SECTION **BCS**

BODY CONTROL SYSTEM

CONTENTS

PRECAUTION
PRECAUTIONS

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

INFOID:0000000012519404

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

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

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

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

SYSTEM DESCRIPTION

COMPONENT PARTS
BODY CONTROL SYSTEM

BODY CONTROL SYSTEM : Component Parts Location
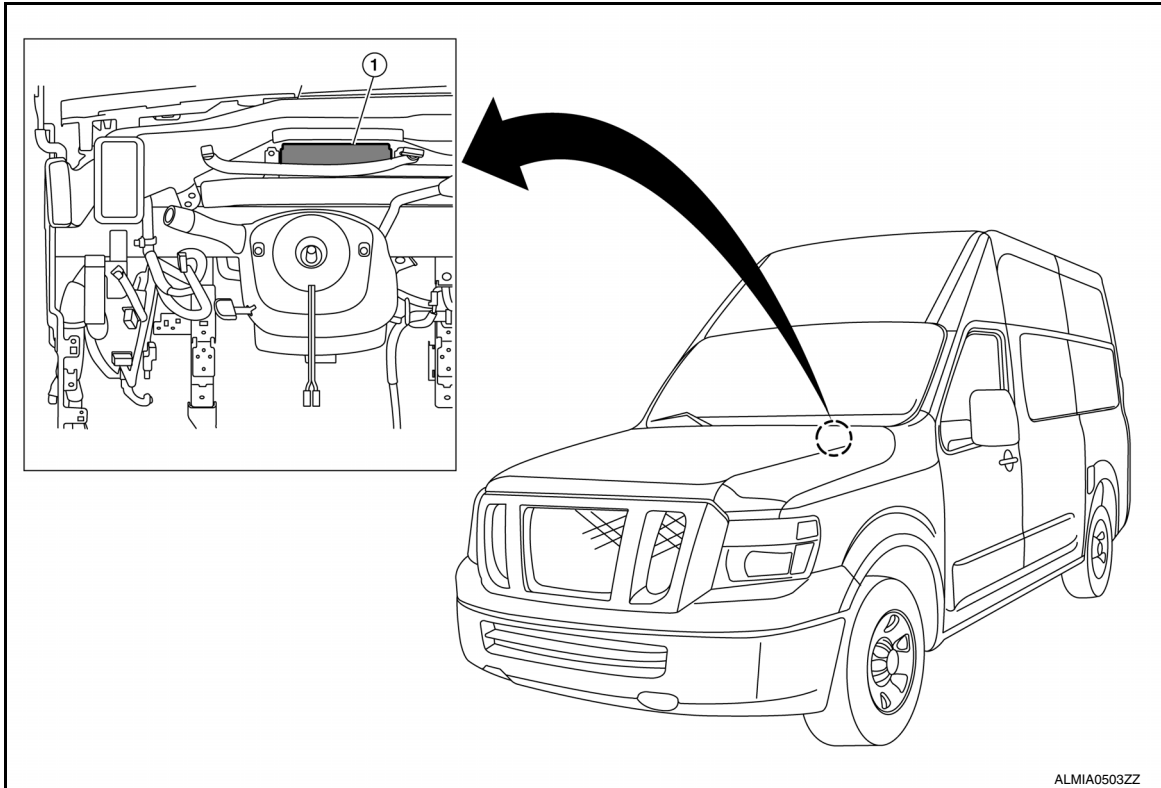
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1.   BCM

