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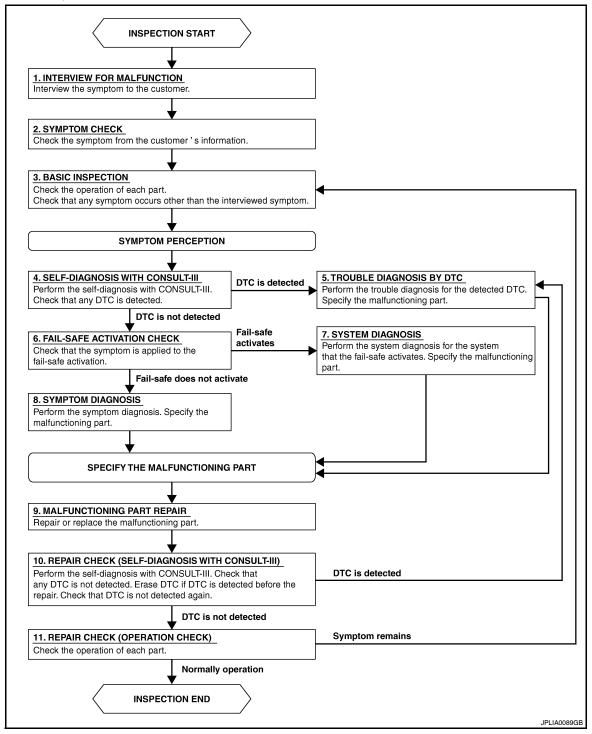
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BASIC INSPECTION

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. $\mathbf{2}.$ 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-III Perform the self diagnosis with CONSULT-III. Check that any DTC is detected. Is any DTC detected? YES >> GO TO 5. NO >> GO TO 6. 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-III) Perform the self diagnosis with CONSULT-III. Verfied that no DTCs are detected. Erase all DTCs detected prior to the repair. Verify that DTC is not detected again.

Revision: December 2009 EXL-5 2009 QX56

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?

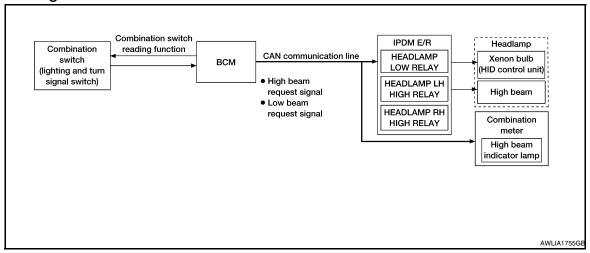
YES >> Inspection End.

NO >> GO TO 3.

FUNCTION DIAGNOSIS

HEADLAMP

System Diagram



System Description

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INFOID:0000000005867511

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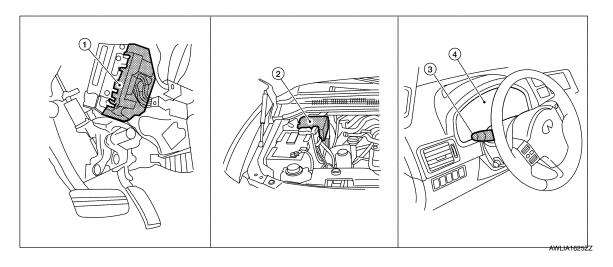
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Control of the headlamp system operation is dependent upon the position of the combination switch (lighting and turn signal switch). When the combination switch (lighting and turn signal switch) is placed in the 2nd position, the BCM (body control 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 LH high, headlamp RH high and headlamp low relay coils. When energized, these relays direct power to the respective headlamps, which then illuminate.

Component Parts Location

INFOID:0000000005867513



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

Combination meter M23, M24

Component Description

INFOID:0000000005867514

XENON HEADLAMP

HEADLAMP

< FUNCTION DIAGNOSIS >

A Xenon type headlamp is adapted to the low beam headlamps. Xenon bulbs do not use a filament. Instead, they produce light when a high voltage current is passed between two tungsten electrodes through a mixture of Xenon (an inert gas) and certain other metal halides. In addition to added lighting power, electronic control of the power supply gives the headlamps stable quality and tone color. Following are some of the advantages of the Xenon type headlamp.

- The light produced by the headlamps is a white color comparable to sunlight that is easy on the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- The light features a high relative spectral distribution at wavelengths to which the human eye is most sensitive. This means that even in the rain, more light is reflected back from the road surface toward the vehicle, for added visibility.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.

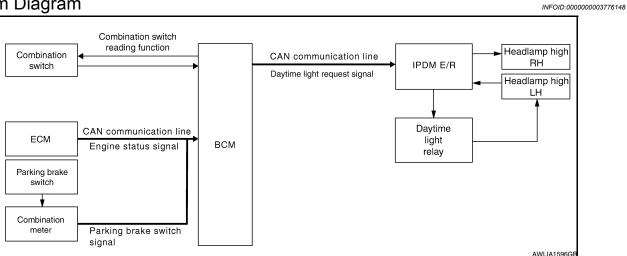
HIGH BEAM OPERATION/FLASH-TO-PASS OPERATION

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 LH high and RH high relay coils 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.

DAYTIME LIGHT SYSTEM

System Diagram



System Description

INFOID:0000000003776149

INFOID:0000000003776150

The headlamp system for Canada vehicles is equipped with a daytime light control unit 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 lights will not be illuminated. The daytime lights will illuminate once the parking brake is released. Thereafter, the daytime lights will continue to operate when the parking brake is applied.

Component Parts Location

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DAYTIME LIGHT SYSTEM

< FUNCTION DIAGNOSIS >

- 1. IPDM E/R E119, E122, E123, E124
- BCM M18, M20 (view with instrument 3. panel removed)
- B. Daytime running light relay E103

- 4. Combination switch M28
- 5. Combination meter M23, M24
- Parking brake switch M11

Component Description

INFOID:0000000003776151

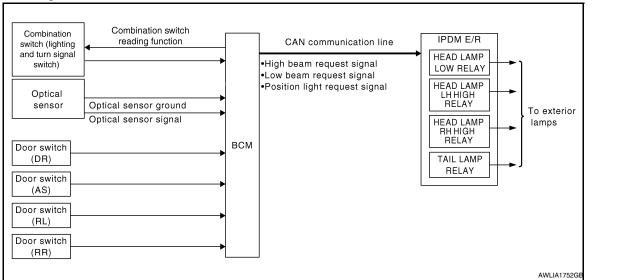
After starting the engine with the parking brake released and the lighting switch in the OFF or 1ST position, the headlamp high beam automatically turns on at a reduced intensity. With the lighting switch in the 2nd position or with autolamps ON, the headlamps function the same as conventional light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

OPERATION

The BCM monitors inputs from the parking brake switch and the combination switch to determine when to activate the daytime light system. The BCM sends a daytime light request to the IPDM E/R via the CAN communication lines. The IPDM E/R grounds the daytime 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 circuit to 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:0000000003776153

- BCM (Body Control Module) controls auto light operation according to signals from optical sensor, lighting 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 and 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 lighting 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 EXL-22, "HEADLAMP: CONSULT-III Function (BCM - HEAD LAMP)".

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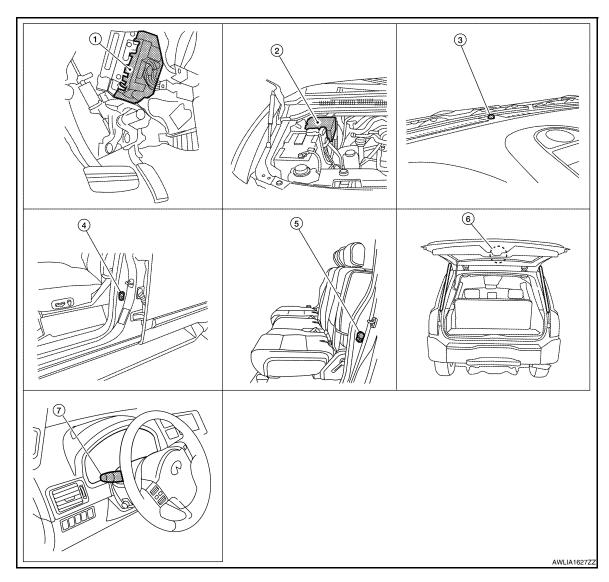
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Component Parts Location

INFOID:0000000003776154



- 1. BCM M18, M19, M20 (view with instru- 2. ment panel removed)
- 4. Front door switch LH B8 RH B108
- 7. Combination switch M28

- IPDM E/R E122, E123, E124
- . Rear door switch LH B18 RH B116

- 3. Optical sensor M302
- 6. Back door latch (door ajar switch) D503

Component Description

INFOID:0000000003776155

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 lighting switch (combination switch) position as a part of the BCM combination switch reading function. When the lighting switch is in the AUTO position, the BCM automatically turns the lamps ON/OFF according to ambient light brightness.

NOTE:

Timing for when lamps turn ON/OFF can be changed by the function setting of CONSULT-III. Refer to <u>EXL-22</u>, <u>"HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)"</u>.

HEADLAMP AIMING SYSTEM (MANUAL)

< FUNCTION DIAGNOSIS >

HEADLAMP AIMING SYSTEM (MANUAL)

System Diagram

INFOID:0000000003776156

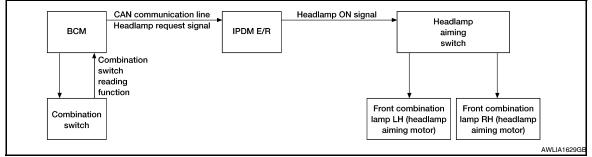
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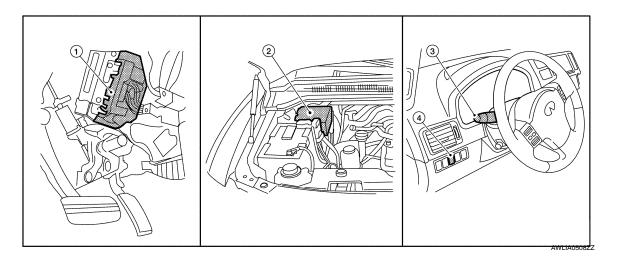
System Description

INFOID:0000000003776157

The headlamp aiming system (manual) controls the headlamp light axis height according to input from the headlamp aimer switch. The variable internal resistance of the headlamp aimer switch controls the signal ground of the headlamp aiming motors located on the front combination lamp LH and RH.

Component Parts Location

INFOID:0000000004216243



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

Headlamp aiming switch M148

Component Description

INFOID:0000000003776158

Part	Description
Headlamp aiming motor	Moves the headlamp up/down based on input from the headlamp aimer switch.
Headlamp aimer switch	Controls variable ground to the headlamp aiming motor signal to move the headlamp aiming motor up/down.

EXL-13 Revision: December 2009 2009 QX56 **EXL**

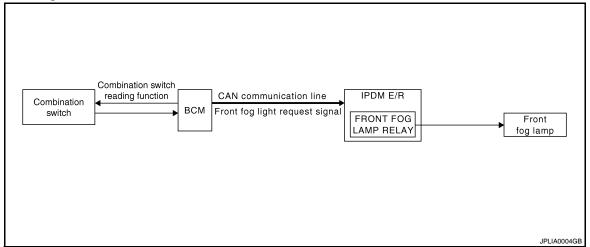
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FRONT FOG LAMP

System Diagram

INFOID:0000000003776159



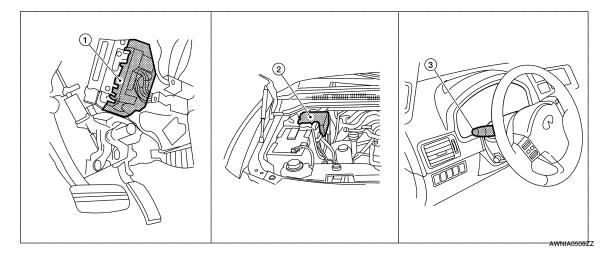
System Description

INFOID:0000000003776160

The front fog lamps are activated with the lighting switch (combination switch). The lighting switch signal to the BCM is monitored with the BCM combination switch reading function. When the fog lamps are turned ON with the lighting 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:0000000003776161



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

3. Combination switch M28

Component Description

INFOID:0000000003776162

FRONT FOG LAMP OPERATION

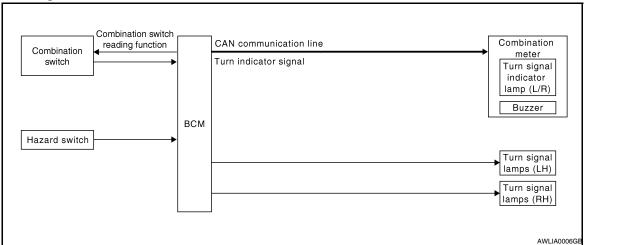
When the lighting switch is in front fog lamp ON position and also in 1ST or 2ND position or AUTO position (headlamp is ON), the BCM detects FR FOG ON and the HEAD LAMP1, 2 ON or the AUTO LIGHT ON. The BCM sends a front fog lamp request ON signal via the CAN communication lines to the IPDM E/R. The IPDM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

TURN SIGNAL AND HAZARD WARNING LAMPS

< FUNCTION DIAGNOSIS >

TURN SIGNAL AND HAZARD WARNING LAMPS

System Diagram



System Description

INFOID:0000000003776164

INFOID:0000000003776163

TURN SIGNAL OPERATION

When the 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.

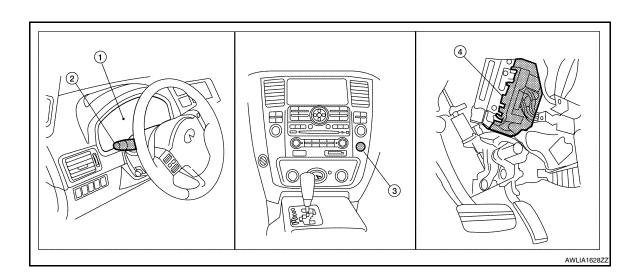
REMOTE KEYLESS ENTRY OPERATION

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

Refer to SEC-7, "System Description".

Component Parts Location

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2009 QX56

TURN SIGNAL AND HAZARD WARNING LAMPS

< FUNCTION DIAGNOSIS >

- 1. Combination meter M23, M24
- 2. Combination switch M28
- 3. Hazard switch M55

4. BCM M18, M20 (view with instrument panel removed)

Component Description

INFOID:0000000003776166

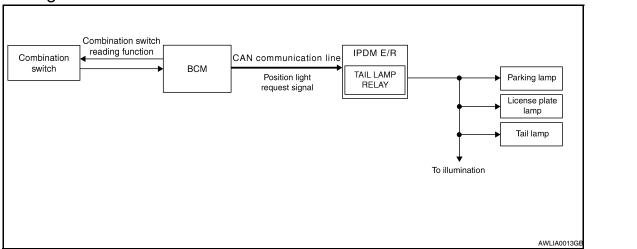
Part name	Description
BCM	Controls turn signal and hazard flasher operation.
Combination switch	Lighting and turn signal switch requests are output to the BCM.
Hazard switch	Hazard flasher request signal is output to the BCM.
Combination meter	Outputs turn and hazard indicator as requested by the BCM.

PARKING, LICENSE PLATE AND TAIL LAMPS

< FUNCTION DIAGNOSIS >

PARKING, LICENSE PLATE AND TAIL LAMPS

System Diagram



System Description

INFOID:0000000003776168

INFOID:0000000003776167

PARKING, LICENSE PLATE AND TAIL LAMPS OPERATION

When the lighting 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

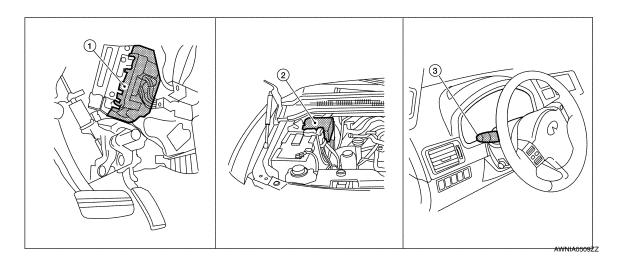
With the lighting switch (combination switch) in the 2nd position and the ignition switch is turned from ON or ACC to OFF, the battery saver feature is activated.

Under this condition, the headlamps remain illuminated for 5 minutes 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-III. Refer to <u>BCS-25</u>, "BATTERY SAVER : CONSULT-III Function (BCM - BATTERY SAVER)".

Component Parts Location

INFOID:0000000004225343



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

Combination switch M28

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Revision: December 2009 EXL-17 2009 QX56

PARKING, LICENSE PLATE AND TAIL LAMPS

< FUNCTION DIAGNOSIS >

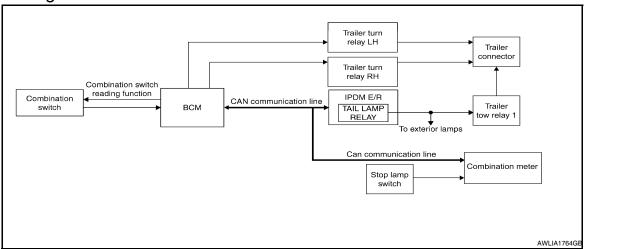
Component Description

INFOID:0000000003776170

Part name	Description
BCM	 Recieves 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 switch)	Outputs lighting requests to the BCM.

TRAILER TOW

System Diagram



System Description

INFOID:0000000005867518

INFOID:000000005867517

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 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 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 combination meter receives a stop lamp switch signal from the stop lamp switch. The combination meter then sends the brake signal to the BCM via the CAN communication lines. The BCM then sends a control signal to both trailer turn relays which sends power to the trailer connector.

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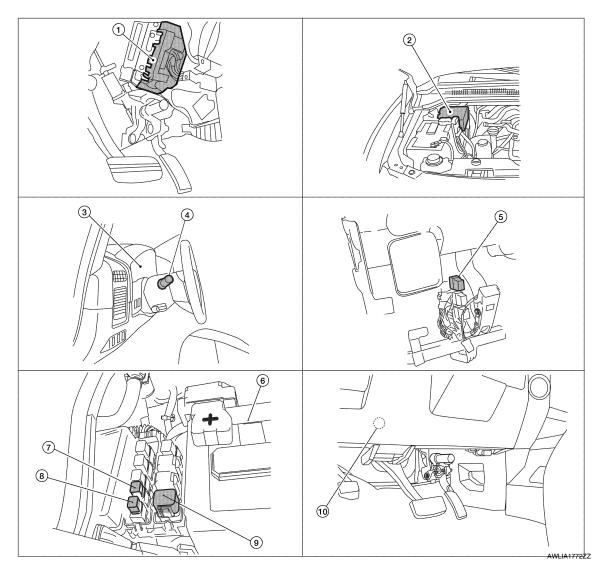
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Component Parts Location

INFOID:0000000005867519



- 1. BCM M18, M19, M20 (view with instru- 2. ment panel removed)
- 4. Combination switch (lighting and turn 5. signal switch) M28
- 7. Trailer turn relay LH E156
- Stop lamp switch E38 (column shift), E42 (floor shift)
- IPDM E/R E119, E122, E123, E124
- Trailer tow relay 1 M51 (view with steering member removed)
- 3. Trailer turn relay RH E157
- 3. Combination meter M24, M25
- 6. Battery
- 9. Trailer tow relay 2 E140

Component Description

INFOID:0000000005867520

Part name	Description
ВСМ	 Receives lighting and turn signal requests from combination switch. Receives stop lamp signal requests from combination meter via CAN communication. 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.

TRAILER TOW

< FUNCTION DIAGNOSIS >

Combination meter	 Receives stop lamp switch signal from stop lamp switch. Sends stop lamp signal request to 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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DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

HEADLAMP

HEADLAMP : CONSULT-III Function (BCM - HEAD LAMP)

INFOID:0000000004215497

WORK SUPPORT

Work Item	Setting item	Setting		
BATTERY SAVER SET	ON*	With the exterior lamp battery saver function		
BATTERT SAVER SET	OFF	Without the exterior	Without the exterior lamp battery saver function	
	MODE1*	Normal		
CUSTOM A/LIGHT SET-	MODE2	More sensitive setting than normal setting (Turns ON earlier than normal operation.)		
TING	MODE3	More sensitive setting than MODE 2 (Turns ON earlier than MODE 2.)		
	MODE4	Less sensitive setting than normal setting (Turns ON later than normal operation.)		
	MODE1*	45 sec.		
	MODE2	Without the function		
	MODE3	30 sec.		
ILL DELAY SET	MODE4	60 sec.	Sets delay timer function timer operation time	
	MODE5	90 sec.	(All doors closed)	
	MODE6	120 sec.		
	MODE7	150 sec.		
	MODE8	180 sec.		

^{*:} Initial setting

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [ON/OFF]	Ignition switch (ON) status judged from IGN signal (ignition power supply)
HI BEAM SW [ON/OFF]	
H/L SW POS [ON/OFF]	
LIGHT SW 1ST [ON/OFF]	
PASSING SW [ON/OFF]	Each switch status that BCM judges from the combination switch reading function
AUTO LIGHT SW [ON/OFF]	
FR FOG SW [ON/OFF]	
DOOR SW-DR [ON/OFF]	The switch status input from front door switch LH
AUT LIGHT SYS [ON/OFF]	Auto light system status that BCM judges from the vehicle condition

ACTIVE TEST

Test Item	Operation	Description
TAIL LAMP	ON	Transmits the position light request signal to IPDM E/R with CAN communication to turn the tail lamp ON.
	OFF	Stops the tail lamp request signal transmission.
	HI	Transmits the high beam request signal with CAN communication to turn the headlamp (HI).
HEAD LAMP	LO	Transmits the low beam request signal with CAN communication to turn the headlamp (LO).
	OFF	Stops the high & low beam request signal transmission.

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

Test Item	Operation	Description	
FR FOG LAMP	ON	Transmits the front fog lights request signal to IPDM E/R with CAN communication to turn the front fog lamp ON.	
	OFF	Stops the front fog lights request signal transmission.	
DAYTIME RUNNING LIGHT	ON	Transmits the day time running light request signal to IPDM E/R with CAN communication to turn the each lamps ON.	
	OFF	Stops the day time running light request signal transmission.	

FLASHER

FLASHER: CONSULT-III Function (BCM - FLASHER)

INFOID:0000000004215499

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DATA MONITOR

Monitor Item [Unit]	Description	
IGN ON SW [ON/OFF]	Ignition switch (ON) status judged from IGN signal (ignition power supply)	
HAZARD SW [ON/OFF]	The switch status input from the hazard switch	
TURN SIGNAL R [ON/OFF]	Each switch condition that BCM judges from the combination switch reading function	
TURN SIGNAL L [ON/OFF]	- Each switch condition that bein judges from the combination switch reading it	
BRAKE SW [ON/OFF]	The switch status input from the brake switch	

ACTIVE TEST

Test Item	Operation	Description	
	RH	Outputs the voltage to turn the right side turn signal lamps ON.	
FLASHER	LH	Outputs the voltage to turn the left side turn signal lamps ON.	
	OFF	Stops the voltage to turn the turn signal lamps OFF.	

COMB SW

COMB SW: CONSULT-III Function (BCM - COMB SW)

INFOID:0000000004215502

DATA MONITOR

Monitor Item [Unit]	Description
TURN SIGNAL R [OFF/ON]	Displays the status of the TURN RH switch in combination switch judged by BCM with the combination switch reading function
TURN SIGNAL L [OFF/ON]	Displays the status of the TURN LH switch in combination switch judged by BCM with the combination switch reading function
HI BEAM SW [OFF/ON]	Displays the status of the HI BEAM switch in combination switch judged by BCM with the combination switch reading function
HEADLAMP SW1 [OFF/ON]	Displays the status of the HEADLAMP switch in combination switch judged by BCM with the combination switch reading function
HEADLAMP SW2 [OFF/ON]	Displays the status of the HEADLAMP switch in combination switch judged by BCM with the combination switch reading function
LIGHT SW 1ST [OFF/ON]	Displays the status of the HEADLAMP switch in combination switch judged by BCM with the combination switch reading function
PASSING SW [OFF/ON]	Displays the status of the PASSING switch in combination switch judged by BCM with the combination switch reading function
AUTO LIGHT SW [OFF/ON]	Displays the status of the AUTO LIGHT switch in combination switch judged by BCM with the combination switch reading function

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DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

Monitor Item [Unit]	Description
FR FOG SW [OFF/ON]	Displays the status of the FR FOG switch in combination switch judged by BCM with the combination switch reading function
FR WIPER HI [OFF/ON]	Displays the status of the FR WIPER HI switch in combination switch judged by BCM with the combination switch reading function
FR WIPER LOW [OFF/ON]	Displays the status of the FR WIPER LOW switch in combination switch judged by BCM with the combination switch reading function
FR WIPER INT [OFF/ON]	Displays the status of the FR WIPER INT switch in combination switch judged by BCM with the combination switch reading function
FR WASHER SW [OFF/ON]	Displays the status of the FR WASHER switch in combination switch judged by BCM with the combination switch reading function
INT VOLUME [1 - 7]	Displays the status of wiper intermittent dial position judged by BCM with the combination switch reading function
RR WIPER ON [OFF/ON]	Displays the status of the RR WIPER switch in combination switch judged by BCM with the combination switch reading function
RR WIPER INT [OFF/ON]	Displays the status of the RR WIPER INT switch in combination switch judged by BCM with the combination switch reading function
RR WASHER SW [OFF/ON]	Displays the status of the RR WASHER switch in combination switch judged by BCM with the combination switch reading function

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (IPDM E/R)

Diagnosis Description

INFOID:0000000004215511

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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
- Tail, license and parking lamps
- Front fog lamps
- Headlamps (Hi, Lo)
- A/C compressor (magnetic clutch)
- Cooling fan

Operation Procedure

1. 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.

