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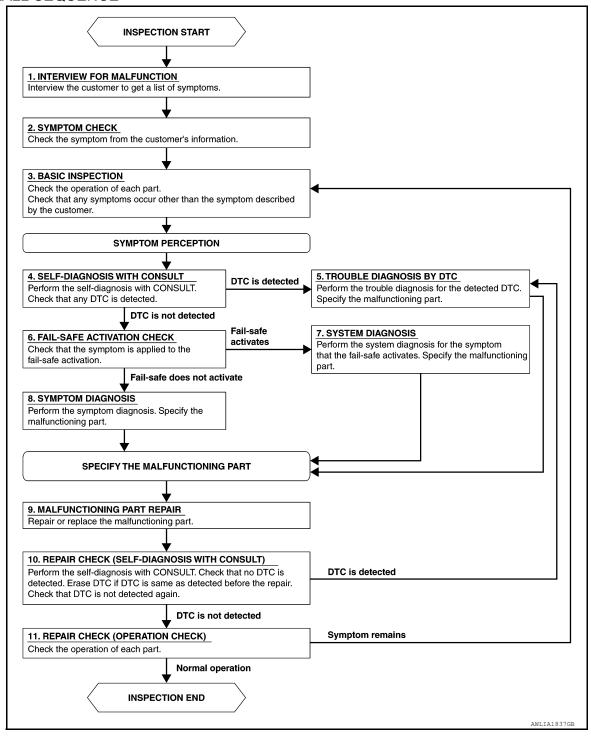
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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

OVERALL SEQUENCE



DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION > DETAILED FLOW Α 1.INTERVIEW FOR MALFUNCTION Find out what the customer's concerns are. В >> GO TO 2. 2.SYMPTOM CHECK Verify the symptom from the customer's information. D >> GO TO 3. 3.BASIC INSPECTION Check the operation of each part. Check that any concerns occur other than those mentioned in the customer interview. >> GO TO 4. F f 4 . SELF-DIAGNOSIS WITH CONSULT Perform the self diagnosis with CONSULT. Check that any DTC is detected. Is any DTC detected? YES >> GO TO 5. NO >> GO TO 6. $oldsymbol{5}$. TROUBLE DIAGNOSIS BY DTC Perform the trouble diagnosis for the detected DTC. Specify the malfunctioning part. >> GO TO 9. 6. FAIL-SAFE ACTIVATION CHECK Determine if the customer's concern is related to fail-safe activation. Does the fail-safe activate? K YES >> GO TO 7. NO >> GO TO 8. **1.**SYSTEM DIAGNOSIS **EXL** Perform the system diagnosis for the system in which the fail-safe activates. Specify the malfunctioning part. M >> GO TO 9. 8.SYMPTOM DIAGNOSIS Perform the symptom diagnosis. Specify the malfunctioning part. >> GO TO 9. 9. MALFUNCTION PART REPAIR Repair or replace the malfunctioning part. Р >> GO TO 10. 10. REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT) Perform the self diagnosis with CONSULT. Verify that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify that DTC is not detected again.

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Is any DTC detected?

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

YES >> GO TO 5. NO >> GO TO 11.

11. REPAIR CHECK (OPERATION CHECK)

Check the operation of each part.

Does it operate normally?

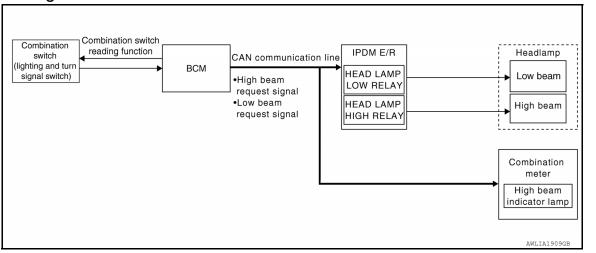
YES >> Inspection End.

NO >> GO TO 3.

SYSTEM DESCRIPTION

HEADLAMP (HALOGEN TYPE)

System Diagram



System Description

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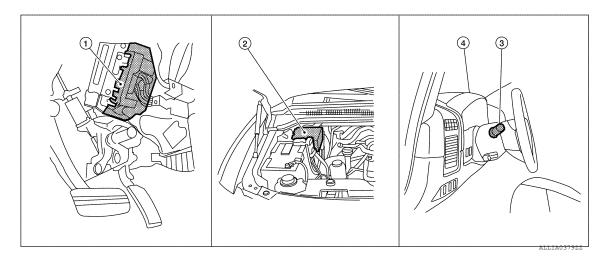
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Control of the headlamp system operation is dependent upon the position of the combination switch (lighting and turn signal switch). When the combination switch (lighting and turn signal switch) is placed in the 2nd position, the BCM (body control module) receives input requesting the headlamps and park lamps to illuminate. This input is communicated to the IPDM E/R (intelligent power distribution module engine room) via the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the headlamp high and headlamp low relay coils. When energized, these relays direct power to the respective headlamps, which then illuminate.

Component Parts Location

INFOID:0000000011288310



- BCM M18, M20 (view with instrument 2. IPDM E/R E122, E123, E124 panel removed)
- 4. Combination meter M24

Combination switch (lighting and turnsignal switch) M28

Component Description

INFOID:0000000011288311

LOW BEAM OPERATION

Revision: August 2014 EXL-7 2015 Armada NAM

HEADLAMP (HALOGEN TYPE)

< SYSTEM DESCRIPTION >

When the combination switch (lighting and turn signal switch) is in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R via the CAN communication lines. The CPU of the IPDM E/R controls the headlamp low relay coil which supplies power to the low beam headlamps.

HIGH BEAM OPERATION/FLASH-TO-PASS OPERATION

With the combination switch (lighting and turn signal switch) in the 2ND position and placed in HIGH position, the BCM receives input requesting the headlamp high beams to illuminate. The flash to pass feature can be used any time and also sends a signal to the BCM. This input is communicated to the IPDM E/R via the CAN communication lines. The CPU of the combination meter controls the ON/OFF status off the HIGH BEAM indicator. The CPU of the IPDM E/R controls the headlamp high relay coil which supplies power to the high beam headlamps.

The combination meter receives a high beam request signal (ON) via the CAN communication lines and turns the high beam indicator lamp ON.

EXTERIOR LAMP BATTERY SAVER CONTROL

With the combination switch (lighting and turn signal switch) in the 2ND position and the ignition switch is turned from ON or ACC to OFF, the battery saver feature is activated.

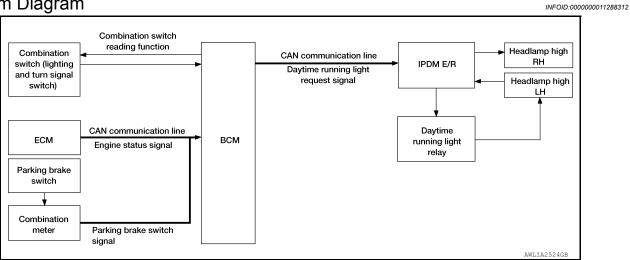
Under this condition, the headlamps remain illuminated for 45 seconds unless the lighting switch position is changed. If the lighting switch position is changed, then the headlamps are turned off.

This setting can be changed by CONSULT. Refer to <u>BCS-25</u>, "BATTERY SAVER : CONSULT Function (BCM - BATTERY SAVER)".

DAYTIME RUNNING LIGHT SYSTEM

DAYTIME RUNNING LIGHT SYSTEM

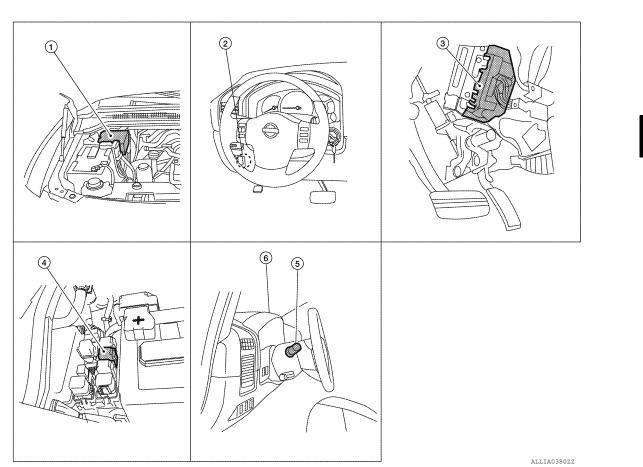
System Diagram



System Description

The headlamp system for Canada vehicles is equipped with a daytime running light relay that activates the high beam headlamps at approximately half illumination whenever the engine is operating. If the parking brake is applied before the engine is started the daytime running lights will not be illuminated. The daytime running lights will illuminate once the parking brake is released. Thereafter, the daytime running lights will continue to operate when the parking brake is applied.

Component Parts Location



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Revision: August 2014 **EXL-9**

DAYTIME RUNNING LIGHT SYSTEM

< SYSTEM DESCRIPTION >

- 1. IPDM E/R E119, E122, E123, E124
- Parking brake switch M11
- BCM M18, M20 (view with instrument panel removed)

- 4. Daytime running light relay E103
- Combination switch (lighting and turn 6. signal switch) M28
- Combination meter M24

Component Description

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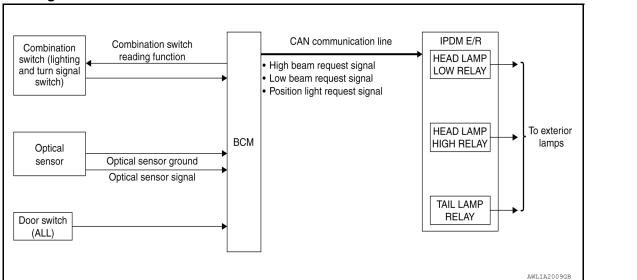
After starting the engine with the parking brake released and the combination switch (lighting and turn signal switch) in the OFF or 1ST position, the headlamp high beam automatically turns on at a reduced intensity. With the combination switch (lighting and turn signal switch) in the 2nd position or with autolamps ON, the headlamps function the same as conventional light systems.

OPERATION

The BCM monitors inputs from the parking brake switch and the combination switch (lighting and turn signal switch) to determine when to activate the daytime running light system. The BCM sends a daytime running light request to the IPDM E/R via the CAN communication lines. The IPDM E/R grounds the daytime running light relay which in turn, provides power to the ground side of the LH high beam lamp. Power flows backward through the LH high beam lamp to the IPDM E/R, through the high beam fuses, through the RH high beam lamp and on to ground. The high beam lamps are wired in series which causes them to illuminate at a reduced intensity.

AUTO LIGHT SYSTEM

System Diagram



System Description

INFOID:0000000011288317

- BCM (Body Control Module) controls auto light operation according to signals from optical sensor, combination switch (lighting and turn signal switch) and ignition switch.
- IPDM E/R (Intelligent Power Distribution Module Engine Room) operates parking, license plate, tail and headlamps according to CAN communication signals from BCM.
- Optical sensor detects ambient brightness of 800 to 2,500 lux. And optical sensor converts light (lux) to voltage, then sends the optical sensor signal to BCM.

OUTLINE

The auto light control system has an optical sensor that detects outside brightness.

When the combination switch (lighting and turn signal switch) is in AUTO position, it automatically turns ON/ OFF the parking, license plate, tail and headlamps in accordance with the ambient light. Sensitivity can be adjusted in four steps. For the details of the setting, Refer to BCS-25, "BATTERY SAVER: CONSULT Function (BCM - BATTERY SAVER)".

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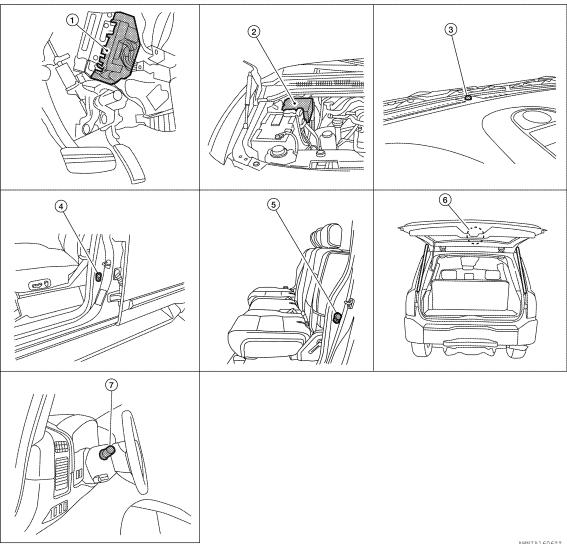
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Component Parts Location

INFOID:0000000011288318



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- BCM M18, M19, M20 (view with instru- 2. ment panel removed)
- Front door switch LH B8 **RH B108**

Rear door switch **LH B18**

RH B116

IPDM E/R E122, E123, E124

Combination switch (lighting and turn signal switch) M28

- 3. Optical sensor M302
- Back door switch D407 (without power back door) Back door latch (door ajar switch) D503 (with power back door)

Component Description

INFOID:0000000011288319

AUTO LIGHT OPERATION

The auto light system operates the low beam and high beam headlamps, parking lamps, tail lamps and license plate lamps. The BCM monitors the combination switch (lighting and turn signal switch) position as a part of the BCM combination switch reading function. When the combination switch (lighting and turn signal switch) is in the AUTO position, the BCM automatically turns the lamps ON/OFF according to ambient light brightness.

Timing for when lamps turn ON/OFF can be changed by the function setting of CONSULT. Refer to BCS-25. "BATTERY SAVER: CONSULT Function (BCM - BATTERY SAVER)".

FRONT FOG LAMP

System Diagram

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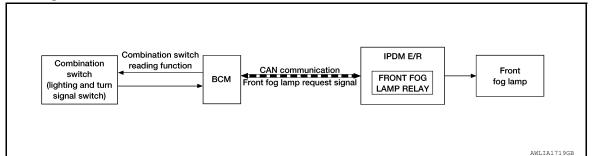
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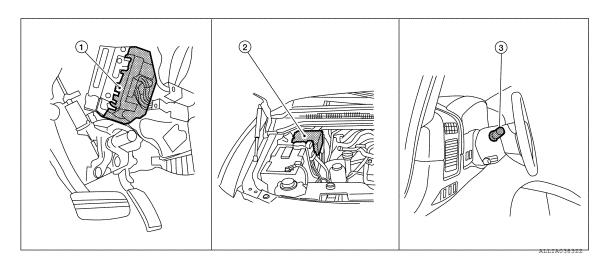
System Description

ch). The combina-

The front fog lamps are activated with the combination switch (lighting and turn signal switch). The combination switch (lighting and turn signal switch) signal to the BCM is monitored with the BCM combination switch reading function. When the fog lamps are turned ON with the combination switch (lighting and turn signal switch), the BCM sends a front fog lamp request signal via CAN communication lines to the IPDM E/R. The IPDM E/R grounds the front fog lamp relay coil to activate the front fog lamps.

Component Parts Location

INFOID:0000000011288322



- . BCM M18, M20 (view with instrument 2. IPDM E/R E122, E123, E124 panel removed)
- Combination switch (lighting and turn signal switch) M28

Component Description

INFOID:0000000011288323

FRONT FOG LAMP OPERATION

When the combination switch (lighting and turn signal switch) is in front fog lamp ON position and also in 1ST or 2ND position or AUTO position (headlamp is ON), the BCM detects FR FOG ON and the HEAD LAMP1, 2 ON or the AUTO LIGHT ON. The BCM sends a front fog lamp request ON signal via the CAN communication lines to the IPDM E/R. The IPDM E/R then turns ON the front fog lamp relay sending power to the front fog lamps.

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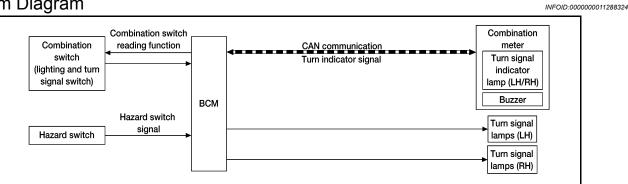
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TURN SIGNAL AND HAZARD WARNING LAMPS

TURN SIGNAL AND HAZARD WARNING LAMPS

System Diagram



System Description

INFOID:0000000011288325

TURN SIGNAL OPERATION

When the combination switch (lighting and turn signal switch) is in LH or RH position with the ignition switch in ON position, the BCM detects the TURN RH or TURN LH ON request. The BCM outputs the flasher signal to the respective turn signal lamp. The BCM also sends a turn indicator signal ON request via the CAN communication lines to the combination meter. The combination meter then activates the appropriate turn signal indicator and audible buzzer.

HAZARD LAMP OPERATION

When the hazard switch is in ON position, the BCM detects the hazard switch signal ON. The BCM outputs the flasher signal (right and left). The BCM sends a hazard indicator signal ON request via the CAN communication lines to the combination meter. The combination meter then activates the hazard indicator and audible buzzer.

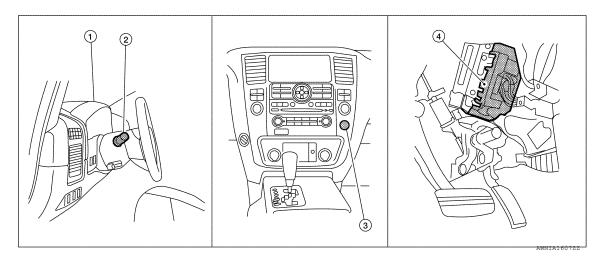
REMOTE KEYLESS ENTRY OPERATION

The remote keyless entry receiver transmits a hazard request signal to the BCM, then BCM controls hazard lamps.

Refer to SEC-11, "System Description".

Component Parts Location

INFOID:0000000011288326



- Combination meter M24
- Combination switch (lighting and turn 3. Hazard switch M55 signal switch) M28
- BCM M18, M20 (view with instrument panel removed)

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TURN SIGNAL AND HAZARD WARNING LAMPS

< SYSTEM DESCRIPTION >

Component Description

INFOID:0000000011288327

Part name	Description				
BCM	Controls turn signal and hazard flasher operation.				
Combination switch (lighting and turn signal switch)	Lighting and turn signal switch requests are output to the BCM.				
Hazard switch	Hazard flasher request signal is output to the BCM.				
Combination meter	Outputs turn and hazard indicator as requested by the BCM.				

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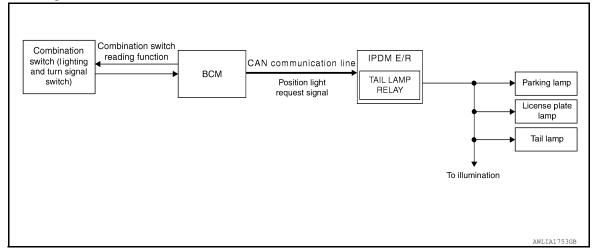
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PARKING, LICENSE PLATE AND TAIL LAMPS

System Diagram

INFOID:0000000011288328



System Description

INFOID:0000000011288329

PARKING, LICENCE PLATE AND TAIL LAMPS OPERATION

When the combination switch (lighting and turn signal switch) is in 1ST position, BCM detects the LIGHTING SWITCH 1ST POSITION ON. The BCM sends a parking light ON request via the CAN communication lines to the IPDM E/R. The IPDM E/R then activates the tail lamp relay which sends power to the parking and instrument illumination circuits.

EXTERIOR LAMP BATTERY SAVER CONTROL

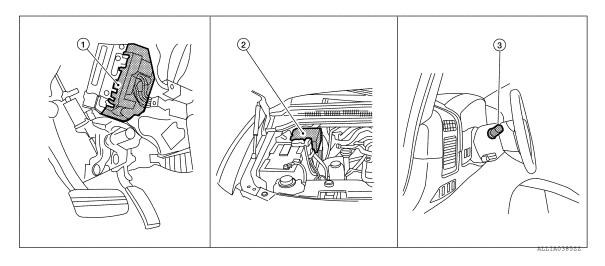
With the combination switch (lighting and turn signal switch) in the 2nd position and the ignition switch is turned from ON or ACC to OFF, the battery saver feature is activated.

Under this condition, the headlamps remain illuminated for 45 seconds unless the combination switch (lighting and turn signal switch) position is changed. If the combination switch (lighting and turn signal switch) position is changed, then the headlamps are turned off.

This setting can be changed by CONSULT. Refer to <u>BCS-25</u>, "BATTERY SAVER : CONSULT Function (BCM - BATTERY SAVER)".

Component Parts Location

INFOID:0000000011288330



BCM M18, M20 (view with instrument 2. IPDM E/R E122, E124 panel removed)

Combination switch (lighting and turn signal switch) M28

PARKING, LICENSE PLATE AND TAIL LAMPS

< SYSTEM DESCRIPTION >

Component Description

INFOID:0000000011288331

Part name	Description				
BCM	 Receives lighting switch requests via BCM combination switch reading function. Sends parking light request signal to the IPDM E/R. 				
IPDM E/R	Activates the tail lamp relay upon request of the BCM.				
Combination switch (lighting and turn signal switch)	Outputs lighting requests to the BCM.				

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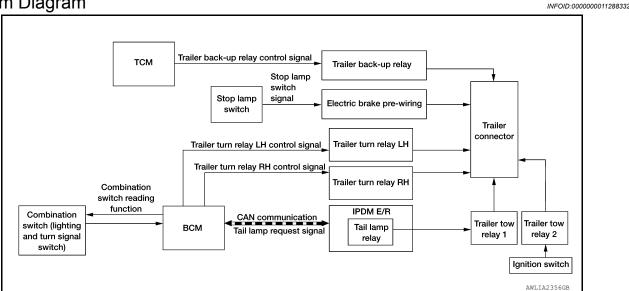
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TRAILER TOW

System Diagram



System Description

INFOID:0000000011288333

TRAILER TAIL LAMP OPERATION

The trailer tail lamps are controlled by the trailer tow relay 1 located behind the left side of the instrument panel (IP). With the combination switch (lighting and turn signal switch) in the 1st position, the BCM detects the LIGHTING SWITCH 1ST POSITION ON. The BCM sends a parking light ON request via the CAN communication lines to the IPDM E/R. The IPDM E/R then activates the tail lamp relay which activates the trailer tow relay 1 and sends power to the trailer connector.

TRAILER TURN SIGNAL LAMP OPERATION

The trailer turn signal lamps are controlled by the BCM. When the turn signal switch is in the LH or RH position with the ignition switch ON, the combination switch (lighting and turn signal switch) sends a signal to the BCM. The BCM detects the TURN RH or TURN LH ON request. The BCM sends a control signal to the respective trailer turn relay which sends power to the trailer connector.

TRAILER HAZARD LAMP OPERATION

The trailer hazard lamps are controlled by the BCM. When the hazard switch is pressed, the BCM detects the the hazard ON request. The BCM then sends a control signal to both trailer turn relays which sends power to the trailer connector.

TRAILER BRAKE LAMP OPERATION

The trailer brake lamps are controlled by the BCM. When the brake pedal is depressed, the stop lamp switch sends the brake signal to the BCM. The BCM then sends a control signal to both trailer turn relays which sends power to the trailer connector.

Component Parts Location

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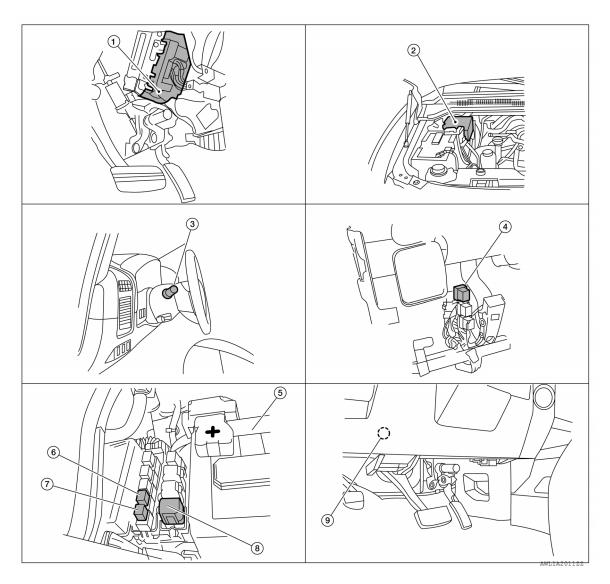
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- 1. BCM M18, M19, M20 (view with instru- 2. ment panel removed)
- 4. Trailer tow relay 1 M51 (view with steering member removed)
- 7. Trailer turn relay RH E157
- . IPDM E/R E119, E122, E123, E124
- 5. Battery
- 8. Trailer tow relay 2 E140
- 3. Combination switch (lighting and turn signal switch) M28
- 6. Trailer turn relay LH E156
- 9. Stop lamp switch E38

Component Description

INFOID:0000000011288335

Part name	Description				
BCM	 Receives lighting and turn signal requests from combination switch. Receives stop lamp signal requests from stop lamp switch. Sends lighting signal request to the IPDM E/R to control the tail lamp relay via CAN communication. Sends turn/hazard/brake control signal to the trailer turn relays. 				
IPDM E/R	Activates the tail lamp relay upon request from the BCM via CAN communication.				
Combination switch (lighting and turn signal switch)	Outputs lighting and turn signal requests to the BCM.				

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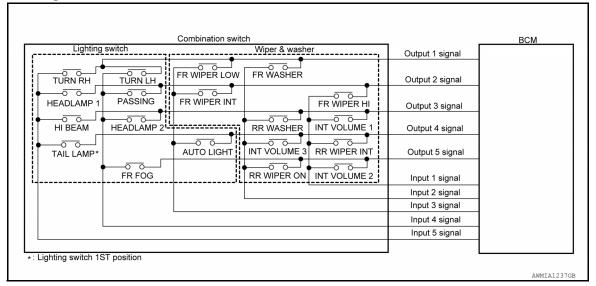
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System Diagram

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System Description

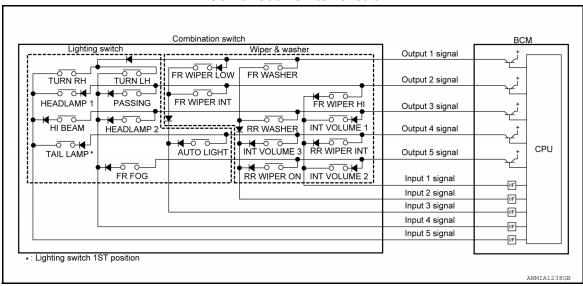
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OUTLINE

- BCM reads the status of the combination switch (light, turn signal, wiper and washer) and recognizes the status of each switch.
- BCM has a combination of 5 output terminals (OUTPUT 1 5) and 5 input terminals (INPUT 1 5) and reads a maximum of 20 switch states.