POWER CONSUMPTION CONTROL SYSTEM

POWER CONSUMPTION CONTROL SYSTEM : Component Parts Location

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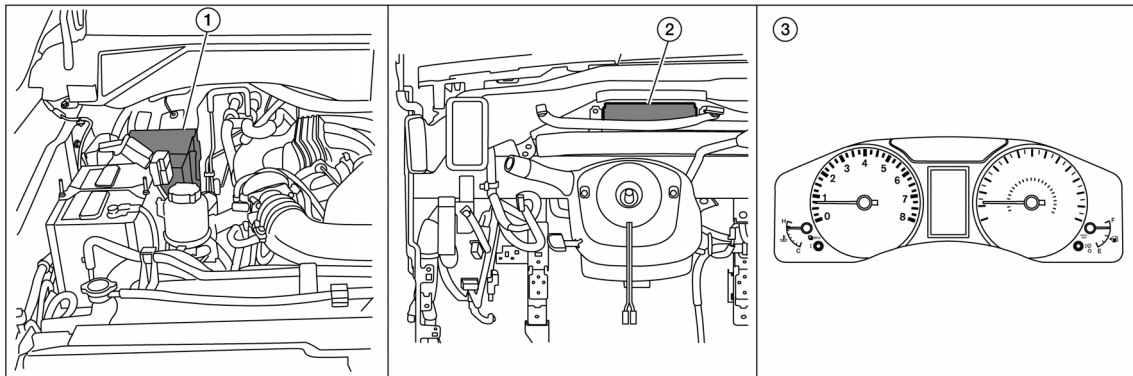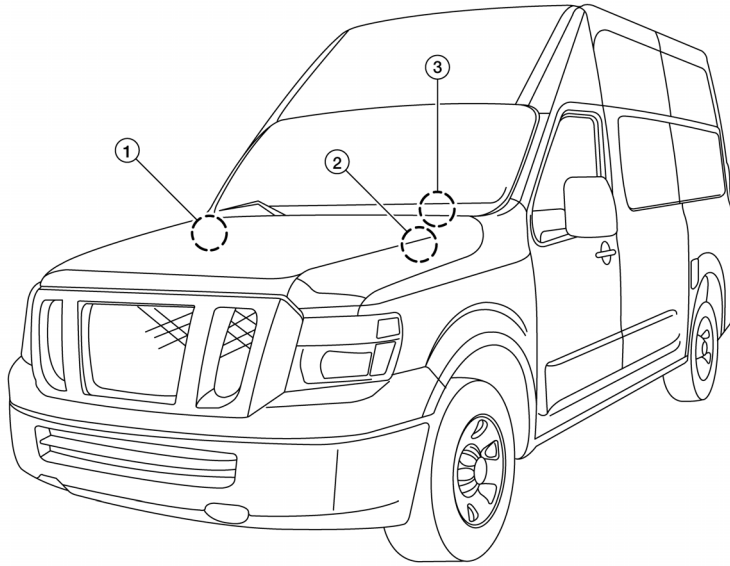
ALMIA0504ZZ

1. IPDM E/R
2. BCM (view with instrument panel and steering wheel removed)
3. Combination meter

SYSTEM
BODY CONTROL SYSTEM

BODY CONTROL SYSTEM : System Description

INFOID:0000000012519407

OUTLINE

- BCM (Body Control Module) controls various electrical components. It receives the information required from CAN communication and the signals received from each switch and sensor.
- BCM has a combination and lighting switch reading function for reading the status of combination and lighting switches (light, turn signal, wiper and washer) in addition to functions for controlling the operation of various electrical components. It also has a signal transmission function, for other systems, and a power consumption control function that reduces the power consumption with the ignition switch OFF.
- BCM is equipped with a diagnosis function that operates with CONSULT and allows for various settings to be changed.

BCM FUNCTION LIST

System	Reference page
Combination and lighting switch reading system	BCS-7, "COMBINATION AND LIGHTING SWITCH READING SYSTEM : System Diagram"
Signal buffer system	BCS-12, "SIGNAL BUFFER : System Diagram"
Power consumption control system	BCS-12, "POWER CONSUMPTION CONTROL SYSTEM : System Diagram"
Shipping mode control system	BCS-14, "SHIPPING MODE CONTROL SYSTEM : System Description"
Transit mode control system	BCS-15, "TRANSIT MODE CONTROL SYSTEM : System Description"
Headlamp system	EXL-8, "HEADLAMP SYSTEM : System Diagram - For USA" EXL-8, "HEADLAMP SYSTEM : System Diagram - For Canada"
Front fog lamp system (if equipped)	EXL-10, "FRONT FOG LAMP SYSTEM : System Diagram"
Daytime running light system (if equipped)	EXL-9, "DAYTIME RUNNING LIGHT SYSTEM : System Diagram - For USA" EXL-10, "DAYTIME RUNNING LIGHT SYSTEM : System Diagram - For Canada"
Turn signal and hazard warning lamp system	EXL-11, "TURN SIGNAL AND HAZARD WARNING LAMP SYSTEM : System Diagram"
Parking, license plate, side maker and tail lamps system	EXL-12, "PARKING, LICENSE PLATE AND TAIL LAMP SYSTEM : System Diagram"
Trailer tow system (if equipped)	EXL-12, "TAIL LAMPS : (TRAILER TOW SYSTEM) System Diagram"
Exterior lamp battery saver system	EXL-13, "EXTERIOR LAMP BATTERY SAVER SYSTEM : System Description"
Interior room lamp control system	INL-8, "INTERIOR ROOM LAMP CONTROL SYSTEM : System Diagram"
Interior room lamp battery saver system	INL-10, "ILLUMINATION CONTROL SYSTEM : System Diagram"
Front wiper and washer system	WW-5, "System Diagram"
Manual air conditioner system (if equipped)	HAC-125, "FRONT MANUAL AIR CONDITIONING SYSTEM : System Diagram"
Automatic air conditioner system (if equipped)	HAC-14, "FRONT AUTOMATIC AIR CONDITIONING SYSTEM : System Diagram"
Warning chime system	WCS-6, "WARNING CHIME SYSTEM : System Diagram"
Power door lock system (if equipped)	DLK-11, "POWER DOOR LOCK SYSTEM : System Diagram"
Nissan vehicle immobilizer system-NATS (NVIS) (if equipped)	SEC-8, "NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : System Diagram"