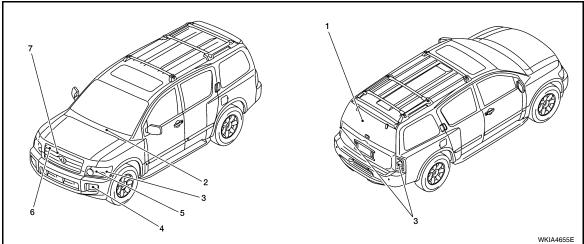
NOTE:

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-71</u>, "<u>Description</u>".
- · 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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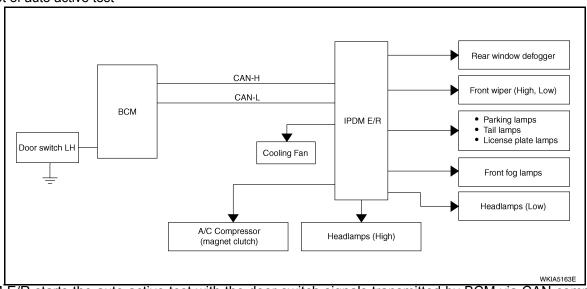
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< FUNCTION DIAGNOSIS >

Operation sequence	Inspection Location	Operation
3	Tail, license and parking lamps	10 seconds
4	Front fog lamps	10 seconds
5	Headlamps	LO for 10 seconds → HI on-off for 5 seconds
6	A/C compressor (magnet clutch)	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 warning indicator does not operate	Perform auto active test. Does the oil pressure low warning indicator operate?	YES	IPDM E/R signal input circuit ECM signal input circuit CAN communication signal between ECM and combination meter
		NO	CAN communication signal between IPDM E/R, BCM and combination meter
	Perform auto active test. Does the oil pressure gauge operate?	YES	IPDM E/R signal input circuit
Oil pressure gauge does not operate		NO	CAN communication signal between IPDM E/R, BCM and combination meter
			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

< FUNCTION DIAGNOSIS >

Symptom	Inspection contents	Inspection contents	
		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 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)
A/O	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)
		YES	ECM signal input circuit CAN communication signal between ECM and IPDM E/ R
Cooling fan does not operate	Perform auto active test. Does the cooling fan operate?	NO	Cooling fan motor malfunction Harness or connector between IPDM E/R and cooling fan IPDM E/R (integrated relay malfunction)

CONSULT - III Function (IPDM E/R)

INFOID:0000000004215512

APPLICATION ITEM

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

Diagnosis mode	Description
ECU Identification	Allows confirmation of IPDM E/R part number.
Self Diagnostic Result	Displays the diagnosis results judged by IPDM E/R.
Data Monitor	Displays the real-time input/output data from IPDM E/R input/output data.
Active Test	IPDM E/R can provide a drive signal to electronic components to check their operations.
CAN Diag Support Monitor	The results of transmit/receive diagnosis of CAN communication can be read.

SELF DIAGNOSTIC

Refer to EXL-133, "DTC Index".

DATA MONITOR

Monitor item

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< FUNCTION DIAGNOSIS >

Monitor Item [Unit]	MAIN SIG- NALS	Description
MOTOR FAN REQ [1/2/3/4]	×	Displays the status of the cooling fan speed request signal received from ECM via CAN communication.
A/C COMP REQ [OFF/ON]	×	Displays the status of the A/C request signal received from AV control unit via CAN communication.
TAIL&CLR REQ [OFF/ON]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [OFF/ON]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [OFF/ON]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [OFF/ON]	×	Displays the status of the front fog lamp request signal received from BCM via CAN communication.
HL WASHER REQ [OFF/ON]		NOTE: This item is displayed, but cannot be monitored.
FR WIP REQ [STOP/1LOW/LOW/HI]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [OFF/Block]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
ST RLY REQ [OFF/ON]		Displays the status of the starter request signal received from ECM via CAN communication.
IGN RLY [OFF/ON]	×	Displays the status of the ignition relay judged by IPDM E/R.
RR DEF REQ [OFF/ON]	×	Displays the status of the rear defogger request signal received from AV control unit via CAN communication.
OIL P SW [OPEN/CLOSE]		Displays the status of the oil pressure switch judged by IPDM E/R.
DTRL REQ [OFF]		Displays the status of the daytime light request signal received from BCM via CAN communication.
HOOD SW [OPEN/CLOSE]		Displays the status of the hood switch judged by IPDM E/R.
THFT HRN REQ [OFF/ON]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [OFF/ON]		Displays the status of the horn reminder signal received from BCM via CAN communication.

ACTIVE TEST

Test item

Test item	Operation	Description
REAR DEFOGGER	OFF	OFF
	ON	Operates rear window defogger relay.
	OFF	OFF
FRONT WIPER	LO	Operates the front wiper relay.
	HI	Operates the front wiper relay and front wiper high relay.
	1	OFF
MOTOR FAN	2	OFF
MOTOR FAIN	3	Operates the cooling fan relay.
	4	Operates the cooling fan relay.

< FUNCTION DIAGNOSIS >

Test item	Operation	Description	
	OFF	OFF	
	TAIL	Operates the tail lamp relay.	
EXTERNAL LAMPS	LO	Operates the headlamp low relay.	
	н	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.	
	FOG	Operates the front fog lamp relay	
HORN	ON	Operates horn relay for 20 ms.	

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POWER SUPPLY AND GROUND CIRCUIT

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COMPONENT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT BCM (BODY CONTROL MODULE)

BCM (BODY CONTROL MODULE): Diagnosis Procedure

INFOID:0000000004215535

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	Battery power supply	22 (15A)
70	Battery power suppry	F (50A)
11	Ignition ACC or ON	4 (10A)
38	Ignition ON or START	59 (10A)

Is the fuse blown?

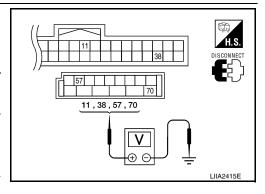
YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

NO >> GO TO 2

2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. 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?

YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK GROUND CIRCUIT

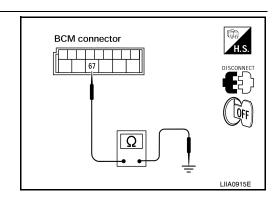
Check continuity between BCM harness connector and ground.

В	CM		Continuity
Connector	Terminal	Ground	Continuity
M20	67		Yes

Does continuity exist?

YES >> Inspection End.

NO >> Repair or replace harness.



POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

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

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

Is the fuse blown?

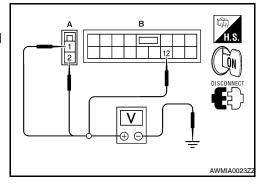
YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

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
E440 (A)	1	Ground	Battery voltage	Battery voltage	Battery voltage
E118 (A)	2		Battery voltage	Battery voltage	Battery voltage
E119 (B)	12		0V	Battery voltage	Battery voltage



Is the measurement value normal?

YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK GROUND CIRCUIT

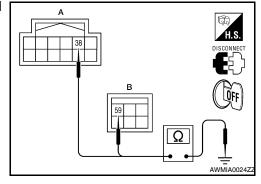
- 1. Turn ignition switch OFF.
- Check continuity between IPDM E/R harness connectors and ground.

IPDM E/R			Continuity	
Connector	Terminal	Ground	Continuity	
E122 (A)	38	- Ground	Yes	
E124 (B)	59		162	

Does continuity exist?

YES >> Inspection End.

NO >> Repair or replace harness.



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HEADLAMP (HI) CIRCUIT

Description INFOID:000000005867521

The IPDM E/R (intelligent power distribution module engine room) controls the headlamp LH high and headlamp RH high relays based on inputs from the BCM via the CAN communication lines. When the headlamp LH high and headlamp RH high relays are 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:0000000003776179

1.CHECK HEADLAMP (HI) OPERATION

WITHOUT CONTULT-III

- 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.

PCONSULT-III

- Select "EXTERNAL LAMP" of IPDM E/R active test item.
- 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-32, "Diagnosis Procedure - Without Daytime Light System", EXL-33, "Diagnosis Procedure - With Daytime Light System".

Diagnosis Procedure - Without Daytime Light System

INFOID:0000000003776180

1. CHECK HEADLAMP (HI) FUSES

- 1. Turn the ignition switch OFF.
- 2. 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?

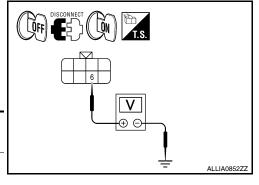
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

- 1. Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector E11 or E107.
- 3. Turn the ignition switch ON.
- Turn the high beam headlamps ON.
- 5. With the high beam headlamps ON, check the voltage between the combination lamp connector and ground.

(+)		(-)	Voltage	
(Connector	Terminal	(-)	voltage
LH	E11	6	Ground	Battery voltage
RH	E107	6	Glound	Ballery Vollage



Are the voltage readings as specified?

YES >> GO TO 4.

HEADLAMP (HI) CIRCUIT

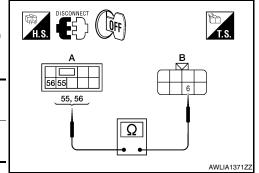
< COMPONENT DIAGNOSIS >

NO >> GO TO 3.

$3. \mathsf{CHECK}$ HEADLAMP (HI) 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
Со	nnector	Terminal	Connector	Terminal	Continuity
LH	E123	55	E11	6	Yes
RH	L123	56	E107	6	165



Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

f 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	2	Ground	Yes
RH	E107	2	Ground	163

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Does continuity exist?

YES >> Inspect the headlamp bulb.

NO >> Repair the harness.

Diagnosis Procedure - With Daytime Light System

1. CHECK HEADLAMP (HI) FUSES

- 1. Turn the ignition switch OFF.
- 2. 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?

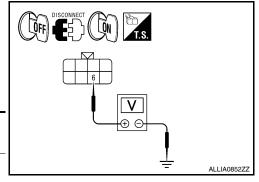
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK HEADLAMP (HI) OUTPUT VOLTAGE

- Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector E6 or E108.
- Turn the ignition switch ON.
- 4. Turn the high beam headlamps ON.
- 5. With the high beam headlamps ON, check the voltage between the combination lamp connector and ground.

(+)		(-)	Voltage		
	Connector	Terminal	(-)	voitage	
LH	E6	6	Ground	Battery voltage	
RH	E108	6	Glound	battery voltage	



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HEADLAMP (HI) CIRCUIT

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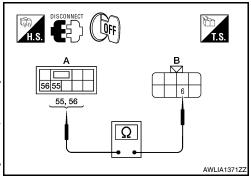
Are the voltage readings as specified?

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

3.check headlamp (HI) 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).

		A	В		Continuity
Co	nnector	Terminal	Connector	Terminal	Continuity
LH	E123	55	E6	6	Yes
RH	E123	56	E108	6	ies



Does continuity exist?

YES >> GO TO 4.

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	E6	2	Ground	Yes
RH	E108	2	Ground	163

DISCONNECT OFF

Does continuity exist?

YES >> Inspect the headlamp bulb.

NO - RH>>Repair the harness.

NO - LH >>Inspect daytime light relay. If OK, repair harness. If NG, replace the daytime light relay.

HEADLAMP (LO) CIRCUIT

< COMPONENT 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

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1. CHECK HEADLAMP (LO) OPERATION

WITHOUT CONSULT-III

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.

CONSULT-III

Select "EXTERNAL LAMP" 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-35</u>, "<u>Diagnosis Procedure - Without Daytime Light System</u>", <u>EXL-36</u>, "<u>Diagnosis Procedure - With Daytime Light System</u>".

Diagnosis Procedure - Without Daytime Light System

INFOID:0000000003776183

1. CHECK HEADLAMP (LO) FUSES

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

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.

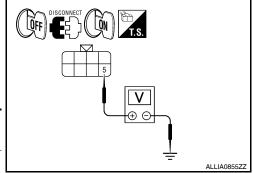
NO >> GO TO 2.

2.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

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		
Cor	nector	Terminal	(-)	voltage	
LH	E11	5	Ground	Battery voltage	
RH	E107	5	Ground	Dattery Voltage	



Is voltage reading as specified?

YES >> GO TO 4.

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HEADLAMP (LO) CIRCUIT

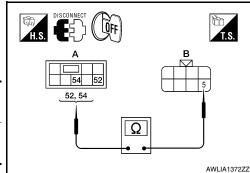
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NO >> GO TO 3.

3.check headlamp (LO) circuit for open

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

	A B		Continuity		
Cor	nector	Terminal	Connector	Terminal	Continuity
LH	E123	52	E11	5	Yes
RH	E123	54	E107	5	res



Does continuity exist?

YES >> GO TO 4.

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.

Coi	nnector	Terminal	_	Continuity
LH	E11	1	Ground	Yes
RH	E107	1	Giodila	165

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Does continuity exist?

YES >> Inspect the headlamp bulb.

NO >> Repair the harness.

Diagnosis Procedure - With Daytime Light System

1. CHECK HEADLAMP (LO) FUSES

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

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?

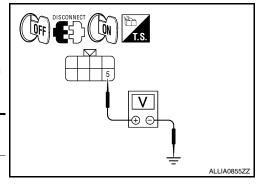
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK HEADLAMP (LO) OUTPUT VOLTAGE

- 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		
Cor	nector	Terminal	(-)	voltage	
LH	E6	5	Ground	Battery voltage	
RH	E108	5	Ground	Dattery voltage	



HEADLAMP (LO) CIRCUIT

< COMPONENT DIAGNOSIS >

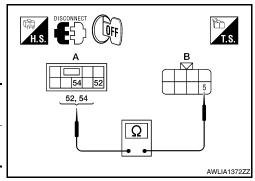
Is voltage reading as specified?

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

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

- Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- 3. Check continuity between the IPDM E/R harness connector and the front combination lamp harness connector.

Α		E	Continuity		
Cor	nnector	Terminal	Connector	Terminal	Continuity
LH	E123	52	E6	5	Yes
RH	L123	54	E108	5	165



Does continuity exist?

YES >> GO TO 4.

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.

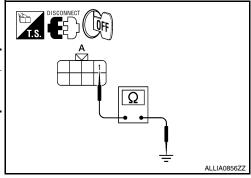
Connector		Terminal	_	Continuity
LH	E6	1	Ground	Yes
RH	E108	1	Ground	163

Does continuity exist?

YES >> Inspect the headlamp bulb.

NO - RH>>Repair the harness.

NO - LH>>Inspect the daytime light relay. If OK, repair harness. If NG, replace the daytime light relay.



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FRONT FOG LAMP CIRCUIT

< COMPONENT DIAGNOSIS >

FRONT FOG LAMP CIRCUIT

Description INFOID:000000003776184

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

INFOID:0000000003776185

1. CHECK FRONT FOG LAMP OPERATION

NWITHOUT CONSULT-III

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

(P)CONSULT-III

- 1. Select "EXTERNAL LAMP" 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-38, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003776186

1. CHECK FRONT FOG LAMP FUSE

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

Unit	Location	Fuse No.	Capacity
Front fog lamp	IPDM E/R	56	20A

Is the fuse open?

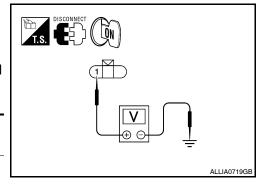
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK FRONT FOG LAMP OUTPUT VOLTAGE

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

	(+)		(-)	Voltage
Connector		Terminal	(-)	voltage
LH	E101	1	Ground	Ratton, voltago
RH	E102	1	Ground	Battery voltage



Are the voltage readings as specified?

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

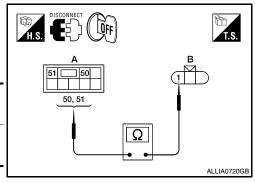
3. CHECK FRONT FOG LAMP OPEN CIRCUIT

FRONT FOG LAMP CIRCUIT

< COMPONENT DIAGNOSIS >

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

А			В		Continuity
Со	nnector	Terminal	Connector	Terminal	Continuity
LH	E123	50	E101	1	Yes
RH	L 125	51	E102	1	165



Does continuity exist?

YES >> GO TO 4.

NO >> Repair the harnesses or connectors.

4. CHECK FRONT FOG LAMP GROUND CIRCUIT

- 1. Disconnect the front fog lamp connector.
- 2. Check continuity between the front fog/turn lamp harness connector terminal and ground.

Connector		Terminal	_	Continuity
LH	E101	3	Ground	Yes
RH	E102	3	Ground	165

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Does continuity exist?

YES >> Inspect the fog lamp bulb.

NO >> Repair the harness.

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PARKING LAMP CIRCUIT

Description INFOID:000000003776187

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.

Component Function Check

INFOID:0000000003776188

1. CHECK PARKING LAMP OPERATION

WITHOUT CONSULT-III

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

(P)CONSULT-III

- 1. Select "EXTERNAL LAMP" of IPDM E/R active test item.
- 2. 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.

NO >> Refer to <u>EXL-40</u>, "<u>Diagnosis Procedure - Without Daytime Light System</u>", <u>EXL-42</u>, "<u>Diagnosis Procedure - With Daytime Light System</u>".

Diagnosis Procedure - Without Daytime Light System

INFOID:0000000003776189

1. CHECK PARKING LAMP FUSES

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

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

Is the fuse open?

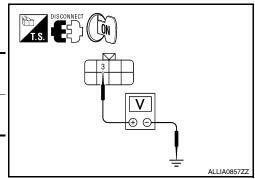
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK TAIL LAMP RELAY OUTPUT (VOLTAGE)

- 1. Turn the ignition switch OFF.
- Disconnect the front combination lamp connector, rear combination lamp connector and license plate lamp connector.
- 3. Turn the ignition switch ON.
- 4. Turn the parking lamps ON.
- 5. With the parking lamps ON, check voltage between the front combination lamp connectors and ground.

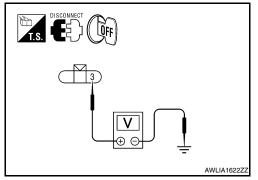
(+)		(-)	Voltage		
Con	nector	Terminal	(-)	voltage	
LH	E11	3	Ground	Battery voltage	
RH	E107	3	Ground	Dattery voltage	



< COMPONENT DIAGNOSIS >

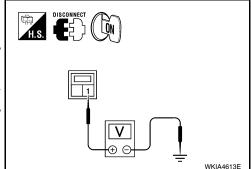
6. With the parking lamps ON, check voltage between the rear combination lamp connectors and ground.

(+)			(-)	Voltage
Connector Terminal		Terminal	(-)	voltage
LH	B70	3	Ground	Battery voltage
RH	B130	3	Giodila	Ballery Vollage



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

(+)	(-)	Voltage	
Connector	Terminal	()	Voltage	
D703	1	Ground	Battery voltage	



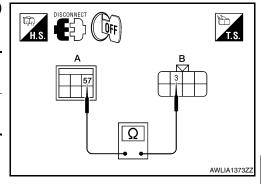
Are voltage readings as specified?

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

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

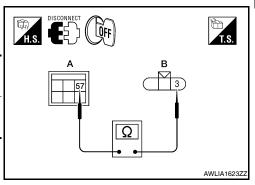
- 1. Turn the ignition switch OFF.
- 2. Disconnect IPDM E/R connector.
- 3. Check continuity between the IPDM E/R harness connector (A) and the front combination lamp harness connector (B).

А		В		Continuity	
Con	nector	Terminal	Connector	Terminal	Continuity
LH	E124	57	E11	3	Yes
RH	L124	37	E107	3	165



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

	А	1	В		Continuity
Coi	nector	Terminal	Connector	Terminal	Continuity
LH	E124	57	B70	3	Yes
RH	E124	57	B130	3	res



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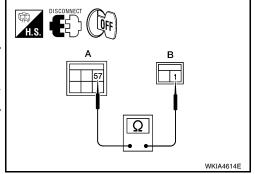
5. Check continuity between the IPDM E/R harness connector (A) and license plate lamp connector (B).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
E124	57	D703	1	Yes

Are continuity test results as specified?

YES >> GO TO 4.

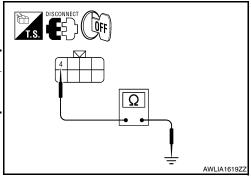
NO >> Repair the harnesses or connectors.



4. CHECK PARKING, LICENSE AND TAIL LAMP GROUND CIRCUITS

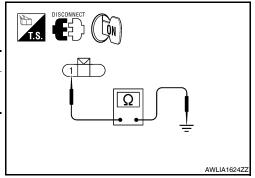
1. Check continuity between the front combination lamp harness connectors E11 and E107 terminal 4 and ground.

Co	onnector	Terminal	_	Continuity
LH	E11	4	Ground	Yes
RH	E107	7	Glound	163



2. Check continuity between the rear combination lamp harness connectors B70 and B130 terminal 1 and ground.

Connector		Terminal	_	Continuity
LH	B70	1	Ground	Yes
RH	B130	!	Ground	165



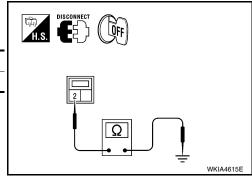
3. Check continuity between the license plate lamp harness connectors and ground.

Connector	Terminal	_	Continuity
D703	2	Ground	Yes

Does continuity exist?

YES >> Inspect the parking lamp bulb.

NO >> Repair the harness.



INFOID:0000000004221427

Diagnosis Procedure - With Daytime Light System

1. CHECK PARKING LAMP FUSES

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

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

Is the fuse open?

< COMPONENT DIAGNOSIS >

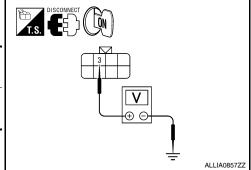
YES >> Repair the harness and replace the fuse.

NO >> GO TO 2.

2.CHECK TAIL LAMP RELAY OUTPUT (VOLTAGE)

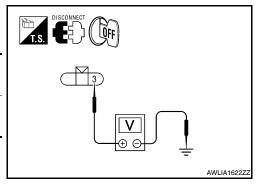
- 1. Turn the ignition switch OFF.
- 2. Disconnect the front combination lamp connector, rear combination lamp connector and license plate lamp connector.
- 3. Turn the ignition switch ON.
- 4. Turn the parking lamps ON.
- 5. With the parking lamps ON, check voltage between the front combination lamp connectors and ground.

(+)		(-)	Voltage	
Con	nector	Terminal	(-)	voltage
LH	E6	3	Ground	Battery voltage
RH	E108	3	Glound	Dattery voltage



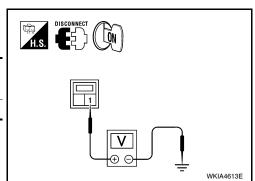
6. With the parking lamps ON, check voltage between the rear combination lamp connectors and ground.

(+)			(-)	Voltage
Co	onnector	Terminal	(-)	voltage
LH	B70	3	Ground	Battery voltage
RH	B130	3	Giodila	Dattery Voltage



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

(+)		(-)	Voltage	
Connector	Terminal	(-)	voitage	
D703	1	Ground	Battery voltage	



Are voltage readings as specified?

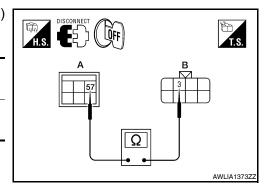
YES >> GO TO 4.

NO >> GO TO 3.

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

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

	P	4		В	Continuity
Con	nector	Terminal	Connector	Terminal	Continuity
LH	E124	57	E6	3	Yes
RH	L124	51	E108	3	163



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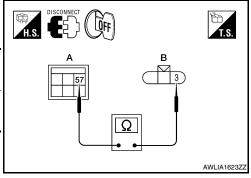
2009 QX56

Revision: December 2009

< COMPONENT DIAGNOSIS >

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

	Α	1	В		Continuity
Co	nnector	Terminal	Connector	Terminal	Continuity
LH	E124	57	B70	3	Yes
RH	C124	37	B130	3	res



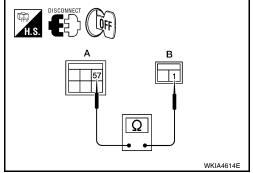
5. Check continuity between the IPDM E/R harness connector (A) and license plate lamp connector (B).

	Α		В	
Connector	Terminal	Connector	Terminal	Continuity
E124	57	D703	1	Yes

Are continuity test results as specified?

YES >> GO TO 4.

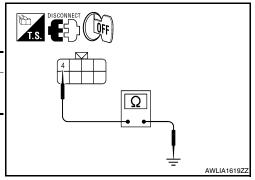
NO >> Repair the harnesses or connectors.



4. CHECK PARKING, LICENSE AND TAIL LAMP GROUND CIRCUITS

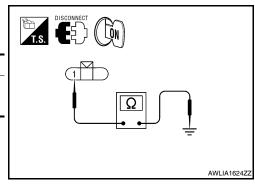
1. Check continuity between the front combination lamp harness connectors E6 and E108 terminal 4 and ground.

Connector		Terminal	_	Continuity
LH	E6	4	Ground	Yes
RH	E108	7	Giodila	163



2. Check continuity between the rear combination lamp harness connectors B70 and B130 terminal 1 and ground.

C	onnector	Terminal	_	Continuity
LH	B70	1	Ground	Yes
RH	B130		Ground	163



< COMPONENT DIAGNOSIS >

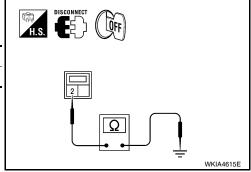
Check continuity between the license plate lamp harness connectors and ground.

Connector	Terminal	_	Continuity
D703	2	Ground	Yes

Does continuity exist?

YES >> Inspect the parking lamp bulb.

NO >> Repair the harness.



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TURN SIGNAL LAMP CIRCUIT

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TURN SIGNAL LAMP CIRCUIT

Description INFOID:000000003776190

The BCM monitors inputs from the combination 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

INFOID:0000000003776191

1. CHECK TURN SIGNAL LAMP

(E)CONSULT-III

- 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-46, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000003776192

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?

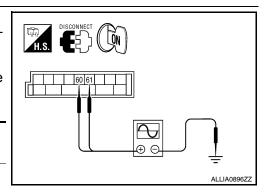
YES >> GO TO 2.

NO >> Replace the bulb.

2.CHECK TURN SIGNAL LAMP OUTPUT VOLTAGE

- 1. Turn the ignition switch OFF.
- 2. Disconnect the front turn/fog lamp connector or the rear combination lamp connector.
- 3. Turn the ignition switch ON.
- 4. With turn signal switch operating, 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 1 s



Is voltage reading as specified?

YES >> GO TO 3.

NO >> Replace BCM. Refer to <u>BCS-56</u>, "Removal and Installation".

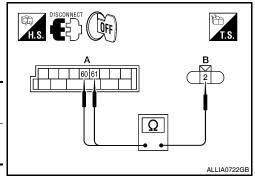
TURN SIGNAL LAMP CIRCUIT

< COMPONENT DIAGNOSIS >

3. CHECK TURN SIGNAL LAMP CIRCUIT FOR OPEN

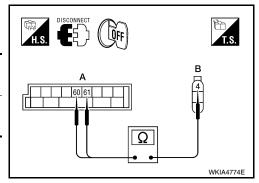
- 1. Turn the ignition switch OFF.
- 2. Disconnect BCM connector M20.
- 3. Check continuity between the BCM harness connector M20 and the front turn/fog lamps.

A			E	3	Continuity
Connector		Terminal	Connector	Terminal	Continuity
Front LH	M20	60	E101	2	Yes
Front RH	IVIZU	61	E102	2	165



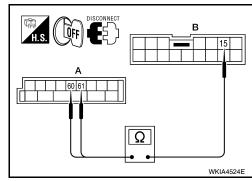
4. Check continuity between the BCM harness connector M20 and the rear combination lamp connectors.