COMBINATION SWITCH MATRIX

Combination switch circuit



Combination switch INPUT-OUTPUT system list

System	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5
OUTPUT 1	_	FR WASHER	FR WIPER LOW	TURN LH	TURN RH
OUTPUT 2	FR WIPER HI	_	FR WIPER INT	PASSING	HEADLAMP 1
OUTPUT 3	INT VOLUME 1	RR WASHER	_	HEADLAMP 2	HI BEAM

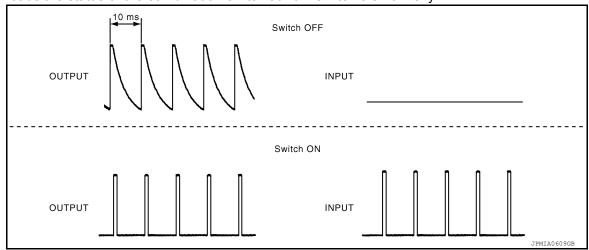
< SYSTEM DESCRIPTION >

System	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5
OUTPUT 4	RR WIPER INT	INT VOLUME 3	AUTO LIGHT	_	TAIL LAMP
OUTPUT 5	INT VOLUME 2	RR WIPER ON	_	FR FOG	_

COMBINATION SWITCH READING FUNCTION

Description

BCM reads the status of the combination switch at 10 ms intervals normally.



NOTE:

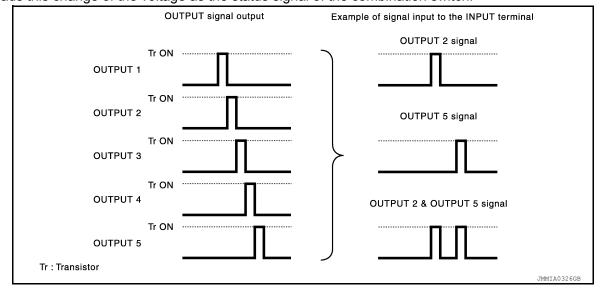
BCM reads the status of the combination switch at 60 ms intervals when BCM is controlled at low power consumption control mode.

• BCM operates as follows and judges the status of the combination switch.

- It operates the transistor on OUTPUT side in the following order: OUTPUT 1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5, and outputs voltage waveform.

- The voltage waveform of OUTPUT corresponding to the formed circuit is input into the interface on INPUT side if any (1 or more) switches are ON.

- It reads this change of the voltage as the status signal of the combination switch.



Operation Example

In the following operation example, the combination of the status signals of the combination switch is replaced as follows: INPUT 1 - 5 to "1 - 5" and OUTPUT 1 - 5 to "A - E".

Example 1: When a switch (TAIL LAMP) is turned ON

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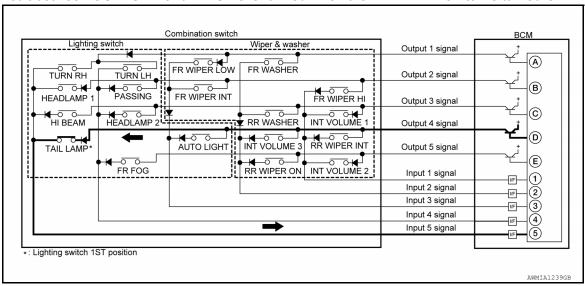
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< SYSTEM DESCRIPTION >

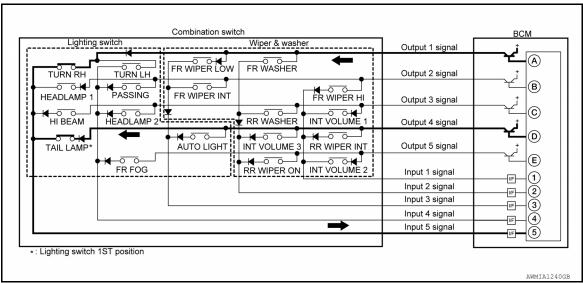
• The circuit between OUTPUT 4 and INPUT 5 is formed when the TAIL LAMP switch is turned ON.



- BCM detects the combination switch status signal "5D" when the signal of OUTPUT 4 is input to INPUT 5.
- BCM judges that the TAIL LAMP switch is ON when the signal "5D" is detected.

Example 2: When some switches (TURN RH, TAIL LAMP) are turned ON

 The circuits between OUTPUT 1 and INPUT 5 and between OUTPUT 4 and INPUT 5 are formed when the TURN RH switch and TAIL LAMP switch are turned ON.



- BCM detects the combination switch status signal "5AD" when the signals of OUTPUT 1 and OUTPUT 4 are input to INPUT 5.
- BCM judges that the TURN RH switch and TAIL LAMP switch are ON when the signal "5AD" is detected.

WIPER INTERMITTENT DIAL POSITION SETTING (FRONT WIPER INTERMITTENT OPERATION) BCM judges the wiper intermittent dial 1 - 7 by the status of INT VOLUME 1, 2, and 3 switches.

< SYSTEM DESCRIPTION >

Wiper intermittent	Intermittent	INT VOLUME switch ON/OFF status					
dial position	operation delay interval	INT VOLUME 1	INT VOLUME 2	INT VOLUME 3			
1	Short	ON	ON	ON			
2	1	ON	ON	OFF			
3		ON	OFF	OFF			
4		OFF	OFF	OFF			
5		OFF	OFF	ON			
6	\	OFF	ON	ON			
7	Long	OFF	ON	OFF			

Component Parts Location

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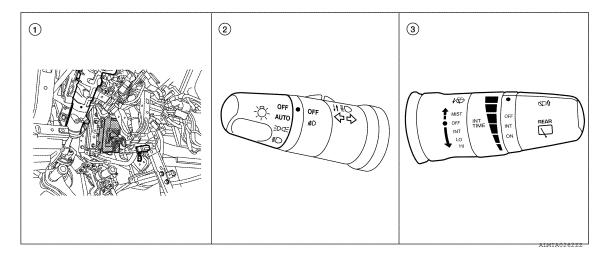
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- 1. BCM M18, M19, M20 (view with instrument panel removed)
- Combination switch (lighting and turn signal switch) M28
- 3. Combination switch (wiper and washer switch) M28

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< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM: CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000011517933

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Direct Diagnostic Mode	Description
ECU Identification	The BCM part number is displayed.
Self Diagnostic Result	The BCM self diagnostic results are displayed.
Data Monitor	The BCM input/output data is displayed in real time.
Active Test	The BCM activates outputs to test components.
Work support	The settings for BCM functions can be changed.
Configuration	 The vehicle specification can be read and saved. The vehicle specification can be written when replacing BCM.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

SYSTEM APPLICATION

BCM can perform the following functions.

				Direct [Diagnosti	c Mode		
System	Sub System	ECU Identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN Diag Support Mntr
Door lock	DOOR LOCK		×	×	×	×		
Rear window defogger	REAR DEFOGGER			×	×			
Warning chime	BUZZER			×	×			
Interior room lamp timer	INT LAMP			×	×	×		
Remote keyless entry system	MULTI REMOTE ENT			×	×	×		
Exterior lamp	HEADLAMP			×	×	×		
Wiper and washer	WIPER			×	×	×		
Turn signal and hazard warning lamps	FLASHER			×	×			
Air conditioner	AIR CONDITIONER			×				
Intelligent Key system	INTELLIGENT KEY			×				
Combination switch	COMB SW			×				
BCM	ВСМ	×	×			×	×	×
Immobilizer	IMMU		×	×	×			
Interior room lamp battery saver	BATTERY SAVER			×	×	×		
Back door open	TRUNK			×	×			
Vehicle security system	THEFT ALM			×	×	×		
RAP system	RETAINED PWR			×	×	×		
Signal buffer system	SIGNAL BUFFER			×	×			
TPMS	AIR PRESSURE MONITOR		×	×	×	×		
Panic alarm system	PANIC ALARM				×			

< SYSTEM DESCRIPTION >

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BUZZER: CONSULT Function (BCM - BUZZER)

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DATA MONITOR

Monitor Item [Unit]	Description	
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.	
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.	
KEY ON SW [On/Off]	Indicates condition of key switch.	
LIGHT SW 1ST [On/Off]	Indicates condition of combination switch.	
BUCKLE SW [On/Off]	Indicates condition of seat belt buckle switch.	

ACTIVE TEST

Test Item	Description
SEAT BELT WARN TEST	This test is able to check seat belt warning operation [On/Off].
LIGHT WARN ALM	This test is able to check light reminder warning operation [On/Off].
IGN KEY WARN ALM	This test is able to check key warning chime operation [On/Off].

HEADLAMP

HEADLAMP : CONSULT Function (BCM - HEAD LAMP)

INFOID:0000000011540621

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
ACC ON SW [On/Off]	Indicates condition of ignition switch ACC position.
HI BEAM SW [On/Off]	
HEAD LAMP SW 1 [On/Off]	
HEAD LAMP SW 2 [On/Off]	
LIGHT SW 1ST [On/Off]	Indicates condition of combination switch.
AUTO LIGHT SW [On/Off]	
PASSING SW [On/Off]	
FR FOG SW [On/Off]	
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
BACK DOOR SW [On/Off]	Indicates condition of back door switch.
TURN SIGNAL R [On/Off]	Indicates condition of combination switch.
TURN SIGNAL L [On/Off]	indicates condition of combination switch.
CARGO LAMP SW [ON/OFF]	Indicates condition of cargo lamp switch.
OPTICAL SENSOR [V]	Indicates voltage signal from optical sensor.

ACTIVE TEST

Test Item	Description
TAIL LAMP	This test is able to check tail lamp operation [Off/On].
HEAD LAMP	This test is able to check head lamp operation [Off/Lo/Hi].

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< SYSTEM DESCRIPTION >

Test Item	Description
FR FOG LAMP	This test is able to check front fog lamp operation [Off/On].
DAYTIME RUNNING LIGHT	This test is able to check daytime running light operation [Off/On].
CARGO LAMP	This test is able to check cargo lamp operation [Off/On].
CORNERING LAMP	This test is able to check turn signal lamp operation [Off/LH/RH].

WORK SUPPORT

Support Item	Setting		Description
BATTERY SAVER SET	Off		Exterior lamp battery saver function OFF.
BALLERT SAVER SET	On*		Exterior lamp battery saver function ON.
	MODE4		Less sensitive setting than normal setting (Turns ON later than normal operation).
CUSTOM A/LIGHT SETTING	MODE3		More sensitive setting than MODE 2 (Turns ON earlier than MODE 2).
	MODE2		More sensitive setting than normal setting (Turns ON earlier than normal operation).
	MODE1*		Normal.
	MODE8	180 sec	
	MODE7	150 sec	
	MODE6	120 sec	
ILL DELAY SET	MODE5	90 sec	Sets delay timer function operation time
ILL DELAT SET	MODE4	60 sec	(All doors closed).
	MODE3	30 sec	
	MODE2	OFF	
	MODE1*	45 sec	

^{*:} Initial setting

FLASHER

FLASHER: CONSULT Function (BCM - FLASHER)

INFOID:0000000011540622

DATA MONITOR

Monitor Item [Unit]	Description	
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.	
HAZARD SW [On/Off]	Indicates condition of hazard switch.	
TURN SIGNAL R [On/Off]	Indicates condition of turn signal function of combination switch.	
TURN SIGNAL L [On/Off]	indicates condition of turn signal function of combination switch.	
BRAKE SW [On/Off]	Indicates condition of brake switch.	

ACTIVE TEST

Test Item	Description
FLASHER	This test is able to check turn signal lamp operation [Off/LH/RH].

COMB SW

COMB SW: CONSULT Function (BCM - COMB SW)

INFOID:0000000011540623

DATA MONITOR

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description	
TURN SIGNAL R [On/Off]	Indicates condition of turn cional engaging of combination quitab	
TURN SIGNAL L [On/Off]	Indicates condition of turn signal operation of combination switch.	
HI BEAM SW [On/Off]	Indicates condition of hi beam operation of combination switch.	-
HEAD LAMP SW 1 [On/Off]		
HEAD LAMP SW 2 [On/Off]	Indicates condition of headlamp operation of combination switch.	
LIGHT SW 1ST [On/Off]	Indicates condition of lighting operation of combination switch.	
PASSING SW [On/Off]	Indicates condition of passing switch operation of combination switch.	
AUTO LIGHT SW [On/Off]	Indicates condition of auto light operation of combination switch.	
FR FOG SW [On/Off]	Indicates condition of front fog light operation of combination switch.	
FR WIPER HI [On/Off]		
FR WIPER LOW [On/Off]	Indicates condition of front wiper operation of combination switch.	
FR WIPER INT [On/Off]	_	
FR WASHER SW [On/Off]	Indicates condition of front washer operation of combination switch.	
INT VOLUME [1 - 7]	Indicates condition of intermittent wiper operation of combination switch.	
RR WIPER ON [On/Off]		
RR WIPER INT [On/Off]	Indicates condition of rear wiper operation of combination switch.	
RR WASHER SW [On/Off]	Indicates condition of rear washer operation of combination switch.	

BCM : CONSULT Function (BCM - BCM)

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ECU IDENTIFICATION

The BCM part number is displayed.

SELF DIAGNOSTIC RESULT

Refer to BCS-44, "DTC Index".

WORK SUPPORT

Support Item	Setting	Description
RESET SETTING VALUE	Reset	Returns BCM to initial value in factory shipment.
	Cancel	Cancels the reset function.

CONFIGURATION

Refer to BCS-4, "CONFIGURATION (BCM): Description".

CAN DIAG SUPPORT MNTR

Refer to LAN-49, "CAN Diagnostic Support Monitor".

BATTERY SAVER

BATTERY SAVER: CONSULT Function (BCM - BATTERY SAVER)

INFOID:0000000011540625	

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
KEY ON SW [On/Off]	Indicates condition of key switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.

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< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
BACK DOOR SW [On/Off]	Indicates condition of back door switch.
KEY CYL LK SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
I-KEY LOCK* [On/Off]	Indicates condition of lock signal from Intelligent Key.
I-KEY UNLOCK* [On/Off]	Indicates condition of unlock signal from Intelligent Key.
KEYLESS LOCK** [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK** [On/Off]	Indicates condition of unlock signal from keyfob.

^{*:} with Intelligent Key

ACTIVE TEST

Test item	Description
BATTERY SAVER	This test is able to check battery saver operation [On/Off].

WORK SUPPORT

Support Item	Setting		Description		
ROOM LAMP TIMER SET	MODE2	60 min	Sets the interior room lamp battery saver timer operating		
ROOM LAMP TIMER SET	MODE1*	10 min	time.		

^{*:} Initial setting

^{** :} without Intelligent Key

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

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AUTO ACTIVE TEST

Description

In auto active test mode, the IPDM E/R sends a drive signal to the following systems to check their operation.

- Oil pressure low/coolant pressure high warning indicator
- Oil pressure gauge
- · Rear window defogger
- Front wipers (HI, LO)
- Tail, license and parking lamps
- Front fog lamps (if equipped)
- Headlamps (HI, LO)
- A/C compressor (magnetic clutch)
- Cooling fan

Operation Procedure

Close the hood and front door RH, and lift the wiper arms from the windshield (to prevent windshield damage due to wiper operation).

NOTE:

When auto active test is performed with hood opened, sprinkle water on windshield before hand.

- 2. Turn ignition switch OFF.
- Turn the ignition switch ON and, within 20 seconds, press the front door switch LH 10 times. Then turn the ignition switch OFF.
- 4. Turn the ignition switch ON within 10 seconds. After that the horn sounds once and the auto active test starts.
- 5. After a series of the following operations is repeated 3 times, auto active test is completed.

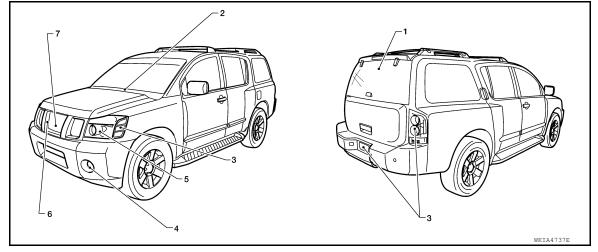
NOTE:

When auto active test mode has to be cancelled halfway through test, turn ignition switch OFF. **CAUTION:**

- If auto active test mode cannot be actuated, check door switch system. Refer to <u>DLK-74, "Description"</u> (with Intelligent Key system), <u>DLK-273, "Description"</u> (without Intelligent Key system).
- Do not start the engine.

Inspection in Auto Active Test Mode

When auto active test mode is actuated, the following 7 steps are repeated 3 times.



Operation sequence	Inspection Location	Operation	
1	Rear window defogger	10 seconds	
2 Front wipers		LO for 5 seconds → HI for 5 seconds	

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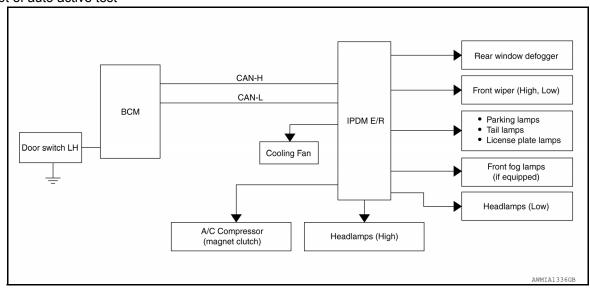
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Operation sequence	Inspection Location	Operation	
3	Tail, license and parking lamps	10 seconds	
4	Front fog lamps (if equipped)	10 seconds	
5	Headlamps	LO for 10 seconds → HI on-off for 5 seconds	
6	A/C compressor	ON ⇔ OFF 5 times	
7	Cooling fan	10 seconds	

Concept of auto active test



- IPDM E/R starts the auto active test with the door switch signals transmitted by BCM via CAN communication. Therefore, the CAN communication line between IPDM E/R and BCM is considered normal if the auto active test starts successfully.
- The auto active test facilitates troubleshooting if any systems controlled by IPDM E/R cannot be operated.

Diagnosis chart in auto active test mode

Symptom	Inspection contents		Possible cause
Oil pressure low/coolant temperature high warning indicator does not operate	Perform auto active test. Does the oil pressure low/ coolant temperature high warning indicator operate?	YES	IPDM E/R signal input circuit ECM signal input circuit CAN communication signal between ECM and combination meter
	warning indicator operate:	NO	CAN communication signal between IPDM E/R, BCM and combination meter
	Perform auto active test.	YES	IPDM E/R signal input circuit
Oil pressure gauge does not operate	Does the oil pressure gauge operate?	NO	CAN communication signal between IPDM E/R, BCM and combination meter
		YES	BCM signal input circuit
Rear window defogger does not operate	Perform auto active test. Does the rear window defogger operate?	NO	Harness or connector between A/C and AV switch assembly and AV control unit CAN communication signal between BCM and IPDM E/R

< SYSTEM DESCRIPTION >

Symptom	Inspection contents		Possible cause	
		YES	BCM signal input system	
Any of the following components do not operate Front wipers Tail lamps License plate lamps Parking lamps Front fog lamps (if equipped) Headlamps (HI, LO)	Perform auto active test. Does the applicable system operate?	NO	Lamp or front wiper motor malfunction Lamp or front wiper motor ground circuit Harness or connector between IPDM E/R and applicable system IPDM E/R (integrated relay malfunction)	
	Perform auto active test. Does the A/C compressor operate?	YES	BCM signal input circuit CAN communication signal between BCM and ECM CAN communication signal between ECM and IPDM E/R	
A/C compressor does not operate		NO	Magnetic clutch malfunction Harness or connector between IPDM E/R and magnetic clutch IPDM E/R (integrated relay malfunction)	
	Perform auto active test. Does the cooling fan operate?	YES	ECM signal input circuit CAN communication signal between ECM and IPDM E/ R	
Cooling fan does not operate		NO	Cooling fan motor malfunction Harness or connector between IPDM E/R and cooling fan IPDM E/R (integrated relay malfunction)	

CONSULT Function (IPDM E/R)

INFOID:0000000011517947

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with IPDM E/R.

Direct Diagnostic Mode	Description
Self Diagnostic Result	The IPDM E/R self diagnostic results are displayed.
Data Monitor	The IPDM E/R input/output data is displayed in real time.
Active Test	The IPDM E/R activates outputs to test components.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

SELF DIAGNOSTIC RESULT

Refer to PCS-24, "DTC Index".

DATA MONITOR

Monitor Item [Unit]	Main Signals	Description
MOTOR FAN REQ [1/2/3/4]	×	Indicates cooling fan speed signal received from ECM on CAN communication line
AC COMP REQ [On/Off]	×	Indicates A/C compressor request signal received from ECM on CAN communication line

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< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Main Signals	Description
TAIL&CLR REQ [On/Off]	×	Indicates position light request signal received from BCM on CAN communication line
HL LO REQ [On/Off]	×	Indicates low beam request signal received from BCM on CAN communication line
HL HI REQ [On/Off]	×	Indicates high beam request signal received from BCM on CAN communication line
FR FOG REQ [On/Off]	×	Indicates front fog light request signal received from BCM on CAN communication line
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Indicates front wiper request signal received from BCM on CAN communication line
WIP AUTO STOP [STOP P/ACT P]	×	Indicates condition of front wiper auto stop signal
WIP PROT [Off/BLOCK]	×	Indicates condition of front wiper fail-safe operation
ST RLY REQ [On/Off]		Indicates starter request signal received from ECM on CAN communication line
IGN RLY [On/Off]	×	Indicates condition of ignition relay
RR DEF REQ [On/Off]	×	Indicates rear defogger request signal received from AV control unit on CAN communication line
OIL P SW [Open/Close]		Indicates condition of oil pressure switch
DTRL REQ [Off]		Indicates daytime light request signal received from BCM on CAN communication line
THFT HRN REQ [On/Off]		Indicates theft warning horn request signal received from BCM on CAN communication line
HORN CHIRP [On/Off]		Indicates horn reminder signal received from BCM on CAN communication line

ACTIVE TEST

Test item	Description
REAR DEFOGGER	This test is able to check rear defogger operation [On/Off].
FRONT WIPER	This test is able to check wiper motor operation [Hi/Lo/Off].
MOTOR FAN	This test is able to check cooling fan operation [4/3/2/1].
EXTERNAL LAMPS	This test is able to check external lamp operation [Fog/Hi/Lo/TAIL/Off].
HORN	This test is able to check horn operation [On].

CAN DIAG SUPPORT MNTR

Refer to LAN-49, "CAN Diagnostic Support Monitor".

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE): Diagnosis Procedure

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Regarding Wiring Diagram information, refer to BCS-46, "Wiring Diagram".

1. CHECK FUSES AND FUSIBLE LINK

Check that the following fuses and fusible link are not blown.

Terminal No.	Signal name	Fuses and fusible link No.	
57	Potton, nower cumply	22 (15A)	
70	Battery power supply	F (50A)	
11	Ignition ACC or ON	4 (10A)	
38	Ignition ON or START	59 (10A)	

Is the fuse blown?

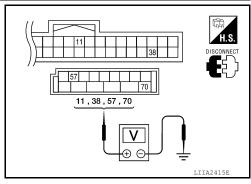
YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

NO >> GO TO 2

2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect BCM.
- 3. Check voltage between BCM harness connector and ground.

Connector	Terminals		Power	Condition	Voltage (V) (Ap-	
Connector	(+)	(-)	source	Condition	prox.)	
M18	11	Ground	ACC power supply	Ignition switch ACC or ON	Battery voltage	
	38	Ground	Ignition power supply	Ignition switch ON or START	Battery voltage	
M20	57	Ground	Battery power supply	Ignition switch OFF	Battery voltage	
IVIZU	70	Ground	Battery power supply	Ignition switch OFF	Battery voltage	
Is the measurement value normal?						



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3. CHECK GROUND CIRCUIT

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>> Repair or replace harness.

>> GO TO 3

YES

NO

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POWER SUPPLY AND GROUND CIRCUIT

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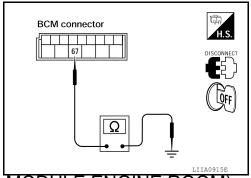
Check continuity between BCM harness connector and ground.

BCM			Continuity	
Connector Terminal		Ground	Continuity	
M20	67		Yes	

Does continuity exist?

YES >> Inspection End.

NO >> Repair or replace harness.



IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) : Diagnosis Procedure

Regarding Wiring Diagram information, refer to PCS-25. "Wiring Diagram".

1. CHECK FUSES AND FUSIBLE LINK

Check that the following IPDM E/R fuses or fusible link are not blown.

Terminal No.	Signal name	Fuses and fusible link No.
1	Battery	A, D
2	Battery	С
12	Ignition switch ON or START	59
22	Battery	A, E, L, N

Is the fuse blown?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

NO >> GO TO 2

2. CHECK BATTERY POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R.
- 3. Check voltage between IPDM E/R harness connectors and ground.

Terminals		Ignition switch position			
(+)		(-)	OFF	ON	START
Connector	Terminal	(-)	OH	ON	JIAKI
E118	1	Ground	Battery voltage	Battery voltage	Battery voltage
LIIO	2		Battery voltage	Battery voltage	Battery voltage
E119	12		0V	Battery voltage	Battery voltage
E120	22		Battery voltage	Battery voltage	Battery voltage

Is the measurement value normal?

YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

2. Check continuity between IPDM E/R harness connectors (A, B) and ground.

IPDM E/R			Continuity	
Connector	Terminal	Ground	Continuity	
E122 (A)	38	Giodila	Yes	
E124 (B)	59		165	

A DISCONNECT OF AMMIAO024ZZ

Does continuity exist?

YES >> Inspection End.

NO >> Repair or replace harness.

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HEADLAMP (HI) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

HEADLAMP (HI) CIRCUIT

Description INFOID.000000011288350

The IPDM E/R (intelligent power distribution module engine room) controls the headlamp high relay based on inputs from the BCM via the CAN communication lines. When the headlamp high relay is energized, power flows through fuses 34 and 35, located in the IPDM E/R. Power then flows to the front combination lamps to the headlamp high beam.

