONT CAMERA POWER SUPPLY VOLTAGE

1. Connect around view monitor control unit connector M112 and front camera connector E226.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	6	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

3. CHECK FRONT CAMERA IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M112 and front camera connectors E226.

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U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

3. Check continuity between around view monitor control unit connector M112 and front camera connector E226.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
M112	8	E226	4	Yes
	7		5	

4. Check continuity between around view monitor control unit connector M112 and ground.

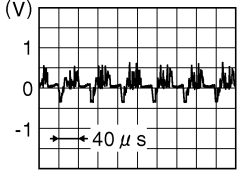
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	8		No

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair or replace harness or connectors.

4. CHECK FRONT CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector M112 and front camera connector E226.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector M112.

Around view monitor control unit connector M112		Condition	Reference value
(+) Terminal	(-) Terminal		
8	7	CAMERA switch is ON or selector lever in R (reverse).	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).
 NO >> Replace front camera. Refer to [AV-222, "Removal and Installation"](#).

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000012422177

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Left side display output signal diagnosis (Harness disconnection) [U111D]	Left side camera image signal circuit open or short.	Check left side camera image signal circuit.

Diagnosis Procedure

INFOID:0000000012422178

Regarding Wiring Diagram information, refer to [AV-116, "Wiring Diagram"](#).

1. CHECK DOOR MIRROR LH POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

- Turn ignition switch OFF.
- Disconnect around view monitor control unit M112 and door mirror LH connector D14.
- Check continuity between around view monitor control unit connector M112 and door mirror LH connector D14.

Around view monitor control unit		Door mirror LH		Continuity
Connector	Terminals	Connector	Terminals	
M112	14	D14	7	Yes
	13		8	

- Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	14		No

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace harness or connectors.

2. CHECK DOOR MIRROR LH POWER SUPPLY VOLTAGE

- Connect around view monitor control unit connector M112 and door mirror LH connector D14.
- Turn ignition switch ON.
- Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	14	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

3. CHECK DOOR MIRROR LH IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector M112 and door mirror LH connector D14.

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

[MULTI AV (NAVI WITHOUT BOSE)]

< DTC/CIRCUIT DIAGNOSIS >

- Check continuity between around view monitor control unit connector M112 and door mirror LH connector D14.

Around view monitor control unit		Door mirror LH		Continuity
Connector	Terminals	Connector	Terminals	
M112	16	D14	16	Yes
	15		15	

- Check continuity between around view monitor control unit connector M112 and ground.

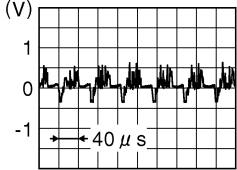
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	16		No

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair or replace harness or connectors.

4. CHECK DOOR MIRROR LH IMAGE SIGNAL

- Connect around view monitor control unit connector M112 and door mirror LH connector D14.
- Turn ignition switch ON.
- Check signal between the terminals of around view monitor control unit connector M112.

Around view monitor control unit connector M112		Condition	Reference value
(+) Terminal	(-) Terminal		
16	15	CAMERA switch is ON or selector lever in R (reverse).	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).
 NO >> Replace door mirror LH. Refer to [AV-223, "Removal and Installation"](#).

U1217 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1217 AV CONTROL UNIT

DTC Logic

INFOID:000000012422179

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
BLUETOOTH MODULE [U1217]	Connection failure to the internal Bluetooth® sub unit is detected.	Replace AV control unit if malfunction occurs constantly. Refer to AV-213, "Removal and Installation" .

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U1229 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1229 AV CONTROL UNIT

DTC Logic

INFOID:000000012422180

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
iPod CERTIFICATION [U1229]	iPod authentication chip error.	Replace AV control unit if malfunction occurs constantly. Refer to AV-213, "Removal and Installation" .

U122F AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U122F AV CONTROL UNIT

DTC Logic

INFOID:000000012422181

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Digital broadcasting connection error [U122F]	Communication error with digital audio broadcast module internal to AV control unit.	Replace AV control unit if malfunction occurs constantly. Refer to AV-213, "Removal and Installation" .

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U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1232 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000012422182

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ST ANG SEN CALIB [U1232]	The neutral position adjustment of the steering angle sensor is incomplete.	Adjust neutral position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000012422183

1. ADJUST THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the neutral position of the steering angle sensor.

>> Perform adjustment of the neutral position of the steering angle sensor. Refer to [AV-103. "CONSULT Function"](#).

U1244 GPS ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1244 GPS ANTENNA

DTC Logic

INFOID:000000012422184

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000012422185

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. GPS ANTENNA INSPECTION

Visually inspect the GPS antenna and antenna feeder. Refer to [AV-225. "Removal and Installation"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2. CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect AV control unit connector M141.
2. Turn ignition switch ON.
3. Check voltage between AV control unit connector M141 and ground.

AV control unit		Ground	Voltage
Connector	Terminal		
M141	58	—	5.0 V

Is inspection result normal?

YES >> Replace GPS antenna. Refer to [AV-225. "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-213. "Removal and Installation"](#).

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U1258 SATELLITE RADIO ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1258 SATELLITE RADIO ANTENNA

DTC Logic

INFOID:000000012422186

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
SXM ANTENNA CONN [U1258]	Open or short to ground is detected in satellite antenna connection.	<ul style="list-style-type: none">Satellite antenna disconnection.Open or short to ground in satellite antenna signal circuit.

Diagnosis Procedure

INFOID:000000012422187

Regarding Wiring Diagram information, refer to [AV-116, "Wiring Diagram"](#).

1. SATELLITE ANTENNA INSPECTION

Visually inspect the satellite antenna and antenna feeder. Refer to [AV-227, "Feeder Layout"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2. CHECK AV CONTROL UNIT VOLTAGE

- Turn ignition switch ON.
- Check voltage between AV control unit connector M142 and ground.

AV control unit		Ground	Voltage
Connector	Terminal		
M142	56	—	5.0 V

Is inspection result normal?

YES >> Replace satellite radio antenna [AV-226, "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-213, "Removal and Installation"](#).

U1263 USB

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1263 USB

DTC Logic

INFOID:000000012422188

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1. PERFORM SELF DIAGNOSTIC RESULT

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

Is DTC U1263 displayed?

- YES >> Refer to [AV-171, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000012422189

1. CHECK USB INTERFACE HARNESS

Visually inspect USB interface harness. Refer to [AV-219, "Removal and Installation"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace USB interface harness. Refer to [AV-219, "Removal and Installation"](#).

2. CHECK USB INTERFACE HARNESS

Check USB interface harness. Refer to [AV-197, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-213, "Removal and Installation"](#).
NO >> Replace USB interface harness. Refer to [AV-219, "Removal and Installation"](#).

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U12AA CONFIGURATION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U12AA CONFIGURATION ERROR

DTC Logic

INFOID:000000012422190

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Configuration Error [U12AA]	AV control unit is not properly configured or configuration is corrupt.	Configuration data needs to be written. Refer to AV-145, "CONFIGURATION (AV CONTROL UNIT) : Work Procedure" .

Diagnosis Procedure

INFOID:000000012422191

1.PERFORM CONFIGURATION

When U12AA is detected, configuration data must be written.

>> Write configuration data with CONSULT. Refer to [AV-145, "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).

U12AB ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U12AB ANTENNA

DTC Logic

INFOID:000000012422192

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
FM Antenna error [U12AB]	Open or short to ground is detected in AM-FM antenna connection.	<ul style="list-style-type: none"> AM-FM antenna disconnection. Open or short to ground in AM-FM antenna signal circuit.

Diagnosis Procedure

INFOID:000000012422193

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. AM-FM ANTENNA INSPECTION

Visually inspect the antenna base (AM-FM antenna) and antenna feeder. Refer to [AV-227. "Feeder Layout"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND ANTENNA BASE

- Turn ignition switch OFF.
- Disconnect AV control unit connector M139 and antenna base connector M502.
- Check continuity between AV control unit connector M139 and antenna base connector M502.

AV control unit		Antenna base		Continuity
Connector	Terminal	Connector	Terminal	
M139	52	M502	2	Yes

- Check continuity between AV control unit connector M139 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M139	52	—	No

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK AV CONTROL UNIT VOLTAGE

- Connect AV control unit connector M139.
- Turn ignition switch ON.
- Check voltage between AV control unit connector M139 and ground.

AV control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M139	52	—	5.0 V

Is the inspection result normal?

YES >> Replace antenna base. Refer to [AV-226. "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-213. "Removal and Installation"](#).

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U12AC AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U12AC AV CONTROL UNIT

DTC Logic

INFOID:000000012422194

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Display Temperature too High [U12AC]	Display temperature has exceeded maximum temperature. Display is switched OFF to avoid irreversible damage.	Replace AV control unit if malfunction occurs constantly. Refer to AV-213, "Removal and Installation" .

U12AD AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U12AD AV CONTROL UNIT

DTC Logic

INFOID:000000012422195

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ECU Temperature too High [U12AD]	AV control unit temperature has exceeded maximum temperature.	Replace AV control unit if malfunction occurs constantly. Refer to AV-213, "Removal and Installation" .

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U12AE AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U12AE AV CONTROL UNIT

DTC Logic

INFOID:000000012422196

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Internal Amplifier temperature Warning [U12AE]	Internal amplifier temperature has exceeded maximum temperature.	Replace AV control unit if malfunction occurs constantly. Refer to AV-213, "Removal and Installation" .

U12AF AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U12AF AV CONTROL UNIT

DTC Logic

INFOID:000000012422197

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CD Mechanism Temperature Warning [U12AF]	CD drive temperature has exceeded maximum temperature. CD drive is switched OFF to avoid irreversible damage.	Replace AV control unit if malfunction occurs constantly. Refer to AV-213, "Removal and Installation" .

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U12B0 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U12B0 POWER SUPPLY VOLTAGE

DTC Logic

INFOID:000000012422198

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000012422199

1. CHECK CHARGING SYSTEM

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning components.

2. CHECK AV CONTROL UNIT POWER SUPPLY AND GROUND CIRCUITS

Perform the AV control unit power supply and ground circuit diagnosis procedure. Refer to [AV-185, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to [AV-213, "Removal and Installation"](#).

NO >> Repair or replace harness or connectors.

U12B1 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U12B1 POWER SUPPLY VOLTAGE

DTC Logic

INFOID:000000012422200

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000012422201

1. CHECK CHARGING SYSTEM

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

Is the inspection result normal?

- YES >> Replace the AV control unit. Refer to [AV-213, "Removal and Installation"](#).
- NO >> Repair or replace the malfunctioning components.

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AV

U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1300 AV COMM CIRCUIT

DTC Logic

INFOID:00000001242202

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
AV COMM CIRCUIT [U1300]	AV communication circuit malfunction (MCAN) between AV control unit and combination meter.	AV communication circuits between AV control unit and combination meter.

Diagnosis Procedure

INFOID:00000001242203

1. PERFORM SELF DIAGNOSTIC RESULT FOR METER M&A

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform "Self Diagnostic Result" for "METER M&A".

Are any DTCs displayed?

YES >> Refer to [MWI-31, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK AV COMMUNICATION CIRCUIT (MCAN L) CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M102 and combination meter connector M77.
3. Check continuity between AV control unit connector M102 and combination meter connector M77.

AV control unit		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M102	32	M77	48	Yes
	39			

4. Check continuity between AV control unit connector M102 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M102	32	—	No
	39		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK AV COMMUNICATION CIRCUIT (MCAN H) CONTINUITY

1. Check continuity between AV control unit connector M102 and combination meter connector M77.

AV control unit		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M102	31	M77	47	Yes
	38			

2. Check continuity between AV control unit connector M102 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M102	31	—	No
	38		

U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to [AV-213, "Removal and Installation"](#).

NO >> Repair or replace harness or connectors.

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U1304 CAMERA IMAGE CALIBRATION

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1304 CAMERA IMAGE CALIBRATION

DTC Logic

INFOID:000000012422204

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Non-completion of the calibration [U1304]	Camera image calibration is incomplete.	Perform calibration of camera image.

Diagnosis Procedure

INFOID:000000012422205

1.PERFORM CALIBRATION

When U1304 is detected, perform calibration of camera image.

>> Refer to [AV-149, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Work Procedure"](#).

U1305 CONFIG UNFINISH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1305 CONFIG UNFINISH

DTC Logic

INFOID:000000012422206

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Non-completion of the configuration [U1305]	Configuration of around view monitor control unit is incomplete.	Perform configuration of around view monitor control unit.

Diagnosis Procedure

INFOID:000000012422207

1.PERFORM CONFIGURATION

When U1305 is detected, perform configuration of around view monitor control unit.

>> Refer to [AV-146, "CONFIGURATION \(AROUND VIEW MONITOR CONTROL UNIT\) : Work Procedure"](#).

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U1310 CONTROL UNIT (AV)

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

U1310 CONTROL UNIT (AV)

DTC Logic

INFOID:000000012422208

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (AV) [U1310]	Error during CAN controller hardware initialization (MCAN).	Replace AV control unit if malfunction occurs constantly. Refer to AV-213, "Removal and Installation" .

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:00000001242209

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. CHECK FUSE

Check that the following fuses are not blown:

Terminal No.	Signal name	Fuse No.
19	Battery power supply	16 (20A)
40	Ignition power supply	30 (10A)

Are the fuses blown?

- YES >> Replace the blown fuse after repairing the affected circuit.
NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors M101 and M102.
3. Check voltage between AV control unit connectors M101 and M102 and ground.

AV control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M101	19	—	Ignition switch: OFF	Battery voltage
M102	40		Ignition switch: ON	

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair or replace harness or connectors.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between AV control unit connector M101 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M101	20	—	Yes

Is the inspection result normal?

- YES >> Inspection End.
NO >> Repair or replace harness or connectors.

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:00000001242210

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. CHECK FUSE

Check that the following fuses are not blown:

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

Terminal No.	Signal name	Fuse No.
40	Battery power supply	30 (10A)

Are the fuses blown?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M112.
3. Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	40	—	Ignition switch: OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	39	—	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

FRONT TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

FRONT TWEETER

Diagnosis Procedure

INFOID:0000000012422211

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. CONNECTOR CHECK

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

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

2. CHECK FRONT TWEETER SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M101 and suspect front tweeter connector.
2. Check continuity between AV control unit connector M101 and suspect front tweeter connector.

AV control unit		Front tweeter		Continuity
Connector	Terminal	Connector	Terminal	
M101	2	M80 (LH)	1	Yes
	3		2	
	11	M23 (RH)	1	
	12		2	

3. Check continuity between AV control unit connector M101 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M101	2	—	No
	3		
	11		
	12		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK FRONT TWEETER SIGNAL

1. Connect AV control unit connector M101 and suspect front tweeter connector.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of AV control unit connector M101.

AV control unit connector M101		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

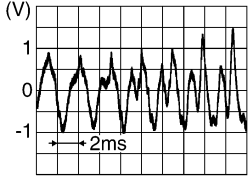
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AV

FRONT TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

2	3	Audio signal output	
11	12		

Is the inspection result normal?

YES >> Replace front tweeter. Refer to [AV-216. "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-213. "Removal and Installation"](#).

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:000000012422212

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. CONNECTOR CHECK

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

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

2. CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M101 and suspect front door speaker connector.
2. Check continuity between AV control unit connector M101 and suspect front door speaker connector.

AV control unit		Front door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M101	2	D7 (LH)	1	Yes
	3		2	
	11	D104 (RH)	1	
	12		2	

3. Check continuity between AV control unit connector M101 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M101	2	—	No
	3		
	11		
	12		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK FRONT DOOR SPEAKER SIGNAL

1. Connect AV control unit connector M101 and suspect front door speaker connector.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of AV control unit connector M101.

AV control unit connector M101		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

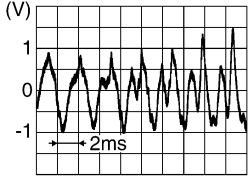
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AV

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

2	3		
11	12	Audio signal output	

Is the inspection result normal?

- YES >> Replace front door speaker. Refer to [AV-217. "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-213. "Removal and Installation"](#).

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

REAR DOOR SPEAKER

Diagnosis Procedure

INFOID:000000012422213

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. CONNECTOR CHECK

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

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

2. CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M101 and suspect rear door speaker connector.
2. Check continuity between AV control unit connector M101 and suspect rear door speaker connector.

AV control unit		Rear door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M101	4	D203 (LH)	1	Yes
	5		2	
	13	D303 (RH)	1	
	14		2	

3. Check continuity between AV control unit connector M101 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M101	4	—	No
	5		
	13		
	14		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK REAR DOOR SPEAKER SIGNAL

1. Connect AV control unit connector M101 and suspect rear door speaker connector.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of AV control unit connector M101.

AV control unit connector M101		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

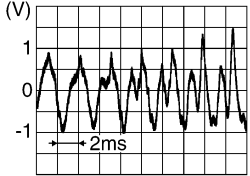
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AV

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

4	5	Audio signal output	
13	14		

SKIB3609E

Is the inspection result normal?

- YES >> Replace rear door speaker. Refer to [AV-218. "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-213. "Removal and Installation"](#).

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000012422214

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. CHECK HARNESS BETWEEN AV CONTROL UNIT AND MICROPHONE

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M102 and microphone connector R8.
3. Check continuity between AV control unit connector M102 and microphone connector R8.

AV control unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M102	34	R8	1	Yes
	35		4	
	36		2	

4. Check continuity between AV control unit connector M102 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M102	34	—	No
	35		

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair harness or connectors.

2. CHECK MICROPHONE POWER SUPPLY

1. Connect AV control unit connector M102 and microphone connector R8.
2. Turn ignition switch ON.
3. Check voltage between microphone connector R8 and ground.

Microphone (+)		Ground (-)	Voltage (Approx.)
Connector	Terminal		
R8	4	—	5V

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace AV control unit. Refer to [AV-213. "Removal and Installation"](#).

3. CHECK MICROPHONE SIGNAL

Check signal between terminals of AV control unit connector M102.

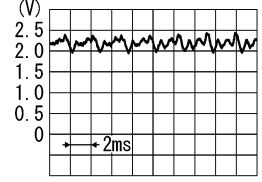
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AV

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

AV control unit connector M102		Condition	Reference value
(+)	(-)		
Terminal	Terminal		
34	36	Speak into microphone.	 <p style="text-align: right;">PKIB5037J</p>

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-213. "Removal and Installation"](#).
- NO >> Replace microphone. Refer to [AV-220. "Removal and Installation"](#).

STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

STEERING SWITCH






Diagnosis Procedure

INFOID:000000012422215

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch connector M90.
3. Check resistance between the terminals of combination switch connector M90.

Combination switch connector M90		Condition	Resistance Ω (Approx.)
Terminal	Terminal		
25	19	Depress SOURCE switch.	1
		Depress Δ switch.	121
		Depress ∇ switch.	321
		Depress  switch.	723
		Depress ENTER switch.	2023
18		Depress -  switch.	1
		Depress  + switch.	121
		Depress  switch.	321
		Depress  switch.	723
		Depress DISPLAY switch.	2023

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to [AV-215. "Removal and Installation"](#).

2. CHECK HARNESS BETWEEN COMBINATION METER AND COMBINATION SWITCH

1. Disconnect combination meter connector M76 and combination switch connector M30.
2. Check continuity between combination meter connector M76 and combination switch connector M30.

Combination meter		Combination switch		Continuity
Connector	Terminal	Connector	Terminal	
M76	22	M30	8	Yes
	23		15	
	21		14	

3. Check continuity between combination meter connector M76 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M76	22	—	No
	23		
	21		

Is the inspection result normal?

STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

- YES >> GO TO 3.
NO >> Repair or replace harness or connectors.

3.CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M90 and M30.

Combination switch				Continuity
Connector	Terminal	Connector	Terminal	
M90	25	M30	8	Yes
	18		15	
	19		14	

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace spiral cable. Refer to [SR-15. "Removal and Installation"](#).

4.CHECK HARNESS BETWEEN COMBINATION METER AND AV CONTROL UNIT

1. Disconnect combination meter connector M77 and AV control unit connector M102.
2. Check continuity between combination meter connector M77 and AV control unit connector M102.

Combination meter		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M77	47	M102	31	Yes
	48		32	

3. Check continuity between combination meter connector M77 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M77	47	—	No
	48		

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-213. "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

USB CONNECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

USB CONNECTOR

Diagnosis Procedure

INFOID:000000012422216

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. CHECK USB INTERFACE HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M138 and USB interface connector M89.
3. Check continuity between AV control unit connector M138 and USB interface connector M89.

AV control unit		USB interface		Continuity
Connector	Terminal	Connector	Terminal	
M138	45	M89	1	Yes
	46		2	
	47		3	
	49		5	
	50		6	

4. Check continuity between AV control unit connector M138 and ground.

AV control unit		—	Continuity
Connector	Terminal		
M138	45	Ground	No
	47		

Is the inspection result normal?

- YES >> Replace the USB interface. Refer to [AV-219. "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

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AV

AUXILIARY INPUT JACK

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

AUXILIARY INPUT JACK

Diagnosis Procedure

INFOID:000000012422217

Regarding Wiring Diagram information, refer to [AV-116. "Wiring Diagram"](#).

1. CHECK AUX IN JACK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M102 and AUX in jack connector M104.
3. Check continuity between AV control unit connector M102 and AUX in jack connector M104.

AV control unit		AUX in jack		Continuity
Connector	Terminal	Connector	Terminal	
M102	21	M104	4	Yes
	22		3	
	23		1	

4. Check continuity between AV control unit connector M102 and ground.

AV control unit		—	Continuity
Connector	Terminal		
M102	21	Ground	No
	23		

Is the inspection result normal?

- YES >> Replace the AUX in jack. Refer to [AV-219. "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM

Symptom Table

INFOID:0000000012422218

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	AV control unit	Malfunction in AV control unit. Refer to AV-101, "On Board Diagnosis Function" .
No sound comes out or the level of the sound is low.	No sound from all speakers.	<ul style="list-style-type: none"> • Speaker circuit shorted to ground. Refer to AV-116, "Wiring Diagram". • AV control unit power supply and ground circuits malfunction. Refer to AV-185, "AV CONTROL UNIT : Diagnosis Procedure".
	Only a certain speaker (front tweeter LH, front tweeter RH, front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH) does not output sound.	<ul style="list-style-type: none"> • Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and speaker. Refer to: <ul style="list-style-type: none"> - AV-187, "Diagnosis Procedure" (front tweeter). - AV-189, "Diagnosis Procedure" (front door speaker). - AV-191, "Diagnosis Procedure" (rear door speaker). • Malfunction in speaker. Refer to: <ul style="list-style-type: none"> - AV-216, "Removal and Installation" (front tweeter). - AV-217, "Removal and Installation" (front door speaker). - AV-218, "Removal and Installation" (rear door speaker). • Malfunction in AV control unit. Refer to AV-101, "On Board Diagnosis Function".

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AV

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

Symptoms	Check items	Probable malfunction location
Noise is mixed with audio.	Noise comes out from all speakers.	Malfunction in AV control unit. Refer to AV-101, "On Board Diagnosis Function" .
	Noise comes out only from a certain speaker (front tweeter LH, front tweeter RH, front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH).	<ul style="list-style-type: none"> Poor connector connection of speaker. Sound signal circuit malfunction between AV control unit and speaker. Refer to: <ul style="list-style-type: none"> AV-187, "Diagnosis Procedure" (front tweeter). AV-189, "Diagnosis Procedure" (front door speaker). AV-191, "Diagnosis Procedure" (rear door speaker). Malfunction in speaker. Poor Installation of speaker (e.g. backlash and looseness). Refer to: <ul style="list-style-type: none"> AV-216, "Removal and Installation" (front tweeter). AV-217, "Removal and Installation" (front door speaker). AV-218, "Removal and Installation" (rear door speaker). Malfunction in AV control unit. Refer to AV-101, "On Board Diagnosis Function".
	Noise is mixed with radio only (when the vehicle hits a bump or while driving over bad roads)	Poor connector connection of antenna or antenna feeder. Refer to AV-227, "Feeder Layout" .
No radio reception or poor reception.	<ul style="list-style-type: none"> Other audio sounds are normal. Any radio station cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises). 	<ul style="list-style-type: none"> Antenna amp. ON signal circuit malfunction. Refer to AV-173, "Diagnosis Procedure". Poor connector connection of antenna or antenna feeder. Refer to AV-227, "Feeder Layout".
No satellite radio reception.	There is malfunction in the CONSULT self diagnosis result. Refer to AV-102, "CONSULT Function" .	<ul style="list-style-type: none"> Malfunction in antenna, antenna feeder or AV control unit. Perform DTC diagnosis. Refer to AV-170, "Diagnosis Procedure". Poor continuity in antenna feeder. Poor connector connection of antenna or antenna feeder. Refer to AV-227, "Feeder Layout".
	There is no malfunction in the CONSULT self diagnosis result. Refer to AV-102, "CONSULT Function" .	<ul style="list-style-type: none"> Poor continuity in antenna feeder. Poor connector connection of antenna or antenna feeder. Loose satellite radio antenna mounting nut. Refer to AV-227, "Feeder Layout".
Buzz/rattle sound from speaker	The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the buzz/rattle.	Refer to "SQUEAK AND RATTLE TROUBLE DIAGNOSIS" in the appropriate interior trim section.

RELATED TO HANDS-FREE PHONE

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

MULTI AV SYSTEM

[MULTI AV (NAVI WITHOUT BOSE)]

< SYMPTOM DIAGNOSIS >

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.









NOTE:
The customer's phone may be required, depending upon their concern.
3. Write down the customer's phone brand, model and service provider.

NOTE:
It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
4. Go to "www.nissanusa.com/bluetooth/".
 - a. Using the website's search engine, find out if the customer's phone is on the approved list.
 - b. If the customer's phone is NOT on the approved list:

Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.
 - c. If the feature related to the customer's concern shows as "N" (not compatible):

Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features".
 - d. If the feature related to the customer's concern shows as "Y" (compatible):

Perform diagnosis as per the following table:

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection (no connection is displayed on the display at the guide).	Repeat the registration of cellular phone.	
Hands-free phone cannot be established.	<ul style="list-style-type: none"> • 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. 	Malfunction in AV control unit. Replace AV control unit. Refer to AV-213, "Removal and Installation" .
The other party's voice cannot be heard by hands-free phone.	Check the "microphone speaker" in Inspection & Adjustment Mode if sound is heard.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-193, "Diagnosis Procedure" .
The system cannot be operated.	<ul style="list-style-type: none"> • The voice recognition can be controlled. • Steering switch's , , and  switch works, but  does not work. 	Steering switch malfunction. Replace steering switch. Refer to AV-215, "Removal and Installation" .
	Steering switch's  ,  ,  , and  switches do not work.	Steering switch signal circuit malfunction. Refer to AV-195, "Diagnosis Procedure" .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-195, "Diagnosis Procedure" .

RELATED TO NAVIGATION

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

Symptoms	Check items	Probable malfunction location
Navigation system is inoperative.	Navigation malfunction.	<ul style="list-style-type: none"> Malfunction in SD card. Malfunction in AV control unit. Refer to AV-101, "On Board Diagnosis Function".
	Steering switches malfunction.	Steering switch signal circuit malfunction. Refer to AV-195, "Diagnosis Procedure" .
	Voice activated control malfunction.	Microphone signal circuit malfunction. Refer to AV-193, "Diagnosis Procedure" . Steering switch signal circuit malfunction. Refer to AV-195, "Diagnosis Procedure" .

RELATED TO AROUND VIEW MONITOR

Symptoms	Check items	Probable malfunction location
Display does not switch to camera image when CAMERA switch is pressed or selector lever is in R (reverse).	Around view monitor control unit malfunction.	Around view monitor control unit power supply and ground circuits malfunction. Refer to AV-185, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure" .
	Camera image signal circuit (output) malfunction.	Camera image signal circuit (output) malfunction between around view monitor control unit and display unit. Refer to AV-110, "Reference Value" .
Display switches to camera image when CAMERA switch is pressed or selector lever is in R (reverse), but all views are not displayed.	Camera image signal circuit (input) malfunction.	Camera image signal circuit (input) malfunction between camera and around view monitor control unit. Refer to: <ul style="list-style-type: none"> AV-161, "Diagnosis Procedure" (front camera). AV-157, "Diagnosis Procedure" (rear camera). AV-163, "Diagnosis Procedure" (side camera LH). AV-159, "Diagnosis Procedure" (side camera RH).
Camera image is rolling.	Camera image signal circuit (output) malfunction.	Camera image signal circuit (output) malfunction between around view monitor control unit and display unit. Refer to AV-110, "Reference Value" .
Display does not switch to rear view monitor even when selector lever is in R (reverse).	Reverse signal circuit malfunction.	Reverse signal circuit between BCM and around view monitor control unit. Refer to AV-110, "Reference Value" .
Predicted course line display in front view and rear view is malfunctioning.	Steering angle sensor malfunction.	Predicted course line center position is malfunctioning. Refer to AV-148, "PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure" .
Front view and front of birds-eye view is not displayed.	<ul style="list-style-type: none"> Front camera malfunction. Front camera image signal circuit malfunction. 	<ul style="list-style-type: none"> Front camera power supply and ground circuits malfunction. Front camera image signal circuit malfunction between front camera and around view monitor control unit. Refer to AV-161, "Diagnosis Procedure" .
Rear view and rear of birds-eye view is not displayed.	<ul style="list-style-type: none"> Rear view camera malfunction. Rear view camera image signal circuit malfunction. 	<ul style="list-style-type: none"> Rear view camera power supply and ground circuits malfunction. Rear view camera image signal circuit malfunction between rear view camera and around view monitor control unit. Refer to AV-157, "Diagnosis Procedure" .
Driver side of birds-eye view is not displayed.	<ul style="list-style-type: none"> Side camera LH malfunction. Side camera LH image signal circuit malfunction. 	<ul style="list-style-type: none"> Side camera LH power supply and ground circuits malfunction. Side camera LH image signal circuit malfunction between side camera LH and around view monitor control unit. Refer to AV-163, "Diagnosis Procedure" .

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

Symptoms	Check items	Probable malfunction location
Front-side and passenger side of birds-eye view is not displayed.	<ul style="list-style-type: none"> Side camera RH malfunction. Side camera RH image signal circuit malfunction. 	<ul style="list-style-type: none"> Side camera RH power supply and ground circuits malfunction. Side camera RH image signal circuit malfunction between side camera RH and around view monitor control unit. Refer to AV-159. "Diagnosis Procedure" .
Selector lever is in a position other than R (reverse) and front, rear, front-side and Birds-Eye views are displayed even as vehicle speed increases.	Vehicle speed signal malfunction.	Vehicle speed signal malfunction between ABS actuator and electric unit (control unit) and around view monitor control unit. Refer to AV-110. "Reference Value" .

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

NORMAL OPERATING CONDITION

Description

INFOID:000000012422219

RELATED TO NOISE

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

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

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

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

NOTE:

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

Type of Noise and Possible Cause

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

RELATED TO HANDS-FREE PHONE

Symptom	Cause and Counter measure
Does not recognize cellular phone connection (No connection is displayed on the display at the guide).	<p>Some Bluetooth[®] enabled cellular phones may not be recognized by the in-vehicle phone module.</p> <p>Refer to "RELATED TO HANDS-FREE PHONE (Check Compatibility)" in AV-199, "Symptom Table".</p>
Cannot use hands-free phone.	<p>Customer will not be able to use a hands-free phone under the following conditions:</p> <ul style="list-style-type: none"> • The vehicle is outside of the telephone service area. • The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area. • The cellular phone is locked to prevent it from being dialed. <p>NOTE:</p> <p>While a cellular phone is connected through the Bluetooth[®] wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth[®] Hands-Free Phone System cannot charge cellular phones.</p>

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

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

RELATED TO NAVIGATION

Basic Operation

Symptom	Cause	Remedy
No image is shown.	Display brightness adjustment is set fully to DARK side.	Adjust the display brightness.
No guide sound is heard. Audio guide volume is too low or too high.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.
	Audio guidance is not available while the vehicle is driving on a dark pink route.	System is not malfunctioning.
Screen is too dark. Motion of the image is too slow.	Temperature inside the vehicle is low.	Wait until the temperature inside the vehicle reaches the proper temperature.
Small black or bright spots appear on the screen.	Symptom peculiar to a liquid crystal display (display unit).	System is not malfunctioning.

Vehicle Mark

Symptom	Cause	Remedy
Map screen and BIRDVIEW™ Name of the place vary with the screen.	Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ. The same place name, street name, etc. may not be displayed every time on account of the data processing.	System is not malfunctioning.
Vehicle mark is not positioned correctly.	Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.	Drive the vehicle for a while in the GPS satellite signal receiving condition.
Screen will not switch to nighttime mode after the lighting switch is turned ON.	The daytime screen is selected by the "SWITCH SCREENS" when the last time the screen dimming setting is done. Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjustment function.	Perform screen dimming and select the nighttime screen by "SWITCH SCREENS".
Map screen will not scroll in accordance with the vehicle travel.	Current location is not displayed.	Press "MAP" button to display the current location.
Vehicle mark will not be shown.	Current location is not displayed.	Press "MAP" button to display the current location.
Accuracy indicator (GPS satellite mark) on the map screen stays gray.	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
	GPS satellite signal cannot be received because an obstacle is placed on top of the instrument panel.	Do not place anything on top of the meter display (instrument panel).
	GPS satellites are not visible from current location.	Wait until GPS satellites are visible by moving the vehicle.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

Symptom	Cause	Remedy
Vehicle location accuracy is low.	Accuracy indicator (GPS satellite mark) on the map screen stays gray.	Current location is not determined.
	Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fitted or the system has been used on another vehicle.	Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMATION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD-ROM will be released once a year.

Destination, Passing Points and Menu Items Cannot be Selected/Set

Symptom	Cause	Remedy
Destination cannot be set.	Destination to be set is on an expressway.	Set the destination on an ordinary road.
Passing point is not searched when re-searching the route.	The vehicle has already passed the passing point, or the system judged so.	To include the passing points that have been passed into the route again, set the route again.
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.
	Vehicle mark is not on the recommended route.	Drive on the recommended route.
	Route guide is turned OFF.	Turn route guide ON.
	Route information is not available on the dark pink route.	System is not malfunctioning.
After the route searching, no guide sign will appear as the vehicle goes near the entrance/exit to the toll road.	Vehicle mark is not on the recommended route. (On the display, only guide signs related to the recommended route will be shown.)	Drive on the recommended route.
Automatic route searching is not possible.	Vehicle is driving on a highway (gray route), or no recommended route is available.	Drive on a road to be searched. Or re-search the route manually. In this case, however, the whole route will be searched.
Performed automatic detour search (or detour search). However, the result is the same as that of the previous search.	Performed search with every conditions considered. However, the result is the same as that of the previous search.	System is not malfunctioning.
Passing points cannot be set.	More than five passing points were set.	Passing points can be set up to five. To stop at more than five points, perform sharing in several steps.
When setting the route, the starting point cannot be selected.	The current vehicle location is always set as the starting point of a route.	System is not malfunctioning.
Some menu items cannot be selected.	The vehicle is being driven.	Stop the vehicle at a safe place and then operate the system.

Voice Guide

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

Symptom	Cause	Remedy	A
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunctioning.	B
	The vehicle is not on the recommended route.	Return to the recommended route or re-search the route.	C
	Voice guide is turned OFF.	Turn voice guide ON.	D
	Route guide is turned OFF.	Turn route guide ON.	E
Voice guide does not match the actual road pattern.	Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.	Drive in conformity to the actual traffic rules.	F

Route Search

Symptom	Cause	Remedy	E
No route is shown.	No road to be searched is found around the destination.	Find wider road (orange road or wider) nearby and reset the destination and passing points onto it. Take care of the traveling direction when there are separate up and down roads.	F
	Starting point and the destination are too close.	Set the destination at more distant point.	G
	Conditional traffic regulation (day of the week/ time of the day) is set at the area around the current location or the destination.	Turn the time-regulating search conditions OFF. Turn "Avoid regulation time" in the search conditions OFF.	H
Indicated route is intermittent.	In some areas, highways (gray routes) are not used for the search ^(Note) . Therefore, the route to the current location or the passing points may be intermittent.	System is not malfunctioning.	I
When the vehicle has passed the recommended route, it is deleted from the screen.	A recommended route is controlled by each section. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.)	System is not malfunctioning.	J
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).	K
	A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.	Slightly move the starting point or the destination, or set the passing point on the route of your choice.	L
	In the area where highways (gray routes) are used for the search, left turn has priority around the current location and the destination (passing points). For this reason, the recommended route may be detouring.	System is not malfunctioning.	M
Landmarks on the map do not match the actual ones.	This can be happen due to omission or error in the map data.	As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.	O
Recommended route is far from the starting point, passing points, and destination.	Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.	Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.	P

NOTE:

Except for the ordinance-designated cities. (Malfunctioning areas may be changed in the updated map disc.)

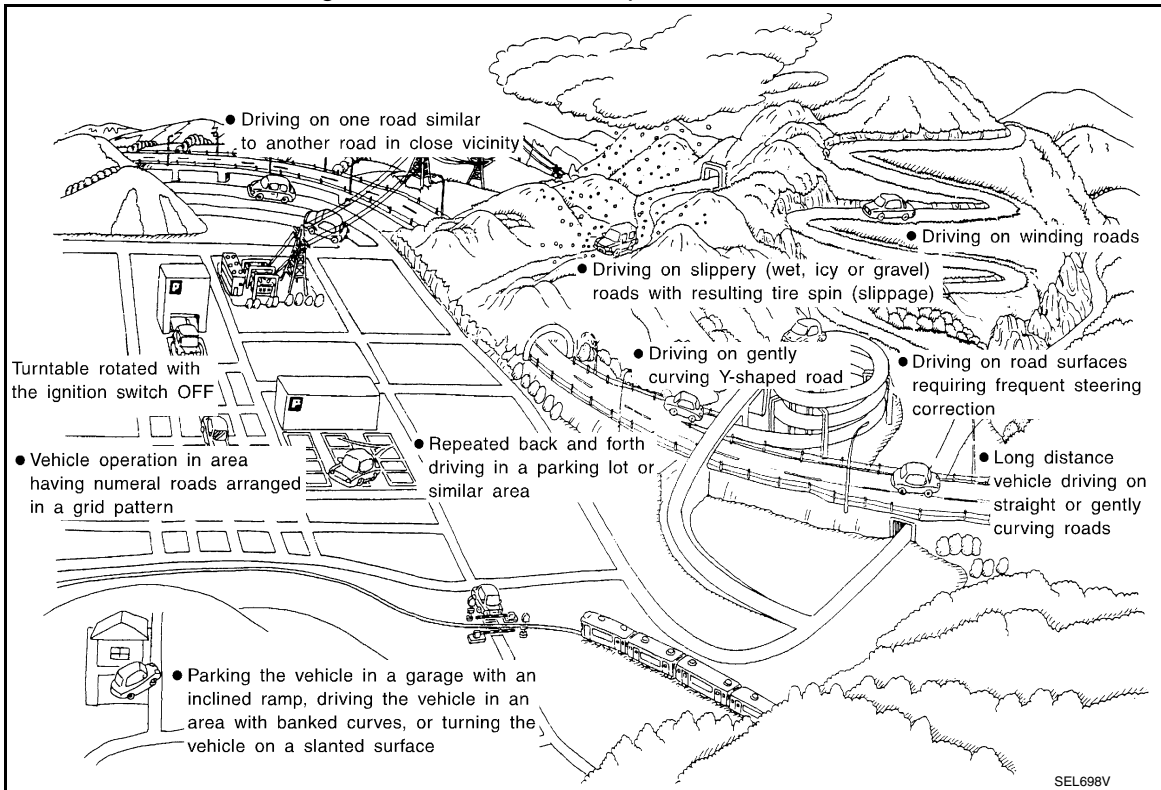
Examples of Current-Location Mark Displacement

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

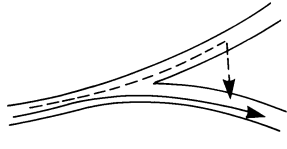
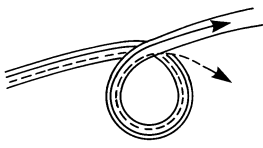
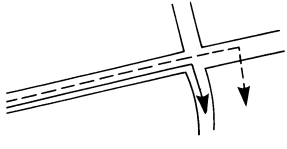
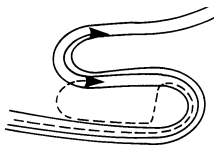
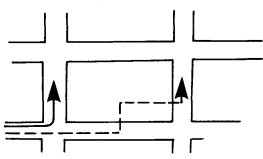
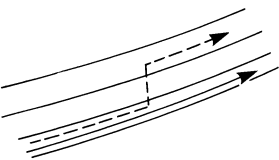
Vehicle's travel amount is calculated by reading its travel distance and turning angle. Therefore, if the vehicle is driven in the following manner, an error will occur in the vehicle's current location display. If correct location has not been restored after driving the vehicle for a while, perform location correction.



NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

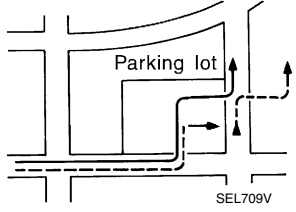
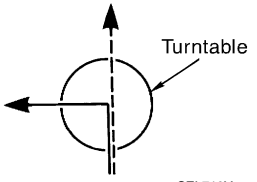
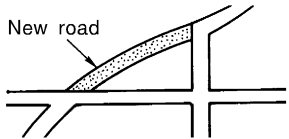
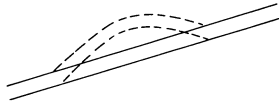
Cause (condition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
Y-intersections  ELK0192D	At a Y intersection or similar gradual division of roads, an error in the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
Spiral roads  ELK0193D	When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark may deviate from the correct location.	
Straight roads  ELK0194D	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and distance errors may accumulate. As a result, the vehicle mark may deviate from the correct location when the vehicle is turned at a corner.	
Zigzag roads  ELK0195D	When driving on a zigzag road, the map may be matched to other roads in the similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	
Roads laid out in a grid pattern  ELK0196D	When driving where roads are laid out in a grid pattern, or where many roads are running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.	
Parallel roads  ELK0197D	When two roads are running in parallel (such as highway and sideway), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.	

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NORMAL OPERATING CONDITION

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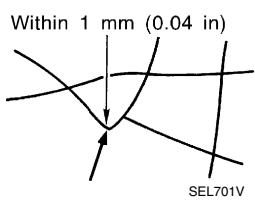
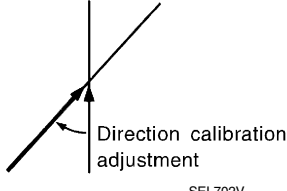
[MULTI AV (NAVI WITHOUT BOSE)]

Cause (condition) -: While driving ooo: Display		Driving condition	Remarks (correction, etc.)
Place	In a parking lot  <small>SEL709V</small>	When driving in a parking lot, or other location where there are no roads on the map, matching may place the vehicle mark on a nearby road. When the vehicle returns to the road, the vehicle mark may have deviated from the correct location. When driving in circle or turning the steering wheel repeatedly, direction errors accumulate, and the vehicle mark may deviate from the correct location.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
	Turntable  <small>SEL710V</small>	When the ignition switch is OFF, the navigation system cannot get the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be wrong and the correct road may not be easily returned to after rotating the vehicle on a turntable with the ignition OFF.	
	Slippery roads	On snow, wet roads, gravel, or other roads where tires may slip easily, accumulated mileage errors may cause the vehicle mark to deviate from the correct road.	
	Slopes	When parking in sloped garages, when travelling on banked roads, or in other cases where the vehicle turns when tilted, an error in the turning angle will occur, and the vehicle mark may deviate from the road.	
Map data	Road not displayed on the map screen  <small>SEL699V</small>	When driving on new roads or other roads not displayed on the map screen, map matching does not function correctly and matches the location to a nearby road. When the vehicle returns to a road which is on the map, the vehicle mark may deviate from the correct road.	
	Different road pattern (Changed due to repair)  <small>ELK0201D</small>	If the road pattern stored in the map data and the actual road pattern are different, map matching does not function correctly and matches the location to a nearby road. The vehicle mark may deviate from the correct road.	
Vehicle	Use of tire chains	When tire chains are used, the mileage is not correctly detected, and the vehicle mark may deviate from the correct road.	Drive the vehicle for a while. If the distance still deviates, adjust it by using the distance adjustment function. (If the tire chain is removed, recover the original value.)

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

Cause (condition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
Precautions for driving	Just after the engine is started	If the vehicle is driven just after the engine is started when the gyroscope (angular speed sensor) correction is not completed, the vehicle can lose its direction and may have deviated from the correct location. Wait for a short while before driving after starting the engine.
	Continuous driving without stopping	When driving long distances without stopping, direction errors may accumulate, and the current-location mark may deviate from the correct road. Stop and adjust the orientation.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable perform correct detection, and may cause the vehicle mark to deviate from the correct road. If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
How to correct location	Position correction accuracy 	If the accuracy of location settings is poor, accuracy may be reduced when the correct road cannot be found, particularly in places where there are many roads. Enter in the road displayed on the screen with an accuracy of approx. 1mm. Caution: Whenever possible, use detailed map for the correction.
	Direction when location is corrected 	If the accuracy of location settings during correction is poor, accuracy may be reduced afterwards. Perform direction correction.

Location Correction by Map-Matching is Slow

- The map-matching function needs to refer to the data of the surrounding area. It is necessary to drive some distance for the function to work.
- Because map-matching operates on this principle, when there are many roads running in similar directions in the surrounding area, no matching determination may be made. The location may not be corrected until some special feature is found.

Name of Road is Not Displayed

The current road name may not be displayed if there are no road names displayed on the map screen.

Contents of Display Differ for Birdview™ and the (Flat) Map Screen

Difference of the BIRDVIEW™ screen from the flat map screen are as follows.

- The current place name displays names which are primarily in the direction of vehicle travel.
- The amount of time before the vehicle travel or turn angle is updated on the screen is longer than for the (flat) map display.
- The conditions for display of place names, roads, and other data are different for nearby areas and for more distant areas.
- Some thinning of the character data is done to prevent the display becoming too complex. In some cases and in some locations, the display contents may differ.
- The same place name, street name, etc. may be displayed multiple times.

Vehicle Mark Shows a Position Which is Completely Wrong

In the following cases, the vehicle mark may appear on completely different position in the map depending on the GPS satellite signal receiving conditions. In this case, perform location correction and direction correction:

- When location correction has not been done
- If the receiving conditions of the GPS satellite signal is poor, if the vehicle mark becomes out of place, it may move to a completely different location and not come back if location correction is not done. The position will be corrected if the GPS signal can be received.
- When the vehicle has traveled by ferry, or when the vehicle has been being towed

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITHOUT BOSE)]

- Because calculation of the current location cannot be done when traveling with the ignition off, for example when traveling by ferry or when being towed, the location before travel is displayed. If the precise location can be detected with GPS, the location will be corrected.

Vehicle Mark Jumps

In the following cases, the vehicle mark may appear to jump as a result of automatic correction of the current location:

- When map matching has been done
- If the current location and the vehicle mark are different when map matching is done, the vehicle mark may seem to jump. At this time, the location may be “corrected” to the wrong road or to a location which is not on a road.
- When GPS location correction has been done
- If the current location and the vehicle mark are different when the location is corrected using GPS measurements, the vehicle mark may seem to jump. At this time, the location may be “corrected” to a location which is not on a road.

Vehicle Mark is in a River or Sea

The navigation system moves the vehicle mark with no distinction between land and rivers or sea. If the vehicle mark is somehow out of place, it may appear that the vehicle is driving in a river or the sea.

Vehicle Mark Automatically Rotates

The system wrongly memorizes the rotating status as stopping when the ignition switch is turned ON with the turntable rotating. That causes the vehicle mark to rotate when the vehicle is stopped.

When Driving on Same Road, Sometimes Vehicle Mark is in Right Place and Sometimes it is in Wrong Place

The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and the operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been wrong, conditions may cause the vehicle mark to deviate.

AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

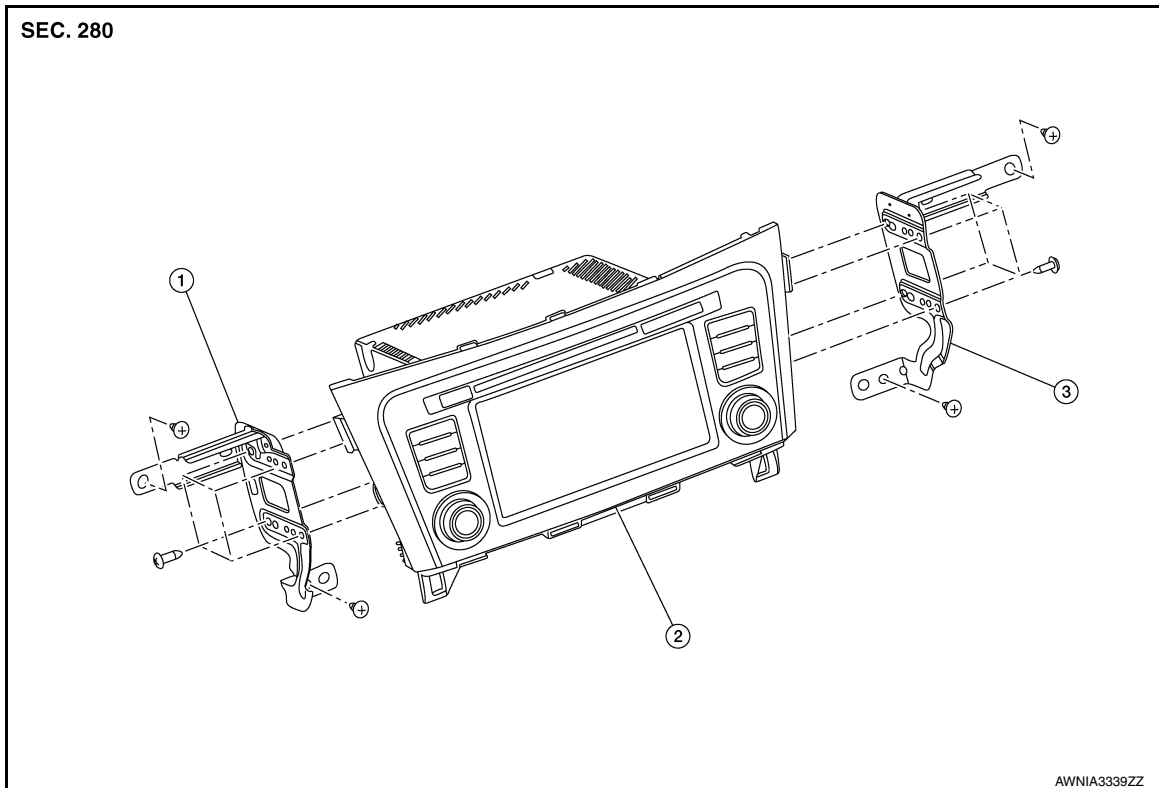
[MULTI AV (NAVI WITHOUT BOSE)]

REMOVAL AND INSTALLATION

AV CONTROL UNIT

Exploded View

INFOID:0000000012422220



1. AV control unit bracket (LH) 2. AV control unit 3. AV control unit bracket (RH)

Removal and Installation

INFOID:0000000012422221

REMOVAL

CAUTION:

- Before disconnecting the AV control unit and battery terminals, turn the ignition switch OFF and wait at least 30 seconds.
- Before replacing AV control unit, perform "READ CONFIGURATION" to save current vehicle specification. Refer to [AV-146, "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).

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. Disconnect the negative battery terminal. Refer to [PG-80, "Removal and Installation \(Battery\)"](#).
2. Remove cluster lid C. Refer to [IP-22, "Removal and Installation"](#).
3. Remove instrument finisher B. Refer to [IP-16, "INSTRUMENT FINISHER B : Removal and Installation"](#).
4. Remove instrument finisher E. Refer to [IP-16, "INSTRUMENT FINISHER E : Removal and Installation"](#).
5. Remove the AV control unit screws, then pull out the AV control unit.
6. Disconnect the harness connectors from the AV control unit and remove.
7. Remove the AV control unit bracket (LH/RH) screws and the AV control unit brackets (LH/RH) (if necessary).

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

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AV

AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

- When replacing AV control unit, perform "WRITE CONFIGURATION". Refer to [AV-146, "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).
- When replacing AV control unit, the AV control unit must be registered. Refer to [AV-147, "REGISTRATION \(AV CONTROL UNIT\) : Description"](#).

STEERING SWITCH

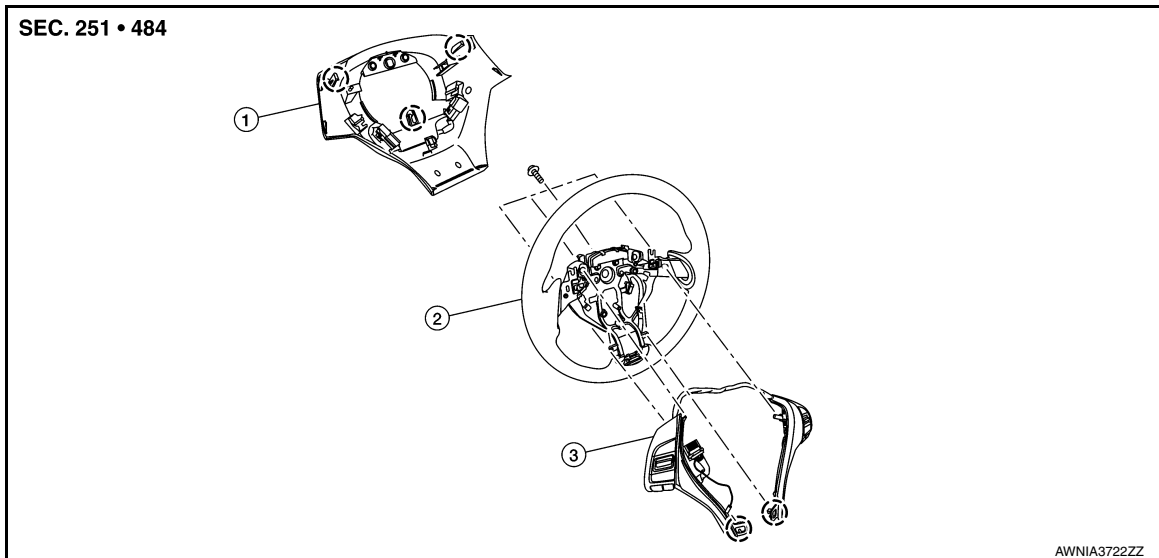
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

STEERING SWITCH

Exploded View

INFOID:00000001242222



1. Steering wheel rear finisher 2. Steering wheel 3. Steering switches

○ Pawl

Removal and Installation

INFOID:00000001242223

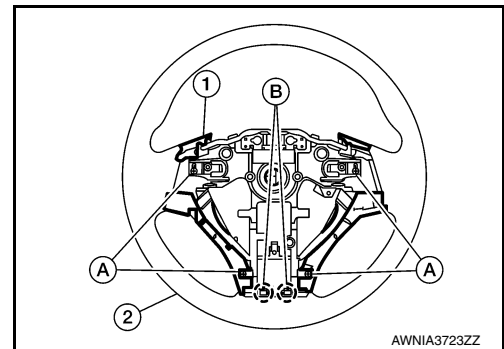
REMOVAL

NOTE:

The steering switches are serviced as an assembly.

1. Remove steering wheel. Refer to [ST-11, "Removal and Installation"](#).
2. Release pawls on the steering wheel rear finisher and remove.
3. Remove screws (A) and release pawls (B) and remove steering switches (1) from steering wheel (2).

○: Pawls



INSTALLATION

Installation is in the reverse order of removal.

FRONT TWEETER

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

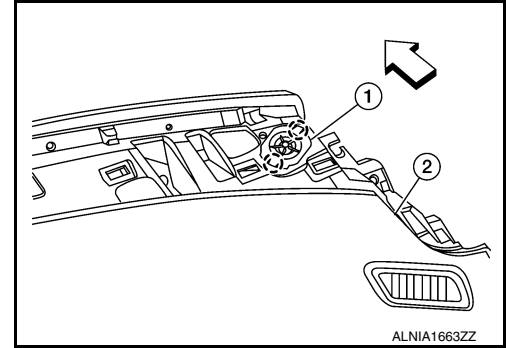
FRONT TWEETER

Removal and Installation

INFOID:000000012422224

REMOVAL

1. Remove defroster grille. Refer to [VTL-12. "DEFROSTER GRILLE : Removal and Installation"](#).
2. Release pawls and pull out the front tweeter (1) from the instrument panel assembly (2).
○ : Pawl
⇐ : Front
3. Disconnect the harness connector from the front tweeter and remove.



INSTALLATION

Installation is in the reverse order of removal.