	Α		I	В	Continuity
Connector		Terminal	Connector	Terminal	Continuity
Rear LH	M20	60	B35	4	Yes
Rear RH	IVIZU	61	B105	4	165



Check continuity between the BCM harness connector M20 and the door mirror connectors.

	Α		E	3	Continuity
Conne	ctor	Terminal	Connector	Terminal	Continuity
Door mirror LH	M20	60	D4	15	Yes
Door mirror RH	IVIZU	61	D107	15	162



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.

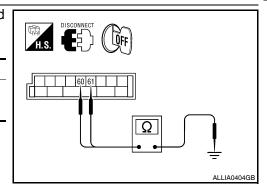
С	onnector	Terminal	_	Continuity
LH	Mao	60	Cround	No
RH	M20	61	Ground	INO

Does continuity exist?

YES >> Repair the harnesses or connectors.

NO >> GO TO 5.

5. CHECK TURN SIGNAL LAMP GROUND CIRCUIT



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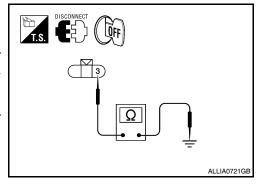
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TURN SIGNAL LAMP CIRCUIT

< COMPONENT DIAGNOSIS >

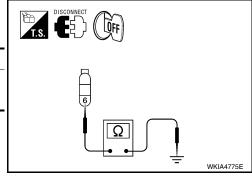
 Check continuity between the front turn/fog lamp harness connectors and ground.

Conn	ector	Terminal	_	Continuity
Front LH	E101	3	Ground	Yes
Front RH	E102	3	Ground	163



2. Check continuity between the rear combination lamp harnness connectors and ground.

Con	nector	Terminal	_	Continuity
Rear LH	B35	6	Ground	Yes
Rear RH	B105	0		



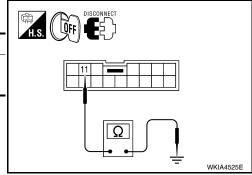
3. Check continuity between the door mirrors and ground.

Connector		Terminal	_	Continuity
Door mirror RH	D107	11	Ground	Yes
Door mirror LH	D4		Glouila	165

Are continuity test results as specified?

YES >> Replace the malfunctioning lamp.

NO >> Repair the harnesses or connectors.



OPTICAL SENSOR

Description INFOID:0000000003776193

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

Component Function Check

INFOID:0000000003776194

1. CHECK OPTICAL SENSOR SIGNAL BY CONSULT-III

(P)CONSULT-III

- Turn the ignition switch ON.
- Select "OPTICAL SENSOR" of BCM (HEAD LAMP) DATA MONITOR item.
- 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 *
OF HOAL 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-49, "Diagnosis Procedure".

Diagnosis Procedure

1. CHECK OPTICAL SENSOR GROUND CIRCUIT

- Turn the ignition switch OFF.
- Disconnect BCM connector M18 and optical sensor connector 2. M302.
- Check continuity between BCM harness connector M18 (A) terminal 18 and optical sensor harness connector M302 (B) terminal 3.

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

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

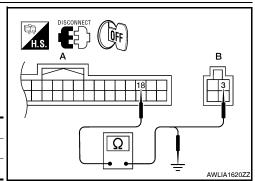
Α			Continuity
Connector	Terminal		Continuity
M18	18	Ground	No

Are continuity test results as specified?

YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK OPTICAL SENSOR SIGNAL CIRCUIT



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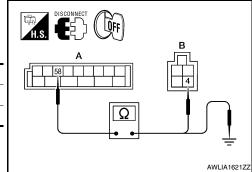
OPTICAL SENSOR

< COMPONENT DIAGNOSIS >

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

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

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



Α			Continuity	
Connector	Terminal		Continuity	
M20	58	Ground	No	

Are the continuity test results as specified?

YES >> Replace the optical sensor. Refer to EXL-149, "Removal and Installation".

NO >> Repair harness or connector.

HEADLAMP AIMING SWITCH

Description INFOID:0000000003776196

The manual headlamp aiming system uses a headlamp aiming switch to adjust the axis of the headlamp aiming motor. The headlamp aimer switch has four settings, each with a different resistance value. The headlamp aiming motor adjusts to the proper axis based off the position of the headlamp aiming switch.

Diagnosis Procedure - Without Daytime Light System

${f 1}$.CHECK HEADLAMP AIMING SWITCH SIGNAL FOR OPEN OR SHORT CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect headlamp aiming switch connector M148, headlamp aiming motor LH connector E11 and headlamp aiming motor RH connector E107.
- 3. Check continuity between the headlamp aiming switch connector M148 terminal 1 and headlamp aiming motor LH E11 and RH E107 terminal 7.

Connector	Terminal	Connector	Terminal	Continuity
M148	1	E11	7	Yes
WITTO		E107	,	163

Check continuity between the headlamp aiming switch connector M148 terminal 1 and ground.

Connector	Terminal	_	Continuity
M148	1	Ground	No

Are the continuity test results as specified?

YES >> GO TO 2.

NO >> Repair the harness or connector.

2.CHECK HEADLAMP AIMING SWITCH

Check resistance between the headlamp aiming switch terminals 1 and 2 in each switch position.

Component	Ter	minal	Switch Position	Resistance
Headlamp	2	0	604 Ω	
		1	324 Ω	
aiming switch	h '	1 2	2	191 Ω
			3	130 Ω

Are the resistance check results as specified?

YFS >> GO TO 3.

NO >> Replace the headlamp aiming switch.

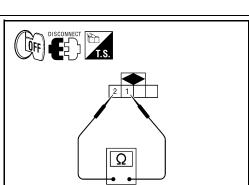
${f 3.}$ CHECK HEADLAMP AIMING SWITCH GROUND CIRCUIT

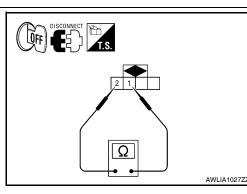
- Turn the ignition switch OFF.
- Disconnect headlamp aiming switch connector M148. 2.
- Check continuity between headlamp aiming switch connector M148 terminal 2 and ground.

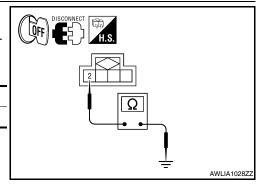
Connector	Terminal	_	Continuity
M148	2	Ground	Yes

Is continuity as specified?

YES >> Inspect headlamp aiming motors.







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EXL-51

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INFOID:0000000003776197

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HEADLAMP AIMING SWITCH

< COMPONENT DIAGNOSIS >

NO >> Repair harness or connector.

Diagnosis Procedure - With Daytime Light System

INFOID:0000000004221417

1.check headlamp aiming switch signal for open or short circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect headlamp aiming switch connector M148, headlamp aiming motor LH connector E6 and headlamp aiming motor RH connector E108.
- 3. Check continuity between the headlamp aiming switch connector M148 terminal 1 and headlamp aiming motor LH E6 and RH E108 terminal 7.

Connector	Terminal	Connector	Terminal	Continuity
M148	1	E6	7	Yes
WITTO	'	E108	,	103

Check continuity between the headlamp aiming switch connector M148 terminal 1 and ground.

OFF E	T.S.
Ω	7
	AWLIA1093ZZ

Connector	Terminal	_	Continuity
M148	1	Ground	No

Are the continuity test results as specified?

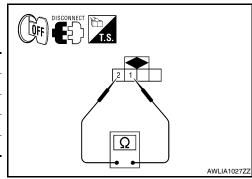
YES >> GO TO 2.

NO >> Repair the harness or connector.

2. CHECK HEADLAMP AIMING SWITCH

1. Check resistance between the headlamp aiming switch terminals 1 and 2 in each switch position.

Component	Teri	minal	Switch Position	Resistance
Headlamp 1		0	604 Ω	
	1	1 2	1	324 Ω
		2	191 Ω	
		3	130 Ω	



Are the resistance check results as specified?

YES >> GO TO 3.

NO >> Replace the headlamp aiming switch.

3.CHECK HEADLAMP AIMING SWITCH GROUND CIRCUIT

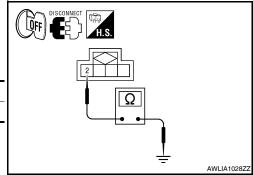
- 1. Turn the ignition switch OFF.
- Disconnect headlamp aiming switch connector M148.
- Check continuity between headlamp aiming switch connector M148 terminal 2 and ground.

Connector	Terminal	_	Continuity
M148	2	Ground	Yes

Is continuity as specified?

YES >> Inspect headlamp aiming motors.

NO >> Repair harness or connector.



< COMPONENT DIAGNOSIS > **HEADLAMP** Α Wiring Diagram INFOID:0000000003776198 IPDM E/R (INTELLIGENT DISTRIBUTION MODULE ENGINE ROOM) (E122), (E123), В ■ : DATA LINE C G IGNITION RELAY E152 M31 D 20A 53 CPU Е 20A 52 F CONT 41 41 HEADLAMP LOW RELAY HEAD-LAMP HIGH 15A 40 Н 10A HDCONT J HEAD-LAMP LHGH HIGH RELAY HEAD-QLAMP HIGH 10A 35 Κ COMBI-NATION METER (M23) FUSE BLOCK (J/B) (M4) EXL BCM (BODY CONTROL MODULE) (M18), (M20) UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY) HIGH BEAM IGNITION SWITCH ON OR START 10A M COMBINATION SWITCH (M28) Ν 92 0 HEADLAMP 10G E152 M31

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HEADLAMP CONNECTORS

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

Connector Name | BCM (BODY CONTROL MODULE)

Connector No. M18

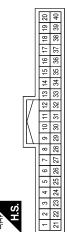
WHITE

Connector Color

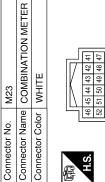


Signal Name	ı
Color of Wire	O/L
Terminal No.	5P

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	>	G/B	>	R/G	R/Y	Г	O/B	R/W	W/L	L	Ь
Terminal No.	2	က	4	9	9	32	88	34	32	36	38	39	40



OUTPUT 2	OUTPUT 1	IGN SW	CAN-H	CAN-L		4	Connector Name COMBINATION METER
0/B	B/W	M/L	٦	Ь		M24)) -
35	98	38	68	40		Connector No.	Connector Nam
							ETER

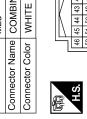


Connector Color WHITE

Signal Name CAN-H CAN-L

Color of Wire

Terminal No. 10



Signal Name	POWER GND	POWER GND
Color of Wire	В	В
Terminal No.	47	52

RUN/START GROUND

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Signal Name	GND (POWER)	BATT (F/L)
Color of Wire	В	M/B
Terminal No.	29	20

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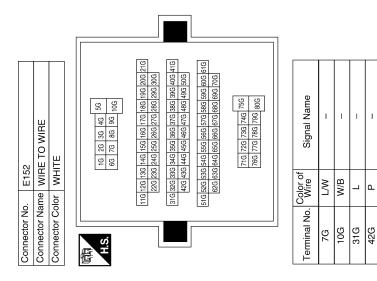
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20100 20400000	-	ļ	Copportor Color	-	L		7G	M/L	I
	∐ I I I I	ш		I III M		<u> </u>	10G	M/B	ı
	12						31G	٦	1
\(\hat{Q}\)	: =	3 4 5	H.S.		5G 4G 3G 2G 1G		42G	۵	1
Terminal No. W	Color of Wire	Signal Name		21G 20G 19G	66 156 14				
- 2	B/W	INPUT 1		30G 29G	30G 29G 28G 27G 26G 25G 24G 23G 22G				
2 0	0/B	INPUT 2		41G 40G 39G	416 406 396 386 376 366 356 346 336 326 316				
3		INPUT 3		50G 49G	50G 49G 48G 47G 46G 45G 44G 43G 42G				
4 R	₽V	INPUT 4		61G 60G 59G	616 606 596 586 576 566 556 546 536 526 516				
5 R	R/G	INPUT 5		70G 69G	70G 69G 68G 67G 66G 65G 64G 63G 62G				
9	>	OUTPUT 1							
9 2	G/B	OUTPUT 2			746 736 726 716				
8	SB	OUTPUT 5			908 1977 1987 1988				
6	G/Y	OUTPUT 4				77			
10	>	OUTPUT 3							
Connector No.	E11		Connector No.). E107	2	<u> ප</u>	Connector No.). E122	
Connector Name	FRON	FRONT COMBINATION LAMP LH (WITHOUT DAYTIME LIGHT SYSTEM)	Connector Name		FRONT COMBINATION LAMP RH (WITHOUT DAYTIME LIGHT SYSTEM)	ŏ_	Connector Name		IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK	X	Connector Color	olor BLACK	CK	<u> </u> ŏ]	Connector Color	olor WHITE	担
H.S.	1 2 3 2 2 2 2 3	48	H.S.	2 - 2	8 2 2 V 7 8 4 4		南 H.S.	42 41 40	5 45 44 43
Terminal No. Wi	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name	Te	Terminal No.	Color of Wire	Signal Name
-	m	ı	-	В	1		38	В	GND (SIGNAL)
2 E	ш	ı	2	В	I		39	_	CAN-H
5 1	Г	-	ß	R/Υ	1		40	Ь	CAN-L
9	<u></u>	ı	9	M	1				

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Connector No.	E124	4
Connector Name		IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	or BLACK	ÇK
H.S.		23 61 60 24 61 60
Terminal No.	Color of Wire	Signal Name
59	В	GND (POWER)

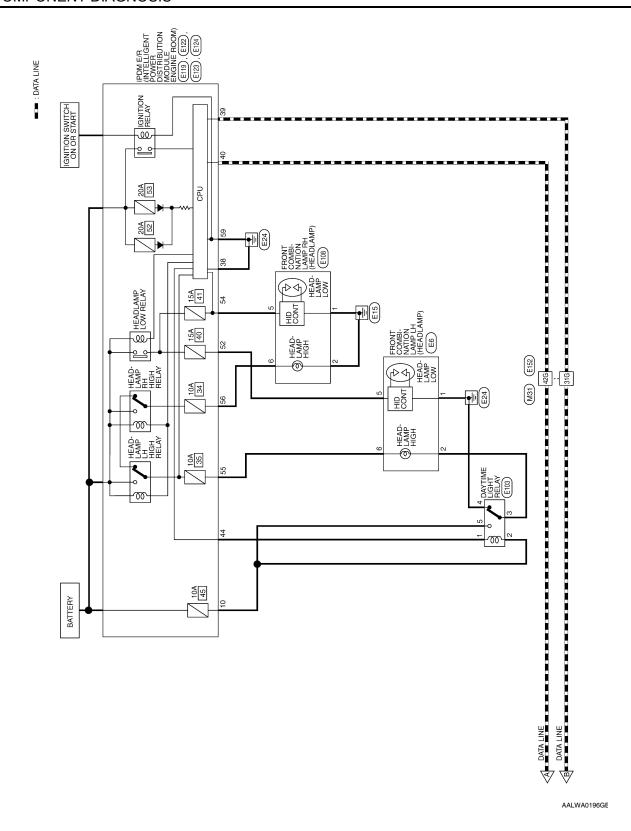
Connector No.	E123
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color BROWN	BROWN
原 H.S.	51
Terminal No. Wire	or of Signal Name

Signal Name	H/LAMP LO LH	H/LAMP LO RH	H/LAMP HI LH	H/LAMP HI RH
Color of Wire	7	R/Υ	9	M/l
Terminal No. Wire	52	54	22	99

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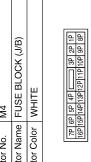
DAYTIME LIGHT SYSTEM Α Wiring Diagram INFOID:0000000003776199 В ■ : DATA LINE C COMBINATION METER (M23), (M24) D ▼ BRAKE Е HIGH F UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY) FUSE BLOCK (J/B) (M4) G Н 10A J Κ (M20) BCM (BODY CONTROL MODULE) (M18) EXL IGNITION SWITCH ON OR START COMBINATION SWITCH (M28) 10A M DAYTIME LIGHT SYSTEM Ν E152 BATTERY 0 Р

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DAYTIME LIGHT SYSTEM CONNECTORS

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





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

	Connector Name PARKING BRAKE SWITCH	CK		Signal Name	-
<u> </u>	ne PAF	or BLA	<u> </u>	Color of Wire	ŋ
Connector No.	Connector Nar	Connector Color BLACK	H.S.	Terminal No. Wire	1
	-USE BLOCK (J/B)	WHITE	14P 13P 12P 14P 14P	Signal Name	-
4	lS.	¥	5P 4P 14P 13P 1	e of	

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

	Connector Color
_	Connector Color
ш 2	Connector Name

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	>	G/B	>	R/G	R/Υ	7	O/B	B/W	M/L	L	Д
erminal No.	2	က	4	5	9	32	33	34	35	36	38	39	40

GND (POWER) BATT (F/L)

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Signal Name

Color of Wire

Terminal No.

				9 10 11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
				19	39
				18	38
				17	37
	ွှ			16	36
	臣			15	35
	6			14	34
	Ö			13	33
	۲۵			12	32
	МЩ			Ξ	31
	<u>=</u> 5	世		9	30
M18	BCM (BOE MODULE)	토	\	6	29
Σ	∞≥	<		8	28
	ы	×		7	27
o.	an	응		9	26
Z	Z	ပ်		2	25
횬	to	흕		4	24
ĕ	ЭЕС	<u>ا</u> ق	\ \	3	23
Connector No.	Connector Name BCM (BODY CONTROL MODULE)	Connector Color WHITE	H.S.	2	22
Ŏ	Ŏ	Ŏ		-	21

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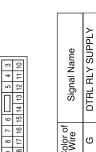
Connector No. M28 Connector Name COMBINATION SWITCH Connector Color WHITE	H.S. 12 13 10 9 8 7 14 11 1 2 3 4 5 6	Terminal No. Wire Signal Name		2 O/B INPUT 2	3 L INPUT3	4 R/Y INPUT 4	5 R/G INPUT 5	6 V OUTPUT 1	7 G/B OUTPUT 2	8 SB OUTPUT 5	9 G/Y OUTPUT 4	10 Y OUTPUT 3														
Connector No. M24 Connector Name COMBINATION METER Connector Color WHITE	画 H.S.	19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 2 30 30 30 37 36 36 37 36 37 30 30 31 37 36 36 37 30 30 30 30 30 30 30 30 30 30 30 30 30	30 37 30 30 34 33 32 31 30 23 20 21 20 20 24 23		Terminal No. Wire Signal Name	10 CAN-H	ı <u>a</u>	8		; c	5		Terminal No Color of Sinnal Name	0		10G W/B –	31G L –	42G P –								
Connector No. M23 Connector Name COMBINATION METER Connector Color WHITE	45 44 43 42	[52 51 50 49 48 47]		-	Terminal No. Wire Signal Name		B POWER	a					Connector No. M31	Connector Name WIRE TO WIRE	Connector Color WHITE	_		56 46 36 26	98	21G 20G 19G 18G 17G 16G 15G 14G 13G 12G 11G 30G 29G 28G 27G 28G 25G 24G 23G 22G	41G 40G 39G 38G 37G 38G 35G 34G 33G 32G 31G 50G 49G 48G 48G 48G 44G 43G 42G 48G 48G 48G 48G 48G 48G 48G 48G 48G 48	61G 60G 59G 58G 57G 56G 58G 54G 62G 52G 51G 70G 69G 68G 68G 68G 68G 68G 68G 68G 68G 68G 68	756 746 736 746	800 77G 78G 78G]]]	

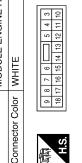
DAYTIME LIGHT SYSTEM

Connector No. E5 Connector Name WIRE TO WIRE Connector Color WHITE H.S. 1 2 3 4 5 6	Connector No. E34 Connector Name WIRE TO WIRE Connector Color WHITE	A B C D
Terminal No. Wire Signal Name 51J L 52J P	Connector No. E16 Connector Name ECM Connector Color BLACK	G H J
Connector No. M40 Connector Name WIRE TO WIRE Connector Color WHITE \$\text{10}\$ \frac{51}{44} \frac{31}{32} \frac{21}{11} \frac{11}{32} \frac{11}{12} \frac{11}{11} \frac{11}{32} \frac{11}{32} \frac{11}{12} \fr	Connector No. E6 Connector Name FRONT COMBINATION LAMP LH (WITH DAYTIME LIGHT SYSTEM) Connector Color BLACK Light System Lamp LH (WITH DAYTIME Light System) Light System) Light System) Light System) Connector Color of BLACK Light Signal Name Lamp Light System Light Syst	M N O

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









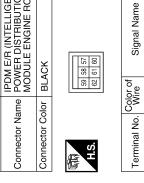


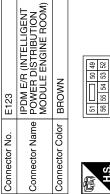
Signal Name	1	1	_	I
Color of Wire	В	В	R/Y	Y
Terminal No.	1	2	2	9

3	DAYTIME LIGHT RELAY) S	© \(\tilde{\pi} \) 4	Signal Name	1	1	ı	1	1
E103		or BLACK		Color of Wire	BR	ŋ	A//G	В	ŋ
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	2	က	4	2

r No. E124	r Name POWER DISTRIBUTION MODULE ENGINE ROOM)	r Color BLACK	
Connector No.	Connector Name	Connector Color BLACK	







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

Connector Name Connector Color

Connector No.

WHITE



Signal Name	IT OT AWP1/H	H/LAMP LO RI	H HWANH	IH AWAJ/H
Color of Wire	7	R/Y	G	У
Terminal No. Wire	52	54	55	99

GND (POWER)

В

29

	37	43	
117	38	44	
- IV	39	45	
- 11	40	46	
	41	47	
	42	48	
L			



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Signal Name	GND (SIGNAL)	CAN-H	CAN-L	DTRL RLY CONT
Color of Wire	В	7	Ь	BR
Terminal No.	38	39	40	44

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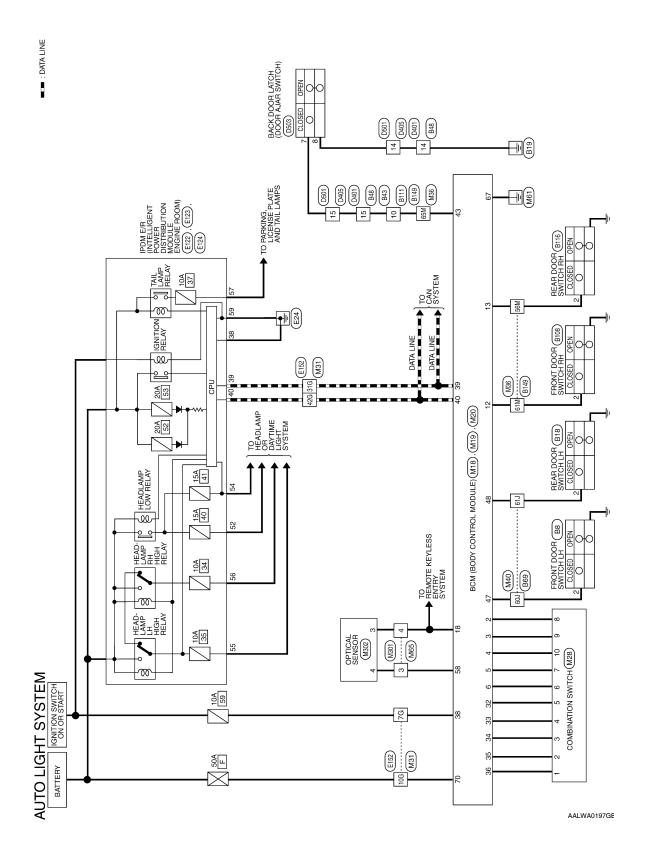
DAYTIME LIGHT SYSTEM

																					Α
WIRE			6 5 4 3 2 1	17 16 15 14		Signal Name	ı	ı	-	1		Signal Name	ı	1							В
Connector No. F14 Connector Name WIRE TO WIRE	olor WHITE		110 9 8 7	24 23 22 21 20 19 18		Color of Wire	_	7	Ф	<u>a</u>		Color of Wire	_	А							D
Connector No.	Connector Color			οį]	Terminal No.	က	ည	14	15		Terminal No.	51J	52J							Е
			1		1									_							F
Signal Name	ı	ı	ı	ı										ш	1.1 2.1 3.1 4.0 5.1 6.1 7.1 8.1 9.0 10.0	11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0 21.0 21		31) 32J 33J 34J 35J 36J 37J 38J 39J 40J 41J	51.1 52.1 53.1 54.1 55.1 56.1 57.1 58.1 59.1 60.0 61.1 62.1 63.1 64.1 65.1 66.1 67.1 68.1 69.1 70.1	71J 72J 73J 74J 75J 76J 77J 78J 799 80J	G H
Color of Wire	M	W/B	_	۵). B69	WINE WIRE I	_		11.0 12.0 13.0		31J 32J 33L 42J 43J	51J 52J 53J 62J 63J	7	I
Terminal No.	76	10G	31G	42G			Г.					Connector No.	Connector Color WILE TO WIRE		H.S.						J
		\neg				21G		41G		616				7							K
E152	Consider Of Miles Of Wiles			16 26 36 46 56	6G 7G 8G 9G 10G	136 146 156 166 176 186 196 206	226 236 246 256 266 276 286 296 306	31G 32G 33G 34G 35G 36G 37G 38G 39G 40G 41G	43G 44G 45G 46G 47G 48G 49G 50G	51G 52G 53G 54G 55G 56G 57G 58G 59G 60G 61G 62G 62G 63G 63G 64G 65G 66G 67G 68G 69G 70G	71G 72G 73G 74G 75G 76G 77G 78G 79G 80G	0	WIRE TO WIRE	ш Е	4 5 6 7 8 9 10 11 15 16 17 18 19 20 21 22 23 24 24	Signal Name	ı	1			EXL
or No.	In Maille W					11G 12G	226	31G 32G	426	516 526					1 2 3 4 11 11 11 11	No. Color of Wire	<u> </u>	_			Ν
Connector No.	Connector Color		E	O II	S.							Connector No.	Connector Color		H.S.	Terminal No.	23	24			0
																				ABLIA0082GB	Р

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AUTO LIGHT SYSTEM

Wiring Diagram



AUTO LIGHT SYSTEM CONNECTORS

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

Signal Name

Color of Wire

Terminal No.