System	Reference page
Vehicle security system	SEC-7, "VEHICLE SECURITY SYSTEM : System Diagram"
Panic alarm	SEC-7, "VEHICLE SECURITY SYSTEM : System Diagram"
Rear window defogger system (if equipped)	DEF-8, "System Diagram"
Remote keyless entry system (if equipped)	DLK-13, "REMOTE KEYLESS ENTRY SYSTEM : System Diagram"
Power window system (if equipped)	PWC-7, "System Diagram"
Retained accessory power (RAP) system	PWC-7, "System Diagram"

COMBINATION AND LIGHTING SWITCH READING SYSTEM

COMBINATION AND LIGHTING SWITCH READING SYSTEM : System Diagram

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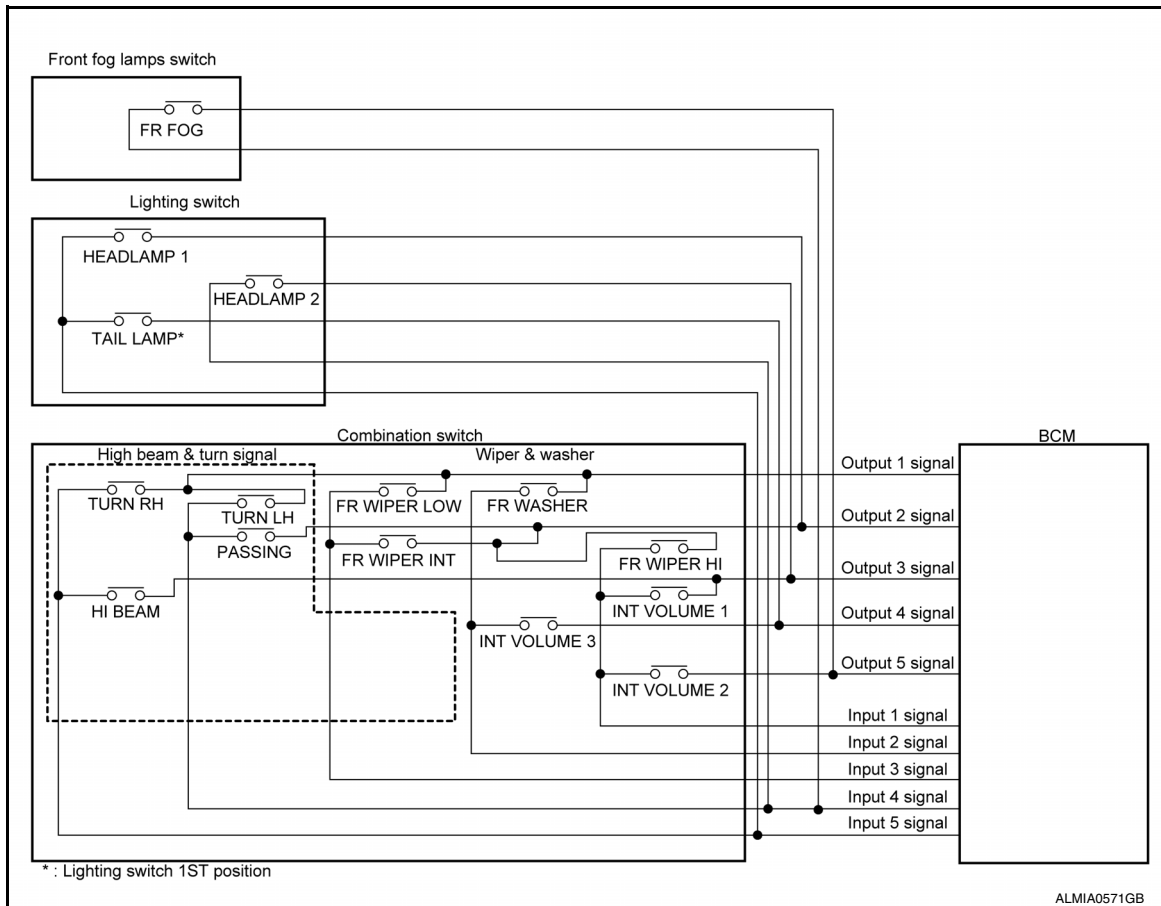
COMBINATION AND LIGHTING SWITCH READING SYSTEM : System Description