FRONT DOOR SPEAKER

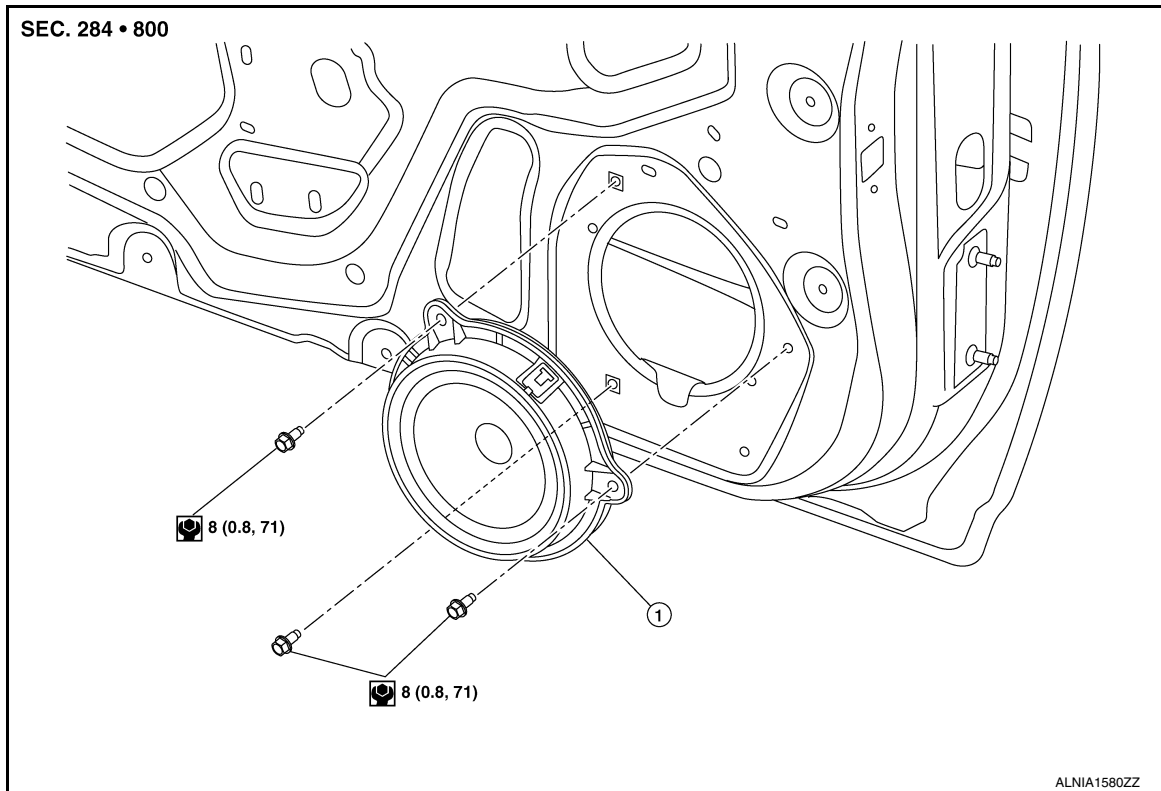
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

FRONT DOOR SPEAKER

Exploded View

INFOID:000000012422225



1. Front door speaker

Removal and Installation

INFOID:000000012422226

REMOVAL

1. Remove front door finisher. Refer to [INT-15. "Removal and Installation"](#).
2. Remove front door speaker bolts, then pull out front door speaker.
3. Disconnect the harness connector from front door speaker and remove.

INSTALLATION

Installation is in the reverse order of removal.

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REAR DOOR SPEAKER

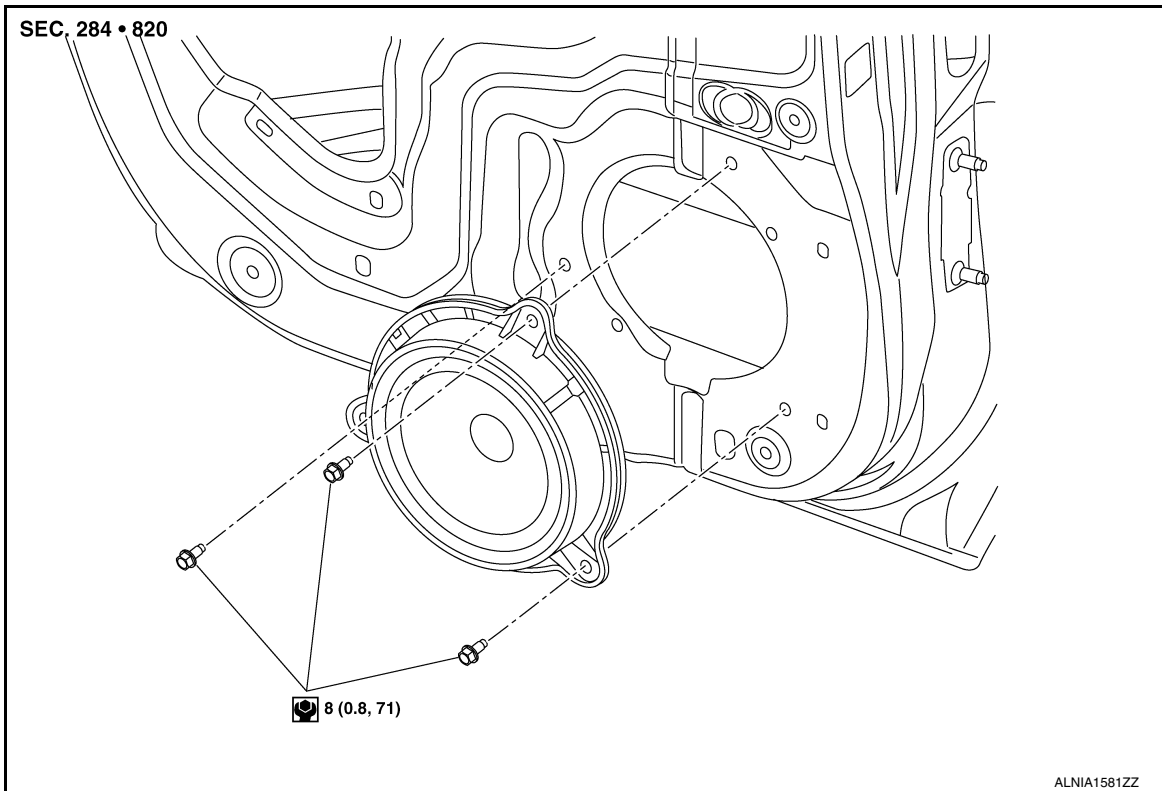
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

REAR DOOR SPEAKER

Exploded View

INFOID:00000001242227



1. Rear door speaker

Removal and Installation

INFOID:00000001242228

REMOVAL

1. Remove rear door finisher. Refer to [INT-18. "Removal and Installation"](#).
2. Remove rear door speaker bolts, then pull out rear door speaker.
3. Disconnect the harness connector from the rear door speaker and remove.

INSTALLATION

Installation is in the reverse order of removal.

USB INTERFACE AND AUX IN JACK

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

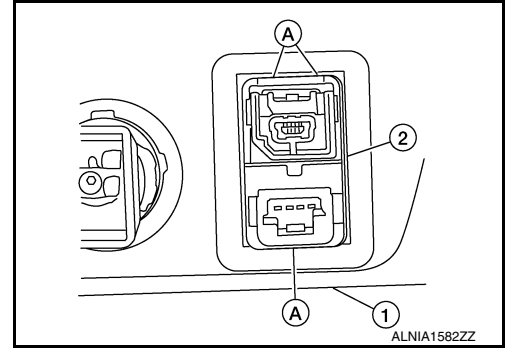
USB INTERFACE AND AUX IN JACK

Removal and Installation

INFOID:000000012422229

REMOVAL

1. Remove cluster lid C. Refer to [IP-22. "Removal and Installation"](#).
2. Release the pawls (A) on the back of USB interface and AUX in jack (2), then remove from the front of cluster lid C (1).



INSTALLATION

Installation is in the reverse order of removal.

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MICROPHONE

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

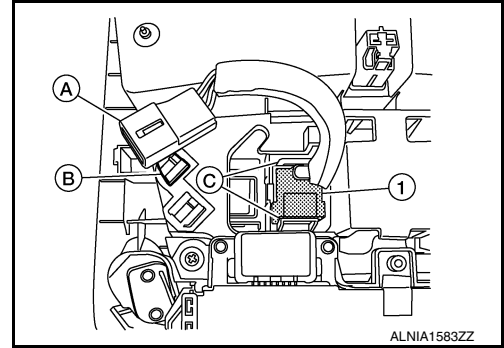
MICROPHONE

Removal and Installation

INFOID:000000012422230

REMOVAL

1. Remove the map lamp assembly. Refer to [INL-55. "Removal and Installation"](#).
2. Release harness connector (A) by sliding rearward to remove from the pawl (B).
3. Release pawls (C) and remove the microphone (1) from the front room/map lamp assembly.



INSTALLATION

Installation is in the reverse order of removal.

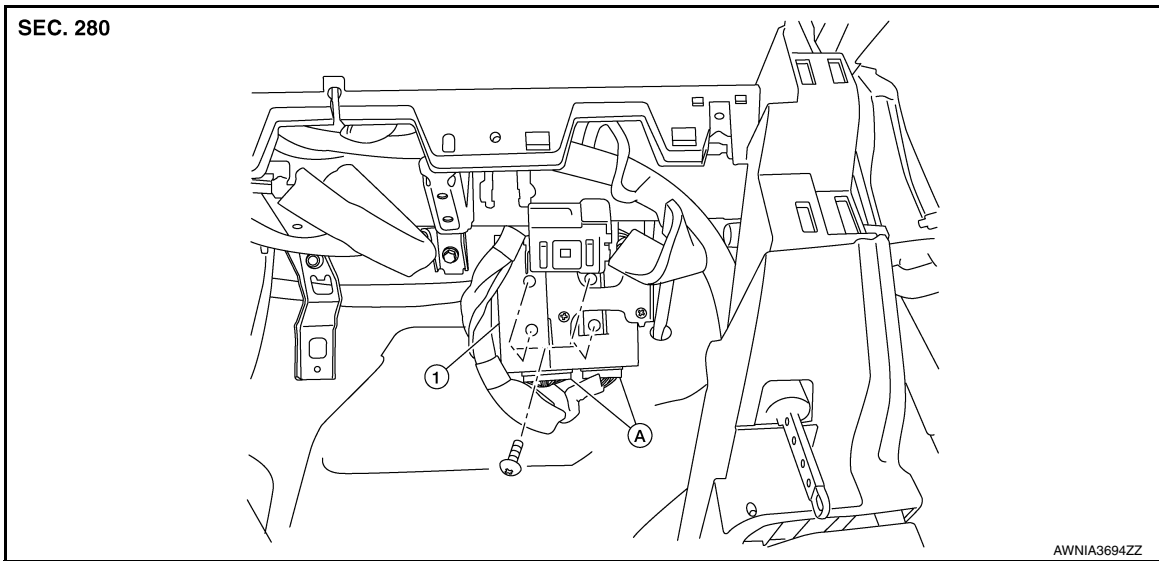
AROUND VIEW MONITOR CONTROL UNIT

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

AROUND VIEW MONITOR CONTROL UNIT

Exploded View



1. Around view monitor control unit A. Harness connector

Removal and Installation

INFOID:00000001242232

REMOVAL

CAUTION:

Before replacing around view monitor control unit, save or print current vehicle specification with CONSULT configuration before replacement. Refer to [AV-144, "ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Work Procedure"](#).

1. Remove glove box assembly. Refer to [IP-24, "Removal and Installation"](#).
2. Remove around view monitor control unit screws.
3. Disconnect the harness connector from the around view monitor control unit and remove.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- Replace the around view monitor control unit if it has been dropped or sustained an impact.
- When replacing around view monitor control unit, you must perform "After Replace ECU" with CONSULT. Refer to [AV-144, "ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Work Procedure"](#).

NOTE:

Perform camera image calibration. Refer to [AV-149, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Work Procedure"](#).

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FRONT CAMERA

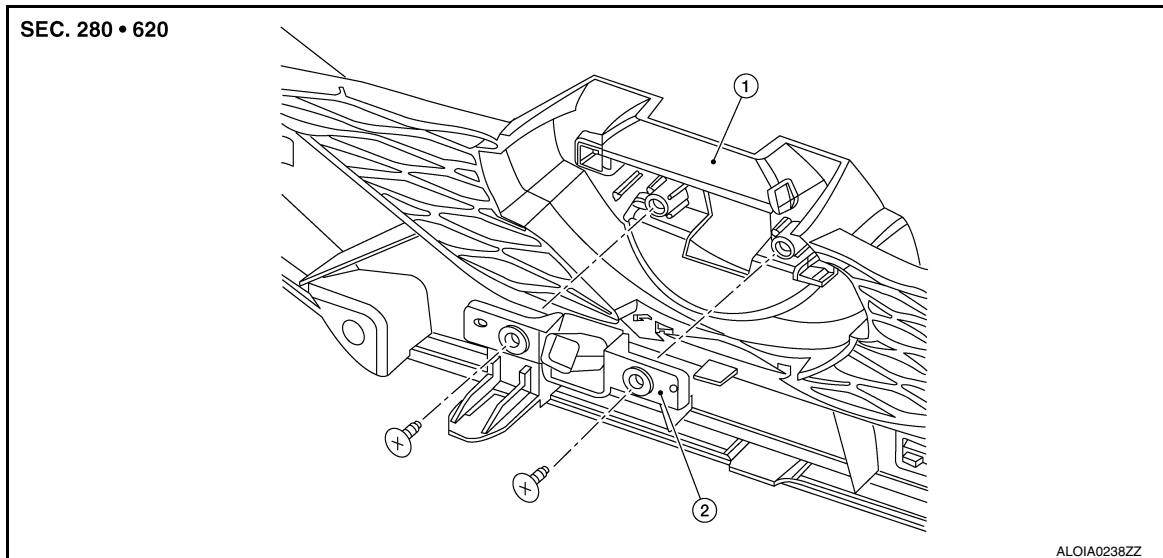
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

FRONT CAMERA

Exploded View

INFOID:00000001242233



1. Front grille

2. Front camera

Removal and Installation

INFOID:00000001242234

REMOVAL

1. Remove the front grille. Refer to [EXT-24, "Removal and Installation"](#).
2. Remove screws and front camera.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

Perform camera image calibration. Refer to [AV-149, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Work Procedure"](#).

SIDE CAMERA

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

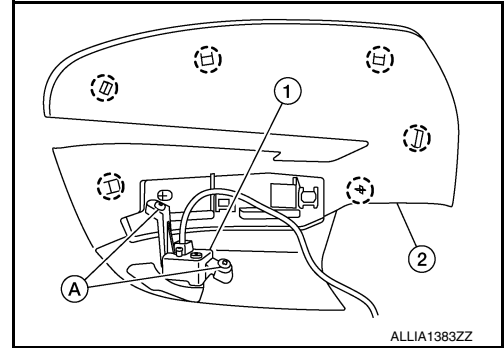
SIDE CAMERA

Removal and Installation

INFOID:000000012422235

REMOVAL

1. Remove door mirror rear finisher (2). Refer to [MIR-26. "Removal and Installation"](#).
2. Remove screws (A) and side camera (1).
○: Pawl



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Perform camera image calibration (if equipped with around view camera). Refer to [AV-148. "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

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REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

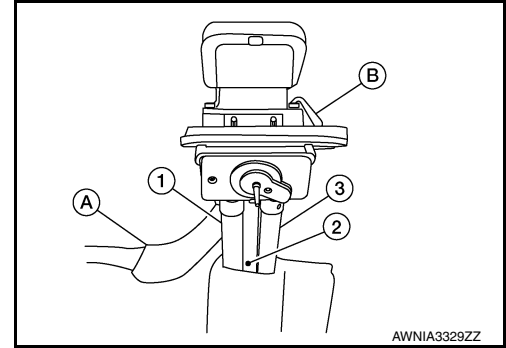
REAR VIEW CAMERA

Removal and Installation

INFOID:000000012422236

REMOVAL

1. Remove the back door outer finisher. Refer to [EXT-50. "Removal and Installation"](#).
2. Disconnect washer tubes (1,3) and air tube (2) (if equipped).
3. Release pawl (B), disconnect harness connector (A) from rear view camera and remove.



INSTALLATION

Installation is in the reverse order of removal.

GPS ANTENNA

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

GPS ANTENNA

Removal and Installation

INFOID:00000001242237

REMOVAL

1. Remove instrument panel. Refer to [IP-14, "INSTRUMENT PANEL ASSEMBLY : Removal and Installation"](#).
2. Remove screw and the GPS antenna.

INSTALLATION

Installation is in the reverse order of removal.

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ANTENNA BASE

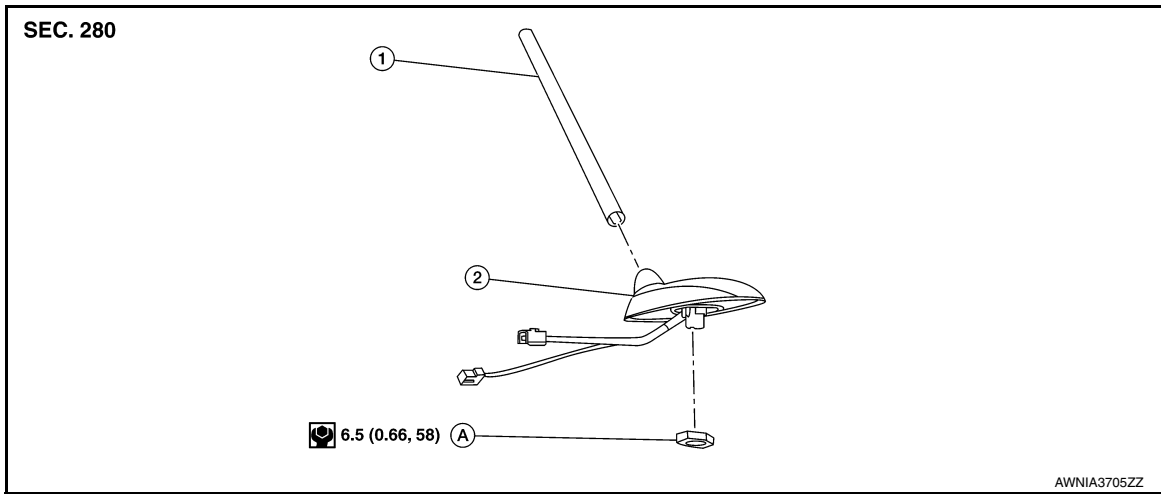
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITHOUT BOSE)]

ANTENNA BASE

Exploded View

INFOID:00000001242238



1. Antenna rod

2. Antenna base

A. Antenna nut

Removal and Installation

INFOID:00000001242239

REMOVAL

1. Remove the luggage side upper finisher (RH). Refer to [INT-36. "LUGGAGE SIDE UPPER FINISHER : Removal and Installation"](#).
2. Partially lower headlining (rear). Refer to [INT-30. "Removal and Installation"](#).
3. Disconnect harness connectors from antenna feeder.
4. Remove nut from antenna base and remove.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

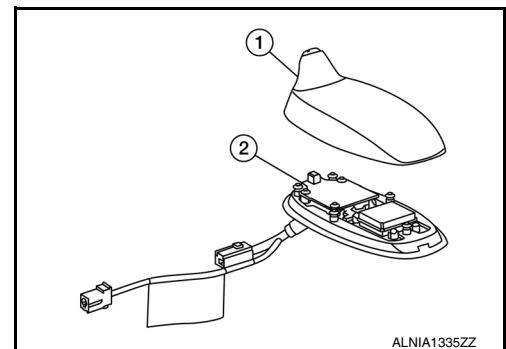
**If the antenna base nut is not properly tightened, lower sensitivity of the antenna may be experienced.
If the nut is over tightened, this will deform the roof panel.**

Disassembly and Assembly

INFOID:00000001242240

DISASSEMBLY

Insert a suitable tool into gaps between antenna base (2) and the cover (1), then remove the cover (1) from antenna base (2).



ASSEMBLY

Assembly is in the reverse order of disassembly.

ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

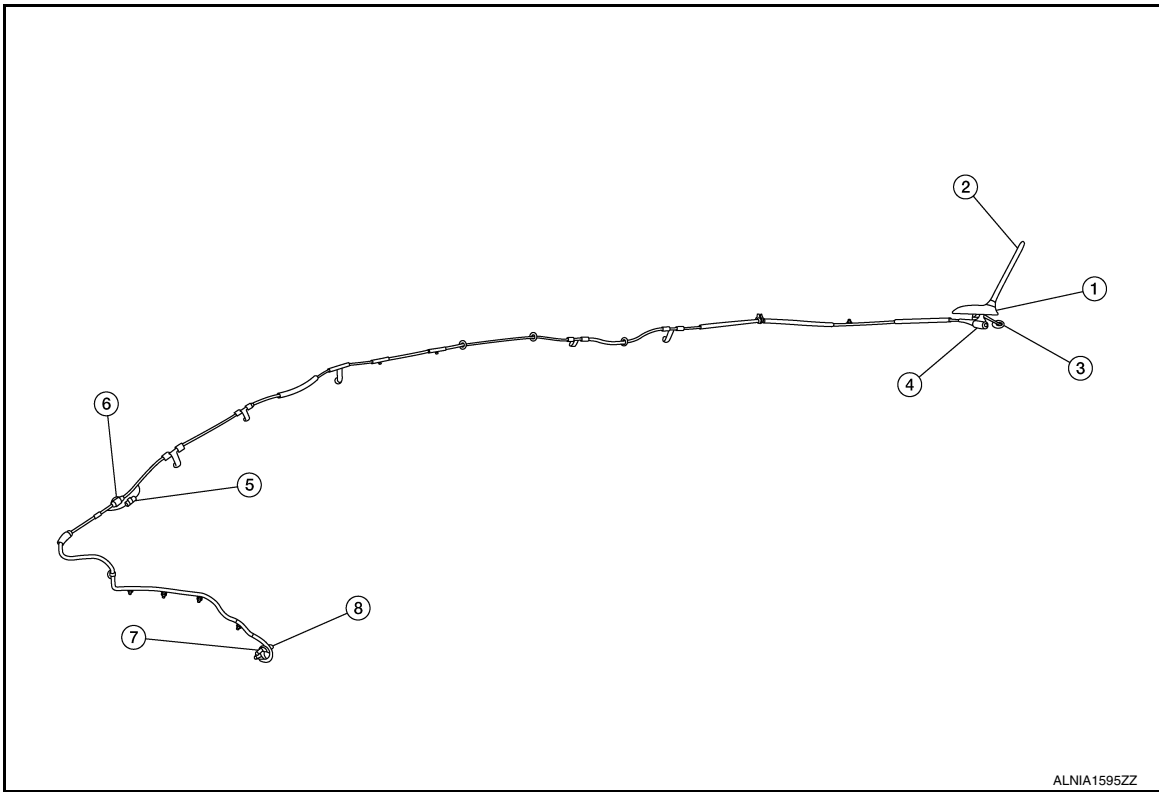
[MULTI AV (NAVI WITHOUT BOSE)]

ANTENNA FEEDER

Feeder Layout

INFOID:000000012422241

ANTENNA FEEDER LAYOUT



- | | | |
|--|----------------|---------------|
| 1. Antenna base (antenna amp. and satellite antenna) | 2. Rod Antenna | 3. M503 |
| 4. M502 | 5. M130, M501 | 6. M129, M500 |
| 7. M142 | 8. M139 | |

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PRECAUTION

PRECAUTIONS

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

INFOID:000000001242242

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

WARNING:

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

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

WARNING:

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

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

INFOID:000000001242243

CAUTION:

Remove battery terminal and AV control unit 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:000000001242244

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:000000001242245

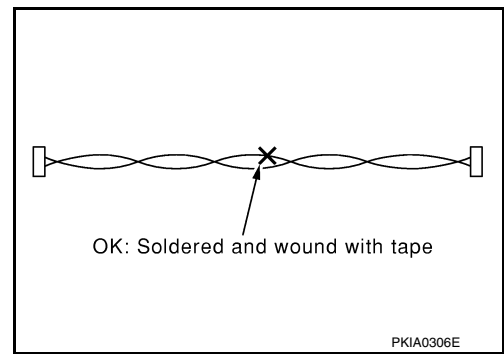
AV COMMUNICATION SYSTEM

PRECAUTIONS

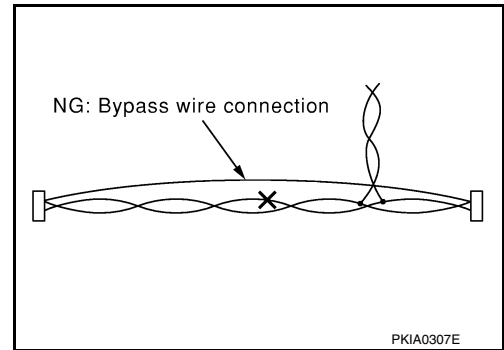
< PRECAUTION >

[MULTI AV (NAVI WITH BOSE)]

- 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.)



Precaution for Work

INFOID:000000012422246

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

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AV

PREPARATION

< PREPARATION >

[MULTI AV (NAVI WITH BOSE)]

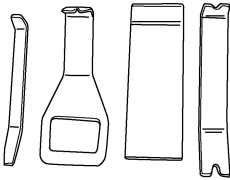
PREPARATION

PREPARATION

Special Service Tool

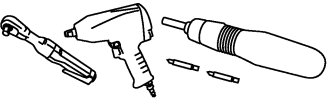
INFOID:00000001242247

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

Commercial Service Tools

INFOID:00000001242248

Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

COMPONENT PARTS

< SYSTEM DESCRIPTION >

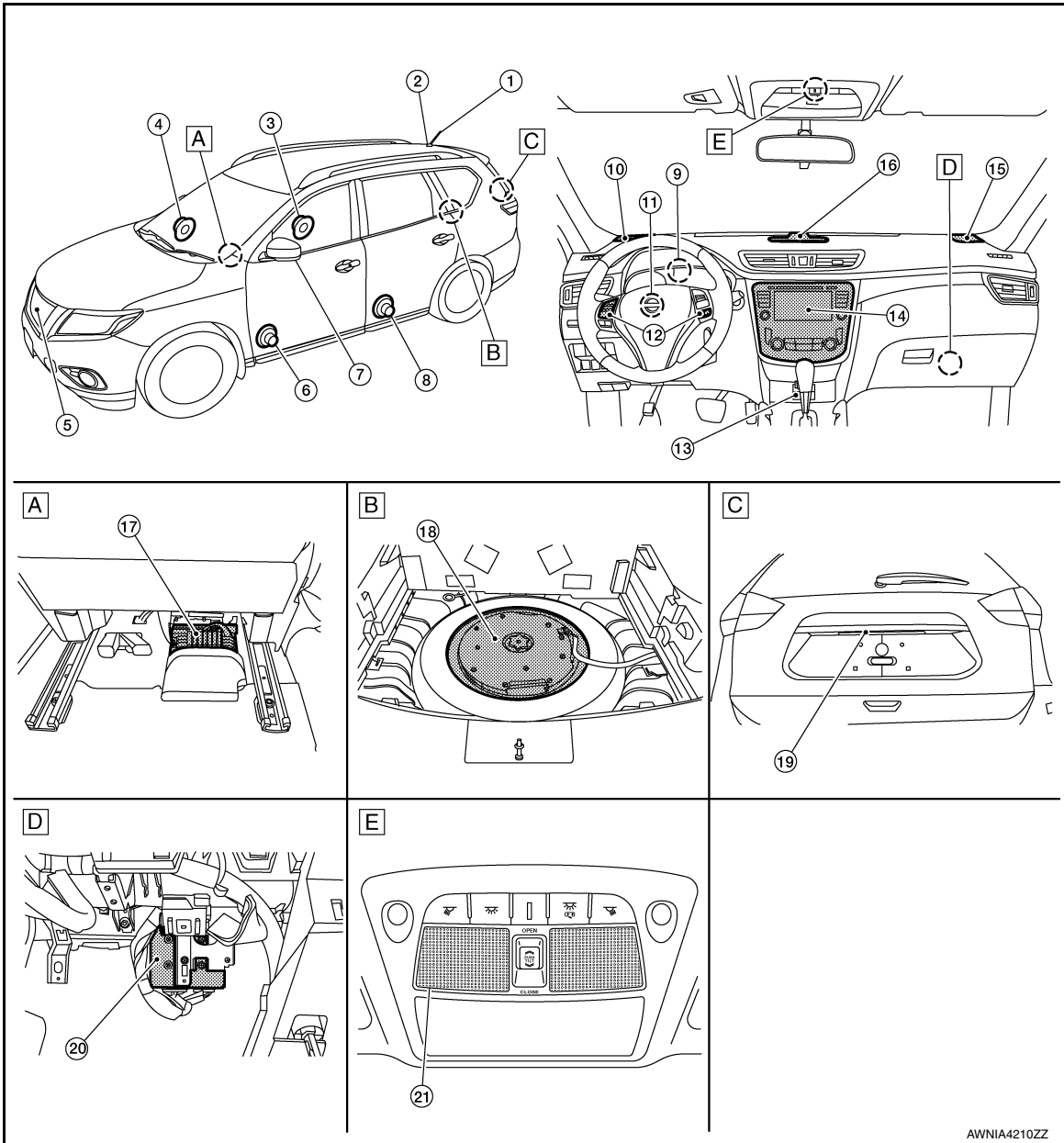
[MULTI AV (NAVI WITH BOSE)]

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000012422249



- A. View under rear of front passenger seat B. View with spare tire cover removed C. Center of back door
 D. View with glove box removed E. Overhead console

No.	Component	Function
1.	Rod antenna	Refer to AV-236, "Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder" .
2.	Antenna base (antenna amp. and satellite antenna)	
3.	Rear door speaker RH	Refer to AV-233, "Speakers" .
4.	Front door speaker RH	

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

No.	Component	Function
5.	Front camera	Refer to AV-235, "Front Camera" .
6.	Front door speaker LH	Refer to AV-233, "Speakers" .
7.	Side camera	Refer to AV-235, "Side Cameras" .
8.	Rear door speaker LH	Refer to AV-233, "Speakers" .
9.	GPS antenna	Refer to AV-237, "GPS Antenna" .
10.	Front tweeter LH	Refer to AV-233, "Speakers" .
11.	Steering angle sensor	Refer to AV-236, "Steering Angle Sensor" .
12.	Steering switches	Refer to AV-234, "Steering Switches" .
13.	USB interface and AUX in jack	Refer to AV-234, "USB Interface and AUX In Jack" .
14.	AV control unit	Refer to AV-232, "AV Control Unit" .
15.	Front tweeter RH	Refer to AV-233, "Speakers" .
16.	Center speaker	Refer to AV-233, "Speakers" .
17.	BOSE speaker amp.	Refer to AV-232, "BOSE Speaker Amp." .
18.	Subwoofer	Refer to AV-233, "Speakers" .
19.	Rear view camera	Refer to AV-235, "Rear View Camera" .
20.	Around View [®] Monitor control unit	Refer to AV-235, "Around View Monitor Control Unit" .
21.	Microphone	Refer to AV-234, "Microphone (for Hands-free Phone/Voice Recognition)" .

*: Around View Monitor is a parking aid/convenience feature. Around View Monitor cannot completely eliminate blind spots. Around View Monitor may not detect every object. Always check surroundings before moving vehicle. Around View Monitor is not a substitute for proper backing procedures. Always turn to check what is behind you before backing up.

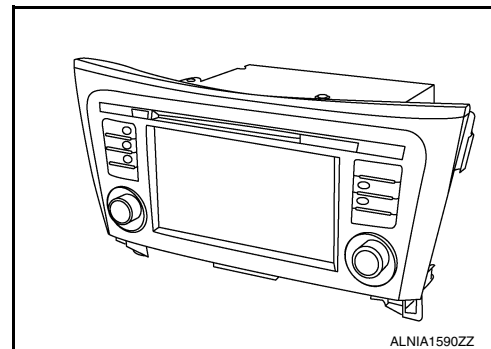
AV Control Unit

INFOID:0000000012422250

Description

- A 7-inch WVGA display, an AM/FM electronic tuner radio, CD drive and navigation unit are integrated into the AV control unit.
- The 7-inch display is a high resolution monitor that includes touch panel functions.
- Music files stored in iPod[®]*/USB memory can be played using the separate USB interface.
- Music files stored in an external audio device can be played using the separate AUX in jack.

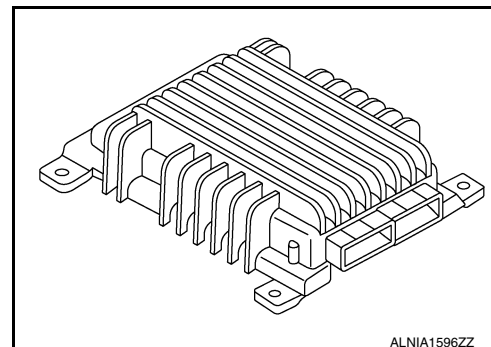
*: iPod[®] is a registered trademark of Apple, Inc. All rights reserved.



BOSE Speaker Amp.

INFOID:0000000012422251

- Installed under the rear of the front passenger seat.
- Receives sound signal from AV control unit, and outputs sound signal to each tweeter, speaker and the subwoofer.



COMPONENT PARTS

< SYSTEM DESCRIPTION >

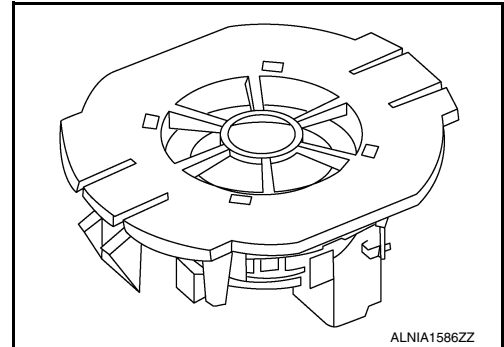
[MULTI AV (NAVI WITH BOSE)]

Speakers

INFOID:000000012422252

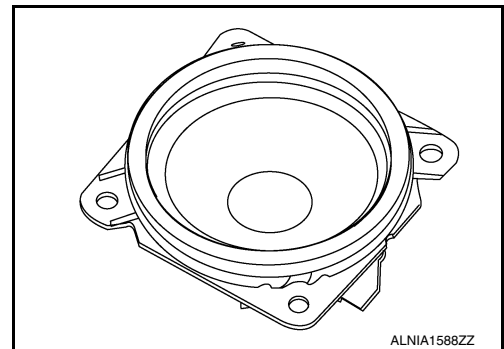
FRONT TWEETER

- 2.5 cm (1 in) tweeters are installed in the top front corners of the instrument panel.
- Sound signals are input from the Bose speaker amp. to output high range sounds.



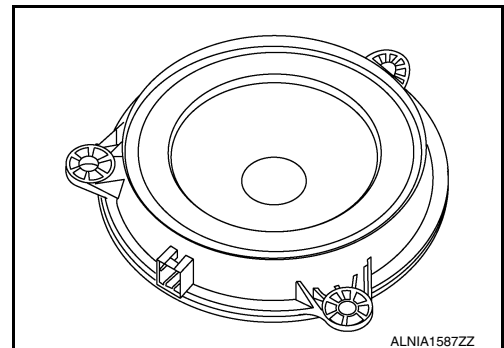
CENTER SPEAKER

- 7.6 cm (3 in) speaker is installed in the top center of the instrument panel.
- Sound signals are input from the Bose speaker amp. to output mid range sounds.



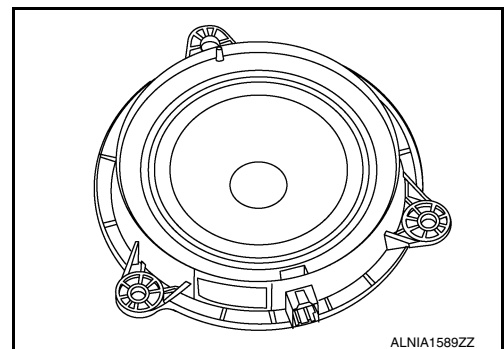
FRONT DOOR SPEAKER

- 16.5 cm (6.5 in) speakers are installed in the bottom of the front doors.
- Sound signals are input from the Bose speaker amp. to output low range sounds.



REAR DOOR SPEAKER

- 12.7 cm (5 in) speakers are installed in the bottom of the rear doors.
- Sound signals are input from the Bose speaker amp. to output high, mid and low range sounds.



SUBWOOFER

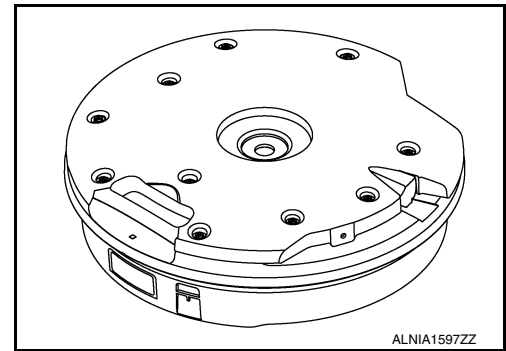
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COMPONENT PARTS

< SYSTEM DESCRIPTION >

- Installed on top of the spare tire underneath the spare tire cover.
- Sound signals are input from the Bose speaker amp. to output low range sounds.

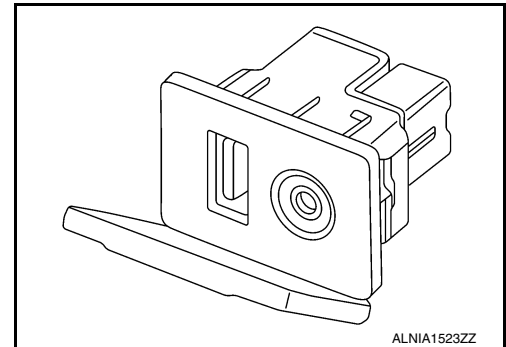
[MULTI AV (NAVI WITH BOSE)]



INFOID:000000012422253

USB Interface and AUX In Jack

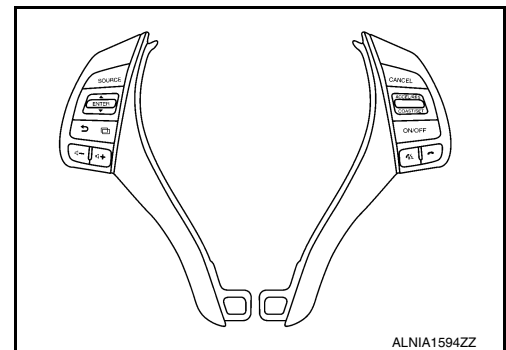
- USB Interface and AUX in jack is installed in the console.
- iPod® and USB memory can be connected to the AV control unit through the USB interface.
- An external audio device can be connected to the AV control unit through the AUX in jack.



INFOID:000000012422254

Steering Switches

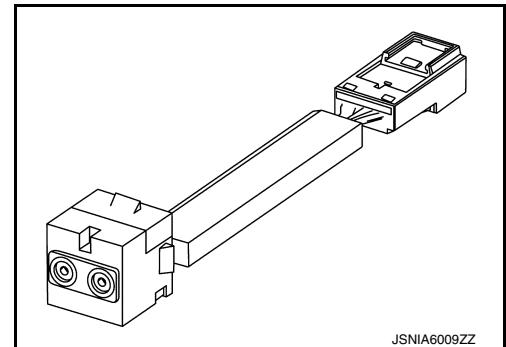
- Steering switches are installed in the steering wheel.
- Operations for audio and hands-free phone are possible.
- Switches are connected to the combination meter.
- Combination meter is connected to the AV control unit via AV communication.



INFOID:000000012775907

Microphone (for Hands-free Phone/Voice Recognition)

- The microphone is installed on the map lamp assembly.
- The power is supplied from the AV control unit to the microphone, transmitting sound signals to the AV control unit at the during hands-free phone communication, or voice recognition.



COMPONENT PARTS

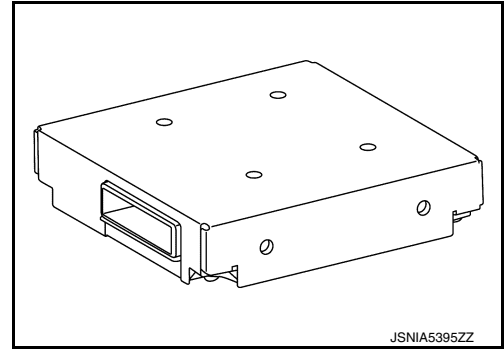
< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

Around View Monitor Control Unit

INFOID:000000012422256

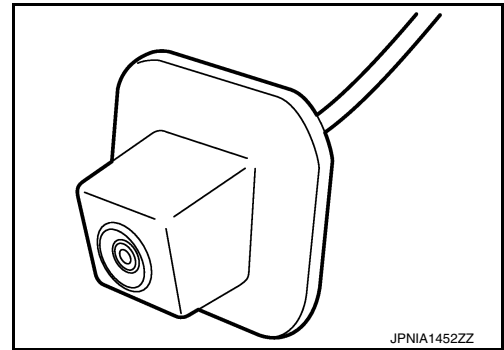
- The around view monitor control unit is installed behind the glove box.
- Vehicle width guide lines, predicted course line, vehicle front guiding line and vehicle side line, and vehicle icon are displayed and combined with camera images.



Rear View Camera

INFOID:000000012422257

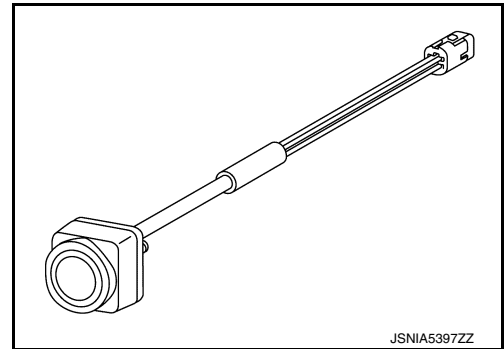
- The rear view camera is installed in the back door finisher.
- Power is supplied from the around view monitor control unit.



Side Cameras

INFOID:000000012422258

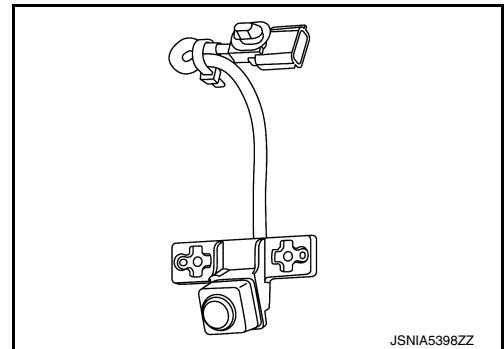
- The side cameras are installed in the door mirrors.
- Power is supplied from the around view monitor control unit.



Front Camera

INFOID:000000012422259

- The front camera is installed in the front grille.
- Power is supplied from the around view monitor control unit.



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COMPONENT PARTS

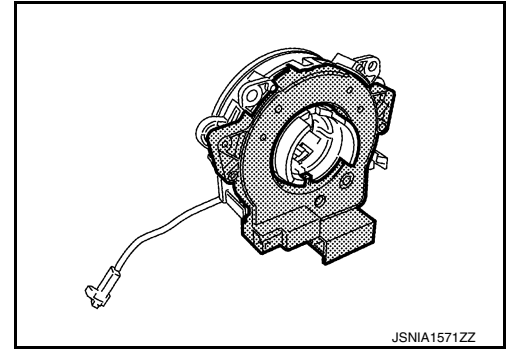
< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

Steering Angle Sensor

INFOID:000000012422260

- Steering sensor is installed to the spiral cable.
- Steering angle sends the steering signal necessary for predictive course line via CAN communication.

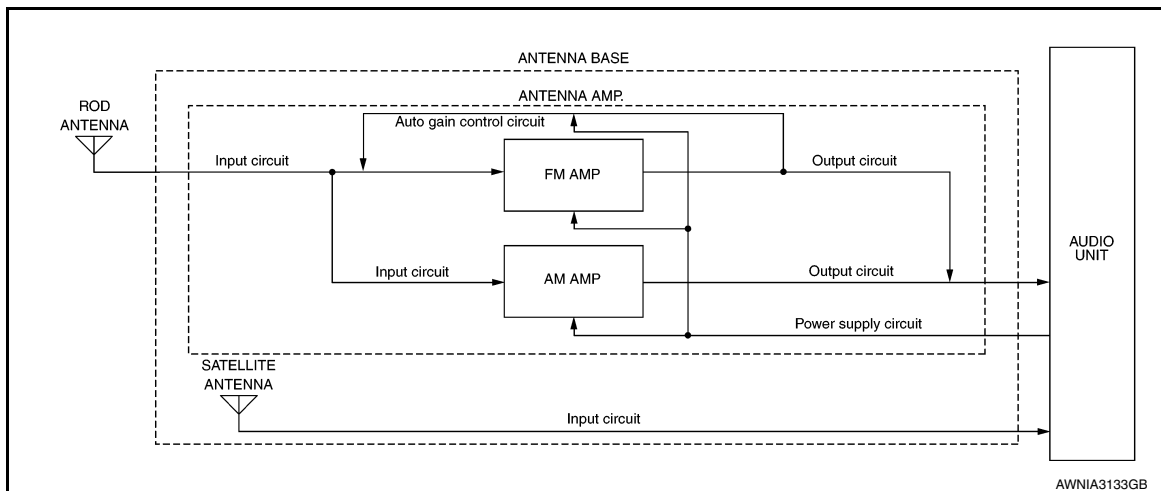


Rod Antenna, Antenna Amp., Satellite Antenna and Antenna Feeder

INFOID:000000012422261

RADIO ANTENNA AND SATELLITE ANTENNA

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

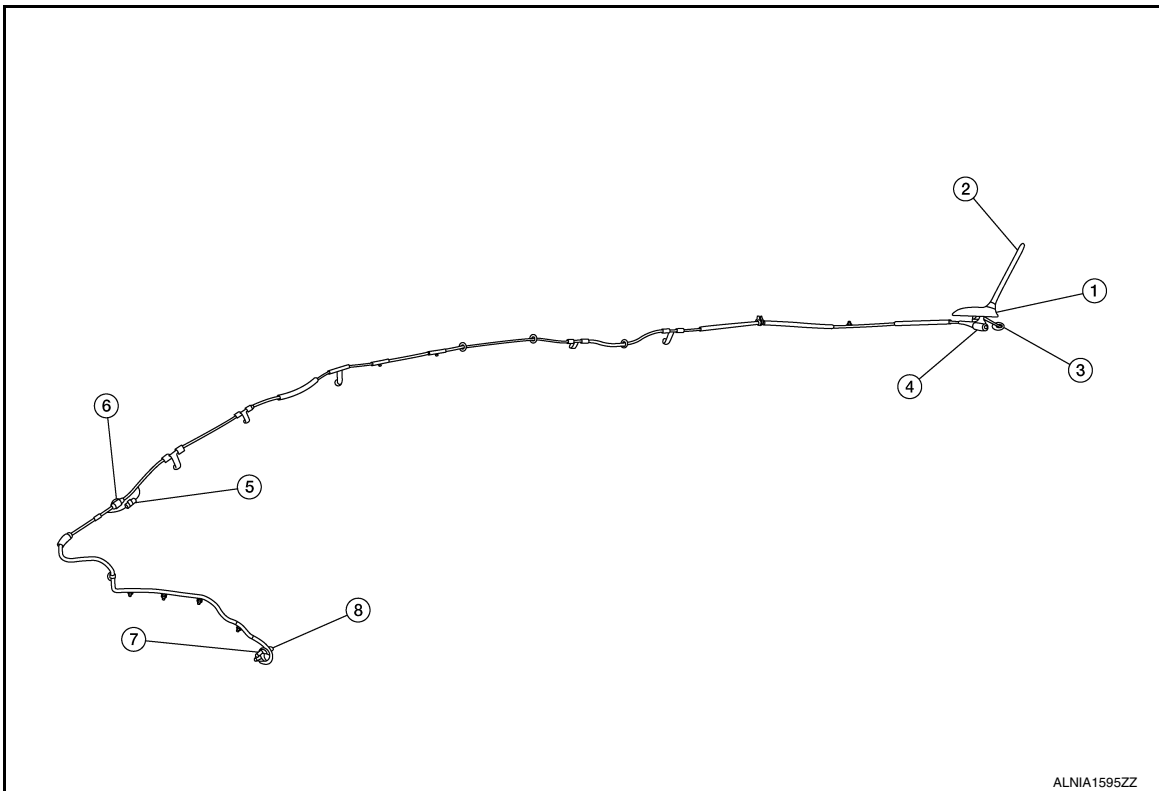


ANTENNA FEEDER LAYOUT

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

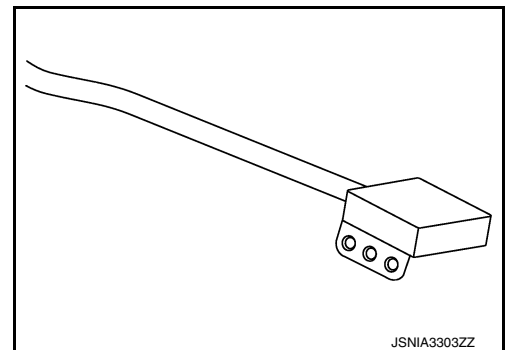


- | | | |
|--|----------------|---------------|
| 1. Antenna base (antenna amp. and satellite antenna) | 2. Rod Antenna | 3. M503 |
| 4. M502 | 5. M130, M501 | 6. M129, M500 |
| 7. M142 | 8. M139 | |

GPS Antenna

INFOID:0000000012422262

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



INFOID:0000000012422263

SD Card

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

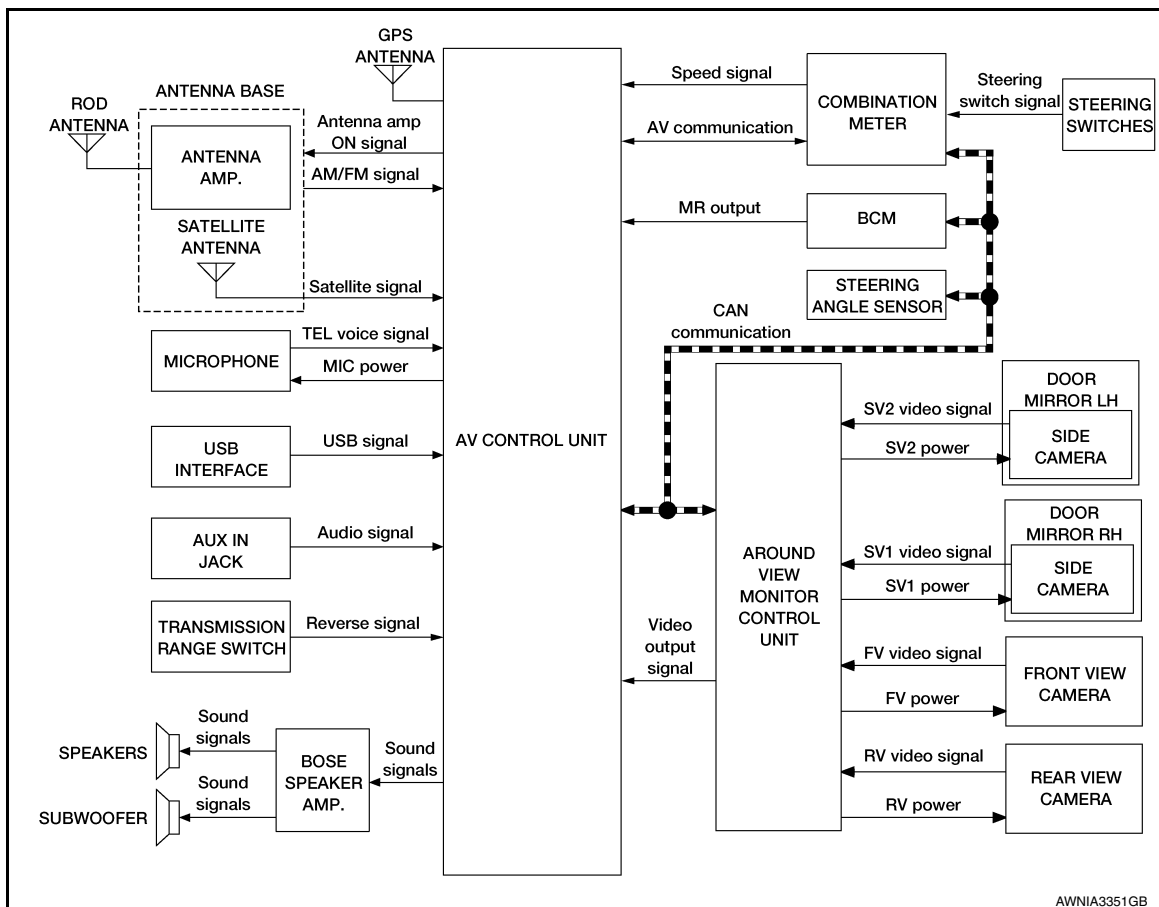
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SYSTEM

System Description

INFOID:000000012422264

SYSTEM DIAGRAM



AUDIO SYSTEM

The audio system consists of the following component:

- AV control unit
- Bose speaker amp.
- Front tweeters
- Center speaker
- Front door speakers
- Rear door speakers
- Subwoofer
- USB interface
- AUX in jack
- Antenna base (rod antenna, antenna amp. and satellite antenna)

When the audio system is on, AM/FM signals received by the rod antenna are amplified by the antenna amp. and sent to the AV control unit. The AV control unit sends the audio signals to the Bose speaker amp. The Bose speaker amp. then sends the audio signals to the tweeters, speakers and subwoofer.

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

NAVIGATION SYSTEM

Description

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

< SYSTEM DESCRIPTION >

POSITION DETECTION PRINCIPLE

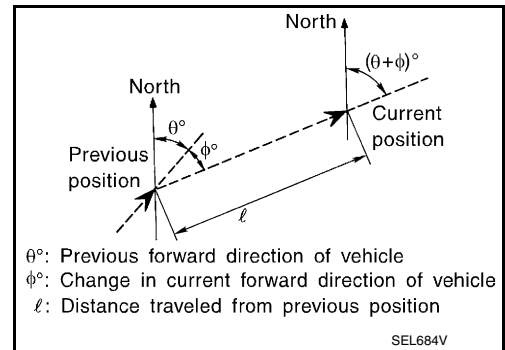
The navigation system periodically calculates the vehicle's current position according to the following three signals:

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

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

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

- Travel distance
Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance correction function has been adopted.
- Travel direction
Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). They have both advantages and disadvantages.



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

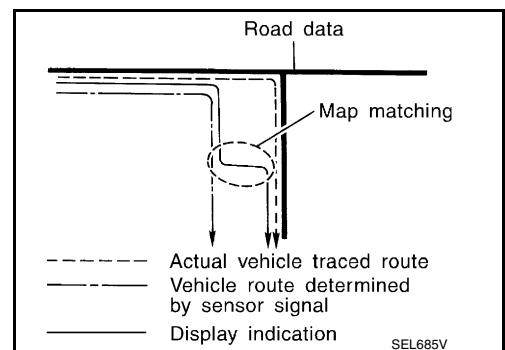
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

MAP-MATCHING

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

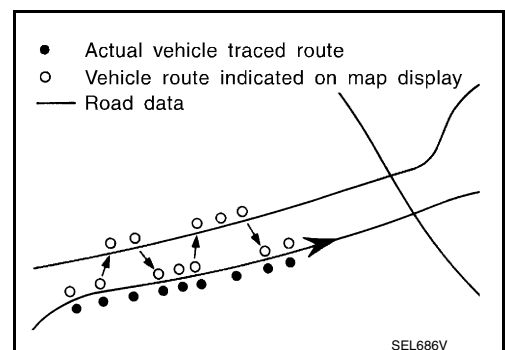
NOTE:

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



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

- In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the vehicle mark has been repositioned. Alternative routes will be shown in different order of priority, and the incorrect road can be avoided if there is an error in distance and/or direction. Routes are of the same priority if two roads are running in parallel. Therefore, the vehicle mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.