Component Function Check

INFOID:0000000011288351

1. CHECK HEADLAMP (HI) OPERATION

NWITHOUT CONSULT

- 1. Start IPDM E/R auto active test. Refer to PCS-12, "Diagnosis Description".
- 2. Check that the headlamp switches to the high beam.

NOTE:

HI/LO is repeated 1 second each when using the IPDM E/R auto active test.

WITH CONSULT

- Select "EXTERNAL LAMPS" of IPDM E/R active test item.
- 2. With the test item operating, check that the headlamp switches to high beam.

Hi : Headlamp switches to the high beam.

Off : Headlamp OFF

Does the headlamp switch to high beam?

YES >> Headlamp (HI) circuit is normal.

NO >> Refer to EXL-36, "Diagnosis Procedure".

Diagnosis Procedure

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Regarding Wiring Diagram information, refer to <u>EXL-70</u>, "Wiring <u>Diagram"</u> (without DTRL) or <u>EXL-75</u>, "Wiring <u>Diagram"</u> (with DTRL).

1. CHECK HEADLAMP (HI) FUSES

- Turn the ignition switch OFF.
- Check that the following fuses are not open.

Unit	Location	Fuse No.	Capacity
Headlamp HI (LH)	IPDM E/R	35	10A
Headlamp HI (RH)	IPDM E/R	34	10A

Is the fuse open?

YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

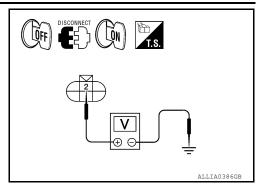
2.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

HEADLAMP (HI) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector.
- Turn the ignition switch ON.
- Turn the high beam headlamps ON.
- With the high beam headlamps ON, check the voltage between the combination lamp connector and ground.

(+)			(-)	Voltage
Connector		Terminal	(-)	voltage
LH	E11 (without DTRL)		Ground	Battery voltage
LII	E6 (with DTRL)	2		
RH	E107 (without DTRL)	2		
	E108 (with DTRL)			



Are the voltage readings as specified?

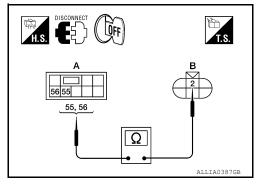
YES >> GO TO 4.

NO >> GO TO 3.

3.check headlamp (HI) circuit for open

- Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector E123.
- Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

	Α		В		Continuity
Conn	ector	Terminal	Connector	Terminal	Continuity
LH		55	E11 (without DTRL)	2	
LII	E123	33	E6 (with DTRL)	2	Yes
RH			E107 (without DTRL)	2	103
КΠ		56	E108 (with DTRL)	2	



Does continuity exist?

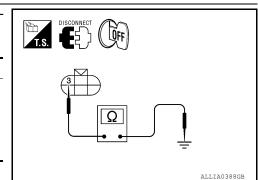
>> Replace IPDM E/R. Refer to PCS-31, "Removal and Installation of IPDM E/R". YES

NO >> Repair the harnesses or connectors.

4. CHECK FRONT COMBINATION LAMP (HI) GROUND CIRCUIT

Check continuity between the front combination lamp harness connector terminal and ground.

Connector		Terminal	_	Continuity
LH	E11 (without DTRL)			Yes
	E6 (with DTRL)	3	Ground	
RH	E107 (without DTRL)	3		
	E108 (with DTRL)			



Does continuity exist?

>> Inspect the headlamp bulb.

NO (Except LH with DTRL)>> Repair the harness.

NO (LH with DTRL)>> GO TO 5.

5. CHECK CONTINUITY BETWEEN FRONT COMBINATION LAMP LH (HI) AND DAYTIME RUNNING LIGHT **RELAY**

- Disconnect daytime running light relay connector.
- Check continuity between front combination lamp LH harness connector and daytime running light relay harness connector.

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HEADLAMP (HI) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

Front combin	ation lamp LH	Daytime running light relay Connector Terminal		Continuity
Connector	Terminal			Continuity
E6	3	E103	3	Yes

Does continuity exist?

YES >> GO TO 6.

NO >> Repair the harness or connector.

6. CHECK DAYTIME RUNNING LIGHT RELAY GROUND CIRCUIT

Check continuity between daytime running light relay harness connector and ground.

Daytime runr	ing light relay		Continuity
Connector Terminal		Ground	Continuity
E103	4		Yes

Does continuity exist?

YES >> GO TO 7.

NO >> Repair the harness or connector.

7. CHECK DAYTIME RUNNING LIGHT RELAY

Check daytime running light relay. Refer to EXL-38, "Component Inspection".

Is the inspection result normal?

YES >> Inspect daytime running light relay circuit for short. If OK, replace IPDM E/R. Refer to PCS-31. "Removal and Installation of IPDM E/R".

NO >> Replace daytime running light relay.

Component Inspection

INFOID:0000000011288353

1. CHECK DAYTIME RUNNING LIGHT RELAY

- 1. Turn ignition switch OFF.
- 2. Remove daytime running light relay.
- 3. Check the continuity between daytime running light relay terminals under the following conditions.

Terminals	Condition	Continuity
3 and 5	12V direct current supply between terminals 1 and 2	Yes
3 and 3	No current supply	No
3 and 4	12V direct current supply between terminals 1 and 2	No
3 and 4	No current supply	Yes

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace daytime running light relay.

HEADLAMP (LO) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

HEADLAMP (LO) CIRCUIT

Description

The IPDM E/R (intelligent power distribution module engine room) controls the headlamp low relay based on inputs from the BCM via the CAN communication lines. When the headlamp low relay is energized, power flows through fuses 40 and 41, located in the IPDM E/R. Power then flows to the front combination lamps to the headlamp low beam.

Component Function Check

INFOID:0000000011288355

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1. CHECK HEADLAMP (LO) OPERATION

NWITHOUT CONSULT

1. Start IPDM E/R auto active test. Refer to PCS-12, "Diagnosis Description".

2. Check that the headlamp is turned ON.

NOTE:

HI/LO is repeated 1 second each when using the IPDM E/R auto active test.

WITH CONSULT

1. Select "EXTERNAL LAMPS" of IPDM E/R active test item.

2. With the test items operating, check that the headlamp is turned ON.

Lo : Headlamp ON Off : Headlamp OFF

Is the headlamp turned ON?

YES >> Headlamp (LO) is normal.

NO >> Refer to <u>EXL-39</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000011288356

Regarding Wiring Diagram information, refer to <u>EXL-70, "Wiring Diagram"</u> (without DTRL) or <u>EXL-75, "Wiring Diagram"</u> (with DTRL).

1. CHECK HEADLAMP (LO) FUSES

Turn the ignition switch OFF.

2. Check that the following fuses are not open.

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Unit	Location	Fuse No.	Capacity
Headlamp LO (LH)	IPDM E/R	40	15A
Headlamp LO (RH)	IPDM E/R	41	15A

Is the fuse open?

YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

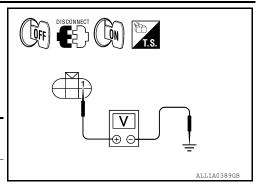
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HEADLAMP (LO) CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

- 1. Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector.
- 3. Turn the ignition switch ON.
- 4. Turn the low beam headlamps ON.
- 5. With the low beam headlamps ON, check the voltage between the combination lamp connector and ground.

	(+)		(-)	Voltage
Connector		Terminal	(-)	
LH	E11 (without DTRL)			Battery voltage
LII	E6 (with DTRL)	1	Ground	
RH	E107 (without DTRL)			
КП	E108 (with DTRL)			



Is voltage reading as specified?

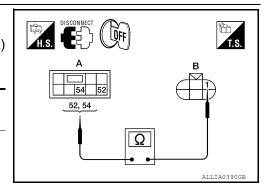
YES >> GO TO 4.

NO >> GO TO 3.

$3. \mathsf{CHECK}$ HEADLAMP (LO) CIRCUIT FOR OPEN

- 1. Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector E123.
- 3. Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

	Α		В		Continuity
Conr	nector	Terminal	Connector	Terminal	Continuity
LH		52	E11 (without DTRL)	1	
			E6 (with DTRL)		
RH	E123	54	E107 (without DTRL)	1	Yes
KH		54	E108 (with DTRL)	·	



Does continuity exist?

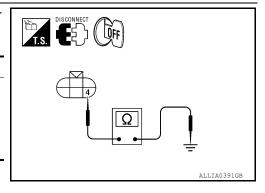
YES >> Replace IPDM E/R. Refer to PCS-31, "Removal and Installation of IPDM E/R".

NO >> Repair the harnesses or connectors.

4. CHECK FRONT COMBINATION LAMP (LO) GROUND CIRCUIT

Check continuity between the front combination lamp harness connector terminal and ground.

	Connector	Terminal	_	Continuity
LH	E11 (without DTRL)			Yes
LII	E6 (with DTRL)	4	Ground	
RH	E107 (without DTRL)	4		
- КП	E108 (with DTRL)			



Does continuity exist?

YES >> Inspect the headlamp bulb.

NO >> Repair the harness.

FRONT FOG LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

FRONT FOG LAMP CIRCUIT

Description INFOID:0000000011288357

The IPDM E/R (intelligent power distribution module engine room) controls the front fog lamp relay based on inputs from the BCM via the CAN communication lines. When the front fog lamp relay is energized, power flows from the front fog lamp relay in the IPDM E/R to the front fog lamps.

Component Function Check

1. CHECK FRONT FOG LAMP OPERATION

®WITHOUT CONSULT

- 1. Activate IPDM E/R auto active test. Refer to PCS-12, "Diagnosis Description".
- Check that the front fog lamp is turned ON.

(P)WITH CONSULT

- 1. Select "EXTERNAL LAMPS" of IPDM E/R active test item.
- 2. With operating the test items, Check that the front fog lamp is turned ON.

Fog : Front fog lamp ON
Off : Front fog lamp OFF

Is the front fog lamp turned ON?

YES >> Front fog lamp circuit is normal.

NO >> Refer to EXL-41, "Diagnosis Procedure".

Diagnosis Procedure

Regarding Wiring Diagram information, refer to EXL-90, "Wiring Diagram".

1. CHECK FRONT FOG LAMP FUSE

1. Turn the ignition switch OFF.

Check that the following fuse is not open.

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	56	15A

Is the fuse open?

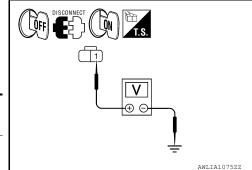
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

- Turn the ignition switch OFF.
- Disconnect the front fog lamp connector.
- 3. Turn the ignition switch ON.
- 4. Turn the front fog lamps ON.
- 5. Check the voltage between the fog lamp connector and ground.

(+)			(-)	Voltage
Co	Connector Terminal		(-)	voltage
LH	E101	1	Ground	Battery voltage
RH	E102	1	Ground	



Are the voltage readings as specified?

YES >> GO TO 4.

NO >> GO TO 3.

Revision: August 2014 EXL-41 2015 Armada NAM

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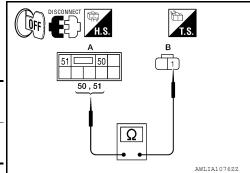
FRONT FOG LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

3.CHECK FRONT FOG LAMP OPEN CIRCUIT

- 1. Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector E123.
- 3. Check continuity between the IPDM E/R harness connector (A) and the front fog lamp harness connector (B).

	A B			Continuity		
Con	nector	Terminal	Connector Terminal		Continuity	
LH	E122	50	E101	1	Yes	
RH	E123	51	E102	1	165	



Does continuity exist?

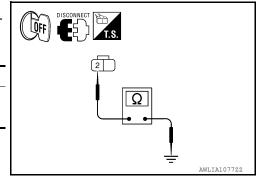
YES >> Replace IPDM E/R. Refer to PCS-31, "Removal and Installation of IPDM E/R".

NO >> Repair the harnesses or connectors.

4. CHECK FRONT FOG LAMP GROUND CIRCUIT

- Disconnect the front fog lamp connector.
- Check continuity between the front fog lamp harness connector and ground.

Conr	nector	Terminal	_	Continuity	
LH	E101	2	Ground	Yes	
RH	E102	2	Ground	163	



Does continuity exist?

YES >> Inspect the fog lamp bulb.

NO >> Repair the harness.

< DTC/CIRCUIT DIAGNOSIS >

PARKING LAMP CIRCUIT

Description INFOID:0000000011288360

The IPDM E/R (intelligent power distribution module engine room) controls the tail lamp relay based on inputs from the BCM via the CAN communication lines. When the tail lamp relay is energized, power flows through fuse 37, located in the IPDM E/R. Power then flows to the front and rear combination lamps, license plate lamps.

Component Function Check

INFOID:0000000011288361

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1. CHECK PARKING LAMP OPERATION

MWITHOUT CONSULT

- 1. Activate IPDM E/R auto active test. Refer to PCS-12, "Diagnosis Description".
- Check that the parking lamp is turned ON.

(P)WITH CONSULT

- 1. Select "EXTERNAL LAMPS" of IPDM E/R active test item.
- With operating the test items, check that the parking lamp is turned ON.

TAIL : Parking lamp ON Off : Parking lamp OFF

Is the parking lamp turned ON?

YES >> Parking lamp circuit is normal.

>> Refer to EXL-43, "Diagnosis Procedure". NO

Diagnosis Procedure

INFOID:0000000011288362

Regarding Wiring Diagram information, refer to EXL-101, "Wiring Diagram".

1. CHECK PARKING LAMP FUSES

- Turn the ignition switch OFF.
- Check that the following fuse is not open.

Unit	Location	Fuse No.	Capacity
Parking lamps	IPDM E/R	37	10A

Is the fuse open?

YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK TAIL LAMP RELAY OUTPUT (VOLTAGE)

- Turn the ignition switch OFF.
- Disconnect the front combination lamp connector, rear combination lamp connector and license plate lamp connector.
- Turn the ignition switch ON.
- Turn the parking lamps ON.

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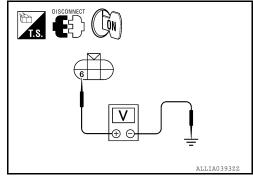
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< DTC/CIRCUIT DIAGNOSIS >

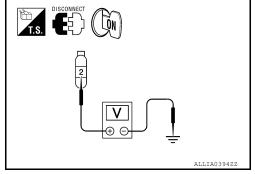
5. With the parking lamps ON, check voltage between the front combination lamp connectors and ground.

(+)				(-)	Voltage
Connector			Terminal	(-)	voltage
With	LH	E6			Detterweltere
DTRL	RH	E108	6	Ground	
Without	out LH E11	Giouria	Battery voltage		
DTRL	RH	E107	:	1	



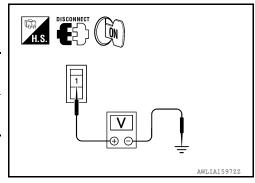
6. With the parking lamps ON, check voltage between the rear combination lamp connectors and ground.

(+)			(-)	Voltage	
	Connector Terr		(-)	voitage	
LH	B70	2	Ground	Battery voltage	
RH	B130	2			



7. With the parking lamps ON, check voltage between the license plate lamp connector and ground

(+)			(-)	Voltage	
Connector		Terminal	(-)	voilage	
LH	C106	1	Ground	Pattony voltago	
RH	C107	'	Giouria	Battery voltage	



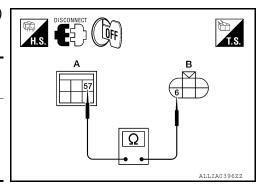
Are voltage readings as specified?

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

 $3. \mathsf{CHECK}$ PARKING, LICENSE PLATE AND TAIL LAMP CIRCUIT (OPEN)

- 1. Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector E124.
- 3. Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

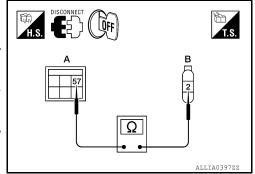
Α		В			Continuity	
Co	nnector	Terminal	Connector		Terminal	Continuity
LH	E124	57	With DTRL	E6		
RH	C124	57	WILLIDIKL	E108	6	Yes
LH	E124	57	Without	E11	O	165
RH	L124	37	DTRL	E107		



< DTC/CIRCUIT DIAGNOSIS >

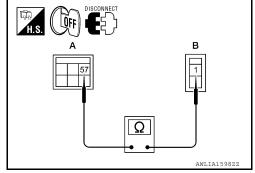
4. Check continuity between the IPDM E/R harness connector (A) and the rear combination lamp harness connector (B).

Α			Continuity		
Co	onnector	Terminal	Connector	Terminal	Continuity
LH	E124	57	B70	2	Yes
RH	E12 4	57	B130	2	162



5. Check continuity between the IPDM E/R harness connector (A) and license plate lamp connector (B).

А			Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
E124	57	C106	1	Yes	
E124	57	C107	1		



Are continuity test results as specified?

Revision: August 2014

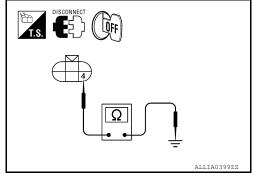
YES >> Replace IPDM E/R. Refer to <u>PCS-31, "Removal and Installation of IPDM E/R"</u>.

NO >> Repair the harnesses or connectors.

4. CHECK PARKING, LICENSE AND TAIL LAMP GROUND CIRCUITS

1. Check continuity between the front combination lamp harness connectors E11 and E107 terminal 4 and ground.

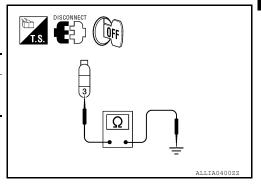
-	Connector		Terminal	_	Continuity
With	LH	E6			
DTRL	RH	E108	4	Ground	Yes
Without DTRL	LH	E11			
	RH	E107			



2. Check continuity between the rear combination lamp harness connectors B70 and B130 terminal 3 and ground.

Connector		Terminal	_	Continuity
LH	B70	3	Ground	Yes
RH	B130	3	Ground	165

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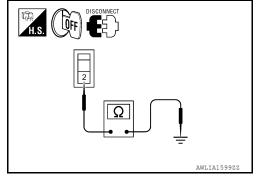
Check continuity between the license plate lamp harness connectors and ground.

Connector	Terminal	_	Continuity
C106	2	Ground	Yes
C107	2	Glound	163

Does continuity exist?

YES >> Inspect the parking lamp bulb.

NO >> Repair the harness.



TURN SIGNAL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

TURN SIGNAL LAMP CIRCUIT

Description INFOID:0000000011288363

The BCM monitors inputs from the combination switch (lighting and turn signal switch) to determine when to activate the turn signals. The BCM outputs voltage direction to the left and right turn signals during turn signal operation or both during hazard warning operation. The BCM sends a turn signal indicator request to the combination meter via the CAN communication lines.

The BCM performs the fast flasher operation (fail-safe) if any bulb or harness of the turn signal lamp circuit is open.

NOTE:

Turn signal lamp blinks at normal speed when using the hazard warning lamp.

Component Function Check

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1. CHECK TURN SIGNAL LAMP

(P)WITH CONSULT

- 1. Select "FLASHER" of BCM (FLASHER) active test item.
- 2. With operating the test items, check that the turn signal lamp blinks.

LH: Turn signal lamp LH blinkingRH: Turn signal lamp RH blinkingOff: The turn signal lamp OFF

Does the turn signal lamp blink?

YES >> Turn signal lamp circuit is normal.

NO >> Refer to EXL-47, "Diagnosis Procedure".

Diagnosis Procedure

Regarding Wiring Diagram information, refer to EXL-94, "Wiring Diagram".

1. CHECK TURN SIGNAL LAMP BULB

Check the applicable lamp bulb to be sure the proper bulb standard is in use and the bulb is not open.

Is the bulb OK?

YES >> GO TO 2.

NO >> Replace the bulb.

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

While operating the turn signal switch, check the voltage between the BCM harness connector M20 and ground.

(+)		()	Voltage	
Con	nector	Terminal	(-)	vollage
	LH	60		
M20	RH	61	Ground	(V) 15 10 5 0

Is voltage reading as specified?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-54, "Removal and Installation".

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TURN SIGNAL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

3. CHECK TURN SIGNAL LAMP CIRCUIT FOR OPEN

- 1. Turn the ignition switch OFF.
- 2. Disconnect BCM connector M20, front combination lamp connector, door mirror connector (if equipped with turn signal in the mirrors) and the rear combination lamp connector.
- 3. Check continuity between the BCM harness connector (A) and the front combination lamp connector (B).

	Α		В		Continuity	
Con	nector	Terminal	Con	nector	Terminal	Continuity
Front LH		60	Without	E11		
Front RH	M20	61	DIKE	E107	5	Yes
Front LH	IVIZO	60	With	E6	3	103
Front RH		61	DIKE	E108		

4. Check continuity between the BCM harness connector (A) and the rear combination lamp connector (B).

А				В	Continuity
Cor	nector	Terminal	Connector	Terminal	Continuity
Rear LH	M20	60	B35	4	Yes
Rear RH	IVIZU	61	B105	4	165

5. Check continuity between the BCM harness connector (A) and the door mirror connector (B) (if equipped with turn signals in the mirrors).

Α				3	Continuity
Conne	ctor	Terminal	Connector	Terminal	Continuity
Door mirror LH	M20	60	D4	15	Yes
Door mirror RH		61	D107	15	165

Are continuity test results as specified?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4. CHECK TURN SIGNAL LAMP SHORT CIRCUIT

Check continuity between the BCM harness connector M20 and ground.

С	onnector	Terminal	_	Continuity
LH	M20	60	Ground	No
RH	IVIZU	61	Ground	NO

Does continuity exist?

YES >> Repair the harnesses or connectors.

NO >> GO TO 5.

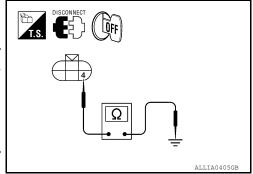
5. CHECK TURN SIGNAL LAMP GROUND CIRCUIT

TURN SIGNAL LAMP CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

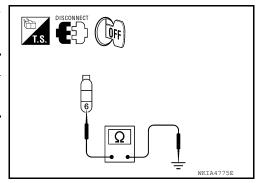
 Check continuity between the front combination lamp harness connector and ground.

Connector		Terminal	_	Continuity	
Without	Front LH	E11			
DTRL	Front RH	E107	4	Ground	Yes
With	Front LH	E6	4	Giouna	165
DTRL Front RH E10	E108				



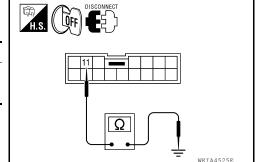
2. Check continuity between the rear combination lamp harness connector and ground.

Connector		Terminal	_	Continuity
Rear LH	B35	6	Ground	Yes
Rear RH	B105	0	Ground	163



3. Check continuity between the door mirrors and ground (if equipped with turn signals in the mirrors).

Connector		Terminal	_	Continuity
Door mirror RH	D107	11	Ground	Yes
Door mirror LH	D4		Ground	res



Are continuity test results as specified?

YES >> Replace the malfunctioning lamp.

NO >> Repair the harnesses or connectors.

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OPTICAL SENSOR

Description INFOID:000000011288366

The optical sensor converts the outside brightness (lux) to voltage and transmits the optical sensor signal to the BCM.

Component Function Check

INFOID:0000000011288367

1. CHECK OPTICAL SENSOR SIGNAL BY CONSULT

(P)WITH CONSULT

- 1. Turn the ignition switch ON.
- Select "OPTICAL SENSOR" of BCM (HEAD LAMP) DATA MONITOR item.
- 3. Turn the lighting switch to AUTO.
- With the optical sensor illuminating, check the monitor status.

Monitor item	Condition	Voltage
OPTICAL SENSOR	When illuminating	3.1V or more *
OPTICAL SENSOR	When shutting off light	0.6V or less

^{*:} Illuminates the optical sensor. The value may be less than the standard value if brightness is weak.

Is the item status normal?

YES >> Optical sensor is normal.

NO >> Refer to EXL-50, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011288368

Regarding Wiring Diagram information, refer to EXL-81, "Wiring Diagram".

1. CHECK OPTICAL SENSOR GROUND CIRCUIT

- 1. Turn the ignition switch OFF.
- Disconnect BCM connector M18 and optical sensor connector M302
- Check continuity between BCM harness connector M18 (A) terminal 18 and optical sensor harness connector M302 (B) terminal 3.

	А		В		
Connector	Terminal	Connector	Terminal	Continuity	
M18	18	M302	3	Yes	

Check continuity between BCM harness connector M18 (A) terminal 18 and ground.

H.S. DISCONNECT OFF	B
	ALLIA0406GB

	A	_	Continuity	
Connector	Terminal		Continuity	
M18	18	Ground	No	

Are continuity test results as specified?

YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK OPTICAL SENSOR SIGNAL CIRCUIT

OPTICAL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

Check continuity between BCM harness connector M20 (A) terminal 58 and optical sensor harness connector M302 (B) terminal 4.

	А		В		
Connector	Terminal	Connector	Terminal	Continuity	
M20	58	M302	4	Yes	

Check continuity between BCM harness connector M20 (A) terminal 58 and ground.

•	H.S. CED OFF	В
	A 58 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
•	Ω	<u></u>
		ALLIA0407GB

	A		Continuity	
Connector	Terminal		Continuity	
M20	58	Ground	No	

Are the continuity test results as specified?

YES >> Replace the optical sensor. Refer to EXL-137, "Removal and Installation".

NO >> Repair harness or connector.

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< ECU DIAGNOSIS INFORMATION >

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

NOTE:

The Signal Tech II Tool (J-50190) can be used to perform the following functions. Refer to the Signal Tech II User Guide for additional information.