				-		
					20	9
					19	ස
					18	38
	_				17	37
	RO				16	38
	Ē				9 10 11 12 13 14 15 16 17 18 19	33
	Ō				14	34
	0		_		13	33
	ن ۾			7	12	32
	BC	111		/	11	31
_	BCM (BOE MODULE)	WHITE		\	10	3
<u>∞</u> <u>≥</u>	űŌ	ΥH		1		29
≥	B≥		_		8	28
	μe	ō			7	27
ġ	a a	즛			9	26
=	ž	ř			5	22
3	닪	당			4	24
<u>D</u>	le l	lue	E S.		က	23
COILLECTOL INC.	Connector Name BCM (BODY CONTROL MODULE)	Connector Color	優三		2	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
	<u> </u>	<u> </u>				7

6	BCM (BODY CONTROL MODULE)	WHITE	41 42 43 44 45 46 47 48 49 49 49 45 55 56 55 56 55 56 55 56 5	Signal Name	BACK DOOR SW/FUEL LID OPEN SW	DOOR SW (DR)	DOOR SW (RL)
. M19			41 42 43	Color of Wire	R/B	SB	R/Υ
Connector No.	Connector Name	Connector Color	原 H.S.	Terminal No.	43	47	48

KEYLESS AND AUTO LIGHT SENSOR GND

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OUTPUT 5

R/G F/≺

33 33

OUTPUT 4

OUTPUT 3 OUTPUT 2

OUTPUT 1

O/B R/W W/L

38 38

IGN SW CAN-H CAN-L

> ۵ \neg

> > 40

39

DOOR SW (AS) DOOR SW (RR)

RR GR

12

13 9

INPUT 3 INPUT 2 INPUT 1

G/B

2 9

>

β

SB

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				1
	M28	Connector Name COMBINATION SWITCH	WHITE	
	Connector No.	Connector Name	Connector Color WHITE	

BCM (BODY CONTROL MODULE)

M20

Connector No.

Connector Name



Signal Name	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5	OUTPUT 1	OUTPUT 2	OUTPUT 5	OUTPUT 4	OUTPUT 3
Color of Wire	R/W	O/B	٦	R/Y	B/G	^	G/B	SB	G/Y	Т
Terminal No.	-	2	3	4	2	9	2	8	6	10

WHITE 10 0 9 8 7	П
2 0 0	IJ
0 4	Ш
	П
WHITE	
있╞││└┴	Ш
- 	
Name Color]
	_

ector Cc	Connector Color BLACK	CK
	56 57 58 59 60 61	Se 57 58 59 60 61 62 63 64 Se 70 64 Se 70 64 Se 70 64 Se 69 69 69 69 69 69 69 69 69 69
No.	Terminal No. Wire	Signal Name
	W/R	AUTO LIGHT SENSOR INPUT 2
	В	GND (POWER)
	W/B	BATT (F/L)

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EXL-65 Revision: December 2009 2009 QX56

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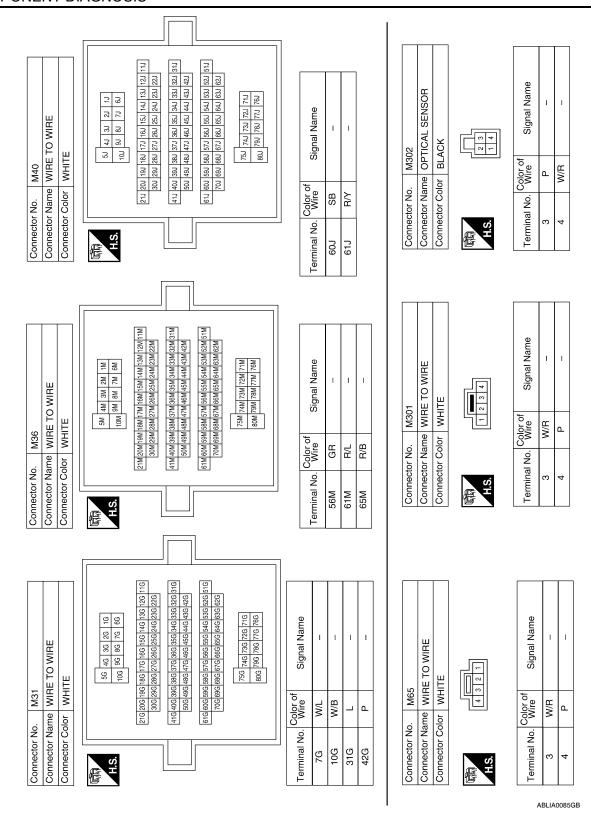
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			А
GENT TION ROOM)	MP WER)		В
POWER DISTRIBUTION MODULE ENGINE ROOM) BLACK SE S	r of Signal Name 1. TAIL LAMP 3. GND (POWER) B8 FRONT DOOR SWITCH LH WHITE	Signal Name	С
 	<u> 2</u> <u> </u>	⊣ ≗≒ ਲ	D
Connector No. Connector Name Connector Color	Terminal No. Working September 1997 Figure	H.S. Terminal No.	Е
			F
LIGENT SUTION E ROOM)	ame		G
PDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) BROWN ST ST ST ST ST ST ST S	Signal Name H/LAMP LO LH H/LAMP LO RH H/LAMP HI LH H/LAMP HI RH H/LAMP HI RH		Н
	Color of Col	W/W L	I
Connector No. Connector Name Connector Color	76 Terminal No.	10G 31G 42G	J
		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	K
LIGENT 3UTION IE ROOM)	ame GGNAL) 	16 26 36 46 56 106	EX
PDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) WHITE 42 41 40 38 33 44 44 44	Signal Name GND (SIGNA) GNN-H CAN-H CAN-L E152 WIRE TO WIRE	26 16 26 36 46 56 16 16 26 36 46 56 16 16 16 16 16 16 1	M
	Color o Wire B B B No.	110 120 120 120 120 120 120 120 120 120	N
Connector No. Connector Name Connector Color	Connector No. Color Color Connector No. Connector No. Connector No. Connector Name Connector Nam	S. H. S.	0
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In No.	14 B -	Terminal No. Color of Signal Name 10 RW -	
ior No.	Connector Name FRONT DOOR SWITCH RH Connector Color WHITE	H.S. Color of Signal Name 2 R/L -	-1
ttor No.	2 R/Y	11G 2G 3G 4G 5G 10G 11G 11G 12G 13G 4G 5G 11G 11G 12G 13G 14G 13G 11G 12G 13G 14G 13G 14G 13G 14G 13G 14G 13G 13G 13G 13G 13G 13G 13G 13G 13G 13	Terminal No. Color of Signal Name 60J SB -

Connector Name REAR DOOR SWITCH RH	Connector No.	Connector No. B149 Connector Name WIRE TO WIRE	TO WIRE	<u> </u>	S.	Wire	Signal Name	
WHITE	Connector Color	Solor WHITE			26M	GR	ı	1
_		-			61M	B/L	1	1
	是 H.S.	11 10 10 10 10 10 10 10 10 10 10 10 10 1	6M 7M 8M 9M 10M 10M 10M 10M 10M 10M 10M 10M 10M 10		65M	MM —	1	
Color of Signal Name GR –		22M 23M 13m 12m 12m 12m 12m 12m 12m 12m 12m 12m 12	1	W W				
Connector No. D401 Connector Name WIRE TO WIRE Connector Color WHITE	Connector No. Connector Name Connector Color	Connector No. D405 Connector Name WIRE TO WIRE Connector Color WHITE	TO WIRE	8 8 8	Connector No. D501 Connector Name WIRE TO WIRE Connector Color WHITE	D501 me WIRE T	TO WIRE	
1 2 3 4 6 6 7 8 9 10 11 12 13 14 15 16 17 18	H.S.	10 9 8 7 6 18 17 16 1	10 9 8 7 6 5 5 4 3 2 1 18 17 16 15 14 13 12 11		ν <u>;</u>	2 3 4 5	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	
Color of Signal Name Wire B - RW -	Terminal No. 14	Color of Wire B B R/W	Signal Name	<u> </u>	Terminal No. 14	Color of Wire B	Signal Name	
]
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Revision: December 2009 EXL-69 2009 QX56







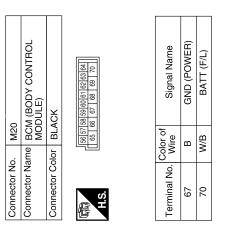
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Signal Name	DOOR AJAR SW	GND
Color of Wire	R/W	В
Terminal No.	7	8

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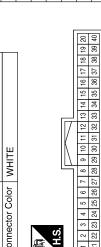
HEADLAMP AIMING SYSTEM (MANUAL) Α Wiring Diagram INFOID:0000000003776201 ■■: DATA LINE (ND): WITHOUT DAYTIME LIGHT SYSTEM (RL): WITH DAYTIME LIGHT SYSTEM IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E122), (E123), (E124) В C IGNITION RELAY w. (E152) (M31) D CPU 20A Е 20A 52 F COMBINATION LAMP RH (HEADLAMP AIMING MOTOR) (E107): (ND) HEADLAMP LOW RELAY Н 15A 41 Tub. FRONT COMBINATION LAMP LH ALMING LAMP AIMING MOTOR) (E6): (RL) M31 J TAIL LAMP RELAY Κ 10A -w EXL BCM (BODY CONTROL MODULE) (M18), (M20) HEADLAMP AIMING SYSTEM M COMBINATION SWITCH (M28) Ν IGNITION SWITCH ON OR START 10A 0 E152 M31 BATTERY Р ABLWA0024GE

HEADLAMP AIMING SYSTEM CONNECTORS

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



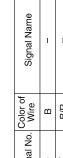
Signal Name	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	IGN SW	CAN-H	CAN-L
Color of Wire	SB	G/Y	>	G/B	>	B/G	R/Y	٦	O/B	B/W	M/L	L	Ь
Terminal No.	2	က	4	2	9	32	33	34	35	36	38	39	40

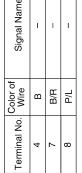


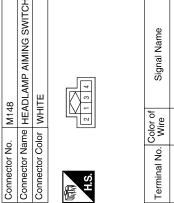
HEADLAMP AIMING SYSTEM (MANUAL)

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Signal Name	ı	ı	1	
Color of Wire	В	B/R	P/L	
Terminal No. Wire	4	7	8	









Connector No.	E121
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN
H.S.	29 28
Terminal No. Wire	lor of Vire Signal Name

HEAD LAMP LEVELIZER

P/L

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000	FRONT COMBINATION LAMP RH (WITH DAYTIME LIGHT SYSTEM)	CK	7 3 4	Signal Name	1	ı	
. F108		lor BLACK	6 2	Color of Wire	В	B/R	70
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	4	7	٥

Connector No.	\forall	7
Connector Name		FRONT COMBINATION LAMP RH (WITHOUT DAYTIME LIGHT SYSTEM)
Connector Color		BLACK
原 H.S.		5 6 7 8
Terminal No.	Color of Wire	Signal Name
4	В	ı
7	B/R	_

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B/R <u>|</u>

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	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) BLACK Sel S	Solor of Wire	Connector C H.S.
_	GIVE (LOWER)	۵	50
D = A		Color of Wire	Terminal No.
Color of Signal Name	25 61 60 25 61 60	8	原面 H.S.
22 61 68	ACK	olor BL/	Connector C
4CK	M E/R (INTELLIGENT WER DISTRIBUTION DULE ENGINE ROOM)	ame POV	
			Connector N

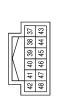
Signal Name	1	1	ı	1	1	
Color of Wire	MΠ	M/B	Г	B/R	Ь	
Terminal No. Wire	7G	10G	31G	32G	42G	
			F			
		7				

Connector No.	E152	_ -
Connector Name	WIRE TO WIRE	
Connector Color	WHITE	
明.S.	16 26 36 46 56 66 76 86 96 10G	
11011	116 126 136 146 156 166 176 186 196 206 216 226 236 246 256 266 276 286 296 306	_
3163	31G 32G 33G 34G 35G 36G 37G 38G 39G 40G 41G 42G 43G 44G 45G 46G 47G 48G 49G 50G	
5165	51G 52G 53G 54G 55G 56G 57G 58G 59G 80G 61G 82G 62G 67G 68G 68G 68G 68G 68G 68G 68G 68G 68G 68	
	716 726 736 746 756 766 776 786 796 806	

Connector No.	E122	22				
Connector Name		WE DO	발표별	NSIC NSIC NSIC NSIC NSIC NSIC NSIC NSIC	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	
Connector Color WHITE	₹	≌	l			1
E	片	$ \Lambda $	IV I	凥	Г	
SH	42 41 40 39 38	40	33	38 37		
2	48 47	7 46	45	48 47 46 45 44 43		

Connector Name Connector Color

Connector No.





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

R/L

Terminal No. 49

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FRONT FOG LAMP SYSTEM

Wiring Diagram

--- : DATA LINE

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E122), (E123). GIGNITION BELAY E152 M31 20A 53 CPU 20A MZO BCM (BODY CONTROL MODULE) (M18), FRONT FOG LAMP RELAY COMBINATION SWITCH (M28) 20A 56 IGNITION SWITCH ON OR START 76 (M31) 50A BATTERY

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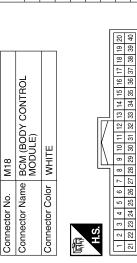
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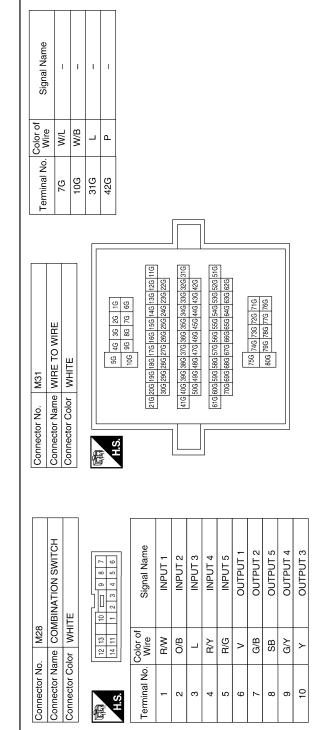
FRONT FOG LAMP

FRONT FOG LAMP CONNECTORS



Connector Nan		/ (BODY CONTBOI
Connector Name		BCM (BODY CONTROL MODULE)
Connector Color	lor BLACK	ÓK
南 H.S.	56 57	56 57 58 59 60 61 62 63 64
Terminal No.	Color of Wire	Signal Name
29	В	GND (POWER)
20	M/B	BATT (F/L)

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	>	G/B	>	R/G	R/Υ	٦	O/B	B/W	M/L	L	Ь
Terminal No.	2	က	4	2	9	32	33	34	32	96	38	39	40



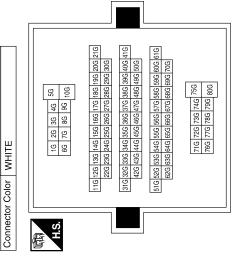
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Signal Name	I	-	-	I
Color of Wire	L/W	M/B	٦	۵
Terminal No.	76	10G	31G	42G

Connector Name WIRE TO WIRE

E152

Connector No.



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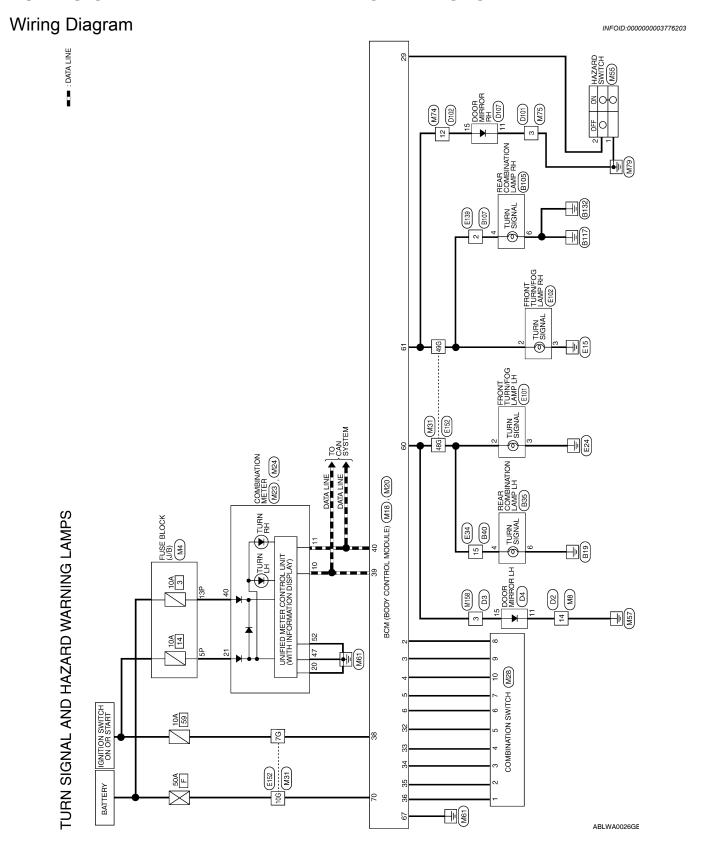
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TURN SIGNAL AND HAZARD WARNING LAMPS CONNECTORS

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

Connector No. M8	Connector Name WIRE TO WIRE	Connector Color WHITE	T 6 5 4 C C C C C C C C C C C C C C C C C C
M4	ne FUSE BLOCK (J/B)	ır WHITE	SP (SP (4P (13P)/2P (11P) (10P) 9P (8P)

Signal Name	1	1
Color of Wire	O/L	۵
Terminal No.	5P	13P

4			
7 6 5 14 14 14	Color of Wire	В	
H.S.	Terminal No. Wire	14	
4P	Signal Name	1	
7P 6P 5P 4P 16P 15P 14P 13P	Color of Wire	O/L	٥
	· ·		

Signal Name

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

BLA	Connector Color
BCN MOI	Connector Name
M20	Connector No.

65 66 67 68 69 70	Signal Name	FLASHER OUTPUT (LEFT)	FLASHER OUTPUT (RIGHT)	GND (POWER)	BATT (F/L)
39	Color of Wire	G/B	G/Y	В	W/B
H.S.	Terminal No. Wire	09	61	29	20

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	G/Y	>	G/B	>	M/B	B/G	R/Y	٦	O/B	R/W	M/L	L	Ь
Terminal No.	2	က	4	2	9	29	32	33	34	35	36	38	39	40

				8	40
				19	39
				18	38
				17	37
	占			16	36
	Œ			15	35
	ΙŹ			4	34
	18			13	33
	Connector Name BCM (BODY CONTROL MODULE)		17	9 10 11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
				Ξ	31
	⊕∃	ш	N	9	30
ω	BCM (BOD MODULE)	두		6	29
M18	88	∣⋝		8	28
_	(I)			7	27
	Ĕ	<u>ē</u>		9	26
ž	lg S	ပြ		2	25
ō	ō	ō		4	24
Sct	忘	슳		က	23
Ĕ	Ē	Ľ	H.S.	2	22
Connector No.	ပြ	Connector Color WHITE	唇	-	21
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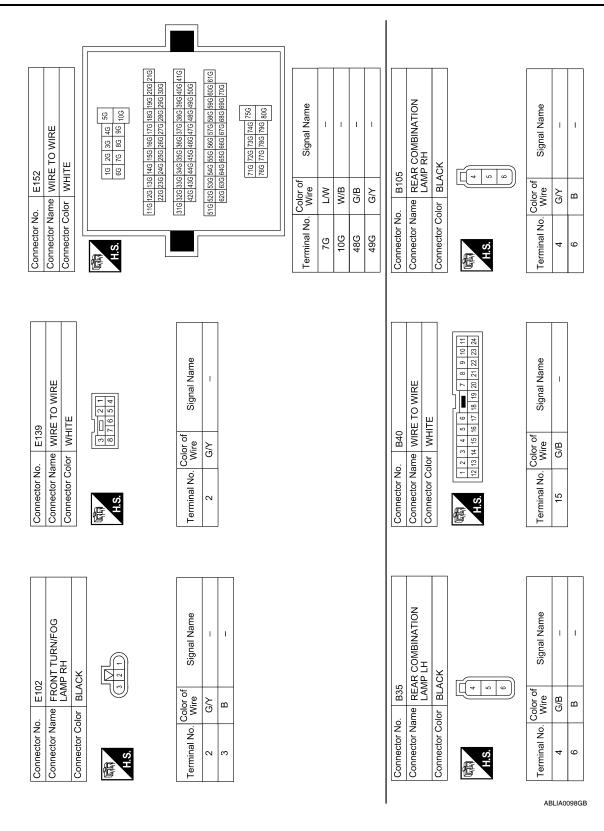
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M28 COMBINATION SWITCH	WHITE		2 3 4 5 6 6		้ซึ่	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5	OUTPUT 1	OUTPUT 2	OUTPUT 5	OUTPUT 4	OUTPUT 3											
a e	_		14 11)	₩ W	O/B	7	R/Υ	R/G	^	G/B	SB	ζg	>											
Connector No. Connector Name	Connector Color	Œ	H.S.		Terminal No.	-	2	8	4	5	9	7	8	6	10											
Connector No. M24 Connector Name COMRINATION METER	TE	•			32 31 30 29 28 27 26 25 24 23 22 21			Signal Name	CAN-H	CAN-L	GROUND	RUN/START	BATTEBY			Signal Name	1	ı	ı	1						
. M24	lor WHITE		L	\neg	5 8		40,100	Wire	_	۵	В	0/6	۵	-		Color of Wire	M/L	M/B	G/B	G/Y						
Connector No.	Connector Color		E.S.		20 19 18 17 16 15 14 40 39 38 37 36 35 34			Terminal No.	10	Ξ	20	21	40	2		Terminal No.	76	10G	48G	49G						
]					Г				7												ā]	٦		
M23 COMBINATION METER	WHITE		46 45 44 43 42 41	52 51 50 49 48 47				of Signal Name		LOWER GIND	ביייטר מואטר					Connector No. M31	IRE IO WIRE	WHIIE		56 46 36 16	3 8	21G 20G 19G 18G 17G 16G 15G 14G 13G 12G 11G 30G 29G 28G 27G 28G 25G 24G 23G 22G	416 40G 39G 38G 37G 36G 35G 34G 33G 32G 31G 50G 49G 48G 47G 46G 45G 44G 43G 42G	61G 60G 59G 58G 57G 56G 55G 54G 53G 52G 51G		75G 74G 73G 72G 71G 80G 79G 78G 77G 76G
Connector No. M	Connector Color M		46	25				al No. Wire								tor No. M	Cormector Name w	_				216 206	41G 40G	616 606	<u> </u>	
Connec	Connec		唇 SH					Terminal No.	7.7	ţ u	20					Connector No.			E C		<u> </u>					

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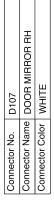
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e e	(5)	e e	В
TO WIRE E Signal Name	E101 FRONT TURN/FOG LAMP LH BLACK	Signal Name	С
O. M75 ame WIRE T olor WHITE Color of Wire B		Color of Wire G/B B	D
Connector No. M75 Connector Name WIRE TO WIRE Connector Color of A.S. A.S. Terminal No. Wire Signal No. Signal No. Signal No. Wire	Connector No. Connector Name Connector Color H.S.	Terminal No. 2 2 3	Е
			F
5 4 3 2 1 1 14 13 12 11 10 Signal Name	4 1 2 1 1 2 1 1 1 2 1 1 1 1 1 1 1 1 1 1	y a me	G
		Signal Name	Н
No. M74 Name WIRI Color WHI 9 8 7 6 20 19 18 7 Wire G/Y	No. E34 Name WIRE TO WII Color WHITE	Color of Wire G/B	I
Connector Name Connector Color Connector Color H.S. 120 Terminal No. W	Connector No. Connector Name Connector Color	Terminal No.	J
			K
SWITCH Signal Name		Signal Name	EXL
M55 HAZARD SWI WHITE 3 1 2 4 r of Signs R AB	WIRE TO WIR WHITE		M
Col Col William		Color of Wire G/B	N
Connector No. Connector Cold H.S. Terminal No. 2	Connector No. Connector Name Connector Color	Terminal No.	0
		ABLIA0097GB	



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lame -	Name	АВ
Connector No. D3 Connector Name WIRE TO WIRE Connector Color WHITE 1 2	Connector No. D102 Connector Name WIRE TO WIRE Connector Color BROWN Terminal No. Wire Signal Name 12 G/Y	C D
		F
Connector No. D2 Connector Name WIRE TO WIRE Connector Color WHITE #S. 1 2 3	Connector No. D101 Connector Name WIRE TO WIRE Connector Color WHITE Terminal No. Wire Signal Name 3 B -	G H I
Connector No. B107 Connector Name WIRE TO WIRE Connector Color WHITE	Connector No. D4 Connector Name DOOR MIRROR LH Connector Color WHITE 11 2 3 4 5 6 7 8 9 Terminal No. Wire Signal Name 11 B - 15 G/B -	K EXL M N
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Signal Name	ı	_
Color of Wire	В	G/Y
Terminal No.	+	15

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PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM < COMPONENT DIAGNOSIS > PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM Α Wiring Diagram INFOID:0000000003776204 IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E122), (E124) ■■: DATA LINE (ND): WITHOUT DAYTIME LIGHT SYSTEM (RL): WITH DAYTIME LIGHT SYSTEM В С (E152) M31 D FRONT COMBINATION LAMP RH E107 : (ND) IGNITION RELAY DATA LINE Е W PARKING CPU F 20A 53 REAR COMBINATION LAMP RH (8130) 20A 52 E139 B107 TAIL TAIL LAMP RELAY H33 **⊕** Н REAR COMBINATION LAMP LH B70 10A E34 B40 TAIL J FRONT COMBINATION LAMP LH (E6): (RL) PARKING, LICENSE PLATE AND TAIL LAMPS Κ **PARKING** EXL BCM (BODY CONTROL MODULE) (M18), (M20) LAMPS (D703) M н Фвн COMBINATION SWITCH (M28) Ν

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(M31)

IGNITION SWITCH ON OR START

BATTERY

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PARKING, LICENSE PLATE AND TAIL LAMP CONNECTORS

Connector No. M18 Color of Color of Module) Terminal No. Color of Wire Connector Name MODULE) 2 SB Connector Color WHITE 3 G/Y H.S. F 7 8 9 0 11 2 34 15 16 77 18 19 20 32 34 35 38 38 38 38 38 38 38					l					
DDY CONTROL E) 11 12 13 14 15 16 17 18 19 20 13 28 38 38 58 58 78 38 39 40	Color of	wire	SB	G/Y	>	G/B	۸	B/G	R/Υ	٦
Connector No. M18 Connector Name BCM (BODY CONTROL MODULE) Connector Color WHITE Line 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 8 19 20 21 22 23 24 25 26 27 28 29 29 21 28 29 29 21 28 29 29 21 28 29 29 21 28 29 29 21 28 29 29 21 28 29 29 21 28 20 21 28 29 21 28 29 21 28 29 21 28 29 21 28 29 21 28 29 21 28 29 21 28 29 20 21 28 29 20 21 28 29 20 21 28 20 21 28 29 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 28 20 21 20 21 20 21 20 21 20 21 20 21 20 21 20 21 20 21 20 21 20 21 20 21 20 21 20 21	Terminal No		2	3	4	5	9	32	33	34
		Connector Name RCM (BODY CONTBOI	MODULE)	Connector Color WHITE			HS		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	04 25 05 12 06 25 36 26 26 36 36 37 07 07 07 07 07 07 07