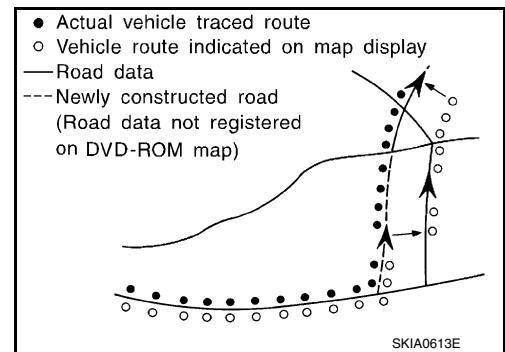


SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

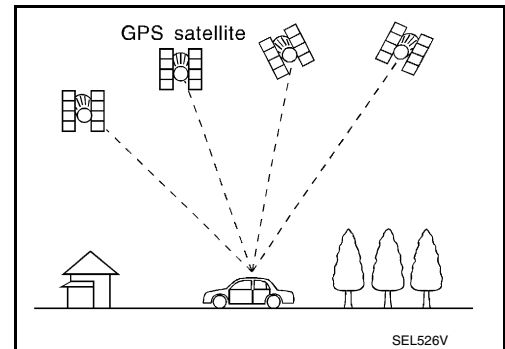
- Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD-card, or when road pattern stored in the map data and the actual road pattern are different due to repair. The map-matching function may find another road and position the vehicle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



GPS (Global Positioning System)

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

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



Accuracy of the GPS will deteriorate under the following conditions:

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

NOTE:

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

USB INTERFACE

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

AUX IN JACK

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

SPEED SENSITIVE VOLUME SYSTEM

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

HANDS-FREE PHONE SYSTEM

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

SYSTEM

[MULTI AV (NAVI WITH BOSE)]

< SYSTEM DESCRIPTION >

When A Call Is Originated

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

When Receiving A Call

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

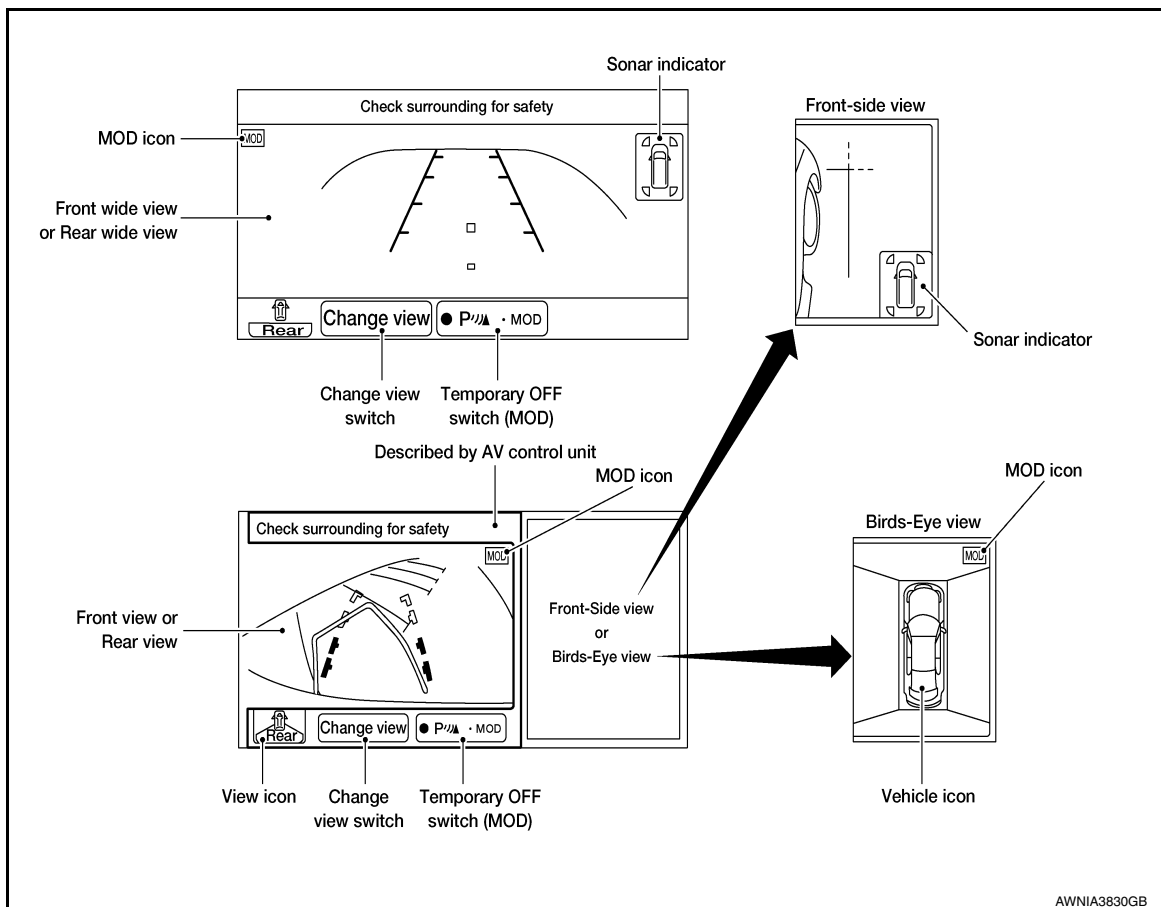
AROUND VIEW MONITOR FUNCTION

- This system is equipped with wide-angle cameras on the front, rear and right and left door mirrors.
- Images from front view, rear view, front-side view (RH side), and birds-eye view are displayed to monitor the vehicle surroundings.
- Around view monitor control unit expands the image received from each camera to create each view.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are displayed.
- In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.
- Birds-eye view converts the images from the cameras into an overhead view and displays the status of the vehicle on the display. The vehicle icon that is displayed in the birds-eye view is depicted by the around view monitor control unit.

Display

- Around view monitor combines and displays the travel direction view and Birds-Eye view, Front-side view, and then it displays the sonar indicator on the Bird's-Eye view, Front-side view, Rear wide view.
- AV control unit renders the "Change View" switch, view icon, and warning message on display.

Screen constitution

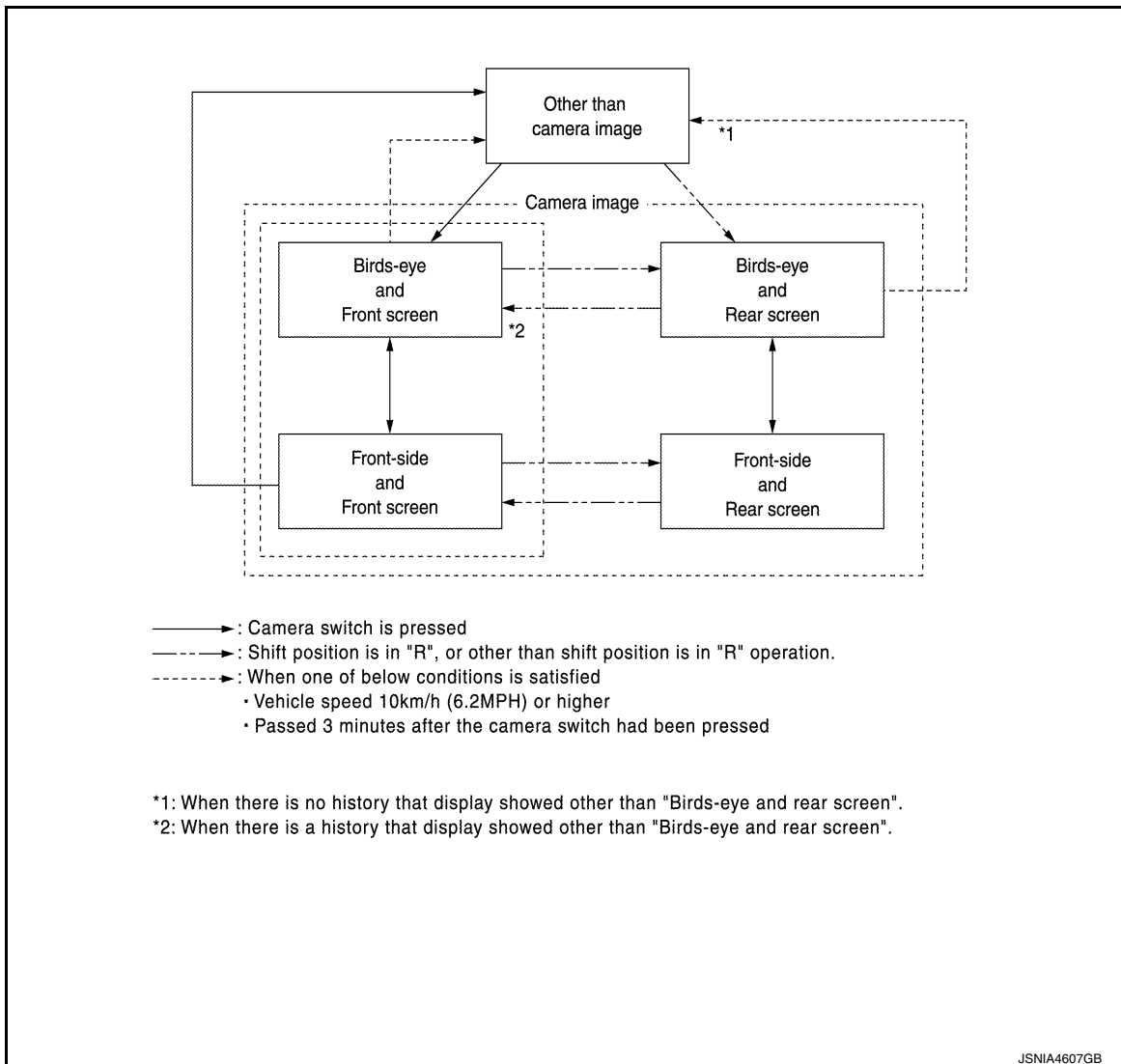


Operation

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Around view monitor screen transition



- Around view monitor is displayed on the display when “CAMERA” switch is pressed, when shifting position is reverse.
- Bird’s-Eye view, Front-side view, and front/rear wide view can be switched by “Change View” switch (touch switch) or “CAMERA” switch while around view monitor is displayed.
- Priority of view to be displayed can be set by “Settings” screen.
- While shift position is other than reverse, around view monitor is canceled when approximately 3 minutes are passed after “CAMERA” switch is pressed or when vehicle speed is approximately 10 km/h (6 MPH) or more. The screen returns to the screen before displaying around view monitor.
- Setting of Moving Object Detection (MOD) can be switched ON/OFF by temporary OFF switch of AV control unit (Temporary OFF).
- In temporary OFF, around view monitor is canceled. Temporary OFF is canceled when around view monitor is displayed once again. MOD is switched to operation-ready status.
- In permanent OFF, MOD is not operative until MOD is switched to ON by “Settings” screen.
- In Bird’s-Eye view, an enhanced boundary is displayed on the image indicating the invisible area and clearly indicating the boundary of the four cameras. The invisible area is displayed in yellow when Bird’s-Eye view is displayed after the ignition switch is turned ON.
- If information of camera and information written to around view monitor control unit are not the same, error indicator of applicable camera position is displayed when Bird’s-Eye view is displayed.
- When “CAMERA” switch is pressed, it receives camera switch signal from AV control unit via CAN communication.
- When around view monitor control unit receives camera switch signal around view monitor control unit reads the image signal from each camera.
- When around view monitor control unit receives reverse signal, while shift position is R position, around view monitor control unit reads image signal from each camera.

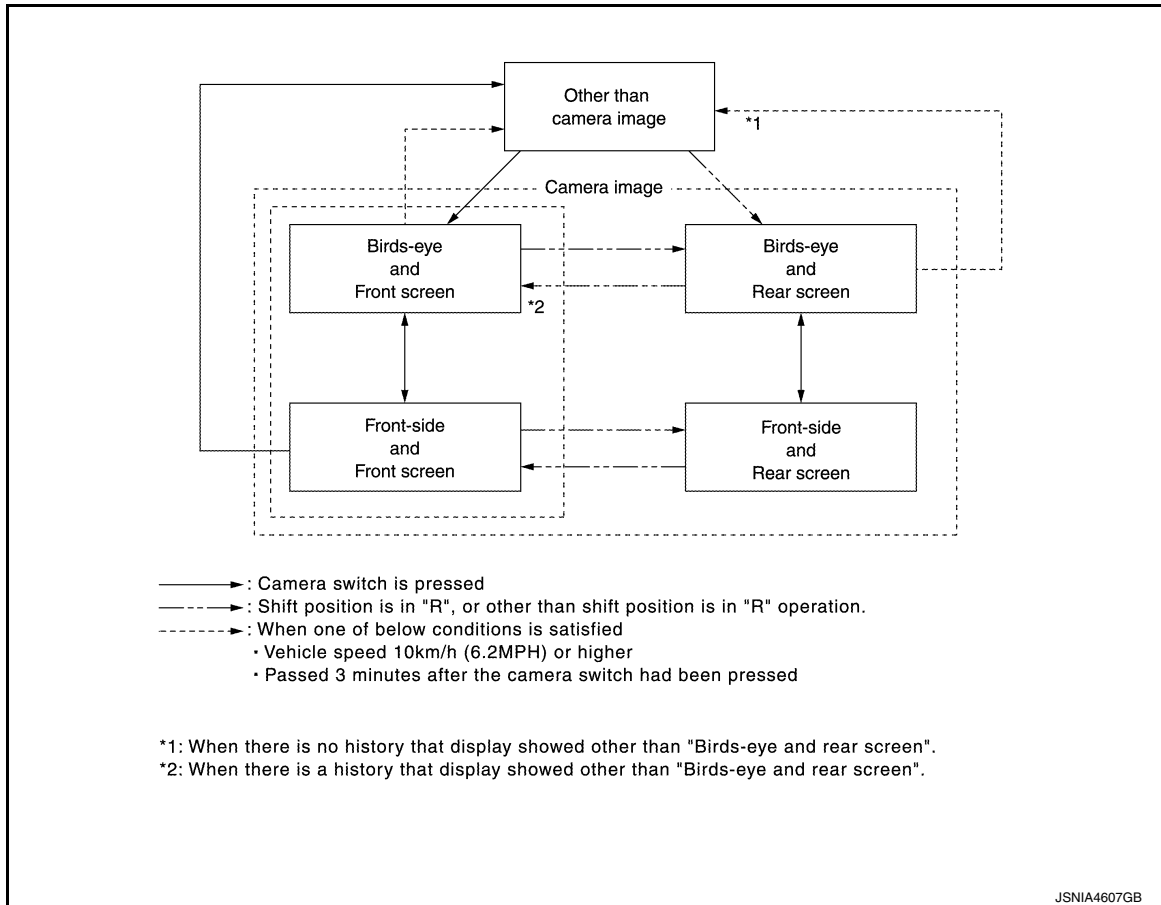
SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

- When around view monitor control unit reads image signal from each camera, it cuts out the required screen for each view, superimposes camera image, vehicle icon, guiding lines, predicted course line, and "MOD" icon and then outputs them to AV control unit.

Around view monitor screen transition



Front View

- The front view image improves the visibility of obstacles in front of the vehicle and assists driving by displaying images from birds-eye view and front-side view.
- The front view image displays the vehicle width guiding line and vehicle distance guiding line, in addition to the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle exceeds approximately 90 degrees, only the predictive course line on the outside is displayed (opposite side of steering direction).
- The around view monitor control unit receives the steering angle signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed using CONSULT.

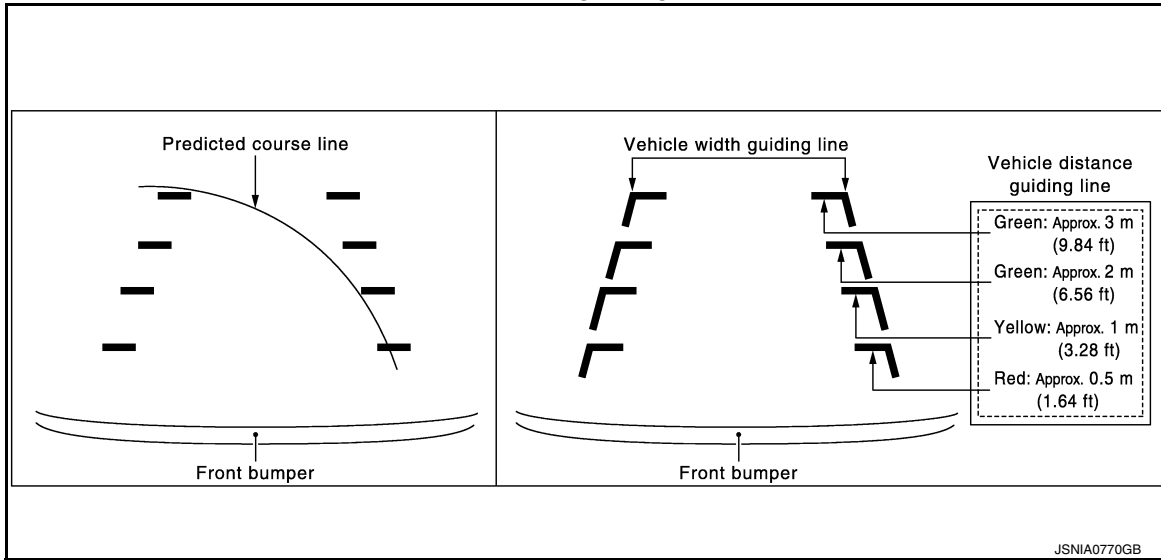
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[MULTI AV (NAVI WITH BOSE)]

Front view guiding lines



Rear View

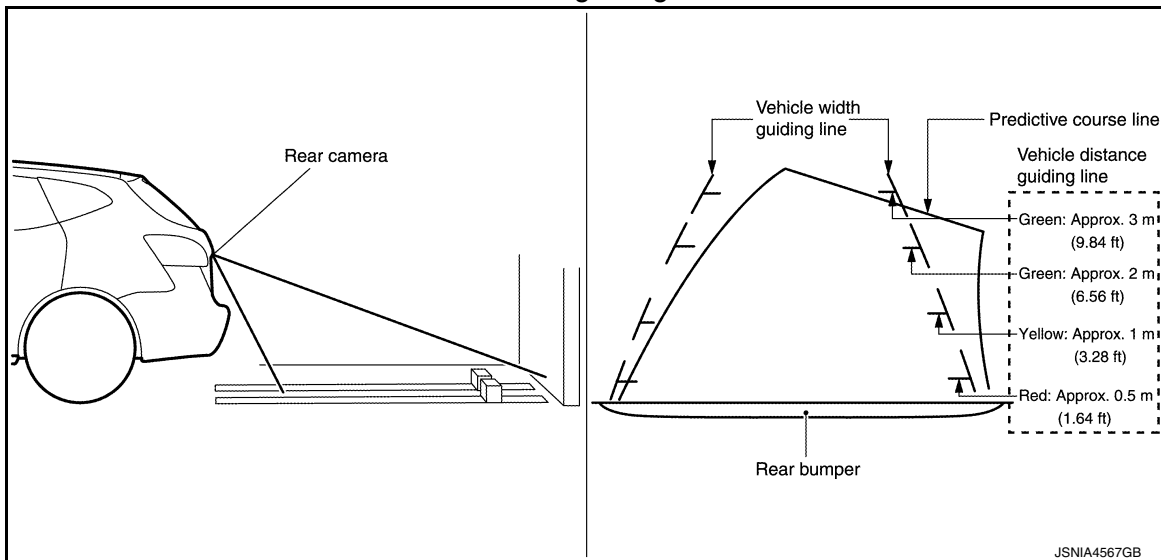
- The rear view image improves the visibility of obstacles in the rear of the vehicle and assists backing and parking by displaying images from birds-eye view and front side view.
- The rear view image displays the vehicle width guiding line and vehicle distance guiding line, in addition to the predictive course line according to the steering angle.

NOTE:

The predictive course line is not displayed at the steering neutral position.

- The around view monitor control unit receives the steering angle signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed using CONSULT.

Rear view guiding lines



Front-Side View

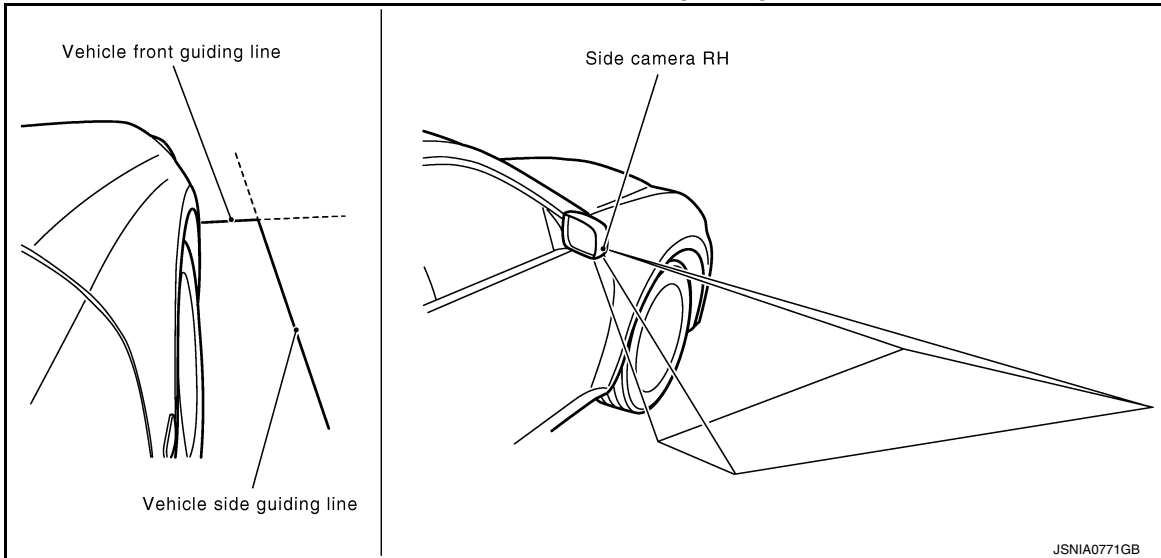
- The front-side view image improves the visibility of obstacles in the front RH side of the vehicle and assists backing and parking.
- The front-side view image displays the vehicle distance guiding line and vehicle width guiding line.

SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

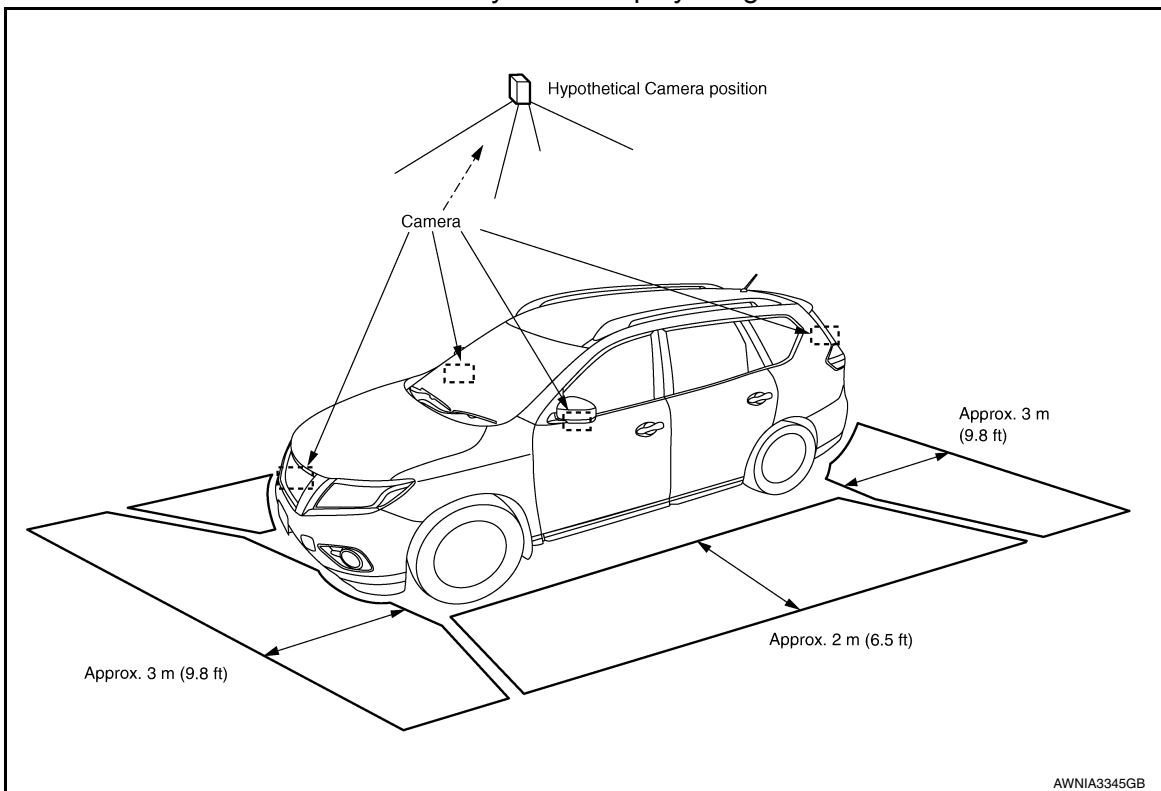
Front-side view area and guiding line



Birds-Eye View

- The birds-eye view image improves the visibility of obstacles all around the vehicle and assists backing and parking.
- The images from the four cameras are converted into an overhead view, and the surroundings of the vehicle are displayed.
- The blind spot area is displayed on the image to specify the boundary of the four cameras.

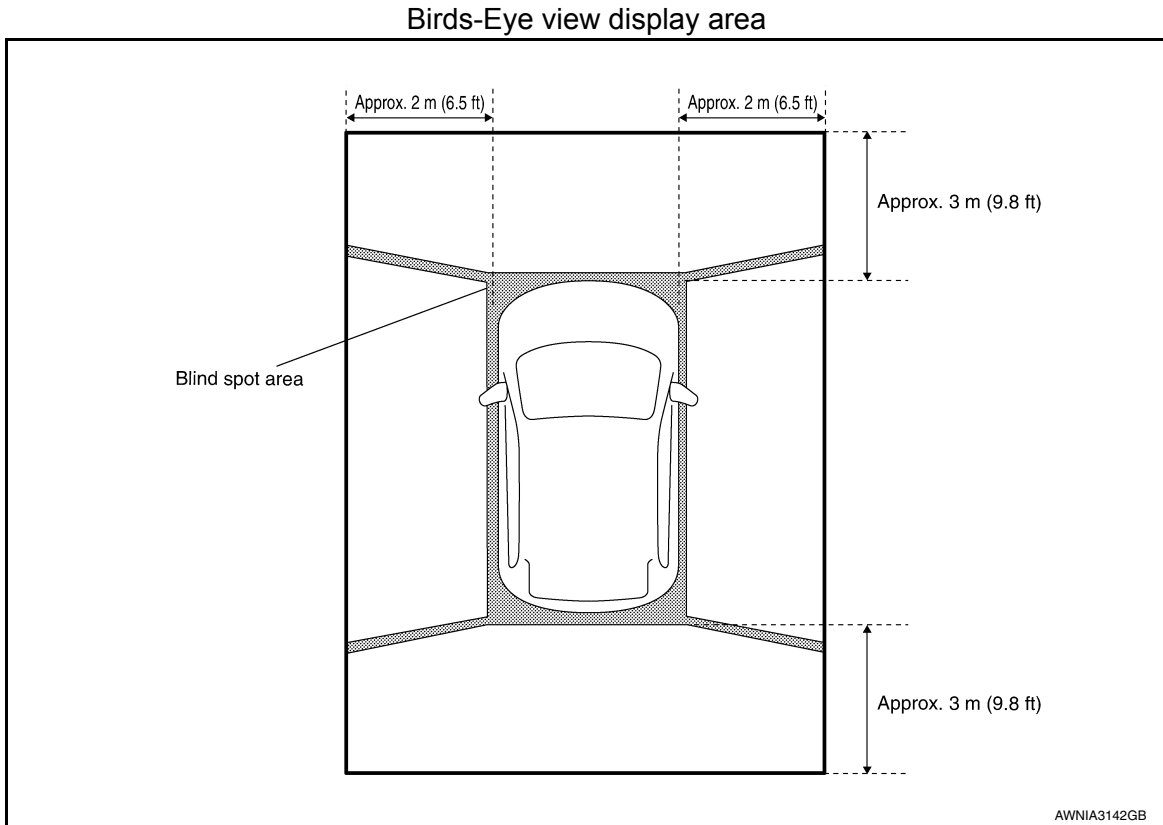
Birds-Eye view display image



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Moving Object Detection (MOD)

- Moving Object Detection (MOD) is a function that notifies the driver of the presence of moving objects in the area around the vehicle. MOD detects moving objects from camera image, illuminates frame of view in yellow whenever “MOD” icon is displayed in blue, and sounds chime.
- MOD detects moving objects while camera image is displayed on AV control unit.
- Around view monitor control unit performs the following process when moving objects are detected:
 - Superimposes yellow frame line on camera image signal and outputs it to AV control unit.
 - Transmits MOD chime sound output request signal to the AV control unit via CAN communication.
 - The combination meter receives the MOD beep sound output request signal from around view monitor control unit and outputs chime.
- Around view monitor control unit detects moving objects from camera image according to an image recognition method called optical flow.
- MOD does not detect a background as a moving object when the vehicle moves (when whole screen moves) but detects a moving object when an actual moving object is displayed on screen.
- MOD can be set to temporary OFF or permanent OFF by the following operations:
 - Temporary off: MOD is switched to OFF with a switch on the AV control unit (touch switch) while camera image is displayed on AV control unit.
 - Permanent off: MOD is switched to OFF by “Settings”.
- Color of “MOD” icon indicates whether or not MOD is operative. “MOD” icon is displayed as shown in the following table. when MOD is operative, “MOD” icon is displayed in blue. when MOD is not operative, “MOD” icon is displayed in gray. MOD icon is not displayed when MOD is off (permanent OFF) by “Settings”, or when MOD is OFF (temporary OFF) by switch of AV control unit (touch switch):

View		Shift position		
		P or N position	D position	R position
		“MOD” icon display		
Birds-Eye view and rear view	Birds-Eye view	Blue	—	Gray
	Rear view	Gray		Blue
Birds-Eye view and front view	Birds-Eye view	Blue	Gray	—
	Front view	Gray	Blue	

SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

View		Shift position		
		P or N position	D position	R position
		“MOD” icon display		
Side view and rear view	Side view	×	—	×
	Rear view	Gray	—	Blue
Side view and front view	Side view	×	×	—
	Front view	Gray	Blue	
Rear wide view		Gray	—	Blue
Front wide view		Gray	Blue	—

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×: Icon is not displayed.

—: View is not displayed in each shift position (D position and R position).

- MOD illuminates frame of view in yellow and sounds chime when any of the conditions in the following table are satisfied:

Operation Condition		View where MOD is operative
Shift position	Vehicle speed	
P or N position	0 km/h	Birds-Eye view
D position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	<ul style="list-style-type: none"> • Front view • Front wide view
R position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	<ul style="list-style-type: none"> • Rear view • Rear wide view

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- MOD does not operate or stops operation when any of the conditions in the following table are satisfied:

Operation stop condition	Note
Door open	<ul style="list-style-type: none"> • MOD does not stop operation for front view and front wide view. • Operation stops for rear view and rear wide view while back door is open. • Operation stops for Bird's-Eye view when any door is open.
Door mirror expanding/retracting	Expanding/retracting status of door mirror is judged according to operation signal of door mirror motor transmitted from door mirror (driver side) to around view monitor control unit.

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DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

INFOID:000000012422265

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

Mode		Item	Content
Version		—	Version data of the AV control unit is displayed.
User Configuration	Touch Display Calibration	—	Allows correction of the position detection accuracy of the touch panel.
Radio	FM monitor	—	Monitors the dynamic values of the current tuner
	AM monitor	—	
	SXM monitor	—	Version data is displayed.
System State	Running System Status	<ul style="list-style-type: none"> • SD card slot Access • Power Supply • Speed Signal • Direction Signal • Illumination Signal • GPS Antenna • GPS Tracking • Satellites Visible • Satellites Tracked • Microphone Current • Steering wheel key • Radio Antenna • SXM Antenna • USB Device • iPod® firmware version • BT Status 	The current system status is displayed.
	Speaker Test 4kHz	—	This activates a sequence of test tone outputs to the audio circuits one after the other for 1 second.
	Speaker Test 100Hz		
	Display-Test	—	This provides a test sequence where test displays (plain colored display: e.g. white, black, red, blue, green) are shown one after the other. The respective color is shown for an indicated period of time (parameter). After the display test, the design of the display previously available is stored. While the screen shows a plain colored display, a pixel malfunction may be detected.
Self Test		<ul style="list-style-type: none"> • SD Card Access • BT Module Access • Radio Antenna • GPS Antenna • SXM Antenna 	A system self test is executed and the results are stored into the error memory.

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

On Board Diagnosis Function

INFOID:000000012422266

METHOD OF STARTING

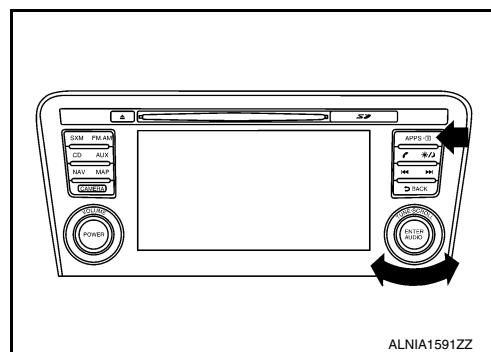
1. Turn the ignition ON.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

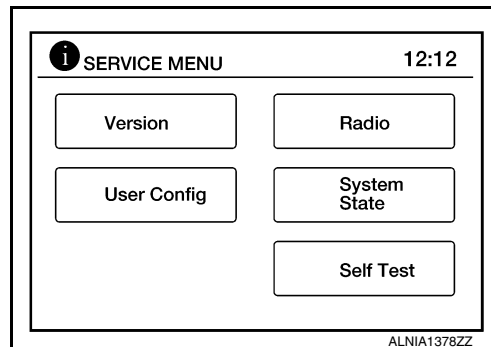
[MULTI AV (NAVI WITH BOSE)]

< SYSTEM DESCRIPTION >

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



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



CONSULT Function

INFOID:00000001242267

CONSULT FUNCTIONS

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

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

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSTIC RESULT

Refer to [AV-256, "DTC Index"](#).

DATA MONITOR

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

CONFIGURATION

Refer to [AV-301, "CONFIGURATION \(AV CONTROL UNIT\) : Description"](#).

CAN DIAG SUPPORT MNTR

Refer to [LAN-17, "CAN Diagnostic Support Monitor"](#).

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

CONSULT Function

INFOID:000000012775916

CONSULT FUNCTIONS

CONSULT performs the following functions via the communication with the around view monitor control unit:

Diagnosis mode	Description
Self Diagnostic Result	Around view monitor control unit and CAN communication circuit connection diagnosis is performed. Current and previous malfunctions are displayed collectively.
Data Monitor	Diagnosis of vehicle signal that is received by around view monitor control unit can be performed.
Work Support	<ul style="list-style-type: none">• Calibration and initialization of each camera can be performed.• Fine tuning of Birds-Eye view can be performed.• Target line calibration of front wide view and rear wide view can be performed.• Display of predicted course line can be switched to ON/OFF.• Language of warning message can be selected.• Neutral position adjustment of steering angle sensor can be performed.• Camera screen activation enhancing display can be switched to ON/OFF.• Calibration of turning radius display can be performed.• Setting change can be performed depending on the vehicle specification with/without door mirror automatic retracting function.• Camera zoom ratio can be changed and used for fine tuning.
ECU Identification	Around view monitor control unit part number, software version, and hardware version can be identified.
Configuration	<ul style="list-style-type: none">• The vehicle specification that is written in around view monitor control unit can be displayed or stored.• The vehicle specification can be written when around view monitor control unit is replaced.

SELF DIAGNOSTIC RESULT

Refer to [AV-266. "DTC Index"](#).

- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT:

Item name	Display content
IGN COUNTER (0 to 39)	<p>Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected.</p> <ul style="list-style-type: none">• When "0" is displayed, it indicates that the system is presently malfunctioning.• When any numerical number other than "0" is displayed, it indicates that system malfunction in the past was detected, but the system is presently normal. <p>NOTE: Each time when ignition switch turns OFF→ON, numerical number increases from 1→2→3...38→39. When number of times exceeds 39, numeric display does not increase and 39 is displayed until self-diagnosis is erased.</p>

DATA MONITOR

NOTE:

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

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

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

Display item	Remarks
ST ANGLE SENSOR SIGNAL [On/Off]	Receiving status of steering angle signal received from steering angle sensor is displayed by ON/OFF.
REVERSE SIGNAL [On/Off]	Receiving status of reverse signal received from AV control unit is displayed by ON/OFF.
VEHICLE SPEED SIGNAL [On/Off]	Receiving status of vehicle speed signal received from ABS actuator control unit is displayed by ON/OFF.
CAMERA SWITCH SIGNAL [On/Off]	Receiving status of camera switch signal received from AV control unit is displayed by ON/OFF.
CAMERA OFF SIGNAL [On/Off]	Receiving status of camera OFF signal received from AV control unit is displayed by ON/OFF.
ST ANGLE SENSOR TYPE [Absolute]	Input type of steering angle sensor is displayed. NOTE: For this vehicle, "Absolute" is displayed.
STEERING GEAR RATIO TYPE [TYPE1]	Type of steering gear ratio is displayed. NOTE: For this vehicle, "TYPE 1" is displayed.
STEERING POSITION [LHD/RHD]	Steering position is displayed.
REAR CAMERA IMAGE SIGNAL [OK/NG]	Input status of rear view camera image signal is displayed by OK/NG in real time.
F-CAMERA IMAGE SIGNAL [OK/NG]	Input status of front view camera image signal is displayed by OK/NG in real time.
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera LH image signal is displayed by OK/NG in real time.
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera RH image signal is displayed by OK/NG in real time.
ILL [ON/OFF]	Input status of illumination signal condition.
TURN SIGNAL [ON/OFF]	Input status of turn signal condition.

WORK SUPPORT

Work support items	Description
NON-VIEWABLE AREA REMINDER	ON/OFF setting of the non-viewable area reminder can be performed.
INITIALIZE CAMERA IMAGE CALIBRATION	The calibration can be initialized to factory shipment condition. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.
STEERING ANGLE SENSOR ADJUSTMENT	Steering angle sensor neutral position can be adjusted and registered. CAUTION: For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side. Refer to BRC-72, "Work Procedure".
CALIBRATING CAMERA IMAGE (FRONT CAMERA)	Performs the calibration of front camera. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.
CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)	Performs the calibration of side camera RH. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV (NAVI WITH BOSE)]

Work support items	Description
CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)	Performs the calibration of side camera LH. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.
CALIBRATING CAMERA IMAGE (REAR CAMERA)	Performs the calibration of rear camera. NOTE: Calibration of camera image caused by misalignment of the camera installation position is performed.
FINE TUNING OF BIRDS-EYE VIEW	The confirmation and adjustment of the difference between each camera can be performed. The fine adjustment function of camera calibration can check and adjust the difference between each camera.
REAR WIDE VIEW FIXED GUIDE LINE CORRECTION	The position of rear wide view guiding line can be changed.
CAUSE OF ENTRY CANCEL	Displays cancel cause item.
MOD FUNCTION	Allows turning ON/OFF of MOD function.
PREDICTIVE COURSE LINE DISPLAY	ON/OFF setting of non-viewable area can be performed.

ECU IDENTIFICATION

Around view monitor control unit part number, software version, and hardware version can be identified.

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

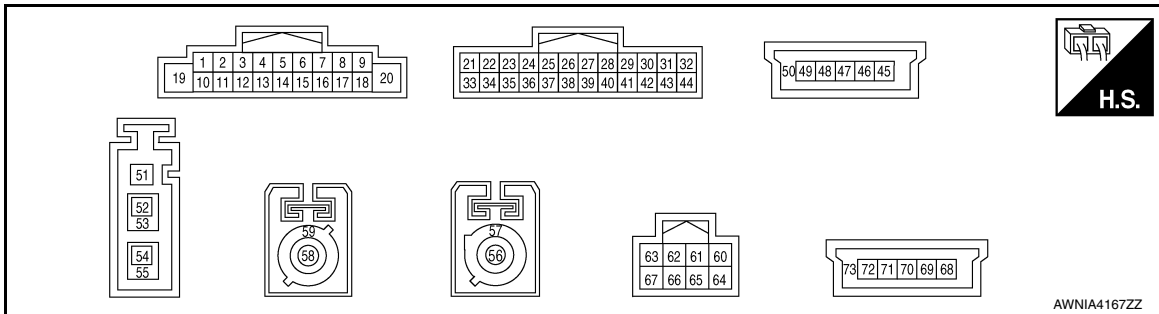
Reference Value

INFOID:0000000012422270

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
VHCL SPD SIG	Vehicle speed = 0 km/h (0 MPH).	Off
	Vehicle speed > 0 km/h (0 MPH).	On
ILLUM SIG	Illumination signal is not received.	Off
	Illumination signal is received.	On
IGN SIG	Ignition switch OFF.	Off
	Ignition switch ON.	On
REV SIG	Selector lever in any position other than R.	Off
	Selector lever in R position.	On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description	Input/Output	Condition		Reference value (Approx.)
+	-			Ignition switch	Operation	
1 (BR)	Ground	BOSE amp. ON signal	Output	ON	—	Battery voltage
2 (R)	3 (G)	Pre-amp sound signal front LH	Output	ON	Sound output	
4 (V)	5 (LG)	Pre-amp sound signal rear LH	Output	ON	Sound output	
7 (W)	Ground	ACC power supply	Input	ON	—	Battery voltage

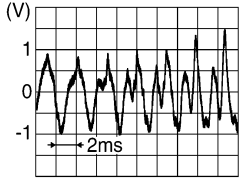
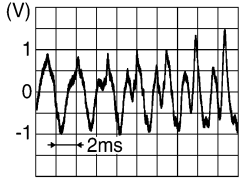
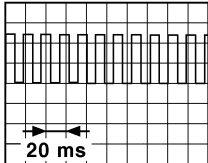
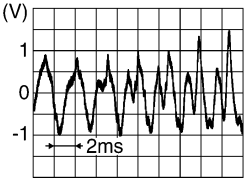
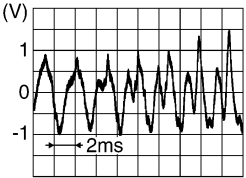
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AV

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

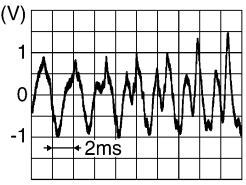
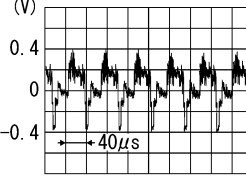
[MULTI AV (NAVI WITH BOSE)]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
8 (L)	—	CAN high	Input/ Output	—	—	—
9 (V)	Ground	Illumination control signal	Input	ON	Headlamps ON	Battery voltage
10 (B)	—	Pre-amp sound signal shield	—	—	—	—
11 (R)	12 (W)	Pre-amp sound signal front RH	Output	ON	Sound output	 SKIB3609E
13 (L)	14 (Y)	Pre-amp sound signal rear RH	Output	ON	Sound output	 SKIB3609E
17 (R)	—	CAN low	Input/ Output	—	—	—
18 (G)	Ground	Vehicle speed signal	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 JSNIA0012GB
19 (L)	Ground	Battery power supply	Input	OFF	—	Battery voltage
20 (B)	Ground	Ground	—	ON	—	0 V
21 (G)	Ground	AUX jack audio signal RH	Input	ON	Received audio signal (AUX input)	 SKIB3609E
22 (Y)	Ground	AUX ground	—	ON	—	0V
23 (L)	Ground	AUX jack audio signal LH	Input	ON	Received audio signal (AUX input)	 SKIB3609E

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
25 (BR)	Ground	Reverse signal	Input	ON	Selector lever in R (reverse)	Battery voltage
					Selector lever in any position other than R (reverse)	0 V
30 (BG)	—	MR output	Output	—	—	—
31 (SB)	—	AV communication high	Input/ Output	—	—	—
32 (LG)	—	AV communication low	Input/ Output	—	—	—
34 (W)	36 (Shield)	Microphone signal	Input	ON	While speaking into microphone.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
35 (B)	—	MIC VCC (without telematics system)	Input	ON	—	—
37 (Shield)	—	AUX signal shield	—	—	—	—
38 (SB)	—	AV communication high	Input/ Output	—	—	—
39 (LG)	—	AV communication low	Input/ Output	—	—	—
40 (LG)	Ground	Ignition power supply	Input	ON	—	Battery voltage
41 (G)	Ground	Camera image signal	Input	ON	When camera image is displayed	 <p style="text-align: right; font-size: small;">SKIB2251J</p>
42 (Shield)	—	Camera image signal shield	—	—	—	—
45 (R)	—	V BUS signal	—	—	—	—
46 (W)	—	USB D- signal	—	—	—	—
47 (G)	—	USB + signal	—	—	—	—
49 (B)	—	USB ground	—	—	—	—
50 (Shield)	—	USB shield	—	—	—	—
51 (B)	Ground	Antenna amp. ON signal	Output	ON	AV control unit ON, FM-AM selected.	Battery voltage

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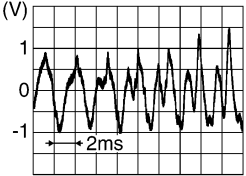
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AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
52 (B)	Ground	AM-FM main antenna	Input	ON	AV control unit ON, FM-AM selected.	5.0 V
53 (Shield)	—	Antenna amp. shield	—	—	—	—
56 (B)	Ground	Satellite antenna signal	Input	ON	AV control unit ON, SXM selected.	5.0 V
57 (Shield)	—	Satellite antenna shield	—	—	—	—
58 (B)	Ground	GPS antenna signal	Input	ON	AV control unit ON, NAV selected.	5.0 V
59 (Shield)	—	GPS antenna shield	—	—	—	—
60 (R)	64 (L)	Microphone signal	Input	ON	While speaking into the microphone	 <small>SKIB3609E</small>
61 (Shield)	—	Microphone shield	—	—	—	—
68 (B)	—	V BUS signal	—	—	—	—
70 (G)	—	USB D- signal	—	—	—	—
71 (W)	—	USB + signal	—	—	—	—
72 (R)	—	USB ground	—	—	—	—
73 (Shield)	—	USB shield	—	—	—	—

DTC Index

INFOID:0000000012422271

CONSULT Display	Reference Page
U1000: CAN COMM CIRCUIT	AV-311, "AV CONTROL UNIT : DTC Logic"
U1010: CONTROL UNIT (CAN)	AV-312, "AV CONTROL UNIT : DTC Logic"
U1217: BLUETOOTH MODULE	AV-321, "DTC Logic"
U1229: iPod CERTIFICATION	AV-322, "DTC Logic"
U122F: Digital broadcasting connection error	AV-323, "DTC Logic"
U1244: GPS ANTENNA CONN	AV-325, "DTC Logic"
U1258: SXM ANTENNA CONN	AV-326, "DTC Logic"
U1263: USB OVERCURRENT	AV-327, "DTC Logic"
U12AA: Configuration Error	AV-329, "DTC Logic"
U12AB: FM Antenna error	AV-330, "DTC Logic"
U12AC: Display Temperature too High	AV-331, "DTC Logic"
U12AD: ECU Temperature too High	AV-332, "DTC Logic"

AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

CONSULT Display	Reference Page
U12AE: Internal Amplifier temperature Warning	AV-333. "DTC Logic"
U12AF: CD Mechanism Temperature Warning	AV-334. "DTC Logic"
U12B0: Supply Voltage Goes below 9V > 20s	AV-335. "DTC Logic"
U12B1: Supply Voltage Goes High > 16V for 20s	AV-336. "DTC Logic"
U1300: AV COMM CIRCUIT	AV-337. "DTC Logic"
U1310: CONTROL UNIT(AV)	AV-341. "DTC Logic"

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BOSE SPEAKER AMP

< ECU DIAGNOSIS INFORMATION >

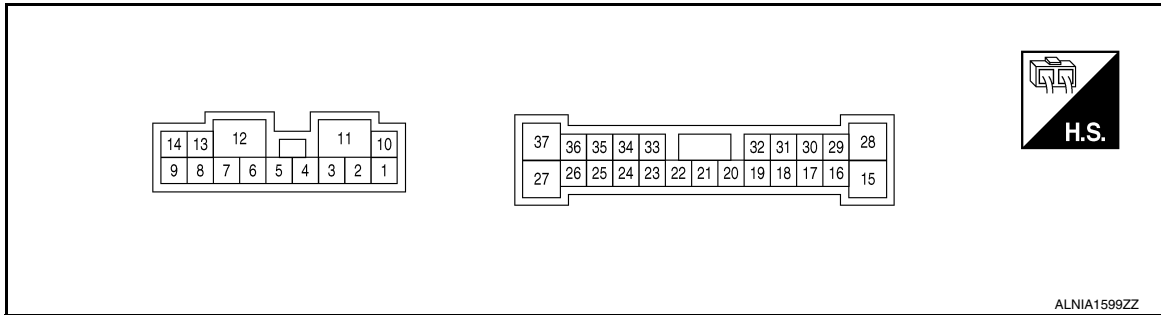
[MULTI AV (NAVI WITH BOSE)]

BOSE SPEAKER AMP

Reference Value

INFOID:00000001242272

TERMINAL LAYOUT



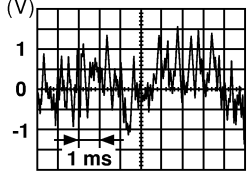
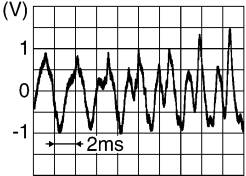
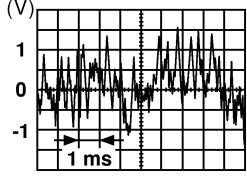
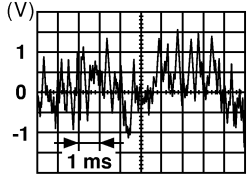
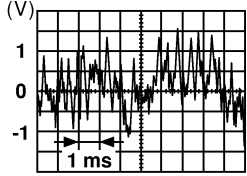
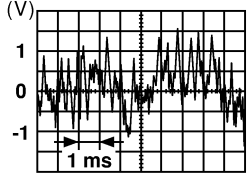
PHYSICAL VALUES

Terminal (wire color)		Description	Input/Output	Condition		Reference value (Approx.)
+	-			Ignition switch	Operation	
1 (L)	10 (R)	Rear door speaker signal LH	Output	ON	Sound output	<p>SKIA0177E</p>
2 (LG)	3 (V)	Rear door speaker signal RH	Output	ON	Sound output	<p>SKIA0177E</p>
4 (BR)	5 (P)	Front door speaker signal LH	Output	ON	Sound output	<p>SKIA0177E</p>
6 (W)	7 (GR)	Front tweeter signal LH	Output	ON	Sound output	<p>SKIA0177E</p>

BOSE SPEAKER AMP

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

Terminal (wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
8 (G)	13 (R)	Front door speaker signal RH	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIA0177E</p>
9 (Y)	14 (BR)	Sound signal subwoofer	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
11 (W)	Ground	Battery power supply	Input	-	-	Battery voltage
12 (B)	Ground	Ground	-	ON	-	0V
15 (V)	28 (BG)	Center speaker signal	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIA0177E</p>
18 (R)	32 (G)	Sound signal front LH	Input	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIA0177E</p>
19 (Y)	20 (L)	Sound signal front RH	Input	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIA0177E</p>
21 (V)	22 (LG)	Sound signal rear LH	Input	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIA0177E</p>

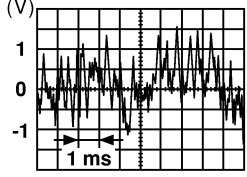
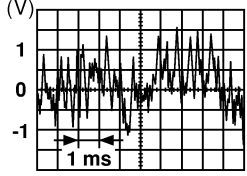
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BOSE SPEAKER AMP

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

Terminal (wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output	Ignition switch	Operation	
23 (W)	33 (R)	Sound signal rear RH	Input	ON	Sound output	 <small>SKIA0177E</small>
25 (G)	Ground	Subwoofer ON signal	Output	ON	-	Greater than 6.5V
31 (BR)	Ground	Amp. ON signal	Input	ON	-	Greater than 6.5V
37 (G)	27 (R)	Front tweeter signal RH	Output	ON	Sound output	 <small>SKIA0177E</small>

AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

AROUND VIEW MONITOR CONTROL UNIT

Reference Value

INFOID:000000012739542

VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

Monitor Item	Condition		Value/Status
ST ANGLE SENSOR SIGNAL [On/Off]	Ignition switch ON	When steering angle sensor signal is inputted	On
		Other than the above	Off
REVERSE SIGNAL [On/Off]	Ignition switch ON	R position	On
		Other than R position	Off
VEHICLE SPEED SIGNAL [On/Off]	Ignition switch ON	When vehicle speed is inputted	On
		Other than the above	Off
CAMERA SWITCH SIGNAL [On/Off]	Ignition switch ON	When camera switch signal is inputted	On
		Other than the above	Off
CAMERA OFF SIGNAL [On/Off]	Ignition switch ON	When camera OFF signal is inputted	On
		Other than the above	Off
ST ANGLE SENSOR TYPE [Absolute]	Ignition switch ON	—	Absolute
STEERING GEAR RATIO TYPE [TYPE1]	Ignition switch ON	—	TYPE1
STEERING POSITION [LHD]	Ignition switch ON	LHD models	LHD
REAR CAMERA IMAGE SIGNAL [OK/NG]	Ignition switch ON	When rear camera image signal input status is normal	OK
		When rear view camera image signal input status is not normal	NG
F-CAMERA IMAGE SIGNAL [OK/NG]	Ignition switch ON	When front camera image signal input status is normal	OK
		When front camera image signal input status is not normal	NG
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Ignition switch ON	When side camera LH image signal input status is normal	OK
		When side camera LH image signal input status is not normal	NG
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Ignition switch ON	When side camera RH image signal input status is normal	OK
		When side camera RH image signal input status is not normal	NG
ILL [ON/OFF]	Illumination ON		On
	Illumination OFF		Off

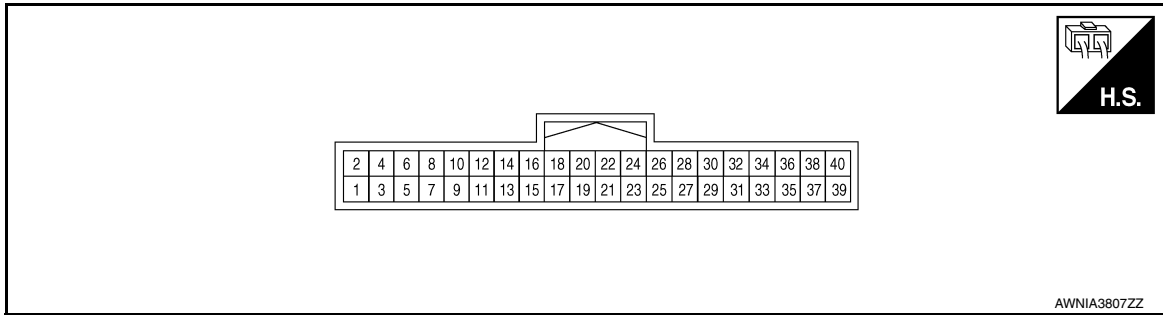
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AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

TERMINAL LAYOUT



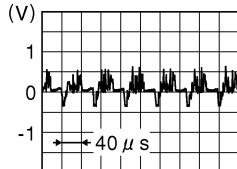
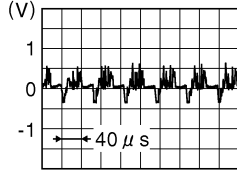
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
3 (Shield)	—	Video output shield	—	—	—
4 (G)	Ground	Video output signal	Output	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 JSNIA0834GB
5 (V)	—	Front camera ground	—	[Ignition switch ON]	0 V
6 (L)	5 (V)	Front camera power supply	Output	[Ignition switch ON]	6.0 V
7 (Shield)	—	Front camera video ground	—	[Ignition switch ON]	0 V
8 (LG)	7 (Shield)	Front camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 JSNIA0834GB
9 (L)	—	Door mirror RH camera ground	—	[Ignition switch ON]	0 V
10 (B)	9 (L)	Door mirror RH camera power supply	Output	[Ignition switch ON]	6.0 V
11 (Shield)	—	Door mirror RH camera video ground	—	[Ignition switch ON]	0 V
12 (Y)	11 (Shield)	Door mirror RH camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 JSNIA0834GB

AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
13 (Y)	—	Door mirror LH camera ground	—	[Ignition switch ON]	0 V
14 (L)	13 (Y)	Door mirror LH camera power supply	Output	[Ignition switch ON]	6.0 V
15 (Shield)	—	Door mirror LH camera video ground	—	[Ignition switch ON]	0 V
16 (G)	15 (Shield)	Door mirror LH camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>
17 (B)	—	Rear view camera ground	—	[Ignition switch ON]	0 V
18 (R)	17 (B)	Rear view camera power supply	Output	[Ignition switch ON]	6.0 V
19 (Shield)	—	Rear view camera video ground	—	[Ignition switch ON]	0 V
20 (W)	19 (Shield)	Rear view camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>
24 (Y)	—	ITS CAN low (with driver assistance system)	Input/ Output	—	—
24 (R)	—	CAN low (without driver assistance system)	Input/ Output	—	—
26 (L)	—	ITS CAN high (with driver assistance system)	Input/ Output	—	—
26 (L)	—	CAN high (without driver assistance system)	Input/ Output	—	—
39 (B)	—	Ground	—	[Ignition switch ON]	0 V
40 (BG)	39 (B)	Ignition signal	Input	[Ignition switch ON or START]	12.0 V

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AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

Fail-Safe

INFOID:000000012739543

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U0428: ST ANGLE SENSOR CALIBRATION	Neutral position adjustment of steering angle sensor is not complete.	<ul style="list-style-type: none"> • Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • Front tire angle display is stopped. • Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.
U1000: CAN COMM CIRCUIT	When around view monitor control unit cannot transmit/receive CAN communication signal continuously for 2 seconds or more.	<p>The following functions are stopped</p> <ul style="list-style-type: none"> • When communication of steering angle sensor signal is not normal: <ul style="list-style-type: none"> - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - Front tire angle display is stopped. - Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed. • When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal: <ul style="list-style-type: none"> - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.
U111A: REAR CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	Camera image is not displayed (gray screen display).
U111B: SIDE CAMERA RH IMAGE SIGNAL	No-signal status of side camera RH image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	
U111C: FRONT CAMERA IMAGE SIGNAL	No-signal status of front camera image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	
U111D: SIDE CAMERA LH IMAGE SIGNAL	No-signal status of side camera LH image signal is continued for 500 ms or more while ignition switch is ON. NOTE: Current malfunction is displayed only and is not saved.	

AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U1232: ST ANGLE SEN CALIB	Neutral position adjustment of steering angle sensor is performed. NG signal from steering angle sensor is received.	<ul style="list-style-type: none"> • Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • Tire icon is stopped. • Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.
U1302: CAMERA POWER VOLT	Camera power supply voltage does not satisfy the following conditions for 2 seconds or more when ignition switch is turned ON: <ul style="list-style-type: none"> • When supplemental lighting power supply output is ON: 5.9 – 6.5 V. • When OFF: 0 V by camera power supply measurement. 	Camera power output is stopped.
U1304: CAMERA IMAGE CALIB	<ul style="list-style-type: none"> • When camera calibration is incomplete. • When camera information in around view monitor control unit and information read from camera are not the same. NOTE: Current malfunction is displayed only and is not saved.	Unmatched icon display (red) is displayed (applicable for unmatched camera only).
U1305: CONFIG UNFINISH	The vehicle setting of around view monitor control unit is incomplete. NOTE: Current malfunction is displayed only and is not saved.	Operation is according to the vehicle setting value as default value.
Other	When around view monitor control unit is not normal.	Switch to camera screen is not allowed.
	When communication between around view monitor control unit and each camera is not normal.	On applicable camera screen, marking (Red) is displayed.
	When communication line between around view monitor control unit and each camera image line is affected by electromagnetic noises.	On applicable camera image screen, display (Blue) is displayed.

DTC Inspection Priority Chart

INFOID:000000012739544

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart:

Priority	Detected items (DTC)
1	U1305: CONFIG UNFINISH
2	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> • U0428: ST ANGLE SENSOR CALIBRATION • U111A: REAR CAMERA IMAGE SIGNAL • U111B: SIDE CAMERA RH IMAGE SIGNAL • U111C: FRONT CAMERA IMAGE SIGNAL • U111D: SIDE CAMERA LH IMAGE SIGNAL • U1232: ST ANGLE SEN CALIB • U1304: CAMERA IMAGE CALIB

AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV (NAVI WITH BOSE)]

DTC Index

INFOID:000000012739545

DTC	CONSULT display	Refer to
U0428	ST ANGLE SENSOR CALIBRATION	AV-310, "DTC Logic"
U1000	CAN COMM CIRCUIT	AV-311, "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"
U1010	CONTROL UNIT (CAN)	AV-312, "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"
U111A	REAR CAMERA IMAGE SIGNAL	AV-313, "DTC Logic"
U111B	SIDE CAMERA RH IMAGE SIGNAL	AV-315, "DTC Logic"
U111C	FRONT CAMERA IMAGE SIGNAL	AV-317, "DTC Logic"
U111D	SIDE CAMERA LH IMAGE SIGNAL	AV-319, "DTC Logic"
U1232	ST ANGLE SEN CALIB	AV-324, "DTC Logic"
U1304	CAMERA IMAGE CALIB	AV-339, "DTC Logic"
U1305	CONFIG UNFINISH	AV-340, "DTC Logic"

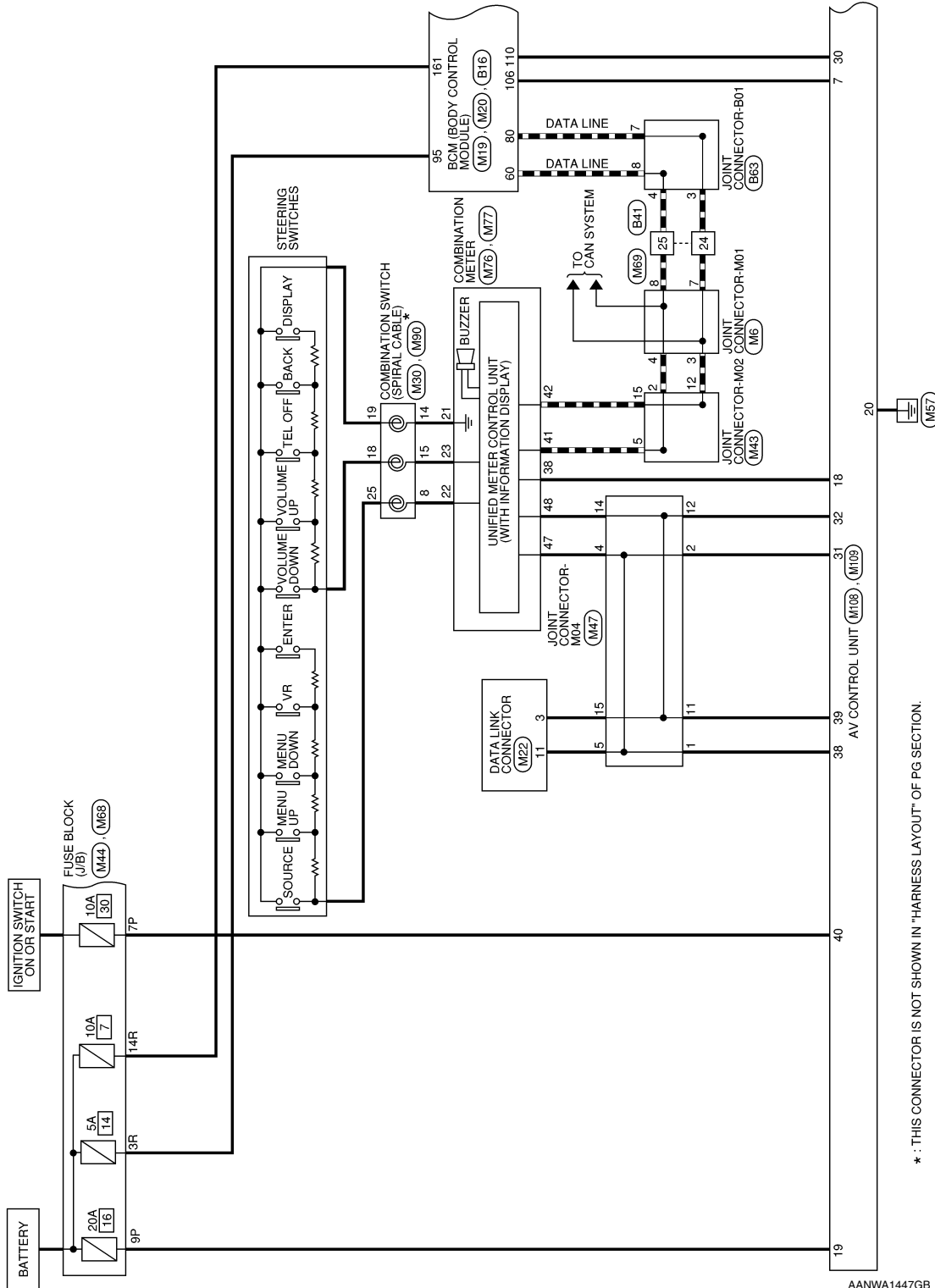
WIRING DIAGRAM

NAVIGATION WITH BOSE

Wiring Diagram

INFOID:0000000012422277

MULTI AV (NAVIGATION WITH BOSE AUDIO SYSTEM)



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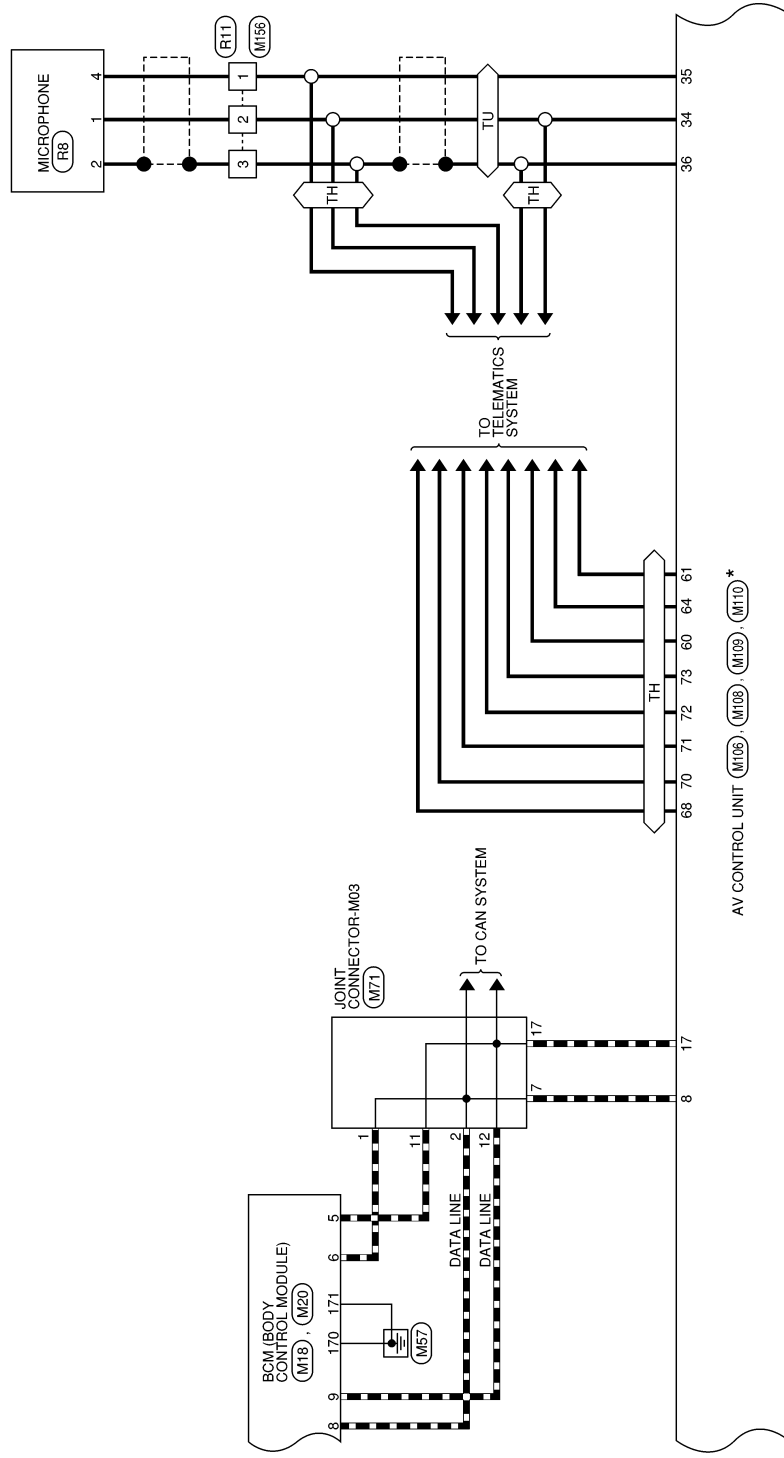
AV

NAVIGATION WITH BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

TH : WITH TELEMATICS SYSTEM
TU : WITHOUT TELEMATICS SYSTEM



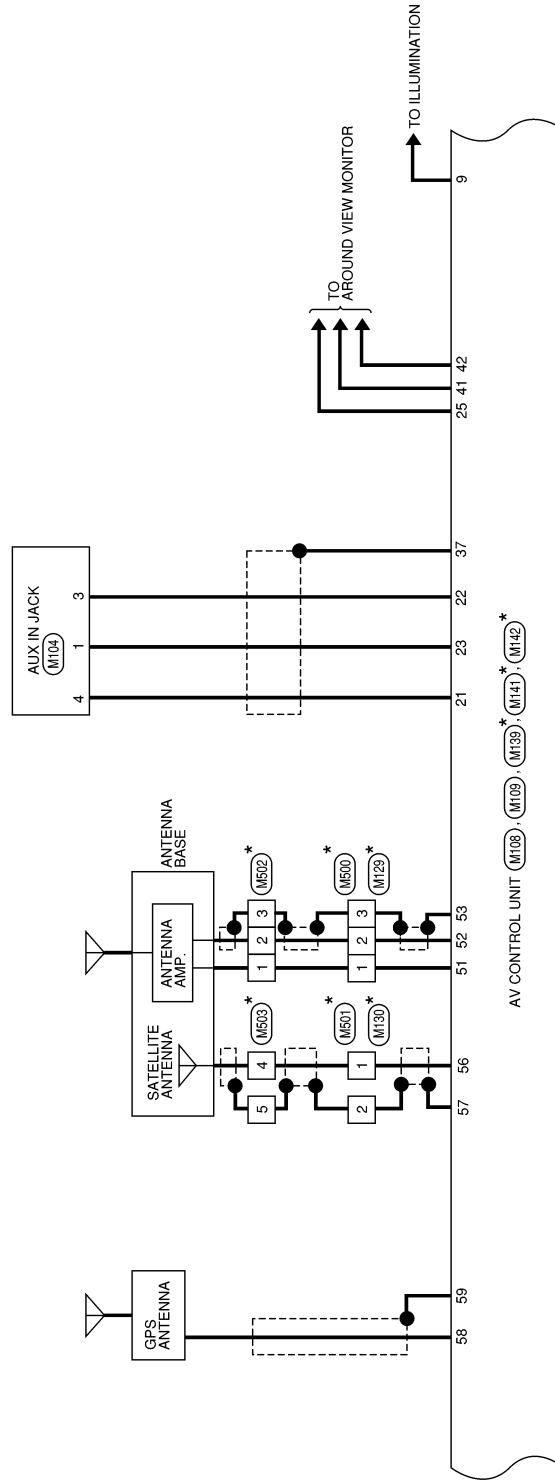
* : THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT" OF PG SECTION.

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NAVIGATION WITH BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]



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

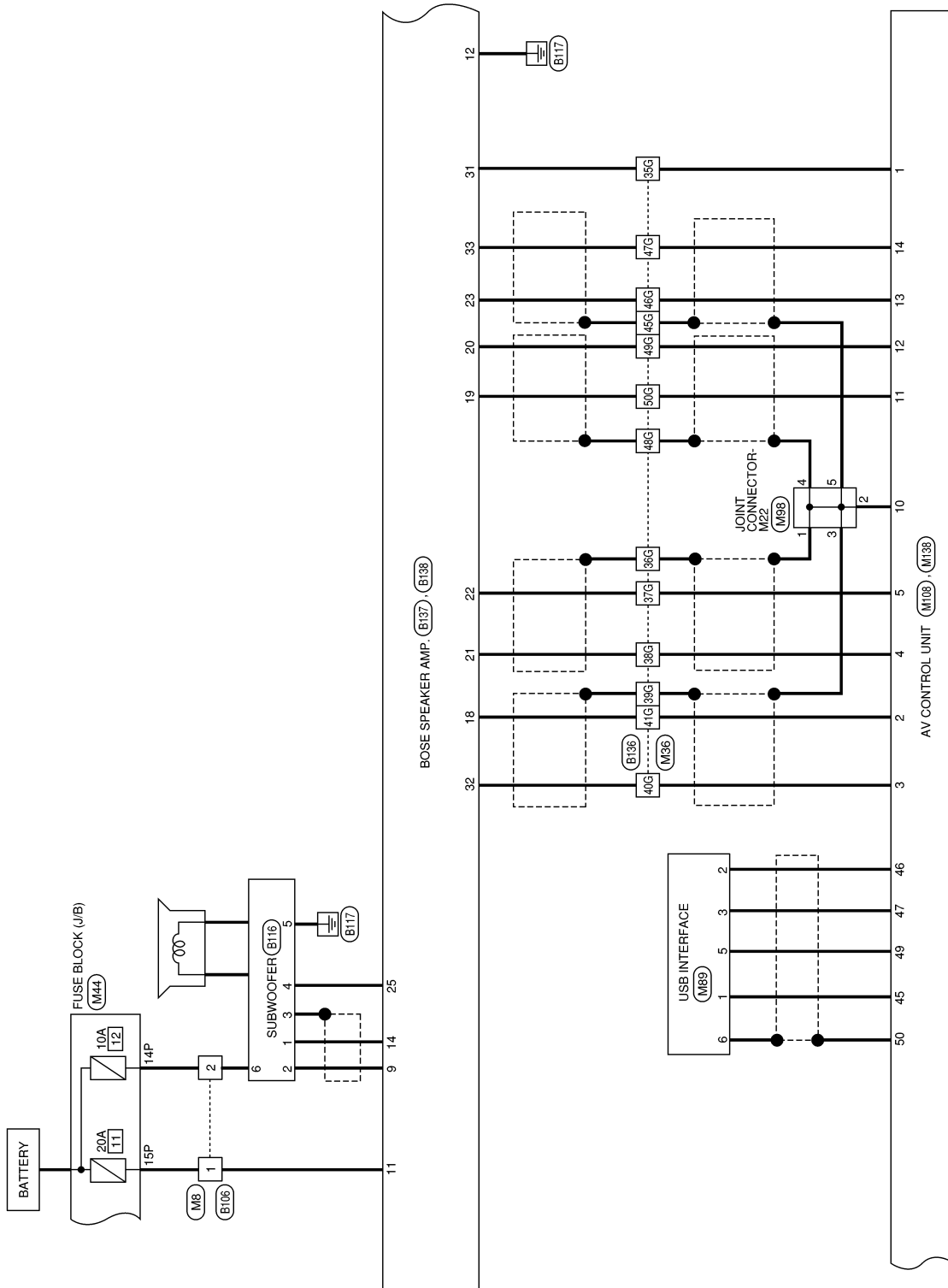
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NAVIGATION WITH BOSE

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[MULTI AV (NAVI WITH BOSE)]

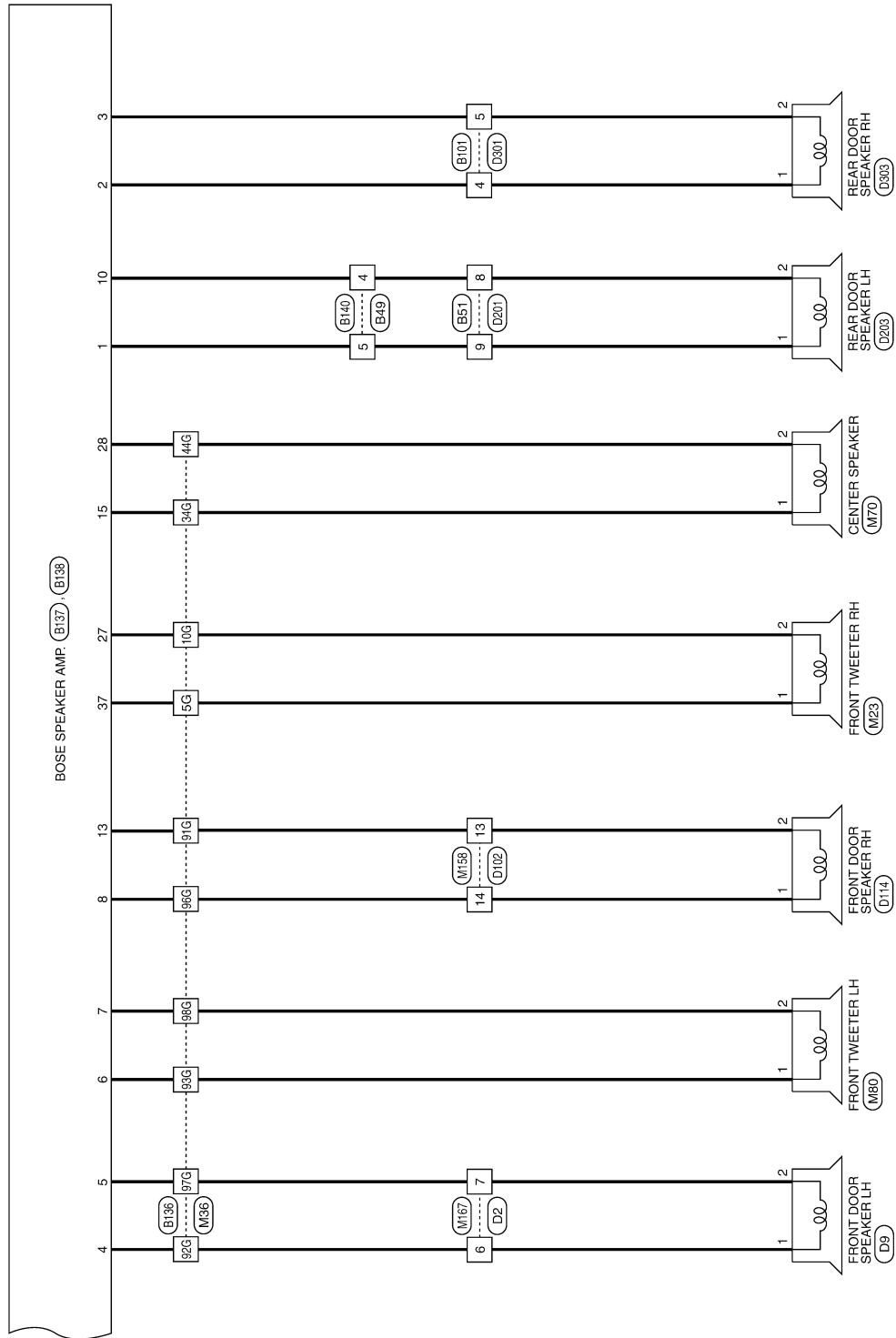


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NAVIGATION WITH BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

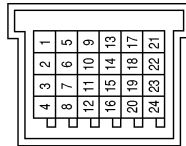


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MULTI AV (NAVIGATION WITH BOSE AUDIO SYSTEM) CONNECTORS

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



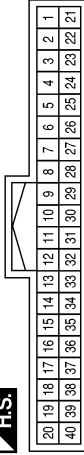
Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	M8
Connector Name	WIRE TO WIRE
Connector Color	WHITE



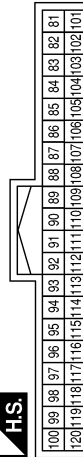
Terminal No.	Color of Wire	Signal Name
1	L	-
2	SB	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
5	R	CAN-L
6	L	CAN-H
8	L	CAN-H
9	R	CAN-L

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
95	V	I SHORTING PIN
106	W	O AUTO ACC2
110	BG	O MR OUTPUT

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BROWN



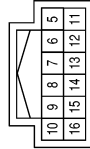
Terminal No.	Color of Wire	Signal Name
161	W	I PWR ECU
170	B	I GND 1
171	B	I GND 2

NAVIGATION WITH BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	WHITE



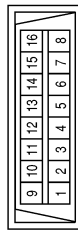
Terminal No.	Color of Wire	Signal Name
8	Y	-
14	L	-
15	GR	-

Connector No.	M23
Connector Name	FRONT TWEETER RH
Connector Color	WHITE



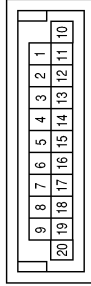
Terminal No.	Color of Wire	Signal Name
1	G	-
2	R	-

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	LG	-
11	SB	-

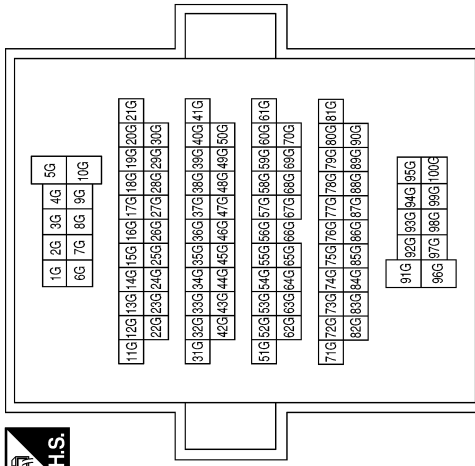
Connector No.	M43
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
2	L	-
5	L	-
12	P	-
15	P	-

Terminal No.	Color of Wire	Signal Name
34G	V	-
35G	BR	-
36G	SHIELD	-
37G	LG	-
38G	V	-
39G	SHIELD	-
40G	G	-
41G	R	-
44G	BG	-
45G	SHIELD	-
46G	L	-
47G	Y	-
48G	SHIELD	-
49G	W	-
50G	R	-
91G	R	-
92G	LA/L	-
93G	W	-
96G	SB	-
97G	LA/BR	-
98G	GR	-

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5G	G	-
10G	R	-

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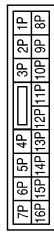
AV

NAVIGATION WITH BOSE

< WIRING DIAGRAM >

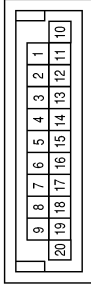
[MULTI AV (NAVI WITH BOSE)]

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7P	Y	-
9P	L	-
14P	SB	-
15P	L	-

Connector No.	M47
Connector Name	JOINT CONNECTOR-M04
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	SB	-

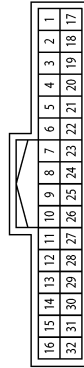
Terminal No.	Color of Wire	Signal Name
4	SB	-
5	SB	-
11	LG	-
12	LG	-
14	LG	-
15	LG	-

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
3R	V	-
14R	W	-

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



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

Connector No.	M70
Connector Name	CENTER SPEAKER
Connector Color	BROWN



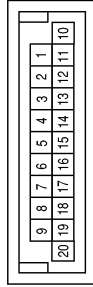
Terminal No.	Color of Wire	Signal Name
1	V	-
2	BG	-

NAVIGATION WITH BOSE

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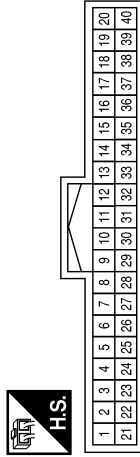
[MULTI AV (NAVI WITH BOSE)]

Connector No.	M71
Connector Name	JOINT CONNECTOR-M03
Connector Color	BLUE



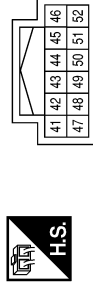
Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
7	L	-
8	L	-
10	R	-
11	R	-
12	R	-
17	R	-

Connector No.	M76
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
21	L	STRG SW GND
22	Y	STRG SW A
23	GR	STRG SW B
38	G	8P/R OUTPUT

Connector No.	M77
Connector Name	COMBINATION METER
Connector Color	WHITE



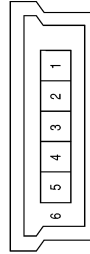
Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
47	SB	M-CAN H
48	LG	M-CAN L

Connector No.	M80
Connector Name	FRONT TWEETER LH
Connector Color	WHITE



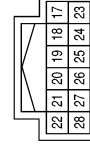
Terminal No.	Color of Wire	Signal Name
1	W	-
2	GR	-

Connector No.	M89
Connector Name	USB INTERFACE
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	R	-
2	W	-
3	G	-
5	B	-
6	SHIELD	-

Connector No.	M90
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
18	L	-
19	G	-
25	P	-

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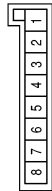
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NAVIGATION WITH BOSE

< WIRING DIAGRAM >

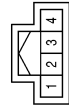
[MULTI AV (NAVI WITH BOSE)]

Connector No.	M98
Connector Name	JOINT CONNECTOR-M22
Connector Color	WHITE



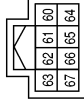
Terminal No.	Color of Wire	Signal Name
1	SHIELD	-
2	B	-
3	SHIELD	-
4	SHIELD	-
5	SHIELD	-

Connector No.	M104
Connector Name	AUX IN JACK
Connector Color	WHITE



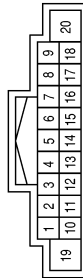
Terminal No.	Color of Wire	Signal Name
1	L	-
3	Y	-
4	G	-

Connector No.	M106
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
60	R	TCU IN+
61	SHIELD	DCM SHIELD
62	-	-
63	-	-
64	L	TCU IN-
65	-	-
66	-	-
67	-	-

Connector No.	M108
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	BR	AMP ON
2	R	FR SP LH (+)
3	G	FR SP LH (-)
4	V	RR SP LH (+)
5	LG	RR SP LH (-)
6	-	-

Terminal No.	Color of Wire	Signal Name
7	W	ACC
8	L	CAN-H
9	V	ILL (+), LIGHT SW
10	B	PRE AMP SHIELD
11	R	FR SP RH (+)
12	W	FR SP RH (-)
13	L	RR SP RH (+)
14	Y	RR SP RH (-)
15	-	-
16	-	-
17	R	CAN-L
18	G	SPEED SIGNAL
19	L	BAT
20	B	GND

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NAVIGATION WITH BOSE

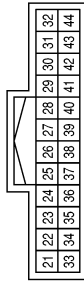
< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

Terminal No.	Color of Wire	Signal Name
36	SHIELD	MIC GND
37	SHIELD	SUB OUT/AUX SHIELD
38	SB	MCAN +
39	LG	MCAN -
40	LG	IGNITION
41	G	CAMERA+
42	SHIELD	CAMERA- (SHIELD)
43	-	-
44	-	-

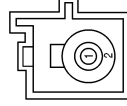
Terminal No.	Color of Wire	Signal Name
25	BR	REVERSE
26	-	-
27	-	-
28	-	-
29	-	-
30	BG	MR OUTPUT
31	SB	M-CAN TERMINATION
32	LG	M-CAN TERMINATION
33	-	-
34	W	MIC SIGNAL
35	B	MIC VCC (WITHOUT TELEMATICS SYSTEM)

Connector No.	M109
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



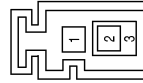
Terminal No.	Color of Wire	Signal Name
21	G	AUX R
22	Y	AUX GND
23	L	AUX L
24	-	-

Connector No.	M130
Connector Name	WIRE TO WIRE
Connector Color	BROWN



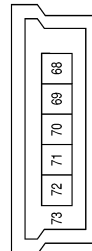
Terminal No.	Color of Wire	Signal Name
1	B	-
2	SHIELD	-

Connector No.	M129
Connector Name	WIRE TO WIRE
Connector Color	GRAY



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

Connector No.	M110
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
68	B	VBUS
69	-	-
70	G	D-
71	W	D+
72	R	GND
73	SHIELD	SHIELD

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AV

NAVIGATION WITH BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

Connector No.	M141
Connector Name	AV CONTROL UNIT
Connector Color	BLUE



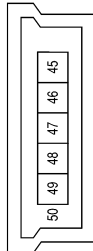
Terminal No.	Color of Wire	Signal Name
58	B	GPS ANT
59	SHIELD	GPS SHIELD

Connector No.	M139
Connector Name	AV CONTROL UNIT
Connector Color	GRAY



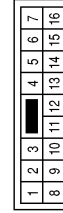
Terminal No.	Color of Wire	Signal Name
51	B	ANT +B
52	B	ANT MAIN
53	SHIELD	MAIN GND
54	-	-
55	-	-

Connector No.	M138
Connector Name	AV CONTROL UNIT
Connector Color	BLACK



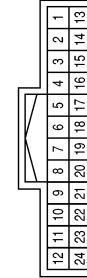
Terminal No.	Color of Wire	Signal Name
45	R	V BUS
46	W	USB D-
47	G	USB D+
48	-	-
49	B	USB GND
50	SHIELD	USB SHIELD

Connector No.	M158
Connector Name	WIRE TO WIRE
Connector Color	WHITE



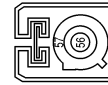
Terminal No.	Color of Wire	Signal Name
13	R	- (WITH BOSE AUDIO SYSTEM)
14	SB	- (WITH BOSE AUDIO SYSTEM)

Connector No.	M156
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Connector No.	M142
Connector Name	AV CONTROL UNIT
Connector Color	PINK



Terminal No.	Color of Wire	Signal Name
56	B	SAT ANT
57	SHIELD	SAT SHIELD

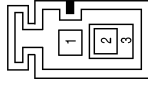
AANIA4191GB

NAVIGATION WITH BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

Connector No.	M500
Connector Name	WIRE TO WIRE
Connector Color	GRAY



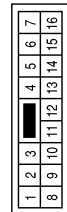
Terminal No.	Color of Wire	Signal Name
1	B	-
2	B	-
3	SHIELD	-

Connector No.	M193
Connector Name	JOINT CONNECTOR-M18
Connector Color	WHITE



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

Connector No.	M167
Connector Name	WIRE TO WIRE
Connector Color	WHITE



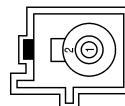
Terminal No.	Color of Wire	Signal Name
6	LA/L	-(WITH BOSE AUDIO SYSTEM)
7	LA/BR	-(WITH BOSE AUDIO SYSTEM)

Connector No.	M502
Connector Name	ANTENNA BASE (ANTENNA AMP)
Connector Color	GRAY



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

Connector No.	M501
Connector Name	WIRE TO WIRE
Connector Color	BROWN



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

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NAVIGATION WITH BOSE

< WIRING DIAGRAM >

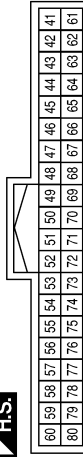
[MULTI AV (NAVI WITH BOSE)]

Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Color	WHITE



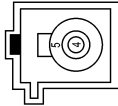
Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



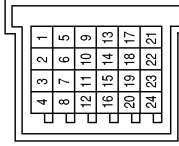
Terminal No.	Color of Wire	Signal Name
60	L	CAN-H
80	P	CAN-L

Connector No.	M503
Connector Name	ANTENNA BASE (SATELLITE RADIO ANTENNA)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
4	B	-
5	SHIELD	-

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	B51
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8	LA/G	- (WITH BOSE AUDIO SYSTEM)
9	LA/P	- (WITH BOSE AUDIO SYSTEM)

Connector No.	B49
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	LA/G	-
5	LA/P	-

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NAVIGATION WITH BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

Connector No.	B116
Connector Name	SUBWOOFER
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	BR	-
2	Y	-
3	SHIELD	-
4	G	-
5	B	-
6	SB	-

Connector No.	B106
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE

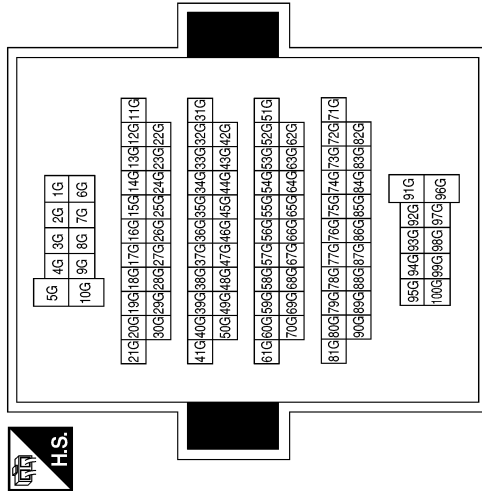


Terminal No.	Color of Wire	Signal Name
4	LG	-(WITH BOSE AUDIO SYSTEM)
5	V	-(WITH BOSE AUDIO SYSTEM)

Terminal No.	Color of Wire	Signal Name
46G	W	-
47G	R	-
48G	SHIELD	-
49G	L	-
50G	Y	-
91G	R	-
92G	BR	-
93G	W	-
96G	G	-
97G	P	-
98G	GR	-

Terminal No.	Color of Wire	Signal Name
5G	G	-
10G	R	-
34G	V	-
35G	BR	-
36G	SHIELD	-
37G	LG	-
38G	V	-
39G	SHIELD	-
40G	G	-
41G	R	-
44G	BG	-
45G	SHIELD	-

Connector No.	B136
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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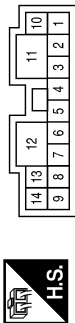
AV

NAVIGATION WITH BOSE

< WIRING DIAGRAM >

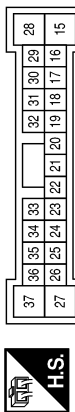
[MULTI AV (NAVI WITH BOSE)]

Connector No.	B137
Connector Name	BOSE SPEAKER AMP.
Connector Color	BROWN



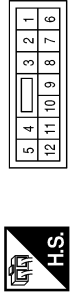
Terminal No.	Color of Wire	Signal Name
1	L	OUTPUT 7+ (REAR LEFT DOOR SP+)
2	LG	OUTPUT 8+ (REAR RIGHT DOOR SP+)
3	V	OUTPUT 8- (REAR RIGHT DOOR SP-)
4	BR	OUTPUT 5+ (FRONT LEFT DOOR SP+)
5	P	OUTPUT 5- (FRONT LEFT DOOR SP-)
6	W	OUTPUT 1+ (IP LEFT, 1" TWEETER+)
7	GR	OUTPUT 1- (IP LEFT, 1" TWEETER-)
8	G	OUTPUT 6+ (FRONT RIGHT DOOR SP+)
9	Y	OUTPUT 4+ (STBB SIGNAL+)
10	R	OUTPUT 7- (REAR LEFT DOOR SP-)
11	W	B+
12	B	GND
13	R	OUTPUT 6- (FRONT RIGHT DOOR SP-)
14	BR	OUTPUT 4- (STBB SIGNAL-)

Connector No.	B138
Connector Name	BOSE SPEAKER AMP.
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
15	V	OUTPUT 3+ (IP CENT, 80MM TIVID+)
16	-	-
17	-	-
18	R	INPUT 1+ (FRONT LEFT IN+)
19	Y	INPUT 2+ (FRONT RIGHT IN+)
20	L	INPUT 2- (FRONT RIGHT IN-)
21	V	INPUT 3+ (REAR LEFT IN+)
22	LG	INPUT 3- (REAR LEFT IN-)
23	W	INPUT 4+ (REAR RIGHT IN+)
24	-	-
25	G	GPIO D (EXTERNAL AMP ENABLE)
26	-	-
27	R	OUTPUT 2- (IP RIGHT, 1" TWEETER-)
28	BG	OUTPUT 3- (IP CENT, 80MM TIVID-)
29	-	-
30	-	-
31	BR	SWB+
32	G	INPUT 1- (FRONT LEFT IN-)
33	R	INPUT 4- (REAR RIGHT IN-)
34	-	-
35	-	-
36	-	-
37	G	OUTPUT 2+ (IP RIGHT, 1" TWEETER+)

Connector No.	B140
Connector Name	WIRE TO WIRE
Connector Color	WHITE



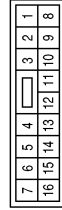
Terminal No.	Color of Wire	Signal Name
4	R	-
5	L	-

NAVIGATION WITH BOSE

< WIRING DIAGRAM >

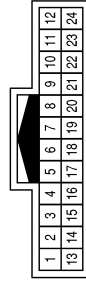
[MULTI AV (NAVI WITH BOSE)]

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	WHITE



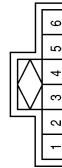
Terminal No.	Color of Wire	Signal Name
6	LA/L	-
7	LA/BR	-

Connector No.	R11
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	B	-
2	W	-
3	SHIELD	-
4	SB	-
6	LG	-

Connector No.	R8
Connector Name	MICROPHONE
Connector Color	WHITE



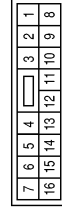
Terminal No.	Color of Wire	Signal Name
1	W	-
2	SHIELD	-
4	B	-

Connector No.	D114
Connector Name	FRONT DOOR SPEAKER RH (WITH BOSE AUDIO SYSTEM)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	LA/G	-
2	LA/R	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
13	LA/R	-
14	LA/G	-

Connector No.	D9
Connector Name	FRONT DOOR SPEAKER LH (WITH BOSE AUDIO SYSTEM)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	LA/L	-
2	LA/BR	-

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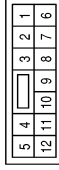
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NAVIGATION WITH BOSE

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

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



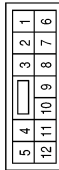
Terminal No.	Color of Wire	Signal Name
4	LA/V	-
5	LA/Y	-

Connector No.	D203
Connector Name	REAR DOOR SPEAKER LH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LA/L	-
2	LA/R	-

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



Terminal No.	Color of Wire	Signal Name
8	LA/R	-
9	LA/L	-

Connector No.	D303
Connector Name	REAR DOOR SPEAKER RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LA/V	-
2	LA/Y	-

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AROUND VIEW MONITOR SYSTEM

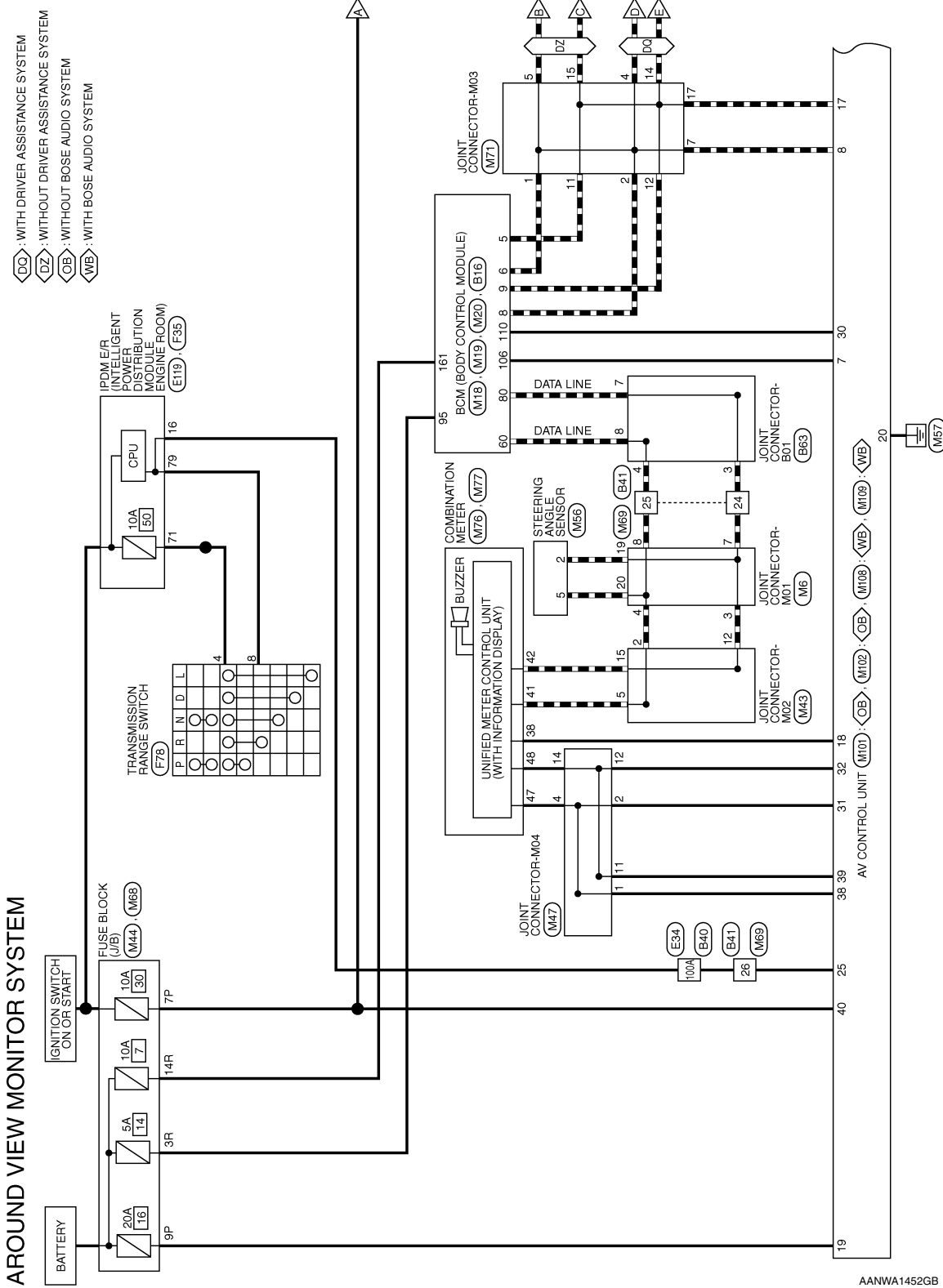
< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

AROUND VIEW MONITOR SYSTEM

Wiring Diagram

INFOID:000000012710162



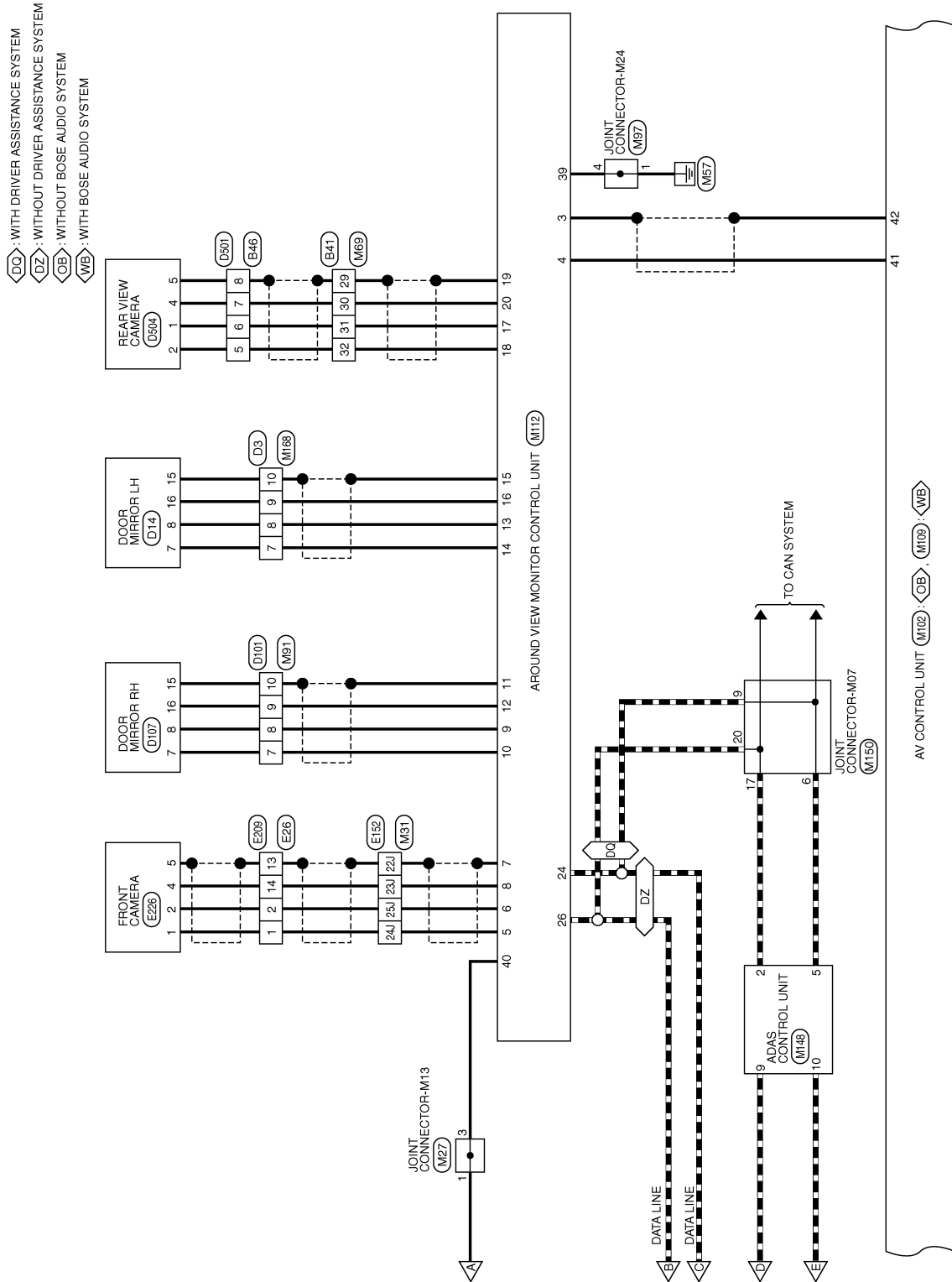
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AROUND VIEW MONITOR SYSTEM

[MULTI AV (NAVI WITH BOSE)]

< WIRING DIAGRAM >



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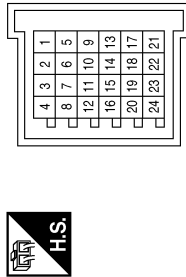
AROUND VIEW MONITOR SYSTEM

[MULTI AV (NAVI WITH BOSE)]

< WIRING DIAGRAM >

AROUND VIEW MONITOR SYSTEM CONNECTORS

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



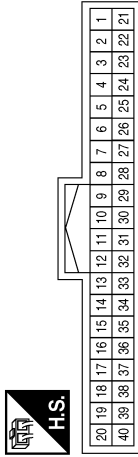
Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-
19	P	-
20	L	-

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BROWN



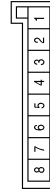
Terminal No.	Color of Wire	Signal Name
161	W	I PWR ECU

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GRAY



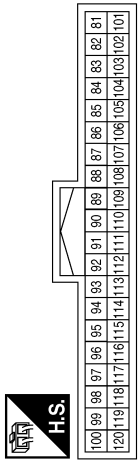
Terminal No.	Color of Wire	Signal Name
5	R	CAN-L
6	L	CAN-H
8	L	CAN-H
9	R	CAN-L

Connector No.	M27
Connector Name	JOINT CONNECTOR-M13
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	SB	-
3	SB	-

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
95	V	I SHORTING PIN
106	W	O AUTO ACC2
110	BG	O MR OUTPUT

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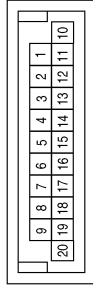


AROUND VIEW MONITOR SYSTEM

[MULTI AV (NAVI WITH BOSE)]

< WIRING DIAGRAM >

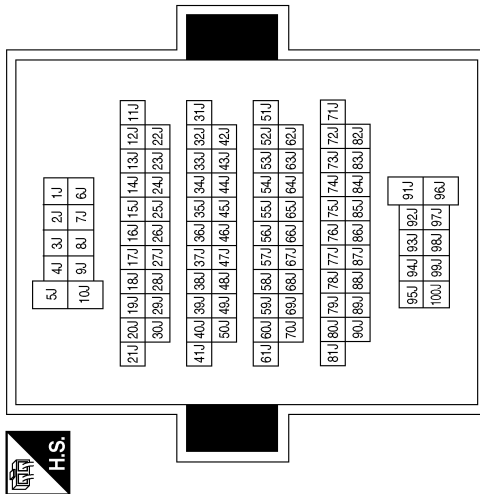
Connector No.	M43
Connector Name	JOINT CONNECTOR-M02
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
2	L	-
5	L	-
12	P	-
15	P	-

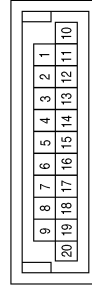
Terminal No.	Color of Wire	Signal Name
22J	SHIELD	-
23J	LG	-
24J	V	-
25J	L	-

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
11	LG	-
12	LG	-
14	LG	-

Connector No.	M47
Connector Name	JOINT CONNECTOR-M04
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	SB	-
2	SB	-
4	SB	-

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7P	Y	-
9P	L	-
14P	SB	-
15P	L	-

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AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

Connector No.	M56
Connector Name	STEERING ANGLE SENSOR
Connector Color	GRAY



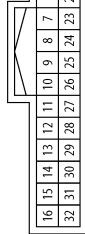
Terminal No.	Color of Wire	Signal Name
2	P	-
5	L	-

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



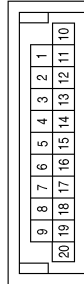
Terminal No.	Color of Wire	Signal Name
3R	V	-
14R	W	-

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



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-
26	BR	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

Connector No.	M71
Connector Name	JOINT CONNECTOR-M03
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
4	L	-
5	L	-
7	L	-
11	R	-
12	R	-
14	R	-
15	R	-
17	R	-

Connector No.	M76
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
38	G	8P/R OUTPUT

Connector No.	M77
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
47	SB	M-CAN H
48	LG	M-CAN L

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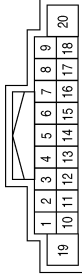
AV

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

Connector No.	M101
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



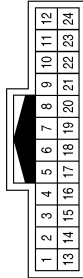
Terminal No.	Color of Wire	Signal Name
7	W	ACC
8	L	CAN-H
17	R	CAN-L
18	G	SPEED SIGNAL
19	L	BAT
20	B	G

Connector No.	M97
Connector Name	JOINT CONNECTOR-M24
Connector Color	WHITE



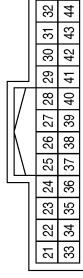
Terminal No.	Color of Wire	Signal Name
1	B	-
4	B	-

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE



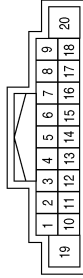
Terminal No.	Color of Wire	Signal Name
7	B	-
8	L	-
9	Y	-
10	SHIELD	-

Connector No.	M109
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



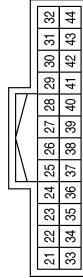
Terminal No.	Color of Wire	Signal Name
25	BR	REVERSE
30	BG	MR OUTPUT
31	SB	M-CAN TERMINATION
32	LG	M-CAN TERMINATION
38	SB	MCAN+
39	LG	MCAN-
40	LG	IGNITION
41	G	CAMERA+
42	SHIELD	SHIELD

Connector No.	M108
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	W	ACC
8	L	CAN-H
17	R	CAN-L
18	G	SPEED SIGNAL
19	L	BAT
20	B	G

Connector No.	M102
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
25	BR	REVERSE
30	BG	MR OUTPUT
31	SB	M-CAN TERMINATION
32	LG	M-CAN TERMINATION
38	SB	MCAN+
39	LG	MCAN-
40	LG	IGNITION
41	G	CAMERA+
42	SHIELD	SHIELD

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AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

Terminal No.	Color of Wire	Signal Name
26	L	CAN-H (WITHOUT DRIVER ASSISTANCE SYSTEM)
27	-	-
28	-	-
29	-	-
30	-	-
31	-	-
32	-	-
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	-	-
39	B	GND
40	SB	IGN

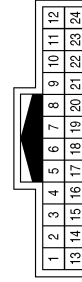
Terminal No.	Color of Wire	Signal Name
12	Y	SV1 VIDEO SIGNAL
13	Y	SV2 POWER GND
14	L	SV2 POWER 6.2V
15	SHIELD	SV2 VIDEO GND
16	G	SV2 VIDEO SIGNAL
17	B	RV POWER GND
18	R	RV POWER 6.2V
19	SHIELD	RV VIDEO GND
20	W	RV VIDEO SIGNAL
21	-	-
22	-	-
23	-	-
24	Y	ITS CAN-L (WITH DRIVER ASSISTANCE SYSTEM)
24	R	CAN-L (WITHOUT DRIVER ASSISTANCE SYSTEM)
25	-	-
26	L	ITS CAN-H (WITH DRIVER ASSISTANCE SYSTEM)

Connector No.	M112
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Color	WHITE



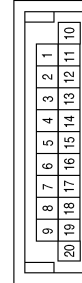
Terminal No.	Color of Wire	Signal Name
1	-	-
2	-	-
3	SHIELD	VIDEO OUTPUT GND
4	G	VIDEO OUTPUT SIGNAL
5	V	FV POWER GND
6	L	FV POWER 6.2V
7	SHIELD	FV VIDEO GND
8	LG	FV VIDEO SIGNAL
9	L	SV1 POWER GND
10	B	SV1 POWER 6.2V
11	SHIELD	SV1 VIDEO GND

Connector No.	M168
Connector Name	WIRE TO WIRE
Connector Color	WHITE



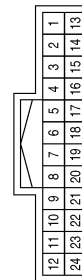
Terminal No.	Color of Wire	Signal Name
7	L	-
8	Y	-
9	G	-
10	SHIELD	-

Connector No.	M150
Connector Name	JOINT CONNECTOR-M07
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
6	Y	-
9	Y	-
17	L	-
20	L	-

Connector No.	M148
Connector Name	ADAS CONTROL UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	L	ITS CAN-H
5	Y	ITS CAN-L
9	L	CAN-H
10	R	CAN-L

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AV

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[MULTI AV (NAVI WITH BOSE)]

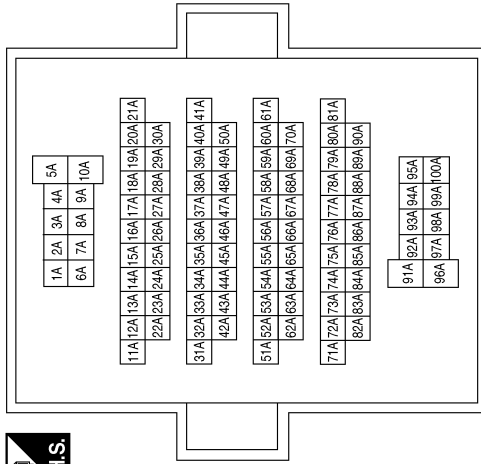
Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	GRAY



9	8	7	6	5	4	3		
18	17	16	15	14	13	12	11	10

Terminal No.	Color of Wire	Signal Name
16	G	O LIGHT REVERSE LAMP

Connector No.	E34
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
100A	G	-

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Terminal No.	Color of Wire	Signal Name
1	V	-
2	L	-
13	SHIELD	-
14	LG	-

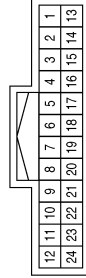
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AROUND VIEW MONITOR SYSTEM

[MULTI AV (NAVI WITH BOSE)]

< WIRING DIAGRAM >

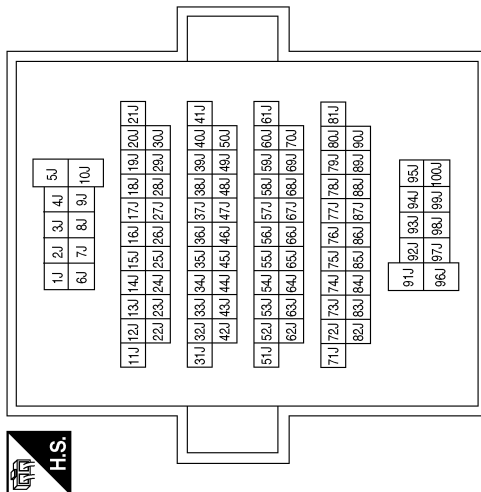
Connector No.	E209
Connector Name	WIRE TO WIRE
Connector Color	WHITE



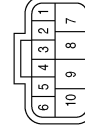
Terminal No.	Color of Wire	Signal Name
1	V	-
2	L	-
13	SHIELD	-
14	LG	-

Terminal No.	Color of Wire	Signal Name
22J	SHIELD	-
23J	LG	-
24J	V	-
25J	L	-

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	F78
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
4	W	-
8	G	-

Connector No.	F35
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
71	SB	O IGN REVERSE SW AC VALVE
79	G	LI LIGHT REVERSE SW

Connector No.	E226
Connector Name	FRONT CAMERA
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	V	-
2	L	-
4	LG	-
5	SHIELD	-

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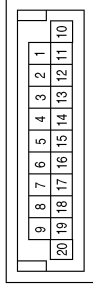
AV

AROUND VIEW MONITOR SYSTEM

[MULTI AV (NAVI WITH BOSE)]

< WIRING DIAGRAM >

Connector No.	B36
Connector Name	JOINT CONNECTOR-B06
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
11	Y	-
12	Y	-

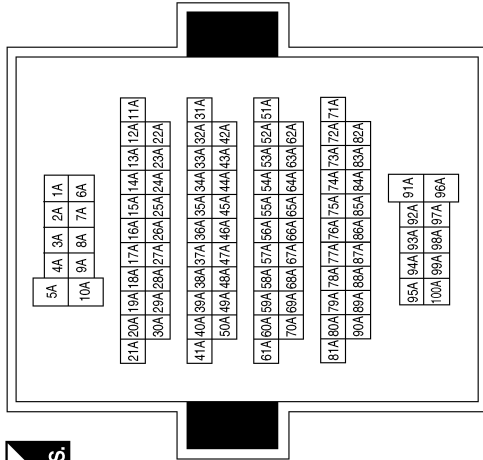
Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
60	L	CAN-H
80	P	CAN-L

Terminal No.	100A
Color of Wire	G
Signal Name	-

Connector No.	B40
Connector Name	WIRE TO WIRE
Connector Color	GRAY



Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-
26	G	-
29	SHIELD	-
30	W	-
31	B	-
32	R	-

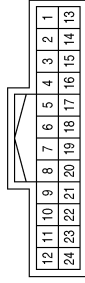
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AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

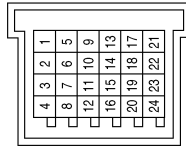
[MULTI AV (NAVI WITH BOSE)]

Connector No.	D3
Connector Name	WIRE TO WIRE
Connector Color	WHITE



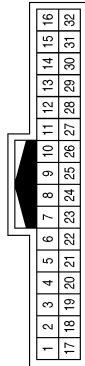
Terminal No.	Color of Wire	Signal Name
7	GR	-
8	G	-
9	Y	-
10	B	-

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	B46
Connector Name	WIRE TO WIRE
Connector Color	WHITE



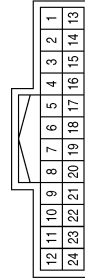
Terminal No.	Color of Wire	Signal Name
5	R	-
6	B	-
7	W	-
8	SHIELD	-

Connector No.	D107
Connector Name	DOOR MIRROR RH
Connector Color	WHITE



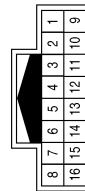
Terminal No.	Color of Wire	Signal Name
7	L	-
8	V	-
15	B	-
16	Y	-

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	L	-
8	V	-
9	Y	-
10	B	-

Connector No.	D14
Connector Name	DOOR MIRROR LH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	GR	-
8	G	-
15	B	-
16	Y	-

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AV

AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

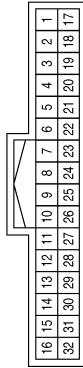
[MULTI AV (NAVI WITH BOSE)]

Connector No.	D504
Connector Name	REAR VIEW CAMERA (WITHOUT DRIVER ASSISTANCE SYSTEM)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
2	R	-
4	W	-
5	V	-

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5	R	-
6	B	-
7	W	-
8	V	-

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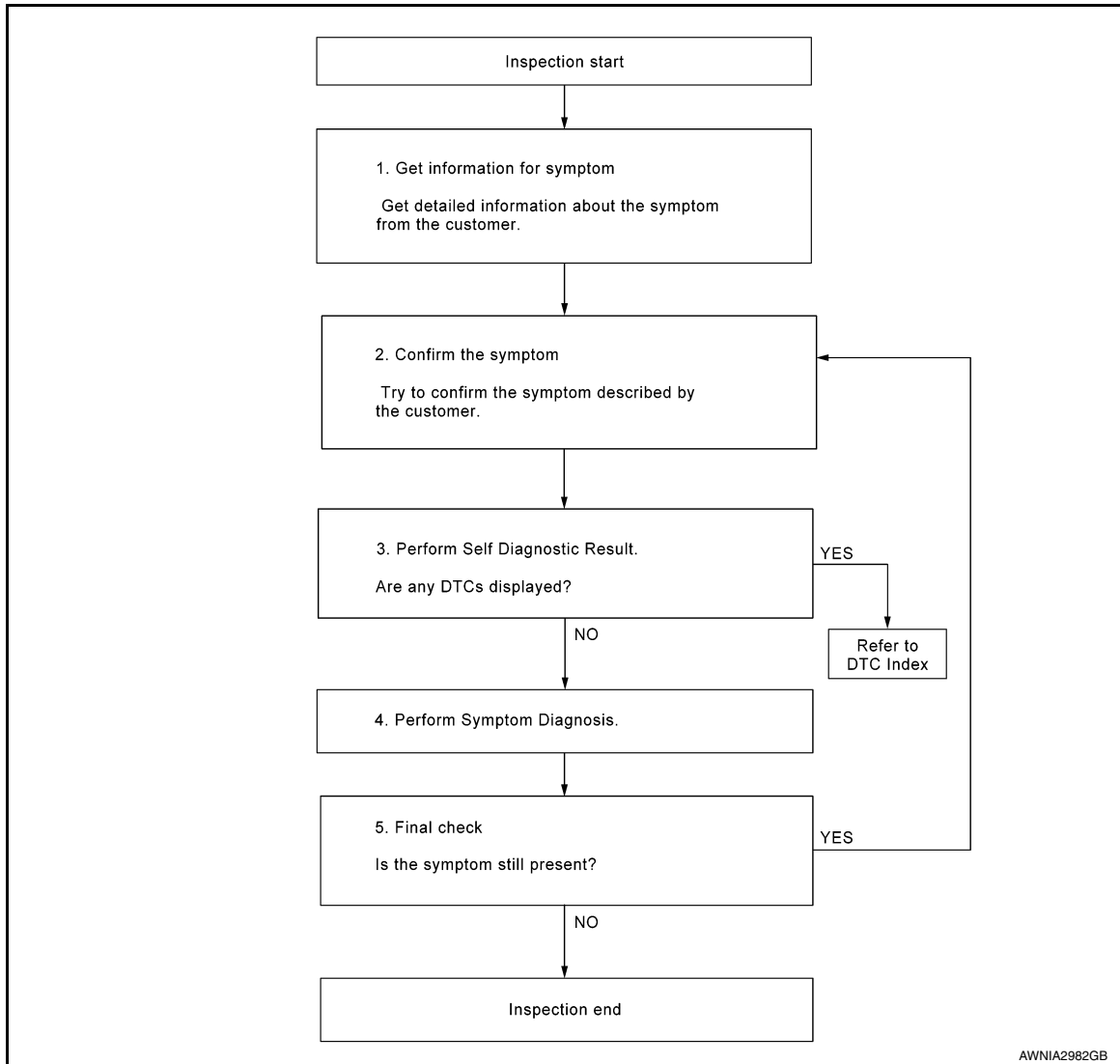
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000012422278

OVERALL SEQUENCE



DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

2.CONFIRM THE SYMPTOM

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

>> GO TO 3.