- · Activate and display TPMS transmitter IDs
- · Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- Register TPMS transmitter IDs
- · Check Intelligent Key relative signal strength
- · Confirm vehicle Intelligent Key antenna signal strength
- · Test remote keyless entry keyfob relative signal strength

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
ACC ON CW	Ignition switch OFF or ON	Off
ACC ON SW	Ignition switch ACC	On
AID COND SW	A/C switch OFF	Off
AIR COND SW	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm², psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm ² , psi
AUTO LIGHT SW	Lighting switch OFF	Off
AUTO LIGHT SW	Lighting switch AUTO	On
DACK DOOD SW	Back door closed	Off
BACK DOOR SW	Back door opened	On
BRAKE SW	Brake pedal released	Off
DRANE SW	Brake pedal applied	On
DLICKI E CW	Seat belt buckle unfastened	Off
BUCKLE SW	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
BUZZEK	Buzzer in combination meter ON	On
CARGO LAMP SW	Cargo lamp switch OFF	Off
CARGO LAIVIP SVV	Cargo lamp switch ON	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
CDL LOCK 3W	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
CDL UNLOCK SW	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Front door RH closed	Off
DOOR SW-AS	Front door RH opened	On
DOOR SW-DR	Front door LH closed	Off
DOOK SW-DK	Front door LH opened	On
DOOR SW-RL	Rear door LH closed	Off
DOOK GW-KL	Rear door LH opened	On

Monitor Item	Condition	Value/Status
DOOR SW-RR	Rear door RH closed	Off
DOOR SW-RR	Rear door RH opened	On
FAN ON SIG	Blower motor fan switch OFF	Off
FAIN OIN SIG	Blower motor fan switch ON	On
FR FOG SW	Front fog lamp switch OFF	Off
FR FOG SW	Front fog lamp switch ON	On
FR WASHER SW	Front washer switch OFF	Off
FR WASHER SW	Front washer switch ON	On
FR WIPER LOW	Front wiper switch OFF	Off
FR WIPER LOW	Front wiper switch LO	On
ED WIDED III	Front wiper switch OFF	Off
FR WIPER HI	Front wiper switch HI	On
ED WIDED INT	Front wiper switch OFF	Off
FR WIPER INT	Front wiper switch INT	On
ED WIDED OTOD	Any position other than front wiper stop position	Off
FR WIPER STOP	Front wiper stop position	On
LIAZADD CW	When hazard switch is not pressed	Off
HAZARD SW	When hazard switch is pressed	On
LIEAD LAND OMA	Headlamp switch OFF	Off
HEAD LAMP SW1	Headlamp switch 1st	On
HEAD LAMP SW2	Headlamp switch OFF	Off
	Headlamp switch 1st	On
	High beam switch OFF	Off
HI BEAM SW	High beam switch HI	On
·	ID registration of front left tire incomplete	YET
ID REGST FL1	ID registration of front left tire complete	DONE
ID DECOT 504	ID registration of front right tire incomplete	YET
ID REGST FR1	ID registration of front right tire complete	DONE
ID DECOTED (ID registration of rear left tire incomplete	YET
ID REGST RL1	ID registration of rear left tire complete	DONE
ID DECCE DE	ID registration of rear right tire incomplete	YET
ID REGST RR1	ID registration of rear right tire complete	DONE
	Ignition switch OFF or ACC	Off
IGN ON SW	Ignition switch ON	On
	Ignition switch OFF or ACC	Off
IGN SW CAN	Ignition switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
	LOCK button of Intelligent Key is not pressed	Off
I-KEY LOCK ¹	LOCK button of Intelligent Key is pressed	On
	PANIC button of Intelligent Key is not pressed	Off
I-KEY PANIC ¹	PANIC button of Intelligent Key is pressed	On
	UNLOCK button of Intelligent Key is not pressed	Off
I-KEY PW DWN ¹	UNLOCK button of Intelligent Key is pressed for greater than 3 seconds and driver's window operating in DOWN direction	On

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
LIZEV LINILOGIZÎ	UNLOCK button of Intelligent Key is not pressed	Off
I-KEY UNLOCK ¹	UNLOCK button of Intelligent Key is pressed	On
KEN CALLK SM	Door key cylinder LOCK position	On
KEY CYL LK-SW	Door key cylinder other than LOCK position	Off
14574 0741 1171 0744	Door key cylinder UNLOCK position	On
KEY CYL UN-SW	Door key cylinder other than UNLOCK position	Off
KEY ON OW	Mechanical key is removed from key cylinder	Off
KEY ON SW	Mechanical key is inserted to key cylinder	On
	LOCK button of key fob is not pressed	Off
KEYLESS LOCK ²	LOCK button of key fob is pressed	On
2	PANIC button of key fob is not pressed	Off
KEYLESS PANIC ²	PANIC button of key fob is pressed	On
0	UNLOCK button of key fob is not pressed	Off
KEYLESS UNLOCK ²	UNLOCK button of key fob is pressed	On
	Lighting switch OFF	Off
LIGHT SW 1ST	Lighting switch 1st	On
OIL PRESS SW	Ignition switch OFF or ACC Engine running	Off
OILT REGO OVV	Ignition switch ON	On
	Bright outside of the vehicle	Close to 5V
OPTICAL SENSOR	Dark outside of the vehicle	Close to 0V
	Other than lighting switch PASS	Off
PASSING SW	Lighting switch PASS	On
	Return to ignition switch to LOCK position	Off
PUSH SW ¹	Press ignition switch	On
	Rear window defogger switch OFF	Off
REAR DEF SW	Rear window defogger switch ON	On
	Rear washer switch OFF	Off
RR WASHER SW	Rear washer switch ON	On
	Rear wiper switch OFF	Off
RR WIPER INT	Rear wiper switch INT	On
	Rear wiper switch OFF	Off
RR WIPER ON	Rear wiper switch ON	On
	Rear wiper stop position	Off
RR WIPER STOP	Other than rear wiper stop position	On
	Rear wiper stop position	Off
RR WIPER STP2	Other than rear wiper stop position	On
	Turn signal switch OFF	Off
TURN SIGNAL L	Turn signal switch LH	On
	Turn signal switch OFF	Off
TURN SIGNAL R	Turn signal switch RH	On
VEHICLE SPEED		
VEHICLE SPEED	While driving	Equivalent to speedometer reading
WARNING LAMP	Low tire pressure warning lamp in combination meter OFF	Off
	Low tire pressure warning lamp in combination meter ON	On

1: With Intelligent Key

< ECU DIAGNOSIS INFORMATION >

2: With remote keyless entry system

Terminal Layout

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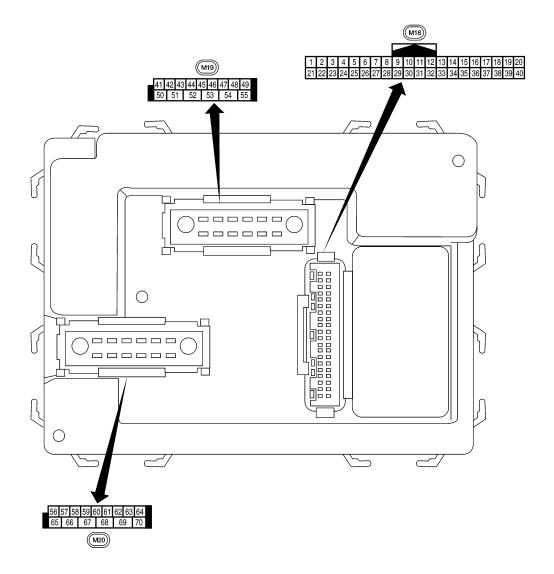
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Physical Values

			Signal		Measuring condition	
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)
1	BR/W	Ignition keyhole illumi-	Output	OFF	Door is locked (SW OFF)	Battery voltage
1	DR/W	nation	Output	OFF	Door is unlocked (SW ON)	0V
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 4 2 0 +-5ms skia5292E
4	Y	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **-5ms
5	G/B	Combination switch input 2				(V)
6	V	Combination switch input 1	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	6 4 2 0 + 5ms SKIA5292E
	D.(0	0, 1, 1, 1, 1		055	Brake pedal depressed	Battery voltage
9	R/G	Stop lamp switch	Input	OFF	Brake pedal released	0V
10	G	Hazard lamp flash	Input	OFF	ON (opening or closing)	0V
	G	Hazaru lahip ilash	input	OFF	OFF (other than above)	Battery voltage
11	0	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	R/L	Front door switch RH	Input	OFF	ON (open)	0V
			pat	J. 1	OFF (closed)	Battery voltage
13	GR	Rear door switch RH	Input	OFF	ON (open)	0V
15	L/W	Tire pressure warning check connector	Input	OFF	OFF (closed)	Battery voltage 5V
18	Р	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	_	oV

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	Wire		Signal		Measuring condition	Reference value or waveform
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)
19	V/W	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	(V) 6 4 2 0
20	G/W	Remote keyless entry	Input	OFF	Stand-by (keyfob buttons re- leased)	(V) 6 4 2 0 +-50 ms LIIA1894E
20	G/W	receiver (signal)	mput	OI I	When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	(V) 6 4 2 0 + 50 ms
21	G	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF \rightarrow ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	G	BUS	_	_	Ignition switch ON or power window timer operates	(V) 15 10 5 0 200 ms
23	G/O	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF \rightarrow ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
					Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	0V
26	Y/L	Rear wiper auto stop switch 2	Input	ON	Forward sweep (counterclock- wise direction)	Fluctuating
					B Position (full counterclock- wise stop position)	Battery voltage
					Reverse sweep (clockwise direction)	Fluctuating
27	W/R	Compressor ON sig-	pressor ON sig-	Input ON	A/C switch OFF	5V
		nal	pat	0.1	A/C switch ON	0V

	Wire		Signal		Measuring condition	Reference value or waveform		
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)		
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage		
20	L/IX	1 Tone blower monitor	mpat	ON	Front blower motor ON	0V		
29	W/B	Hazard switch	Input	OFF	ON	0V		
29	VV/D	Tiazaiù Switcii	Прис	Orr	OFF	5V		
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 ••5ms SKIA5291E		
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 → 5ms SKIA5292E		
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 4 2 0 		
35	O/B	Combination switch output 2				(V)		
36	R/W	Combination switch output 1	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	6 4 2 0 ***5ms		
a=1	D/D	Key switch and igni-	1	OFF	Intelligent Key inserted	Battery voltage		
37 ¹	B/R	tion knob switch	Input	OFF	Intelligent Key removed	0V		
0=2	D / D	Key switch and key	lm:-:4	055	Key inserted	Battery voltage		
37 ²	B/R	lock solenoid	Input	OFF	Key removed	0V		
38	W/L	Ignition switch (ON)	Input	ON	_	Battery voltage		
39	L	CAN-H	_	_	_	_		
40	Р	CAN-L		_	_	_		
41	GR/R	Rear window defogger switch	Input	ON	Rear window defogger switch ON	OV		
		SWILCH	-		Rear window defogger switch OFF	5V		
42	GR	Glass hatch ajar	Input	ON	Glass hatch open	0		
42 GR		switch	switch			Glass hatch closed	Battery	

< ECU DIAGNOSIS INFORMATION >

	Wire	o	Signal		Measuring condition	Reference value or waveform	
Terminal	color	Signal name	input/ output	Ignition switch	Operation or condition	(Approx.)	
		Back door switch			ON (open)	0V	
43	R/B	(without power back door) or back door latch (door ajar switch) (with power back door)	Input	OFF	OFF (closed)	Battery voltage	
					Rise up position (rear wiper arm on stopper)	0V	
					A Position (full clockwise stop position)	Battery voltage	
44	0	Rear wiper auto stop switch 1	Input	ON	Forward sweep (counterclockwise direction)	Fluctuating	
					B Position (full counterclockwise stop position)	0V	
					Reverse sweep (clockwise direction)	Fluctuating	
47	SB	Front door switch LH	Input	OFF	ON (open)	0V	
		The same of the sa		J., 1	OFF (closed)	Battery voltage	
48	R/Y	Rear door switch LH	Input	OFF	ON (open)	0V	
		33 23.2. 2			OFF (closed)	Battery voltage	
49	R	Cargo lamp	Output	OFF	Any door open (ON)	0V	
-		- J			All doors closed (OFF)	Battery voltage	
51	Y/B	Trailer turn signal (right)	Output	ON	Turn right ON	(V) 15 10 500 ms SKIA3009J	
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON	(V) 15 10 500 ms SKIA3009J	
					Rise up position (rear wiper arm on stopper)	0V	
				Input ON		A Position (full clockwise stop position)	0V
54	Υ	Rear wiper output circuit 2	Input		Forward sweep (counterclockwise direction)	0V	
					B Position (full counterclockwise stop position)	Battery voltage	
					Reverse sweep (clockwise direction)	Battery voltage	
55	SB	Rear wiper output cir-	Output	ON	OFF	0	
30	05	cuit 1	Jaipai	0.1	ON	Battery voltage	

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	Wire		Signal		Measuring con	dition	Reference value or waveform	
Terminal	color	Signal name	input/ output	Ignition switch	Operation	or condition	(Approx.)	
56	R/G	Battery saver output	Output	OFF	10 minutes after switch is turne		0V	
				ON	1 —		Battery voltage	
57	Y/R	Battery power supply	Input	OFF	-	_	Battery voltage	
58	W/R	Optical sensor	Input	ON	When optical s	sensor is illumi-	3.1V or more	
30	VV/IX	Optical serisor	прис	ON	When optical s minated	ensor is not illu-	0.6V or less	
		Front door lock as-			OFF (neutral)		0V	
59	G	sembly LH actuator (unlock)	Output	OFF	ON (unlock)		Battery voltage	
60	G/B	Turn signal (left)	Output	ON	Turn left ON		(V) 15 10 500 ms SKIA3009J	
61	G/Y	Turn signal (right)	Output	ON	Turn right ON		(V) 15 10 5 0 500 ms	
62	R/W	Foot lamp LH and RH	Output	OFF	ON (any door of OFF (all doors	. ,	0V Battery voltage	
		Interior room/map			Any door	ON (open)	0V	
63	L	lamp	Output	OFF	switch	OFF (closed)	Battery voltage	
		All door lock actuators			OFF (neutral)	, ,	0V	
65	V	(lock)	Output	OFF	ON (lock)		Battery voltage	
		Front door lock actua-			OFF (neutral)		0V	
66	G/Y	tor RH, rear door lock actuators LH/RH and back door lock actua- tor (unlock)	Output	OFF	ON (unlock)		Battery voltage	
67	В	Ground	Input	ON	-		0V	
					Ignition switch	ON	Battery voltage	
					Within 45 seco		Battery voltage	
68	W/L	Power window power supply (RAP)	Output	_	More than 45 seconds after ig nition switch OFF		0V	
					When front do open or power operates		OV	
69	W/R	Power window power supply	Output	_	-	_	Battery voltage	
70	W/B	Battery power supply	Input	OFF	-	_	Battery voltage	

^{1:} With Intelligent Key system

< ECU DIAGNOSIS INFORMATION >

2: With remote keyless entry system

Fail Safe

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Fail-safe index

BCM performs fail-safe control when any DTC listed below is detected.

Display contents of CONSULT	Fail-safe	Cancellation	
U1000: CAN COMM CIRCUIT	Inhibit engine cranking	When the BCM re-establishes communication with the other modules.	

DTC Inspection Priority Chart

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC	
1	U1000: CAN COMM CIRCUIT	
2	 B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM B2013: STRG COMM 1 B2552: INTELLIGENT KEY B2590: NATS MALFUNCTION 	
3	C1729: VHCL SPEED SIG ERR C1735: IGNITION SIGNAL	
4	 C1708: [NO DATA] FL C1709: [NO DATA] FR C1710: [NO DATA] RR C1711: [NO DATA] RL C1712: [CHECKSUM ERR] FL C1713: [CHECKSUM ERR] FR C1714: [CHECKSUM ERR] RR C1715: [CHECKSUM ERR] RL C1716: [PRESSDATA ERR] FL C1717: [PRESSDATA ERR] FR C1718: [PRESSDATA ERR] RR C1719: [PRESSDATA ERR] RR C1720: [CODE ERR] FL C1721: [CODE ERR] FR C1722: [CODE ERR] RR C1723: [CODE ERR] RR C1724: [BATT VOLT LOW] FL C1726: [BATT VOLT LOW] RR C1727: [BATT VOLT LOW] RR C1727: [BATT VOLT LOW] RR 	

DTC Index

NOTE:

Details of time display

CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.

1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1
 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter
 remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch
 OFF → ON after returning to the normal condition if the malfunction is detected again.

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CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	_	_		_
U1000: CAN COMM CIRCUIT	_	_	_	BCS-29
B2013: STRG COMM 1	_	_	_	SEC-30
B2190: NATS ANTENNA AMP	_	_	_	SEC-33 (with I- Key), SEC-143 (without I-Key)
B2191: DIFFERENCE OF KEY	_	_	_	SEC-36 (with I- Key), SEC-146 (without I-Key)
B2192: ID DISCORD BCM-ECM	_	_	_	SEC-37 (with I- Key), SEC-147 (without I-Key)
B2193: CHAIN OF BCM-ECM	_	_	_	SEC-39 (with I- Key), SEC-149 (without I-Key)
B2552: INTELLIGENT KEY	_	_	_	<u>SEC-41</u>
B2590: NATS MALFUNCTION	_	_	_	<u>SEC-42</u>
C1708: [NO DATA] FL	_	_	_	<u>WT-15</u>
C1709: [NO DATA] FR	_	_	_	<u>WT-17</u>
C1710: [NO DATA] RR	_	_	_	<u>WT-17</u>
C1711: [NO DATA] RL	_	_	_	<u>WT-17</u>
C1712: [CHECKSUM ERR] FL	_	_	_	<u>WT-17</u>
C1713: [CHECKSUM ERR] FR	_	_	_	<u>WT-17</u>
C1714: [CHECKSUM ERR] RR	_	_	_	<u>WT-17</u>
C1715: [CHECKSUM ERR] RL	_	_	_	<u>WT-17</u>
C1716: [PRESSDATA ERR] FL	_	_	_	<u>WT-19</u>
C1717: [PRESSDATA ERR] FR	_	_	_	<u>WT-17</u>
C1718: [PRESSDATA ERR] RR	_	_	_	<u>WT-17</u>
C1719: [PRESSDATA ERR] RL	_	_	_	<u>WT-17</u>
C1720: [CODE ERR] FL	_	_	_	<u>WT-17</u>
C1721: [CODE ERR] FR	_	_	_	<u>WT-17</u>
C1722: [CODE ERR] RR	_	_	_	<u>WT-17</u>
C1723: [CODE ERR] RL	_	_	_	<u>WT-17</u>
C1724: [BATT VOLT LOW] FL	_	_	_	<u>WT-17</u>
C1725: [BATT VOLT LOW] FR	_	_	_	<u>WT-17</u>
C1726: [BATT VOLT LOW] RR	_	_	_	<u>WT-17</u>
C1727: [BATT VOLT LOW] RL	_	_	_	<u>WT-17</u>
C1729: VHCL SPEED SIG ERR	_	_	_	<u>WT-21</u>
C1735: IGN_CIRCUIT_OPEN	_	_	_	<u>WT-22</u>

< ECU DIAGNOSIS INFORMATION >

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Reference Value

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Con	dition	Value/Status	
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1, 2, 3, 4	
AC COMP DEC	A/C switch OFF		Off	
AC COMP REQ	A/C switch ON		On	
TAIL&CLR REQ	Lighting switch OFF		Off	
IAILACLK REQ	Lighting switch 1ST, 2ND, HI or AU	ΓΟ (Light is illuminated)	On	
HL LO REQ	Lighting switch OFF		Off	
HE LO REQ	Lighting switch 2ND HI or AUTO (Li	ght is illuminated)	On	
UL ULBEO	Lighting switch OFF		Off	
HL HI REQ	Lighting switch HI		On	
		Front fog lamp switch OFF	Off	
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch ON Daytime light activated (Canada only)	On	
		Front wiper switch OFF	Stop	
ED WID DEO	Ignition switch ON	Front wiper switch INT	1LOW	
FR WIP REQ		Front wiper switch LO	Low	
		Front wiper switch HI	Hi	
		Front wiper stop position	STOP P	
WIP AUTO STOP	Ignition switch ON	Any position other than front wiper stop position	ACT P	
		Front wiper operates normally	Off	
WIP PROT	Ignition switch ON	Ignition switch ON Front wiper stops at fail-safe operation		
ST RLY REQ	Ignition switch OFF or ACC		Off	
31 KET KEQ	Ignition switch START		On	
IGN RLY	Ignition switch OFF or ACC		Off	
IGNIKLI	Ignition switch ON		On	
RR DEF REQ	Rear defogger switch OFF		Off	
IN DEL NEQ	Rear defogger switch ON		On	
OIL P SW	Ignition switch OFF, ACC or engine	running	Open	
OIL P 3W	Ignition switch ON	ı ON		
DTDL DEO	Not operated		Off	
DTRL REQ	Daytime Running Lights ON		On	
	Not operated		Off	
THFT HRN REQ	 Panic alarm is activated Horn is activated with VEHICLE S TEM 	On		

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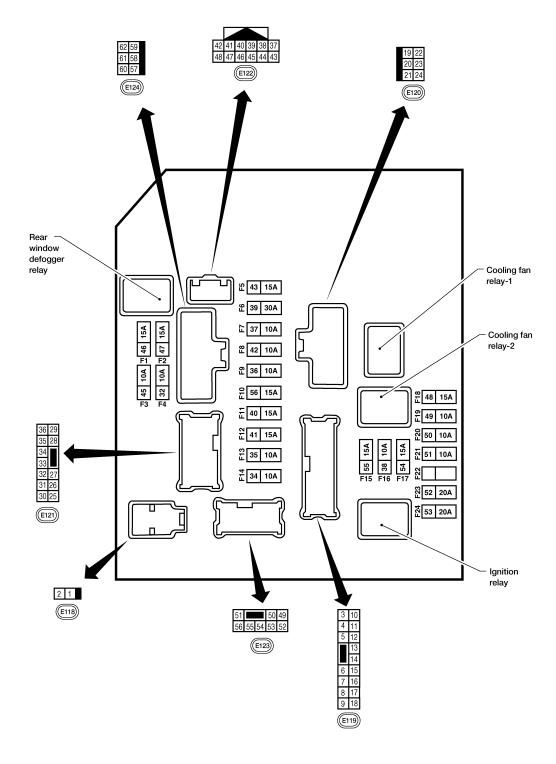
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< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
HORN CHIRP	Not operated	Off
HORN CHIRF	Door locking with keyfob or Intelligent Key (if equipped) (horn chirp mode)	On

Terminal Layout



NOTE:

Numbers preceded by an "F" represent the fuse numbers imprinted on the IPDM E/R. The other numbers represent the fuse numbers as they appear in the wiring diagrams.

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AWMIA1631GB

< ECU DIAGNOSIS INFORMATION >

Physical Values

PHYSICAL VALUES

					Measuring condition																			
Terminal	Wire color	Signal name	Signal input/ output	Igni- tion switch	Operation or condition	Reference value (Approx.)																		
1	B/Y	Battery power supply	Input	OFF	_	Battery voltage																		
2	R	Battery power supply	Input	OFF		Battery voltage																		
		Zamery perior cappiy		. .	Ignition switch ON or START	Battery voltage																		
3	BR	ECM relay	Output	_	Ignition switch OFF or ACC	0V																		
					Ignition switch ON or START	Battery voltage																		
4	W/L	ECM relay	Output	_	Ignition switch OFF or ACC	0V																		
		Throttle control motor			Ignition switch ON or START	Battery voltage																		
6	L	relay	Output	_	Ignition switch OFF or ACC																			
					Ignition switch ON or START	0V																		
7	W/B	ECM relay control	Input	_	Ignition switch OFF or ACC	Battery voltage																		
					Ignition switch ON or START	Battery voltage																		
8	R/B	Fuse 54	Output	_	Ignition switch OFF or ACC	0V																		
		Fuse 45			Daytime light system active	0V																		
10	G	(Canada only)	Output ON		Daytime light system inactive	Battery voltage																		
			_	ON or	A/C switch ON or defrost A/C switch	Battery voltage																		
11	Y/B	A/C compressor	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	Output	START	A/C switch OFF or defrost A/C switch	0V
		Ignition switch sup-			OFF or ACC	0V																		
12	L/W	plied power	Input	_	ON or START	Battery voltage																		
40	DA	F .1	0.1.1		Ignition switch ON or START	Battery voltage																		
13	B/Y	Fuel pump relay	Output	_	Ignition switch OFF or ACC	0V																		
	V/D	F 10	0.1.1		Ignition switch ON or START	Battery voltage																		
14	Y/R	Fuse 49	Output	_	Ignition switch OFF or ACC	0V																		
15	LG/B	Fuse 50	Output		Ignition switch ON or START	Battery voltage																		
15	LG/B	ruse 50	Output	_	Ignition switch OFF or ACC	0V																		
16	G	Fuse 51	Output		Ignition switch ON or START	Battery voltage																		
10	G	ruse 51	Output	_	Ignition switch OFF or ACC	0V																		
17	W	Fuse 55	Output		Ignition switch ON or START	Battery voltage																		
17	VV	ruse 55	Output	_	Ignition switch OFF or ACC	0V																		
19	W/R	Starter motor	Output	START	_	Battery voltage																		
21	BR	Ignition switch sup-	Input		OFF or ACC	0V																		
	DIX	plied power	Прис		START	Battery voltage																		
22	G	Battery power supply	Output	OFF	_	Battery voltage																		
23	GR/W	Door mirror defogger output signal	Output	_	When rear defogger switch is ON When rear defogger switch is	Battery voltage																		
					OFF	0V																		

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			0: 1		Measuring con	ndition						
Terminal	Wire color	Signal name	Signal input/ output	Igni- tion switch	Operation or condition		Reference value (Approx.)					
24	L	Cooling fan relay	Output	_	Conditions cor fan operation	rect for cooling	Battery voltage					
24	_	Gooding latt relay	Output		Conditions not cooling fan ope		0V					
27	W/B	Fuse 38	Output		Ignition switch		Battery voltage					
					Ignition switch		0V					
30	W	Fuse 53	Output		Ignition switch		Battery voltage					
					Ignition switch		0V					
32	L	Wiper low speed sig- nal	Output	ON or START	Wiper switch	OFF LO or INT	0V Battery voltage					
35	L/B	Wiper high speed sig-	Output	ON or	Wiper switch	OFF, LO, INT	0V					
35	L/D	nal	Output	START	wiper switch	HI	Battery voltage					
					Output	Output	Output	Output		Ignition switch	ON	(V) 6 4 2 0 2 2ms 3 Jemia0001gB
37	Y	Power generation command signal	Output —	Output					Output	Output	Output	_
					40% is set on "Active test," "ALTERNATOR DUTY" of "ENGINE"		(V) 6 4 2 0 2 2 ms 1.4 V					
38	В	Ground	Input	_			0V					
39	L	CAN-H		ON	_		<u> </u>					
40	Р	CAN-L	_	ON	-	_	_					
42	GR	Oil pressure switch	Input	_	Engine running		Battery voltage 0V					
43	L/Y	Wiper auto stop signal	Input	ON or START	Wiper switch	OFF, LO, INT	Battery voltage					
		Daytime light relay		0.7411	Daytime light s	system active	0V					
44	BR	control (Canada only)	Input	ON		system inactive	Battery voltage					

			Signal		Measuring condition Operation or condition		
Terminal	Wire color	Signal name	input/ output	Igni- tion switch			Reference value (Approx.)
45	G/W	Horn relay control	Input	ON	When door locks are operated using keyfob or Intelligent Key (if equipped) (OFF → ON)*		Battery voltage → 0V
46	GR	Fuel pump relay con-	Input	_	Ignition switch	ON or START	0V
		trol			Ignition switch		Battery voltage
47	0	Throttle control motor	Input		Ignition switch		0V
		relay control	-		Ignition switch		Battery voltage
48	B/R	Starter relay (inhibit switch)	Input	ON or START	Selector lever tion	in "P" or "N" any other posi-	0V Battery voltage
					Lighting	OFF	0V
49	R/L	Trailer tow relay Illumination	Output	ON	switch must be in the 1st position	ON	Battery voltage
					Lighting	OFF	0V
50	W/R	Front fog lamp (LH)	Output	ON or START	switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch	ON	Battery voltage
					Lighting	OFF	0V
51	W/R	Front fog lamp (RH)	Output	ON or START	switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch	ON	Battery voltage
52	L	LH low beam head- lamp	Output	_	Lighting switch	in 2nd position	Battery voltage
54	R/Y	RH low beam head- lamp	Output	_	Lighting switch	in 2nd position	Battery voltage
55	G	LH high beam head- lamp	Output	_		in 2nd position HIGH or PASS	Battery voltage
56	Y (With DTRL)	RH high beam head- lamp	Output	_		in 2nd position HIGH or PASS	Battery voltage
56	L/W (Without DTRL)	RH high beam head- lamp	Output	_		in 2nd position HIGH or PASS	Battery voltage
F.7	D.//	Parking, license, and	0	ON!	Lighting	OFF	0V
57	R/L	tail lamp	Output	ON	switch 1st po- sition	ON	Battery voltage
59	В	Ground	Input	_	-	_	0V
60	В	Rear window defog-	Outout	ON or	Rear defogger	switch ON	Battery voltage
00	D	ger relay	Output	START	Rear defogger	switch OFF	0V
61	BR	Fuse 32	Output	OFF		_	Battery voltage

^{*:} When horn reminder is ON

< ECU DIAGNOSIS INFORMATION >

Fail Safe

CAN COMMUNICATION CONTROL

When CAN communication with ECM and BCM is impossible, IPDM E/R performs fail-safe control. After CAN communication recovers normally, it also returns to normal control.