INFOID:0000000012519409

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

COMBINATION AND LIGHTING SWITCH MATRIX

Combination and lighting switch circuit

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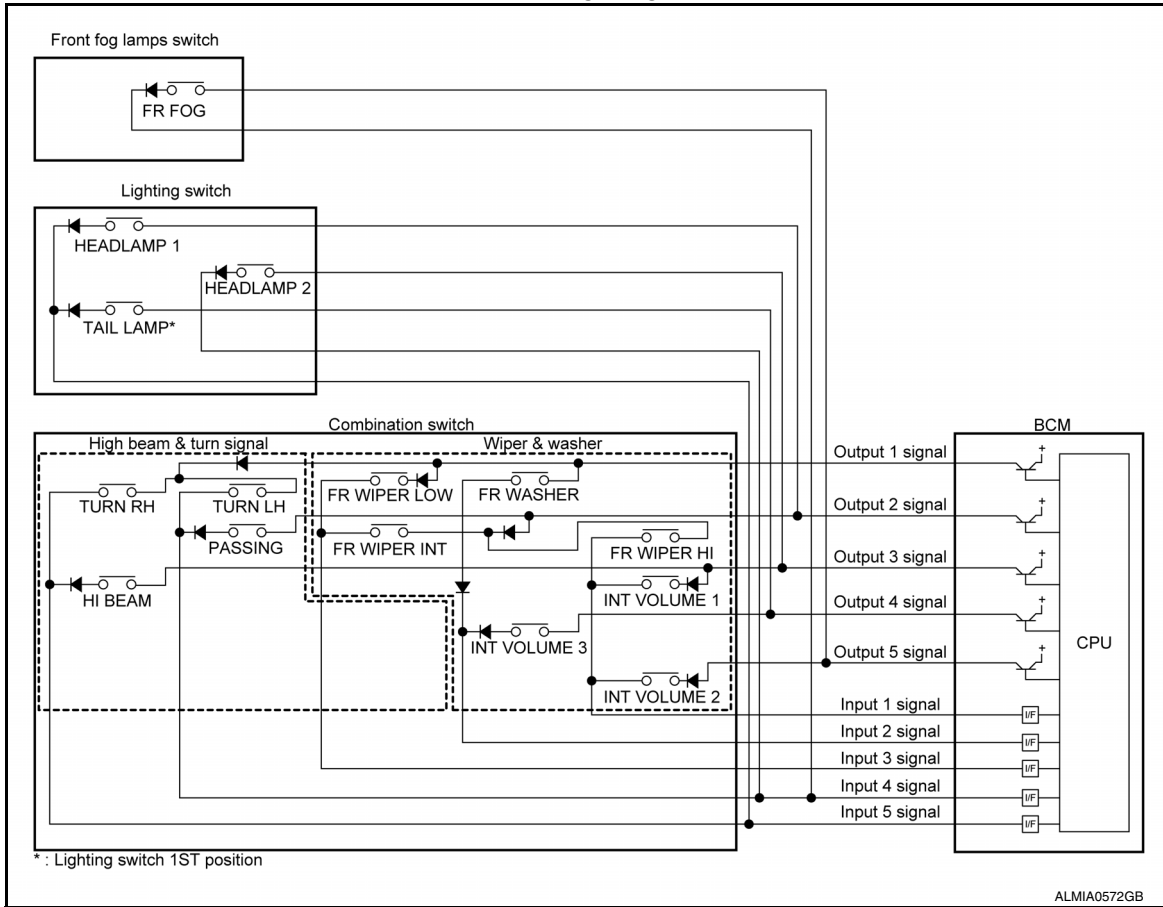
Combination and lighting switch INPUT-OUTPUT system list

System	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5
OUTPUT 1	—	FR WASHER	FR WIPER LOW	TURN LH	TURN RH
OUTPUT 2	FR WIPER HI	—	FR WIPER INT	PASSING	HEADLAMP 1
OUTPUT 3	INT VOLUME 1	—	—	HEADLAMP 2	HI BEAM
OUTPUT 4	—	INT VOLUME 3	—	—	TAIL LAMP
OUTPUT 5	INT VOLUME 2	—	—	FR FOG	—

COMBINATION AND LIGHTING SWITCH READING FUNCTION

Description
• BCM reads the status of the combination and lighting switches at 10 ms intervals normally.