M20	BCM (BODY CONTROL	MODÙLE)	BLACK		56 57 58 59 60 61 62 63 64	80 90 100			of Signal Name		GND (POWER)	BATT (F/L)
	ame B	≥			565	3			\circ	>	Ω	M/B
Connector No.	Connector Name		Connector Color		F	H.S.			Terminal No	3	29	70
				•								
	Signal Name	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	WO NOT

CAN-H CAN-L

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Signal Name		I	ı	1		1						
Color of	ם • •	M/L	M/B	_	J	Ь						
Terminal No. Wisso		5/2	10G	316	5	42G						
				Г								
. No. M31	Connector Name WIBE TO WIBE		WHILE			56 46 36 26 16	100 90 80 70 60	216 206 196 186 176 166 156 146 136 126 116	30G 29G 28G 27G 26G 25G 24G 23G 22G	416 406 396 386 376 366 356 346 336 326 316	50G 49G 48G 47G 46G 45G 44G 43G 42G	
Connector No.	Connector	Connector Color			E	-	ć E					
	IOI	5		Г			7	me				

	COMBINATION SWITCH	WHITE	10 9 8 7	Signal Name	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5	OUTPUT 1	OUTPUT 2	OUTPUT 5	4 TUTPUO	OUTPUT 3
. M28	_		12 13	Color of Wire	B/W	O/B	_	₽/A	B/G	>	G/B	SB	G/Y	>
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	-	2	ဧ	4	5	9	7	8	6	10

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75G 74G 73G 72G 71G 80G 79G 78G 77G 76G

PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

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			13 12 1					
E34	Connector Name WIRE TO WIRE Connector Color WHITE	1 1	24 23 22 21 20 19 18 17 16 15 14	or of Signal Name	R/L –			
Connector No.	Connector Name WIRE T Connector Color WHITE		H.S.	Terminal No. Wire	12 F			
	Connector Name LAMP LH (WITHOUT DAYTIME LIGHT SYSTEM)	-ACK	6 7 8 6 7 8	A Case of A		ı	1	
Connector No. E11	Connector Name LAD	Connector Color BLACK	斯 H.S.	Color of	reililliai NO. Wire	3 B/L	4 B	
	ш					<u> </u>	7	
9	RONT COMBINATION AMP LH (WITH DAYTIME IGHT SYSTEM)	BLACK	1 2 3 1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	of Signal Name	1	1		
Connector No. E6	Connector Name LAMP LH (WITH LIGHT SYSTEM)	Connector Color BI	H.S.	Terminal No. Wire	3 R/L	4 B		

2	Sonnector Name POWER DISTRIBUTION MODULE ENGINE ROOM)	ПЕ	42 41 40 39 88 37 48 47 46 45 44 43	Signal Name	GND (SIGNAL)	CAN-H	CAN-L
E122	ne PO\ MO	or WH	48 47	Solor of Wire	В	٦	Ь
Connector No.	Connector Nar	Connector Color WHITE	雨 H.S.	Terminal No. Wire	38	39	40
							1
8	Connector Name LAMP RH (WITH DAYTIME LIGHT SYSTEM)	CK	8 8 4 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Signal Name	1	ı	
E108	re LAM LIGH	or BLA		Solor of Wire	R/L	В	
Connector No.	Connector Nan	Connector Color BLACK	原 H.S.	Terminal No. Wire	е	4	
7	FRONT COMBINATION LAMP RH (WITHOUT DAYTIME LIGHT SYSTEM)	CK	8 8 4 4	Signal Name	1	1	
E107	FRC	BLACK		olor of Wire	R/L	ш	

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Color of Wire R/L В

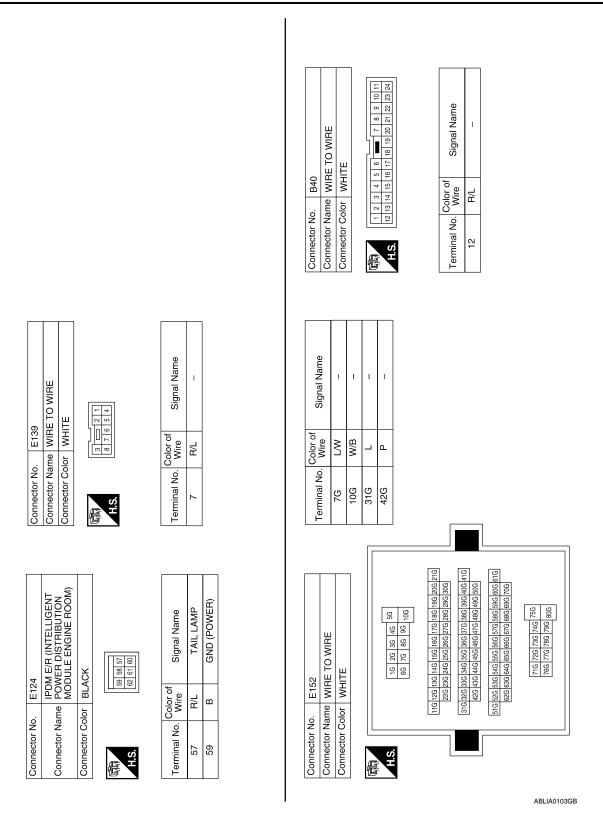
Terminal No.

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Connector Name Connector Color

Connector No.



PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

< COMPONENT DIAGNOSIS >

0	Connector Name REAR COMBINATION LAMP RH	\ _t	3 2 1	Signal Name	ı	ı	
B130	e REA	r GR/		olor of Wire	В	B/L	
Connector No.	Connector Nam	Connector Color GRAY	H.S.	Terminal No. Wire	-	3	
	E TO WIRE	1		Signal Name	1		
B107	or WIRE		1 4 5	color of Wire	R/L		
Connector No. B107	Connector Name WIRE TO WIRE Connector Color WHITE		语.S.H	Terminal No. Wire	2		
	REAR COMBINATION LAMP LH	AY	2 5 1	Signal Name	ı	1	
. B70	me RE	lor GR		Color of Wire	В	R/L	
Connector No.	Connector Name REAR COMBIN	Connector Color GRAY	H.S.	Terminal No. Wire	-	3	

Connector No. B139	B139	Connector No. B140	B140	Connector No. D601	D601
Connector Name	onnector Name WIRE TO WIRE	Connector Name	Connector Name WIRE TO WIRE	Connector Name	Connector Name WIRE TO WIRE
Connector Color WHITE	WHITE	Connector Color WHITE	WHITE	Connector Color WHITE	WHITE

10	RE TO WIRE	IITE	3 -1	Signal Name	ı
D601	me WIF	or WH	0 5	Solor of Wire	В
Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	哥 H.S.	Terminal No. Wire	8
01	RE TO WIRE	IITE	2 0 C	Signal Name	1
. B14	me WIF	lor WF	[- m	Solor of Wire	В
Connector No. B140	Connector Name WIRE TO WIRE	Connector Color WHITE	原 H.S.	Terminal No. Wire	3
	ro wire		12 [13] 14 [15] 15 [16]	Signal Name	1

Color of Wire R/L

Terminal No.

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PARKING, LICENSE PLATE AND TAIL LAMPS SYSTEM

Connector Name LICENSE PLATE LAMPS
Connector Color WHITE

Connector No. D703

Connector Name WIRE TO WIRE Connector Color WHITE

Connector Name WIRE TO WIRE Connector Color WHITE

Connector No. D701

Connector No. D702

Signal Name

Color of Wire R/L

Terminal No.

Signal Name

Color of Wire B

Terminal No.

Signal Name

Color of Wire R/L

Terminal No.

N

< COMPONENT DIAGNOSIS >

Connector Name WIRE TO WIRE Connector Color WHITE	7 6 5 4 3 2 1	Signal Name
Vo. D606 Vame WIRE	7 6 15 7	Color of Wire B/L
Connector No. D606 Connector Name WIRE To	E.S.	Color of Wire 4 R/L
E TO WIRE	S	Signal Name -
time WIRE	0 0	Color of Wire B
Connector No. D605 Connector Name WIRE TO WIRE Connector Color WHITE	南南 H.S.	Color of Wire 3 B
0 0 0		
2 IE TO WIRE ITE	4 4 12 11 10 9 8 1 1 1 10 10 10 10 10 10 10 10 10 10 10	Signal Name
D602 ame WIRE	7 6 5 14 16 15 14	Color of Wire R/L
Connector No. D602 Connector Name WIRE TO WIRE Connector Color WHITE	所 H.S.	Terminal No. Wire Wire 4 R/L

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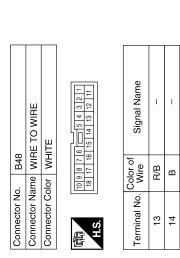
STOP LAMP Α Wiring Diagram INFOID:0000000003776205 T7>: TRAILER TOW 7 PIN В С D Е F → TO BRAKE CONTROL SYSTEM BLS BRL OUT G Н 8132 8132 J D401 B48 SWITCH E38 Κ BATTERY EXL \mathbb{N} E26 Ν 0 STOP LAMP Ρ ABLWA0028GE

Connector No. M91 Connector Name WIRE TO WIRE Connector Color WHITE	T 6 5 4 3 2 1	Terminal No. Wire Signal Name		Connector No. E34 Connector Name WIRE TO WIRE Connector Color WHITE	H.S. (11 10 9 8 7 6 5 4 3 2 1 1 1 H.S.)	o O	13 R/B =		
Connector No. M60 Connector Name FUSE BLOCK (J/B) Connector Color WHITE	(新) (27 (三7 11 11 11 11 11 11 11 11 11 11 11 11 11	Terminal No. Wire Signal Name 1T R/Y –		Connector No. E26 Connector Name WIRE TO WIRE Connector Color WHITE	H.S. 1 2 3 4 5 6 7 H.S. H.S.	Terminal No. Volre Signal Name	11 R/G –		
STOP LAMP CONNECTORS Connector No. M31 Connector Name WIRE TO WIRE Connector Color WHITE	56 4G 3G 2G 1G 10G 9G 8G 7G 6G	210 200 190 190 176 176 176 176 176 176 176 300 290 290 276 286 256 246 259 220 220	Terminal No. Color of Signal Name 46G R/Y -	Connector No. E12 Connector Name STOP LAMP RELAY Connector Color BLACK	H.S.	Terminal No. Wire Signal Name	1 R/Y -	B/G	5

		Α
<u>0</u>	8 9 10 11	В
TO WIRE Signal Name		С
20. E139 Signature MIRE TO W Signature Signatu	B40 B40	D
Connector No. E139 Connector Name WIRE TO WIRE Connector Color WHITE A.S. Signal R.M. Signal R.M. Signal R.M. Signal	Connector No. Connector Name Connector Color Terminal No. Color 13 Ray	Е
0L 4 15 16 16 17 16 17 16 17 17		F
UATOR AND C UNIT (CONTROL 3 10 11 12 13 14 15 16 12 13 14 14 15 16 12 13 14 14 1 12 13 14 14 1 12 13 14 14 1 12 13 14 14 1 12 13 14 14 1 12 13 14 1 13 14 1 13 14 1 13 14 1 13 14 1 13 14 1 13 14 1 13 14 1 13 14 1 13 14 1 13 14 1 13 14 1 14 14 1	Name	G
5 5 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Signal	Н
or No. E125 or Name ELEC UNIT) or Color BLAC 19 20 21 22 2 10 20 21 22 3 10 20 20 3 10 20 20 3 10 20 20 3 10 3 	No. Color of Wire R/Y	I
Connector No. Connector Name Connector Color 1 2 3 4 5 5 17 18 19 20 20 1 20 3 4 5 30 20 5 20 20 35 LV 20 35 LV 20 41 R	Terminal No.	J
		K
Signal Name	Color	EXL
	Color Colo	M
N N N N N N N N N N	Connector Name V Connector Color V Connector No.	N
Connector No. Connector Nar Connector Col		0
'	ABLIA0105GB	Р

	E IO WIRE		Signal Name	ı
. B107	ine WIRE I	- 4 C D	Color of Wire	B/B
Connector No.	Connector Color WHTE	雨 H.S.	Terminal No. Wire	8

Connector No.). B70	0
Connector Name		REAR COMBINATION LAMP LH
Connector Color		BLACK
原 H.S.		
Terminal No.	Color of Wire	Signal Name
1	В	I
2	B/B	ı



1			1		7	1	
		Connector No. D401	No.	.01	Connector No. D403	NO.	03
Name REAR COMBINATION	_	Connector	Name W	Connector Name WIRE TO WIRE	Connector	Vame HIC	Connector Name HIGH MOUNTED STOP
		Connector Color WHITE	Color	HITE		Z	LAMP
					Connector Color GRAY	Color GF	3AY
		H.S.	11 12 13 4 5	5 14 15 16 7 18	语, H.S.		2 -
Signal Name		Terminal No. Wire	Color o Wire	Signal Name	Terminal No. Wire	Color of Wire	Signal Name
١.		13	B/B	ı	-	B/B	-
		41	В	ı	2	В	1

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Connector Name

Terminal No.

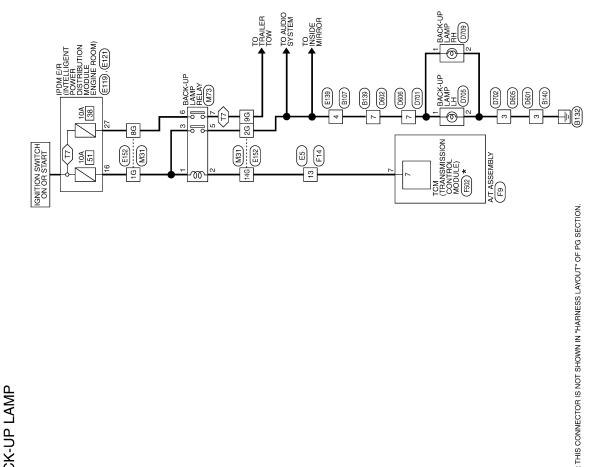
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Connector No.

BACK-UP LAMP

Wiring Diagram

(T7): TRAILER TOW 7 PIN



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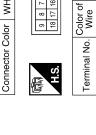
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BACK-UP LAMP

BACK-UP LAMP CONNECTORS

WINE TO WINE	Connector No. M73	plor BROWN	_		2 2	6 3	Color of Signal Name	I G	ı	5	G/W –	– M/B	Y/R –	
Terminal No. Wire 1G G G Wire 1G G G Wire G G G Wire G G G Wire G G G G Wire G G G G G G Wire G G G G G G G G G	Connector No.	Connector Co		E		Ċ	Terminal No.	-	2	က	2	9	7	
166 16 176 166 166 17		1	1	ı	1	1								
166 16 176 166 166 17	Color of Wire	G	G/W	M/B	Y/R	ш								
Same Marker Mar	Terminal No.	1G	26	8G	98	14G								
Same Wind War To wind Sector No. War To wind Wind To wind Sector Color White Sector Color White Sector Color White Sector Color White Sector Color Sector Sector Color Sector Sector Sector Color Sector Sect				ſſ										
Conr	Connector No. M31	Jector Marie Wine 10 Wine	WHILE		55	100 90 86 76			506 496 476 466 456 446 436 426	Con Con	70G 69G 68G 67G 66G 65G 64G 63G 62G		75G 74G 73G 72G 71G	80G 79G 776 776 76G

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



Signal Name REVERSE LAMP

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	WIRE TO WIRE	ITE	1 2 3 4 5 6	Signal Name	ı
). E5	ıme WIF	olor WHITE	2 3 4 15 14 15 11	Color of Wire	В
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	13

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ame 15 17 18 18 18 18 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 19 18 18 18 18 18 18 18 18 18 18 18 18 18	В
Signal N	С
No. F14 Name WIRE T Color of Wire Outline 9 8 7 1 20 15 12 15 15 15 15 15 15 15 15 15 15 15 15 15	D
Connector No. Connector Name Connector Color Terminal No. Will	Е
	F
Name Name	G
Signal I	Н
No. E139 Name WIRE T Color of GREEN O. Color of GREEN R. Color of	I
Connector No. Connector Name Connector No. Connector Name Connector Name Connector Name Connector Name Terminal No. Townsort Color Terminal No. Townsort Color Terminal	J
	K
POWER DISTRIBUTION	EXL
E121	N.I
POWER DISTRIED	N O
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Connector No.	o. F502	Ş	Connector No.	. B107	7	<u>U</u>	Connector No. B139	. B139		_
Connector Na	ame TCN	Connector Name TCM (TRANSMISSION	Connector Name WIRE TO WIRE	me WIR	E TO WIRE	<u> </u>	Connector Name WIRE TO WIRE	me WIRE	E TO WIRE	
	<u>3</u>	N I ROL MODULE)	Connector Color WHITE	or	<u> </u>	J	Connector Color WHITE	or WHI	Щ	_
Connector Color GRAY	olor GR,	AY				_			!	7
		(1 2	3			1 2 3	4 5 6 7	
	10 9 8	7 6 5 4 3 2 1	H.S.	4	5 6 7 8	_	H.S.	8 9 10 11	1 12 13 14 15 16	
Ġ.										
						Į				ı
Terminal No. Wire	Color of Wire	Signal Name	Terminal No. Wire	Color of Wire	Signal Name	<u> </u>	Terminal No. Wire	Color of Wire	Signal Name	
7	ď	BEV I AMP BI V	4	₩°	ı		7	× U		

r						
	20	RE TO WIRE	IITE	7 6 5 4 3 2 1 16 15 14 13 12 11 10 9 8	Signal Name	ı
-)9Q	ne WIF	or WH	7 6 15	Solor of Wire	G/W
	Connector No. D602	Connector Name WIRE TO WIRE	Connector Color WHITE	语 H.S.	Terminal No. Wire	7
				<u> </u>		
)1	RE TO WIRE	HTE	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Signal Name	ı
) Dec	me WIF	or WH	[2]9]	Solor of Wire	В
	Connector No. D601	Connector Name WIRE TO WIRE	Connector Color WHITE	H.S.	Terminal No. Wire	က
	C	E TO WIRE	ITE	4 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Signal Name	1
	B140	me WIR	or WHI	- 0	Solor of Wire	В
	Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	E.S.	Terminal No. Wire	m

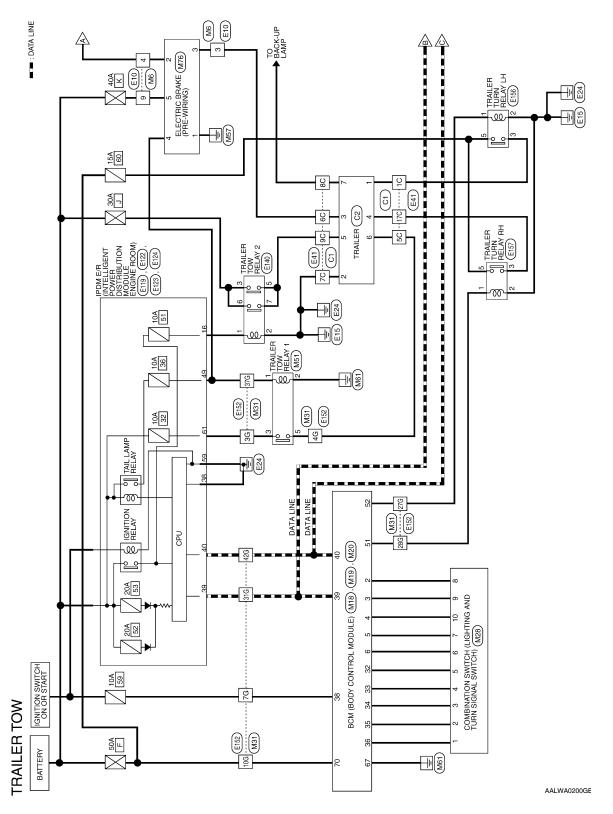
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		В
WIRE TO WIRE WHITE WHITE Signal Name Cor of Signal Name	Connector No. D709 Connector Color GRAY Connector Color GRAY H.S. Terminal No. Wire Signal Name 1 GW - 2 B -	С
O. D701 ame WIRE T olor WHITE 1 2 3 10 11 12 1	0. D709 ame BACK-lolor GRAY Wire GNW B B	D
Connector No. D701	Connector No. Connector Color Terminal No. W W W	Е
		F
2 1 1 8 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Name	G
NE TO WIRE NE	Signal	Н
No. D606 Name WIRE Color of 6. Wire GAW	No. D7G Color GB, Color of GW GAW B B	I
Connector No. Connector Color Connector Color H.S. Terminal No. W. 7	Connector No. Connector Color H.S. Terminal No. W 2	J
		K
Signal Name	O WIRE	EX
WINE TO WIR WHITE Proof 2	D702 WIRE TO WIR GRAY or of Signa	M
tor No.	Connector No. D702 Connector Name WIRE TO WIRE Connector Color GRAY H.S. Terminal No. Wire Signal No. Wire 3 B B	N
Connec Connec Termin 3	Conne Conne Termir	0
	I ABLIA0110GE	•

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TRAILER TOW

Wiring Diagram



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	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	>	G/B	>	R/G	R/Y	7	O/B	R/W	M/L	7	Ь	
Terminal No.	2	က	4	2	9	32	33	34	35	36	38	39	40	
							[s	8						

	8	8
	19	33
	8	88
	1	37
	16	38
	15	88
	4	怒
	13	g
117	12	32
IV.	Ξ	33
IN.	10	30
	6	83
	8	28
	7	27
	9	56
	ß	32
	4	54
16	က	33
S. I	2	22
慢	-	2

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<u> </u>	_ \$		5		2 2 2	4 5 5	4 5 5	/ c+	/ c+
	10 11 12	9 10 11 12	10 11 12	9 10 11 12	7 8 9 10 11 12	9 10 11 12	6 7 8 9 10 11 12	6 7 8 9 10 11 12	4 5 6 7 8 9 10 11 12
Ξ	10	9	9	9	7 8 9 10	6 7 8 9 10	6 7 8 9 10	4 5 6 7 8 9 10	4 5 6 7 8 9 10
	9	9 0	9	9 0	7 8 9 10	6 7 8 9 10	6 7 8 9 10	4 5 6 7 8 9 10	4 5 6 7 8 9 10

Signal Name	ı	_	-	
Color of Wire	BR/W	B/G	Я	
Terminal No. Wire	င	4	6	

	M28
Connector Name COMBINATION SWITCH	MBINATION SWITC
Connector Color WHITE	ITE

IVIZO	Connector Name COMBINATION SW	WHITE	10 01 8 7	1 2 3 4 5 6		of Signal Naı
	r Name (r Color	12 13	14 11		No. Wire
	Connecto	Connector Color WHITE	偃	N I	Š	Terminal No.

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

Connector Name BCM (BODY CONTROL MODULE)	4CK	56 57 58 59 60 162 62 63 64 56 56 65 65 65 65 65 65 65 65 65 65 65	Signal Name	GND (POWER)	BATT (F/L)
MO MO	or BLACK	56 57	Color of Wire	В	M/B
Connector Nar	Connector Color	同句 H.S.	Terminal No.	29	20

Connector No.	M19	
Connector Name		BCM (BODY CONTROL MODULE)
Connector Color	or WHITE	ITE
语 H.S.	41 42 43 50 51	47 42 43 44 45 49 49 49 49 49 49
Terminal No.	Color of Wire	Signal Name
51	G/Y	TRAILER FLASHER OUTPUT (RIGHT)
52	G/B	TRAILER FLASHER OUTPUT (LEFT)

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OUTPUT 5 OUTPUT 2

G/B G/Y ≺

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OUTPUT 1

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INPUT 5

R/G

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INPUT 3 INPUT 4

INPUT 2

0/B

N က

W.