If No CAN Communication Is Available With ECM

Control part	Fail-safe in operation
Cooling fan	 Turns ON the cooling fan relay when the ignition switch is turned ON Turns OFF the cooling fan relay when the ignition switch is turned OFF

If No CAN Communication Is Available With BCM

Control part	Fail-safe in operation
Headlamp	 Turns ON the headlamp low relay when the ignition switch is turned ON Turns OFF the headlamp low relay when the ignition switch is turned OFF Headlamp high relay OFF
Parking lampsLicense plate lampsTail lamps	 Turns ON the tail lamp relay when the ignition switch is turned ON Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	 The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Rear window defogger	Rear window defogger relay OFF
A/C compressor	A/C relay OFF
Front fog lamps (if equipped)	Front fog lamp relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors the voltage at the contact circuit and excitation coil circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the voltage differs between the contact circuit and the excitation coil circuit.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Ignition switch	Ignition relay	Tail lamp relay
ON	ON	_
OFF	OFF	_

NOTE:

The tail lamp turns OFF when the ignition switch is turned ON.

FRONT WIPER CONTROL

IPDM E/R detects front wiper stop position by a front wiper auto stop signal.

When a front wiper auto stop signal is in the conditions listed below, IPDM E/R stops power supply to wiper after repeating a front wiper 10 seconds activation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Auto stop signal
ON	OFF	Front wiper stop position signal cannot be input 10 seconds.
	ON	The signal does not change for 10 seconds.

NOTE:

This operation status can be confirmed on the IPDM E/R "DATA MONITOR" that displays "Block" for the item "WIP PROT" while the wiper is stopped.

STARTER MOTOR PROTECTION FUNCTION

< ECU DIAGNOSIS INFORMATION >

IPDM E/R turns OFF the starter control relay to protect the starter motor when the starter control relay remains active for 90 seconds.

DTC Index

CONSULT display	Fail-safe	TIME	NOTE	Refer to
No DTC is detected. further testing may be required.	_	_	_	_
U1000: CAN COMM CIRCUIT	×	CRNT	1 – 39	PCS-16

NOTE:

The details of TIME display are as follows.

- CRNT: The malfunctions that are detected now
- 1 39: The number is indicated when it is normal at present and a malfunction was detected in the past. It increases like 0 → 1 → 2 · · · 38 → 39 after returning to the normal condition whenever IGN OFF → ON. It is fixed to 39 until the self-diagnosis results are erased if it is over 39. It returns to 0 when a malfunction is detected again in the process.

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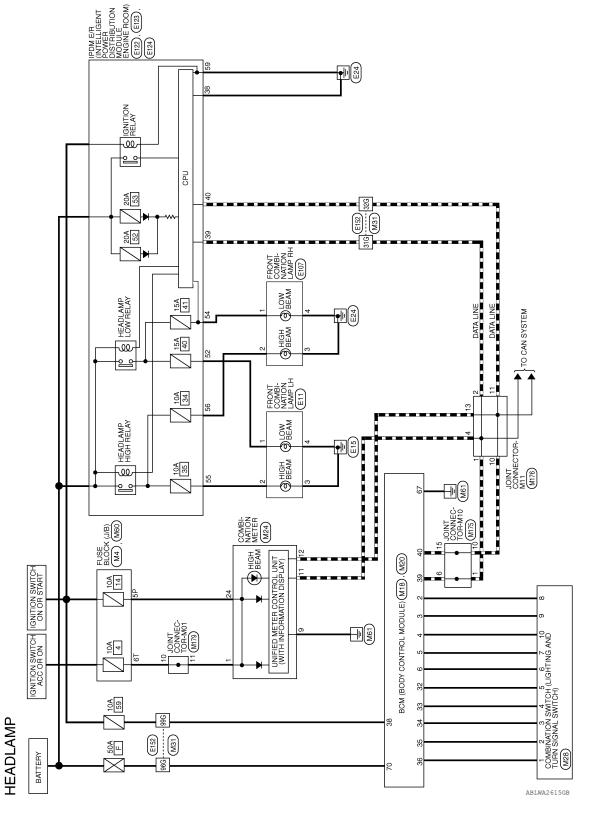
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WIRING DIAGRAM

HEADLAMP

Wiring Diagram



Signal Name

Color of Wire

Terminal No.

INPUT 4 INPUT 3 INPUT 2 INPUT 1

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OUTPUT 5

R/G

ΡY

33 34

G/B

2 9

>

OUTPUT 3 OUTPUT 4

HEADLAMP CONNECTORS

Connector No.	M4
Connector Name	Connector Name FUSE BLOCK (J/B)
Connector Color WHITE	WHITE

Connector Name | BCM (BODY CONTROL MODULE)

M18

Connector No.

WHITE

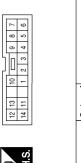
Connector Color



Signal Name	I	
Color of Wire	O/L	
Terminal No.	5P	

	MOR	Connector No	
CAN-L	Ь	40	
CAN-H	Τ	39	
IGN SW	M/L	38	
OUTPUT 1	R/W	36	
OUTPUT 2	O/B	35	

M28	Connector Name COMBINATION SWITCH	WHITE	
Connector No.	Connector Name	Connector Color WHITE	



Signal Name	1	ı	-	1	ı	ı	_	_	_	1
Color of Wire	B/W	O/B	Т	R/Υ	R/G	^	G/B	SB	G/Y	Υ
Terminal No. Wire	-	2	3	4	5	9	7	8	6	10

4	COMBINATION METER	WHITE		13 12 11 10 9 8 7 6 5 4 3 2 1 1	Signal Name	ACCESSORY	GND	CAN-H	CAN-L	BUN/STABT
. M24				15 14 13 35 34 33	Color of Wire	0	<u>m</u>	_	Д	0/C
Connector No.	Connector Name	Connector Color	H.S.	20 19 18 17 16 40 39 38 37 36	Terminal No.	-	6	+	12	24

M20	Connector Name BCM (BODY CONTROL MODULE)	BLACK	56 57 58 59 60 61 62 63 64 65 66 67 68 69 70
Connector No.	Connector Name	Connector Color BLACK	



Signal Name	GND (POWER)	BAT (F/L)	
Color of Wire	В	W/B	
Terminal No.	29	70	

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Connector No. M60 Connector Name FUSE BLOCK (J/B) Connector Color WHITE Terminal No. Color of Signal Name 6T O -	Connector No. M179 Connector Name JOINT CONNECTOR-M01 Connector Color GREEN Signal Name Signal Nam
Terminal No. Color of Signal Name 31G L	Connector No. M176
Connector No. M31 Connector Name WIRE TO WIRE Connector Color WHITE To WIRE Connector Color WHITE To WIRE Connector Color WHITE To WIRE To	Connector No. M175

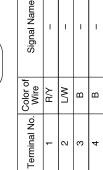
Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color WHITE	WHITE

42 41 40 39 38 37 48 45 44 43	Signal Name	GND (SIGNAL)
48 47 47	Color of Wire	<u>а</u>
16	inal No.	38

Signal Name	GND (SIGNAL)	CAN-H	CAN-L	
Color of Wire	В	٦	Ъ	
Terminal No.	38	39	40	

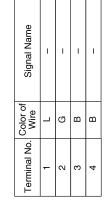
Connector No.	E10/
Connector Name	FRONT COMBINATION LAMP RH (WITHOUT DAYTIME LIGHT SYSTEM)
Connector Color BLACK	BLACK
原 H.S.	2 2

Connector No.



Signal N	I	I	I	ı	
Color of Wire	R/Υ	MΠ	В	В	
Terminal No. Wire	1	2	3	4	

E11	FRONT COMBINATION THE LAMP LH (WITHOUT DAYTIME LIGHT SYSTEM)	or BLACK	1 4 4 8 8 8 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9
Connector No.	Connector Name	Connector Color BLACK	配 H.S.



Connector No.	E124
Connector Name	POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color BLACK	r BLACK
是 H.S.	(5) (5) (5) (5) (5) (6) (6) (6) (6) (6) (6) (6) (6) (6) (6
Terminal No. Wire	olor of Signal Name

Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color BROWN	BROWN
原动 H.S.	51

	21.1
nnector Name	IPDM E/R (INTELLIGE POWER DISTRIBUTIC MODULE ENGINE RO
nnector Color	BROWN
L.S.	56 55 54 53 52

Signal Name	H/LAMP LO LH	H/LAMP LO RH	H/LAMP HI LH	H/LAMP HI RH (WITHOUT DAYTIME LIGHT SYSTEM)
Color of Wire	٦	R/Υ	9	L/W
Terminal No. Wire	52	54	22	56

GND (POWER)

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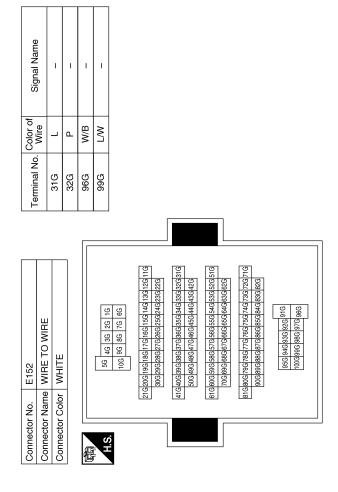
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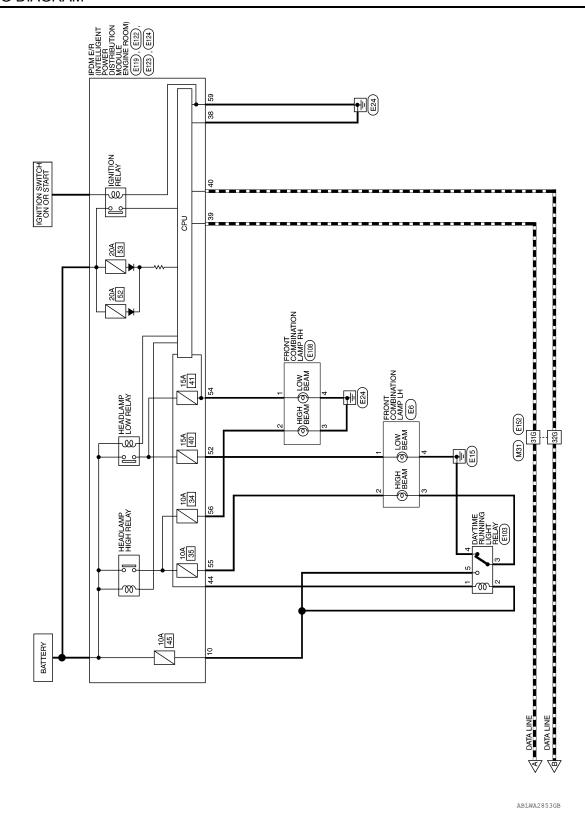
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DAYTIME RUNNING LIGHT SYSTEM Α Wiring Diagram INFOID:0000000011288381 В С D ▼ BRAKE Е F FUSE BLOCK (J/B) (M4), (M60) UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY) HIGH BEAM G 10A JOINT CONNECTOR-M01 (M179) Н IGNITION SWITCH ACC OR ON 40F J JOINT CONNEC. TOR-M11 Meta Connector TOR-M10 Κ , (M20) BCM (BODY CONTROL MODULE) (M18) EXL DAYTIME RUNNING LIGHT SYSTEM COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) (M28) IGNITION SWITCH ON OR START 10A 59 M Ν M31 BATTERY 0 Р ABLWA2854GB



DAYTIME RUNNING LIGHT SYSTEM CONNECTORS

Connector Name FUSE BLOCK (J/B)
- 1

M11	Connector Name PARKING BRAKE SWITCH	BLACK	-
Connector No. M11	Connector Name	Connector Color BLACK	(南) H.S.
M4	ne FUSE BLOCK (J/B)	or WHITE	7P 6P 5P 4P () 3P 2P 1P 1EP 1SP 14P 1SP 14P 1SP 14P 1SP 12P 11P 1SP 18P 1SP 1SP 1SP 1SP 1SP 1SP 1SP 1SP 1SP 1S

Terminal No. Wire Signal Name		
Terminal No. Wire 5P O/L		1
Terminal No. 5P	Color of Wire	O/L
	Terminal No.	5P

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

BC MC	B	
 Connector Name	Connector Color	á

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Signal Name	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	IGN SW	CAN-H	CAN-L
Color of Wire	SB	G/Y	Υ	G/B	^	B/G	R/Υ	7	O/B	R/W	M/L	٦	Ь
Terminal No. Wire	2	8	4	2	9	32	33	34	35	36	38	39	40

8 9 10 11 12 13 14 15 16 17 18 19 20 28 29 30 31 32 33 34 35 36 37 38 39 40
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 3

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Terminal No. Color of Signal Name 6 View -									Connector No. M60 Connector Name FLISE BLOCK (1/B)	Connector Color WHITE			67 57 47	Color of Signa Wire	0			
Connector No. M28 Connector Name COMBINATION SWITCH Connector Color WHITE	H.S. 10 0 9 8 7 8		Terminal No. Color of Signal Name Wire	R/W	3 L -	4 R/Y –	5 R/G –	ſ	Terminal No. Wire Signal Name Conne	31G L – Conne	32G P –	96G W/B – m	99G W/L – H.S.	Termi	٥			
Connector No. M24 Connector Name COMBINATION METER Connector Color WHITE	H.S.	20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 1 4	Terminal No. Wire Signal Name	O ACC	9 B GND	12 P CAN-L	23 G PARK BRAKE	24 O/L RUN/START	Connector No. M31	Connector Color MHTE	_		H.S. 116 203 303 405 505 805 705 805 305 1005	11G12G13G14G15G16G17G18G13G20G21G 22G23G24G25G26G27G28G20G30G		51G82G83G54G85G87G88G57G88G56G 82G83G64G85G85G87G89G8G67G	716/726/736/746/756/756/756/756/756/756/756/756/756/75	910 920 930 940 950 960 970 980 996 1000

DAYTIME RUNNING LIGHT SYSTEM

Connector No. M179 Connector Color GREEN M. S. R.	Signal Name		E108 FRONT COMBINATION LIGHT SYSTEM) BLACK
2. M179 Joint GREEN GREEN 6 8 7 6 6 7 16 16 17 16 10 17 17 16 10 17 17 16 10 17 17 16 10 17 17 17 17 17 17 17 17 17 17 17 18 17 17 17 17 17 17 17 17 17 17 17 17 17	Color of Wire O		o lo
Connector No. Connector Color Connector Color HS.	Terminal No. (10		Connector No. Connector Name Connector Color
M176 JOINT CONNECTOR-M11 BLUE	Signal Name	1	E103 DAYTIME RUNNING LIGHT RELAY BLACK
	Color of Wire L L L L P P P	۵	
Connector No. Connector Color H.S.	Terminal No. 1 1 2 2 4 4 11 11	6.	Connector No. Connector Name Connector Color
Connector No. M175 Connector Name JOINT CONNECTOR-M10 Connector Color BLUE	Signal Name		E6 FRONT COMBINATION LAMP LH (WITH DAYTIME LIGHT SYSTEM) BLACK
M175 me JOINT or BLUE	Color of Wire L		FRONT FRONT BLACK
Connector No. Connector Color Connector Color	Terminal No. C 1 10 15 15		Connector No. Connector Color

						1
\$\frac{6}{2} \\ \frac{2}{6} \\ \frac{6}{1} \\ \frac{2}{6} \\ \frac{6}{1} \\ \frac{1}{6} \\ \frac	Signal Name	ı	1	ı	1	
	Signal Name Terminal No. Color of Signal Name Terminal No. Wire	>	В	В		
是 S.H.	Terminal No.	-	2	က	4	
			1	ı		
) ro 4	Signal Name	I	1	ı	ı	1
<u></u>	Color of Wire	BB	g	Y/G	В	5
H.S.	Terminal No.	-	2	3	4	5
(c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	Signal N	1	1	ı	ı	
1 4 0 0	No. Wire	_	g	Y/G	В	
	No.					

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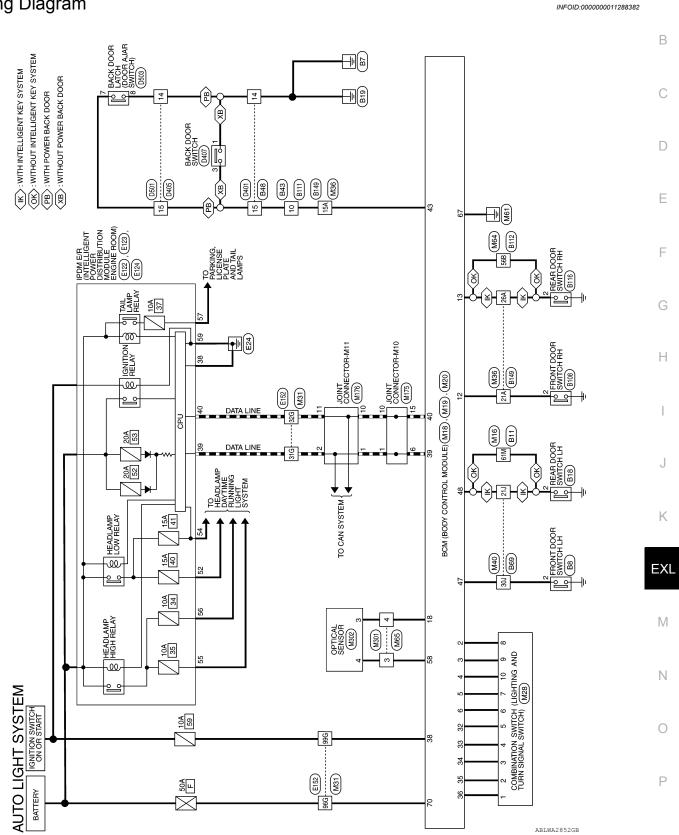
DAYTIME RUNNING LIGHT SYSTEM

E123 IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) BROWN	1 55 52	Signal Name	H/LAMP LO LH H/LAMP LO RH	H/LAMP HI LH	H/LAMP HI RH (WITH DAYTIME LIGHT SYSTEM)	:	Signal Name	1	1	1	ı	
	51 56 55 54	Color of Wire	L R/Y	G	>	Color of	Wire	٦	Ь	M/B	N/	
Connector No. Connector Name Connector Color	原動 H.S.	No.	52	22	26		l erminal No.	31G	32G	996	966	
Connector No. E122 Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM) Connector Color WHITE	(中) (42 41 40 88 38 37 44 43 48 43 48 43 48 43 48 43 48 48 48 48 48 48 48 48 48 48 48 48 48	al No. Color of Wire	38 B GND (SIGNAL) 39 L CAN-H	40 P CAN-L	44 BR DTRL RLY CONT	Connector No. F152	e		-		56 5c	10G 9G 8G 7G 2G 2G 2G 2G 2G 2G 2G
Connector No. E119 PDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) Connector Color WHITE	H.S.	Il No. Wire Signal N	10 G DIRL RLY SUPPLY			Connector No. E124		Connector Name POWER DISTRIBUTION	_	Connector Color BLACK		Terminal No. Color of Signal Name 59 B GND (POWER)

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AUTO LIGHT SYSTEM

Wiring Diagram



AUTO LIGHT SYSTEM CONNECTORS

Connector Name | WIRE TO WIRE

Connector No.

Connector Color WHITE

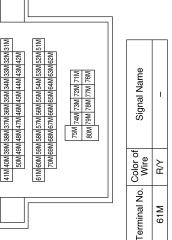
Signal Name		OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	IGN SW	CAN-H	CAN-I
Color of	Wire	R/G	R/Y	٦	O/B	B/W	M/L	٦	c
Terminal No Color of		32	33	34	35	36	38	39	70
Connector No. M18	Connector Name BCM (BODY CONTROL	MODÙLE)	Connector Color WHITE			H.S.		21 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	
o. M16	ame WIRE TO WIRE	olor WHITE			5M AM 9M 9M 1M	MZ M8 M8	MAC	21M 20M 19M 18M 17M 16M 15M 14M 13M 12M 11M	30M 29M 28M 27M 26M 25M 24M 23M 22M

_	⊕ 8	3									
	8 9 10 11 12 13 14 15 16 17 18 1 28 20 30 31 32 32 34 35 36 37 38 3		Signal Name	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	DOOR SW (AS)	DOOR SW (RR)	KEYLESS AND AUTO LIGHT SENSOR GND
	7	i	Color of Wire	SB	G/Y	Υ	G/B	۸	B/L	GR	Ь
原 H.S.	1 2 3 4 5 6	27	Terminal No.	2	က	4	5	9	12	13	18
		Г]							

CAN-L

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

Connector Name | BCM (BODY CONTROL MODULE)

M19

Connector No.

Connector Color WHITE





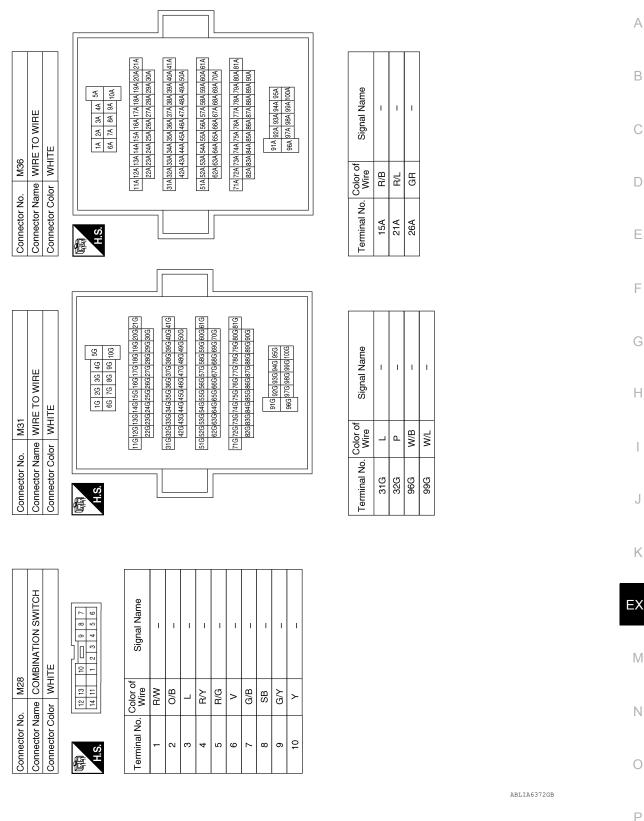
,		
BAT (F/L)	M/B	02
GND (POWEF	В	29
AUTO LIGHT SENSOR INPU	M/R	58
Signal Name	Color of Wire	Terminal No.