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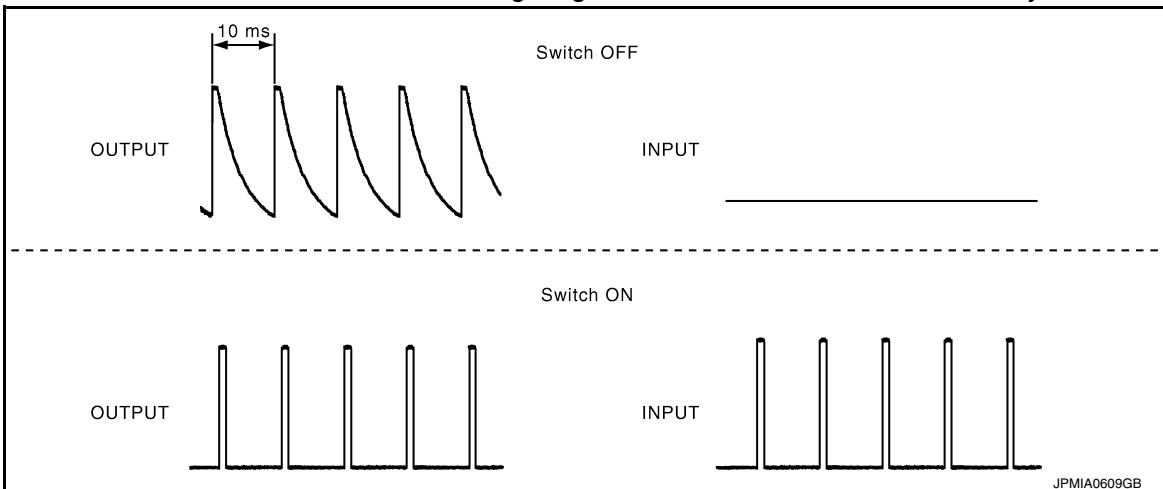
NOTE:
BCM reads the status of the combination and lighting switches at 60 ms intervals when BCM is controlled at low power consumption control mode.
• BCM operates as follows and judges the status of the combination and lighting switches.
- It operates the transistor on OUTPUT side in the following order: OUTPUT 1 → 2 → 3 → 4 → 5, and outputs voltage waveform.
- The voltage waveform of OUTPUT corresponding to the formed circuit is input into the interface on INPUT side if any (1 or more) switches are ON.
- It reads this change of the voltage as the status signal of the combination and lighting switches.

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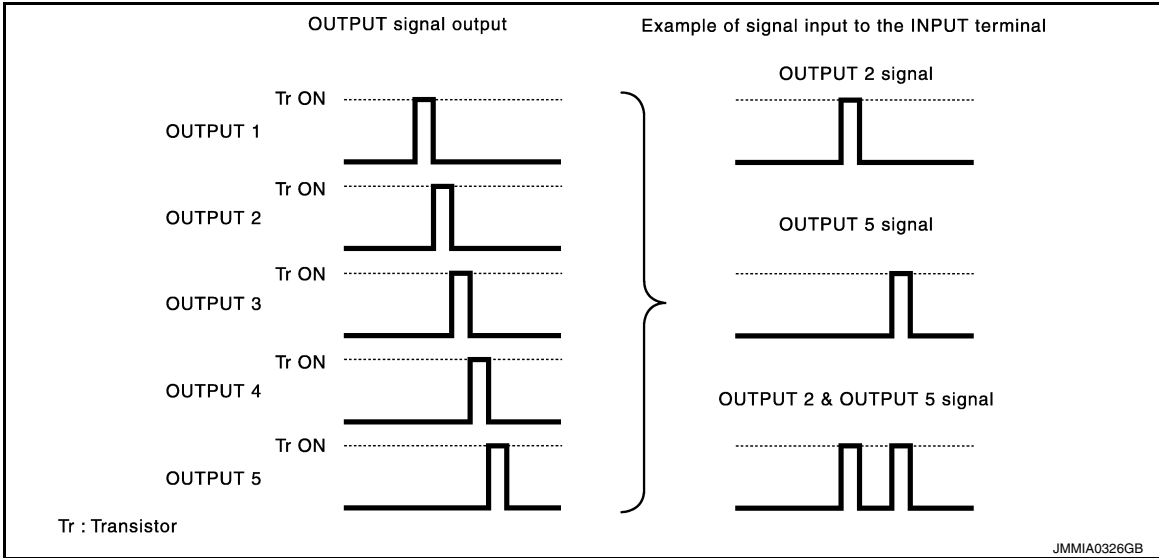
Operation Example
In the following operation example, the combination of the status signals of the combination and lighting switches is replaced as follows: INPUT 1 - 5 to "1 - 5" and OUTPUT 1 - 5 to "A - E".