OUTPUT 4 OUTPUT 3

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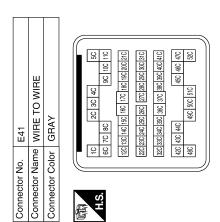
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Connector No.	Jo M31			Color of		Connector No. M51	
Connector N	e	TO WIBE	Terminal No.	Wire	Signal Name	Connector Name TRAILER TOW RELAY	TOW RELAY 1
Connector Color	Jolor William) 	3G	BR	1	Connector Color BLUE	
			4G	Œ	1	+	
			76	M/L	1		
	L.C.	56 40 90 90 40	10G	M/B	1		ſī
Ģ	, 5	96 86 76	27G	G/B	1	2 📉	
			28G	Y/B	1		
	21G 20G 19G 180	216 206 196 186 176 166 156 146 136 126 116	31G	_	ı		
	30G 29G 28v	30G 29G 28G 27G 26G 25G 24G 23G 22G	37G	R/L	ı	Terminal No Color of Sic	Signal Name
	416 406 396 380	416 406 396 386 376 366 356 346 336 326 316	42G	۵	ı	Wire	igilal ivalile
	50G 49G 48G 47G 4	3G 47G 46G 45G 44G 43G 42G				1 R/L	1
	616 606 596 580	3G 57G 56G 55G 54G 53G 52G 51G				2 B	1
	70G 69G 680	70G 69G 68G 67G 66G 65G 64G 63G 62G				3 BR	1
						5 8	1
	<u>~ %</u>	75G 74G 73G 72G 71G 80G 79G 78G 77G 76G					
Connector No.	NO.		Connector No.	П			
Connector Name		TRIC BRAKE	Connector Name WIRF TO WIRE	me WIR	TO WIBE		
		(PRE-WIRING)	Connector Color	olor WHITE	! ! ! ! ! ! !		
Connector Color	Solor WHITE	Щ		_	1		
				,	- 1 ⊢		
僵	2			2 9 9	7 8 9 10		
H.S.	1 3	4 5	1.0				
	40,500			70,70			
Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name		
-	В	GND	က	BR/W	ı		
2	B/G	STOP	4	B/G	1		
8	BR/W	ı	6	ш	1		
4	B/L	ILL (TAIL)				1	
2	ж	B+					

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Connector No.). E119	6
Connector Name		IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	olor WHITE	TE TI
H.S.	9 8 7 18 17 16	9 8 7 6
Terminal No.	Color of Wire	Signal Name
16	ŋ	REVERSE LAMP

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



14	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	BLACK	28 (81 SD) 29 (81 SD) 29 (81 SD)	Signal Name	GND (POWER)	TRAILER RIYSUPPIY
E124				Color of Wire	В	BB
Connector No.	Connector Name	Connector Color	励 H.S.	Terminal No.	59	61

က	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM	BROWN	55 54 53 52	Signal Name	ILLUMINATION
. E123			51 [Color of Wire	R/L
Connector No.	Connector Name	Connector Color	原 H.S.	Terminal No.	49

E122	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	WHITE	41 40 39 38 37	of Signal Name	GND (SIGNAL)	CAN-H	CAN-L
			48 42 43 43 43 43 43 43 43 43 43 43 43 43 43	Color of Wire	m	_	۵
Connector No.	Connector Name	Connector Color	高 H.S.	Terminal No.	38	39	40

24 84	Color c Wire	В	٦	
H.S.	Terminal No.	38	39	

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Connector No.	o. E140		Connector No.	o. E152		F	1	Color of		
Connector N	ame TRAI	Connector Name TRAILER TOW RELAY-2	Connector Name WIRE TO WIRE	ame WIRE	TO WIRE	9	i erminal ivo.	Wire	Signal Name	
Connector Color	olor BROWN	NWC	Connector Color	olor WHITE	щ		3G	BB	ı	
	-			-			4G	Œ	I	
E	Ľ						76	M	I	
	닺	2	0 1	Ę	26 36 46 56		10G	M/B	ı	
2	9	3	Th:3:	2 99	25 SS 95 57 SS 96 96 96 96 96 96 96 96 96 96 96 96 96		27G	G/B	ı	
							28G	Y/B	I	
Terminal No.	Color of Wire	Signal Name		11G 12G 13G 14	116 126 136 146 156 166 176 186 196 206 216		31G	٦	ı	
-	2 0	1		226 236 24	22G 23G 24G 25G 26G 27G 28G 29G 30G		37G	R/L	I	
. 2	5 @	ı		31G 32G 33G 34	31G 32G 33G 34G 35G 36G 37G 38G 39G 40G 41G		42G	Д	I	
က	>	1		42G 43G 44	426 436 446 456 466 476 486 496 506					
ß	M/L	ı		51G 52G 53G 54 62G 63G 64	51G 52G 53G 54G 55G 56G 57G 58G 59G 60G 61G 62G 63G 64G 65G 65G 67G 68G 69G 70G					
9	>	ı		2000						
7	M/L	1		71	716 726 736 746 756					
				92	76G 77G 78G 79G 80G					
-			N. S. C.	17.1						
Connector No.	0. E156	E156 TBAII EB TI IBNI BEI AV I H	Connector Name		EIS/ TBAII FB TURN BEI AY BH					
Connector Color	olor BLUE		Connector Color							
		(N)	唇		~ L					
H.S.			H.S.							
Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name					
-	G/B	ı	-	Y/B	1					
2	В	1	2	В	-					
က	G/B	ı	3	Y/B	-					
2	_	ı	2		1					

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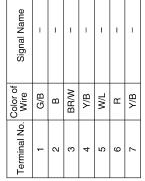
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C2	TRAILER	BLACK
Connector No.	Connector Name TRAILER	Connector Color BLACK







11C 10C 9C 2C 8C 7C 6C 11C 11C 10C 9C 8C 7C 6C 11C 10C 9C 11C 10C 12C 14C 13C 12C 12
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	Signal Name	I	I	I	I	_	I	_
Color of	Wire	G/B	В	BR/W	В	Y/R	M/L	Y/B
	Terminal No.	51	5C	29	7C	9C	36	17C

Connector Name WIRE TO WIRE Connector Color GRAY

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Connector No.

BCM (BODY CONTROL MODULE)

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

VALUES ON THE DIAGNOSIS TOOL

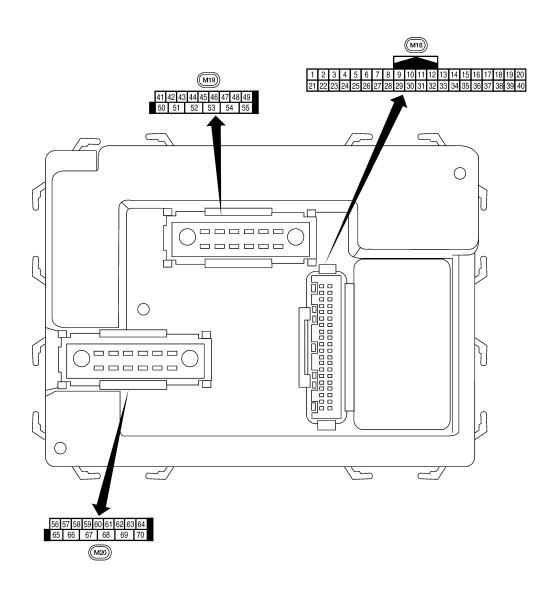
AIR COND SW AIC switch OFF OFF AUT LIGHT SYS Outside of the room is dark OFF AUTO LIGHT SW Lighting switch OFF OFF AUTO LIGHT SW Lighting switch OFF OFF BACK DOOR SW Back door closed OFF BACK DOOR SW Back door opened ON CDL LOCK SW Door lock/unlock switch does not operate OFF CDL UNLOCK SW Door lock/unlock switch does not operate OFF CDL UNLOCK SW Door lock/unlock switch does not operate OFF Press door lock/unlock switch does not operate OFF DOOR SW-AS Front door RH closed OFF DOOR SW-AS Front door RH closed OFF DOOR SW-RE Rear door LH closed	Monitor Item	Condition	Value/Status
AC switch ON Outside of the room is dark Outside of the room is bright OUTSIDE OFF OUTSIDE OFF AUTO LIGHT SW Lighting switch OFF Lighting switch OFF Lighting switch OFF Lighting switch AUTO ON BACK DOOR SW Back door closed Back door closed OFF Press door lock/unlock switch does not operate OFF Press door lock/unlock switch to the LOCK side ON CDL UNLOCK SW Door lock/unlock switch does not operate OFF Press door lock/unlock switch does not operate OFF Press door lock/unlock switch does not operate OFF Press door lock/unlock switch to the UNLOCK side ON DOOR SW-AS Front door RH closed Front door RH opened ON DOOR SW-DR Front door LH closed Front door LH opened ON Rear door LH opened ON DOOR SW-RI Rear door LH opened ON PRear door LH closed OFF Rear door RH closed OFF Rear door RH opened ON DOOR SW-RR Rear door RH opened ON PRESS OFF Press door lock/unlock switch does OFF Press door lock/unlock switch does OFF Press door lock/unlock switch to the UNLOCK side ON PRESS OFF Press door lock/unlock switch to the UNLOCK side ON PRESS OFF Press door lock/unlock switch to the UNLOCK side ON ON PRESS OFF Press door lock/unlock switch to the UNLOCK side ON ON OFF Press door lock/unlock switch to the UNLOCK side ON ON OFF Press door lock/unlock switch to the UNLOCK side ON ON OFF Press door lock/unlock switch does not operate OFF Press door lock/unlock switch does not operate OFF Press door lock/unlock switch off Press door lock/unlock switch does not operate OFF Press door lock/unlock switch off OFF Press	AIR COND SW	A/C switch OFF	OFF
AUTO LIGHT SYS Outside of the room is bright ON AUTO LIGHT SW Lighting switch OFF OFF Lighting switch AUTO ON BACK DOOR SW Back door closed OFF Back door opened ON CDL LOCK SW Door lock/unlock switch does not operate OFF CDL UNLOCK SW Door lock/unlock switch does not operate OFF CDL UNLOCK SW Press door lock/unlock switch to the LOCK side ON DOOR SW-AS Front door RH closed OFF Front door LH closed OFF Front door LH closed OFF DOOR SW-RD Front door LH closed OFF Rear door LH opened ON DOOR SW-RL Rear door LH closed OFF Rear door RH opened ON DOOR SW-RR Rear door RH opened ON Engline stopped OFF Engline stopped OFF Engline stopped OFF Front fog lamp switch OFF OFF Front washer switch OFF OFF Front washer switch OFF	AIR COND 3W	A/C switch ON	ON
Outside of the room is bright	ALIT LICUT CVC	Outside of the room is dark	OFF
Lighting switch AUTO	AUT LIGHT STS	Outside of the room is bright	ON
Lighting switch AUTO	ALITO LICUIT CW	Lighting switch OFF	OFF
Back door opened	AUTO LIGHT SW	Lighting switch AUTO	ON
Back door opened	DACK DOOD SW	Back door closed	OFF
CDL LOCK SW Press door lock/unlock switch to the LOCK side ON CDL UNLOCK SW Door lock/unlock switch does not operate OFF Press door lock/unlock switch to the UNLOCK side ON DOOR SW-AS Front door RH closed OFF Front door LH closed OFF DOOR SW-DR Front door LH closed OFF DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON ON BOOR SW-RR Rear door RH closed OFF Rear door RH opened ON ON ENGINE RUN Engine stopped OFF Engine stopped OFF OFF Engine running ON ON FR FOG SW Front fog lamp switch OFF OFF Front washer switch OFF OFF Front washer switch OFF OFF Front washer switch OFF OFF Front wiper switch OFF OFF Front wi	BACK DOOK SW	Back door opened	ON
CDL UNLOCK SW Press door lock/unlock switch to the LOCK side ON DOD or lock/unlock switch does not operate OFF Press door lock/unlock switch to the UNLOCK side ON DOOR SW-AS Front door RH closed OFF Front door RH opened ON DOOR SW-DR Front door LH closed OFF DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON ON DOOR SW-RR Rear door RH opened ON ENGINE RUN Engine stopped OFF Engine stopped OFF Engine running ON FR FOG SW Front fog lamp switch OFF OFF Front fog lamp switch OFF OFF Front washer switch OFF OFF Front washer switch OFF OFF Front wiper	CDL LOCK CW	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-DR Front door LH closed OFF DOOR SW-DR Front door LH closed OFF DOOR SW-RL Rear door LH closed OFF DOOR SW-RL Rear door LH closed OFF DOOR SW-RR Rear door RH closed OFF Rear door RH closed ON Bengine stopped OFF Engine stopped OFF Engine stopped OFF Engine stopped OFF Front fog lamp switch OFF OFF Front fog lamp switch OFF OFF Front washer switch OFF OFF Front washer switch OFF OFF Front wiper switch OFF OFF Front wipe	CDL LOCK SW	Press door lock/unlock switch to the LOCK side	ON
Press door lock/unlock switch to the UNLOCK side ON DOOR SW-AS Front door RH closed OFF Front door RH opened ON DOOR SW-DR Front door LH closed OFF Front door LH opened ON DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON BOOR SW-RR Rear door RH closed OFF Rear door RH opened ON ON ENGINE RUN Engine stopped OFF Engine running ON ON FR FOG SW Front fog lamp switch OFF OFF Front fog lamp switch OFF OFF Front washer switch OFF OFF Front washer switch OFF OFF Front wiper switch OFF OFF	ODL HNI OOK OW	Door lock/unlock switch does not operate	OFF
DOOR SW-AS Front door RH opened ON DOOR SW-DR Front door LH closed OFF Front door LH opened ON OFF DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON ON DOOR SW-RR Rear door RH closed OFF Rear door RH opened ON ON ENGINE RUN Engine stopped OFF Engine stopped OFF OFF Engine running ON ON FR FOG SW Front fog lamp switch OFF OFF Front fog lamp switch ON ON ON FR WIPER SW Front washer switch OFF OFF Front washer switch OFF OFF OFF Front wiper switch OFF OFF OFF <td< td=""><td>CDL UNLOCK SW</td><td>Press door lock/unlock switch to the UNLOCK side</td><td>ON</td></td<>	CDL UNLOCK SW	Press door lock/unlock switch to the UNLOCK side	ON
Front door RH opened	DOOD OW AC	Front door RH closed	OFF
DOOR SW-DR Front door LH opened ON DOOR SW-RL Rear door LH closed OFF Rear door LH opened ON DOOR SW-RR Rear door RH closed OFF Rear door RH opened ON ENGINE RUN Engine stopped OFF Engine running ON FR FOG SW Front fog lamp switch OFF OFF Front fog lamp switch ON ON FR WASHER SW Front washer switch OFF OFF Front washer switch OFF OFF Front wiper switch OFF OF	DOOR SW-AS	Front door RH opened	ON
Front door LH opened	DOOD OW DD	Front door LH closed	OFF
DOOR SW-RL Rear door LH opened ON DOOR SW-RR Rear door RH closed OFF Rear door RH opened ON ENGINE RUN Engine stopped OFF Engine running ON FR FOG SW Front fog lamp switch OFF OFF Front fog lamp switch ON ON FR WASHER SW Front washer switch OFF OFF Front washer switch ON ON ON FR WIPER LOW Front wiper switch OFF OFF Front wiper switch OFF OFF OFF Front wiper switch OFF OFF OFF FR WIPER INT Front wiper switch OFF OFF Front wiper switch INT ON ON FR WIPER STOP Any position other than front wiper stop position OFF HAZARD SW When hazard switch is not pressed OFF Lighting switch OFF OFF	DOOK SW-DR	Front door LH opened	ON
Rear door LH opened	DOOD OW DI	Rear door LH closed	OFF
DOOR SW-RR Rear door RH opened ON ENGINE RUN Engine stopped OFF Engine running ON FR FOG SW Front fog lamp switch OFF OFF Front fog lamp switch ON ON FR WASHER SW Front washer switch OFF OFF Front washer switch ON ON ON FR WIPER LOW Front wiper switch OFF OFF Front wiper switch OFF OFF OFF Front wiper switch OFF OFF OFF FR WIPER INT Front wiper switch OFF OFF Front wiper switch INT ON ON FR WIPER STOP Any position other than front wiper stop position OFF Front wiper stop position ON OFF HAZARD SW When hazard switch is not pressed OFF LIGHT SW 1ST Lighting switch OFF OFF	DOOR SW-RL	Rear door LH opened	ON
Rear door RH opened	DOOD OW DD	Rear door RH closed	OFF
Engine running	DOOR SW-RR	Rear door RH opened	ON
Engine running	ENCINE DUN	Engine stopped	OFF
Front fog lamp switch ON	ENGINE RUN	Engine running	ON
Front fog lamp switch ON	ED EOC SW	Front fog lamp switch OFF	OFF
FR WASHER SW Front washer switch ON ON FR WIPER LOW Front wiper switch OFF OFF Front wiper switch LO ON FR WIPER HI Front wiper switch OFF OFF Front wiper switch HI ON FR WIPER INT Front wiper switch OFF OFF Front wiper switch INT ON Any position other than front wiper stop position OFF Front wiper stop position ON HAZARD SW When hazard switch is not pressed OFF LIGHT SW 1ST Lighting switch OFF OFF	FR FOG SW	Front fog lamp switch ON	ON
Front washer switch ON	ED WASHED SW	Front washer switch OFF	OFF
FR WIPER LOW Front wiper switch LO ON FR WIPER HI Front wiper switch OFF Front wiper switch HI ON FR WIPER INT Front wiper switch OFF Front wiper switch INT ON Any position other than front wiper stop position FR WIPER STOP HAZARD SW When hazard switch is not pressed When hazard switch is pressed ON Lighting switch OFF OFF OFF OFF OFF OFF OFF OFF OFF	FR WASHER SW	Front washer switch ON	ON
Front wiper switch LO Front wiper switch OFF Front wiper switch OFF Front wiper switch HI ON FR WIPER INT Front wiper switch OFF Front wiper switch INT ON Any position other than front wiper stop position FR WIPER STOP Any position other than front wiper stop position ON When hazard switch is not pressed When hazard switch is pressed ON Lighting switch OFF OFF	ED WIDED LOW	Front wiper switch OFF	OFF
FR WIPER HI Front wiper switch HI ON FR WIPER INT Front wiper switch OFF Front wiper switch INT ON Any position other than front wiper stop position FR WIPER STOP Any position other than front wiper stop position Front wiper stop position ON When hazard switch is not pressed OFF When hazard switch is pressed ON Lighting switch OFF OFF	FR WIPER LOW	Front wiper switch LO	ON
Front wiper switch HI ON FR WIPER INT Front wiper switch OFF Front wiper switch INT ON Any position other than front wiper stop position OFF Front wiper stop position ON HAZARD SW When hazard switch is not pressed OFF When hazard switch is pressed ON Lighting switch OFF Front wiper switch OFF OFF	ED WIDED HI	Front wiper switch OFF	OFF
FR WIPER INT Front wiper switch INT ON Any position other than front wiper stop position Front wiper stop position ON HAZARD SW When hazard switch is not pressed When hazard switch is pressed ON Lighting switch OFF OFF	FR WIPER III	Front wiper switch HI	ON
Front wiper switch INT ON Any position other than front wiper stop position OFF Front wiper stop position ON HAZARD SW When hazard switch is not pressed OFF When hazard switch is pressed ON Lighting switch OFF Front wiper stop position ON OFF When hazard switch is not pressed ON Lighting switch OFF	ED WIDED INT	Front wiper switch OFF	OFF
FR WIPER STOP Front wiper stop position When hazard switch is not pressed When hazard switch is pressed ON Lighting switch OFF OFF	FR WIPER IN I	Front wiper switch INT	ON
Front wiper stop position ON When hazard switch is not pressed OFF When hazard switch is pressed ON Lighting switch OFF OFF	ED WIDED OTOD	Any position other than front wiper stop position	OFF
HAZARD SW When hazard switch is pressed ON Lighting switch OFF OFF	FK WIPER STUP	Front wiper stop position	ON
When hazard switch is pressed ON Lighting switch OFF OFF	LIAZADD OM	When hazard switch is not pressed	OFF
LIGHT SW 1ST	MAZAKU SW	When hazard switch is pressed	ON
Lighting switch 1st ON	LICHT OW ACT	Lighting switch OFF	OFF
	LIGHT SW 181	Lighting switch 1st	ON

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status
HEADLAMP SW1	Headlamp switch OFF	OFF
HEADLAIVIP SVV I	Headlamp switch 1st	ON
HEADLAMP SW2	Headlamp switch OFF	OFF
HEADLAINF 3WZ	Headlamp switch 1st	ON
HI BEAM SW	High beam switch OFF	OFF
HI BEAIVI SVV	High beam switch HI	ON
H/L WASH SW	NOTE: The item is indicated, but not monitored	OFF
GN ON SW	Ignition switch OFF or ACC	OFF
IGN ON SW	Ignition switch ON	ON
IGN SW CAN	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
KEVLOOK	LOCK button of Intelligent Key is not pressed	OFF
-KEY LOCK	LOCK button of Intelligent Key is pressed	ON
	UNLOCK button of Intelligent Key is not pressed	OFF
I-KEY UNLOCK	UNLOCK button of Intelligent Key is pressed	ON
(EV ON 500)	Mechanical key is removed from key cylinder	OFF
KEY ON SW	Mechanical key is inserted to key cylinder	ON
OIL PRESS SW	Ignition switch OFF or ACC Engine running	OFF
	Ignition switch ON	ON
	Other than lighting switch PASS	OFF
PASSING SW	Lighting switch PASS	ON
	Rear window defogger switch OFF	OFF
REAR DEF SW	Rear window defogger switch ON	ON
RKE LOCK AND UN-	NOTE:	OFF
LOCK	The item is indicated, but not monitored	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
	Lighting switch OFF	OFF
TAIL LAMP SW	Lighting switch 1ST	ON
	When back door opener switch is not pressed	OFF
TRNK OPNR SW	When back door opener switch is pressed	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	While driving	Equivalent to speedometer reading

Terminal Layout



LIIA2443E

Physical Values

Revision: December 2009 EXL-108 2009 QX56

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	\A/:		Signal		Measuring condition	Deference value as
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
ı	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 2 0
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 +
4	Y	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 **5ms SKIA5291E
5	G/B	Combination switch input 2				(V)
6	٧	Combination switch input 1	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	5ms SKIA5292E
0	CD/D	Rear window defogger	lande	ON	Rear window defogger switch ON	0V
9	GR/R	switch	Input	ON	Rear window defogger switch OFF	5V
10	G	Hazard lamp flash	Input	OFF	ON (opening or closing)	0V
10	G	riazaru iampiliasii	mput	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
	IVL	1 TOTA GOOF SWILLIT INT	mpat	511	OFF (closed)	Battery voltage
13	GR	Rear door switch RH	Input	OFF	ON (open)	0V
13	GIV	Noai dooi Switch NH	input	OI I	OFF (closed)	Battery voltage
15	L/W	Tire pressure warning check connector	Input	OFF	_	5V
18	Р	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	_	0V

	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 sup- ply)	Output	OFF	Ignition switch OFF	(V) 6 4 2 0 → •50 ms
20	G/W	Remote keyless entry	Input	OFF	Stand-by (keyfob buttons released)	(V) 6 4 2 0 +-50 ms
20	G/W	receiver (signal)	трас	OI I	When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	(V) 6 4 2 -1
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	W/V	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 → 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-	Input	ON	A/C switch OFF	5V
		nal	pat		A/C switch ON	0V

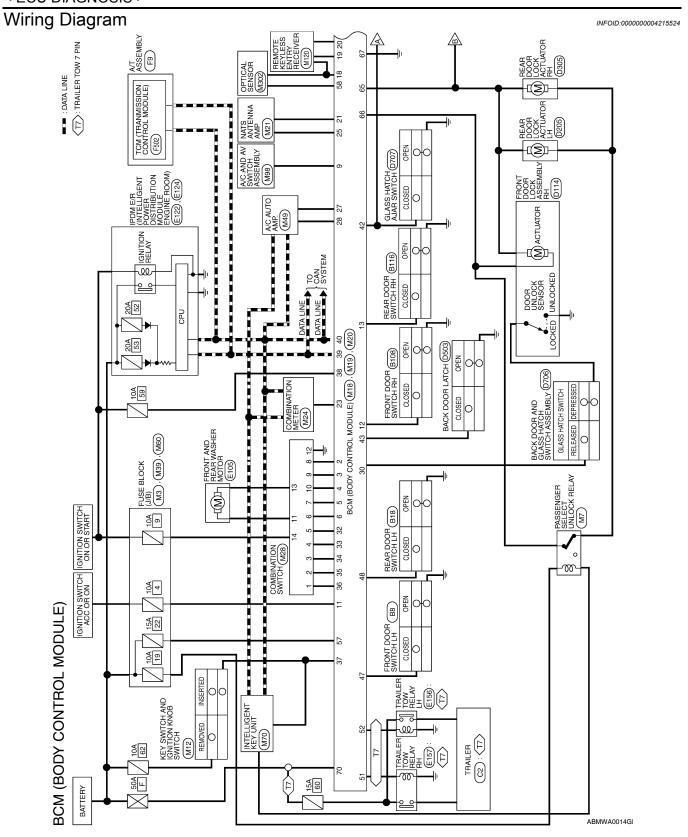
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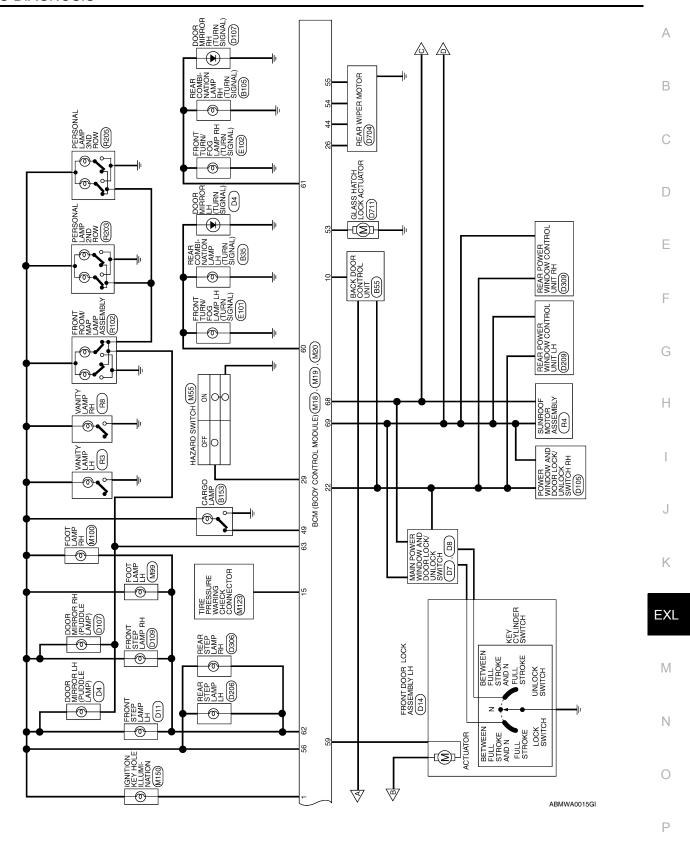
			Signal		Measuring condition	
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation or condition	Reference value or waveform (Approx.)
20	L /D	Front blower result	lar4	CNI	Front blower motor OFF	Battery voltage
28	L/R	Front blower monitor	Input	ON	Front blower motor ON	0V
20	\A//D	11	1	OFF	ON	0V
29	W/B	Hazard switch	Input	OFF	OFF	5V
	\//DD	01 1 1 1 11		055	Glass hatch switch released	0
30	Y/BR	Glass hatch switch	Input	OFF	Glass hatch switch pressed	Battery
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 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
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 64 2 0
35	O/B	Combination switch				
36	R/W	Combination switch output 1	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	(V) 6 4 2 0 → 5ms SKIA5292E
37	B/R	Key switch and igni-	Input	OFF	Intelligent Key inserted	Battery voltage
31	אווט	tion knob switch	put	511	Intelligent Key inserted	0V
38	W/L	Ignition switch (ON)	Input	ON	_	Battery voltage
39	L	CAN-H		_	_	
40	Р	CAN-L	_	_	_	_
42	GR	Glass hatch ajar	Innut	ON	Glass hatch open	0
44	GR	switch	Input	ON	Glass hatch closed	Battery
43	R/B	Back door latch (door	Input	OFF	ON (open)	0V
43	IVD	ajar switch)	iiiput	OFF	OFF (closed)	Battery voltage