Signal Name	BACK DOOR SW	DOOR SW (DR)	DOOR SW (RL)
Color of Wire	B/B	SB	R/Y
erminal No.	43	47	48

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AUTO LIGHT SYSTEM

< WIRING DIAGRAM >



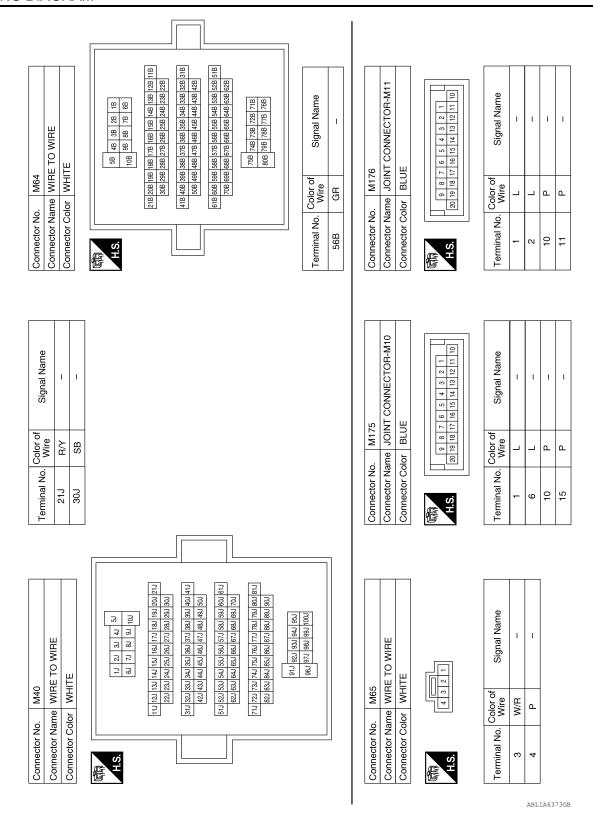
EXL-83 Revision: August 2014 2015 Armada NAM

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AUTO LIGHT SYSTEM



Connector No. M302	M302	Connector No. E122	E122
nnector Name	Connector Name OPTICAL SENSOR		IPDM E/R (INTELLIGENT
Connector Color WHITE	WHITE	Connector Name	Connector Name POWER DISTRIBUTION MODILIE FINGINE ROOM)
			(moo) - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
		Connector Color WHITE	WHITE

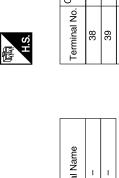
Connector Name | WIRE TO WIRE

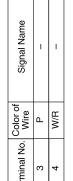
M301

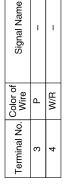
Connector No.

Connector Color WHITE

48 47 46 45 44 43	Signal Name	GND (SIGNAL)	CAN-H	CAN-L
24 84 14 74	Color of Wire	В	٦	Ь
H.S.	erminal No.	38	39	40







Color of Wire	Ь	H/M	
Terminal No.	3	4	

Signal Name	I	I	
Color of Wire	W/R	Ь	
Terminal No. Wire	3	4	

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

Connector Name Connector Color

E123

Connector No.

BROWN

Connector Color	S. H

Signal Name	TAIL LAMP	GND (POWER)	
Color of Wire	B/L	В	
Terminal No.	25	59	

Terminal No.

52 55 26

Signal Name	H/LAMP LO LH	H/LAMP LO RH	H/LAMP HI LH	H/LAMP HI RH (WITHOUT DAYTIME LIGHT SYSTEM)	H/LAMP HI RH (WITH DAYTIME LIGHT SYSTEM)
Color of Wire	_	R/Υ	9	N/	>

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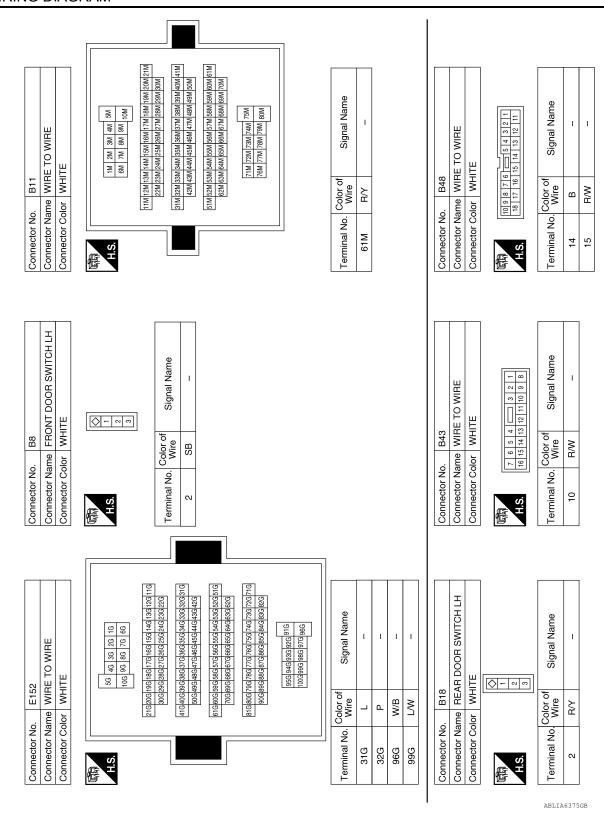
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	Signal Name	Signal Name	
me FRON	Color of Wire R/L	Color of Wire GR	
Connector No. Connector Name Connector Color	S Niminal No.	Terminal No. 56B	
Signal Name		18 122 38 48 58 68 78 89 308 708 58 58 508 508 508 508 508 508 508 508	
Sig		WIRE TO WIRE WHITE WHITE 18 28 48 48 68 78 68 73 68 28 248 288 248 288 248 288 248 288 248 288 248 288 248 288 278 288 288 288 288 288 288 288 28	
O. Color of Wire R/Y		No. B112 Color WHITE Color WHITE 18 228 238 24 228 238 24 228 238 24 788 64 778	
Terminal No. 21J 30J		Connector No. Connector Name Connector Color Tile Sile Sile	
O WIRE	54 41 31 21 11 100 90 80 70 60 60 70 60 210 200 190 180 770 260 250 250 250 300 250 250 277 250 250 250 250 250 410 400 350 380 377 350 350 350 350 500 450 450 450 450 450 450 450 700 650 650 577 650 650 650 650 650 700 650 650 677 650 650 650 650 650 810 800 850 877 850 850 650 650 650 810 800 850 877 850 850 650 650 650 810 800 850 877 850 850 650 650 650 810 800 850 877 850 850 650 650 650 810 800 850 877 850 850 650 650 810 800 850 877 850 850 650 650 810 800 850 877 850 850 650 650 810 800 850 877 850 850 650 650 810 800 850 877 850 850 650 650 810 810 870 870 870 870 810 810 870 870 870 870 810 810 870 870 870 810 810 870 870 870 810 810 870 870 870 810 810 870 870 870 810 810 870 870 810 810 870 870 810 810 870 870 810 810 870 870 810 810 870 870 810 810 870 870 810 810 870 870 810 810 870 810 810 870 810 810 870 810 810 870 810 810 870 810 810 870 810 810 870 810 810 870 810 810 870 810 810 870 810 810 870 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810 810	Section Signal Name Sign	
B69 WIRE T	100 1 181 181 181 181 181 181 181 181 18	WHRE TO WHITE IT	
No. Name Color	113 [14] [18]	No. Name WIR Name WIR Name WIR Name WIR Name WIR NAME NAME NAME NAME NAME NAME NAME NAME	
Connector No. B69 Connector Name WIRE TO WIRE Connector Color WHITE	SH	Connector No. B111 Connector Name WIRE TO WIRE Connector Color WHITE Terminal No. Wire Signs 10 RW	

		W 0				2	
Connector Color WHITE	Connector Color		TE TE		15A	B/W	1
_		-	1		21A	B/L	ı
				F	26A	GR	ı
1.S.	H.S.		5A 4A 3A 2A 1A 10A 9A 8A 7A 6A				
		21A 20A 19,	21A 20A 19A 18A 17A 16A 15A 14A 13A 12A 11A				
Terminal No. Wire Signal Name		41A 40A 39	41A 40A 39A 38A 37A 36A 35A 34A 33A 32A 31A				
2 GR –		50A 49	50A 49A 48A 47A 46A 45A 44A 43A 42A				
		61A 60A 59/ 70A 69/	61A 60A 59A 58A 57A 56A 55A 54A 53A 52A 51A 70A 69A 68A 67A 66A 65A 64A 63A 62A				
		81A 80A 79, 90A 89,	81A 80A 79A 78A 77A 76A 75A 74A 73A 72A 71A 90A 89A 88A 87A 86A 85A 84A 83A 82A				
		[0] -	95A 94A 93A 92A 91A 100A 99A 98A 97A 96A				
Connector No. D401	Connector No.	o. D405	10		Connector No.	. D407	
	Connector Name WIRE TO WIRE	ame WIR	E TO WIRE		Connector Na	me BACI	Connector Name BACK DOOR SWITCH
Connector Color WHIIE	Connector Color	olor WHITE	Щ		Connector Color	lor WHITE	Щ
1 2 3 4 5 6 7 8 9 10 1 1 2 13 14 15 16 17 18	原 H.S.	10 9 8 7 6	7 6 5 4 3 2 11 16 15 14 13 12 11		是 H.S.		
Terminal No. Color of Wire Signal Name	Terminal No.	Color of Wire	Signal Name		Terminal No.	Color of Wire	Signal Name
14 B –	14	В	1		-	В	1
15 R/W –	15	W/A	I		က	A/A	ı

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Connector No. D503 Connector Name BACK DOOR LATCH Connector Color WHITE		
Connector Name BACK DOOR LATCI Connector Color WHITE	Connector No.	D503
Connector Color WHITE	Connector Name	BACK DOOR LATCH
	Connector Color	WHITE





Signal N	I	1
Color of Wire	B/W	В
Terminal No.	7	8

Connector No.	D501
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color WHITE	WHITE
斯 H.S.	1 2 3 4 5 = 6 7 8 9 10 11 12 13 14 15 16 17 18

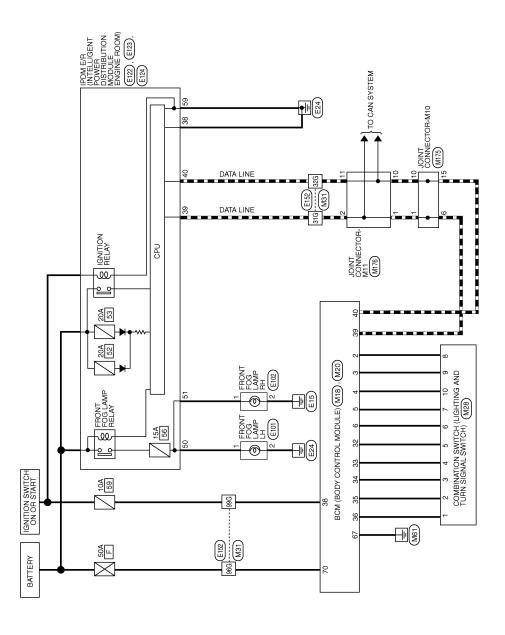


Signal Name	ı	1
Color of Wire	В	B/W
Terminal No.	14	15

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FRONT FOG LAMP SYSTEM

Wiring Diagram



FRONT FOG LAMP

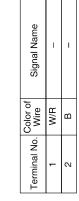
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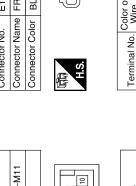
				ı															T															
	TO THE STATE OF TH	BCM (BODY CONTROL MODULE)			51 62 63 64	8 69 70				olgnal Name	GND (POWER)	BAT (F/L)			:	Signal Name	ı	ı	1	ı														
			or BLACK		56 57 58 59 60 61 62 63 64	9 29 99 99			Color of	Wire	В	M/B			Color of	Wire	_	<u>а</u>	M/B	M/L														
	Connector No.	Connector Name	Connector Color			H.S.	Ī			l erminal No.	29	20				S	31G	32G	996	966														
							•												ſ														\exists	
	ame	-5	4	.3	-2		T 5	T 4	Т3	T 2	Т1	×	ı							56	90	319G20G21G	250000	339G40G41G	1	359G 60G 61G	1696 /06	379G80G81G	3896 906	Ş	00 30			
	Signal Name	INPUT 5	4 INPUT 4	INPUT 3	INPUT 2	INPUT 1	OUTPUT	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	MS NDI	CAN-H	CAN-L		TO WIRE	 	J		16 26 36 46 56	96 76 86 96 106	11G12G13G14G15G16G17G18G19G20G21G	1962060061060	31G32G33G34G35G36G37G38G39G40G41G	1	51G 52G 53G 54G 55G 56G 57G 58G 59G 60G 61G	62G63G64G65G66G67G68G69G70G	71G72G73G74G75G76G77G78G79G80G81G	4G85G86G87G88	916 000 000 000	ose 976 986 996 1006	1		
	Color of Wire	SB	G/Y	>	G/B	>	B/G	₽/A	T	O/B	B/W	M/L	_	<u>م</u>	o. M31	ame WIRE	olor WHITE	_				1161261361	200202	31G32G33G3		51G52G53G5	956959	7167267367	82G83G8					
	Terminal No.	2	ε	4	5	9	32	33	34	32	36	38	39	40	Connector No.	Connector Name WIRE TO WIRE	Connector Color			O I	: :													
ဟ				1					3 39 40																			1	ı			ı	٦	
FRONT FOG LAMP CONNECTORS	COLLINGO	BCM (BODY CONTROL MODULE)	12						9 10 11 12 13 14 15 16 17 18 19 29 30 31 32 33 34 35 36 37 38 39							COMBINATION SWITCH		1		1 2 3 4 5 6		Signal Name	1	1	1	1	ı	I	ı	1	1	ı		E
LAMP		ame BCM MOD	olor WHITE					Ť.	7 28						W W	_	_	_	П	12 13		Color of Wire	W/A	0/B	_	Ρ/A	R/G	>	G/B	SB	G/Y	>		
ONT FOG	Connector No.	Connector Name	Connector Color		僵	H.S.			21 22 23 24 25 26 2						Connector No	Connector Name	Connector Color		E		Ö.	Terminal No.	-	2	က	4	2	9	7	8	6	10		
Η̈́																														AB	LIA4	1240	ЗВ	

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Connector No. E101	Connector Name FRONT FOG LAMP LH	Connector Color BLACK
	CTOR-M11	



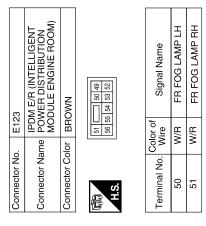




		1					Г
onnector Name JOINT CONNECTOR-M11	JE JE		20 19 18 77 6 5 4 3 2 1	Signal Name	-	-	
me JOI	lor BLUE		9 8 20 19 18	Color of Wire	_	٦	۵
onnector Na	onnector Color		H.S.	erminal No.	-	2	40

9,	JOINT CONNECTOR	E E		7 6 5 4 3 2 1	17 16 15 14 13 12 11		Signal Nam	ı	1	_	ı
. M176		lor BLUE		8	20 19 18		Color of Wire	_	_	Ь	Д
Connector No.	Connector Name	Connector Color			S.	<u>-</u>	Terminal No.	1	2	10	11
	•	•	' '								

.5	Connector Name JOINT CONNECTOR-M10	JE		7 6 5 4 3 2 1	20 19 18 17 16 15 14 13 12 11 10	Signal Name	ı	1	ı	1
. M175	me JOI	lor BLUE		8	20 19 18	Color of Wire	_	٦	Д	۵
Connector No.	Connector Na	Connector Color			S. S.	Terminal No.	-	9	10	15

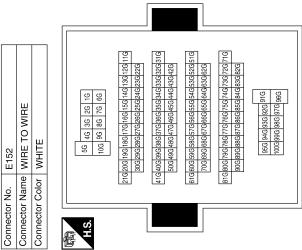


72	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	WHITE	40 39 38 37 46 45 44 43	Signal Name	GND (SIGNAL)	CAN-H	CAN-L
. E122		_	42 41 48 47	Color of Wire	В	_	Ъ
Connector No.	Connector Name	Connector Color	哥 H.S.	Terminal No.	38	39	40

20	FRONT FOG LAMP RH	BLACK		Signal Name	ı	_
. E102				Color of Wire	W/R	В
Connector No.	Connector Name	Connector Color	原面 H.S.	Terminal No.	1	7

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Signal Name	I	1	1	1
Color of Wire	_	۵	M/B	M
Terminal No. Wire	31G	32G	96G	966



Connector No.	F124	4
Connector Name		IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	lor BLACK	ÇK
咸南 H.S.	الساسا	09 19 29 <u>75 88 65</u>
Terminal No.	Color of Wire	Signal Name
59	В	GND (POWER)

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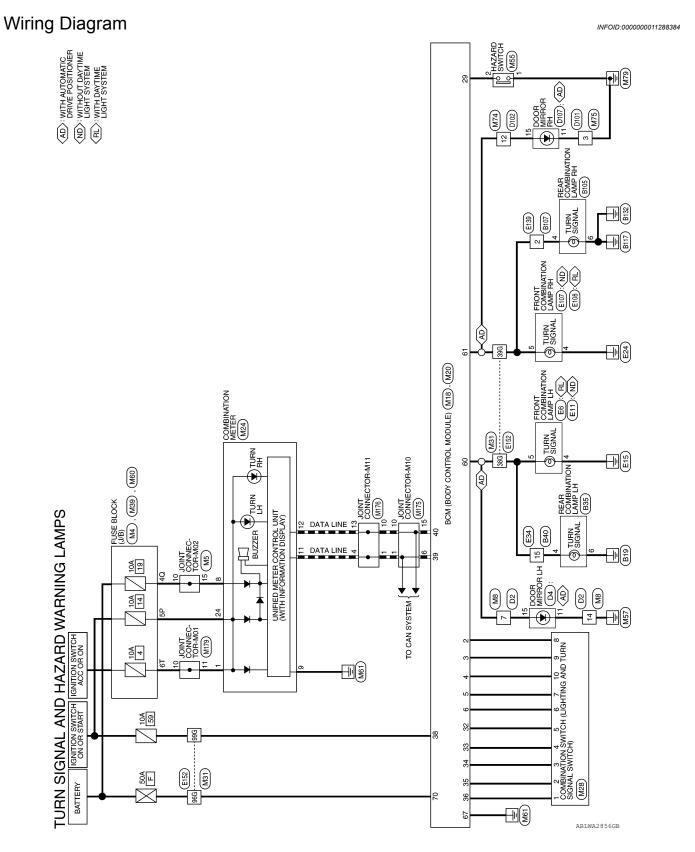
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Connector Name WIRE TO WIRE Connector Color WHITE

M8

Connector No.

TURN SIGNAL AND HAZARD WARNING LAMPS CONNECTORS

	J/B)	
M4	FUSE BLOCK (WHITE
Connector No.	Connector Name FUSE BLOCK (J/B)	Connector Color

	M4		Connect
$\overline{}$	FUSE BLOCK (J/B)		Connect
	WHITE		Connect
l		_	
ΠΘ	6P 5P 4P 3P 2P 1P		E S
1221	5P14P13P12P11P10P 9P 8P		H.S.
1			



2	Connector Name JOINT CONNECTOR-M02	-UE	20 19 18 17 16 15 14 13 12 11 10	of Signal Name	ı
o. M5	ame JC	olor B	07 07 18 18 18	Color o Wire	Y/R
Connector No.	Connector Na	Connector Color BLUE	H.S.	Terminal No. Wire	10
	nnector Name FUSE BLOCK (J/B)	11	8P 5P 44P	Signal Name	-
M4	e FUSI	r WHI	7P 6P 5P 4P 6P 13P 4P 14P 13P 4P 14P 13P 4P 14P 14P 14P 14P 14P 14P 14P 14P 14P	Solor of Wire	O/L
nector No.	nector Nam	nector Color WHITE	.S.	rminal No. Wire	5P

Signal Name	-	1	
Color of Wire	G/B	В	
Terminal No.	7	14	

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M20	BCM (BODY MODULE)	BLACK	
Connector No.	Connector Name BCM (BODY MODULE)	Connector Color	

BCM (BODY CONTROL MODULE)	BLACK	F66 57 58 59 60 61 62 63 64 70 10	Signal Name	FLASHER OUTPUT (LEFT)	FLASHER OUTPUT (RIGHT)	GND (POWER)	
		56 57 58 65 66	Color of Wire	G/B	G/Y	В	
Connector Name	Connector Color	明.S.	Terminal No.	09	61	29	

Signal Name	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	HAZARD SW	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	IGN SW	CAN-H	CAN-L
Color of Wire	SB	GΛ	Y	G/B	۸	M/B	R/G	R/Y	7	O/B	R/W	W/L	L	Р
Terminal No.	2	က	4	2	9	59	35	88	34	32	98	88	68	40

	Ŏ	Connector No.) Š	ᅙ	Ž	· 0		Σ	M18											
	ΙŎ	Connector Name) je	[호	Ž	au		ΜŽ	등등	BCM (BOE MODULE)	ĮŽΨ	≿_	Ö	S	BCM (BODY CONTROL MODULE)	١Ē				
	ŭ	Connector Color	ĕ	5	Q	응	Ē		₹	WHITE	l									
		E.S.	Ø					i ii		IN	IV	17								
_	-	2	3	4	2	9	7	8	6	9	Ξ	10 11 12 13	13	14	14 15 16 17 18 19	91	17	18	9	20
	21	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	23	24	25	56	27	88	62	8	3	33	33	34	35	æ	37	æ	೫	8

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Connector Color WHITE Connector Color WHITE H.S. 20 19 18 17 16 15 14 13 12 11 10 10 10 19 18 17 16 15 14 13 12 11 10 10 10 19 18 17 16 15 19 18 13 13 13 13 13 13 13 13 13 13 13 13 13		N rotograph N	One Name	Connector Name COMBINATION SWITCH	Terminal No.	Wire	Signal Name
1 1 1 1 1 1 1 1 1 1	COMBINATION METER	Connector Color	olor WHITE	EDIIVA IION SWITCH	2	B/G	ı
16 15 14 13 12 11 10 88 83 33 32 31 30			- 1		9	۸	I
3 12			13	6	7	G/B	ı
16 15 14 13 12 11 10 36 35 34 33 32 31 30		N H	14 11	1 2 3 4 5 6	8	SB	I
16 15 14 13 12 11 10 36 35 34 33 32 31 30	7				6	G/Y	-
	9 8 7 6 5 4 3 2 1 29 28 27 26 25 24 23 22 21	Terminal No.	Color of Wire	Signal Name	10	٨	1
<u>_</u>	ome N leave	-	R/W	ı			
Wire	Olyllal Ivalile	2	0/B	1			
	ACCESSORY	ဧ	_	1			
Y/R B	BATTERY	4	₽	1			
В	GND						
	CAN-H						
۵	CAN-L						
O/L RI	RUN/START						
			-				
Connector No. M31	MIRE	Terminal No.	Color of Wire	Signal Name	Connector Name		M39 FISE BLOCK (I/B)
Connector Color WHITE		38G	G/B	1	Connector Color	-	SE BLUCK (J/B)
_		39G	G/Y	1		-	4
		96G	W/B	1		2	[0
	Ţ	966	M/L	1		08 07 07	80 70 60 50 40
16 26 66 76	3 86 96 106				Y H.S.		
11G12G13G14G15G 22G23G24G25G	116 126 136 146 156 166 170 186 190 200 216 226 236 246 256 276 266 276 286 296 296 206 276 286 276				Terminal No.	Color of Wire	Signal Name
31G 32G 33G 34G 35G	31G32C33G34G35C36C37C38C39C40C41G				40	Y/R	ı
519529539549559	51G52G53G54G55G56G57G58G59G60G61G						
62G 63G 64G 65G	6296336496596666736896703						
71G72G73G74G75G76G77G78G 82G83G84G85G86G87G88G	71G72G73G74G75G76G777G78G79G80G81G 82G83G84G85G86G87G88G89G90G						
916	(6 936 946 956						
96G 970	96G 97G 98G 99G 100G						

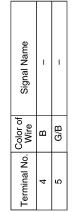
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MYA WIRE TO WIRE BROWN Signal Name Wire JAY WI76 JOINT CONNECTOR-M11 BLUE L L L L L P P P P P P P P	С
	D
Connector No. M74	Е
	F
3/B) Name Name Name	G
Signal S	Н
Name FUSE Color of WHTE Color of Whire Color of Wire Color of Color	I
Connector No. Connector Name Connector Name Forminal No. Connector Name Connector Name Connector Name Connector Name Connector No. Terminal No. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	J
	K
Signal Name Signal Name	EXL
	M
Connector No. M55 Connector Name HAZARI Connector Color WHITE Terminal No. Wire Connector Name WIRE T Connector Color MHITE Connector Color MHITE Terminal No. Wire A.S. A.S.	N
Connector No. Terminal No. A.S. Terminal No. 3	0
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Connector No.	E11
Connector Name	FRONT COMBINATION LAMP LH (WITHOUT DAYTIME LIGHT SYSTEM)
Connector Color BLACK	BLACK









BLACK

Connector Color



Signal Name	I	Ι
Color of Wire	В	G/Y
Terminal No.	4	5

E6	Connector Name LAMP LH (WITH DAYTIME LIGHT SYSTEM)	BLACK	
Connector No.	Connector Name	Connector Color BLACK	





Signal Name	I	I
Color of Wire	В	G/B
Terminal No.	4	2

No. E107	Connector Name LAMP RH (WITHOUT DAYTIME LIGHT SYSTEM)	Color BLACK	
Connector No.	Connector Name	Connector Color BLACK	



Signal Narr	ı	ı
Color of Wire	В	G/Y
erminal No.	4	2

Connector No.		M179						
Connector Name JOINT CONNECTOR-M01	Name	JOINT	8	Z		12	R-MC	_
Connector Color GREEN	Color	GREE	z					
	Ŀ							_
	<u> </u>	8 7	6 5	4	3	2	_	_
S.	20 1	20 19 18 17 16 15 14 13 12 11	16	4	13	12	1 10	
								_

Signal Name	1	I
Color of Wire	0	0
Terminal No. Wire	10	11

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				l	-	2	I
				I	7	24 23 22 21 20 19 18 17 16 15 14 13 12	Ш
				I	က	14	Ш
				I	4	15	Ш
	뮖			I	2	16	Ш
	₹			I	9	17	Ш
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Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE			Ξ	24	Ш
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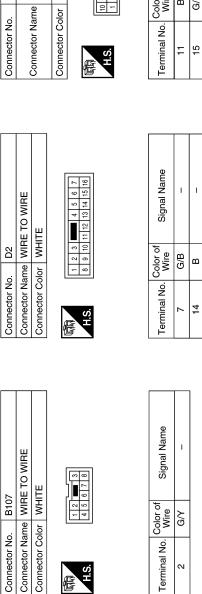
G/B
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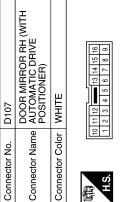
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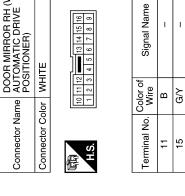
Signal Name	_	ı	ı	ı	NON NON		Signal Name	1	1		
Wire Signal	G/B	G/Y	W/B	L/W	B105 B REAR COMBINATION LAMP RH BLACK	4 10 0	Color of Signal Wire	G/Y	В		
Terminal No.	38G	39G	96G	966	Connector No. Connector Name Connector Color	H.S.	Terminal No.	4	9		
			ſг								
E132 WIRE TO WIRE					100 90 90 10 10 10 10 10	1	Signal Name	ı			
	_	-		[100 96 17 100 96 17 100 96 17 100 96 17 100 96 17 100 96 17 100 96 17 100 96 17 100 96 17 100 96 17 100 96 17 100 96 96 96 96 96 96 96	13 14 5 16 16 16 16 16 16 16 16 16 16 16 16 16	Color of Wire	G/B			
Connector Name	Connector Color		•	NEW TO	1.8. 100	ø;	Terminal No.	15			
	1	_								1	
= TO WIRE		!	F	1 4 4	r of Signal Name Y		Signal Name	ı	ı		
ame WIRF	olor WHITE		נ' [[0 a		4 6 9	Color of Wire	G/B	В		
Connector Name WIBE TO WIBE	Connector Color				Terminal No. Colonnector No. Connector Name Connector No. Connector Colon	所 H.S.	Terminal No.	4	9		
							AE	BLIA	6954G	GB.	