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

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

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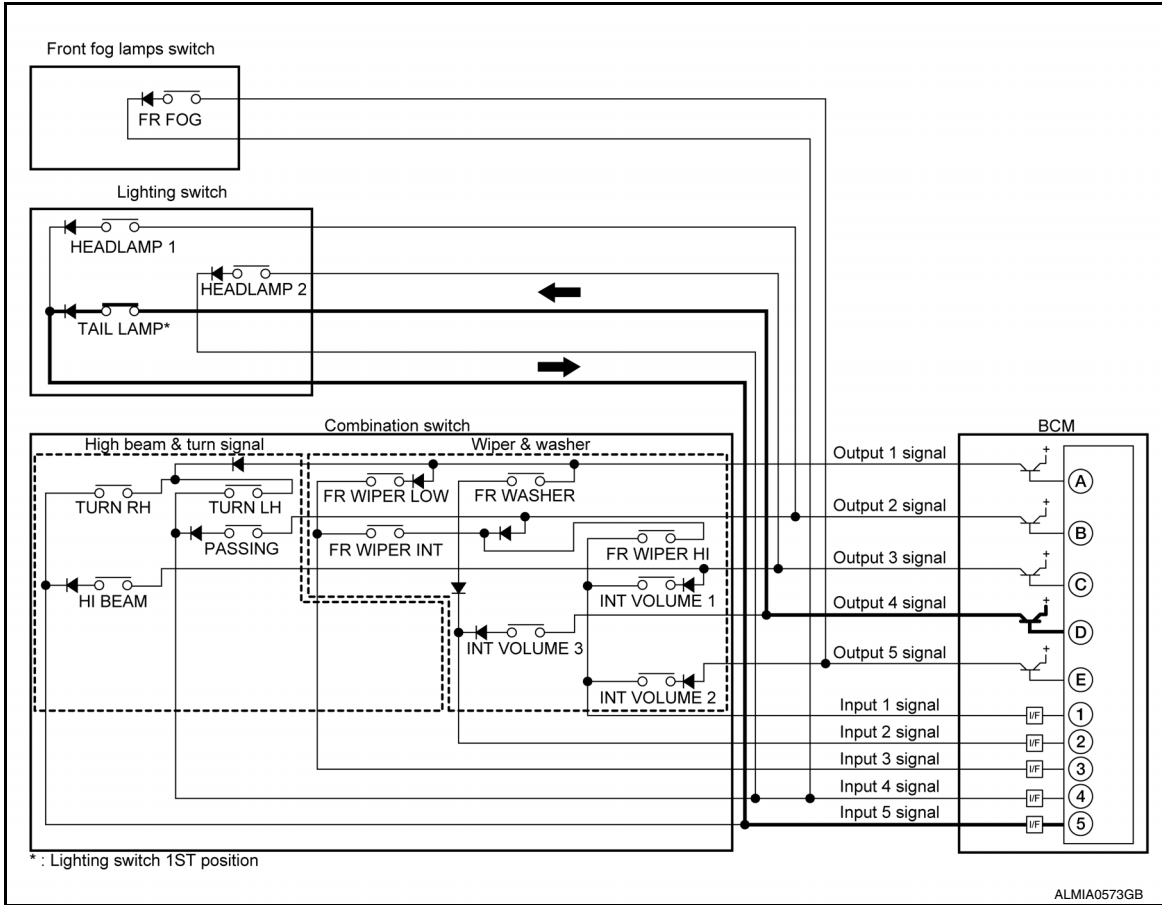
• BCM detects the combination and lighting switch status signal "5D" when the signal of OUTPUT 4 is input to INPUT 5.
• BCM judges that the TAIL LAMP switch is ON when the signal "5D" is detected.