3.PERFORM SELF DIAGNOSTIC RESULT

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

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[MULTI AV (NAVI WITH BOSE)]

2. Depending on system being diagnosed, perform Self Diagnostic Result for:

- MULTI AV.
- AVM.

Are any DTCs displayed?

YES >> Refer to [AV-256, "DTC Index"](#) (MULTI AV) or [AV-266, "DTC Index"](#) (AVM).

NO >> GO TO 4.

4. PERFORM SYMPTOM DIAGNOSIS

Refer to [AV-366, "Symptom Table"](#).

>> GO TO 5.

5. FINAL CHECK

Refer to symptom described by the customer in step 1.

Is the symptom still present?

YES >> GO TO 2.

NO >> Inspection End.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITH BOSE)]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description

INFOID:000000012422279

BEFORE REPLACEMENT

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

NOTE:

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

AFTER REPLACEMENT

CAUTION:

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

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

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Work Procedure

INFOID:000000012422280

1. SAVING VEHICLE SPECIFICATION

CONSULT

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

NOTE:

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

>> GO TO 2.

2. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

CONSULT

1. Enter "Re/Programming, Configuration".
2. If "Before Replace ECU" operation was performed, automatically an "Operation Log Selection" screen will be displayed. Select the applicable file from the "Saved Data List" and press "Confirm" to write vehicle specification. Refer to [AV-301, "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).
3. If "Before Replace ECU" operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to [AV-301, "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).

>> GO TO 4.

4. REGISTER AV CONTROL UNIT

Perform AV control unit registration. Refer to [AV-303, "REGISTRATION \(AV CONTROL UNIT\) : Work Procedure"](#).

>> GO TO 5.

5. OPERATION CHECK

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

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>> Work End.

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description

INFOID:00000001242281

BEFORE REPLACEMENT

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

NOTE:

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

AFTER REPLACEMENT

CAUTION:

When replacing around view monitor control unit, you must perform "After Replace ECU" with CONSULT.

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

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Work Procedure

INFOID:00000001242282

1. SAVING VEHICLE SPECIFICATION

ⓑ-CONSULT

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

NOTE:

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

>> GO TO 2.

2. REPLACE AROUND VIEW MONITOR CONTROL UNIT

Replace around view monitor control unit. Refer to [AV-392. "Removal and Installation"](#).

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

ⓑCONSULT

1. Enter "Re/Programming, Configuration".
2. If "Before Replace ECU" operation was performed, automatically an "Operation Log Selection" screen will be displayed. Select the applicable file from the "Saved Data List" and press "Confirm" to write vehicle specification. Refer to [AV-302. "CONFIGURATION \(AROUND VIEW MONITOR CONTROL UNIT\) : Work Procedure"](#).
3. If "Before Replace ECU" operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to [AV-302. "CONFIGURATION \(AROUND VIEW MONITOR CONTROL UNIT\) : Work Procedure"](#).

>> GO TO 4.

4. OPERATION CHECK

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

>> Work End.

CONFIGURATION (AV CONTROL UNIT)

CONFIGURATION (AV CONTROL UNIT) : Description

INFOID:000000012422283

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

Configuration has three functions as follows:

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

CAUTION:

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

CONFIGURATION (AV CONTROL UNIT) : Work Procedure

INFOID:000000012422284

1. WRITING MODE SELECTION

④CONSULT

Select "Reprogramming, Configuration" of AV control unit.

When writing saved data>>GO TO 2.

When writing manually>>GO TO 3.

2. PERFORM "SAVED DATA LIST"

④CONSULT

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

>> Work End.

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

④CONSULT

1. Select "After Replace ECU" or "Manual Configuration".
2. Identify the correct model and configuration list. Refer to [AV-302. "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).
3. Confirm and/or change setting value for each item.

CAUTION:
Thoroughly read and understand the vehicle specification. ECU control may not operate normally if the setting is not correct.
4. Select "Next".

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

>> GO TO 4.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITH BOSE)]

4. OPERATION CHECK

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

>> Work End.

CONFIGURATION (AV CONTROL UNIT) : Configuration List

INFOID:000000001242285

CAUTION:

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

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

↔: Items which confirm vehicle specifications

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Description

INFOID:0000000012777023

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

Configuration has three functions as follows

Function	Description
READ CONFIGURATION	<ul style="list-style-type: none">• Reads the vehicle configuration of current around view monitor control unit.• Saves the read vehicle configuration.
WRITE CONFIGURATION - Manual setting	Writes the vehicle configuration with manual setting.
WRITE CONFIGURATION - Config file	Writes the vehicle configuration with saved data.

CAUTION:

- When replacing around view monitor control unit, you must perform “WRITE CONFIGURATION” with CONSULT.
- Never perform “WRITE CONFIGURATION” except for new around view monitor control unit.

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Work Procedure

INFOID:0000000012777024

1. WRITING MODE SELECTION

ⓅCONSULT Configuration

Select “CONFIGURATION” of AVM.

When writing saved data>>GO TO 2.

When writing manually>>GO TO 3.

2. PERFORM “WRITE CONFIGURATION - CONFIG FILE”

ⓅCONSULT Configuration

Perform “WRITE CONFIGURATION - Config file”.

>> Work End.

3. PERFORM “MANUAL CONFIGURATION”

ⓅCONSULT Configuration

Select “MANUAL CONFIGURATION” to write vehicle specifications into the around view monitor control unit.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITH BOSE)]

CAUTION:

- Thoroughly read and understand the vehicle specification. Incorrect settings may result in abnormal control of ECU.
- Make sure to select “NEXT” even if the default settings displayed on the CONSULT are the desired settings. If “NEXT” is not selected, the configuration process will be incomplete.

NOTE:

If manual configuration items are not displayed, touch “NEXT”.

>> GO TO 4.

4. OPERATION CHECK

Confirm that each function controlled by around view monitor control unit operates normally.

>> Work End.

REGISTRATION (AV CONTROL UNIT)

REGISTRATION (AV CONTROL UNIT) : Description

INFOID:00000001242289

AFTER REPLACEMENT

If the AV control unit is replaced with a new AV control unit, the new AV control unit must be registered using the registration code.

CAUTION:

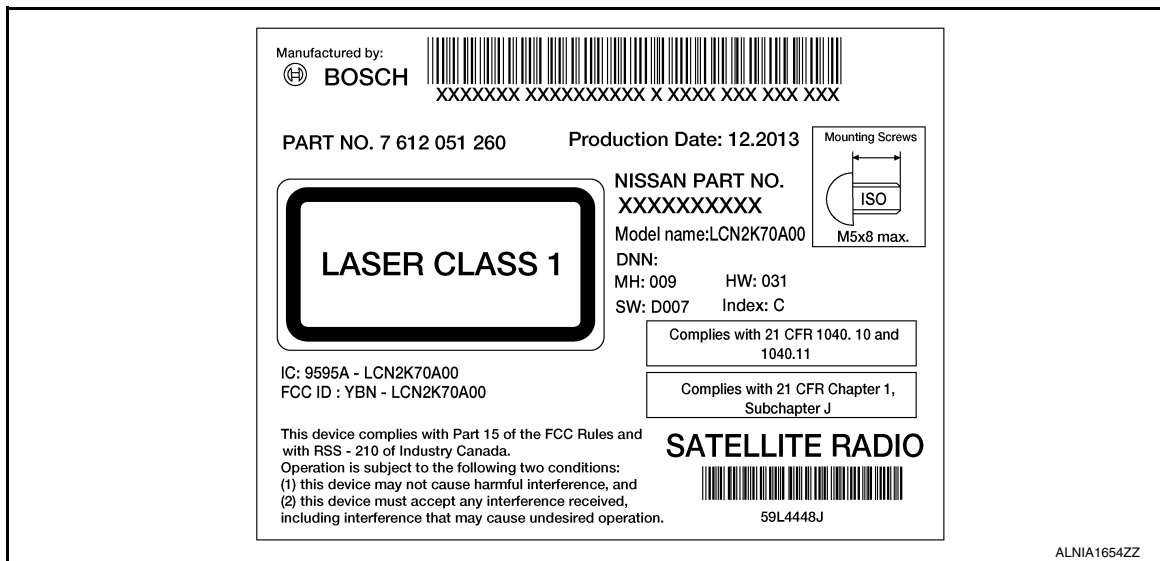
If the new AV control unit registration code is not registered, the “APPS” mode will not function.

REGISTRATION (AV CONTROL UNIT) : Work Procedure

INFOID:00000001242290

1. RECORD REGISTRATION CODE FOR REPLACEMENT AV CONTROL UNIT

1. Refer to the replacement AV control unit's label located on the top of the AV control unit.

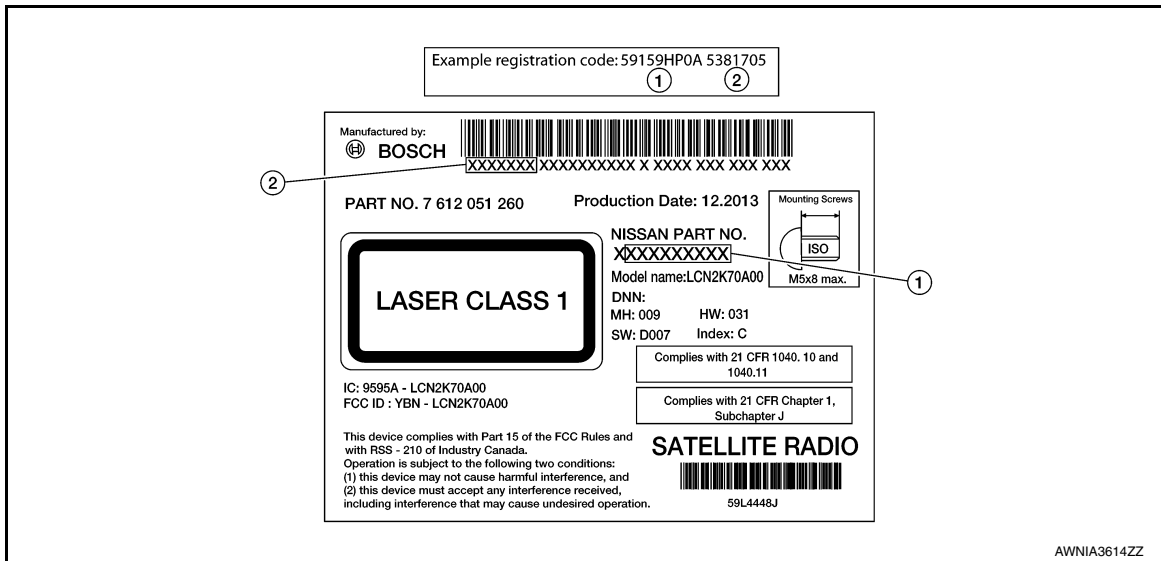


2. Create a registration code to supply to NISSAN Owner Services by combining the last 9 digits of the NISSAN PART NO. (1) and the first 7 digits of the bar code number (2).

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITH BOSE)]



3. Record the registration code.

>> GO TO 2.

2. REGISTER REPLACEMENT AV CONTROL UNIT

Register the replacement AV control unit by contacting NISSAN Owner Services. Refer to TSB.

>> GO TO 3.

3. OPERATION CHECK

Verify that the AV control unit "APPS" function operates normally.

>> Work End.

PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT

PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:000000012422291

Adjust the center position of the predictive course line of the rear view monitor if it is shifted.

PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure

INFOID:000000012422292

1. DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

>> End.

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description

INFOID:000000012422293

- Calibration must be performed after removing/replacing the cameras, removing parts (e.g. front grille, door mirror, and others) mounted on the cameras, or replacing the Around view monitor control unit.
- The use of CONSULT is required to perform calibration or writing of calibration results to the Around view monitor control unit.
- Align the white lines on the road near the vehicle at the boundary of each camera image by this camera calibration. The white lines far from the vehicle may not be aligned at the boundary of each camera image. The farther the line, the greater the difference is.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

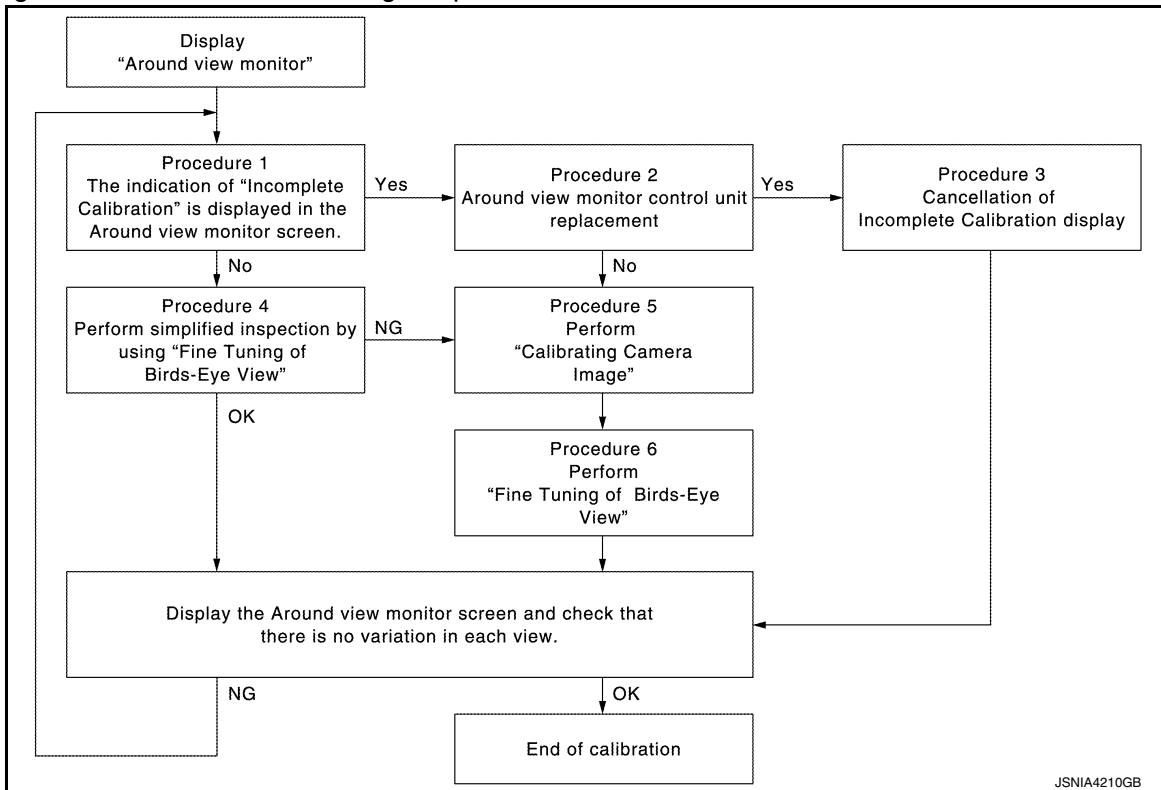
[MULTI AV (NAVI WITH BOSE)]

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure


INFOID:00000001242294

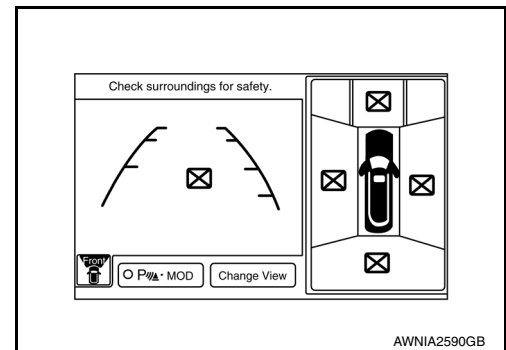
CALIBRATION FLOWCHART

Following the flowchart shown in the figure, perform the calibration.



NOTE:

View in the incomplete calibration state is indicated by  on the around view monitor.



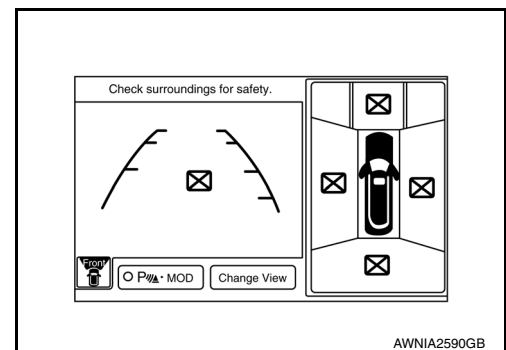
CALIBRATION PROCEDURE

1. AROUND VIEW MONITOR SCREEN CONFIRMATION

Check that there is no indication of "Incomplete calibration".

Is the "Incomplete calibration" display visible?

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



2. CHECK THAT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITH BOSE)]

Check that the around view monitor control unit is replaced.

Is the around view monitor control unit replaced?

- YES >> GO TO 3.
- NO >> GO TO 5.

3. CANCEL THE INDICATION OF INCOMPLETE CALIBRATION (PERFORM THIS ONLY AFTER REPLACING AROUND VIEW MONITOR CONTROL UNIT.)

CONSULT work support

1. On the CONSULT screen, touch “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”, “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”, “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”, or “CALIBRATING CAMERA IMAGE (REAR CAMERA)” to accept the selection.

NOTE:

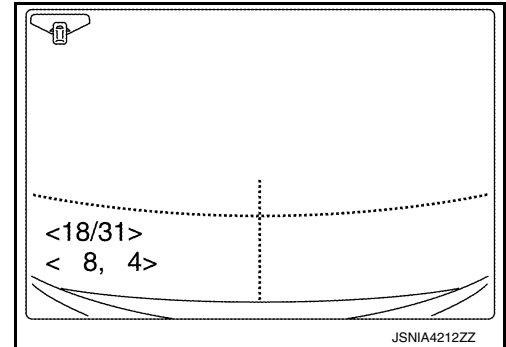
To cancel the indication of Incomplete calibration, select items based on the target camera.

2. On the adjustment screen of each camera, touch “APPLY” button. After this, touch “OK” button.

CAUTION:

- Never perform operations other than those mentioned above.
- Never perform “Initialize Camera Image Calibration”.

3. Display the around view monitor screen to check that there is no errors, such as deviations among the camera images.



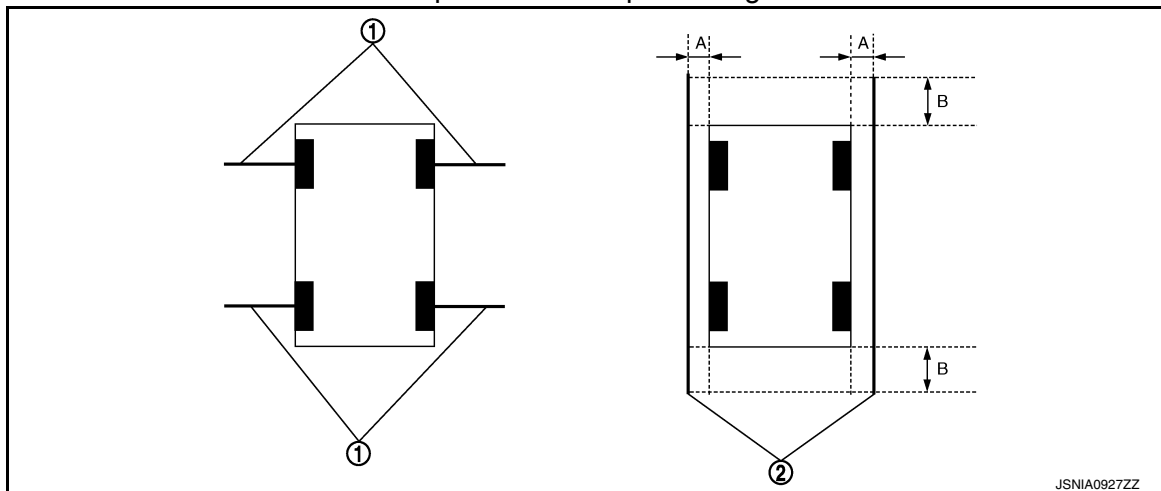
Is there a malfunction?

- YES >> Calibration End.
- NO >> GO TO 1.

4. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY “FINE TUNING OF BIRDS-EYE VIEW”

1. Put target line 1 on the ground beside each axle using packing tape, etc.
2. Put target lines 2 equal to the vehicle total length + approximately 1.0 m (39.3 in) from the vehicle side (right and left) at approximately 30 cm (11.8 in) away from the vehicle (make the line as parallel with the vehicle as possible).

Preparation of simplified target line



- | | |
|----------------------------|----------------------------|
| 1. Target lines 1 | 2. Target lines 2 |
| A. Approx. 30 cm (11.8 in) | B. Approx. 1.0 m (39.3 in) |

CONSULT work support

Touch “FINE TUNING OF BIRDS-EYE VIEW” on the CONSULT screen.

4. On the CONSULT screen, touch “SELECT” button to select right or left camera and perform camera calibration as instructed below:
 - If the marker on the screen deviates from Target line 1, touch “AXIS X” button and “AXIS Y” button to adjust so that the marker is placed on the Target line 1.
 - If Target line 2 is misaligned among the cameras, adjust each camera image to bring Target line 2 into a straight line.

CAUTION:

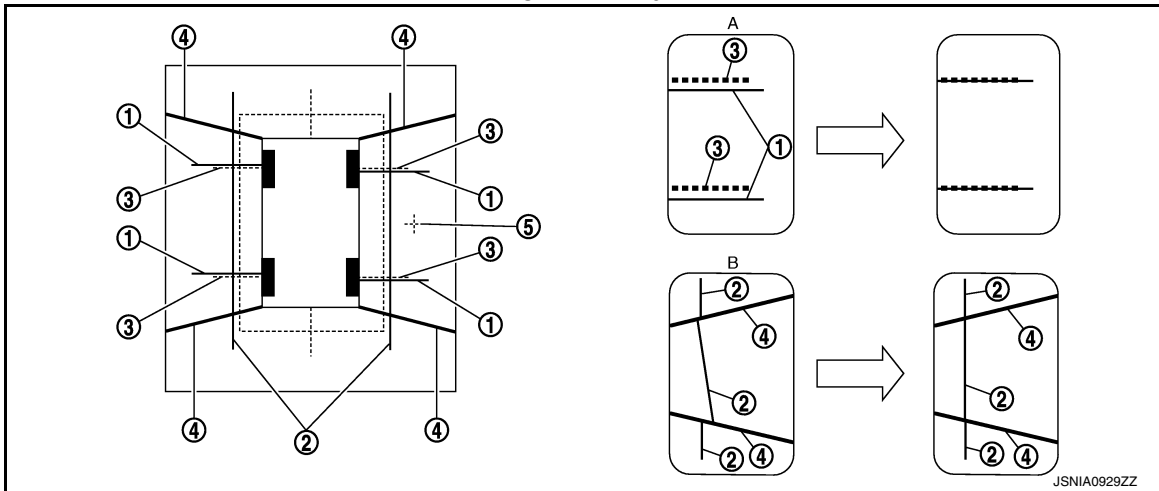
INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITH BOSE)]

Never adjust the front camera and rear camera. Only adjust the right and left cameras.

Simplified target line adjustment method



- | | | |
|---|---|-----------------------------|
| 1. Target lines 1 | 2. Target lines 2 | 3. Marker for target line 1 |
| 4. Boundary between cameras | 5. Crosshairs cursor (mark indicated the selected camera) | |
| A. Adjustment method for target lines 1 (right) | B. Adjustment method for target lines 2 (right) | |

- Adjust right and left cameras. Touch "APPLY" on the CONSULT screen to display adjustment results.
- After adjusting right and left cameras, check that the marker is properly placed on the screen and there is no deviation in Target line 1.

NOTE:

- It can be initialized to the NISSAN factory default condition with "Initialize Camera Image Calibration".
- The adjustment value is cancelled on this mode by performing "Initialize Camera Image Calibration".

Is the difference corrected?

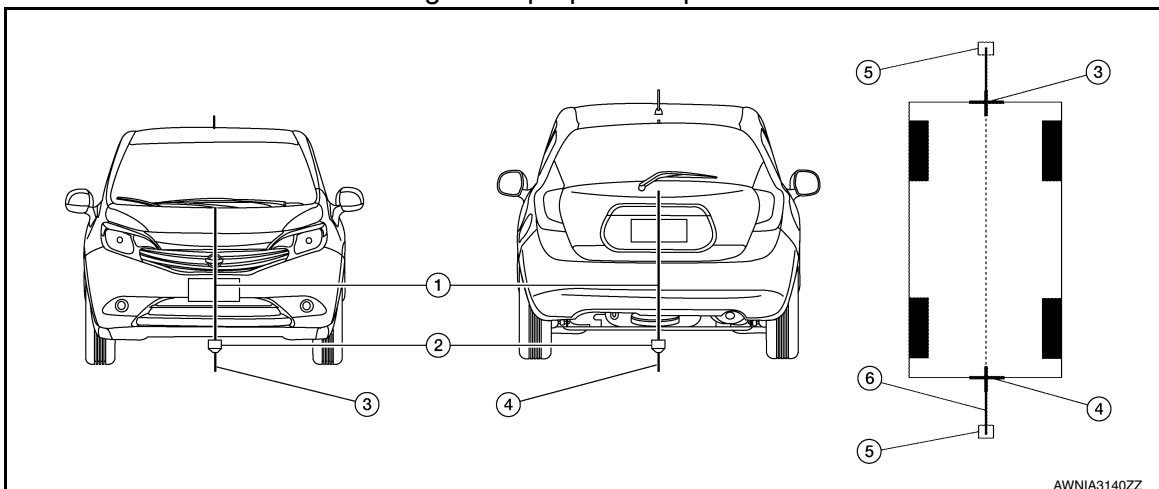
- YES >> On the CONSULT screen, touch "OK" button to complete writing to the around view monitor control unit.
- NO >> GO TO 5.

5.PERFORM "CALIBRATING CAMERA IMAGE"

Preparation of target line

- Hang a string with a weight as shown in the figure. Put the points FM0, RM0 (mark) on the ground at the center of the vehicle front end and rear end with white packing tape or a pen.
- Route the vinyl string under the vehicle, and then pull and fix it on the point approximately 1.0 m (39.9 in) to the front and rear of the vehicle through the points FM0 and RM0 using packing tape.

Target line preparation procedure 1



AV

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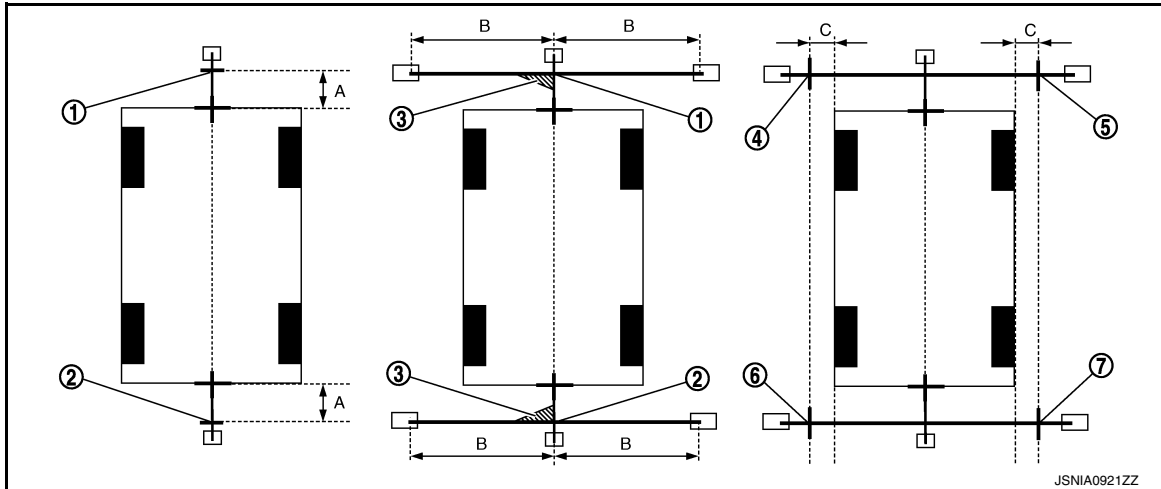
INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITH BOSE)]

1. Thread
 2. Weight
 3. Point FM0 (mark)
 4. Point RM0 (mark)
 5. Packing tape (to fix the vinyl string)
 6. Vinyl string
3. Put the points FM and RM (mark) 75 cm (29.5 in) from the points FM0 and RM0 individually.
 4. Route the vinyl string through the points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59 in) on both sides with packing tape.
 5. Put the points FL, FR, RL, and RR (mark) to both right and left [vehicle width / 2 + 30 cm (11.8 in)] from the points FM and RM.

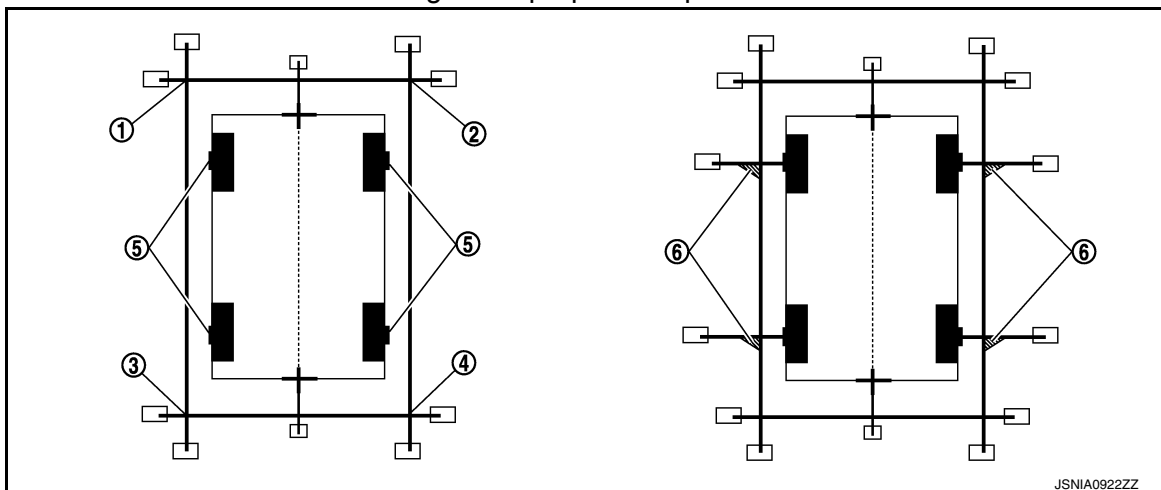
Target line preparation procedure 2



- | | | |
|--------------------|--------------------|--------------------|
| 1. Point FM | 2. Point RM | 3. Triangle scale |
| 4. Point FL (mark) | 5. Point FR (mark) | 6. Point RL (mark) |
| 7. Point RR (mark) | | |
- A. 75 cm (29.5 in) B. Approx. 1.5 m (59 in) C. 30 cm (11.8 in)
 [Vehicle width / 2 + 30 cm (11.8 in) from the points FM and RM]

6. Draw the lines of the points FL – RL and FR – RR with vinyl string, and fix it with packing tape.
7. Put a mark on the center of each axle, draw vertical lines to the lines of the points FL – RL and FR – RR from the marks on the center of the axle using a triangle scale, and then fix the lines using packing tape.

Target line preparation procedure 3



- | | | |
|-------------|----------------------------|-------------------|
| 1. Point FL | 2. Point FR | 3. Point RL |
| 4. Point RR | 5. Center position of axle | 6. Triangle scale |

Perform "Calibrating Camera Image"

CONSULT work support

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[MULTI AV (NAVI WITH BOSE)]

1. On the CONSULT screen, touch “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”, “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”, “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”, or “CALIBRATING CAMERA IMAGE (REAR CAMERA)” to accept the selection.

NOTE:

To cancel the indication of Incomplete calibration, select items based on the target camera.

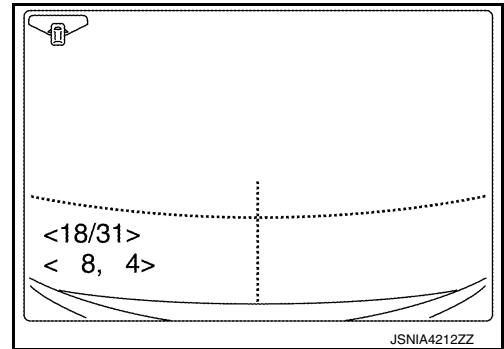
2. On the adjustment screen of each camera, adjust the parameter by touching the “AXIS X” button, “AXIS Y” button, and “ROTATE” button to place the calibration marker shown on the camera screen on the target line drawn on the ground.

Adjustment range

Rotation direction (Center dial) : 31 patterns (16 on the center)

Upper/lower direction (upper/lower switch) : -22 – 22

Left/right direction (left/right switch) : -22 – 22



3. Touch “APPLY” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are shown on the camera screen.

CAUTION:

Check that “PRCSNG” is displayed. Never perform other operations while “PRCSNG” is displayed.

4. Touch “OK” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are written to the around view monitor control unit.

CAUTION:

Check that “PRCSNG” is displayed. Never perform other operations while “PRCSNG” is displayed.

>> GO TO 6.

6. PERFORM “FINE TUNING OF BIRDS-EYE VIEW”

This mode is designed to align the boundary between each camera image that could not be aligned in the “Calibrating Camera Image” mode.

ⓂCONSULT work support

1. Select “FINE TUNING OF BIRDS-EYE VIEW” by touching CONSULT screen.

2. On the adjustment screen of each camera, adjust the parameter by touching the “AXIS X” button, “AXIS Y” button”, and “ROTATE” button to place the calibration marker shown on the camera screen on the target line drawn on the ground.

NOTE:

Touch “SELECT” button on the CONSULT screen to select the target camera.

3. Touch “APPLY” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are shown on the camera screen.

CAUTION:

Check that “PRCSNG” is displayed. Never perform other operations while “PRCSNG” is displayed.

4. Touch “OK” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are written to the around view monitor control unit.

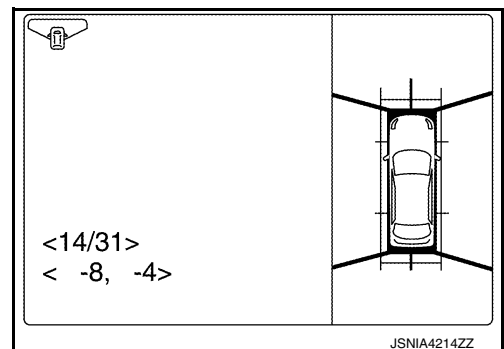
CAUTION:

- Check that “PRCSNG” is displayed. Never perform other operations while “PRCSNG” is displayed.
- After pressing the “OK” button, never press buttons other than the “BACK” button.

NOTE:

- It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration”.
- The adjustment value is cancelled in this mode by performing “Initialize Camera Image Calibration”.

>> Calibration End.



U0428 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

DTC/CIRCUIT DIAGNOSIS

U0428 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000012422295

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ST ANG SEN CALIB [U0428]	Predictive course line center position adjustment of steering angle sensor is incomplete.	Adjust predictive course line center position adjustment of steering angle sensor.

Diagnosis Procedure

INFOID:0000000012422296

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

When U0428 is detected, the predictive course line center position of steering angle sensor needs to be adjusted.

>> Adjust the predictive course line center position of steering angle sensor. Refer to [AV-304, "PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure"](#).

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1000 CAN COMM CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:0000000012422297

DTC DETECTION LOGIC

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

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000012422298

1.PERFORM SELF DIAGNOSTIC RESULT

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

Is CAN COMM CIRCUIT displayed?

YES >> Refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-45, "Intermittent Incident"](#).

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000012422299

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CAN COMM CIRCUIT [U1000]	Around view monitor control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000012422300

1.PERFORM SELF DIAGNOSTIC RESULT

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

Is CAN COMM CIRCUIT displayed?

YES >> Refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to [GI-45, "Intermittent Incident"](#).

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U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1010 CONTROL UNIT (CAN)

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:0000000012422301

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (CAN) [U1010]	Error during CAN controller hardware initialization (VCAN).	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-381 . "Removal and Installation".

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000012422302

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (CAN) [U1010]	Error during CAN controller hardware initialization (VCAN).	Replace the Around view monitor control unit if the malfunction occurs constantly. Refer to AV-392 . "Removal and Installation".

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012777093

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Rear display output signal diagnosis (Harness disconnection) [U111A]	Rear view camera image signal circuit open or short.	Check rear view camera image signal circuit.

Diagnosis Procedure

INFOID:000000012777094

Regarding Wiring Diagram information, refer to [AV-116, "Wiring Diagram"](#).

1. CHECK REAR VIEW CAMERA POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M112 and rear view camera connector D504.
3. Check continuity between around view monitor control unit connector M112 and rear view camera connector D504.

Around view monitor control unit		Rear view camera		Continuity
Connector	Terminals	Connector	Terminals	
M112	17	D504	1	Yes
	18		2	

4. Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	18		No

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace harness or connectors.

2. CHECK REAR VIEW CAMERA POWER SUPPLY VOLTAGE

1. Connect around view monitor control unit connector M112 and rear view camera connector D504.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	18	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

3. CHECK REAR VIEW CAMERA IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M112 and rear view camera connector D504.
3. Check continuity between around view monitor control unit connector M112 and rear view camera connector D504.

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U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Around view monitor control unit		Rear view camera		Continuity
Connector	Terminals	Connector	Terminals	
M112	20	D504	4	Yes
	19		5	

4. Check continuity between around view monitor control unit connector M112 and ground.

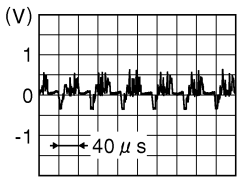
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	20		No

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair or replace harness or connectors.

4. CHECK REAR VIEW CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector M112 and rear view camera connector D504.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector M112.

Around view monitor control unit connector M112		Condition	Reference value
(+) Terminal	(-) Terminal		
20	19	CAMERA switch is ON or selector lever in R (reverse).	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).
 NO >> Replace rear view camera. Refer to [AV-224, "Removal and Installation"](#).

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012777095

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Right side display output signal diagnosis (Harness disconnection) [U111B]	Right side camera image signal circuit open or short.	Check right side camera image signal circuit.

Diagnosis Procedure

INFOID:000000012777096

Regarding Wiring Diagram information, refer to [AV-116, "Wiring Diagram"](#).

1. CHECK DOOR MIRROR RH POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit M112 and door mirror RH connector D107.
3. Check continuity between around view monitor control unit connector M112 and door mirror RH connector D107.

Around view monitor control unit		Door mirror RH		Continuity
Connector	Terminals	Connector	Terminals	
M112	9	D107	8	Yes
	10		7	

4. Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	9		No

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace harness or connectors.

2. CHECK DOOR MIRROR RH POWER SUPPLY VOLTAGE

1. Connect around view monitor control unit connector M112 and door mirror RH connector D107.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	9	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

3. CHECK DOOR MIRROR RH IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M112 and door mirror RH connector D107.

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

[MULTI AV (NAVI WITH BOSE)]

< DTC/CIRCUIT DIAGNOSIS >

3. Check continuity between around view monitor control unit connector M112 and door mirror RH connector D107.

Around view monitor control unit		Door mirror RH		Continuity
Connector	Terminals	Connector	Terminals	
M112	12	D107	16	Yes
	11		15	

4. Check continuity between around view monitor control unit connector M112 and ground.

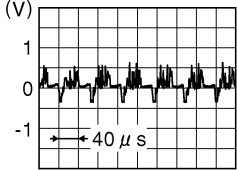
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	12		No

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair or replace harness or connectors.

4. CHECK DOOR MIRROR RH IMAGE SIGNAL

1. Connect around view monitor control unit connector M112 and door mirror RH connector D107.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector M112.

Around view monitor control unit connector M112		Condition	Reference value
(+) Terminal	(-) Terminal		
12	11	CAMERA switch is ON or selector lever in R (reverse).	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).
 NO >> Replace door mirror RH. Refer to [AV-223, "Removal and Installation"](#).

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012777097

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Front display output signal diagnosis (Harness disconnection) [U111C]	Front camera image signal circuit open or short.	Check front camera image signal circuit.

Diagnosis Procedure

INFOID:000000012777098

Regarding Wiring Diagram information, refer to [AV-116, "Wiring Diagram"](#).

1. CHECK FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector M112 and front camera connector E226.
- Check continuity between around view monitor control unit connector M112 and front camera connector E226.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
M112	6	E226	2	Yes
	5		1	

- Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	6		No

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace harness or connectors.

2. CHECK FRONT CAMERA POWER SUPPLY VOLTAGE

- Connect around view monitor control unit connector M112 and front camera connector E226.
- Turn ignition switch ON.
- Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	6	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

3. CHECK FRONT CAMERA IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector M112 and front camera connectors E226.

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U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

3. Check continuity between around view monitor control unit connector M112 and front camera connector E226.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
M112	8	E226	4	Yes
	7		5	

4. Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	8		No

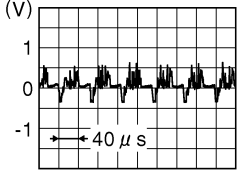
Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness or connectors.

4. CHECK FRONT CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector M112 and front camera connector E226.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector M112.

Around view monitor control unit connector M112		Condition	Reference value
(+) Terminal	(-) Terminal		
8	7	CAMERA switch is ON or selector lever in R (reverse).	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

NO >> Replace front camera. Refer to [AV-222, "Removal and Installation"](#).

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:000000012777099

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Left side display output signal diagnosis (Harness disconnection) [U111D]	Left side camera image signal circuit open or short.	Check left side camera image signal circuit.

Diagnosis Procedure

INFOID:000000012777100

Regarding Wiring Diagram information, refer to [AV-116, "Wiring Diagram"](#).

1. CHECK DOOR MIRROR LH POWER SUPPLY AND GROUND CIRCUIT CONTINUITY

- Turn ignition switch OFF.
- Disconnect around view monitor control unit M112 and door mirror LH connector D14.
- Check continuity between around view monitor control unit connector M112 and door mirror LH connector D14.

Around view monitor control unit		Door mirror LH		Continuity
Connector	Terminals	Connector	Terminals	
M112	14	D14	7	Yes
	13		8	

- Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	14		No

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace harness or connectors.

2. CHECK DOOR MIRROR LH POWER SUPPLY VOLTAGE

- Connect around view monitor control unit connector M112 and door mirror LH connector D14.
- Turn ignition switch ON.
- Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	14	—	CAMERA switch is ON or selector lever in R (reverse).	6.0 V

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).

3. CHECK DOOR MIRROR LH IMAGE SIGNAL AND IMAGE SIGNAL GROUND CIRCUIT CONTINUITY

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector M112 and door mirror LH connector D14.

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

3. Check continuity between around view monitor control unit connector M112 and door mirror LH connector D14.

Around view monitor control unit		Door mirror LH		Continuity
Connector	Terminals	Connector	Terminals	
M112	16	D14	16	Yes
	15		15	

4. Check continuity between around view monitor control unit connector M112 and ground.

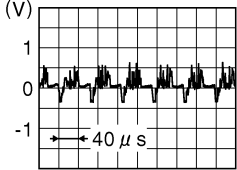
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	16		No

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair or replace harness or connectors.

4. CHECK DOOR MIRROR LH IMAGE SIGNAL

1. Connect around view monitor control unit connector M112 and door mirror LH connector D14.
2. Turn ignition switch ON.
3. Check signal between the terminals of around view monitor control unit connector M112.

Around view monitor control unit connector M112		Condition	Reference value
(+) Terminal	(-) Terminal		
16	15	CAMERA switch is ON or selector lever in R (reverse).	

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-221, "Removal and Installation"](#).
 NO >> Replace door mirror LH. Refer to [AV-223, "Removal and Installation"](#).

U1217 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1217 AV CONTROL UNIT

DTC Logic

INFOID:0000000012422311

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
BLUETOOTH MODULE [U1217]	Connection failure to the internal Bluetooth [®] sub unit is detected.	Replace AV control unit if malfunction occurs constantly. Refer to AV-381, "Removal and Installation" .

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AV

U1229 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1229 AV CONTROL UNIT

DTC Logic

INFOID:000000012422312

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
iPod CERTIFICATION [U1229]	iPod authentication chip error.	Replace AV control unit if malfunction occurs constantly. Refer to AV-381, "Removal and Installation" .

U122F AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U122F AV CONTROL UNIT

DTC Logic

INFOID:000000012422313

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Digital broadcasting connection error [U122F]	Communication error with digital audio broadcast module internal to AV control unit.	Replace AV control unit if malfunction occurs constantly. Refer to AV-381, "Removal and Installation" .

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AV

U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1232 STEERING ANGLE SENSOR

DTC Logic

INFOID:000000012422314

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ST ANG SEN CALIB [U1232]	Predictive course line center position adjustment of steering angle sensor is incomplete.	Adjust predictive course line center position adjustment of steering angle sensor.

Diagnosis Procedure

INFOID:000000012422315

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

When U1232 is detected, the predictive course line center position of steering angle sensor needs to be adjusted.

>> Adjust the predictive course line center position of steering angle sensor. Refer to [AV-304, "PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure"](#).

U1244 GPS ANTENNA

[MULTI AV (NAVI WITH BOSE)]

< DTC/CIRCUIT DIAGNOSIS >

U1244 GPS ANTENNA

DTC Logic

INFOID:000000012422316

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000012422317

Regarding Wiring Diagram information, refer to [AV-267, "Wiring Diagram"](#).

1. GPS ANTENNA INSPECTION

Visually inspect the GPS antenna and antenna feeder. Refer to [AV-396, "Removal and Installation"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2. CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect AV control unit connector M141.
2. Turn ignition switch ON.
3. Check voltage between AV control unit connector M141 and ground.

AV control unit		Ground	Voltage
Connector	Terminal		
M141	58	—	5.0 V

Is inspection result normal?

YES >> Replace GPS antenna. Refer to [AV-396, "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).

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U1258 SATELLITE RADIO ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1258 SATELLITE RADIO ANTENNA

DTC Logic

INFOID:000000012422318

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
SXM ANTENNA CONN [U1258]	Open or short to ground is detected in satellite antenna connection.	<ul style="list-style-type: none">Satellite antenna disconnection.Open or short to ground in satellite antenna signal circuit.

Diagnosis Procedure

INFOID:000000012422319

Regarding Wiring Diagram information, refer to [AV-267, "Wiring Diagram"](#).

1. SATELLITE ANTENNA INSPECTION

Visually inspect the satellite antenna and antenna feeder. Refer to [AV-398, "Feeder Layout"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2. CHECK AV CONTROL UNIT VOLTAGE

- Turn ignition switch ON.
- Check voltage between AV control unit connector M142 and ground.

AV control unit		Ground	Voltage
Connector	Terminal		
M142	56	—	5.0 V

Is inspection result normal?

YES >> Replace satellite radio antenna [AV-397, "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).

U1263 USB

DTC Logic

INFOID:0000000012422320

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM SELF DIAGNOSTIC RESULT

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

Is DTC U1263 displayed?

- YES >> Refer to [AV-327, "Diagnosis Procedure"](#).
- NO >> Inspection End.

Diagnosis Procedure

INFOID:0000000012422321

1.CHECK USB INTERFACE HARNESS

Visually inspect USB interface harness. Refer to [AV-390, "Removal and Installation"](#).

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Replace USB interface harness. Refer to [AV-390, "Removal and Installation"](#).

2.CHECK USB INTERFACE HARNESS

Check USB interface harness. Refer to [AV-364, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).
- NO >> Replace USB interface harness. Refer to [AV-390, "Removal and Installation"](#).

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AV

U1265 BOSE AMP.

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1265 BOSE AMP.

DTC Logic

INFOID:000000012422322

CONSULT Display	DTC Detection Condition	Possible Cause
AMP ON TERMINAL [U1265]	Open or short to ground is detected in BOSE amp. ON signal circuit.	Open or short to ground in BOSE amp. ON signal circuit.

Diagnosis Procedure

INFOID:000000012422323

Regarding Wiring Diagram information, refer to [AV-267, "Wiring Diagram"](#).

1. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND BOSE SPEAKER AMP.

- Turn ignition switch OFF.
- Disconnect AV control unit connector M108 and Bose speaker amp. connector B138.
- Check continuity between AV control unit connector M108 and Bose speaker amp. connector B138.

AV control unit		Bose speaker amp.		Continuity
Connector	Terminal	Connector	Terminal	
M108	1	B138	31	Yes

- Check continuity between AV control unit connector M108 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M108	1	—	No

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace harness or connectors.

2. CHECK AV CONTROL UNIT VOLTAGE

- Connect AV control unit connector M108.
- Turn ignition switch ON.
- Check voltage between AV control unit connector M108 and ground.

AV control unit		Ground	Voltage (Approx.)
(+)			
Connector	Terminal	(-)	
M108	1	—	Battery voltage

Is the inspection result normal?

- YES >> Replace Bose speaker amp. Refer to [AV-384, "Removal and Installation"](#).
NO >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).

U12AA CONFIGURATION ERROR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U12AA CONFIGURATION ERROR

DTC Logic

INFOID:000000012422324

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Configuration Error [U12AA]	AV control unit is not properly configured or configuration is corrupt.	Configuration data needs to be written. Refer to AV-301, "CONFIGURATION (AV CONTROL UNIT) : Work Procedure" .

Diagnosis Procedure

INFOID:000000012422325

1.PERFORM CONFIGURATION

When U12AA is detected, configuration data must be written.

>> Write configuration data with CONSULT. Refer to [AV-301, "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).