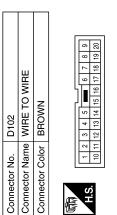
	Connector No. D4	D4
WIRE	Connector Name (DOOR MIRROR LH (WITH AUTOMATIC DRIVE POSITIONER)
	Connector Color WHITE	WHITE
7 8 7		

4 5 6 7 8 9	Signal Name	-	1
10 11 12 1 2 3	Color of Wire	В	G/B
H.S.	Ferminal No. Wire	11	15





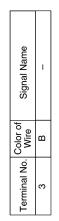




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18		Signal Name	1
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15		0)	
10 11 12 13 14 15 16 17 18 19 20			
13		_	
12		color c Wire	Ğζ
11		Color of Wire	ဖြ
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2		≒	12
1		Terminal No.	
7			

Connector No.	D101
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color WHITE	WHITE
H.S.	1 2 mm 3 4 5 6 7 8 9 10



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PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM Α Wiring Diagram INFOID:0000000011288385 IPDM E/R (INTELLIGENT POWENTRIBUTION MODULE ENGINE ROOM) JOINT CONNECTOR-M10 (M175) JOINT CONNECTOR-M11 (M176) ⟨ND⟩ : WITHOUT DAYTIME LIGHT SYSTEM ⟨RL⟩ : WITH DAYTIME LIGHT SYSTEM В С M31 D 6 IGNITION RELAY TO CAN SYSTEM {◀ Е CPU F 20A FRONT COMBINATION LAMP RH (E107): (ND) 20A PARKING - [ES] COMBINATION LAMP RH B130 Н TAIL LAMP RELAY E139 B107 TAIL 10A ھ <u></u> REAR COMBINATION LAMP LH (B70) J (B40) @ TAIL LAMP PARKING, LICENSE PLATE AND TAIL LAMPS FRONT COMBINATION LAMP LH E6 : RL K නු 💻 PARKING EXL BCM (BODY CONTROL MODULE) (M18), (M20) M COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) Ν IGNITION SWITCH ON OR START 10A 0 M31 50A BATTERY Р

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PARKING, LICENSE PLATE AND TAIL LAMPS CONNECTORS

Connector No. M20 Connector Name BCM (BODY CONTROL	\rightarrow	Connector Color BLACK		56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	H.S.			Terminal No Color of Signal Name	wire	B G	70 W/B BAT (F/L)			Terminal No. Color of Signal Name	31G L –	32G P –	96G W/B –	- M/L – 966												
				2		15	T 4			T1	N			Ter				56		196206216	29G30G	39G40G41G	49G 50G	59G60G61G	699709	79G80G81G	896908		20	200
No. Wire Signal Name	SB INPUT 5	G/Y INPUT 4	Y NPUT3	G/B NPUT 2	V NPUT 1	R/G OUTPUT	R/Y OUTPUT 4	L OUTPUT 3	O/B OUTPUT 2	R/W OUTPUT 1	M/L IGN SW	L CAN-H	P CAN-L			Color WHILE		16 26 36 46	66 76 86 96 106	116126136146156166176186196206216	22G23G24G25G26G27G28G29G30G	31G32G33G34G35G36G37G38G39G40G41G	42G43G44G45G46G47G48G49G50G	519 529 539 549 559 569 579 589 599 609 619	62G 63G 64G 65G 66G 67G 68G 69G 70G	7197297896806816	82G83G84G85G86G87G88G89G90G		916 926 936 946 956	96G 97G 98G 99G 100G
Terminal No. Color of Sign	2	8	4	5	9	32		38 39 40 34	3]	36	38	39	40			COLUMECTOL COLOR		UI												
	MODULE)	olor WHITE						6 7 8 9 10 11 12 13 14 15 16 17 38 37 38 38 38 38 38 38 38 38 38 38 38 38 38	00 70 10 00 67 07 17					M28		ior WHITE		14 11 1 2 3 4 5 6		Color of Signal Name	R/W –	O/B		B/Y –	R/G –	^	G/B –	SB -	G/Y –	→
Connector No. M18	Connector Name	Connector Color		僵	H.S.			21 22 3 4 5	C7 L7 C7					Connector No.	Connector Name	Connector Color	E		6	Terminal No.	-	2	က	4	5	9	7	8	O ABL	O IA41300

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

< WIRING DIAGRAM >

Connector No. E6 FRONT COMBINATION Connector Name LAMP LH (WITH DAYTIME LIGHT SYSTEM)	Connector Color BLACK The state of the stat	Color of Wire B	- L/L 0	Connector No. E41 Connector Name WIRE TO WIRE Connector Color GRAY	10 20 30 40 50 50 60 110		Terminal No. Wire Signal Name 45C B -
Connector No. M176 Connector Name JOINT CONNECTOR-M11 Connector Color BLUE	(所) (20 19 16 17 16 15 14 13 12 11 10	Terminal No. Wire Signal Name 1 L	10 P -	Connector No. E34 Connector Name WIRE TO WIRE Connector Color WHITE	H.S. [11 10 9 8 7 10 6 5 4 3 2 1	Terminal No. Color of Signal Name	
Connector No. M175 Connector Name JOINT CONNECTOR-M10 Connector Color BLUE	HS. (20 19 18 77 16 15 14 13 12 11 10	Terminal No. Color of Wire Signal Name 1 L - 6 L -	10 P – 15 P – 1		Connector Color BLACK H.S. 4 5 6	Terminal No. Color of Wire Signal Name 4 B - 6 R/L -	

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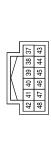
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Revision: August 2014 EXL-103 2015 Armada NAM

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color WHITE	WHITE



Signal Name	GND (SIGNAL)	CAN-H	CAN-L
Color of Wire	В	٦	Ь
Terminal No.	38	39	40



FRONT COMBINATION LAMP RH (WITHOUT DAYTIME LIGHT SYSTEM)

Connector Name Connector Color

E107

Connector No.

BLACK

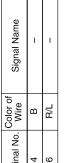




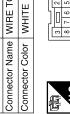




Signal Name	1	1
Color of Wire	В	R/L
Terminal No.	4	9



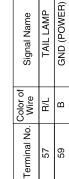




B/L	
Color of Signal Na	Terminal No.

4	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	CK	
Connector No. E124	Connector Name PO\ MO	Connector Color BLACK	





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PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

< WIRING DIAGRAM >

Connector No. C1	Connector No. C106	A B C D
Signal Name	C101 WIRE TO WIRE GRAY or of Signal Name	G H
Color of Color of 31G	Connector No. C101 Connector Name WIRE TO Connector Color GRAY H.S. Color of S S C C C Terminal No. Wire S S B C C Terminal No. Wire S S B C C C C Terminal No. Wire S C C C C C C Terminal No. Wire S C C C C C C Terminal No. Wire S C C C C C C C Terminal No. Wire S C C C C C C Terminal No. Wire S C C C C C C Terminal No. Wire S C C C C C C Terminal No. Wire S C C C C C C Terminal No. Wire S C C C C C C Terminal No. Wire S C C C C C C Terminal No. Wire S C C C C C C C Terminal No. Wire S C C C C C C C C C	J
1306 220 510 820 820 820 820 820 820 820 820 820 82	Φ.	K
Connector No. E152	Connector No. C3 Connector Name WIRE TO WIRE Connector Color of RAY H.S. (4 3 2 1) (4 3 2 1) (8 7 6 5) Terminal No. Wire 1 R/L 5 B	M
Connector Name Connector Color H.S. #10	Connector No. Connector Name Connector Name Terminal No. A.S. A.S. ABRITA13108	0

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

B70 REAR COMBINATION LAMP LH BLACK	Signal Name			
	Color of Wire Wire B/L B			
Connector No. Connector Name Connector Color H.S.	Terminal No.			
No. B40 Name WIRE TO WIRE Color WHITE 1 2 3 4 5 6 6 6 7 8 9 10 11 1 12 13 14 15 16 17 18 19 20 21 22 23 24	Signal Name	B130 REAR COMBINATION LAMP RH	¥	Signal Name
B40 me WIRE T llor WHITE 2 3 4 5 6 13 14 15 16 17	Color of Wire R/L		or BLACK	Color of Wire R/L B
Connector No. Connector Color Connector Color L.S. T. 2 3 H.S.	Terminal No.	Connector No.	Connector Color 師	Terminal No.
C107 LICENSE PLATE LAMP RH GRAY	Signal Name	TO WIRE		Signal Name
	Color of Wire B/L B	B107 ne WIRE T		Color of Wire R/L
Connector No. Connector Color H.S.	Terminal No.	Connector No. B107 Connector Name WIRE TO WIRE Connector Color WHITE	H.S.	Terminal No. 7

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STOP LAMP

Wiring Diagram

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SEG STOP LAMP

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	Connector No. E12 Connector Name STOP LAMP RELAY Connector Color BLACK	H.S.	Terminal No. Wire Signal Name		3 R/G – 4 R/B –							
	Connector No. M60 Connector Name FUSE BLOCK (J/B) Connector Color WHITE	(項) <u>27 (二) 17</u> (F)	Terminal No. Color of Signal Name 1T R/V -						Connector No. E38 Connector Name STOP LAMP SWITCH Connector Color BLACK	H.S.	Terminal No. Color of Signal Name	1 R/Y – 2 R/G –
STOP LAMP CONNECTORS	Connector No. M31 Connector Name WIRE TO WIRE Connector Color WHITE	H.S. 66 76 86 96 106	11.6 126 136 146 156 166 176 196 196 206 216 	420430440450460470480490500	51GEZGGSGEAGESGEAGESGEAGESGEGEGEGEGEGEGEGEGEG	719729739749759779789799809819	91G 2002 3002 3005 300	Terminal No. Wire Signal Name 36G R/Y –	Connector No. E34 Connector Name WIRE TO WIRE Connector Color WHITE	[研 124 23 22 21 20 19 18 17 16 15 14 13 12] H.S.	Terminal No.	13 PA B

		А
139(126) 119(126) 129(226) 129	N O e	В
E152 WHITE TO WIRE TO WIRE 16 16 16 16 16 16 16 1	B70 LAMP LH BLACK 1 Signal Name B Signal Name B	С
Color of	- - -	D
Connector No. Connector Name Connector Color H.S. H.S. A10 810 810 810 810 810 810 810	Connector No. Connector Color Terminal No. Color 3 B	Е
		F
lame	Name	G
WIRE TO WIRE WHITE Story Signal Name B	Signal I	Н
	No. B48 Name WIRE T Color WHITE 10 9 8 7 6 14 17 16 16 17 16 17 16 18 17 16 19 17 16 10 10 10 10 10 10 10 10	I
Connector No. Connector Color Terminal No. Color 8 R	Connector Name Connector Color Terminal No. Color Terminal No.	J
		K
ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) BLACK 42 41 40 39 37 78 78 74 74 74 74 74 7	3 WIRE 7 8 9 10 11 18 19 20 21 22 23 24 24 24 24 24 24 24 24 24 24 24 24 24	EXI
## PE 125 ABS ACTUATA ABS ACTUATA BLACK ## # # # # # # ## #	TT HE TC	M
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Ν
Connector No. Connector College Connector No.	Connector Name Connector Color Connector Color H.S. 12 13 Co	0
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onnector No. B107	107	Connector No. B130	. B130		Connector No. D401	. D401		
Connector Name WIRE TO W	/IRE TO WIRE	Connector Na	me REA	Connector Name REAR COMBINATION	Connector Name WIRE TO WIRE	me WIRI	E TO WIRE	
Connector Color WHITE	HITE		LAM	LAMP RH	Connector Color WHITE	lor WHI	빝	
		Connector Color BLACK	ilor BLA	OK			!	7
	4 1 2 8 8 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	H.S.			H.S.	1 2 3 4 5 6 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13 14 15 16 17 18	
Terminal No. Wire	of Signal Name	Color of Wire	Color of Wire	Signal Name	Color of Terminal No. Wire	Color of Wire	Signal Name	
B/B	ı	-	B/B	1	13	B/B	1	_
		က	В	1	14	B	ı	1

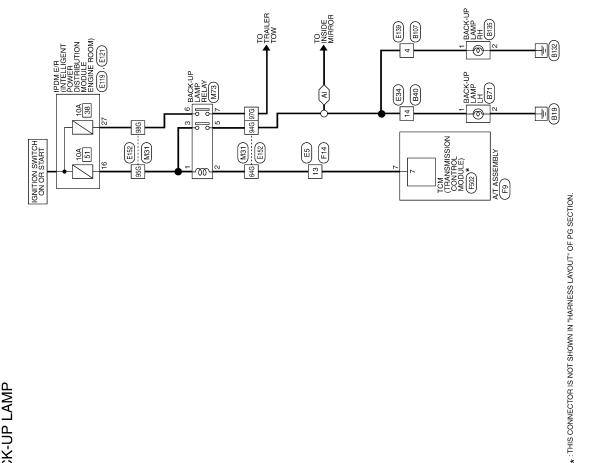
2	HIGH-MOUNTED STOP LAMP	AY		Signal Name	I	1
2		lor GR,		Color of Wire	R/B	В
	Connector Name	Connector Color GRAY	所 H.S.	Terminal No.	-	2

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BACK-UP LAMP

Wiring Diagram

(AI): WITH AUTO ANTI-DAZZLING INSIDE MIRROR



BACK-UP LAMP

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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) REVERSE LAMP Connector Name BACK-UP LAMP RELAY Signal Name Signal Name 9 8 7 6 5 4 3 18 17 16 15 14 13 12 11 10 Connector Color BROWN Connector Color WHITE Connector No. M73 Color of Wire Color of Wire M/B Ω. Y/R G α Connector Name Connector No. Terminal No. Terminal No. 16 က Ŋ 9 H.S. Signal Name Signal Name Connector Name | WIRE TO WIRE Connector Color WHITE Color of Wire G/W Y/R G/W W/B Œ ഗ Connector No. Terminal No. Terminal No. 64G 95G 97G 98G 94G 4 偃 11G12G13G14G15G16G17G18G19G20G21G 22G23G24G25G28G27G28G29G30G 51G52G53G54G55G56G57G58G59G60G61G 62G63G64G65G66G7G68G69G70G 71G72G73G74G75G77G77G79G79G80G81G 82G83G84G85G86G87G88G89G90G 31G 32G 33G 34G 35G 36G 37G 38G 39G 40G 41 42G 43G 44G 45G 46G 47G 48G 49G 50G BACK-UP LAMP CONNECTORS 91G 92G 93G 94G 95G 96G 97G 98G 99G 100G Signal Name 16 26 36 46 ⁵⁶ 66 76 86 96 106 Connector No. M31 Connector Name WIRE TO WIRE Connector Name | WIRE TO WIRE Connector Color WHITE Connector Color WHITE Color of Wire E2 α Connector No. Terminal No. 5 H.S. H.S. 僵 偃

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		Connector No. F9 Connector Name A/T ASSEMBLY Connector Color GREEN H.S. Signal Name 7 R R — —	A B C D
O WIRE	Signal Name	Signal Name	G
Connector No. E139 Connector Name WIRE TO WIRE Connector Color WHITE 3 2 1 3 5 4 1.5.	No. Color of Wire G/W	No. Wire G/W B W/W G/W B W/W B	I
Connector No. Connector Color Connector Color	Terminal No.	Terminal No. 94G 94G 95G 95G 98G	J
F No. E121 IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) Color BROWN [29 28	No. Wire Signal Name W/B TTOW REV LAMP	State	K EXI M
Connector No. Connector Name Connector Color HS.	Terminal No.	Connector No. Connector Name Connect	0
			Р

Connector No. B40 Connector Name WIRE TO WIRE Connector Color WHITE To a 4 5 6 7 8 9 10 11 To a 4 5 6 7 8 9 10 11 H.S. To a 4 5 6 7 8 9 10 11 To a 4 5 6 7 8 9 10 11 To a 4 5 6 7 8 9 10 11 To a 4 5 6 7 8 9 10 11	Color of Signal Name G/W –	Connector No. B135 Connector Name BACK-UP LAMP RH Connector Color BLACK	Color of Signal Name
VSMISSION MODULE)	Signal Name TEV LAMP RLY 14		Tall H.S. Terminal No. Color of Wire
Connector Name TCM (TRAI Connector Color GRAY MAS Tol 9 8 7 6 5	Terminal No. Color of Sig	Connector No. B107 Connector Name WIRE TO WIRE Connector Color WHITE	H.S. Color of Terminal No. Wire Signature
Connector No. F14 Connector Name WIRE TO WIRE Connector Color WHITE Til 10 9 8 7 6 8 4 8 2 1 1 2 2 2 1 20 19 18 17 16 15 14 13 12 H.S.	Terminal No. Color of Wire Signal Name	Connector No. B71 Connector Name BACK-UP LAMP LH Connector Color BLACK	H.S. Color of Signal Name

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G/W В

Ø/W

G/W m

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TRAILER TOW Α Wiring Diagram INFOID:0000000011288388 FUSE BLOCK (J/B) (M60) M6 ETO TO BACK-UP LAMP В ELECTRIC BRAKE (M76) (PRE-WIRING) M31 10A С <u>-∏</u>(29) D 15A 60 TRAILER C2 Е 8 -[위 | RECEPTACLE (C15) ပ္ပ 170 4 (170 E41 F IPDM E/R (INTELLIGENT DISTRIBUTION MODULE ENGINE ROOM) (E119), (E122), (E123), (E123) ပ္တ [4] TRAILER TURN RELAY RH (E157) <u>ي -</u> 10A Н 10A 36 -[][[9] 10A TAIL LAMP J JOINT CONNECTOR-M10 (M175) <u>_</u> Κ M31 E152 DATA LINE M20 ىلە EXL CPU DATA LINE (M19) 20A 53 BCM (BODY CONTROL MODULE) (M18), M 2 3 4 5 6 7 10 COMBINATION SWITCH (LIGHTING AND TURN SIGNAL SWITCH) (M28) 20A 52 Ν IGNITION SWITCH ON OR START 8 TRAILER TOW 0 M31 50A BATTERY Р <u>-[]</u>

TRAILER TOW CONNECTORS

Connector No.	M6
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color	WHITE

Connector Name | BCM (BODY CONTROL | MODULE)

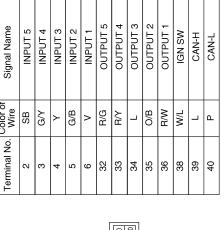
M18

Connector No.

Connector Color WHITE



Signal Name	Î	1	1
Color of Wire	BR/W	R/G	В
Terminal No.	3	4	6



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			38
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		9	56
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		4	24
		က	ន
E E S:		2	22
		-	21

Signal Name	ı	I	-
Color of Wire	BR/W	R/G	В
Terminal No.	3	4	6

M28	Connector Name COMBINATION SWITCH	WHITE	
Connector No.	Connector Name	Connector Color WHITE	



Con	Con	

12 13

	BCM (BODY CONTROL MODULE)	OK	56 57 58 59 60 61 62 63 64 8 6 7 6 8 69 70	Signal Name	GND (POWER)	BAT (F/L)
. M20		lor BLACK	56 57	Color of Wire	В	M/B
Connector No.	Connector Name	Connector Color	原 H.S.	Terminal No.	29	70

Signal Name

Color of Wire

Terminal No.

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R/G

G/B

G/Y

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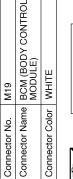
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Connector No. M51	Connector Color BLIF	_		±	2 7 1			Tomisol Nia Color of Cianal Mana	leililia No. Wire		3 BR	رى ا	-				Terminal No. Color of Wire	1 B	2 R/G	3 BR/W –	4 R/L –	5 R								A B C D
Signal Name	1	ı	ı	ı	1	1	ı	ı	-	ı							דייא ממי יימדי	(PRE-WIRING)	щ		2	1 3 4 5								F G
Terminal No. Wire		32G P	36G R/Y	47G R/L	57G G/B	58G Y/B	92G R	93G BR	96G W/B	96G W/L							Connector No. M76		Connector Color WHITE			S.								l
				26	100	2	3G19G20G21G	36296306	39399409419	3G 49G 50G	19899609616		IG 89G 90G	95G	1006									me					ı	K
Connector No. M31	Connector Color WHITE	_		76 76	66 76 86 96 106		116126136146156166176186196206216	226 236 246 256 266 276 28	316 326 336 346 356 366 376 386 396 406 416	42643644645646647648	51G52G53G54G55G56G57G58G59G60G61G		71672G73G74G75G76G77G78G79G80G81G 82G83G84G85G86G87G88G89G90G	916 926 936 946 956	96G 97G 98G 93G 100G		ctor No. M60	Connector Color WHITE	_		27 11	61 51 41 31	Color of)						M
Connector No.	Connect		£		6.11												Connector No.	Connec				Ġ.		Terminal No.	11	ABLIA	6386G	Β		О Р



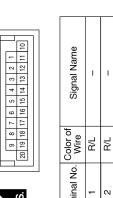
Connector Name | JOINT CONNECTOR-M10

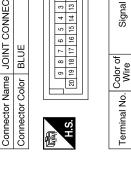
M175

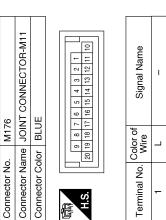
Connector No.

BLUE

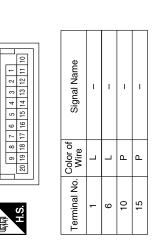
Connector Color

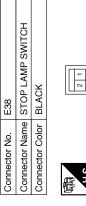


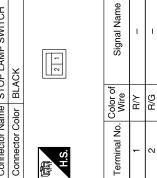


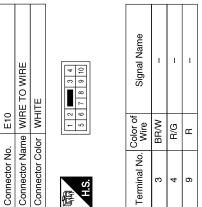


Color of Wire Wire 1 L 2 L 10 P 11 P 11 P	Signal Name	I	ı	ı	-
minal No. 2 10 11	Color of Wire	Г	٦	Ь	Ь
Ter Ter	Terminal No.	-	2	10	11





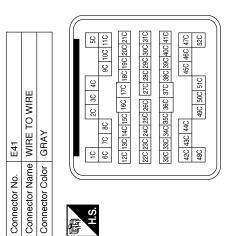




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Connector No.). E119	6
Connector Name		IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	olor WHITE	TE
H.S.	9 8 7 6 18 17 16 15	9 8 7 6 6 5 4 3 8 17 16 15 14 13 12 11 10
Terminal No.	Color of Wire	Signal Name
16	ტ	REVERSE LAMP

Signal Name	ı	ı	1	1	1	ı	ı
Color of Wire	G/B	Ж	BR/W	В	Y/R	M/L	Y/B
Terminal No. Wire	10	2C	29	7C	9C	36	17C



Connector No. E123	33	Connector No.	. E124	4
ne PO	Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM)	Connector Na	me POV	Connector Name POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color BROWN	OWN	Connector Color BLACK	lor BLA	CK
25 55	51	H.S.	82 89	88 57 88 100 100 100 100 100 100 100 100 100 100
Terminal No. Wire	Signal Name	Terminal No. Wire	Color of Wire	Signal Name
R/L	ILLUMINATION	29	В	GND (POWER)
		61	BR	TRAIL RLY SUPPLY

Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color WHITE	WHITE
H.S.	42 4 40 39 37 48 47 48 48 48 48 48 48 48 48 48 48 48 48 48

POWER DISTRIBUTION MODULE ENGINE ROON	IITE	41 40 39 88 37 47 46 45 44 43	Signal Name	GND (SIGNAL)	CAN-H	CAN-L
	lor WHITE	42 41	Color of Wire	Ф	_	Ъ
Connector Name	Connector Color	s H.S.	Terminal No.	88	39	40

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Connector Name TRAII FR TOW RELAY 2	Connector Na	Connector Name WIRE TO WIRE			2	,
	Connector Color	Inc White 10 willing		31G	_	I
_		_		32G	۵	I
				36G	Ρ/Υ	1
		56 46 36 36	16	47G	B/L	1
(e 3)	11:3:	98	2 9	57G	G/B	-
				58G	Y/B	1
		216206196186176166156146136126116	59149139129119	92G	Œ	I
Terminal No. Color of Signal Name Wire		30G 29G 28G 27G 26G 25G 24G 23G 22G	59249239229	93G	BR	I
1 6		416 406 396 386 376 366 356 346 336 326 316	5G34G33G32G31G	996	M/B	I
2 B		506 496 486 476 466 456 446 436 426	5G 44G 43G 42G	966	N/	ı
3 ×		61G 60G 59G 58G 57G 56G 55G 54G 53G 52G 51G	59549539529519			
5 W/L –		70G 69G 68G 67G 66G 65G 64G 63G 62G	5G 64G 63G 62G			
- Д		816 806 796 776 76 756 746 736 726 716	56/746/736/726/716			
7 W/L –		90G89G88G87G86G85G84G83G82G	5G84G83G82G			
		95G 94G 93G 92G 91G	916			
		1006 996 986 976 966	996			
Connector No. E156	Connector No.	. E157				
Connector Name TRAILER TURN RELAY LH	Connector Name	me TRAILER TURN RELAY RH	I RELAY RH			
Connector Color BLUE	Connector Color	lor BLUE				
	SH SH	2 2				
		7				
Terminal No. Color of Signal Name	Terminal No.	Color of Signal Name Wire	Name			
1 G/B –	1	Y/B	1			
2 B -	2	В	1			
3 G/B –	က	Y/B	ı			
	2					

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	e	Ž	
C15	TRAILER RECEPTACLE	BLACK	

Signal Name	STOP/TURN LH	GROUND	ELECTRIC BRAKE	STOP/TURN RH	BATTERY	RUNNING LAMPS	BACK-UP LAMPS
Color of Wire	ı	ı	ı	ı	ı	1	ı
Ferminal No.	-	2	3	4	5	9	7

Connector No.	Connector Name	Connector Color	

	TRAILER	CK		Signal Name	1	ı	I	ı	ı	1	
C5		or BLACK		Color of Wire	G/B	В	BR/W	Y/B	M/L	æ	(/>
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	2	က	4	5	9	7

44C 43C 42C

51C 50C 49C

47C 46C 45C 52C 51

Connector No.	C1
Connector Name	WIRE TO WIRE
Connector Color	GRAY
FIG. 100 100 100 100 100 100 100 100 100 10	5C
41Ci	41C 40C 39C 38C 37C 36C 35C 34C 33C 32C

Signal Name	1	I	1	ı	ı	ı	I
Color of Wire	G/B	Œ	BR/W	В	Y/R	M/L	A//B
Terminal No.	10	2C	09	2/2	8C	Э6	17C

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EXTERIOR LIGHTING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

CAUTION:

Perform the self-diagnosis with CONSULT before the symptom diagnosis. Perform the trouble diagnosis if any DTC is detected.