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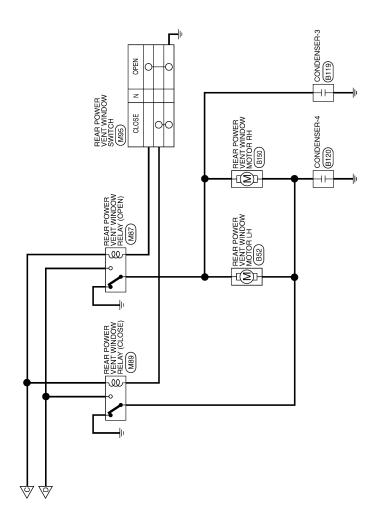
44 O Rear wiswitch of switch of swit	oor switch LH oor switch LH amp	Signal input/output Input Input Output	Ignition switch ON OFF OFF	Measuring condition Operation or condition Rise up position (rear wiper arm on stopper) A Position (full clockwise stop position) Forward sweep (counterclockwise direction) B Position (full counterclockwise stop position) Reverse sweep (clockwise direction) ON (open) OFF (closed) ON (open) OFF (closed) Any door open (ON) All doors closed (OFF)	Reference value or waveform (Approx.) 0V Battery voltage Fluctuating 0V Fluctuating 0V Battery voltage 0V Battery voltage 0V Battery voltage
47 SB Front do 48 R/Y Rear do 49 R Cargo la	oor switch LH oor switch LH	Input	OFF OFF	arm on stopper) A Position (full clockwise stop position) Forward sweep (counterclockwise direction) B Position (full counterclockwise stop position) Reverse sweep (clockwise direction) ON (open) OFF (closed) ON (open) OFF (closed) Any door open (ON)	Battery voltage Fluctuating 0V Fluctuating 0V Battery voltage 0V Battery voltage 0V OV
47 SB Front do 48 R/Y Rear do 49 R Cargo la	oor switch LH oor switch LH	Input	OFF OFF	position) Forward sweep (counterclockwise direction) B Position (full counterclockwise stop position) Reverse sweep (clockwise direction) ON (open) OFF (closed) ON (open) OFF (closed) Any door open (ON)	Fluctuating 0V Fluctuating 0V Battery voltage 0V Battery voltage 0V
47 SB Front do 48 R/Y Rear do 49 R Cargo la	oor switch LH oor switch LH	Input	OFF OFF	wise direction) B Position (full counterclockwise stop position) Reverse sweep (clockwise direction) ON (open) OFF (closed) ON (open) OFF (closed) Any door open (ON)	OV Fluctuating OV Battery voltage OV Battery voltage OV
48 R/Y Rear do	oor switch LH	Input	OFF	wise stop position) Reverse sweep (clockwise direction) ON (open) OFF (closed) ON (open) OFF (closed) Any door open (ON)	Fluctuating 0V Battery voltage 0V Battery voltage 0V
48 R/Y Rear do	oor switch LH	Input	OFF	rection) ON (open) OFF (closed) ON (open) OFF (closed) Any door open (ON)	0V Battery voltage 0V Battery voltage 0V
48 R/Y Rear do	oor switch LH	Input	OFF	OFF (closed) ON (open) OFF (closed) Any door open (ON)	Battery voltage 0V Battery voltage 0V
48 R/Y Rear do	oor switch LH	Input	OFF	ON (open) OFF (closed) Any door open (ON)	0V Battery voltage 0V
49 R Cargo la	lamp			OFF (closed) Any door open (ON)	Battery voltage 0V
49 R Cargo la	lamp			Any door open (ON)	0V
51 G/V Trailer t	·	Output	OFF	, , ,	-
51 G/V Trailer t	·	Output	OH	All doors closed (OFF)	Battery voltage
					. =
	turn signal	Output	ON	Turn right ON	15 10 5 0 >
52 G/B Trailer t	turn signal (left)	Output	ON	Turn left ON	(V) 15 10 5 0 500 ms
Glass h	natch lock actu-			Glass hatch switch released	0
53 L/W ator	iatori iook aota	Output	OFF	Glass hatch switch pressed	Battery
				Rise up position (rear wiper arm on stopper)	0V
				A Position (full clockwise stop position)	0V
54 Y Rear wi	iper output cir-	Input	ON	Forward sweep (counterclockwise direction)	0V
				B Position (full counterclock- wise stop position)	Battery voltage
				Reverse sweep (clockwise direction)	Battery voltage
55 SB Rear wi	iper output cir-	Output	ON	OFF	0
		O. t.	OFF	ON 30 minutes after ignition switch is turned OFF	Battery voltage 0V
56 R/G Battery	saver output	Output	ON	- Switch is turned Of I	Battery voltage
57 Y/R Battery	power supply	Input	OFF		Battery voltage

	\ <i>\(\lambda\)</i> :		Signal		Measuring cond	dition	Deference value				
Terminal	Wire color	Signal name	input/ output	Ignition switch	Operation	or condition	Reference value or waveform (Approx.)				
58	W/R	Optical sensor	lanut	ON	When optical s	ensor is illumi-	3.1V or more				
56	VV/IX	Optical selisor	Input	ON	When optical sensor is not illuminated		0.6V or less				
	(Front door lock as-	0	055	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 5 0 >				
61	G/Y	Turn signal (right)	Output	ON	Turn right ON		(V) 15 10 500 ms				
62	R/W	Step lamp LH and RH	Output	OFF	ON (any door open)		0V				
					OFF (all doors closed)		Battery voltage				
63	L	Interior room/map lamp	Output	OFF	Any door switch	ON (open) OFF (closed)	0V Battery voltage				
		All door lock actuators			OFF (neutral)	((((((((((((((((((((
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	OFF (neutral) ON (unlock)		, ,		ON (unlock)		Battery voltage
67	В	Ground	Input	ON	_		0V				
					Ignition switch		Battery voltage				
					Within 45 seconds after ignition switch OFF		Battery voltage				
68	W/L	Power window power supply (RAP)	Output	_	More than 45 s nition switch O	econds after ig- FF	0V				
					When front doo open or power operates		0V				
69	W/R	Power window power supply	Output	_	_	_	Battery voltage				
70	W/B	Battery power supply	Input	OFF	_		Battery voltage				





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

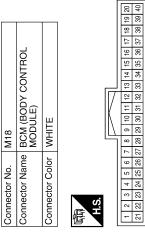


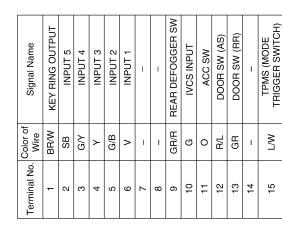
Terminal No.	Color of	Signal Name
	Wire	I
	GR	GLASS HATCH SW
	R/B	BACK DOOR SW
	0	REAR WIPER AUTO STOP SW1
45	1	1
	1	1
	SB	DOOR SW (DR)
48	R/Y	DOOR SW (RL)
49	œ	LUGGAGE LAMP OUTPUT
	_	_
	G/Y	TREAILER FLASH OUTPUT (RIGHT)
	G/B	TREAILER FLASH OUTPUT (LEFT)
53	LW	GLASS ACTUATOR OUTPUT
54	>	REAR WIPER MOTOR OUTPUT 2
55	SB	REAR WIPER MOTOR OUTPUT 1

Signal Name	1	ı	KEYLESS AND AUTO
Color of Wire	_	1	Ь
Terminal No. Wire	16	17	18

BCM (BODY CONTROL MODULE) CONNECTORS

Signal Name	1	1	KEYLESS AND AUTO LIGHT SENSOR GND	KEYLESS TUNER POWER SUPPLY OUTPUT	KEYLESS TUNER SIGNAL	IMMOBILIZER ANTENNA SIGNAL (CLOCK)	ANTI-PINCH SERIAL LINK (RX, TX)	SECURITY INDICATOR OUTPUT	ı	IMMOBILIZER ANTENNA SIGNAL (RX,TX)	REAR WIPER AUTO STOP SW2	AIR CON SW	BLOWER FAN SW	HAZARD SW	GLASS HATCH OPENEF	I	OUTPUT 5	OUTPUT 4	OUTPUT 3	OUTPUT 2	OUTPUT 1	KEY SW	IGN SW	CAN-H	CAN-L
Color of Wire	1	_	۵	M/N	G/W	g	W/V	G/W	ı	BR	X/L	W/R	L/R	M/B	Y/BR	ı	R/G	Α̈́	٦	O/B	M/A	B/R	W/L	L	۵
Terminal No.	16	17	18	19	20	21	22	23	24	25	56	27	28	29	30	31	32	33	34	35	36	37	38	39	40





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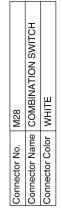
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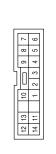
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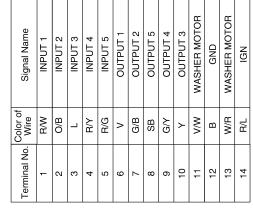
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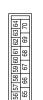
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Fail Safe

Fail-safe index

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

< ECU DIAGNOSIS >

Display contents of CONSULT	Fail-safe	Cancellation
U1000: CAN COMM CIRCUIT	Inhibit engine cranking	When the BCM re-establishes communication with the other modules.
U1010: CONTROL UNIT (CAN)	Inhibit engine cranking	When the BCM re-start communicating with the other modules.

DTC Inspection Priority Chart

INFOID:0000000004215526

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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 U1010: CONTROL UNIT (CAN)	
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	 C1704: LOW PRESSURE FL C1705: LOW PRESSURE FR C1706: LOW PRESSURE RR C1707: LOW PRESSURE RL C1709: [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] RR C1716: [PRESSDATA ERR] FL C1717: [PRESSDATA ERR] FR C1718: [PRESSDATA ERR] FR C1719: [PRESSDATA ERR] RR C1719: [PRESSDATA ERR] RR C1720: [CODE ERR] FL C1721: [CODE ERR] FR C1722: [CODE ERR] RR C1724: [BATT VOLT LOW] FL C1725: [BATT VOLT LOW] FR C1726: [BATT VOLT LOW] RR C1727: [BATT VOLT LOW] RR 	E

DTC Index

NOTE:

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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.

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-30
U1010: CONTROL UNIT (CAN)	_	_	_	BCS-31
B2190: NATS ANTENNA AMP	_	_	_	<u>SEC-27</u>
B2191: DIFFERENCE OF KEY	_	_	_	<u>SEC-30</u>
B2192: ID DISCORD BCM-ECM	_	_	_	SEC-31
B2193: CHAIN OF BCM-ECM	_	_	_	<u>SEC-33</u>
B2552: INTELLIGENT KEY	_	_	_	SEC-35
B2590: NATS MALFUNCTION	_	_	_	SEC-36
C1704: LOW PRESSURE FL	_	_	_	<u>WT-26</u>
C1705: LOW PRESSURE FR	_	_	_	<u>WT-26</u>
C1706: LOW PRESSURE RR	_	_	_	<u>WT-26</u>
C1707: LOW PRESSURE RL	_	_	_	<u>WT-26</u>
C1708: [NO DATA] FL	_	_	_	<u>WT-14</u>
C1709: [NO DATA] FR	_	_	_	<u>WT-14</u>
C1710: [NO DATA] RR	_	_	_	<u>WT-14</u>
C1711: [NO DATA] RL	_	_	_	<u>WT-14</u>
C1712: [CHECKSUM ERR] FL	_	_	_	<u>WT-16</u>
C1713: [CHECKSUM ERR] FR	_	_	_	<u>WT-16</u>
C1714: [CHECKSUM ERR] RR	_	_	_	<u>WT-16</u>
C1715: [CHECKSUM ERR] RL	_	_	_	<u>WT-16</u>
C1716: [PRESSDATA ERR] FL	_	_	_	<u>WT-18</u>
C1717: [PRESSDATA ERR] FR	_	_	_	<u>WT-18</u>
C1718: [PRESSDATA ERR] RR	_	_	_	<u>WT-18</u>
C1719: [PRESSDATA ERR] RL	_	_	_	<u>WT-18</u>
C1720: [CODE ERR] FL	_	_	_	<u>WT-16</u>
C1721: [CODE ERR] FR	_	_	_	<u>WT-16</u>
C1722: [CODE ERR] RR	_	_	_	<u>WT-16</u>
C1723: [CODE ERR] RL	_	_	_	<u>WT-16</u>
C1724: [BATT VOLT LOW] FL	_	_	_	<u>WT-16</u>
C1725: [BATT VOLT LOW] FR	_	_	_	<u>WT-16</u>
C1726: [BATT VOLT LOW] RR	_	_	_	<u>WT-16</u>
C1727: [BATT VOLT LOW] RL	_	_	_	<u>WT-16</u>
C1729: VHCL SPEED SIG ERR	_	_	_	<u>WT-19</u>
C1735: IGNITION SIGNAL	_	_	_	_

< ECU DIAGNOSIS >

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

Reference Value

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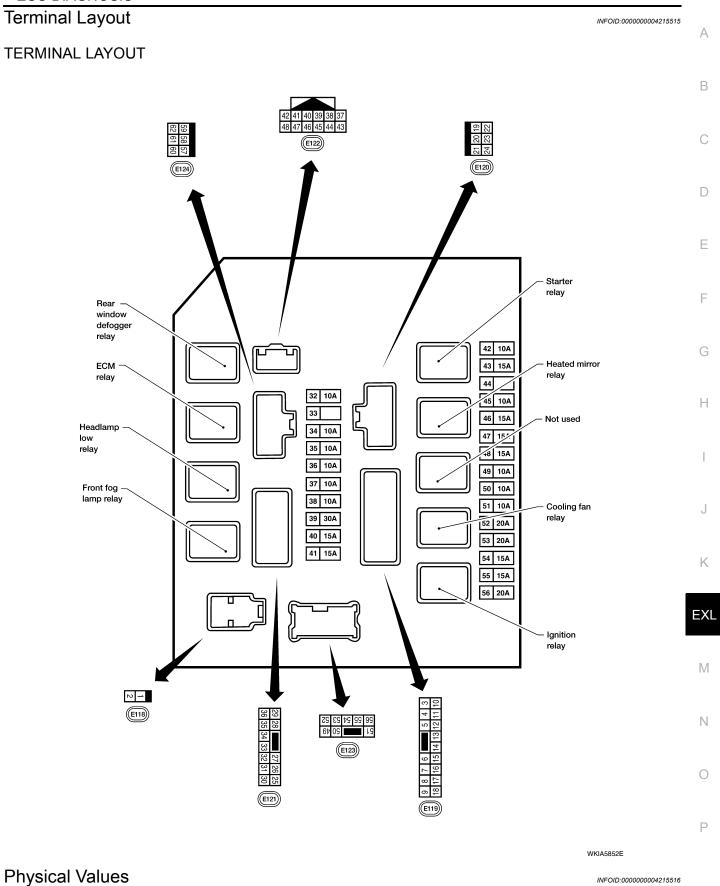
VALUES ON THE DIAGNOSIS TOOL

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.	0 - 100 %
A/C COMP DEO	A/C switch OFF	-	OFF
A/C COMP REQ	A/C switch ON		ON
TAIL & CL D. DEC	Lighting switch OFF		OFF
TAIL&CLR REQ	Lighting switch 1ST, 2ND, HI or AU	ΓΟ (Light is illuminated)	ON
III I O DEO	Lighting switch OFF		OFF
HL LO REQ	Lighting switch 2ND HI or AUTO (Li	ght is illuminated)	ON
III III DEO	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
HL WASHER REQ	NOTE: This item is displayed, but cannot be	OFF	
		Front wiper switch OFF	STOP
FR WIP REQ	lourities and the ON	Front wiper switch INT	1LOW
	Ignition switch ON	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	Front wiper stops at fail-safe operation	BLOCK
ST RLY REQ	Ignition switch OFF or ACC		OFF
SI KLI KEQ	Ignition switch START		ON
ICN DLV	Ignition switch OFF or ACC	OFF	
IGN RLY	Ignition switch ON		ON
	Rear defogger switch OFF		OFF
RR DEF REQ	Rear defogger switch ON		ON
OIL D SW	Ignition switch OFF, ACC or engine	running	OPEN
OIL P SW	Ignition switch ON		CLOSE
DTDL DEO	Daytime light system requested OF	F with CONSULT-III.	OFF
DTRL REQ	Daytime light system requested ON	with CONSULT-III.	ON
HOOD SW	Hood closed.		OFF
HOOD SW	Hood open.		ON

Monitor Item	Condition	Value/Status
	Not operated	OFF
THFT HRN REQ	Panic alarm is activated Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM	ON
HORN CHIRP	Not operated	OFF
HORN CHIRP	Door locking with Intelligent Key (horn chirp mode)	ON

< ECU DIAGNOSIS >

PHYSICAL VALUES



Revision: December 2009 EXL-123 2009 QX56

			0:		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
3	BR	ECM relay	Output		Ignition switch ON or START	Battery voltage
3	ых	Low relay	Output		Ignition switch OFF or ACC	0V
4	W/L	ECM relay	Output		Ignition switch ON or START	Battery voltage
•	VV/L	Low rolly	σαιραι		Ignition switch OFF or ACC	0V
6	L	Throttle control motor	Output		Ignition switch ON or START	Battery voltage
O	-	relay	Output		Ignition switch OFF or ACC	0V
7	W/B	ECM relay control	Input		Ignition switch ON or START	0V
,	VV/D	Low relay control	IIIput		Ignition switch OFF or ACC	Battery voltage
8	R/B	Fuse 54	Output		Ignition switch ON or START	Battery voltage
O	IVD	1 436 54	Output	_	Ignition switch OFF or ACC	0V
10	G	Fuse 45	Output	ON	Daytime light system active	0V
10	9	1 436 43	Output	ON	Daytime light system inactive	Battery voltage
11	N/D A/O	Output	ON or	A/C switch ON or defrost A/C switch	Battery voltage	
11	Y/B	A/C compressor	Output	START	A/C switch OFF or defrost A/C switch	0V
40	1.00/	Ignition switch sup-	Input		OFF or ACC	0V
12	L/W	plied power		_	ON or START	Battery voltage
40	DA	Fuel nums relati	Output		Ignition switch ON or START	Battery voltage
13	B/Y	Fuel pump relay		Output		Ignition switch OFF or ACC
1.4	V/D	Fuer 40	Outro et		Ignition switch ON or START	Battery voltage
14	Y/R	Fuse 49	Output	_	Ignition switch OFF or ACC	0V
15	LG/B	Fuse 50 (VDC)	Output		Ignition switch ON or START	Battery voltage
15	LG/B	Fuse 50 (VDC)	Output	_	Ignition switch OFF or ACC	0V
45	O.D.	F (ADC)	0		Ignition switch ON or START	Battery voltage
15	GR	Fuse 50 (ABS)	Output	_	Ignition switch OFF or ACC	0V
40	0	F	0		Ignition switch ON or START	Battery voltage
16	G	Fuse 51	Output		Ignition switch OFF or ACC	0V
47	10/	E	0.1.1		Ignition switch ON or START	Battery voltage
17	W	Fuse 55	Output		Ignition switch OFF or ACC	0V
19	W/R	Starter motor	Output	START	_	Battery voltage
04	D D	Ignition switch sup-	la t		OFF or ACC	0V
21	BR	plied power	Input	_	START	Battery voltage
22	G	Battery power supply	Output	OFF	_	Battery voltage
22	CD/M	Door mirror defogger	Output		When rear defogger switch is ON	Battery voltage
23	GR/W	output signal	Output	_	When raker defogger switch is OFF	0V

			Cianal		Measuring con	dition								
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		Cooling lan relay	Output	_	Conditions not cooling fan op		0V							
					Lighting	OFF	0V							
26	P/L	Headlamp aiming motors	Output	_	switch 2nd position or AUTO, head- lamp aiming switch in po- sition	ON	Battery voltage							
27	W/B	Fuse 38	Output		Ignition switch	ON or START	Battery voltage							
21	VV/D	1 436 30	Output		Ignition switch	OFF or ACC	0V							
30	W	Fuse 53	Output		Ignition switch	ON or START	Battery voltage							
30	**	1 430 30	Output		Ignition switch	OFF or ACC	0V							
32	L	Wiper low speed sig-	Output	ON or	Wiper switch	OFF	Battery voltage							
	_	nal	- Carpar	START		LO or INT	0V							
35	L/B	Wiper high speed sig-	Output	ON or	Wiper switch	OFF, LO, INT	Battery voltage							
		nal		START		HI	0V							
	37 Y Power generation command signal											Ignition switch	ON	(V) 6 4 2 0
37										Output	_	40% is set on "ALTERNATOI "ENGINE"		(V) 6 4 2 0 2ms JPMIA0002GB
				40% is set on	"Active test,"	3.8 V								
					"ALTERNATOI "ENGINE"		0 → 4 2ms JPMIA0003GB 1.4 V							
38	В	Ground	Input	_	-	_	0V							
	L	CAN-H	_	ON	_	_	_							
39	_					l.								

			Signal		Measuring con	dition	
Terminal	Wire color	Signal name	input/ output	lgni- tion switch	Operation	or condition	Reference value (Approx.)
41	Y/B	Hood switch	Input		Hood closed	OFF	0V
41	176	1100d Switch	iliput	_	Hood open	ON	Battery voltage
42	GR	Oil pressure switch	Innut		Engine running)	Battery voltage
42	GR	Oil pressure switch	Input		Engine stoppe	d	0V
43	L/Y	Wiper auto stop signal	Input	ON or START	Wiper switch	OFF, LO, INT	Battery voltage
44	BR	Daytime light relay	Input	ON	Daytime light s	system active	0V
44	DIX	control	прис	ON	Daytime light s	ystem inactive	Battery voltage
45	G/W	Horn relay control	Input	ON		ks are operated r Intelligent Key	Battery voltage → 0V
46	CD	Fuel pump relay con-	lmm4		Ignition switch	ON or START	0V
46	GR	trol	Input	_	Ignition switch	OFF or ACC	Battery voltage
47		Throttle control motor			Ignition switch	ON or START	0V
47	0	relay control	Input	_	Ignition switch	OFF or ACC	Battery voltage
		0		611	Selector lever	in "P" or "N"	0V
48	B/R	Starter relay (inhibit switch)	Input	ON or START	Selector lever	any other posi-	Battery voltage
					Lighting	OFF	0V
49	R/L	Trailer tow relay	Output	ON	switch must be in the 1st position	ON	Battery voltage
50	W/R	Front fog lamp (LH)	Output	ON or START	Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch	OFF ON	0V 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	_	Lighting switch in 2nd position and placed in HIGH or PASS position		Battery voltage
56	L/W	RH high beam head- lamp	Output	_	Lighting switch and placed in I position	in 2nd position HIGH or PASS	Battery voltage
		Parking, license, and			Lighting	OFF	0V
57	R/L	tail lamp	Output	ON	switch 1st po- sition	ON	Battery voltage

< ECU DIAGNOSIS >

			Signal		Measuring condition		
Terminal	Wire color	Wire color Signal name		lgni- tion switch	Operation or condition	Reference value (Approx.)	
59	В	Ground	Input	_	_	0V	
60	B/W	Rear window defog-	Output	ON or	Rear defogger switch ON	Battery voltage	
00	D/ VV	ger relay	Output	Output START	Rear defogger switch OFF	0V	
61	BR	Fuse 32	Output	OFF	_	Battery voltage	

^{*:} When horn reminder is ON

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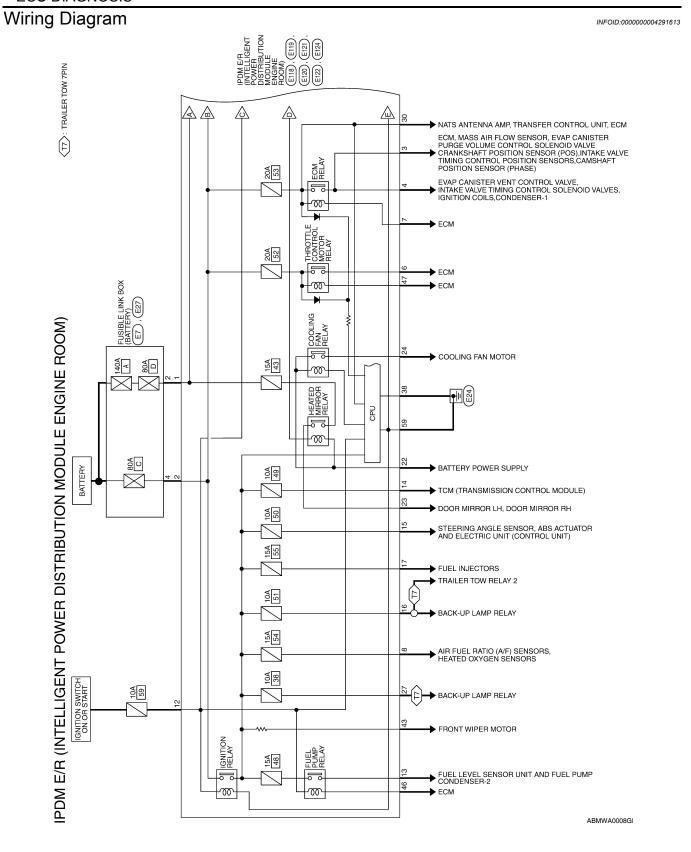
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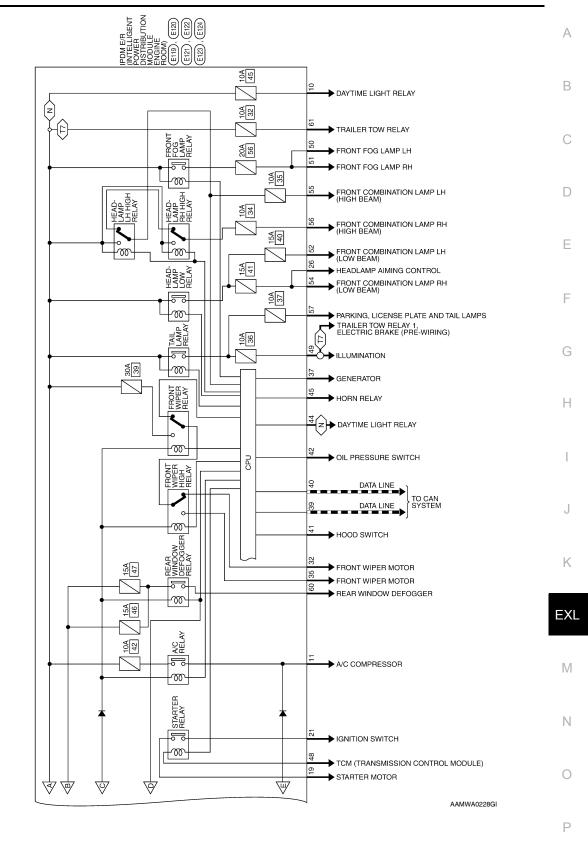
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E118

Connector No.

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

E7	Connector Name FUSIBLE LINK BOX (BATTERY)	BLACK	
Connector No.	Connector Name	Connector Color BLACK	

E27	Connector Name FUSIBLE LINK BOX (BATTERY)	BROWN
Connector No.	Connector Name	Connector Color



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Signal Name	ı
color of Wire	В

Signal Name

Color of Wire ₽

Terminal No.