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

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

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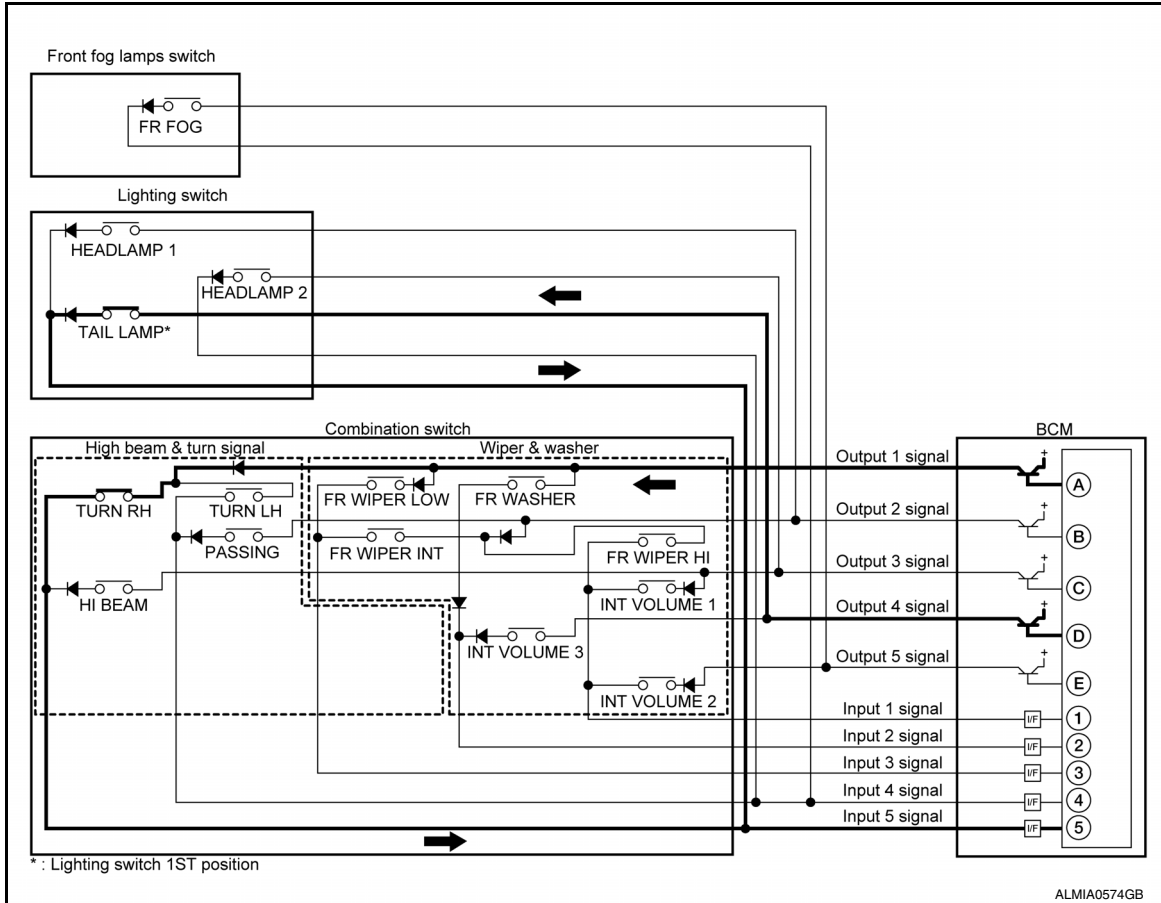
• BCM detects the combination and lighting switch status signal "5AD" when the signals of OUTPUT 1 and OUTPUT 4 are input to INPUT 5.
• BCM judges that the TURN RH switch and TAIL LAMP switch are ON when the signal "5AD" is detected.

WIPER INTERMITTENT DIAL POSITION
BCM judges the wiper intermittent dial 1 - 5 by the status of INT VOLUME 1, 2 and 3 switches.

Wiper intermittent dial position	Switch status		
	INT VOLUME 1	INT VOLUME 2	INT VOLUME 3
1	OFF	ON	OFF
2	OFF	ON	ON
3	OFF	OFF	ON
4	OFF	OFF	OFF
5	ON	ON	OFF

NOTE:

For details of wiper intermittent dial position, refer to WW-5, "System Description".