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U12AB ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U12AB ANTENNA

DTC Logic

INFOID:000000012422326

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
FM Antenna error [U12AB]	Open or short to ground is detected in AM-FM antenna connection.	<ul style="list-style-type: none">• AM-FM antenna disconnection.• Open or short to ground in AM-FM antenna signal circuit.

Diagnosis Procedure

INFOID:000000012422327

Regarding Wiring Diagram information, refer to [AV-267, "Wiring Diagram"](#).

1. AM-FM ANTENNA INSPECTION

Visually inspect the antenna base (AM-FM antenna) and antenna feeder. Refer to [AV-398, "Feeder Layout"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning components.

2. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND ANTENNA BASE

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M139 and antenna base connector M502.
3. Check continuity between AV control unit connector M139 and antenna base connector M502.

AV control unit		Antenna base		Continuity
Connector	Terminal	Connector	Terminal	
M139	52	M502	2	Yes

4. Check continuity between AV control unit connector M139 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M139	52	—	No

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector M139.
2. Turn ignition switch ON.
3. Check voltage between AV control unit connector M139 and ground.

AV control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M139	52	—	Battery voltage

Is the inspection result normal?

YES >> Replace antenna base. Refer to [AV-397, "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).

U12AC AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U12AC AV CONTROL UNIT

DTC Logic

INFOID:000000012422328

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Display Temperature too High [U12AC]	Display temperature has exceeded maximum temperature. Display is switched OFF to avoid irreversible damage.	Replace AV control unit if malfunction occurs constantly. Refer to AV-381, "Removal and Installation" .

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AV

U12AD AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U12AD AV CONTROL UNIT

DTC Logic

INFOID:000000012422329

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ECU Temperature too High [U12AD]	AV control unit temperature has exceeded maximum temperature.	Replace AV control unit if malfunction occurs constantly. Refer to AV-381, "Removal and Installation" .

U12AE AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U12AE AV CONTROL UNIT

DTC Logic

INFOID:000000012422330

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Internal Amplifier temperature Warning [U12AE]	Internal amplifier temperature has exceeded maximum temperature.	Replace AV control unit if malfunction occurs constantly. Refer to AV-381, "Removal and Installation" .

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AV

U12AF AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U12AF AV CONTROL UNIT

DTC Logic

INFOID:000000012422331

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CD Mechanism Temperature Warning [U12AF]	CD drive temperature has exceeded maximum temperature. CD drive is switched OFF to avoid irreversible damage.	Replace AV control unit if malfunction occurs constantly. Refer to AV-381, "Removal and Installation" .

U12B0 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U12B0 POWER SUPPLY VOLTAGE

DTC Logic

INFOID:000000012422332

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000012422333

1. CHECK CHARGING SYSTEM

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

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning components.

2. CHECK AV CONTROL UNIT POWER SUPPLY AND GROUND CIRCUITS

Perform the AV control unit power supply and ground circuit diagnosis procedure. Refer to [AV-342, "AV CONTROL UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> Replace the AV control unit. Refer to [AV-381, "Removal and Installation"](#).

NO >> Repair or replace harness or connectors.

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U12B1 POWER SUPPLY VOLTAGE

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U12B1 POWER SUPPLY VOLTAGE

DTC Logic

INFOID:000000012422334

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:000000012422335

1. CHECK CHARGING SYSTEM

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

Is the inspection result normal?

- YES >> Replace the AV control unit. Refer to [AV-381, "Removal and Installation"](#).
- NO >> Repair or replace the malfunctioning components.

U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1300 AV COMM CIRCUIT

DTC Logic

INFOID:000000012422336

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
AV COMM CIRCUIT [U1300]	AV communication circuit malfunction (MCAN) between AV control unit and combination meter.	AV communication circuits between AV control unit and combination meter.

Diagnosis Procedure

INFOID:000000012422337

1. PERFORM SELF DIAGNOSTIC RESULT FOR METER M&A

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Perform "Self Diagnostic Result" for "METER M&A".

Are any DTCs displayed?

YES >> Refer to [MWI-31, "DTC Index"](#).

NO >> GO TO 2.

2. CHECK AV COMMUNICATION CIRCUIT (MCAN L) CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M109 and combination meter connector M77.
3. Check continuity between AV control unit connector M109 and combination meter connector M77.

AV control unit		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M109	32	M77	48	Yes
	39			

4. Check continuity between AV control unit connector M109 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M109	32	—	No
	39		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK AV COMMUNICATION CIRCUIT (MCAN H) CONTINUITY

1. Check continuity between AV control unit connector M109 and combination meter connector M77.

AV control unit		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M109	31	M77	47	Yes
	38			

2. Check continuity between AV control unit connector M109 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M109	31	—	No
	38		

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U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Is the inspection result normal?

- YES >> Replace the AV control unit. Refer to [AV-381, "Removal and Installation"](#).
- NO >> Repair or replace harness or connectors.

U1304 CAMERA IMAGE CALIBRATION

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1304 CAMERA IMAGE CALIBRATION

DTC Logic

INFOID:000000012422338

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Non-completion of the calibration [U1304]	Camera image calibration is incomplete.	Perform calibration of camera image.

Diagnosis Procedure

INFOID:000000012422339

1.PERFORM CALIBRATION

When U1304 is detected, perform calibration of camera image.

>> Refer to [AV-305, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Work Procedure"](#).

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AV

U1305 CONFIG UNFINISH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1305 CONFIG UNFINISH

DTC Logic

INFOID:000000012422340

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
Non-completion of the configuration [U1305]	Configuration of around view monitor control unit is incomplete.	Perform configuration of around view monitor control unit.

Diagnosis Procedure

INFOID:000000012422341

1.PERFORM CONFIGURATION

When U1305 is detected, perform configuration of around view monitor control unit.

>> Refer to [AV-302, "CONFIGURATION \(AROUND VIEW MONITOR CONTROL UNIT\) : Work Procedure"](#).

U1310 CONTROL UNIT (AV)

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

U1310 CONTROL UNIT (AV)

DTC Logic

INFOID:000000012422342

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (AV) [U1310]	Error during CAN controller hardware initialization (MCAN).	Replace AV control unit if malfunction occurs constantly. Refer to AV-381, "Removal and Installation" .

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:000000012422343

Regarding Wiring Diagram information, refer to [AV-267, "Wiring Diagram"](#).

1. CHECK FUSE

Check that the following fuses are not blown:

Terminal No.	Signal name	Fuse No.
19	Battery power supply	16 (20A)
40	Ignition power supply	30 (10A)

Are the fuses blown?

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

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors M108 and M109.
3. Check voltage between AV control unit connectors M108 and M109 and ground.

AV control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M108	19	—	Ignition switch: OFF	Battery voltage
M109	40		Ignition switch: ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between AV control unit connector M108 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M108	20	—	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

BOSE SPEAKER AMP

BOSE SPEAKER AMP : Diagnosis Procedure

INFOID:000000012422344

Regarding Wiring Diagram information, refer to [AV-267, "Wiring Diagram"](#).

1. CHECK FUSE

Check that the following fuses are not blown:

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Terminal No.	Signal name	Fuse No.
11	Battery power supply	11 (20A)

Are the fuses blown?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect Bose speaker amp. connector B137.
3. Check voltage between Bose speaker amp. connector B137 and ground.

Bose speaker amp.		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B137	11	—	Ignition switch: OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3.CHECK GROUND CIRCUIT

Check continuity between Bose speaker amp. connector B137 and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B137	12	—	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:000000012422345

Regarding Wiring Diagram information, refer to [AV-267, "Wiring Diagram"](#).

1.CHECK FUSE

Check that the following fuses are not blown:

Terminal No.	Signal name	Fuse No.
40	Ignition switch ON or START	30 (10A)

Are the fuses blown?

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

NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch to ON or START.
2. Disconnect around view monitor control unit connector M112.
3. Check voltage between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M112	40	—	Ignition switch: ON or START	Battery voltage

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between around view monitor control unit connector M112 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M112	39	—	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.

FRONT TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

FRONT TWEETER

Diagnosis Procedure

INFOID:000000012422346

Regarding Wiring Diagram information, refer to [AV-267. "Wiring Diagram"](#).

1. CONNECTOR CHECK

Check the AV control unit, Bose speaker amp. and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

2. CHECK FRONT TWEETER SIGNAL CIRCUIT CONTINUITY (BOSE SPEAKER AMP.)

1. Disconnect Bose speaker amp. connectors and suspect front tweeter connector.
2. Check continuity between Bose speaker amp. connectors and suspect front tweeter connector.

Bose speaker amp.		Front tweeter		Continuity
Connector	Terminal	Connector	Terminal	
B137	6	M80 (LH)	1	Yes
	7		2	
B138	37	M23 (RH)	1	
	27		2	

3. Check continuity between Bose speaker amp. connectors and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B137	6	—	No
	7		
B138	37		
	27		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK FRONT TWEETER SIGNAL (BOSE SPEAKER AMP.)

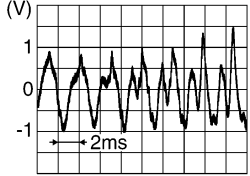
1. Connect Bose speaker amp. connectors and suspect front tweeter connector.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of Bose speaker amp. connectors.

Bose speaker amp.			Condition	Reference value
Connector	(+)	(-)		
		Terminal	Terminal	

FRONT TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

B137	6	7	Audio signal output	
B138	37	27		

Is the inspection result normal?

- YES >> Replace front tweeter. Refer to [AV-385. "Removal and Installation"](#).
 NO >> GO TO 4.

4. CHECK FRONT TWEETER SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

1. Turn ignition switch to OFF.
2. Disconnect Bose speaker amp. connector B138 and AV control unit connector M108.
3. Check continuity between Bose speaker amp. connector B138 and AV control unit connector M108.

Bose speaker amp.		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
B138	18	M108	2	Yes
	32		3	
	19		11	
	20		12	

4. Check continuity between Bose speaker amp. connector B138 and ground.

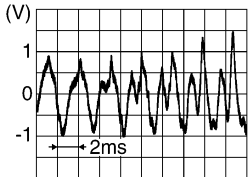
Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B138	18	—	No
	32		
	19		
	20		

Is the inspection result normal?

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

5. CHECK FRONT TWEETER SIGNAL (AV CONTROL UNIT)

1. Connect Bose speaker amp. connector B138 and AV control unit connector M108.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between AV control unit connector M108 and ground.

AV control unit connector M108		Condition	Reference value
(+)	(-)		
Terminal	Terminal	Audio signal output	
2	3		
11	12		

Is the inspection result normal?

FRONT TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

- YES >> Replace Bose speaker amp. Refer to [AV-384, "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).

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AV

CENTER SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

CENTER SPEAKER

Diagnosis Procedure

INFOID:000000012422347

Regarding Wiring Diagram information, refer to [AV-267. "Wiring Diagram"](#).

1. CONNECTOR CHECK

Check the AV control unit, Bose speaker amp. and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair the terminals or connectors.

2. CHECK CENTER SPEAKER SIGNAL CIRCUIT CONTINUITY (BOSE SPEAKER AMP.)

1. Disconnect Bose speaker amp. connector B138 and center speaker connector M70.
2. Check continuity between Bose speaker amp. connector B138 and center speaker connector M70.

Bose speaker amp.		Center speaker		Continuity
Connector	Terminal	Connector	Terminal	
B138	15	M70	1	Yes
	28		2	

3. Check continuity between Bose speaker amp. connector B138 and ground.

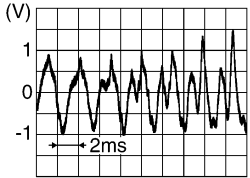
Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B138	15	—	No
	28		

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Repair or replace harness or connectors.

3. CHECK CENTER SPEAKER SIGNAL (BOSE SPEAKER AMP.)

1. Connect Bose speaker amp. connector B138 and center speaker connector M70.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between Bose speaker amp. connector B138 and ground.

Bose speaker amp. connector B138		Condition	Reference value
(+) Terminal	(-) Terminal		
15	28	Audio signal output	

Is the inspection result normal?

CENTER SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

- YES >> Replace center speaker. Refer to [AV-387. "Removal and Installation"](#).
 NO >> GO TO 4.

4. CHECK CENTER SPEAKER SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

1. Turn ignition switch to OFF.
2. Disconnect Bose speaker amp. connector B138 and AV control unit connector M108.
3. Check continuity between Bose speaker amp. connector B138 and AV control unit connector M108.

Bose speaker amp.		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
B138	18	M108	2	Yes
	32		3	
	19		11	
	20		12	

4. Check continuity between Bose speaker amp. connector B138 and ground.

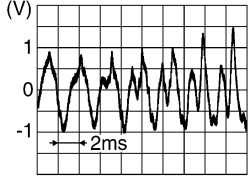
Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B138	18	—	No
	32		
	19		
	20		

Is the inspection result normal?

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

5. CHECK CENTER SPEAKER SIGNAL (AV CONTROL UNIT)

1. Connect Bose speaker amp. connector B138 and AV control unit connector M108.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between AV control unit connector M108 and ground.

AV control unit connector M108		Condition	Reference value
(+) Terminal	(-) Terminal		
2	3	Audio signal output	
11	12		

Is the inspection result normal?

- YES >> Replace Bose speaker amp. Refer to [AV-384. "Removal and Installation"](#).
 NO >> Replace AV control unit. Refer to [AV-381. "Removal and Installation"](#).

AV

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

FRONT DOOR SPEAKER

Diagnosis Procedure

INFOID:000000012422348

Regarding Wiring Diagram information, refer to [AV-267. "Wiring Diagram"](#).

1. CONNECTOR CHECK

Check the AV control unit, Bose speaker amp. and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

2. CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY (BOSE SPEAKER AMP.)

1. Disconnect Bose speaker amp. connectors and suspect front door speaker connector.
2. Check continuity between Bose speaker amp. connectors and suspect front door speaker connector.

Bose speaker amp.		Front door speaker		Continuity
Connector	Terminal	Connector	Terminal	
B137	4	D9 (LH)	1	Yes
	5		2	
	8	D114 (RH)	1	
	13		2	

3. Check continuity between Bose speaker amp. connectors and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B137	4	—	No
	5		
	8		
	13		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK FRONT DOOR SPEAKER SIGNAL (BOSE SPEAKER AMP.)

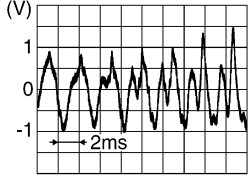
1. Connect Bose speaker amp. connectors and suspect front door speaker connector.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of Bose speaker amp. connectors.

Bose speaker amp. connector B137		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

4	5	Audio signal output	
8	13		

Is the inspection result normal?

- YES >> Replace front door speaker. Refer to [AV-386. "Removal and Installation"](#).
- NO >> GO TO 4.

4. CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

1. Turn ignition switch to OFF.
2. Disconnect Bose speaker amp. connector B138 and AV control unit connector M108.
3. Check continuity between Bose speaker amp. connector B138 and AV control unit connector M108.

Bose speaker amp.		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
B138	18	M108	2	Yes
	32		3	
	19		11	
	20		12	

4. Check continuity between Bose speaker amp. connector B138 and ground.

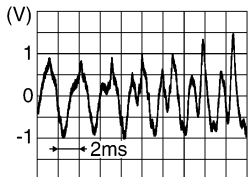
Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B138	18	—	No
	32		
	19		
	20		

Is the inspection result normal?

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

5. CHECK FRONT DOOR SPEAKER SIGNAL (AV CONTROL UNIT)

1. Connect Bose speaker amp. connector B138 and AV control unit connector M108.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between AV control unit connector M108 and ground.

AV control unit connector M108		Condition	Reference value
(+)	(-)		
Terminal	Terminal		
2	3	Audio signal output	
11	12		

Is the inspection result normal?

FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

- YES >> Replace Bose speaker amp. Refer to [AV-384, "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

REAR DOOR SPEAKER

Diagnosis Procedure

INFOID:000000012422349

Regarding Wiring Diagram information, refer to [AV-267. "Wiring Diagram"](#).

1. CONNECTOR CHECK

Check the AV control unit, Bose speaker amp. and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

2. CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY (BOSE SPEAKER AMP.)

1. Disconnect Bose speaker amp. connectors and suspect rear door speaker connector.
2. Check continuity between Bose speaker amp. connectors and suspect rear door speaker connector.

Bose speaker amp.		Rear door speaker		Continuity
Connector	Terminal	Connector	Terminal	
B137	1	D203 (LH)	1	Yes
	10		2	
	2	D303 (RH)	1	
	3		2	

3. Check continuity between Bose speaker amp. connectors and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B137	1	—	No
	10		
	2		
	3		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK REAR DOOR SPEAKER SIGNAL (BOSE SPEAKER AMP.)

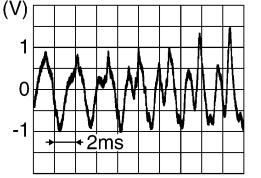
1. Connect Bose speaker amp. connectors and suspect rear door speaker connector.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of Bose speaker amp. connectors.

Bose speaker amp. connector B137		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

1	10	Audio signal output	
2	3		

Is the inspection result normal?

- YES >> Replace rear door speaker. Refer to [AV-388. "Removal and Installation"](#).
 NO >> GO TO 4.

4. CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY (AV CONTROL UNIT)

1. Turn ignition switch to OFF.
2. Disconnect Bose speaker amp. connector B138 and AV control unit connector M108.
3. Check continuity between Bose speaker amp. connector B138 and AV control unit connector M108.

Bose speaker amp.		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
B138	21	M108	4	Yes
	22		5	
	23		13	
	33		14	

4. Check continuity between Bose speaker amp. connector B138 and ground.

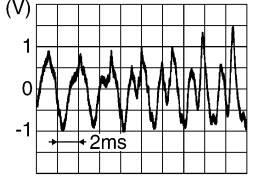
Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B138	21	—	No
	22		
	23		
	33		

Is the inspection result normal?

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

5. CHECK REAR DOOR SPEAKER SIGNAL (AV CONTROL UNIT)

1. Connect Bose speaker amp. connector B138 and AV control unit connector M108.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between AV control unit connector M108 and ground.

AV control unit connector M108		Condition	Reference value
(+)	(-)		
Terminal	Terminal	Audio signal output	
4	5		
13	14		

Is the inspection result normal?

REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

YES >> Replace Bose speaker amp. Refer to [AV-384, "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).

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SUBWOOFER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

SUBWOOFER

Diagnosis Procedure

INFOID:000000012422350

Regarding Wiring Diagram information, refer to [AV-267, "Wiring Diagram"](#).

1. CONNECTOR CHECK

Check the AV control unit, BOSE speaker amp. and subwoofer connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminal and connector.

2. CHECK SUBWOOFER AMP ON CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect Bose speaker amp. connector B138 and subwoofer connector.
3. Check continuity between Bose speaker amp. connector B138 and subwoofer connector B116.

Bose speaker amp.		Subwoofer		Continuity
Connector	Terminal	Connector	Terminal	
B138	25	B116	4	Yes

4. Check continuity between Bose speaker amp. connector B138 and ground.

Bose speaker amp.		Ground	Continuity
Connector	Terminal		
B138	25	—	No

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK SUBWOOFER AMP ON CIRCUIT VOLTAGE

1. Connect Bose speaker amp. connector B138.
2. Turn ignition switch ON.
3. Check voltage between Bose speaker amp. connector B138 and ground.

Bose speaker amp.		Ground	Voltage (Approx.)
(+)			
Connector	Terminal		
B138	25	—	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace Bose speaker amp. Refer to [AV-384, "Removal and Installation"](#).

4. CHECK SUBWOOFER SIGNAL CIRCUIT CONTINUITY

1. Disconnect BOSE speaker amp. connector B137 and subwoofer connector.
2. Check continuity between BOSE speaker amp. connector B137 and subwoofer connector.

SUBWOOFER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

BOSE speaker amp.		Subwoofer		Continuity
Connector	Terminal	Connector	Terminal	
B137	9	B116	2	Yes
	14		1	

3. Check continuity between BOSE speaker amp. connector B137 and ground.

BOSE speaker amp.		Ground	Continuity
Connector	Terminal		
B137	9	—	No
	14		

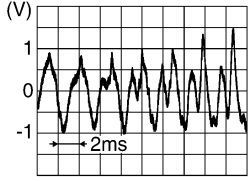
Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness or connectors.

5. CHECK SUBWOOFER SIGNAL

1. Connect BOSE speaker amp. connector B137 and subwoofer connector.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check the signal between the terminals of BOSE speaker amp. connector B137.

BOSE speaker amp. connector B137		Condition	Reference value
(+) Terminal	(-) Terminal		
9	14	Audio signal output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>

Is the inspection result normal?

YES >> Replace subwoofer. Refer to [AV-389, "Removal and Installation"](#).

NO >> GO TO 6.

6. CHECK PRE-AMP SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M108 and BOSE speaker amp. connector B138.
2. Check continuity between AV control unit connector M108 and BOSE speaker amp. connector B138.

AV control unit		BOSE speaker amp.		Continuity
Connector	Terminal	Connector	Terminal	
M108	4	B138	21	Yes
	5		22	
	13		23	
	14		33	

3. Check continuity between AV control unit connector M108 and ground.

SUBWOOFER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

AV control unit		Ground	Continuity
Connector	Terminal		
M108	4	—	No
	5		
	13		
	14		

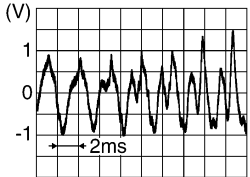
Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace harness or connectors.

7. CHECK PRE-AMP SIGNAL

1. Connect AV control unit connector M108 and BOSE speaker amp. connector B138.
2. Turn ignition switch to ON.
3. Push AV control unit POWER switch.
4. Check signal between the terminals of AV control unit connector M108.

AV control unit connector M108		Condition	Reference value
(+) Terminal	(-) Terminal		
4	5	Audio signal output	
13	14		

SKIB3609E

Is the inspection result normal?

YES >> Replace BOSE speaker amp. Refer to [AV-384, "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).

AMP ON SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

AMP ON SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:000000012422351

Regarding Wiring Diagram information, refer to [AV-267. "Wiring Diagram"](#).

1. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND BOSE SPEAKER AMP.

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M108 and Bose speaker amp. connector B138.
3. Check continuity between audio unit connector M108 and Bose speaker amp. connector B138

AV control unit		Bose speaker amp.		Continuity
Connector	Terminal	Connector	Terminal	
M108	1	B138	31	Yes

4. Check continuity between AV control unit connector M108 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M108	1	—	No

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace harness or connectors.

2. CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector M108.
2. Turn ignition switch ON.
3. Check voltage between AV control unit connector M108 and ground.

AV control unit (+)		Ground (-)	Voltage (Approx.)
Connector	Terminal		
M108	1	—	Battery voltage

Is the inspection result normal?

- YES >> Replace Bose speaker amp. Refer to [AV-384. "Removal and Installation"](#).
 NO >> Replace AV control unit. Refer to [AV-381. "Removal and Installation"](#).

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AV

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

MICROPHONE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:000000012422352

Regarding Wiring Diagram information, refer to [AV-267. "Wiring Diagram"](#).

1. CHECK HARNESS BETWEEN AV CONTROL UNIT AND MICROPHONE

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M109 and microphone connector R8.
3. Check continuity between AV control unit connector M109 and microphone connector R8.

AV control unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M109	34	R8	1	Yes
	35		4	
	36		2	

4. Check continuity between AV control unit connector M109 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M109	34	—	No
	35		

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connectors.

2. CHECK MICROPHONE POWER SUPPLY

1. Connect AV control unit connector M109 and microphone connector R8.
2. Turn ignition switch ON.
3. Check voltage between microphone connector R8 and ground.

Microphone (+)		Ground (-)	Voltage (Approx.)
Connector	Terminal		
R8	4	—	5V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace AV control unit. Refer to [AV-381. "Removal and Installation"](#).

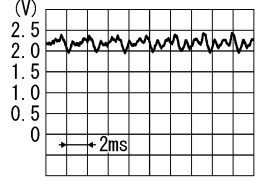
3. CHECK MICROPHONE SIGNAL

Check signal between terminals of AV control unit connector M109.

MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

AV control unit connector M109		Condition	Reference value
(+)	(-)		
Terminal	Terminal		
34	36	Speak into microphone.	 <p style="text-align: right; font-size: small;">PKIB5037J</p>

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-381. "Removal and Installation"](#).
- NO >> Replace microphone. Refer to [AV-391. "Removal and Installation"](#).

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AV

STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

STEERING SWITCH






Diagnosis Procedure

INFOID:000000012422353

Regarding Wiring Diagram information, refer to [AV-267. "Wiring Diagram"](#).

1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch connector M90.
3. Check resistance between the terminals of combination switch connector M90.

Combination switch connector M90		Condition	Resistance Ω (Approx.)
Terminal	Terminal		
25	19	Depress SOURCE switch.	1
		Depress Δ switch.	121
		Depress ∇ switch.	321
		Depress  switch.	723
		Depress ENTER switch.	2023
18		Depress -  switch.	1
		Depress  + switch.	121
		Depress  switch.	321
		Depress  switch.	723
		Depress DISPLAY switch.	2023

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to [AV-383. "Removal and Installation"](#).

2. CHECK HARNESS BETWEEN COMBINATION METER AND COMBINATION SWITCH

1. Disconnect combination meter connector M76 and combination switch connector M30.
2. Check continuity between combination meter connector M76 and combination switch connector M30.

Combination meter		Combination switch		Continuity
Connector	Terminal	Connector	Terminal	
M76	22	M30	8	Yes
	23		15	
	21		14	

3. Check continuity between combination meter connector M76 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M76	22	—	No
	23		
	21		

Is the inspection result normal?

STEERING SWITCH

[MULTI AV (NAVI WITH BOSE)]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 3.
- NO >> Repair or replace harness or connectors.

3. CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M90 and M30.

Combination switch				Continuity
Connector	Terminal	Connector	Terminal	
M90	25	M30	8	Yes
	18		15	
	19		14	

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Replace spiral cable. Refer to [SR-15, "Removal and Installation"](#).

4. CHECK HARNESS BETWEEN COMBINATION METER AND AV CONTROL UNIT

1. Disconnect combination meter connector M77 and AV control unit connector M109.
2. Check continuity between combination meter connector M77 and AV control unit connector M109.

Combination meter		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M77	47	M109	31	Yes
	48		32	

3. Check continuity between combination meter connector M77 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M77	47	—	No
	48		

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-381, "Removal and Installation"](#).
- NO >> Repair or replace harness or connectors.

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AV

USB CONNECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

USB CONNECTOR

Diagnosis Procedure

INFOID:000000012422354

Regarding Wiring Diagram information, refer to [AV-267, "Wiring Diagram"](#).

1. CHECK USB INTERFACE HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M138 and USB interface connector M89.
3. Check continuity between AV control unit connector M138 and USB interface connector M89.

AV control unit		USB interface		Continuity
Connector	Terminal	Connector	Terminal	
M138	45	M89	1	Yes
	46		2	
	47		3	
	49		5	
	50		6	

4. Check continuity between AV control unit connector M138 and ground.

AV control unit		—	Continuity
Connector	Terminal		
M138	45	Ground	No
	47		

Is the inspection result normal?

- YES >> Replace the USB interface. Refer to [AV-390, "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

AUXILIARY INPUT JACK

[MULTI AV (NAVI WITH BOSE)]

< DTC/CIRCUIT DIAGNOSIS >

AUXILIARY INPUT JACK

Diagnosis Procedure

INFOID:000000012422355

Regarding Wiring Diagram information, refer to [AV-267. "Wiring Diagram"](#).

1. CHECK AUX IN JACK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M109 and AUX in jack connector M104.
3. Check continuity between AV control unit connector M109 and AUX in jack connector M104.

AV control unit		AUX in jack		Continuity
Connector	Terminal	Connector	Terminal	
M109	21	M104	4	Yes
	22		3	
	23		1	

4. Check continuity between AV control unit connector M109 and ground.

AV control unit		—	Continuity
Connector	Terminal		
M109	21	Ground	No
	23		

Is the inspection result normal?

- YES >> Replace the AUX in jack. Refer to [AV-390. "Removal and Installation"](#).
NO >> Repair or replace harness or connectors.

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C
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O
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AV

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM

Symptom Table

INFOID:000000012422356

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	AV control unit	Malfunction in AV control unit. Refer to AV-248. "On Board Diagnosis Function" .

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Symptoms	Check items	Probable malfunction location
	No sound from all speakers.	<ul style="list-style-type: none"> • Speaker circuit shorted to ground. Refer to AV-267, "Wiring Diagram". • Bose amp. ON signal circuit malfunction. Refer to AV-328, "Diagnosis Procedure". • Bose speaker amp. power supply and ground circuits malfunction. Refer to AV-342, "BOSE SPEAKER AMP : Diagnosis Procedure".
No sound comes out or the level of the sound is low.	Only a certain speaker (front tweeter LH, front tweeter RH, center speaker, front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH, subwoofer) does not output sound.	<ul style="list-style-type: none"> • Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and Bose speaker amp. Refer to: <ul style="list-style-type: none"> - AV-345, "Diagnosis Procedure" (front tweeter). - AV-348, "Diagnosis Procedure" (center speaker). - AV-350, "Diagnosis Procedure" (front door speaker). - AV-353, "Diagnosis Procedure" (rear door speaker). - AV-356, "Diagnosis Procedure" (subwoofer). • Sound signal circuit malfunction between Bose speaker amp. and speaker. Refer to: <ul style="list-style-type: none"> - AV-345, "Diagnosis Procedure" (front tweeter). - AV-348, "Diagnosis Procedure" (center speaker). - AV-350, "Diagnosis Procedure" (front door speaker). - AV-353, "Diagnosis Procedure" (rear door speaker). - AV-356, "Diagnosis Procedure" (subwoofer). • Malfunction in speaker. Refer to: <ul style="list-style-type: none"> - AV-385, "Removal and Installation" (front tweeter). - AV-387, "Removal and Installation" (center speaker). - AV-386, "Removal and Installation" (front door speaker). - AV-388, "Removal and Installation" (rear door speaker). - AV-389, "Removal and Installation" (subwoofer). • Malfunction in AV control unit. Refer to AV-248, "On Board Diagnosis Function". • Malfunction in Bose speaker amp. Replace Bose speaker amp. Refer to AV-384, "Removal and Installation".

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F
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K
L
M
AV
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P

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Symptoms	Check items	Probable malfunction location
	Noise comes out from all speakers.	<ul style="list-style-type: none"> • Malfunction in AV control unit. Refer to AV-248. "On Board Diagnosis Function". • Malfunction in Bose speaker amp. Replace Bose speaker amp. Refer to AV-384. "Removal and Installation".
Noise is mixed with audio.	Noise comes out only from a certain speaker (front tweeter LH, front tweeter RH, center speaker, front door speaker LH, front door speaker RH, rear door speaker LH, rear door speaker RH, subwoofer).	<ul style="list-style-type: none"> • Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and Bose speaker amp. Refer to: <ul style="list-style-type: none"> - AV-345. "Diagnosis Procedure" (front tweeter). - AV-348. "Diagnosis Procedure" (center speaker). - AV-350. "Diagnosis Procedure" (front door speaker). - AV-353. "Diagnosis Procedure" (rear door speaker). - AV-356. "Diagnosis Procedure" (subwoofer). • Sound signal circuit malfunction between Bose speaker amp. and speaker. Refer to: <ul style="list-style-type: none"> - AV-345. "Diagnosis Procedure" (front tweeter). - AV-348. "Diagnosis Procedure" (center speaker). - AV-350. "Diagnosis Procedure" (front door speaker). - AV-353. "Diagnosis Procedure" (rear door speaker). - AV-356. "Diagnosis Procedure" (subwoofer). • Malfunction in speaker. Refer to: <ul style="list-style-type: none"> - AV-385. "Removal and Installation" (front tweeter). - AV-387. "Removal and Installation" (center speaker). - AV-386. "Removal and Installation" (front door speaker). - AV-388. "Removal and Installation" (rear door speaker). - AV-389. "Removal and Installation" (subwoofer). • Malfunction in AV control unit. Refer to AV-248. "On Board Diagnosis Function". • Malfunction in Bose speaker amp. Replace Bose speaker amp. Refer to AV-384. "Removal and Installation".
	Noise is mixed with radio only (when the vehicle hits a bump or while driving over bad roads)	Poor connector connection of antenna or antenna feeder. Refer to AV-398. "Feeder Layout" .
No radio reception or poor reception.	<ul style="list-style-type: none"> • Other audio sounds are normal. • Any radio station cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises). 	<ul style="list-style-type: none"> • Antenna amp. ON signal circuit malfunction. Refer to AV-330. "Diagnosis Procedure". • Poor connector connection of antenna or antenna feeder. Refer to AV-398. "Feeder Layout".

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Symptoms	Check items	Probable malfunction location
No satellite radio reception.	There is malfunction in the CONSULT self diagnosis result. Refer to AV-249, "CONSULT Function" .	<ul style="list-style-type: none"> Malfunction in antenna, antenna feeder or AV control unit. Perform DTC diagnosis. Refer to AV-326, "Diagnosis Procedure". Poor continuity in antenna feeder. Poor connector connection of antenna or antenna feeder. Refer to AV-398, "Feeder Layout".
	There is no malfunction in the CONSULT self diagnosis result. Refer to AV-249, "CONSULT Function" .	<ul style="list-style-type: none"> Poor continuity in antenna feeder. Poor connector connection of antenna or antenna feeder. Loose satellite radio antenna mounting nut. Refer to AV-398, "Feeder Layout".
Buzz/rattle sound from speaker	The majority of buzz/rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the buzz/rattle.	Refer to "SQUEAK AND RATTLE TROUBLE DIAGNOSIS" in the appropriate interior trim section.

RELATED TO HANDS-FREE PHONE

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

Check Compatibility

- Make sure the customer's Bluetooth® related concern is understood.
- Verify the customer's concern.

NOTE:
The customer's phone may be required, depending upon their concern.
- Write down the customer's phone brand, model and service provider.

NOTE:
It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
- Go to "www.nissanusa.com/bluetooth/".
 - Using the website's search engine, find out if the customer's phone is on the approved list.
 - If the customer's phone is NOT on the approved list:

Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.
 - If the feature related to the customer's concern shows as "N" (not compatible):

Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features".
 - If the feature related to the customer's concern shows as "Y" (compatible):









Perform diagnosis as per the following table:

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MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection (no connection is displayed on the display at the guide).	Repeat the registration of cellular phone.	
Hands-free phone cannot be established.	<ul style="list-style-type: none"> 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. 	Malfunction in AV control unit. Replace AV control unit. Refer to AV-381, "Removal and Installation" .
The other party's voice cannot be heard by hands-free phone.	Check the "microphone speaker" in Inspection & Adjustment Mode if sound is heard.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-360, "Diagnosis Procedure" .
The system cannot be operated.	<ul style="list-style-type: none"> The voice recognition can be controlled. Steering switch's , , and  switch works, but  does not work. 	Steering switch malfunction. Replace steering switch. Refer to AV-383, "Removal and Installation" .
	Steering switch's  ,  ,  , and  switches do not work.	Steering switch signal circuit malfunction. Refer to AV-362, "Diagnosis Procedure" .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-362, "Diagnosis Procedure" .

RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
Navigation system is inoperative.	Navigation malfunction.	<ul style="list-style-type: none"> Malfunction in SD card. Malfunction in AV control unit. Refer to AV-248, "On Board Diagnosis Function".
	Steering switches malfunction.	Steering switch signal circuit malfunction. Refer to AV-362, "Diagnosis Procedure" .
	Voice activated control malfunction.	Microphone signal circuit malfunction. Refer to AV-360, "Diagnosis Procedure" . Steering switch signal circuit malfunction. Refer to AV-362, "Diagnosis Procedure" .

RELATED TO AROUND VIEW MONITOR

Symptoms	Check items	Probable malfunction location
Display does not switch to camera image when CAMERA switch is pressed or selector lever is in R (reverse).	Around view monitor control unit malfunction.	Around view monitor control unit power supply and ground circuits malfunction. Refer to AV-343, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure" .
	Camera image signal circuit (output) malfunction.	Camera image signal circuit (output) malfunction between around view monitor control unit and display unit. Refer to AV-261, "Reference Value" .
Display switches to camera image when CAMERA switch is pressed or selector lever is in R (reverse), but all views are not displayed.	Camera image signal circuit (input) malfunction.	Camera image signal circuit (input) malfunction between camera and around view monitor control unit. Refer to: <ul style="list-style-type: none"> AV-317, "Diagnosis Procedure" (front camera). AV-313, "Diagnosis Procedure" (rear camera). AV-319, "Diagnosis Procedure" (side camera LH). AV-315, "Diagnosis Procedure" (side camera RH).

MULTI AV SYSTEM

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Symptoms	Check items	Probable malfunction location
Camera image is rolling.	Camera image signal circuit (output) malfunction.	Camera image signal circuit (output) malfunction between around view monitor control unit and display unit. Refer to AV-261, "Reference Value" .
Display does not switch to rear view monitor even when selector lever is in R (reverse).	Reverse signal circuit malfunction.	Reverse signal circuit between BCM and around view monitor control unit. Refer to AV-261, "Reference Value" .
Predicted course line display in front view and rear view is malfunctioning.	Steering angle sensor malfunction.	Predicted course line center position is malfunctioning. Refer to AV-304, "PREDICTED COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure" .
Front view and front of birds-eye view is not displayed.	<ul style="list-style-type: none"> • Front camera malfunction. • Front camera image signal circuit malfunction. 	<ul style="list-style-type: none"> • Front camera power supply and ground circuits malfunction. • Front camera image signal circuit malfunction between front camera and around view monitor control unit. Refer to AV-317, "Diagnosis Procedure" .
Rear view and rear of birds-eye view is not displayed.	<ul style="list-style-type: none"> • Rear view camera malfunction. • Rear view camera image signal circuit malfunction. 	<ul style="list-style-type: none"> • Rear view camera power supply and ground circuits malfunction. • Rear view camera image signal circuit malfunction between rear view camera and around view monitor control unit. Refer to AV-313, "Diagnosis Procedure" .
Driver side of birds-eye view is not displayed.	<ul style="list-style-type: none"> • Side camera LH malfunction. • Side camera LH image signal circuit malfunction. 	<ul style="list-style-type: none"> • Side camera LH power supply and ground circuits malfunction. • Side camera LH image signal circuit malfunction between side camera LH and around view monitor control unit. Refer to AV-319, "Diagnosis Procedure" .
Front-side and passenger side of birds-eye view is not displayed.	<ul style="list-style-type: none"> • Side camera RH malfunction. • Side camera RH image signal circuit malfunction. 	<ul style="list-style-type: none"> • Side camera RH power supply and ground circuits malfunction. • Side camera RH image signal circuit malfunction between side camera RH and around view monitor control unit. Refer to AV-315, "Diagnosis Procedure" .
Selector lever is in a position other than R (reverse) and front, rear, front-side and Birds-Eye views are displayed even as vehicle speed increases.	Vehicle speed signal malfunction.	Vehicle speed signal malfunction between ABS actuator and electric unit (control unit) and around view monitor control unit. Refer to AV-261, "Reference Value" .

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AV

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

NORMAL OPERATING CONDITION

Description

INFOID:000000012422357

RELATED TO NOISE

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

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

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

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

NOTE:

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

Type of Noise and Possible Cause

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

RELATED TO HANDS-FREE PHONE

Symptom	Cause and Counter measure
Does not recognize cellular phone connection (No connection is displayed on the display at the guide).	Some Bluetooth [®] enabled cellular phones may not be recognized by the in-vehicle phone module. Refer to "RELATED TO HANDS-FREE PHONE (Check Compatibility)" in AV-366, "Symptom Table" .
Cannot use hands-free phone.	Customer will not be able to use a hands-free phone under the following conditions: <ul style="list-style-type: none">• The vehicle is outside of the telephone service area.• The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.• The cellular phone is locked to prevent it from being dialed. NOTE: While a cellular phone is connected through the Bluetooth [®] wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth [®] Hands-Free Phone System cannot charge cellular phones.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

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

RELATED TO NAVIGATION

Basic Operation

Symptom	Cause	Remedy
No image is shown.	Display brightness adjustment is set fully to DARK side.	Adjust the display brightness.
No guide sound is heard. Audio guide volume is too low or too high.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.
	Audio guidance is not available while the vehicle is driving on a dark pink route.	System is not malfunctioning.
Screen is too dark. Motion of the image is too slow.	Temperature inside the vehicle is low.	Wait until the temperature inside the vehicle reaches the proper temperature.
Small black or bright spots appear on the screen.	Symptom peculiar to a liquid crystal display (display unit).	System is not malfunctioning.

Vehicle Mark

Symptom	Cause	Remedy
Map screen and BIRDVIEW™ Name of the place vary with the screen.	Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ. The same place name, street name, etc. may not be displayed every time on account of the data processing.	System is not malfunctioning.
Vehicle mark is not positioned correctly.	Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.	Drive the vehicle for a while in the GPS satellite signal receiving condition.
Screen will not switch to nighttime mode after the lighting switch is turned ON.	The daytime screen is selected by the "SWITCH SCREENS" when the last time the screen dimming setting is done. Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjustment function.	Perform screen dimming and select the nighttime screen by "SWITCH SCREENS".
Map screen will not scroll in accordance with the vehicle travel.	Current location is not displayed.	Press "MAP" button to display the current location.
Vehicle mark will not be shown.	Current location is not displayed.	Press "MAP" button to display the current location.
Accuracy indicator (GPS satellite mark) on the map screen stays gray.	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
	GPS satellite signal cannot be received because an obstacle is placed on top of the instrument panel.	Do not place anything on top of the meter display (instrument panel).
	GPS satellites are not visible from current location.	Wait until GPS satellites are visible by moving the vehicle.

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Symptom	Cause	Remedy
Vehicle location accuracy is low.	Accuracy indicator (GPS satellite mark) on the map screen stays gray.	Current location is not determined.
	Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fitted or the system has been used on another vehicle.	Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMATION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD-ROM will be released once a year.

Destination, Passing Points and Menu Items Cannot be Selected/Set

Symptom	Cause	Remedy
Destination cannot be set.	Destination to be set is on an expressway.	Set the destination on an ordinary road.
Passing point is not searched when re-searching the route.	The vehicle has already passed the passing point, or the system judged so.	To include the passing points that have been passed into the route again, set the route again.
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.
	Vehicle mark is not on the recommended route.	Drive on the recommended route.
	Route guide is turned OFF.	Turn route guide ON.
	Route information is not available on the dark pink route.	System is not malfunctioning.
After the route searching, no guide sign will appear as the vehicle goes near the entrance/exit to the toll road.	Vehicle mark is not on the recommended route. (On the display, only guide signs related to the recommended route will be shown.)	Drive on the recommended route.
Automatic route searching is not possible.	Vehicle is driving on a highway (gray route), or no recommended route is available.	Drive on a road to be searched. Or re-search the route manually. In this case, however, the whole route will be searched.
Performed automatic detour search (or detour search). However, the result is the same as that of the previous search.	Performed search with every conditions considered. However, the result is the same as that of the previous search.	System is not malfunctioning.
Passing points cannot be set.	More than five passing points were set.	Passing points can be set up to five. To stop at more than five points, perform sharing in several steps.
When setting the route, the starting point cannot be selected.	The current vehicle location is always set as the starting point of a route.	System is not malfunctioning.
Some menu items cannot be selected.	The vehicle is being driven.	Stop the vehicle at a safe place and then operate the system.

Voice Guide

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Symptom	Cause	Remedy	A
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunctioning.	B
	The vehicle is not on the recommended route.	Return to the recommended route or re-search the route.	C
	Voice guide is turned OFF.	Turn voice guide ON.	D
	Route guide is turned OFF.	Turn route guide ON.	E
Voice guide does not match the actual road pattern.	Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.	Drive in conformity to the actual traffic rules.	F

Route Search

Symptom	Cause	Remedy	G
No route is shown.	No road to be searched is found around the destination.	Find wider road (orange road or wider) nearby and reset the destination and passing points onto it. Take care of the traveling direction when there are separate up and down roads.	H
	Starting point and the destination are too close.	Set the destination at more distant point.	I
	Conditional traffic regulation (day of the week/ time of the day) is set at the area around the current location or the destination.	Turn the time-regulating search conditions OFF. Turn "Avoid regulation time" in the search conditions OFF.	J
Indicated route is intermittent.	In some areas, highways (gray routes) are not used for the search ^(Note) . Therefore, the route to the current location or the passing points may be intermittent.	System is not malfunctioning.	K
When the vehicle has passed the recommended route, it is deleted from the screen.	A recommended route is controlled by each section. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.)	System is not malfunctioning.	L
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).	M
	A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.	Slightly move the starting point or the destination, or set the passing point on the route of your choice.	N
	In the area where highways (gray routes) are used for the search, left turn has priority around the current location and the destination (passing points). For this reason, the recommended route may be detouring.	System is not malfunctioning.	O
Landmarks on the map do not match the actual ones.	This can be happen due to omission or error in the map data.	As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.	P
Recommended route is far from the starting point, passing points, and destination.	Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.	Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.	Q

NOTE:

Except for the ordinance-designated cities. (Malfunctioning areas may be changed in the updated map disc.)

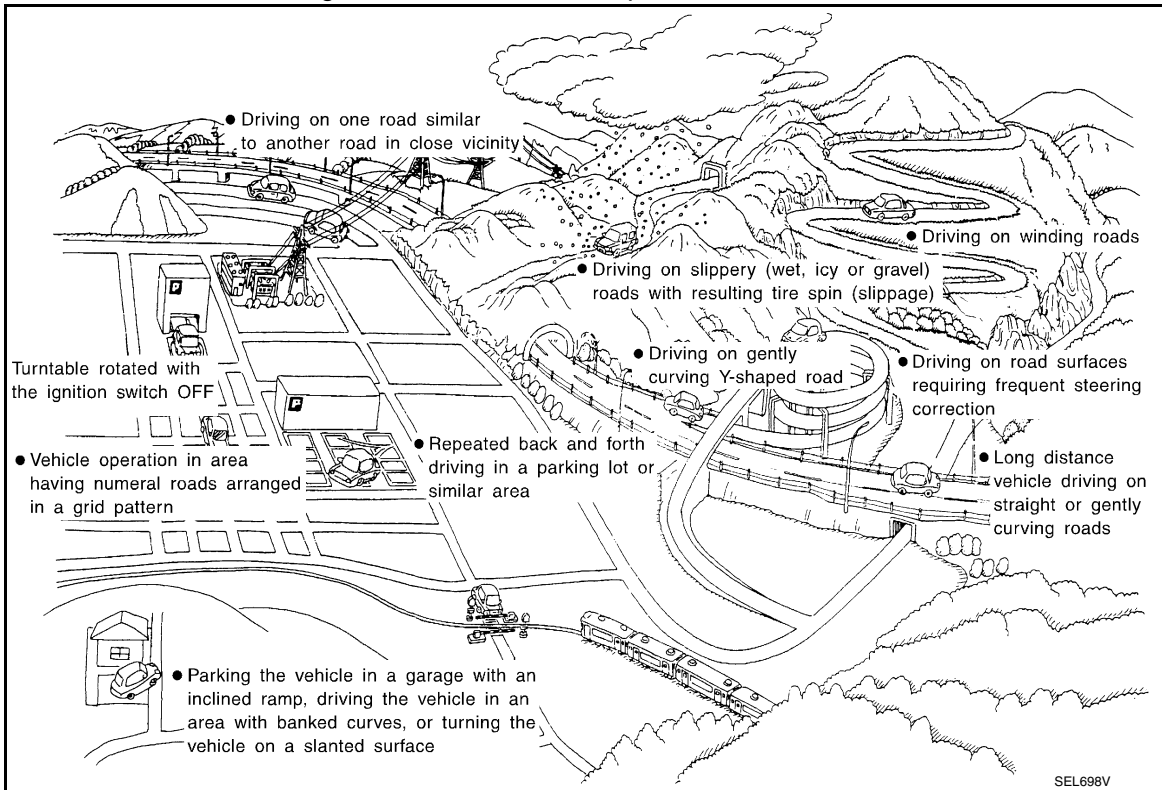
Examples of Current-Location Mark Displacement

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

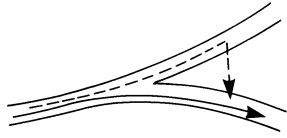
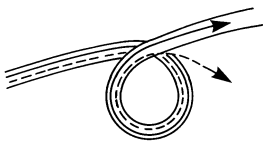
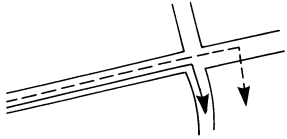
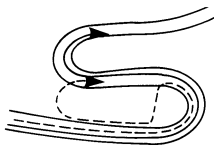
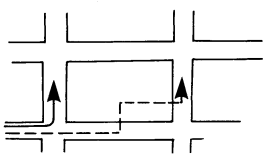
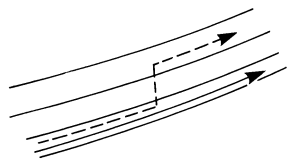
Vehicle's travel amount is calculated by reading its travel distance and turning angle. Therefore, if the vehicle is driven in the following manner, an error will occur in the vehicle's current location display. If correct location has not been restored after driving the vehicle for a while, perform location correction.



NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

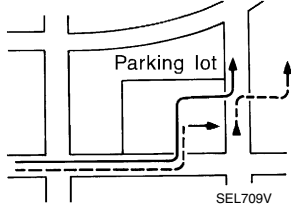
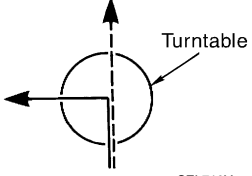
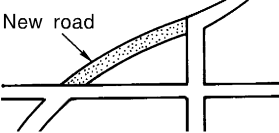
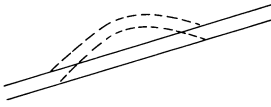
Cause (condition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
Y-intersections  ELK0192D	At a Y intersection or similar gradual division of roads, an error in the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
Spiral roads  ELK0193D	When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark may deviate from the correct location.	
Straight roads  ELK0194D	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and distance errors may accumulate. As a result, the vehicle mark may deviate from the correct location when the vehicle is turned at a corner.	
Zigzag roads  ELK0195D	When driving on a zigzag road, the map may be matched to other roads in the similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	
Roads laid out in a grid pattern  ELK0196D	When driving where roads are laid out in a grid pattern, or where many roads are running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.	
Parallel roads  ELK0197D	When two roads are running in parallel (such as highway and sideway), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.	

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

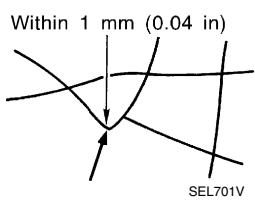
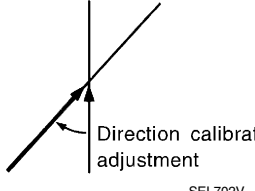
[MULTI AV (NAVI WITH BOSE)]

Cause (condition) -: While driving ooo: Display		Driving condition	Remarks (correction, etc.)
Place	In a parking lot  SEL709V	When driving in a parking lot, or other location where there are no roads on the map, matching may place the vehicle mark on a nearby road. When the vehicle returns to the road, the vehicle mark may have deviated from the correct location. When driving in circle or turning the steering wheel repeatedly, direction errors accumulate, and the vehicle mark may deviate from the correct location.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
	Turntable  SEL710V	When the ignition switch is OFF, the navigation system cannot get the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be wrong and the correct road may not be easily returned to after rotating the vehicle on a turntable with the ignition OFF.	
	Slippery roads	On snow, wet roads, gravel, or other roads where tires may slip easily, accumulated mileage errors may cause the vehicle mark to deviate from the correct road.	
	Slopes	When parking in sloped garages, when travelling on banked roads, or in other cases where the vehicle turns when tilted, an error in the turning angle will occur, and the vehicle mark may deviate from the road.	
Map data	Road not displayed on the map screen  SEL699V	When driving on new roads or other roads not displayed on the map screen, map matching does not function correctly and matches the location to a nearby road. When the vehicle returns to a road which is on the map, the vehicle mark may deviate from the correct road.	
	Different road pattern (Changed due to repair)  ELK0201D	If the road pattern stored in the map data and the actual road pattern are different, map matching does not function correctly and matches the location to a nearby road. The vehicle mark may deviate from the correct road.	
Vehicle	Use of tire chains	When tire chains are used, the mileage is not correctly detected, and the vehicle mark may deviate from the correct road.	Drive the vehicle for a while. If the distance still deviates, adjust it by using the distance adjustment function. (If the tire chain is removed, recover the original value.)

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

Cause (condition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
Precautions for driving	Just after the engine is started	If the vehicle is driven just after the engine is started when the gyroscope (angular speed sensor) correction is not completed, the vehicle can lose its direction and may have deviated from the correct location. Wait for a short while before driving after starting the engine.
	Continuous driving without stopping	When driving long distances without stopping, direction errors may accumulate, and the current-location mark may deviate from the correct road. Stop and adjust the orientation.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable perform correct detection, and may cause the vehicle mark to deviate from the correct road. If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
How to correct location	Position correction accuracy 	If the accuracy of location settings is poor, accuracy may be reduced when the correct road cannot be found, particularly in places where there are many roads. Enter in the road displayed on the screen with an accuracy of approx. 1mm. Caution: Whenever possible, use detailed map for the correction.
	Direction when location is corrected 	If the accuracy of location settings during correction is poor, accuracy may be reduced afterwards. Perform direction correction.

Location Correction by Map-Matching is Slow

- The map-matching function needs to refer to the data of the surrounding area. It is necessary to drive some distance for the function to work.
- Because map-matching operates on this principle, when there are many roads running in similar directions in the surrounding area, no matching determination may be made. The location may not be corrected until some special feature is found.

Name of Road is Not Displayed

The current road name may not be displayed if there are no road names displayed on the map screen.

Contents of Display Differ for Birdview™ and the (Flat) Map Screen

Difference of the BIRDVIEW™ screen from the flat map screen are as follows.

- The current place name displays names which are primarily in the direction of vehicle travel.
- The amount of time before the vehicle travel or turn angle is updated on the screen is longer than for the (flat) map display.
- The conditions for display of place names, roads, and other data are different for nearby areas and for more distant areas.
- Some thinning of the character data is done to prevent the display becoming too complex. In some cases and in some locations, the display contents may differ.
- The same place name, street name, etc. may be displayed multiple times.

Vehicle Mark Shows a Position Which is Completely Wrong

In the following cases, the vehicle mark may appear on completely different position in the map depending on the GPS satellite signal receiving conditions. In this case, perform location correction and direction correction:

- When location correction has not been done
- If the receiving conditions of the GPS satellite signal is poor, if the vehicle mark becomes out of place, it may move to a completely different location and not come back if location correction is not done. The position will be corrected if the GPS signal can be received.
- When the vehicle has traveled by ferry, or when the vehicle has been being towed

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV (NAVI WITH BOSE)]

- Because calculation of the current location cannot be done when traveling with the ignition off, for example when traveling by ferry or when being towed, the location before travel is displayed. If the precise location can be detected with GPS, the location will be corrected.

Vehicle Mark Jumps

In the following cases, the vehicle mark may appear to jump as a result of automatic correction of the current location:

- When map matching has been done
- If the current location and the vehicle mark are different when map matching is done, the vehicle mark may seem to jump. At this time, the location may be “corrected” to the wrong road or to a location which is not on a road.
- When GPS location correction has been done
- If the current location and the vehicle mark are different when the location is corrected using GPS measurements, the vehicle mark may seem to jump. At this time, the location may be “corrected” to a location which is not on a road.

Vehicle Mark is in a River or Sea

The navigation system moves the vehicle mark with no distinction between land and rivers or sea. If the vehicle mark is somehow out of place, it may appear that the vehicle is driving in a river or the sea.

Vehicle Mark Automatically Rotates

The system wrongly memorizes the rotating status as stopping when the ignition switch is turned ON with the turntable rotating. That causes the vehicle mark to rotate when the vehicle is stopped.

When Driving on Same Road, Sometimes Vehicle Mark is in Right Place and Sometimes it is in Wrong Place

The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and the operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been wrong, conditions may cause the vehicle mark to deviate.

AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

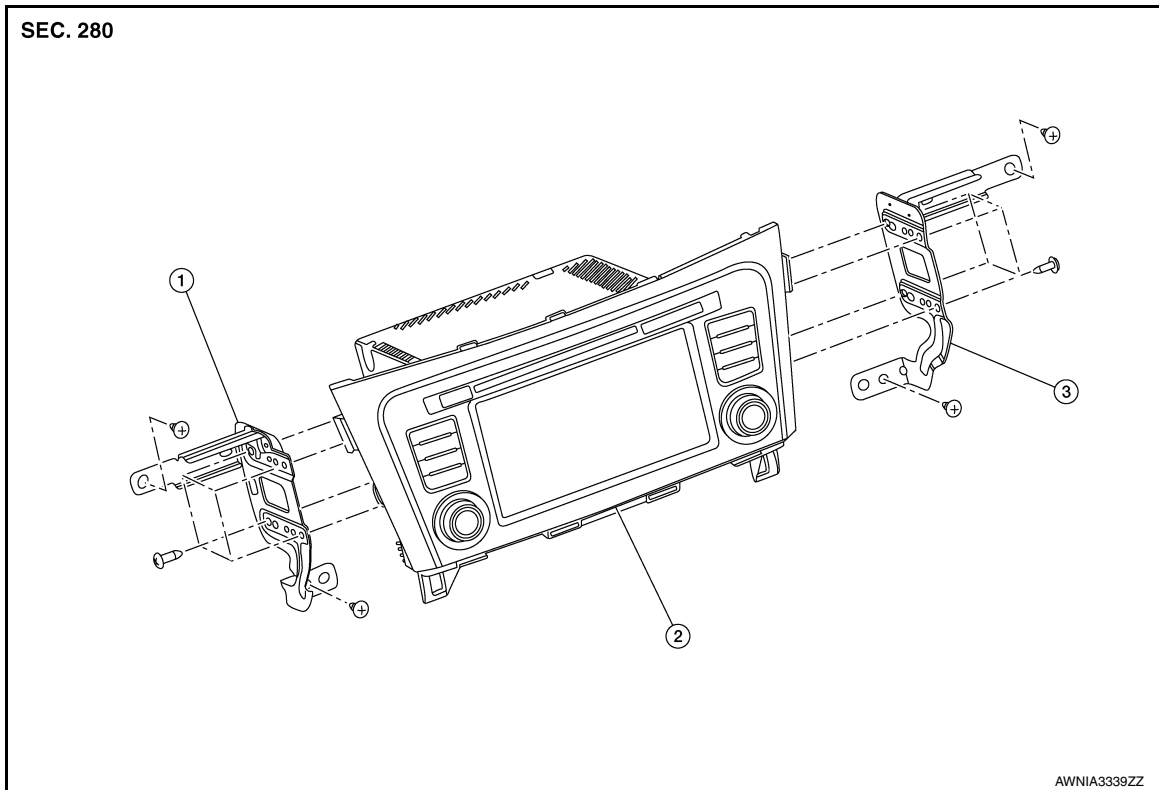
[MULTI AV (NAVI WITH BOSE)]

REMOVAL AND INSTALLATION

AV CONTROL UNIT

Exploded View

INFOID:0000000012422358



1. AV control unit bracket (LH) 2. AV control unit 3. AV control unit bracket (RH)

Removal and Installation

INFOID:0000000012422359

REMOVAL

CAUTION:

- Before disconnecting the AV control unit and battery terminals, turn the ignition switch OFF and wait at least 30 seconds.
- Before replacing AV control unit, perform "READ CONFIGURATION" to save current vehicle specification. Refer to [AV-146, "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).

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. Disconnect the negative battery terminal. Refer to [PG-80, "Removal and Installation \(Battery\)"](#).
2. Remove cluster lid C. Refer to [IP-22, "Removal and Installation"](#).
3. Remove instrument finisher B. Refer to [IP-16, "INSTRUMENT FINISHER B : Removal and Installation"](#).
4. Remove instrument finisher E. Refer to [IP-16, "INSTRUMENT FINISHER E : Removal and Installation"](#).
5. Remove the AV control unit screws, then pull out the AV control unit.
6. Disconnect the harness connectors from the AV control unit and remove.
7. Remove the AV control unit bracket (LH/RH) screws and the AV control unit brackets (LH/RH) (if necessary).

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

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AV

AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

- When replacing AV control unit, perform "WRITE CONFIGURATION". Refer to [AV-302, "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).
- When replacing AV control unit, the AV control unit must be registered. Refer to [AV-303, "REGISTRATION \(AV CONTROL UNIT\) : Description"](#).

STEERING SWITCH

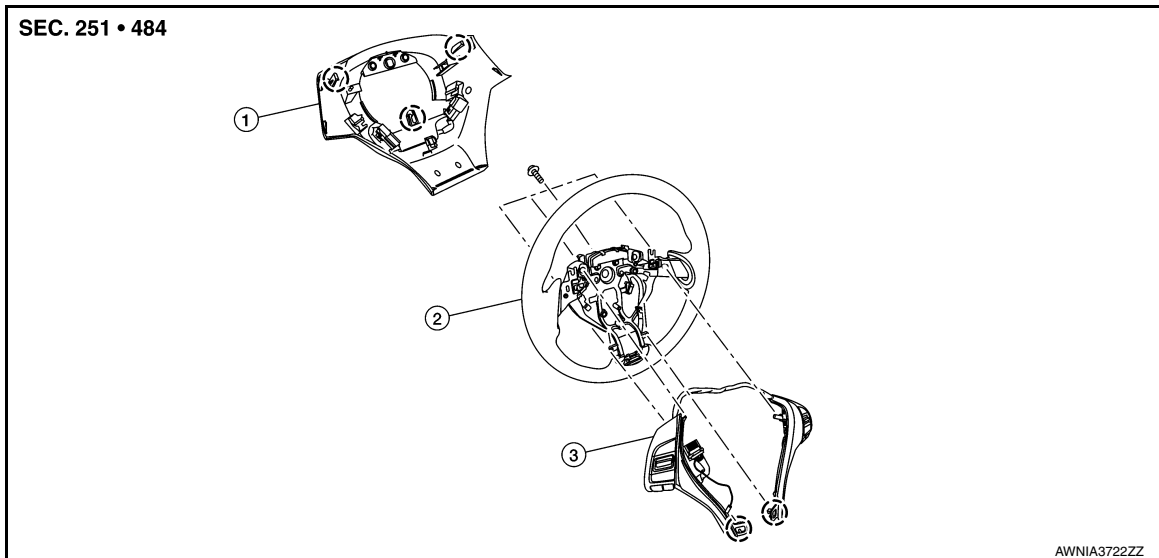
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

STEERING SWITCH

Exploded View

INFOID:000000012422360



1. Steering wheel rear finisher 2. Steering wheel 3. Steering switches

○ Pawl

Removal and Installation

INFOID:000000012422361

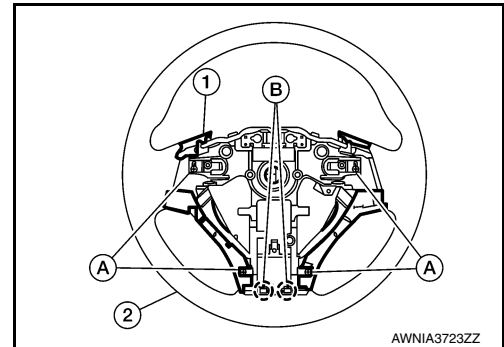
REMOVAL

NOTE:

The steering switches are serviced as an assembly.

1. Remove steering wheel. Refer to [ST-11, "Removal and Installation"](#).
2. Release pawls on the steering wheel rear finisher and remove.
3. Remove screws (A) and release pawls (B) and remove steering switches (1) from steering wheel (2).

○: Pawls



INSTALLATION

Installation is in the reverse order of removal.

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BOSE SPEAKER AMP

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

BOSE SPEAKER AMP

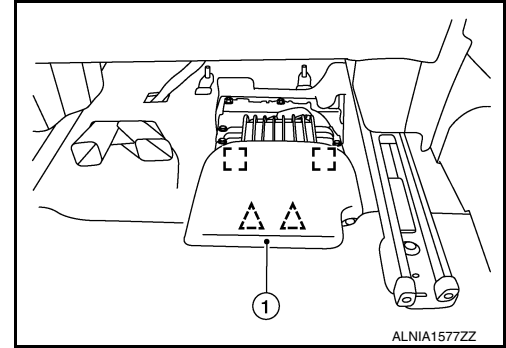
Removal and Installation

INFOID:000000012422362

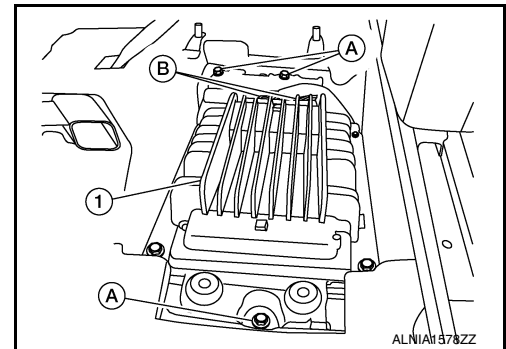
REMOVAL

1. Slide the passenger seat to the full forward position.
2. Release the clips using a suitable tool and remove Bose speaker amp cover (1).

- []: Metal clip
- △: Clip



3. Remove Bose speaker amp bolts (A).
4. Disconnect the harness connectors (B) from the Bose speaker amp (1).



5. Remove the Bose speaker amp. and bracket as an assembly.
6. Remove the bolts and the Bose speaker amp. from the Bose speaker amp. bracket (if necessary).

INSTALLATION

Installation is in the reverse order of removal.

FRONT TWEETER

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

FRONT TWEETER

Removal and Installation

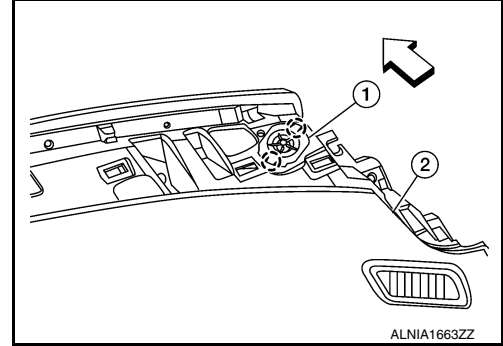
INFOID:000000012422363

REMOVAL

1. Remove defroster grille. Refer to [VTL-12. "DEFROSTER GRILLE : Removal and Installation"](#).
2. Release pawls and pull out the front tweeter (1) from the instrument panel assembly (2).

○ : Pawl
⇐ : Front

3. Disconnect the harness connector from the front tweeter and remove.



INSTALLATION

Installation is in the reverse order of removal.

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AV

FRONT DOOR SPEAKER

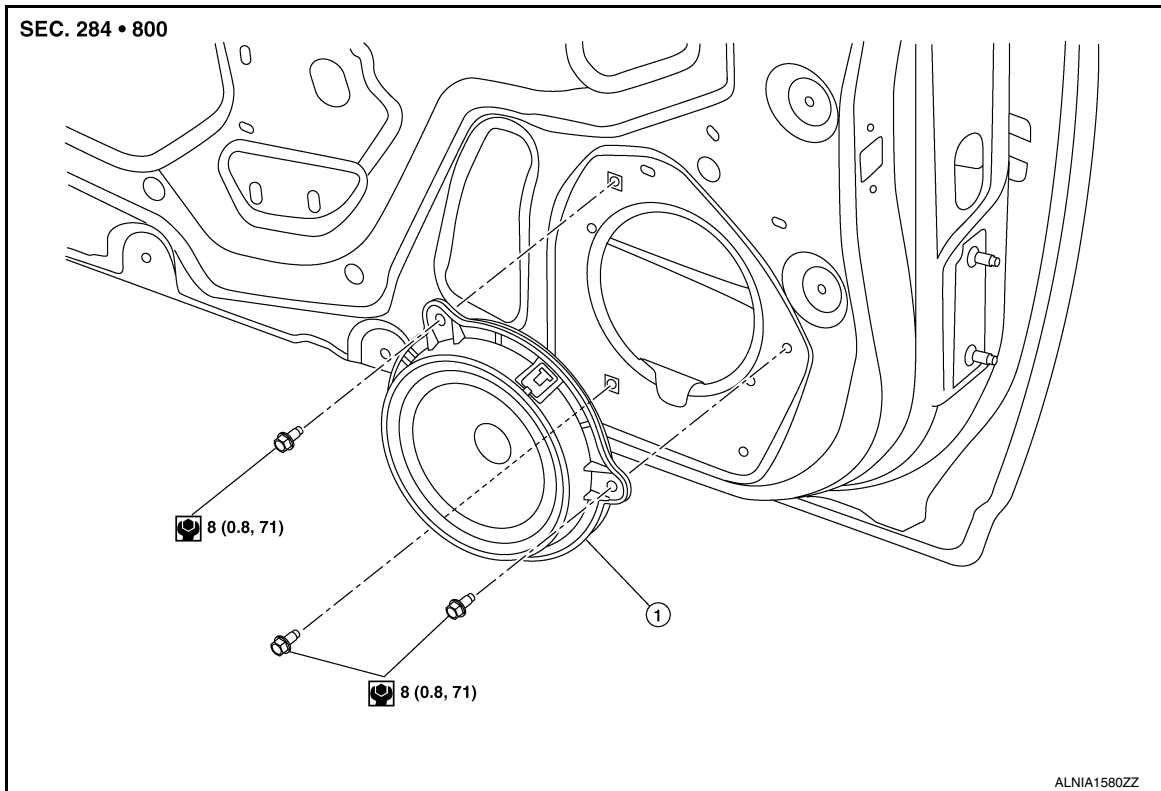
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

FRONT DOOR SPEAKER

Exploded View

INFOID:000000012422364



1. Front door speaker

Removal and Installation

INFOID:000000012422365

REMOVAL

1. Remove front door finisher. Refer to [INT-15. "Removal and Installation"](#).
2. Remove front door speaker bolts, then pull out front door speaker.
3. Disconnect the harness connector from front door speaker and remove.

INSTALLATION

Installation is in the reverse order of removal.

CENTER SPEAKER

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

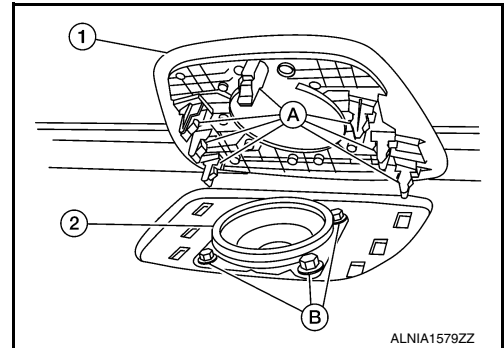
CENTER SPEAKER

Removal and Installation

INFOID:000000012422366

REMOVAL

1. Release the metal clips (A) using a suitable tool and remove center speaker grille (1).
2. Remove the center speaker bolts (B).
3. Pull out the center speaker (2).



4. Disconnect the harness connector from the center speaker and remove.

INSTALLATION

Installation is in the reverse order of removal.

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AV

REAR DOOR SPEAKER

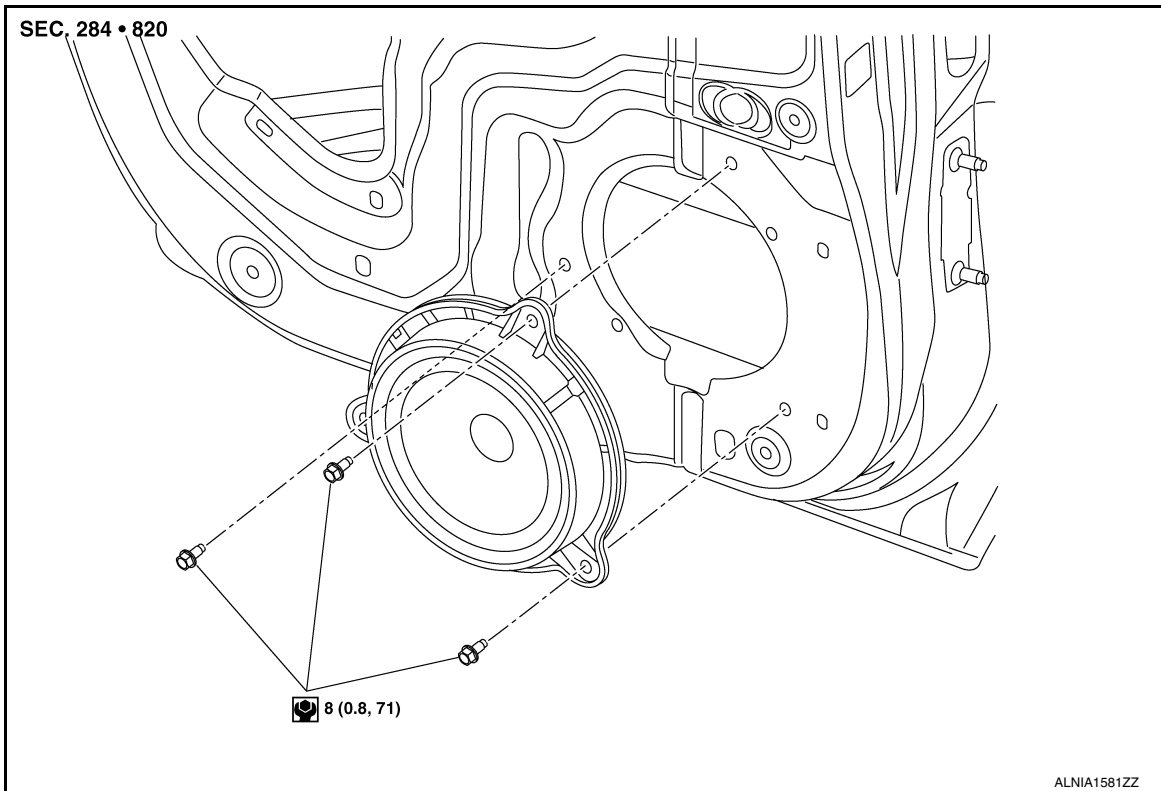
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

REAR DOOR SPEAKER

Exploded View

INFOID:000000012422367



1. Rear door speaker

Removal and Installation

INFOID:000000012422368

REMOVAL

1. Remove rear door finisher. Refer to [INT-18. "Removal and Installation"](#).
2. Remove rear door speaker bolts, then pull out rear door speaker.
3. Disconnect the harness connector from the rear door speaker and remove.

INSTALLATION

Installation is in the reverse order of removal.

SUBWOOFER

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

SUBWOOFER

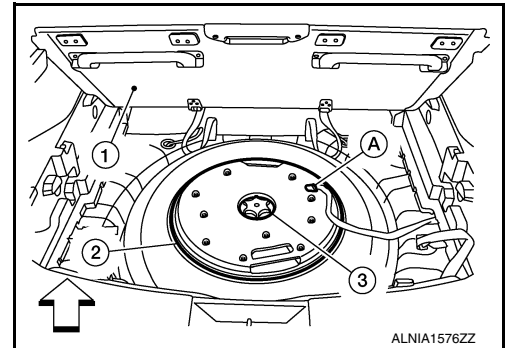
Removal and Installation

INFOID:000000012422369

REMOVAL

1. Open the rear luggage floor finisher (1).
2. Remove the spare tire clamp (3) by rotating counterclockwise.
3. Disconnect the harness connector (A) from the subwoofer (2) and remove.

↶: Front



INSTALLATION

Installation is in the reverse order of removal.

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AV

USB INTERFACE AND AUX IN JACK

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

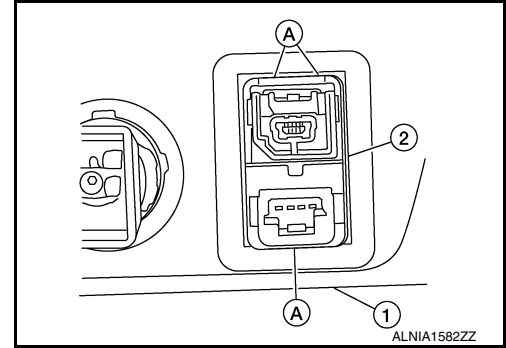
USB INTERFACE AND AUX IN JACK

Removal and Installation

INFOID:000000012422370

REMOVAL

1. Remove cluster lid C. Refer to [IP-22. "Removal and Installation"](#).
2. Release the pawls (A) on the back of USB interface and AUX in jack (2), then remove from the front of cluster lid C (1).



INSTALLATION

Installation is in the reverse order of removal.

MICROPHONE

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

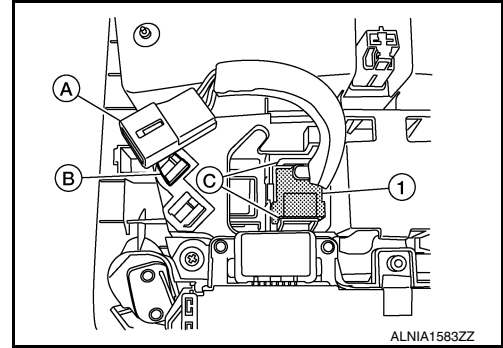
MICROPHONE

Removal and Installation

INFOID:000000012422371

REMOVAL

1. Remove the map lamp assembly. Refer to [INL-55, "Removal and Installation"](#).
2. Release harness connector (A) by sliding rearward to remove from the pawl (B).
3. Release pawls (C) and remove the microphone (1) from the front room/map lamp assembly.



INSTALLATION

Installation is in the reverse order of removal.

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AROUND VIEW MONITOR CONTROL UNIT

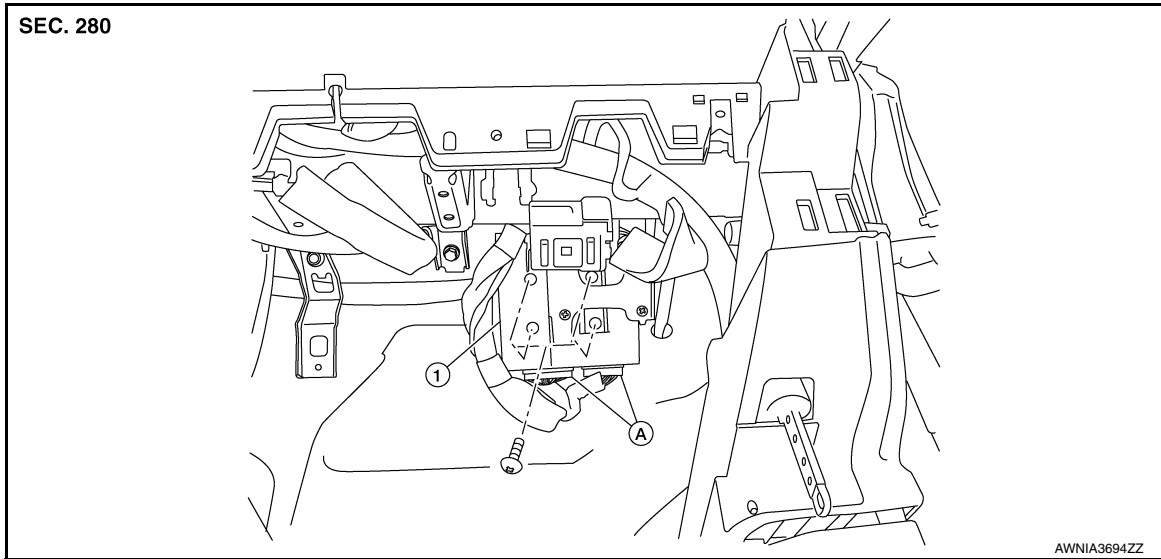
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

AROUND VIEW MONITOR CONTROL UNIT

Exploded View

INFOID:000000012422372



1. Around view monitor control unit A. Harness connector

Removal and Installation

INFOID:000000012422373

REMOVAL

CAUTION:

Before replacing around view monitor control unit, save or print current vehicle specification with CONSULT configuration before replacement. Refer to [AV-300, "ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Work Procedure"](#).

1. Remove glove box assembly. Refer to [IP-24, "Removal and Installation"](#).
2. Remove around view monitor control unit screws.
3. Disconnect the harness connector from the around view monitor control unit and remove.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- Replace the around view monitor control unit if it has been dropped or sustained an impact.
- When replacing around view monitor control unit, you must perform "After Replace ECU" with CONSULT. Refer to [AV-300, "ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Work Procedure"](#).

NOTE:

Perform camera image calibration. Refer to [AV-305, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Work Procedure"](#).

FRONT CAMERA

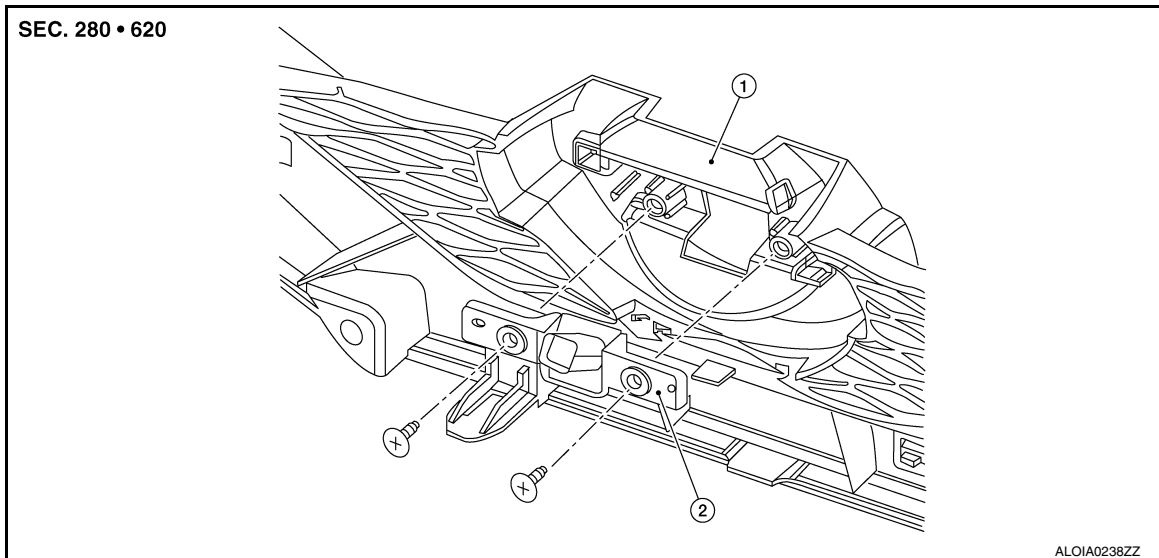
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

FRONT CAMERA

Exploded View

INFOID:000000012422374



1. Front grille

2. Front camera

Removal and Installation

INFOID:000000012422375

REMOVAL

1. Remove the front grille. Refer to [EXT-24, "Removal and Installation"](#).
2. Remove screws and front camera.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

Perform camera image calibration. Refer to [AV-305, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Work Procedure"](#).

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AV

SIDE CAMERA

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

SIDE CAMERA

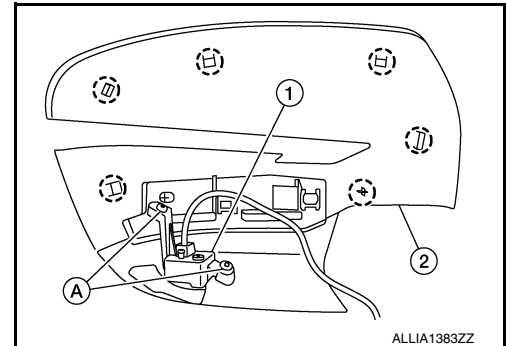
Removal and Installation

INFOID:000000012422376

REMOVAL

1. Remove door mirror rear finisher (2). Refer to [MIR-26. "Removal and Installation"](#).
2. Remove screws (A) and side camera (1).

○: Pawl



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Perform camera image calibration (if equipped with around view camera). Refer to [AV-148. "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

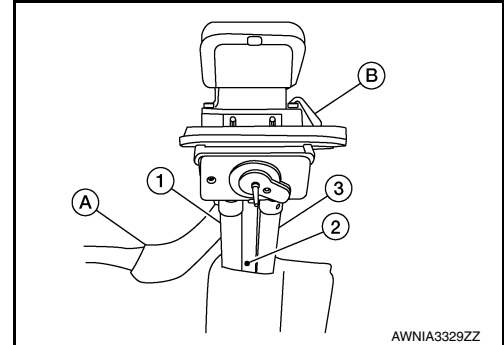
REAR VIEW CAMERA

Removal and Installation

INFOID:000000012422377

REMOVAL

1. Remove the back door outer finisher. Refer to [EXT-50. "Removal and Installation"](#).
2. Disconnect washer tubes (1,3) and air tube (2) (if equipped).
3. Release pawl (B), disconnect harness connector (A) from rear view camera and remove.



INSTALLATION

Installation is in the reverse order of removal.

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AV

GPS ANTENNA

Removal and Installation

INFOID:000000012422378

REMOVAL

1. Remove instrument panel. Refer to [IP-14, "INSTRUMENT PANEL ASSEMBLY : Removal and Installation"](#).
2. Remove screw and the GPS antenna.

INSTALLATION

Installation is in the reverse order of removal.

ANTENNA BASE

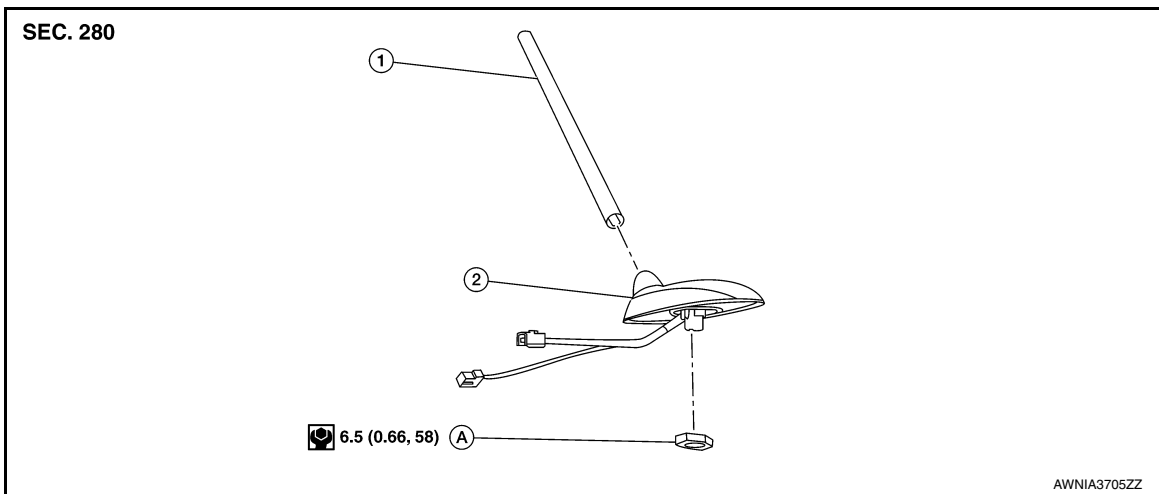
< REMOVAL AND INSTALLATION >

[MULTI AV (NAVI WITH BOSE)]

ANTENNA BASE

Exploded View

INFOID:0000000012422379



1. Antenna rod

2. Antenna base

A. Antenna nut

Removal and Installation

INFOID:0000000012422380

REMOVAL

1. Remove the luggage side upper finisher (RH). Refer to [INT-36. "LUGGAGE SIDE UPPER FINISHER : Removal and Installation"](#).
2. Partially lower headlining (rear). Refer to [INT-30. "Removal and Installation"](#).
3. Disconnect harness connectors from antenna feeder.
4. Remove nut from antenna base and remove.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

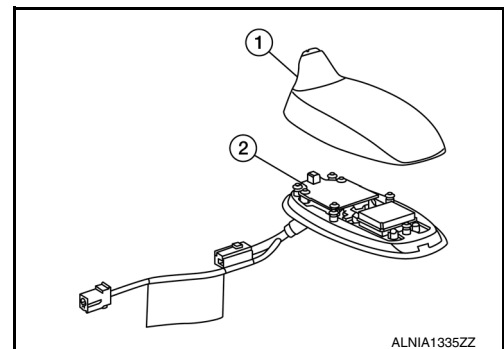
If the antenna base nut is not properly tightened, lower sensitivity of the antenna may be experienced. If the nut is over tightened, this will deform the roof panel.

Disassembly and Assembly

INFOID:0000000012422381

DISASSEMBLY

Insert a suitable tool into gaps between antenna base (2) and the cover (1), then remove the cover (1) from antenna base (2).



ASSEMBLY

Assembly is in the reverse order of disassembly.

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ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

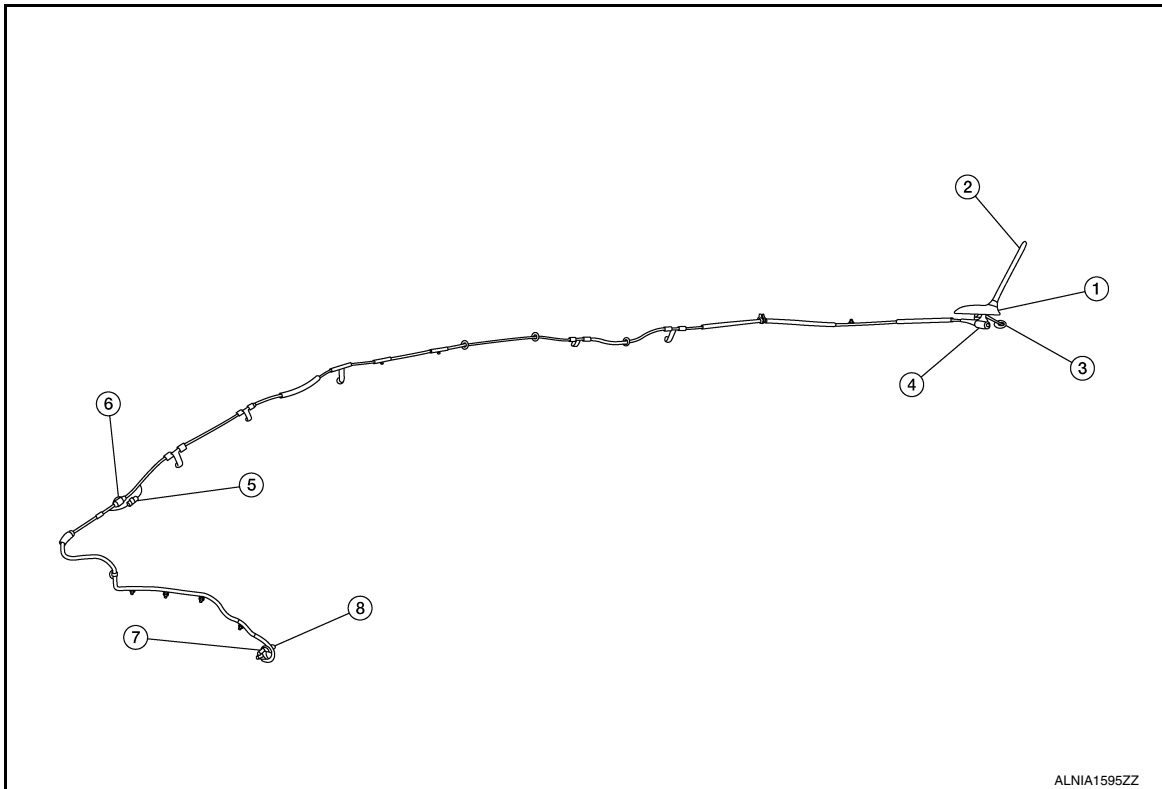
[MULTI AV (NAVI WITH BOSE)]

ANTENNA FEEDER

Feeder Layout

INFOID:000000012422382

ANTENNA FEEDER LAYOUT



- | | | |
|--|----------------|---------------|
| 1. Antenna base (antenna amp. and satellite antenna) | 2. Rod Antenna | 3. M503 |
| 4. M502 | 5. M130, M501 | 6. M129, M500 |
| 7. M142 | 8. M139 | |

PRECAUTION

PRECAUTIONS

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

INFOID:000000012874014

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

WARNING:

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

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

WARNING:

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

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

INFOID:000000012874015

CAUTION:

Remove battery terminal and AV control unit 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:000000012874016

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.

AV

Precaution for Harness Repair

INFOID:000000012874017

AV COMMUNICATION SYSTEM

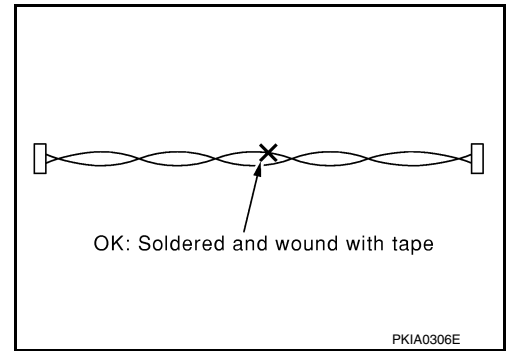
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PRECAUTIONS

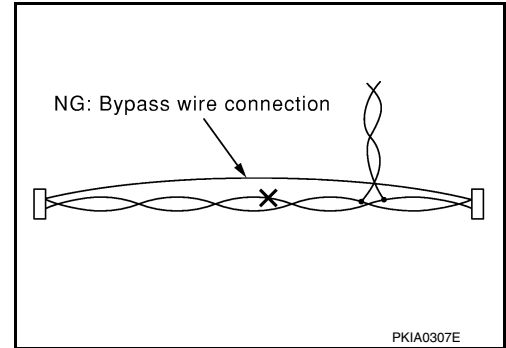
[TELEMATICS SYSTEM]

< PRECAUTION >

- 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.)



Precaution for Work

INFOID:000000012874018

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

PREPARATION

< PREPARATION >

[TELEMATICS SYSTEM]

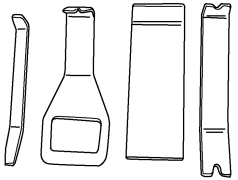
PREPARATION

PREPARATION

Special Service Tool

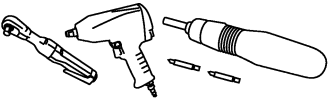
INFOID:0000000012874019

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set  AWJIA0483ZZ	Removing trim components

Commercial Service Tools

INFOID:0000000012874020

Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

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COMPONENT PARTS

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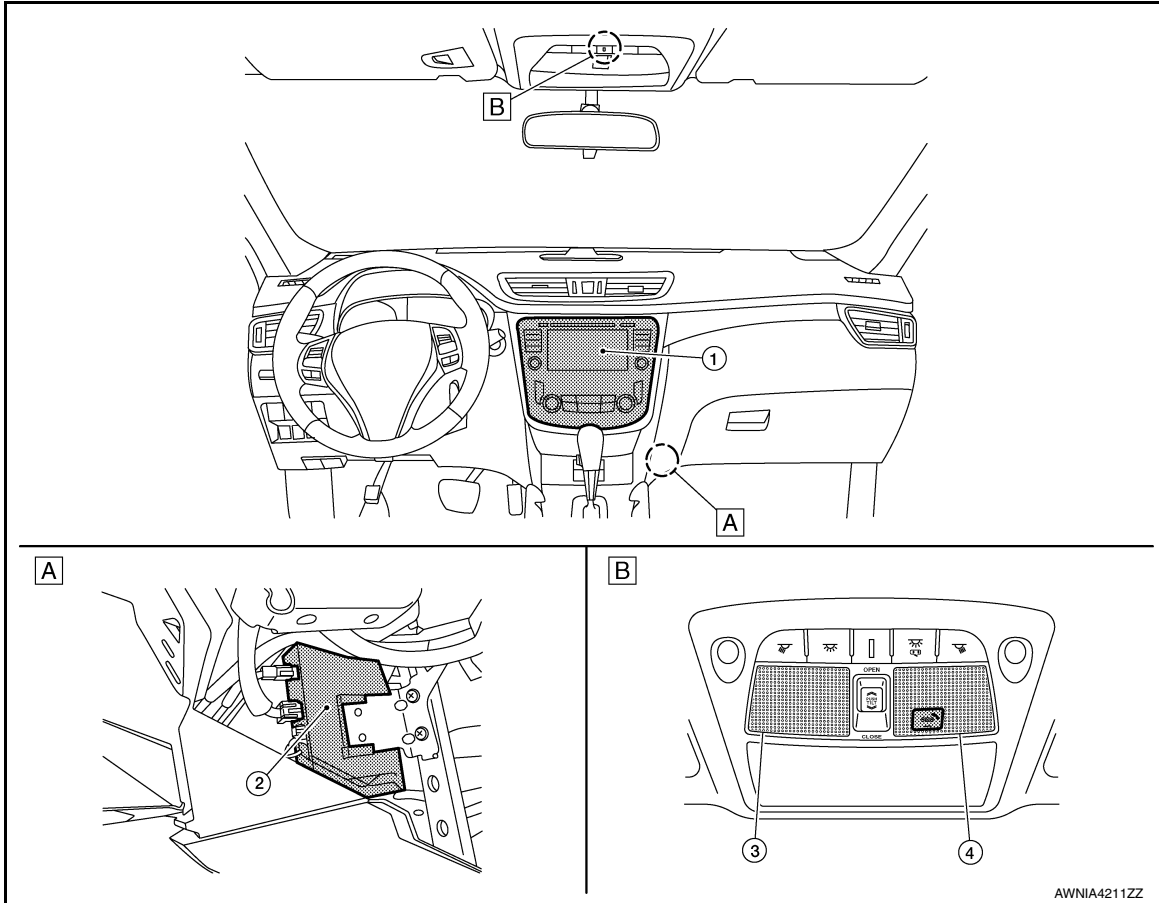
[TELEMATICS SYSTEM]

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000012873915



A. View with glove box removed

B. Overhead console

No.	Component	Function
1.	AV control unit	TCU with the signals necessary for telematics is sent and received. Refer to AV-402, "AV Control Unit" for detailed installation location.
2.	TCU	Refer to AV-403, "TCU" .
3.	Microphone	Refer to AV-404, "Microphone" .
4.	Telematics switch	Refer to AV-404, "Telematics Switch" .

AV Control Unit

INFOID:000000012874075

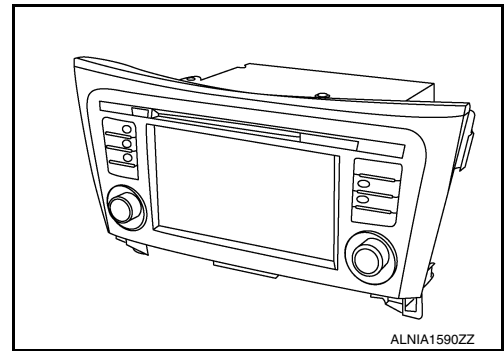
Description

COMPONENT PARTS

< SYSTEM DESCRIPTION >

- A 7-inch WVGA display, an AM/FM electronic tuner radio, CD drive and navigation unit are integrated into the AV control unit.
- AV control unit is connected to TCU with the USB harness, and signals necessary for Telematics function and NISSANCONNECTSM function are sent and received.

[TELEMATICS SYSTEM]



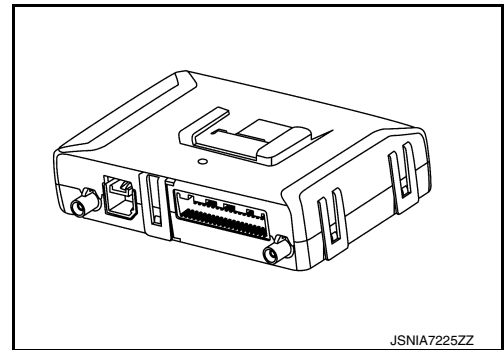
INFOID:000000012857599

TCU

- TCU is abbreviation of Telematics Communication Unit.
- It is installed at the back of the glove box cover assembly.
- A radio communication terminal and SIM card are built into the unit and data is sent and received in SMS*, DTMF tone signal with the NISSANCONNECTSM center through the TEL antenna.

NOTE:

- *: SMS stands for Short Message Service. It is also referred to as Text Messaging, Short Mail, etc. It is the service that performs text based message communication.
- It is connected to the AV control unit with the USB harness for sound signal input/output and USB communication.
- It is connected to the airbag diagnosis sensor unit. TCU performs an emergency report when the air bag is inflated.
- VIN information necessary for the Telematics service is memorized.
- Audio signals received during SOS/Operator call are transmitted from TCU to each speaker via the AV control unit.
- During the communication with NISSANCONNECTSM center, TCU transmits a TEL ON signal to the AV control unit to prohibit the use of Bluetooth[®] hands-free phone.



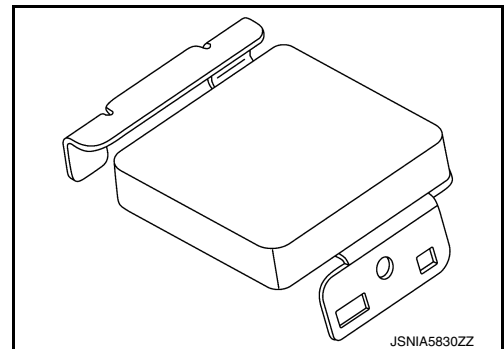
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Telematics Antenna

- The telematics antenna consists of TEL antenna and GPS antenna.
- It is installed in the instrument panel.

NOTE:

The placement of an object on the instrument panel may cause desensitization in the receiver sensitivity.



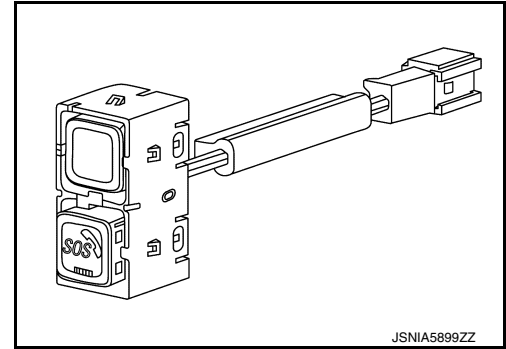
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Telematics Switch

INFOID:000000012775909

- The Telematics switch is located on the map lamp assembly.
- The Telematics switch is connected to TCU and transmits an operation signal.
- The state of LED (ON/Blink/OFF) shows the status of SOS call.

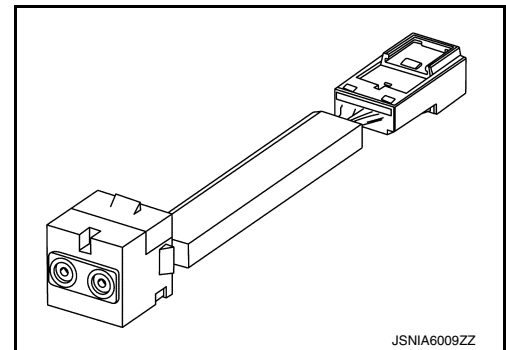
LED ON :SOS Call available
 LED Blink :SOS Call in communication
 LED OFF :Out of service area or system error



Microphone

INFOID:000000012874021

- Microphone is installed on the map lamp assembly.
- The microphone is used for the operation of the NISSANCONNECTSM, hands-free phone system, voice recognition function.
- The power is supplied from the TCU to the microphone, transmitting sound signals to the TCU at the during operation of the NISSANCONNECTSM system, hands-free phone communication, and voice recognition.

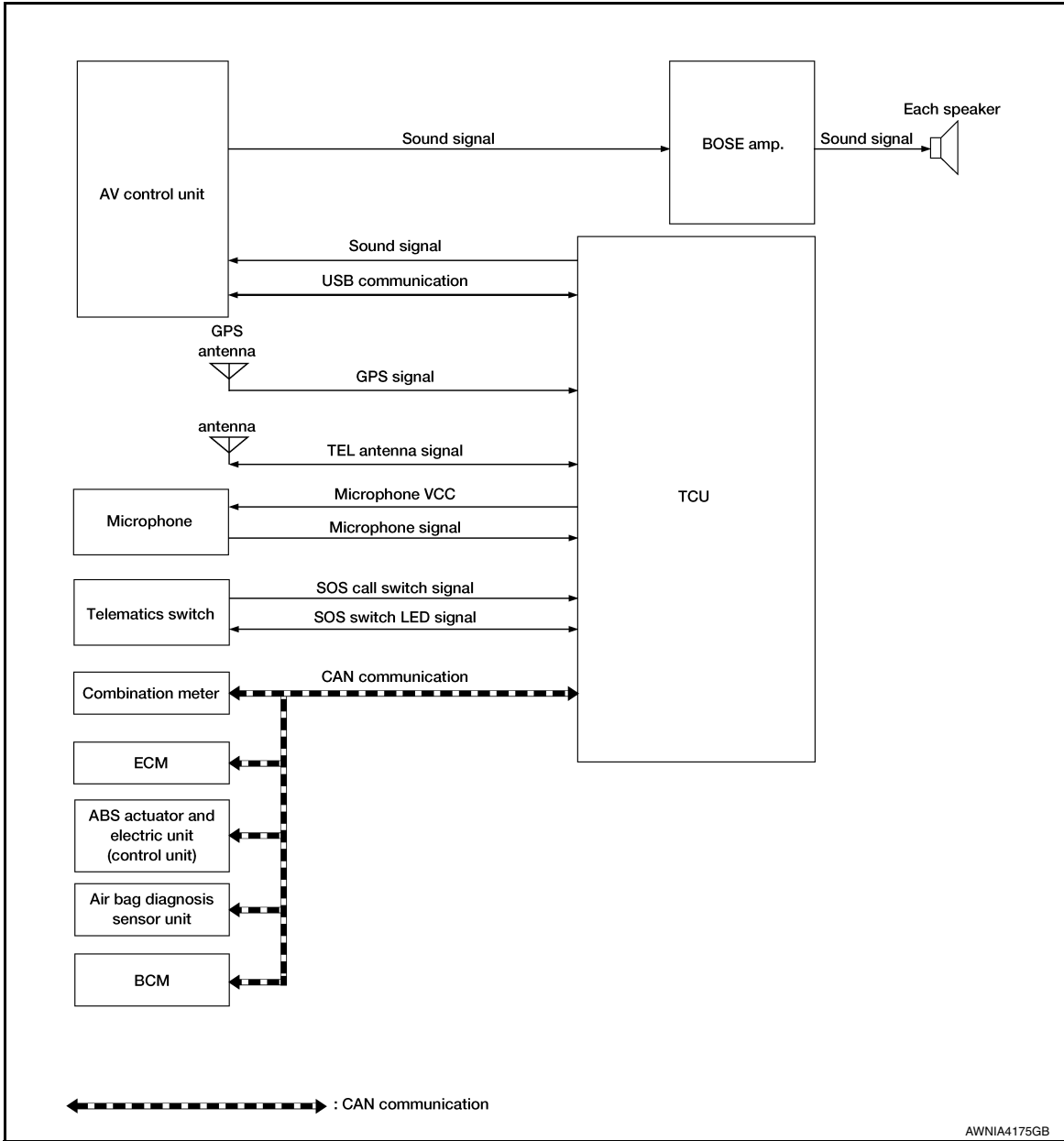


TELEMATICS SYSTEM
TELEMATICS SYSTEM

TELEMATICS SYSTEM : System Description

INFOID:0000000012857604

SYSTEM DIAGRAM



NOTE:

To use the Telematics system, it is necessary to apply for the services separately.

TCU Input Signal (CAN Communication)

Transmit unit	Signal name
ECM	Engine status signal
	Malfunction indicator lamp signal
	Engine oil pressure warning lamp signal
ABS actuator and electric unit (control unit)	ABS warning lamp signal
	VDC warning lamp signal
Combination meter	Brake warning lamp signal

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AV

TELEMATICS SYSTEM

< SYSTEM DESCRIPTION >

[TELEMATICS SYSTEM]

Transmit unit	Signal name
Air bag diagnosis sensor unit	Car crash information signal
BCM	Auto ACC signal
	Door lock status signal
	Sleep wake up signal

DESCRIPTION

- The Telematics system is a system for providing information and services supporting the safe and pleasant car life by connecting the vehicle and the user all the time via NISSANCONNECTSM center.
- TCU (Telematics Communication Unit) equipped with a radio communication terminal communicates with the information center (NISSANCONNECTSM center) via radio waves for receiving NISSANCONNECTSM services.
- With the equipment of the radio communication terminal, TCU communicate with NISSANCONNECTSM center by Packet communication*¹ and SMS*² via TEL antenna mounted on the Telematics antenna.

NOTE:

- *1: Packet communication means a communication method that data are broken down into smaller chunks for communication. The split data is called a packet and improves the efficiency of the communication circuit.
- *2: SMS stands for Short Message Service, also known as text messaging or short mail, and provides text-based message communication services.
- While communicating with the operator, data (e.g. transmission of own vehicle location) are transmitted to the NISSANCONNECTSM Service Center by using DTMF tone signals and SMS via the radio communication module included in TCU.
- Audio signals transmitted and received while communicating with the operator are input by the microphone connected to TCU, and then these audio signals are output from TCU via the audio data circuit by using the audio signal circuit connected to the AV control unit.
- To use the Telematics System, TCU must be activated. Refer to the following requirements:
 - Sign up for Telematics Service.
 - Perform the activation procedure, refer to [AV-422. "ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM \(WORK STEP VIEW\) : Process Chart"](#).

NISSANCONNECTSM SERVICES

NISSANCONNECTSM provides services as follows:

Service item
Information Service
Vehicle tracking
Tow notification, Vehicle abnormal status Notification, Burglar warning / Invasion notification
Operator service

Information Service

1. When the Information channel is operated, the AV control unit issues a request of data communications between the user and NISSANCONNECTSM center to TCU via USB.
2. TCU starts up and starts data communications with NISSANCONNECTSM center via TEL antenna.
3. TCU receives various information, such as Internet contents and traffic information, from NISSANCONNECTSM center by packet communication.
4. TCU transmits received signals to the AV control unit via USB. The AV control unit converts the signals to start voice guidance and display information on the screen.

Vehicle Tracking

1. When performing an own vehicle location verification with cell phone or personal computer, the user can access to NISSANCONNECTSM center.
2. Own vehicle location information is transmitted from the vehicle to NISSANCONNECTSM center by SMS.
3. TCU starts up when SMS is received via TEL antenna.

TELEMATICS SYSTEM

[TELEMATICS SYSTEM]

< SYSTEM DESCRIPTION >

4. Own vehicle location information is obtained via GPS antenna connected to TCU and transmitted to NISSANCONNECTSM center by SMS.
5. NISSANCONNECTSM center transmits own vehicle location information and accumulated probe data to user's terminal equipment.

Tow notification, Vehicle Abnormal Status Notification, Burglar Warning / Invasion Notification

1. TCU starts up when receiving a specific warning signal from each unit connected via CAN communication.
2. TCU transmits data to NISSANCONNECTSM center by SMS.
3. NISSANCONNECTSM center transmits data to user's terminal equipment.

Operator Service

1. When receiving a Telematics switch signal or a shock sensor signal of the air bag diagnosis sensor unit, TCU communicates with the NISSANCONNECTSM Service Center by voice call.
2. Own vehicle location information is obtained through the GPS antenna connected to TCU and the information is transmitted to NISSANCONNECTSM center by SMS and DTMF tone signal.
3. TCU receives a microphone signal.
4. Audio signals received by TCU are transmitted to each speaker via the AV control unit.

TELEMATICS SYSTEM : Fail-safe

INFOID:0000000012857606

If a malfunction occurs in the telematics system, TCU performs fail-safe activation according to the detected malfunction.

Detection item	Telematics system operation in fail-safe mode	DTC
Air-bag connection	<ul style="list-style-type: none"> • Some telematics system does not function. • Inform a NISSANCONNECTSM center about abnormality. 	U1A10
CAN communication	<ul style="list-style-type: none"> • Telematics system does not function. • Inform a NISSANCONNECTSM center about abnormality. 	U1000
AV communication	<ul style="list-style-type: none"> • Some telematics system does not function. • Inform a NISSANCONNECTSM center about abnormality. 	B13E1
TEL antenna	<ul style="list-style-type: none"> • Telematics switch LED indicator turn OFF. (LED indicator turns ON 10 times when push the SOS call switch.) • When operated a telematics system, inform that cannot be connected to the NISSANCONNECTSM center. 	U1A06
GPS antenna	<ul style="list-style-type: none"> • Telematics system cannot send correct positional information. • Inform a NISSANCONNECTSM center about abnormality. 	U1A09 U1A0A
USB communication	<ul style="list-style-type: none"> • Telematics system does not function. • Inform a NISSANCONNECTSM center about abnormality. 	B13D9
TCU	Telematics system function stops.	B1310 B130D U1010 U1A01
	<ul style="list-style-type: none"> • Telematics system function stops. • When operated a telematics system, inform that cannot be connected to the NISSANCONNECTSM center. 	U1A03 U1A11
Telematics switch (SOS call switch)	<ul style="list-style-type: none"> • Telematics system does not function. (Only SOS call does not operate.) • Telematics switch LED indicator turn OFF. 	B2E33 U1A0E
Microphone	<ul style="list-style-type: none"> • Transmit an own vehicle position to the NISSANCONNECTSM center. • Inform a NISSANCONNECTSM center about abnormality. 	U1A0B U1A0C
VIN	Telematics service does not function.	U1A04

DIAGNOSIS SYSTEM (TCU)

< SYSTEM DESCRIPTION >

[TELEMATICS SYSTEM]

DIAGNOSIS SYSTEM (TCU)

CONSULT Function

INFOID:000000012857607

APPLICABLE ITEM

CONSULT performs the following items by communication with TCU:

Diagnosis mode	Description
Self-Diagnosis Result	Performs the diagnosis of TCU and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of the vehicle signal that is input to TCU can be performed.
Work support	Performs TCU activation setting and center connection setting.
ECU identification	Checks TCU part number and various ID numbers.

SELF-DIAGNOSIS RESULT

Refer to [AV-413, "DTC Index"](#).

- In CONSULT self-diagnosis, the self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "0". The counter increases by 1 if the condition is normal at the next power switch ON cycle.