Signal Name	_
Color of Wire	В
Terminal No.	4

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)	OK		Signal Name	F/L USM	F/L MAIN
	lor BLACK		Color of Wire	Β/Y	Ж
Connector Name	Connector Color	原 H.S.	Terminal No. Wire	1	2







Signal Name	STARTER MTR	ı	IGN SW (ST)	F/L MOTOR FAN	HEATED MIRROR	MOTOR FAN 2
Color of Wire	W/R	ı	BR	g	GR/W	_
Terminal No.	19	20	21	22	23	24

Signal Name	02_SENSOR	-	DTRL RLY SUPPLY	A/C COMPRESSOR	IGN SW (IG)	FUEL PUMP	A/T CU IGN SUPPLY	ABS IGN SUPPLY	REVERSE LAMP	INJECTOR	_
Color of Wire	R/B	_	В	Y/B	T/W	В/У	Y/R	LG/B	G	W	_
Terminal No.	8	6	10	11	12	13	14	15	16	17	18

Connector Name		IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	olor WHITE	ITE
	8	5 4
E.S.	18 17 16 15	15 14 13 12 11 10
erminal No.	Color of Wire	Signal Name
3	BR	IGN COIL
4	M/L	ECM
5	ı	1
9	٦	ETC
7	M/B	ECM RLY CONT

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E119

Connector No.

< ECU DIAGNOSIS >

IPDM E/R (INTELLIGENT POWER DISTRIBUTION	OLE ENGINE ROC	51	Signal Name	ILLUMINATION	FR FOG LAMP LH	FR FOG LAMP RH	H/LAMP LO RH	I	H/LAMP LO RH	H/LAMP HI LH	H/LAMP HI RH	(WILHOUT DAY IIME LIGHT)	H/LAMP HI BH	(WITH DAYTIME LIGHT)										
	-	56 55	Color of Wire	B/L	M/R	M/R	_	1	R/Y	G		<u> </u>		<u> </u>										
Connector Name	Connector Color	H.S.	Terminal No.	49	50	51	52	53	54	22	i l	96	C	96										
IPDM E/R (INTELLIGENT POWER DISTRIBUTION		4 8 37	Signal Name	ALT-C CONT	GND (SIGNAL)	CAN-H	CAN-L	HOOD SW	OIL PRESSURE SW	AUTO STOP SW	DTRL RLY CONT	ANT THEFT HORN	FUEL PUMP RLY CONT	ETC RLY CONT	INHIBIT SW		Signal Name	TAIL LAMP	1	GND (POWER)	RR DEF	TRAIL RLY SUPPLY	_	
_	-	42 41 40 39 38 48 47 46 45 44	Color of Wire	>	В	_	<u>a</u>	Y/B	GR OI	<u></u>	BR	G/W A	GR FUE	0	B/R		Color of Wire	R/L	_	В	B/W	BR TF	-	
Connector Name	Connector Color	研 H.S.	Terminal No.	37	38	39	40	14	42	43	44	45	46	47	48		Terminal No.		28		09	61	62	
0	_ 0		'	1			-	-	-				<u> </u>	I		l	<u>'</u>							
IPDM E/R (INTELLIGENT POWER DISTRIBUTION	WN	34 33 32 31 30	Signal Name	1	H/LAMP LEVELIZER	T TOW REV LAMP	1	1	ECM BAT	-	FR WIPER LO	ı	1	FR WIPER HI	ı			IPDIM E/R (INTELLIGENT POWER DISTRIBUTION MODITIE ENGINE BOOM)		¥.	ſ	58 57	61 60	
ne POW		29 28 36 35 34	Color of Wire		P/L	M/B	1	ı	>	1	Г	ı	ı	L/B	-		E124		+	or BLACK	L	29	62	
Connector Name	Connector Color	峤 H.S.	Terminal No.	25	26	27	28	59	30	31	32	33	34	35	36		Connector No.	Connector Name	John States		8F		Ŋ Ľ	

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

< ECU DIAGNOSIS >

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 lamps License plate lamps Tail 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	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 second activation and 20 second 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

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

< ECU DIAGNOSIS >

DTC Index

CONSULT-III display	Fail-safe	TIME	NOTE	Refer to
No DTC is detected. further testing may be required.	_	_	_	_
U1000: CAN COMM CIRCUIT	×	CRNT	1 – 39	PCS-17

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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EXTERIOR LIGHTING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

EXTERIOR LIGHTING SYSTEM SYMPTOMS

Symptom Table

CAUTION:

Perform the self-diagnosis with CONSULT-III 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-32</u> .		
	Both sides	Symptom diagnosis "BOTH SIDE HEADLAMPS DO N Refer to EXL-137.	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.		Combination switch Harness between the combination switch and BCM BCM	Combination switch Refer to <u>BCS-36</u> .		
	Both sides	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-35</u> .		
	Both sides	Symptom diagnosis "BOTH SIDE HEADLAMPS (LO) ARE NOT TURNED ON" Refer to EXL-138, "Description".			
	When the ignition switch is turned ON	BCM Combination switch	Combination switch Refer to BCS-36.		
Headlamp does not turn OFF.	The ignition switch is turned OFF (After activating the battery saver).	IPDM E/R	_		
Headlamp is not turned Ol	N/OFF with the lighting	Combination switch Harness between the combination switch and BCM BCM	Combination switch Refer to <u>BCS-36</u> .		
switch AUTO.		Optical sensor Harness between the optical sensor and BCM BCM	Optical sensor Refer to <u>EXL-49</u> .		

EXTERIOR LIGHTING SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

Symp	otom	Possible cause	Inspection item		
Daytime light system does	not activate.	Either high beam bulb Parking brake switch Combination switch BCM IPDM E/R Daytime light relay Harness between IPDM E/R and daytime light relay.	Daytime light system description. Refer to EXL-9, "System Description".		
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-38.		
	Both sides	Symptom diagnosis "BOTH SIDE FRONT FOG LAMPS Refer to EXL-140.	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-40.		
	Both sides	Symptom diagnosis "PARKING, LICENSE PLATE AND ON" Refer to EXL-139.	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 <u>EXL-46</u> .		
	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 circuit Refer to MWI-30.		

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NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description INFOID:000000003776211

XENON HEADLAMPS

The brightness and color of the light may vary slightly immediately after turning the headlamp ON. This conditionwill remain until the xenon bulb becomes stable. This is normal.

• Illumination time lag may occur between right and left. This is normal.

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 INFOID:0000000003776212

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

Diagnosis Procedure

1.COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-36, "Diagnosis Procedure".

Is the combination switch normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (HI) REQUEST SIGNAL INPUT

©CONSULT-III DATA MONITOR

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

Monitor item	Con	dition	Monitor status
	Lighting switch	HI or PASS	ON
HL HI REQ	(2ND)	Except for HI or PASS	OFF

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-56, "Removal and Installation".

3.HEADLAMP (HI) CIRCUIT INSPECTION

Check the headlamp (HI) circuit. Refer to EXL-32, "Description".

Is the headlamp (HI) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "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:000000003776214

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

Diagnosis Procedure

INFOID:0000000003776215

1. CHECK COMBINATION SWITCH

Check the combination switch. Refer to BCS-36, "Diagnosis Procedure".

Is the combination switch normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK HEADLAMP (LO) REQUEST SIGNAL INPUT

(P)CONSULT-III DATA MONITOR

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

Monitor item	Con	Monitor status	
HL LO REQ	Lighting switch	2ND	ON
		OFF	OFF

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-56, "Removal and Installation".

3.HEADLAMP (LO) CIRCUIT INSPECTION

Check the headlamp (LO) circuit. Refer to EXL-35, "Description".

Is the headlamp (LO) circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "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 Α Description INFOID:0000000003776216 The parking, license plate and tail lamps do not turn ON in with any lighting switch setting. В Diagnosis Procedure INFOID:0000000003776217 1.COMBINATION SWITCH INSPECTION Check the combination switch. Refer to BCS-36, "Diagnosis Procedure". Is the combination switch normal? D YES >> GO TO 2. NO >> Repair or replace the malfunctioning part. 2.CHECK TAIL LAMP RELAY REQUEST SIGNAL INPUT Е PCONSULT-III DATA MONITOR Select "TAIL & CLR REQ" of IPDM E/R DATA MONITOR item. With operating the lighting switch, check the monitor status. F Monitor item Condition Monitor status 1ST ON TAIL & CLR

OFF

lo the	itom	ototuo	normal?

YES >> GO TO 3.

REQ

NO >> Replace BCM. Refer to BCS-56, "Removal and Installation".

OFF

3.PARK LAMP CIRCUIT INSPECTION

Lighting switch

Check the parking lamp circuit. Refer to EXL-40, "Description".

Is the tail lamp circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

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BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

< SYMPTOM DIAGNOSIS >

BOTH SIDE FRONT FOG LAMPS ARE NOT TURNED ON

Description INFOID:000000003776218

The front fog lamps do not turn ON in any setting.

Diagnosis Procedure

INFOID:0000000003776219

1. COMBINATION SWITCH INSPECTION

Check the combination switch. Refer to BCS-36, "Diagnosis Procedure".

Is the combination switch normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning part.

2.CHECK FRONT FOG LAMP REQUEST SIGNAL INPUT

(P)CONSULT-III DATA MONITOR

- 1. Select "FR FOG REQ" of IPDM E/R DATA MONITOR item.
- 2. With operating the front fog lamp switch, check the monitor status.

Monitor item	Condition	Monitor status	
FR FOG REQ	Front fog lamp switch	ON	ON
	(Lighting switch 2ND)	OFF	OFF

Is the item status normal?

YES >> GO TO 3.

NO >> Replace BCM. Refer to BCS-56, "Removal and Installation".

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

Check the front fog lamp circuit. Refer to EXL-38, "Description".

Is the front fog lamp circuit normal?

YES >> Replace IPDM E/R. Refer to PCS-34, "Removal and Installation of IPDM E/R".

NO >> Repair or replace the malfunctioning part.

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

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 3 minutes before performing any service.

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

NOTE:

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- · After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

This vehicle is equipped with a push-button ignition switch and a steering lock unit.

If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

- 2. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)
- 3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
- Perform the necessary repair operation.

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PRECAUTIONS

< PRECAUTION >

- 5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
- 6. Perform self-diagnosis check of all control units using CONSULT-III.

General precautions for service operations

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- When removing or disassembling any part, be careful not to damage or deform it. Protect parts which may
 get in the way with cloth.
- When removing parts with a screw driver or other tool, protect parts by wrapping them with vinyl or tape.
- Keep removed parts protected with cloth.
- If an non-reuseable part is removed, replace it with a new one.
- After re-assembly has been completed, make sure each part functions correctly.
- · Never work with wet hands.
- Turn the combination switch (lighting and turn signal switch) OFF before disconnecting and connecting the connector.
- Do not use organic solvent (paint thinner or gasoline) to clean lamps or remove sealant residue.

ADJUSTMENT AND INSPECTION

< ON-VEHICLE REPAIR >

ON-VEHICLE REPAIR

ADJUSTMENT AND INSPECTION HEADLAMP

HEADLAMP: Aiming Adjustment

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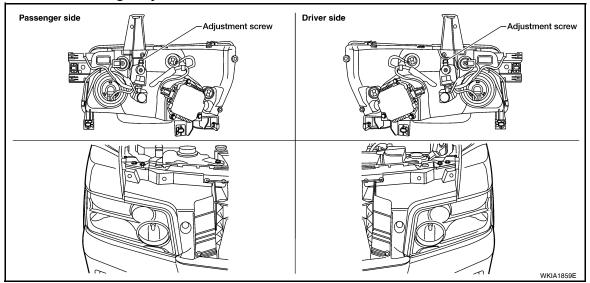
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NOTE:

- For details, refer to the regulations in your area.
- If vehicle front body has been repaired and /or the headlamp assembly has been replaced, check headlamp aiming.

HEADLAMP AIMING

NOTE:

- Before performing aiming adjustment, check the following:
- Ensure all tires are inflated to correct pressure.
- Place vehicle and screen on level surface.
- Ensure there is no load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant and engine oil filled to correct level, and fuel tank full.
- Confirm spare tire, jack and tools are properly stowed.
- Aim each headlamp individually and ensure other headlamp beam pattern is blocked from screen.
- Use adjusting screw to perform aiming adjustment

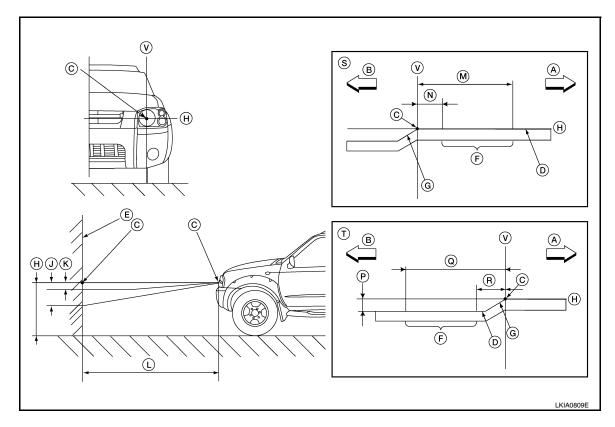
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- A. Right
- D. Cutoff line
- G. Step
- K. 37 mm (1.46 in.)
- N. 133 mm (5.24 in.)
- R. 200 mm (7.87 in.)
- V. Vertical center line

- 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)

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- 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

NOTE:

Basic illuminating area for adjustment should be within the range shown on the aiming chart. Adjust head-lamps accordingly.

LOW BEAM AND HIGH BEAM

- Turn headlamp low beam on.
- Use adjusting screw to perform aiming adjustment.

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, make sure of the following.

- · Keep all tires inflated to correct pressure.
- Place vehicle on level ground.

ADJUSTMENT AND INSPECTION

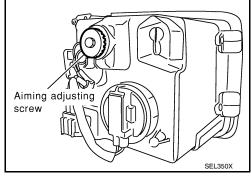
< ON-VEHICLE REPAIR >

 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.

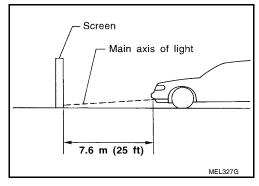
Adjust aiming in the vertical direction by turning the adjustment screw.

NOTE:

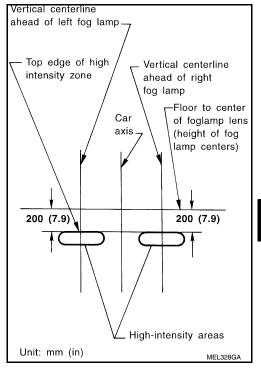
Access adjustment screw from underneath front bumper. Turn screw clockwise to raise pattern and counterclockwise to lower pattern.



- 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 200 mm (7.9 in) below the height of the fog lamp centers as shown.
 - When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.



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REMOVAL AND INSTALLATION

HEADLAMP

Bulb Replacement

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CAUTION:

- Disconnect battery negative terminal before touching xenon bulb or headlamp wiring harness assembly.
- Turn headlamp switch OFF before disconnecting headlamp harness connector.
- Do not touch bulb by hand right after being turned off. Burning may result.
- Do not touch the glass of bulb directly by hand. Keep grease and other oily substances away from it.
- Do not turn xenon bulb ON when xenon bulb is removed from front combination lamp assembly.
- After installing the bulb, be sure to install the bulb socket securely to ensure watertightness.
- Do not leave bulb out of front combination lamp assembly for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp. When replacing bulb, be sure to replace it with a new one.

HEADLAMP (OUTER SIDE), FOR LOW BEAM

Removal

- 1. Position fender protector aside.
- 2. Turn headlamp switch OFF.
- Disconnect battery negative terminal.
- 4. Remove ballast.
- Disconnect headlamp electrical connector.
- 6. Release bulb retaining spring and pull bulb straight out.

Installation

Installation is in the reverse order of removal.

HEADLAMP (INNER SIDE), FOR HIGH BEAM

Removal

- 1. Turn headlamp switch OFF.
- Disconnect headlamp electrical connector.
- Turn the bulb counterclockwise to remove it.

Installation

Installation is in the reverse order of removal.

FRONT PARKING LAMP (INNER OR OUTER)

Removal

- 1. Turn the bulb socket counterclockwise to unlock it.
- 2. Pull the bulb to remove it from the socket.

Installation

Installation is in the reverse order of removal.

SIDE MARKER LAMP (FRONT)

Removal

- Position fender protector aside.
- Turn the side marker lamp (front) bulb socket counterclockwise and remove side marker lamp (front) bulb socket.
- Pull to remove side marker lamp (front) from the side marker lamp (front) bulb socket.

Installation

Installation is in the reverse order of removal.

Removal and Installation

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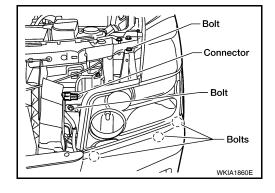
FRONT COMBINATION LAMP ASSEMBLY

CAUTION:

- Disconnect battery negative terminal before touching xenon bulb or headlamp wiring harness assembly.
- Turn headlamp switch OFF before disconnecting headlamp harness connector.
- . Do not touch bulb by hand right after being turned off. Burning may result.
- Do not touch the glass of bulb directly by hand. Keep grease and other oily substances away from it.
- Do not turn xenon bulb ON when xenon bulb is removed from front combination lamp assembly.
- After installing the bulb, be sure to install the bulb socket securely to ensure watertightness.
- Do not leave bulb out of front combination lamp assembly for a long time because dust, moisture, smoke, etc. may affect the performance of the lamp. When replacing bulb, be sure to replace it with a new one.

Removal

- 1. Disconnect battery negative terminal.
- 2. Disconnect front combination lamp assembly.
- 3. Remove front fascia. Refer to EXT-13, "Removal and Installation".
- 4. Remove front combination lamp assembly bolts.
- 5. Remove front combination lamp assembly.



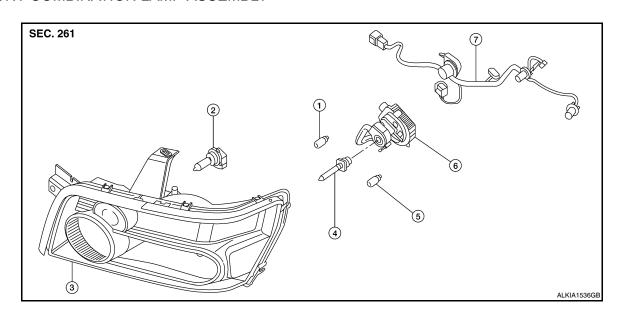
Installation

Installation is in the reverse order of removal.

Disassembly and Assembly

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FRONT COMBINATION LAMP ASSEMBLY



1. Parking lamp bulb

2. Headlamp bulb (high beam)

3. Headlamp assembly

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HEADLAMP

< REMOVAL AND INSTALLATION >

- 4. Xenon bulb (low beam)
- 5. Side marker lamp (front) bulb
- 6. Ballast

7. Wiring harness assembly

Disassembly

- 1. Remove ballast.
- 2. Release xenon bulb retaining spring and remove xenon bulb.
- 3. Turn high beam bulb counterclockwise to unlock and remove high beam bulb.
- 4. Turn parking lamp bulb socket counterclockwise to unlock and remove parking lamp bulb.
- 5. Turn side marker lamp (front) bulb socket counterclockwise to unlock and remove side marker lamp (front) bulb.

Assembly

Assembly is in the reverse order of disassembly.

AUTO LIGHT SYSTEM

< REMOVAL AND INSTALLATION >

AUTO LIGHT SYSTEM

Removal and Installation

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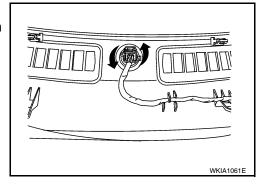
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OPTICAL SENSOR

Removal

- 1. Remove defroster grille. Refer to IP-12, "Exploded View".
- 2. Disconnect the optical sensor connector.
- 3. Turn the optical sensor counterclockwise to remove it from defroster grille.



Installation

Installation is in the reverse order of removal.

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FRONT FOG LAMP

Bulb Replacement

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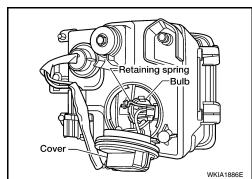
FRONT FOG LAMP

Removal

- 1. Remove the front turn/fog lamp assembly. Refer to EXL-150, "Removal and Installation".
- Turn the bulb cover counterclockwise to remove it.
- 3. Unlatch retaining spring.
- 4. Remove bulb and disconnect the connector.

CAUTION:

- Do not touch the glass of bulb directly by hand. Keep grease and other oily substances away from it. Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.
- Do not leave bulb out of fog lamp reflector for a long time because dust, moisture smoke, etc. may affect the performance of fog lamp. When replacing bulb, be sure to replace it with new one.



Installation

Installation is in the reverse order of removal.

Removal and Installation

INFOID:0000000003776227

FRONT FOG LAMP

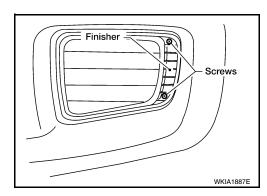
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb.

CAUTION:

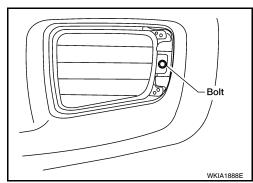
- Do not leave fog lamp assembly without bulb for a long period of time. Dust, moisture, smoke, etc.
 entering the fog lamp body may affect the performance. Remove the bulb from the headlamp assembly just before replacement bulb is installed.
- Grasp only the plastic base when handling the bulb. Never touch the glass envelope. Touching the glass could significantly affect the bulb life and/or fog lamp performance.

Removal

Remove the front turn/fog lamp finisher.



- 2. Remove bolt and pull fog lamp out of front fascia.
- Disconnect electrical connector.



FRONT FOG LAMP

< REMOVAL AND INSTALLATION >

Installation

Installation is in the reverse order of removal.

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LIGHTING & TURN SIGNAL SWITCH

< REMOVAL AND INSTALLATION >

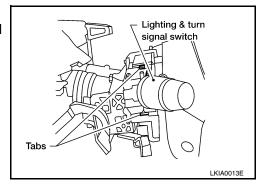
LIGHTING & TURN SIGNAL SWITCH

Removal and Installation

INFOID:0000000003776228

REMOVAL

- 1. Remove steering column cover.
- 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.

HAZARD SWITCH

< REMOVAL AND INSTALLATION >

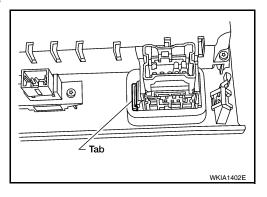
HAZARD SWITCH

Removal and Installation

INFOID:0000000003776229

REMOVAL

- 1. Remove cluster lid C. Refer to IP-16, "Removal and Installation".
- 2. While pressing the tab, push out the hazard switch.



INSTALLATION

Installation is in the reverse order of removal.

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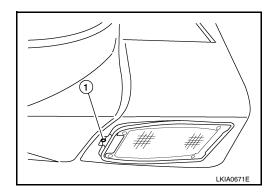
PUDDLE LAMP

Removal and Installation

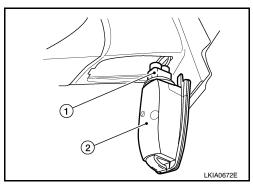
INFOID:0000000005864680

REMOVAL

1. Depress tab (1) on outer edge of puddle lamp housing.



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



INSTALLATION

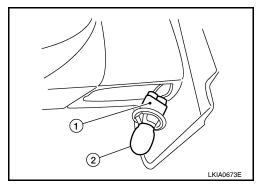
Installation is in the reverse order of removal.

Bulb Replacement

INFOID:0000000005864681

REMOVAL

- 1. Remove puddle lamp housing. Refer to EXL-154, "Removal and Installation".
- 2. Pull puddle lamp bulb (2) straight out from puddle lamp socket (1) to remove.



INSTALLATION

Installation is in the reverse order of removal.

LICENSE PLATE LAMP

< REMOVAL AND INSTALLATION > LICENSE PLATE LAMP **Bulb Replacement** INFOID:0000000003776230 LICENSE PLATE LAMP Removal 1. Remove back door lower finisher. Refer to EXT-24, "Removal and Installation". 2. Turn bulb socket counterclockwise to remove it. 3. Pull bulb from socket. Installation Installation is in the reverse order of removal. Removal and Installation INFOID:0000000003776231 LICENSE PLATE LAMP Removal Remove back door lower finisher. Refer to <u>INT-21, "Removal and Installation"</u>. Remove license plate lamp screws. Remove license plate lamp. Installation Installation is in the reverse order of removal.

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< REMOVAL AND INSTALLATION >

STOP LAMP

Bulb Replacement

INFOID:0000000003776232

HIGH-MOUNTED STOP LAMP

NOTE:

High-mounted stop lamp bulbs are not serviceable.

STOP LAMP

Refer to EXL-156, "Removal and Installation".

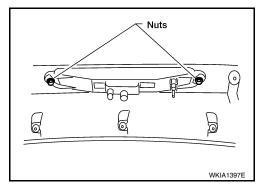
Removal and Installation

INFOID:0000000003776233

HIGH-MOUNTED STOP LAMP

Removal

- 1. Remove back door upper finisher. Refer to INT-21, "Removal and Installation".
- 2. Remove 2 nuts and remove high-mounted stop lamp.



Installation

Installation is in the reverse order of removal.

STOP LAMP

Refer to EXL-157, "Removal and Installation".

REAR COMBINATION LAMP

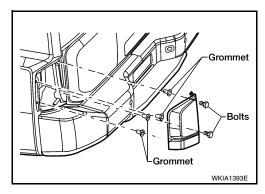
< REMOVAL AND INSTALLATION >

REAR COMBINATION LAMP

Bulb Replacement

REMOVAL

1. Remove rear combination lamp bolts.



- 2. Pull rear combination lamp to remove.
- 3. Turn bulb socket counterclockwise and unlock it.
- 4. Remove bulb.

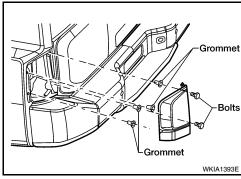
INSTALLATION

Installation is in the reverse order of removal.

Removal and Installation

REMOVAL

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



INSTALLATION

Installation is in the reverse order of removal.

Bolts

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EXL-157 Revision: December 2009 2009 QX56

BULB SPECIFICATIONS

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

BULB SPECIFICATIONS

Headlamp INFOID:000000003776236

Item	Wattage (W)*
Low	35
High	60/65

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

Exterior Lamp

INFOID:0000000003776237

Item		Wattage (W)*
Front combination lamp	Parking lamp (inner)	7
	Parking lamp (outer)	7
	Side marker lamp (front)	7
Rear combination lamp	Stop/Tail lamp	LED*
	Side marker lamp (rear)	*
	Turn signal lamp	27
Back-up lamp		*
Turn/fog lamp	Fog	55
	Turn	21
License plate lamp		*
High-mounted stop lamp		LED*

 $[\]ensuremath{^{\star}}\xspace$: Always check with the Parts Department for the latest parts information.