Symp	otom	Possible cause	Inspection item
Headlamp does not switch to the high beam.	One side	Fuse Harness between IPDM E/R and the front combination lamp Front combination lamp (High beam relay) IPDM E/R	Headlamp (HI) circuit Refer to <u>EXL-36</u> .
	Both sides	Symptom diagnosis "BOTH SIDE HEADLAMPS DO N Refer to EXL-125.	OT SWITCH TO HIGH BEAM"
High beam indicator lamp (Headlamp switches to the		Combination meter BCM	Combination meter. Data monitor "HI-BEAM IND" BCM (HEAD LAMP) Active test "HEADLAMP"
	One side	Front combination lamp (Low beam relay)	_
Headlamp does not switch to the low beam.	Both sides	Combination switch (lighting and turn signal switch) Harness between the combination switch (lighting and turn signal switch) and BCM BCM	Combination switch (lighting and turn signal switch) Refer to BCS-51.
		High beam request signal BCM IPDM E/R	IPDM E/R Data monitor "HL HI REQ"
		IPDM E/R	_
Headlamp does not turn ON.	One side	Fuse Bulb Harness between IPDM E/R and the front combination lamp Front combination lamp IPDM E/R	Headlamp (LO) circuit Refer to <u>EXL-39</u> .
	Both sides	Symptom diagnosis "BOTH SIDE HEADLAMPS (LO) A Refer to EXL-126.	RE NOT TURNED ON"
Headlamp does not turn OFF.	When the ignition switch is turned ON	BCM Combination switch (lighting and turn signal switch)	Combination switch (lighting and turn signal switch) Refer to BCS-51.
Headlamp is not turned ON/OFF with the lighting switch AUTO.		Combination switch (lighting and turn signal switch) Harness between the combination switch (lighting and turn signal switch) and BCM BCM	Combination switch (lighting and turn signal switch) Refer to BCS-51.
		Optical sensor Harness between the optical sensor and BCM BCM	Optical sensor Refer to <u>EXL-50</u> .

EXTERIOR LIGHTING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symp	otom	Possible cause	Inspection item
Daytime running light system does not activate.		 Either high beam bulb Parking brake switch Combination switch (lighting and turn signal switch) BCM IPDM E/R Daytime running light relay Harness between IPDM E/R and daytime running light relay. 	Daytime running light system description. Refer to EXL-9.
Front fog lamp is not turned ON.	One side	Front fog lamp bulb Harness between IPDM E/R and the front combination lamp Front combination lamp IPDM E/R	Front fog lamp circuit Refer to EXL-41.
	Both side	Symptom diagnosis "BOTH SIDE FRONT FOG LAMPS Refer to EXL-128.	S ARE NOT TURNED ON"
Parking lamp is not turned ON.	One side	Fuse Parking lamp bulb Harness between IPDM E/R and the front/rear combination lamp Front/rear combination lamp IPDM E/R	Parking lamp circuit Refer to EXL-43.
	Both sides	Symptom diagnosis "PARKING, LICENSE PLATE AND ON" Refer to EXL-127.	TAIL LAMPS ARE NOT TURNED
Turn signal lamp does not blink.	Indicator lamp is normal. (The applicable side performs the high flasher activation).	Harness between BCM and each turn signal lamp Turn signal lamp bulb Door mirror (if equipped with turn signals in the door mirrors)	Turn signal lamp circuit Refer to EXL-47.
	One side	Combination meter	_
Turn signal indicator lamp	Both sides (Always)	Turn signal indicator lamp signal Combination meter BCM	Combination meter. Data monitor "TURN IND" BCM (FLASHER) Active test "FLASHER"
does not blink.	Both sides (Does blink when activating the hazard warning lamp with the ignition switch OFF)	The combination meter power supply and the ground circuit Combination meter	Combination meter Power supply and the ground circui Refer to MWI-32.

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description INFOID:000000011288390

AUTO LIGHT SYSTEM

The auto light system may not turn the headlamp ON/OFF immediately after passing a dark area or a bright area (short tunnel, sky bridge, shadowed area etc.). This is normal.

BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM

< SYMPTOM DIAGNOSIS >

BOTH SIDE HEADLAMPS DO NOT SWITCH TO HIGH BEAM

Description

The headlamps (both sides) do not switch to high beam when the combination switch (lighting and turn signal switch) is in the HI or PASS setting.

Diagnosis Procedure

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1.combination switch (Lighting and turn signal switch) inspection

Check the combination switch (lighting and turn signal switch). Refer to <u>BCS-51, "Symptom Table"</u>.

Is the combination switch (lighting and turn signal switch) normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

(P)CONSULT DATA MONITOR

- 1. Select "HL HI REQ" of IPDM E/R DATA MONITOR item.
- 2. With operating the combination switch (lighting and turn signal switch), check the monitor status.

Monitor item	Condition		Monitor status
	Combination switch (lighting	HI or PASS	ON
HL HI REQ	and turn signal switch) (2ND)	Except for HI or PASS	OFF

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-54, "Removal and Installation".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-36, "Description".

Is the headlamp (HI) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-31, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

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BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON

Description INFOID:000000011288393

The headlamps (both sides) do not turn ON in any combination switch (lighting and turn signal switch) setting.

Diagnosis Procedure

INFOID:0000000011288394

1.combination switch (Lighting and turn signal switch) inspection

Check the combination switch (lighting and turn signal switch). Refer to BCS-51, "Symptom Table".

Is the combination switch (lighting and turn signal switch) normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

©CONSULT DATA MONITOR

- 1. Select "HL LO REQ" of IPDM E/R DATA MONITOR item.
- 2. With operating the combination switch (lighting and turn signal switch), check the monitor status.

Monitor item	Condition		Monitor status
HL LO REQ	Combination switch (lighting	2ND	ON
TIL LO NEQ	and turn signal switch)	OFF	OFF

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-54, "Removal and Installation".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-39, "Description".

Is the headlamp (LO) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-31, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

PARKING, LICENSE PLATE AND TAIL LAMPS ARE NOT TURNED ON

Description INFOID:000000011288395

The parking, license plate and tail lamps do not turn ON in with any combination switch (lighting and turn signal switch) setting.

Diagnosis Procedure

1.combination switch (lighting and turn signal switch) inspection

Check the combination switch (lighting and turn signal switch). Refer to <u>BCS-51, "Symptom Table"</u>. Is the combination switch (lighting and turn signal switch) normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT

®CONSULT DATA MONITOR

- 1. Select "TAIL & CLR REQ" of IPDM E/R DATA MONITOR item.
- 2. With operating the combination switch (lighting and turn signal switch), check the monitor status.

Monitor item	Condition		Monitor status
TAIL & CLR	Combination switch (lighting and turn	1ST	ON
REQ	signal switch)	OFF	OFF

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-54, "Removal and Installation".

3. PARK LAMP CIRCUIT INSPECTION

Check the parking lamp circuit. Refer to EXL-43, "Description".

Is the tail lamp circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-31, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

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Revision: August 2014 EXL-127 2015 Armada NAM

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description INFOID:000000011288397

The front fog lamps do not turn ON in any combination switch (lighting and turn signal switch) setting.

Diagnosis Procedure

INFOID:0000000011288398

1.combination switch (Lighting and turn signal switch) inspection

Check the combination switch (lighting and turn signal switch). Refer to <u>BCS-51</u>, "Symptom Table". Is the combination switch (lighting and turn signal switch) normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

(P)CONSULT DATA MONITOR

- 1. Select "FR FOG REQ" of IPDM E/R DATA MONITOR item.
- 2. With operating the combination switch (lighting and turn signal switch), check the monitor status.

Monitor item	Condition		Monitor status
ED 500 D50	Combination switch (lighting	ON	ON
FR FOG REQ	and turn signal switch) (2ND)	OFF	OFF

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-54, "Removal and Installation".

$3.\mathsf{front}$ fog LAMP CIRCUIT INSPECTION

Check the front fog lamp circuit. Refer to EXL-41, "Description".

Is the front fog lamp circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-31, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRF-TFNSIONFR"

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the 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 Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000011288400

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYS-
- · Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

Connect both battery cables.

NOTE:

- Supply power using jumper cables if battery is discharged.
- Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
- 3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
- Perform the necessary repair operation.

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PRECAUTIONS

< PRECAUTION >

- 5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
- Perform a self-diagnosis check of all control units using CONSULT.

Precaution for Work

• 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.

INFOID:0000000011288401

- 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.
- Oilv 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 >

PREPARATION

PREPARATION

Special Service Tool

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

Tool number (TechMate No.) Tool name		Description	
(J-46534) Trim Tool Set	AWJIA04832Z	Removing trim components	-

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PERIODIC MAINTENANCE

ADJUSTMENT AND INSPECTION HEADLAMP

HEADLAMP: Aiming Adjustment

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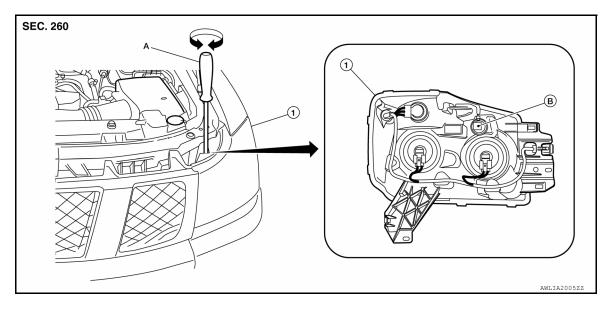
CAUTION:

Do not use organic solvent (thinner, gasoline etc.) NOTE:

- For details, refer to the regulations in your own country.
- Perform aiming if the vehicle front body has been repaired and/or the headlamp assembly has been replaced.

Before performing aiming adjustment, check the following:

- Keep all tires inflated to correct pressure.
- · Place vehicle on level ground.
- See that the vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in drivers seat.
- Adjust aiming in the vertical direction by turning the adjustment screw.
- When performing adjustment, if necessary, cover the opposite headlamp.



1. Front combination lamp

A. Suitable tool

B. Adjusting screw

HEADLAMP: Headlamp Aiming

INFOID:0000000011288404

NOTE:

Set the screen so that it is perpendicular to the road.

- 1. Position the screen.
- 2. Make the distance between the headlamp center and the screen 7.62 m (25 ft).
- Start the engine and illuminate the headlamp (LO).

CAUTION:

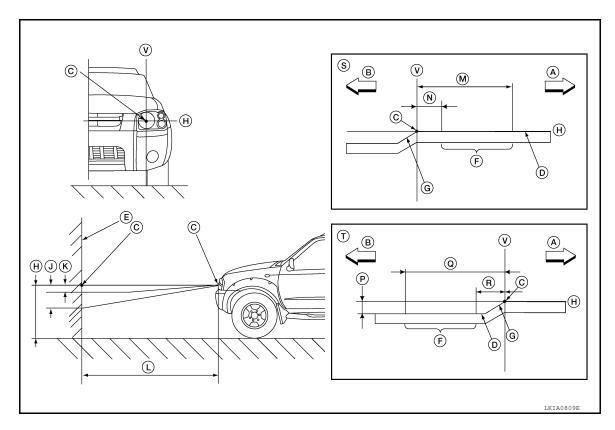
Do not cover the lens surface with tape, etc. because it is made of plastic.

Block the light from the headlamp that is not being adjusted with a thick fabric or similar object, so that it does not reach the screen.

ADJUSTMENT AND INSPECTION

< PERIODIC MAINTENANCE >

4. Use the adjustment screw to adjust the low beams on the screen, so that it is within the aiming adjustment area.



- A. Right
- D. Cutoff line
- G. Step
- K. 37 mm (1.46 in)
- N. 133 mm (5.24 in)
- R. 200 mm (7.87 in)
- V. Vertical center line of headlamp
- B. Left
- E. Screen
- H. Horizontal center line of headlamp
- L. 7.62 m (25 ft)
- P. 53.2 mm (2.09 in)
- S. RH headlamp aiming screen
- C. Center of headlamp bulb (H-V point)
- F. Aim evaluation segment
- J. 103 mm (4.06 in)
- M. 399 mm (15.71 in)
- Q. 466 mm (18.35 in)
- T. LH headlamp aiming screen

FRONT FOG LAMP

FRONT FOG LAMP: Aiming Adjustment

The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb.

Before performing aiming adjustment, check the following.

- Keep all tires inflated to correct pressure.
- · Place vehicle on level ground.
- See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver seat.
- When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.

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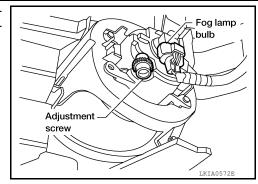
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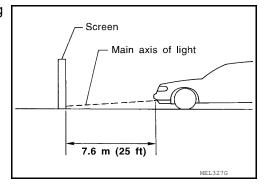
ADJUSTMENT AND INSPECTION

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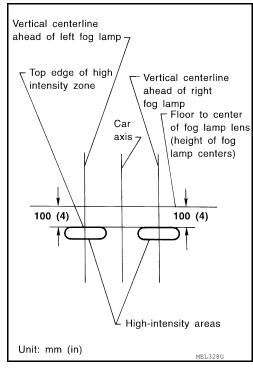
Access adjustment screw from underneath front bumper. Use a suitable tool to adjust. Turn screw clockwise to raise pattern and counterclockwise to lower pattern.



- 1. Set the distance between the screen and the center of the fog lamp lens as shown.
- 2. Turn front fog lamps ON.



3. Adjust front fog lamps using adjusting screw so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown.



HEADLAMP

< UNIT REMOVAL AND INSTALLATION >

UNIT REMOVAL AND INSTALLATION

HEADLAMP

Bulb Replacement

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HEADLAMP - LOW/HIGH BEAM

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.

CAUTION:

- Do not touch glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.
- Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp.

Removal

- 1. Remove front combination lamp. Refer to EXL-135, "Removal and Installation".
- Disconnect the harness connector.
- 3. Rotate headlamp bulb counterclockwise and remove.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing, be sure to install the bulb securely to ensure watertightness.

FRONT TURN SIGNAL/PARKING LAMP

Removal

- 1. Remove front combination lamp. Refer to EXL-135, "Removal and Installation".
- Rotate bulb socket counterclockwise and remove.
- Pull bulb to remove from the socket.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing, be sure to install the bulb socket securely to ensure watertightness.

FRONT SIDE MARKER LAMP

Removal

- Remove front combination lamp. Refer to EXL-135, "Removal and Installation".
- Rotate the bulb socket counterclockwise and remove.
- 3. Pull bulb to remove from the socket.

IV.

Installation

Installation is in the reverse order of removal.

CAUTION:

INFOID:0000000011288407

After installing, be sure to install the bulb socket securely to ensure watertightness.

Removal and Installation

FRONT COMBINATION LAMP

Removal

- Partially remove fender protector (front edge). Refer to EXT-27, "Removal and Installation".
- Remove front grille. Refer to <u>EXT-23</u>, "Removal and Installation".

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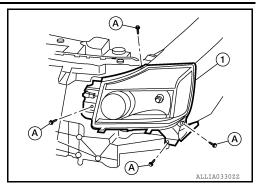
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HEADLAMP

< UNIT REMOVAL AND INSTALLATION >

3. Remove the bolts (A), disconnect the harness connector from the front combination lamp (1) and remove.



Installation

Installation is in the reverse order of removal.

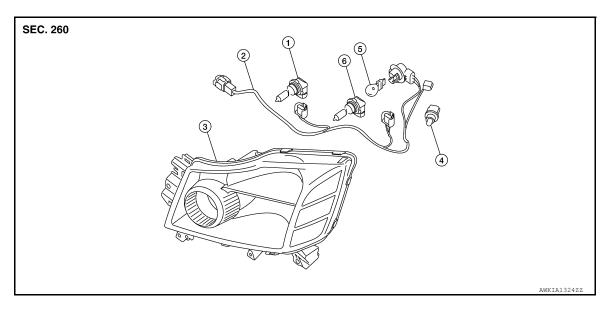
NOTE:

After installation perform headlamp aiming adjustment. Refer to EXL-132, "HEADLAMP: Aiming Adjustment".

Disassembly and Assembly

INFOID:0000000011288408

FRONT COMBINATION LAMP



1. Headlamp bulb (high beam)

4. Side marker lamp bulb

- 2. Wiring harness
- 5. Turn signal/parking lamp bulb
- 3. Front combination lamp
- 6. Headlamp bulb (low beam)

Disassembly

- 1. Rotate high beam bulb counterclockwise and remove.
- 2. Rotate low beam bulb counterclockwise and remove.
- 3. Rotate turn signal/parking lamp bulb socket counterclockwise and remove.
- 4. Rotate side marker lamp bulb socket counterclockwise and remove.

Assembly

Assembly is in the reverse order of disassembly.

CAUTION:

After installing, be sure to install the bulb sockets securely to ensure watertightness.

AUTO LIGHT SYSTEM

< UNIT REMOVAL AND INSTALLATION >

AUTO LIGHT SYSTEM

Removal and Installation

INFOID:0000000011288409

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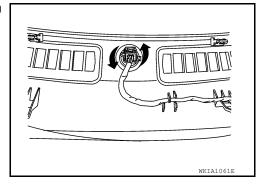
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OPTICAL SENSOR

Removal

- 1. Remove defroster grille. Refer to IP-11, "Exploded View".
- 2. Disconnect the harness connector from the optical sensor.
- 3. Rotate the optical sensor counterclockwise and remove from defroster grille.



Installation

Installation is in the reverse order of removal.

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FRONT FOG LAMP

< UNIT REMOVAL AND INSTALLATION >

FRONT FOG LAMP

Bulb Replacement

INFOID:0000000011288410

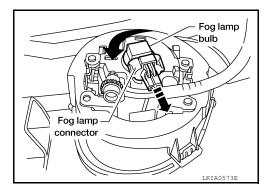
FRONT FOG LAMP

Removal

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result. CAUTION:

- Do not touch glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.
- Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp.
- 1. Disconnect the harness connector from the front fog lamp bulb.
- 2. Rotate front fog lamp bulb counterclockwise and remove.



Installation

Installation is in the reverse order of removal.

CAUTION:

After installing, be sure to install the bulb socket securely to ensure watertightness.

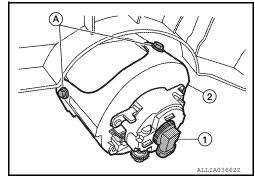
Removal and Installation

INFOID:0000000011288411

FRONT FOG LAMP

Removal

- Disconnect the harness connector from the front fog lamp bulb (1).
- 2. Remove the bolts (A) and the front fog lamp (2).



Installation

Installation is in the reverse order of removal.

NOTE:

After installing, perform fog lamp aiming adjustment. Refer to <u>EXL-133</u>, "<u>FRONT FOG LAMP</u>: Aiming Adjustment".

LIGHTING & TURN SIGNAL SWITCH

< UNIT REMOVAL AND INSTALLATION >

LIGHTING & TURN SIGNAL SWITCH

Removal and Installation

INFOID:0000000011288412

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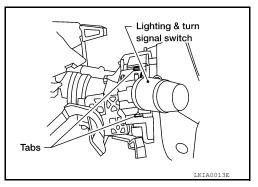
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REMOVAL

- 1. Remove steering column cover. Refer to IP-14, "Removal and Installation".
- 2. While pressing tabs, pull lighting and turn signal switch toward driver door and disconnect from the base.



INSTALLATION

Installation is in the reverse order of removal.

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HAZARD SWITCH

< UNIT REMOVAL AND INSTALLATION >

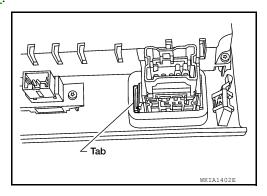
HAZARD SWITCH

Removal and Installation

INFOID:0000000011288413

REMOVAL

- 1. Remove cluster lid C. Refer to IP-15, "Removal and Installation".
- 2. While pressing the tab, push out the hazard switch.



INSTALLATION

Installation is in the reverse order of removal.

LICENSE PLATE LAMP

< UNIT REMOVAL AND INSTALLATION > LICENSE PLATE LAMP Α **Bulb Replacement** INFOID:0000000011288414 LICENSE PLATE LAMP В Removal **WARNING:** Do not touch bulb by hand while it is lit or right after being turned off. Burning may result. **CAUTION:** · Do not touch glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb. D Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp. 1. Remove license plate lamp. Refer to EXL-141, "Removal and Installation". Е 2. Rotate bulb socket counterclockwise and remove. 3. Pull bulb from socket. F Installation Installation is in the reverse order of removal. Removal and Installation INFOID:0000000011288415 LICENSE PLATE LAMP Н Removal 1. Using a suitable tool, first release the tab which is forward in vehicle, then pry outward to release the second tab. Disconnect the harness connector and remove the license plate lamp from the rear bumper. Installation Installation is in the reverse order of removal. K

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PUDDLE LAMP

Removal and Installation

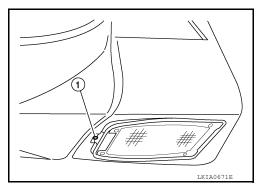
INFOID:0000000011288416

REMOVAL

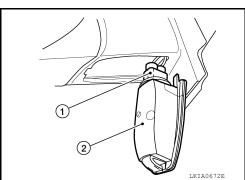
WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result. CAUTION:

- Do not touch glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.
- Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp.
- 1. Release pawl (1) on outer edge of puddle lamp housing.



- 2. Lower outer edge and slide puddle lamp housing out of door mirror.
- 3. Rotate puddle lamp socket (1) counterclockwise to remove from puddle lamp housing (2).



INSTALLATION

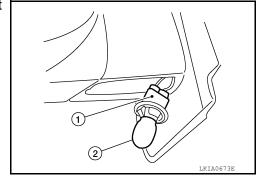
Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000011288417

REMOVAL

- 1. Remove puddle lamp. Refer to EXL-142, "Removal and Installation".
- 2. Pull puddle lamp bulb (2) straight out from puddle lamp socket (1) to remove.



INSTALLATION

PUDDLE LAMP

< UNIT REMOVAL AND INSTALLATION > Installation is in the reverse order of removal. Α В С D Е F Н J Κ EXL M Ν 0

HIGH-MOUNTED STOP LAMP

< UNIT REMOVAL AND INSTALLATION >

HIGH-MOUNTED STOP LAMP

Bulb Replacement

REMOVAL AND INSTALLATION

NOTE:

High-mounted stop lamp bulbs are not serviceable.

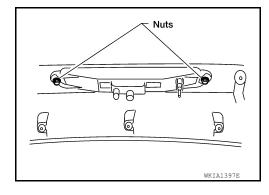
Removal and Installation

INFOID:0000000011288419

INFOID:0000000011288418

REMOVAL

- 1. Remove back door upper finisher. Refer to INT-27, "Removal and Installation".
- 2. Remove nuts and high-mounted stop lamp assembly.



INSTALLATION

Installation is in the reverse order of removal.

REAR COMBINATION LAMP

< UNIT REMOVAL AND INSTALLATION >

REAR COMBINATION LAMP

Bulb Replacement

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REMOVAL

WARNING:

Do not touch bulb by hand while it is lit or right after being turned off. Burning may result. CAUTION:

- Do not touch glass surface of the bulb with bare hands or allow oil or grease to get on it to prevent damage to bulb.
- Do not leave the bulb out of the lamp reflector for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp.
- Remove rear combination lamp. Refer to <u>EXL-145, "Removal and Installation"</u>.
- 2. Rotate bulb socket counterclockwise and remove.
- 3. Pull bulb from socket.

INSTALLATION

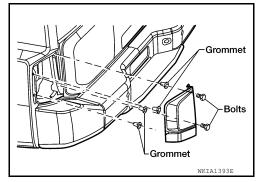
Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000011288421

REMOVAL

- 1. Remove rear combination lamp bolts.
- 2. Pull rear combination lamp to remove.
- 3. Disconnect the harness connector from the rear combination lamp.



INSTALLATION

Installation is in the reverse order of removal.

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BULB SPECIFICATIONS

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

BULB SPECIFICATIONS

Bulb Specifications

INFOID:0000000011288422

	Item	Wattage (W)*
Headlamp (HI/LO)		65/55
Front combination lamp	Parking lamp/Turn lamp	28/8
	Side marker lamp	3.8
Front fog lamp (if equipped)		55
Side turn signal lamp (if equipped)		-
Puddle lamp (if equipped)		9
Stop lamp/Tail lamp		27/8
Rear combination lamp	Rear turn signal lamp	18
	Back-up lamp	18
License plate lamp		5
High-mounted stop lamp		-

^{*:} Always check with the Parts Department for the latest parts information.