DATA MONITOR

NOTE:

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

Display item	Display	Condition	Note
HF TYPE	BT/NO BT	—	Indicates state of configuration result. NOTE: This item is displayed, but not used.
AUDIO UNIT TYPE	AUDIO/ NAVI	—	
CALL SWITCH TYPE	SOS/OP	—	
SPEAKER TYPE	INDRCT	—	
ZONE	PRC	—	
CHANNEL	NISSAN	—	
CAN COMM	GEN.5	—	
AV COMM	ENABLE/ DISABLE	—	
K-LINE	ENABLE/ DISABLE	—	
VEHICLE TYPE	ENG	—	
ECHO CANCEL	TYPE 1	—	This item is displayed, but cannot be monitored.
	TYPE 2		
	TYPE 3		
	TYPE 4		
NOISE CANCEL	TYPE 1	—	This item is displayed, but cannot be monitored.
	TYPE 2		
	TYPE 3		
	TYPE 4		
TCU STANDBY TIME	14DAYS	Set at 14 days (default)	Set value for continued operation time to control battery consumption
	2DAYS	Set at 2 days	
	30DAYS	Set at 30 days	
	NON	No setting	

DIAGNOSIS SYSTEM (TCU)

< SYSTEM DESCRIPTION >

[TELEMATICS SYSTEM]

Display item	Display	Condition	Note
SENSOR ANGLE X	—	—	Indicates state of configuration result. NOTE: This item is displayed, but not used.
SENSOR ANGLE Y	—	—	
SENSOR ANGLE Z	—	—	
SVTB	—	—	
REMOTE DOOR LOCK	ENABLE/ DISABLE	—	
REMOTE HORN & LAMP	ENABLE/ DISABLE	—	
REMOTE START	ENABLE/ DISABLE	—	
NAD OUTPUT STATUS	On	When TCU activation is ON	NAD: Abbreviation of Network Access Device. ON/OFF setting of radio wave
	Off	When TCU activation is OFF	
ACN COMM SEQUENCE LOG	—	—	—
SOS COMM SEQUENCE LOG	—	—	—

WORK SUPPORT

Performs TCU activation setting and center connection setting.

Item name	Description
SAVE VIN DATA	The VIN data saved in TCU is stored in CONSULT.
TCU ACTIVATE SETTING	TCU ON/OFF setting is available.
WRITE VIN (SAVED DATA)	Write VIN data stored by "SAVE VIN DATA" in work support mode to TCU.
WRITE VIN (MANUAL INPUT)	Write VIN data in TCU. (MANUAL)

ECU IDENTIFICATION

Displays TCU part number and various ID numbers.

Display items	Description
ECU PART NUMBER	Displays TCU part number.
UNIT ID	Displays AV control unit ID number.
TCU ID	Displays TCU ID number.
SIM ID	Displays ICC ID of SIM card.
V.I.N	Displays the vehicle identification number stored in TCU.

AV

ECU DIAGNOSIS INFORMATION

TCU

Reference Value

INFOID:0000000012776480

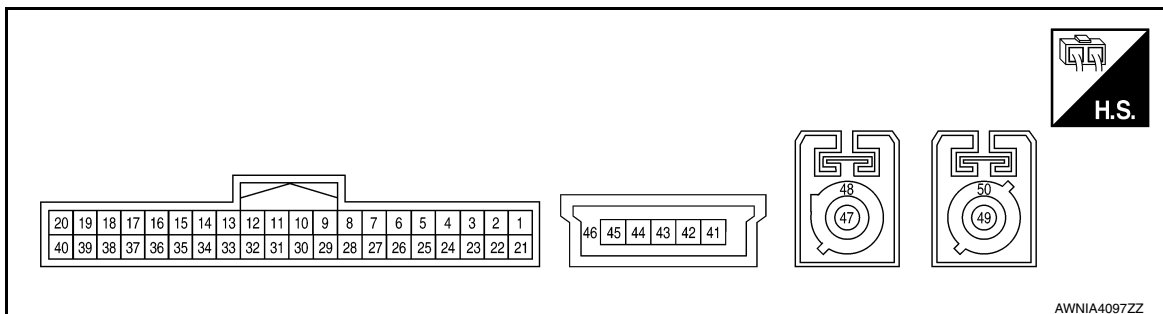
VALUES ON THE DIAGNOSIS TOOL

NOTE:

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

Monitor Item	Condition	Value/Status
HF TYPE	Ignition switch ON	BT
AUDIO UNIT TYPE	Ignition switch ON	NAVI
CALL SWITCH TYPE	Ignition switch ON	SOS
SPEAKER TYPE	Ignition switch ON	INDRCT
ZONE	Ignition switch ON	PRC
CHANNEL	Ignition switch ON	NISSAN
CAN COMM	Ignition switch ON	GEN.5
AV COMM	Ignition switch ON	ENABLE
K-LINE	Ignition switch ON	DISABLE
VEHICLE TYPE	Ignition switch ON	ENG
ECHO CANCEL	Ignition switch ON	TYPE1
NOISE CANCEL	Ignition switch ON	TYPE1
TCU STANDBY TIME	Set at 14 days (default)	14DAYS
	Set at 2 days	2DAYS
	Set at 30 days	30DAYS
	No setting	NON
SENSOR ANGLE X	Ignition switch ON	4.0
SENSOR ANGLE Y	Ignition switch ON	4.0
SENSOR ANGLE Z	Ignition switch ON	4.0
SVTB	Ignition switch ON	DISABLE
REMOTE DOOR LOCK	Ignition switch ON	DISABLE
REMOTE HORN & LAMP	Ignition switch ON	DISABLE
REMOTE START	Ignition switch ON	DISABLE
NAD OUTPUT STATUS	When TCU activation is ON	On
	When TCU activation is OFF	Off
ACN COMM SEQUENCE LOG	—	—
SOS COMM SEQUENCE LOG	—	—

TERMINAL LAYOUT

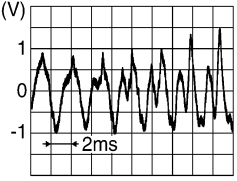
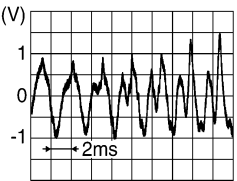


TCU

< ECU DIAGNOSIS INFORMATION >

[TELEMATICS SYSTEM]

PHYSICAL VALUES

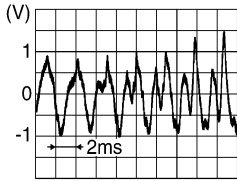
Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
1 (L)	29 (B)	Battery power supply	Input	[Ignition switch OFF]	Battery Voltage
2 (W)	29 (B)	ACC power supply	Input	[Ignition switch ACC]	12 V
5 (Y)	28 (B)	SOS switch LED signal	Input	[Ignition switch ACC] • When not illuminated LED lamp of SOS switch	12 V
				[Ignition switch ACC] • When illuminated LED lamp of SOS switch	0 V
6 (L)	—	CAN high	Input/ Output	—	—
7 (R)	—	CAN low	Input/ Output	—	—
10 (LG)	29 (B)	Ignition signal	Input	[Ignition switch ON]	12 V
11 (Shield)	—	Shield	—	—	—
12 (W)	11 (Shield)	Microphone signal	Output	[Ignition switch ACC] • When inputting interior sound	 <small>SKIB3609E</small>
16 (Shield)	—	Microphone shield	—	—	—
17 (W)	16 (Shield)	Microphone signal	Input	[Ignition switch ACC] • When inputting interior sound	 <small>SKIB3609E</small>
18 (B)	16 (Shield)	Microphone VCC	Input	[Ignition switch ACC]	5 V
26 (SB)	—	M-CAN high	Input/ Output	—	—
27 (LG)	—	M-CAN low	Input/ Output	—	—
28 (B)	Ground	Ground	—	[Ignition switch ON]	0 V
29 (B)	Ground	Ground	—	[Ignition switch ON]	0 V

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TCU

< ECU DIAGNOSIS INFORMATION >

[TELEMATICS SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
31 (R)	32 (L)	Sound signal (+)	Output	[Ignition switch ACC] • When inputting interior sound	 <small>SKIB3609E</small>
32 (L)	—	Sound signal (-)	—	—	—
37 (BG)	28 (B)	SOS call switch signal	Input	[Ignition switch ACC] • When pressing SOS switch	0 V
				[Ignition switch ACC] • Except for above	5 V
41 (B)	—	USB V BUS signal	Input	[Ignition switch ON]	—
43 (G)	—	USB D- signal	Input/ Output	[Ignition switch ON]	—
44 (W)	—	USB D+ signal	Input/ Output	[Ignition switch ON]	—
45 (R)	—	USB ground	—	—	—
46 (Shield)	—	Shield	—	—	—
47 (B)	Ground	TEL antenna signal	Input	Not connected TEL antenna connector.	2.8 V
48 (Shield)	—	Shield	—	—	—
49 (B)	Ground	GPS antenna signal	Input	Not connected GPS antenna connector.	2.8 V
50 (Shield)	—	Shield	—	—	—

Fail-safe

INFOID:0000000012857608

If a malfunction occurs in the telematics system, TCU performs fail-safe activation according to the detected malfunction.

Detection item	Telematics system operation in fail-safe mode	DTC
Air-bag connection	<ul style="list-style-type: none"> Some telematics system does not function. Inform a NISSANCONNECTSM center about abnormality. 	U1A10
CAN communication	<ul style="list-style-type: none"> Telematics system does not function. Inform a NISSANCONNECTSM center about abnormality. 	U1000
AV communication	<ul style="list-style-type: none"> Some telematics system does not function. Inform a NISSANCONNECTSM center about abnormality. 	B13E1
TEL antenna	<ul style="list-style-type: none"> Telematics switch LED indicator turn OFF. (LED indicator turns ON 10 times when push the SOS call switch.) When operated a telematics system, inform that cannot be connected to the NISSANCONNECTSM center. 	U1A06
GPS antenna	<ul style="list-style-type: none"> Telematics system cannot send correct positional information. Inform a NISSANCONNECTSM center about abnormality. 	U1A09 U1A0A

TCU

< ECU DIAGNOSIS INFORMATION >

[TELEMATICS SYSTEM]

Detection item	Telematics system operation in fail-safe mode	DTC
USB communication	<ul style="list-style-type: none"> Telematics system does not function. Inform a NISSANCONNECTSM center about abnormality. 	B13D9
TCU	Telematics system function stops.	B1310 B130D U1010 U1A01
	<ul style="list-style-type: none"> Telematics system function stops. When operated a telematics system, inform that cannot be connected to the NISSANCONNECTSM center. 	U1A03 U1A11
Telematics switch (SOS call switch)	<ul style="list-style-type: none"> Telematics system does not function. (Only SOS call does not operate.) Telematics switch LED indicator turn OFF. 	B2E33 U1A0E
Microphone	<ul style="list-style-type: none"> Transmit an own vehicle position to the NISSANCONNECTSM center. Inform a NISSANCONNECTSM center about abnormality. 	U1A0B U1A0C
VIN	Telematics service does not function.	U1A04

DTC Inspection Priority Chart

INFOID:0000000012857609

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	U1A04: VIN UNFINISHED
2	<ul style="list-style-type: none"> U1000: CAN COMM CIRCUIT U1010: CONTROL UNIT (CAN)
3	<ul style="list-style-type: none"> B130D: TEL LINE OUT ERROR B1310: TCU TEMPERATURE ERROR B13D9: USB CONNECTION B13E1: CAN COMMUNICATION B2E33: ECALL BUTTON U1A00: ACC NO CONN U1A01: INTERNAL ERROR (TCU) U1A03: SIM CARD U1A06: TEL ANTENNA U1A09: GPS ANTENNA CONN U1A0A: GPS MODULE COMM U1A0B: MIC IN CONN U1A0C: MIC OUT CONN U1A0E: SOS SWITCH ON STUCK U1A10: AIRBAG SIGNAL U1A11: TEL MUTE OUTPUT SIGNAL NO CONN

DTC Index

INFOID:0000000012857610

DTC	Display contents of CONSULT	Reference
B130D	TEL LINE OUT ERROR	AV-426, "DTC Description"
B1310	TCU TEMPERATURE ERROR	AV-427, "DTC Description"
B13D9	USB CONNECTION	AV-428, "DTC Description"
B13E1	CAN COMMUNICATION	AV-429, "DTC Description"
B2E33	ECALL BUTTON	AV-430, "DTC Description"
U1000	CAN COMM CIRCUIT	AV-431, "TCU : DTC Logic"
U1010	CONTROL UNIT (CAN)	AV-432, "TCU : DTC Logic"
U1A00	ACC NO CONN	AV-433, "DTC Description"
U1A01	INTERNAL ERROR (TCU)	AV-434, "DTC Logic"

TCU

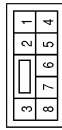
< ECU DIAGNOSIS INFORMATION >

[TELEMATICS SYSTEM]

DTC	Display contents of CONSULT	Reference
U1A03	SIM CARD	AV-435, "DTC Description"
U1A04	VIN UNFINISHED	AV-436, "DTC Description"
U1A06	TEL ANTENNA	AV-437, "DTC Description"
U1A09	GPS ANTENNA CONN	AV-438, "DTC Description"
U1A0A	GPS MODULE COMM	AV-441, "DTC Description"
U1A0B	MIC IN CONN	AV-442, "DTC Logic"
U1A0C	MIC OUT CONN	AV-444, "DTC Logic"
U1A0E	SOS SWITCH ON STUCK	AV-446, "DTC Logic"
U1A10	AIR BAG SIGNAL	AV-439, "DTC Description"
U1A11	TEL MUTE OUTPUT SIGNAL NO CONN	AV-440, "DTC Description"

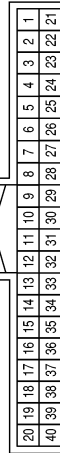
TELEMATICS SYSTEM CONNECTORS

Connector No.	M21
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	B	-

Connector No.	M35
Connector Name	TCU
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	L	B+
2	W	ACC
3	-	-
4	-	-
5	Y	LED A
6	L	CAN-H
7	R	CAN-L
8	-	-

Terminal No.	Color of Wire	Signal Name
9	-	-
10	LG	IGN
11	SHIELD	SHIELD
12	W	MIC OUT SIG
13	-	-
14	-	-
15	-	-
16	SHIELD	SHIELD
17	W	MIC SIG
18	B	MIC VCC
19	-	-
20	-	-
21	-	-
22	-	-
23	-	-
24	-	-

Terminal No.	Color of Wire	Signal Name
25	-	-
26	SB	M-CAN H
27	LG	M-CAN L
28	B	GND
29	B	GND
30	-	-
31	R	AUDIO HU OUT+
32	L	AUDIO HU OUT-
33	-	-
34	-	-
35	-	-
36	-	-
37	BG	E CALL SW
38	-	-
39	-	-
40	-	-

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TELEMATICS SYSTEM

< WIRING DIAGRAM >

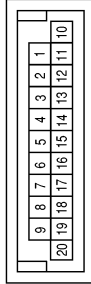
[TELEMATICS SYSTEM]

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7P	Y	-
9P	L	-

Connector No.	M47
Connector Name	JOINT CONNECTOR-M04
Connector Color	BLUE



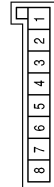
Terminal No.	Color of Wire	Signal Name
1	SB	-
2	SB	-
3	SB	-
11	LG	-
12	LG	-
13	LG	-

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



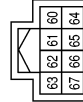
Terminal No.	Color of Wire	Signal Name
15R	W	-
16R	GR	-

Connector No.	M73
Connector Name	JOINT CONNECTOR-M23
Connector Color	WHITE



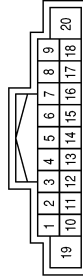
Terminal No.	Color of Wire	Signal Name
1	W	-
6	L	-

Connector No.	M106
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
60	R	TCU IN+
61	SHIELD	DCM SHIELD
64	L	TCU IN-

Connector No.	M108
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
19	L	BAT
20	B	GND

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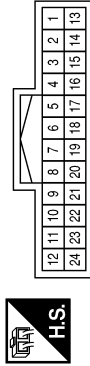
AV

TELEMATICS SYSTEM

< WIRING DIAGRAM >

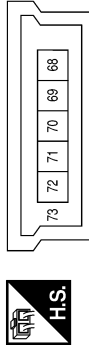
[TELEMATICS SYSTEM]

Connector No.	M156
Connector Name	WIRE TO WIRE
Connector Color	WHITE



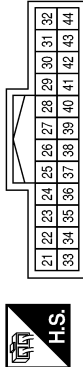
Terminal No.	Color of Wire	Signal Name
1	B	-
2	W	-
3	SHIELD	-
4	BG	-
6	Y	-

Connector No.	M110
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
68	B	VBUS
70	G	D-
71	W	D+
72	R	GND
73	SHIELD	SHIELD

Connector No.	M109
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
31	SB	M-CAN TERMINATION
32	LG	M-CAN TERMINATION
34	W	MIC SIGNAL
36	SHIELD	MIC GND
38	SB	MCAN +
39	LG	MCAN -
40	LG	IGNITION

Connector No.	M175
Connector Name	TCU
Connector Color	BLUE



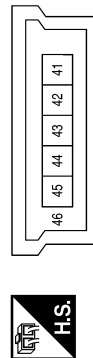
Terminal No.	Color of Wire	Signal Name
49	B	GPS ANT
50	SHIELD	SHIELD

Connector No.	M174
Connector Name	TCU
Connector Color	PINK



Terminal No.	Color of Wire	Signal Name
47	B	GSM ANT
48	SHIELD	SHIELD

Connector No.	M173
Connector Name	TCU
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
41	B	VBUS
42	-	-
43	G	D-
44	W	D+
45	R	GND
46	SHIELD	SHIELD

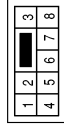
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TELEMATICS SYSTEM

< WIRING DIAGRAM >

[TELEMATICS SYSTEM]

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



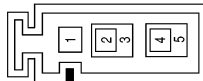
Terminal No.	Color of Wire	Signal Name
3	B	-

Connector No.	M193
Connector Name	JOINT CONNECTOR-M18
Connector Color	WHITE



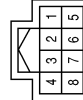
Terminal No.	Color of Wire	Signal Name
1	GR	-
7	W	-

Connector No.	M176
Connector Name	TCU ANTENNA
Connector Color	GRAY



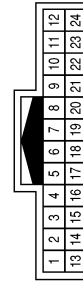
Terminal No.	Color of Wire	Signal Name
2	B	-
3	SHIELD	-
4	B	-
5	SHIELD	-

Connector No.	R21
Connector Name	TELEMATICS SWITCH
Connector Color	WHITE



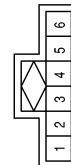
Terminal No.	Color of Wire	Signal Name
1	LG	-
2	B	-
3	SB	-
7	B	-

Connector No.	R11
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	B	-
2	W	-
3	SHIELD	-
4	SB	-
6	LG	-

Connector No.	R8
Connector Name	MICROPHONE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	W	-
2	SHIELD	-
4	B	-

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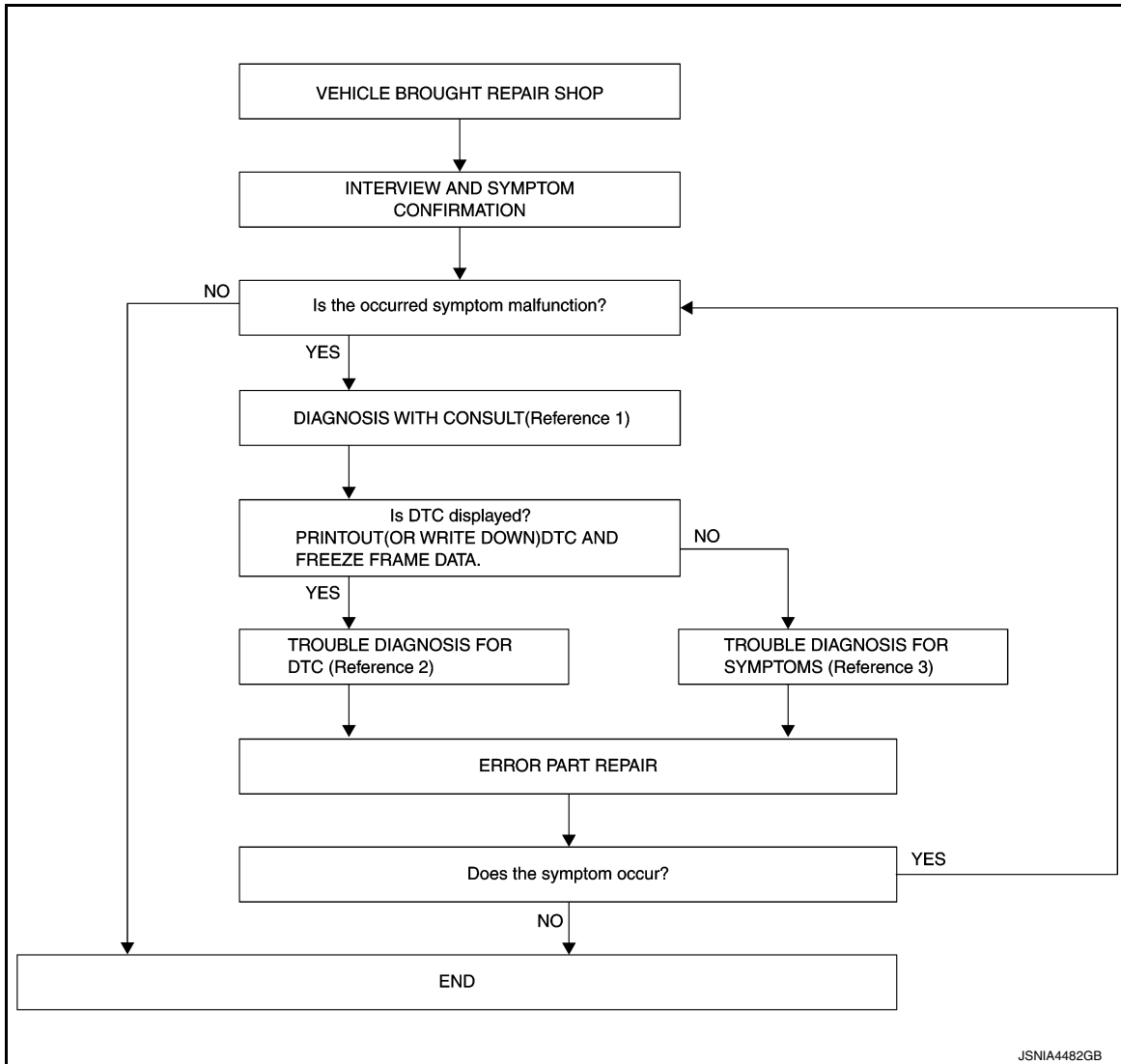
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000012873930

OVERALL SEQUENCE



JSNIA4482GB

- Reference 1… Refer to [AV-408, "CONSULT Function"](#).
- Reference 2… Refer to [AV-413, "DTC Index"](#).
- Reference 3… Refer to [AV-448, "Symptom Table"](#).

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.

- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

- YES >> GO TO 2.
 NO >> Inspection End.

2. DIAGNOSIS WITH CONSULT

DIAGNOSIS AND REPAIR WORK FLOW

[TELEMATICS SYSTEM]

< BASIC INSPECTION >

1. Connect CONSULT and perform a self-diagnosis for "TCU". Refer to [AV-408. "CONSULT Function"](#).
2. When DTC is detected, follow the instructions below:
 - Record DTC and Freeze Frame Data.

Is DTC displayed?

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

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to [AV-413. "DTC Index"](#).

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-448. "Symptom Table"](#).

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for "TCU" with CONSULT.
3. Check that the symptom does not occur.

Does the symptom occur?

- YES >> GO TO 1.
NO >> Inspection End.

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[TELEMATICS SYSTEM]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM (WORK STEP VIEW)

ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM (WORK STEP VIEW) : Process Chart

INFOID:0000000012857611

	Initial Sub- scription (AV-422)	TCU Replace- ment (AV-423)	Cancellation (AV-425)	Re-subscrip- tion (AV-422)	Scrap (AV-425)
TCU; Read VIN data		1			
TCU; Turn off RF			1		1
TCU; Remove and Install		2			
TCU; Write VIN data		3			
TCU; User-info update		4			
TCU; Turn on RF	1	5		1	
VIN Check		6			
Telematics system; Confirmation of operation	2	7		2	

ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM FOR THE FIRST TIME/RE-SUBSCRIPTION

ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM FOR THE FIRST TIME/RE-SUBSCRIPTION : Description

INFOID:0000000012857612

When the driver uses telematics system for the first time/re-subscription, TCU activation operation is required.

PREPARATION BEFORE ACTIVATION OPERATION

- Subscribe to telematics service.

ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM FOR THE FIRST TIME/RE-SUBSCRIPTION : Procedure

INFOID:0000000012857613

1.CHECK TCU CONTRACT

Check the contract of TCU.

Is this the recontract?

- YES >> GO TO 2.
- NO >> GO TO 7.

2.CHECK THE SETTINGS OF TCU ACTIVATION

CONSULT work support

Select "TCU ACTIVATE SETTING" to check its settings.

Is the ACTIVATE setting ON?

- YES >> GO TO 3.
- NO >> GO TO 7.

3.INITIALIZE TCU

1. CONSULT work support

Select "TCU ACTIVATE SETTING". Change the setting of TCU activate from OFF to ON.

2. Check the status of the SOS indicator for 30 seconds.

Does the SOS indicator turn ON?

- YES >> GO TO 8.
- NO >> GO TO 4.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[TELEMATICS SYSTEM]

4.CHECK THE STATUS OF TCU

Press the operator switch.

The voice guidance of "It is out of service. Please try again." can be heard with the indicator lamp remained OFF. >> Move to within a service area (where the indicator lamp turns ON) of the cellular phone to restart the test.

The indicator lamp blinks ten times.>>GO TO 5.

5.PERFORM SELF-DIAGNOSIS OF CONSULT

Perform self-diagnosis of CONSULT.

IS DTC detected?

YES >> Repair or replace malfunctioning parts, according to the self-diagnosis results.

NO >> GO TO 6.

6.CHECK THE SETTINGS OF TCU ACTIVATION

CONSULT work support

Select "TCU ACTIVATE SETTING" to check its settings.

Is the activate setting ON?

YES >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).

NO >> GO TO 3.

7.TCU ACTIVATION

CONSULT work support

Select "TCU ACTIVATE SETTING", then "ON" on changing screen to activate TCU.

>> GO TO 8.

8.CONFIRMATION OF OPERATION

1. After turning ON TCU, wait for 30 seconds to perform the procedure.
2. Operate the telematics switch to check that the connection to the operator is established.

NOTE:

If the connection to the operator cannot be established, check that the ID confirmed with CONSULT agrees with the one registered with the NISSANCONNECTSM operation system.

Is communication test result normal?

Abnormal>>GO TO 1.

Normal >> operation end.

ADDITIONAL SERVICE WHEN REPLACING TCU

ADDITIONAL SERVICE WHEN REPLACING TCU : Description

INFOID:0000000012857614

When TCU is replaced, TCU activation operation is required.


Preparation before activation operation

- Subscribe to telematics service

ADDITIONAL SERVICE WHEN REPLACING TCU : Procedure

INFOID:0000000012857615

1.READING OF VIN DATA

CONSULT work support

Select "SAVE VIN DATA", "START SAVE VIN DATA" then "YES" on START SAVE VIN DATA screen to save the VIN data stored in replaced TCU in CONSULT. If it cannot be saved, writing operation must be performed manually.

>> GO TO 2.

2.TCU REMOVE

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[TELEMATICS SYSTEM]

Remove TCU. Refer to [AV-452. "Removal and Installation"](#).

>> GO TO 3.

3. NOTICE TO CARRIER "CONTINENTAL HELP DESK"

Contact CONTINENTAL to have the malfunctioning TCU repaired.

NOTE:

The telematics system cannot be used when TCU is under repair

The repaired TCU is back.>>GO TO 4.

4. TCU INSTALL

Install TCU. Refer to [AV-452. "Removal and Installation"](#).

Can ID data be saved to CONSULT at 1st step?

YES >> GO TO 5.

NO >> GO TO 6.

5. AUTOMATIC WRITING OF VIN DATA TO TCU

ⓅCONSULT work support

Select "WRITE VIN DATA", "WRITE SAVED VIN DATA" then "YES" at WRITE SAVED VIN DATA screen to write the VIN data saved in CONSULT into new TCU.

>> GO TO 7.

6. MANUAL WRITING OF VIN DATA TO TCU

ⓅCONSULT work support

Select "WRITE VIN DATA (MANUAL)", "WRITE VIN DATA" then "START" on changing screen to write the VIN data saved into new TCU.

>> GO TO 7.

7. USER INFORMATION UPDATE

Update each ID according to the repair record from CONTINENTAL.

- Replace SIM card: ICC ID update
- Replace TCU: TCU ID update

>> GO TO 8.

8. TCU ACTIVATION

ⓅCONSULT work support

Select "TCU ACTIVATE SETTING", then "ON" on changing screen to activate TCU.

>> GO TO 9.

9. CONFIRMATION OF OPERATION

Operate the telematics switch to check that the connection to the operator is established.

Is communication test result normal?

Abnormal>>GO TO 6.

Normal >> operation end.

ADDITIONAL SERVICE WHEN TCU DEACTIVATION

ADDITIONAL SERVICE WHEN TCU DEACTIVATION : Description

INFOID:000000012857616

After canceling a contract with NISSANCONNECTSM, TCU must be deactivated.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[TELEMATICS SYSTEM]

ADDITIONAL SERVICE WHEN TCU DEACTIVATION : Procedure

INFOID:000000012857617

1. TCU DEACTIVATION

ⓂCONSULT work support

Select "TCU ACTIVATE SETTING", then "OFF" on changing screen to activate TCU.

>> Work End.

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DTC/CIRCUIT DIAGNOSIS

B130D TCU

DTC Description

INFOID:000000012857619

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
TEL LINE OUT ERROR [B130D]	Malfunction is detected audio signal circuits between TCU and AV control unit.	TCU audio signal circuits.

Diagnosis Procedure

INFOID:000000012857620

1. CHECK CONTINUITY BETWEEN TCU AND AV CONTROL UNIT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector M35 and AV control unit harness connector M106.
3. Check continuity between TCU harness connector M35 and AV control unit harness connector M106.

TCU		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M35	31	M106	19	Yes

4. Check continuity between TCU harness connector M35 and ground.

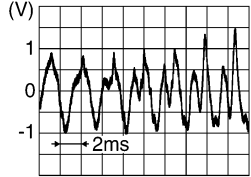
TCU		Ground	Continuity
Connector	Terminals		
M35	31		No

Is the inspection result normal?

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

2. CHECK AUDIO SIGNAL

1. Connect TCU harness connector M35 and AV control unit harness connector M106.
2. Turn ignition switch ON.
3. Check signal between TCU harness connector M35 terminals.

Connector	TCU		Condition	Reference value
	(+)	(-)		
	Terminal			
M35	31	32	When inputting interior sound	 <p>SKIB3609E</p>

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-452. "Removal and Installation"](#).
 NO >> Replace AV control unit. Refer to [AV-450. "Removal and Installation"](#).

B1310 TCU

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

B1310 TCU

DTC Description

INFOID:000000012857621

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
TCU TEMPERATURE ERROR [B1310]	TCU internal temperature out of range	Internal TCU failure.

Diagnosis Procedure

INFOID:000000012857622

1. CHECK AROUND TCU

Check whether there is any factor which causes a temperature rise near TCU.

Was there any factor?

YES >> Remove a factor.

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC confirmation procedure.

Is DTC B1310 detected again?

YES >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).

NO >> Inspection End.

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AV

B13D9 TCU

DTC Description

INFOID:000000012857623

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
USB CONNECTION [B13D9]	Communication between AV control unit and TCU is malfunctioning.	USB harness between TCU and AV control unit.

Diagnosis Procedure

INFOID:000000012857624

1. CHECK USB HARNESS CONNECTION

1. Turn ignition switch OFF.
2. Visually check USB harness connector between AV control unit and TCU.

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace USB harness.

2. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC confirmation procedure.

Is DTC B13D9 detected again?

- YES >> Replace TCU. Refer to [AV-452. "Removal and Installation"](#).
- NO >> Inspection End.

B13E1 TCU

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

B13E1 TCU

DTC Description

INFOID:0000000012857625

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CAN COMMUNICATION [B13E1]	AV communication circuit between AV control unit and TCU is malfunctioning.	CAN communication system.

Diagnosis Procedure

INFOID:0000000012857626

1. CHECK AV COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit harness connector M109 and TCU harness connector M35.
3. Check the continuity between AV control unit harness connector M109 and TCU harness connector M35.

AV control unit		TCU		Continuity
Connector	Terminal	Connector	Terminal	
M109	32	M35	27	Yes
	39		26	
	31			
	38			

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-452. "Removal and Installation"](#).
 NO >> Repair or replace malfunctioning parts.

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AV

B2E33 TELEMATICS SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

B2E33 TELEMATICS SWITCH

DTC Description

INFOID:000000012857627

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ECALL BUTTON [B2E33]	Malfunction detected is SOS call switch signal circuit between TCU and telematics switch.	Telematics switch, or switch circuits.

Diagnosis Procedure

INFOID:000000012857628

1. CHECK SOS SWITCH LED SIGNAL

1. Turn ignition switch ON.
2. Check the voltage between TCU harness connector M35 and ground.

TCU		Ground	Voltage (Approx.)
Connector	Terminal		
M35	5	—	3.5 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).

2. CHECK SOS SWITCH LED SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector M35 and telematics switch harness connector R21.
3. Check the continuity between TCU harness connector M35 and telematics switch harness connector R21.

TCU		Telematics switch		Continuity
Connector	Terminal	Connector	Terminal	
M35	5	R21	1	Yes

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3. CHECK SOS SWITCH LED SIGNAL CIRCUIT FOR SHORT

Check the continuity between TCU harness connector M35 and ground.

TCU		Ground	Continuity
Connector	Terminal		
M35	5		Yes

Is the inspection result normal?

YES >> Replace telematics switch. Refer to [AV-453, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1000 CAN COMM CIRCUIT

TCU

TCU : DTC Logic

INFOID:0000000012874383

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CAN COMM CIRCUIT [U1000]	TCU is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

TCU : Diagnosis Procedure

INFOID:0000000012874384

1. PERFORM SELF DIAGNOSTIC RESULT

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

Is CAN COMM CIRCUIT displayed?

- YES >> Refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).
NO >> Refer to [GI-45, "Intermittent Incident"](#).

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U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1010 CONTROL UNIT (CAN)

TCU

TCU : DTC Logic

INFOID:0000000012874387

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (CAN) [U1010]	Error during CAN controller hardware initialization (VCAN).	Replace the TCU if the malfunction occurs constantly. Refer to AV-452 , "Removal and Installation".

U1A00 TCU

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A00 TCU

DTC Description

INFOID:0000000012875235

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
ACC NO CONN [U1A00]	No input of ACC signal.	Replace TCU if malfunction occurs constantly. Refer to AV-452, "Removal and Installation" .

Diagnosis Procedure

INFOID:0000000012875236

1. CHECK ACC POWER CIRCUIT

Check the ACC power circuit. Refer to [AV-447, "TCU : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).
- NO >> Repair or replace malfunctioning parts.

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U1A01 TCU

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A01 TCU

DTC Logic

INFOID:000000012777119

CONSULT Display	DTC Detection Condition	Possible Cause
INTERNAL ERROR (TCU) [U1A01]	Malfunction in TCU is detected.	Replace TCU if malfunction occurs constantly. Refer to AV-452 , "Removal and Installation".

U1A03 TCU

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A03 TCU

DTC Description

INFOID:000000012857629

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
SIM CARD [U1A03]	SIM card malfunction is detected.	Replace TCU if malfunction occurs constantly. Refer to AV-452, "Removal and Installation" .

Diagnosis Procedure

INFOID:000000012857630

1. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC confirmation procedure again. Refer to [AV-435, "DTC Description"](#).

Is DTC U1A03 detected again?

- YES >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).
- NO >> Inspection End.

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U1A04 TCU

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A04 TCU

DTC Description

INFOID:0000000012857631

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
VIN UNFINISHED [U1A04]	No write of VIN number is detected.	VIN is not written to TCU.

Diagnosis Procedure

INFOID:0000000012857632

1. PERFORM WRITING VIN DATA TO TCU

Perform writing VIN data to TCU. Refer to [AV-422, "ADDITIONAL SERVICE WHEN USING TELEMATICS SYSTEM FOR THE FIRST TIME/RE-SUBSCRIPTION : Description"](#).

Was the writing of VIN data completed?

YES >> GO TO 2.

NO >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).

2. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC confirmation procedure again. Refer to [AV-436, "DTC Description"](#).

Is DTC U1A04 detected again?

YES >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).

NO >> Inspection End.

U1A06 TEL ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A06 TEL ANTENNA

DTC Description

INFOID:0000000012857633

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
TEL ANTENNA [U1A06]	Malfunction detected is TEL antenna signal circuit between TCU and TEL antenna.	TEL antenna signal circuit

Diagnosis Procedure

INFOID:0000000012857634

1.CHECK TELEMATICS ANTENNA

Visually check telematics antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

2.CHECK TCU VOLTAGE

1. Disconnect TCU harness connector M173.
2. Turn ignition switch ON.
3. Check voltage between TCU terminal and ground.

TCU		Ground	Continuity
Connector	Terminal		
M173	47		No

Is the check result normal?

YES >> Replace telematics antenna. Refer to [AV-454, "Removal and Installation"](#).

NO >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).

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U1A09 GPS ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A09 GPS ANTENNA

DTC Description

INFOID:000000012857635

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
GPS ANTENNA CONN [U1A09]	No input of GPS antenna signal.	GPS antenna signal circuit.

Diagnosis Procedure

INFOID:000000012857636

1.CHECK TELEMATICS ANTENNA

Visually check telematics antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

2.CHECK TCU VOLTAGE

1. Disconnect TCU harness connector M175.
2. Turn ignition switch ON.
3. Check voltage between TCU terminal and ground.

TCU		Ground	Continuity
Connector	Terminals		
M175	49		No

Is the check result normal?

YES >> Replace telematics antenna. Refer to [AV-454, "Removal and Installation"](#).

NO >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).

U1A10 TCU

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A10 TCU

DTC Description

INFOID:000000012857639

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
AIRBAG SIGNAL [U1A10]	When detected an abnormal signal from air bag diagnosis sensor.	CAN communication system.

Diagnosis Procedure

INFOID:000000012857640

1. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC confirmation procedure again. Refer to [AV-429, "DTC Description"](#)

Is DTC U1A10 detected again?

- YES >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).
- NO >> Inspection End.

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U1A11 TCU

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A11 TCU

DTC Description

INFOID:000000012857641

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
TEL MUTE OUTPUT SIGNAL NO CONN [U1A11]	Malfunction is detected audio signal circuits between TCU and AV control unit.	TCU audio signal circuit.

Diagnosis Procedure

INFOID:000000012857642

1. CHECK CONTINUITY BETWEEN TCU AND AV CONTROL UNIT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector M35 and AV control unit harness connector M106.
3. Check continuity between TCU harness connector M35 and AV control unit harness connector M106.

TCU		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M35	31	M106	60	Yes

4. Check continuity between TCU harness connector M35 and ground.

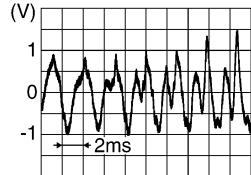
TCU		Ground	Continuity
Connector	Terminals		
M35	31		No

Is the inspection result normal?

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

2. CHECK AUDIO SIGNAL

1. Connect TCU harness connector M35 and AV control unit harness connector M106.
2. Turn ignition switch ON.
3. Check signal between TCU harness connector M35 terminals.

Connector	TCU		Condition	Reference value
	(+)	(-)		
Terminal				
M35	31	32	When inputting interior sound	 <p>SKIB3609E</p>

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).
NO >> Replace AV control unit. Refer to [AV-450, "Removal and Installation"](#).

U1A0A TCU

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A0A TCU

DTC Description

INFOID:0000000012857637

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
GPS MODULE COMM [U1A0A]	Malfunction on the GPS module in TCU is detected.	Replace TCU if malfunction occurs constantly. Refer to AV-452, "Removal and Installation" .

Diagnosis Procedure

INFOID:0000000012857638

1. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC confirmation procedure.

Is DTC U1A0A detected again?

- YES >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).
- NO >> Inspection End.

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U1A0B MICROPHONE

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A0B MICROPHONE

DTC Logic

INFOID:000000012777127

CONSULT Display	DTC Detection Condition	Possible Cause
MIC IN CONN [U1A0B]	No input of microphone circuits.	<ul style="list-style-type: none"> • Harness or connectors. • Microphone. • Replace TCU if malfunction occurs constantly. Refer to AV-452. "Removal and Installation".

Diagnosis Procedure

INFOID:000000012777128

Regarding Wiring Diagram information, refer to [AV-415. "Wiring Diagram"](#).

1. CHECK MIC IN SIGNAL CIRCUIT AND MIC VCC CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect TCU connector M35 and microphone connector R8.
3. Check continuity between TCU connector M35 and microphone connector R8.

TCU		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M35	16	R8	2	Yes
	17		1	
	18		4	

4. Check the continuity between TCU connector M35 and ground.

TCU		Ground	Continuity
Connector	Terminal		
M35	17	—	No
	18		

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace harness or connectors.

2. CHECK MIC VCC VOLTAGE

1. Connect TCU connector M35 and microphone connector R8.
2. Turn ignition switch ON.
3. Check voltage between terminals of TCU connector M35.

TCU connector M35		Voltage (Approx.)
(+) Terminal	(-) Terminal	
17	16	5.0 V

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace TCU. Refer to [AV-452. "Removal and Installation"](#).

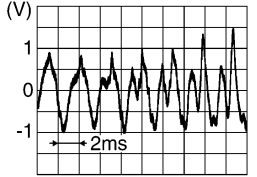
3. CHECK MIC IN SIGNAL

Check signal between terminals of TCU connector M35.

U1A0B MICROPHONE

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

TCU connector M35		Condition	Reference value
(+)	(-)		
Terminal	Terminal		
17	16	Speak into microphone.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-452. "Removal and Installation"](#).
- NO >> Replace microphone. Refer to [AV-455. "Removal and Installation"](#).

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U1A0C MICROPHONE

DTC Logic

INFOID:000000012777129

CONSULT Display	DTC Detection Condition	Possible Cause
MIC OUT CONN [U1A0C]	No output of microphone circuits.	<ul style="list-style-type: none"> Harness or connectors. Microphone. Replace TCU if malfunction occurs constantly. Refer to AV-452. "Removal and Installation".

Diagnosis Procedure

INFOID:000000012777130

Regarding Wiring Diagram information, refer to [AV-415. "Wiring Diagram"](#).

1. CHECK DCM MIC SIGNAL CIRCUIT AND DCM MIC VCC CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect TCU connector M35 and AV control unit connector M106.
3. Check continuity between TCU connector M35 and AV control unit connector M106.

TCU		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M35	31	M106	60	Yes
	32		64	

4. Check the continuity between TCU connector M35 and ground.

TCU		Ground	Continuity
Connector	Terminal		
M35	31	—	No
	32		

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Repair or replace harness or connectors.

2. CHECK DCM MIC VCC VOLTAGE

1. Connect TCU connector M35 and AV control unit connector M106.
2. Turn ignition switch ON.
3. Check voltage between TCU connector terminals.

TCU connector M35		Voltage (Approx.)
(+)	(-)	
Terminal	Terminal	
18	16	5.0 V

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace TCU. Refer to [AV-452. "Removal and Installation"](#).

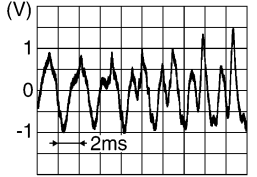
3. CHECK DCM MIC SIGNAL

Check signal between TCU connector M35.

U1A0C MICROPHONE

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

TCU connector		Condition	Reference value
(+) Terminal	(-) Terminal		
17	16	Speak into microphone.	 <p>SKIB3609E</p>

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-452. "Removal and Installation"](#).
- NO >> Replace microphone. Refer to [AV-455. "Removal and Installation"](#).

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AV

U1A0E TELEMATICS SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

U1A0E TELEMATICS SWITCH

DTC Logic

INFOID:000000012777131

CONSULT Display	DTC Detection Condition	Possible Cause
SOS SWITCH ON STUCK [U1A0E]	ECALL SW short circuit.	<ul style="list-style-type: none"> • Harness or connectors. • Telematics switch. • Replace TCU if malfunction occurs constantly. Refer to AV-452, "Removal and Installation".

Diagnosis Procedure

INFOID:000000012777132

Regarding Wiring Diagram information, refer to [AV-415, "Wiring Diagram"](#).

1. CHECK ECALL SW CIRCUIT CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect TCU connector M35 and telematics switch connector R21.
3. Check the continuity between TCU connector M35 and ground.

TCU		Ground	Continuity
Connector	Terminal		
M35	37	—	No

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace harness or connectors.

2. CHECK TELEMATICS SWITCH

Check continuity between telematics switch terminals.

Telematics switch connector R21		Condition	Continuity
Terminal	Terminal		
3	7	Switch pressed	Yes
		Switch released	No

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-452, "Removal and Installation"](#).
NO >> Replace telematics switch. Refer to [AV-453, "Removal and Installation"](#).

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[TELEMATICS SYSTEM]

POWER SUPPLY AND GROUND CIRCUIT

TCU

TCU : Diagnosis Procedure

INFOID:0000000012874389

Regarding Wiring Diagram information, refer to [AV-415. "Wiring Diagram"](#).

1. CHECK FUSE

Check that the following fuses are not blown.

Terminal No.	Signal name	Fuse No.
1	Battery power supply	6 (10A)
2	ACC power supply	20 (10A)
10	Ignition signal	29 (5A)

Are the fuses blown?

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

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU connector M35.
3. Check voltage between TCU connector M35 and ground.

TCU		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M47	1	—	Ignition switch: OFF	Battery voltage
	2		Ignition switch: ACC	
	10		Ignition switch: ON	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between TCU connector M35 and ground.

TCU		Ground	Continuity
Connector	Terminal		
M47	28	—	Yes
	29		

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair or replace harness or connectors.



SYMPTOM DIAGNOSIS

TELEMATICS SYSTEM

Symptom Table

INFOID:000000012777137

TELEMATICS SYSTEM

Symptom	Display icon	Error message	Possible cause
Telematics operation not available.	—	Telematics unit is not connected.	Perform self-diagnosis with CONSULT. Refer to AV-408. "CONSULT Function" .
		The connection to the center failed.	Check ON/OFF status of TCU using the data monitor of CONSULT. • Replace TCU if it is ON. Refer to AV-452. "Removal and Installation" . • Turn it ON again if it is OFF. Replace TCU if ON is switched to OFF. Refer to AV-452. "Removal and Installation" .
		No service.	Use a cellular phone to check reception. • If service is available, replace TCU or TEL antenna. - For TCU replacement, refer to AV-452. "Removal and Installation" . - For TEL antenna replacement, refer to AV-454. "Removal and Installation" . • If the service is not available, move the vehicle to the position where service is available and perform the operation again.
		Service inoperative due to poor reception.	Use a cellular phone to check reception. • If it is OK, there may be a cause at the NISSANCONNECTION SM Data Center. Check connection after a short period of time. If there is no problem at the NISSANCONNECTION SM Data Center, replace TCU or TEL antenna. - For TCU replacement, refer to AV-452. "Removal and Installation" . - For TEL antenna replacement, refer to AV-454. "Removal and Installation" . • If it is NG, check connection again after a short period of time.
		Service not registered.	Check input of user ID and password from the navigation setting screen. If malfunction such as input or no memory despite input is detected, replace AV control unit. Refer to AV-450. "Removal and Installation" .
		TCU line is used.	Check connection after a short period of time. Replace TCU if it is frequently displayed. Refer to AV-452. "Removal and Installation" .
		The connection to the center failed.	There may be a cause at the NISSANCONNECTION SM Data Center. Check connection after a short period of time. If there is no problem at the NISSANCONNECTION SM Data Center, replace TCU or TEL antenna. • For TCU replacement, refer to AV-452. "Removal and Installation" . • For TEL antenna replacement, refer to AV-454. "Removal and Installation" .

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[TELEMATICS SYSTEM]

NORMAL OPERATING CONDITION

Description

INFOID:000000012777138

NOTE:

For Telematics system operation detail information, refer to Navigation system Owner's Manual.

Symptom	Possible cause	Possible solution
The system cannot connect to the NISSANCONNECT SM Data Center.	A subscription for the CONNECT service has not been established.	Sign up for a subscription to the NISSANCONNECT SM service. For details about subscriptions, contact an NISSAN dealer or visit the NISSANCONNECT SM Data Center website.
	The user ID and password are not entered.	Enter the user ID and password.
	The communication line is busy.	Try again after a short period of time.
	The vehicle is in a location where reception is difficult.	When the vehicle moves to an area where radio waves can be transmitted sufficiently, communication will be restored. When the icon on the display shows that the vehicle is inside the communication area, the system can be used.
	TCU reception is insufficient.	When the vehicle moves to an area where radio waves can be transmitted sufficiently, communication will be restored. When the icon on the display shows that the vehicle is inside the communication area, the system can be used.
Some of the items that are displayed on the menu screen cannot be selected.	The vehicle is being driven and some menu items are disabled.	The vehicle is being driven. Stop the vehicle in a safe location and apply the parking brake before operating the functions.
Some parts of the screen are not displayed		Operate the system after stopping the vehicle in a safe location and applying the parking brake.
The system does not announce information.	The volume level is set to the minimum.	Adjust the volume level by operating the VOL switches located on the control panel or on the steering switch while the system is announcing information.

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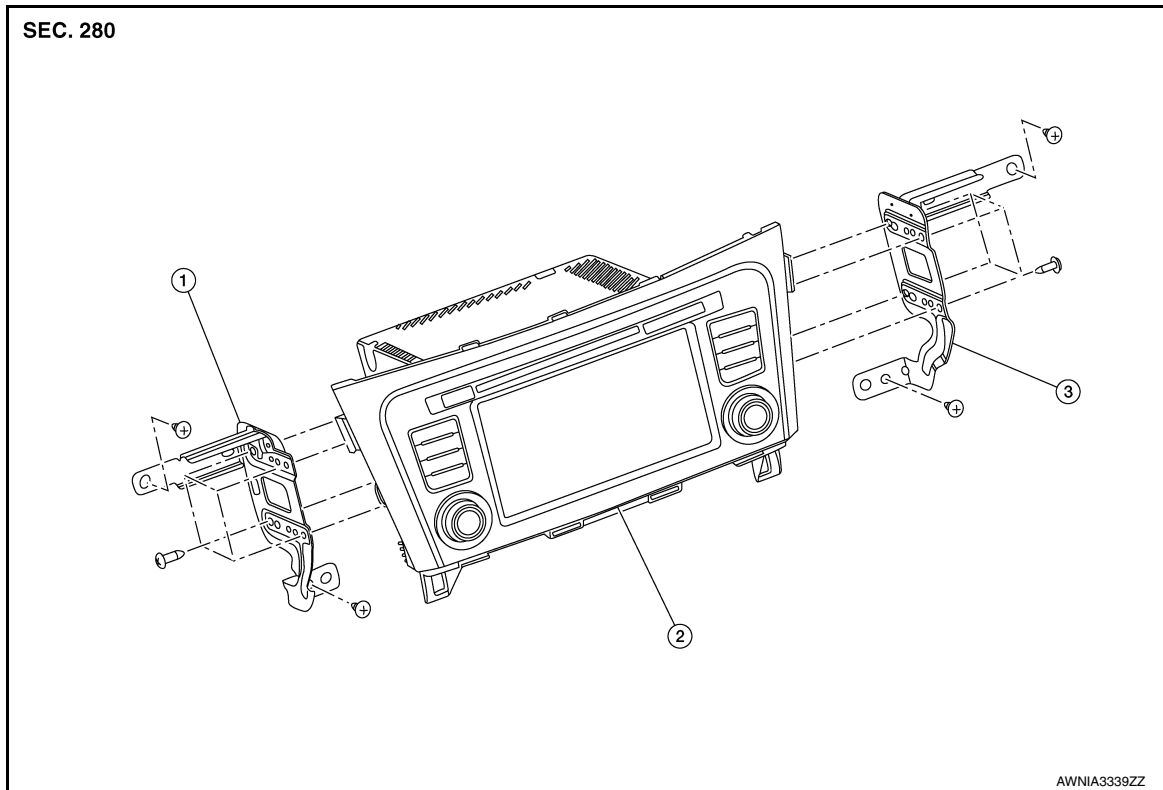
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REMOVAL AND INSTALLATION

AV CONTROL UNIT

Exploded View

INFOID:000000012874012



1. AV control unit bracket (LH) 2. AV control unit 3. AV control unit bracket (RH)

Removal and Installation

INFOID:000000012874013

REMOVAL

CAUTION:

- Before disconnecting the AV control unit and battery terminals, turn the ignition switch OFF and wait at least 30 seconds.
- Before replacing AV control unit, perform "READ CONFIGURATION" to save current vehicle specification. Refer to [AV-146. "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).

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. Disconnect the negative battery terminal. Refer to [PG-80. "Removal and Installation \(Battery\)"](#).
2. Remove cluster lid C. Refer to [IP-22. "Removal and Installation"](#).
3. Remove instrument finisher B. Refer to [IP-16. "INSTRUMENT FINISHER B : Removal and Installation"](#).
4. Remove instrument finisher E. Refer to [IP-16. "INSTRUMENT FINISHER E : Removal and Installation"](#).
5. Remove the AV control unit screws, then pull out the AV control unit.
6. Disconnect the harness connectors from the AV control unit and remove.
7. Remove the AV control unit bracket (LH/RH) screws and the AV control unit brackets (LH/RH) (if necessary).

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[TELEMATICS SYSTEM]

- When replacing AV control unit, perform "WRITE CONFIGURATION". Refer to [AV-302. "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).
- When replacing AV control unit, the AV control unit must be registered. Refer to [AV-303. "REGISTRATION \(AV CONTROL UNIT\) : Description"](#).

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AV

TCU

Removal and Installation

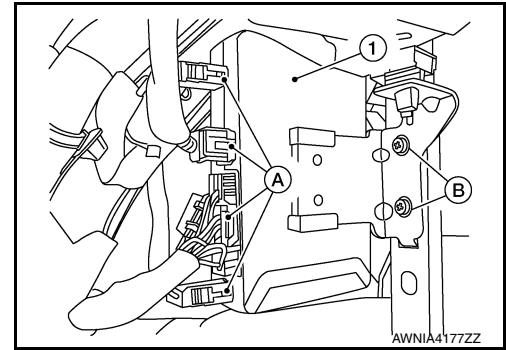
INFOID:000000012735194

REMOVAL

NOTE:

Before replacing TCU, perform "SAVE VIN DATA" to save current vehicle specification. For details, refer to [AV-423, "ADDITIONAL SERVICE WHEN REPLACING TCU : Description"](#).

1. Remove glove box. Refer to [IP-24, "Removal and Installation"](#).
2. Disconnect the harness connectors (A) from the TCU (1).
3. Remove screws (B), then remove TCU with bracket attached.



4. Slide TCU off bracket to remove, if necessary.

INSTALLATION

1. Installation is in the reverse order of removal.
2. After installation, perform activation. Refer to [AV-423, "ADDITIONAL SERVICE WHEN REPLACING TCU : Description"](#).

TELEMATICS SWITCH

Removal and Installation

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The telematics switch is serviced as part of the room/map lamp. Refer to [INL-55. "Removal and Installation"](#).

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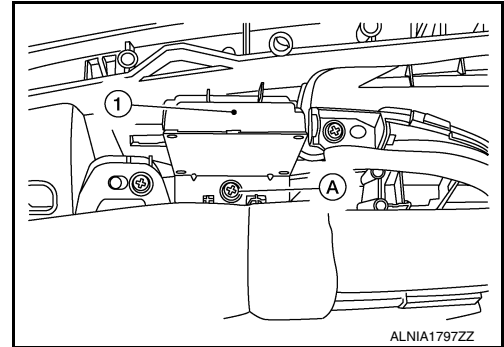
TEL ANTENNA

Removal and Installation

INFOID:000000012783041

REMOVAL

1. Remove instrument panel. Refer to [IP-14, "INSTRUMENT PANEL ASSEMBLY : Removal and Installation"](#).
2. Remove screw (A) to remove telematics antenna (1) from instrument panel.



INSTALLATION

Installation is in the reverse order of removal.

MICROPHONE

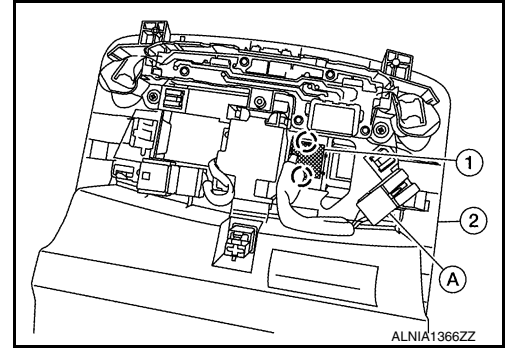
Removal and Installation

INFOID:000000012873978

REMOVAL

1. Remove the map lamp assembly. Refer to [INL-55, "Removal and Installation"](#).
2. Disconnect the microphone connector (A) from the map lamp assembly (2).
3. Release the microphone pawls, then remove the microphone (1).

○ : Pawl



INSTALLATION

Installation is in the reverse order of removal.

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