SIGNAL BUFFER

SIGNAL BUFFER : System Diagram

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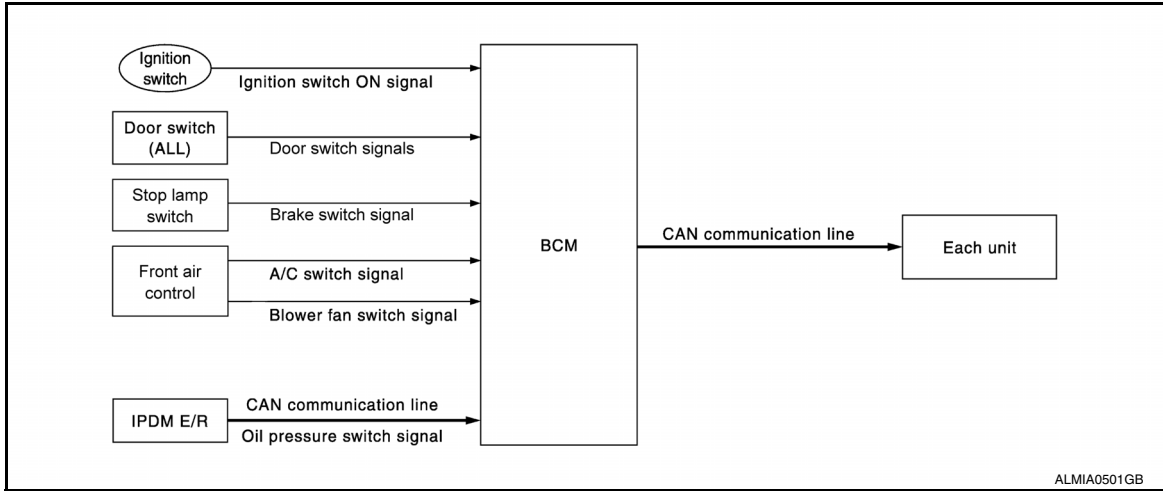
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SIGNAL BUFFER : System Description

INFOID:0000000012519411

OUTLINE
BCM has the signal transmission function that outputs/transmits each input/received signal to each unit.

SIGNAL TRANSMISSION FUNCTION LIST

Signal name	Input	Output	Description
Ignition switch ON signal	Ignition switch	IPDM E/R (CAN)	Inputs the ignition switch signal and transmits it with CAN communication.
Brake switch signal	Stop lamp switch	IPDM E/R (CAN)	Inputs the brake switch signal and transmits it with CAN communication.
Door switch signal	Any door switch	• Combination meter (CAN) • IPDM E/R (CAN)	Inputs the door switch signal and transmits it with CAN communication.
Blower fan ON signal	Front air control	ECM (CAN)	Inputs each signals, and transmits the blower fan ON signal and A/C ON signal via CAN communication.
A/C ON signal			
Oil pressure switch signal	IPDM E/R (CAN)	Combination meter (CAN)	Transmits the received oil pressure switch signal with CAN communication.

POWER CONSUMPTION CONTROL SYSTEM

POWER CONSUMPTION CONTROL SYSTEM : System Diagram

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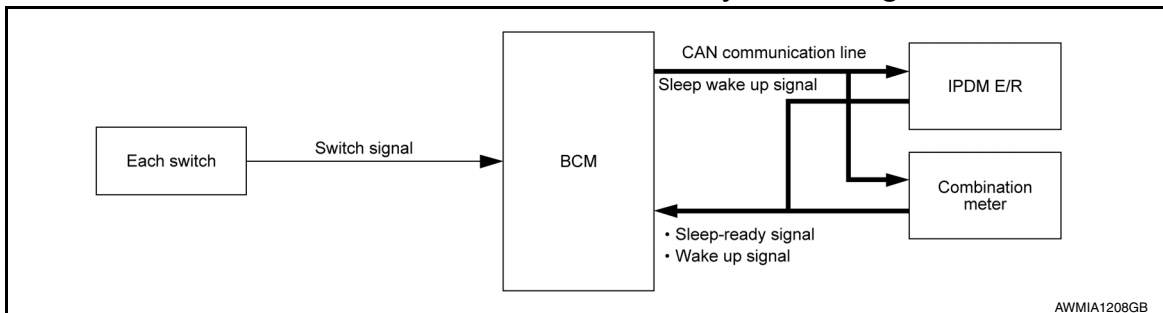
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POWER CONSUMPTION CONTROL SYSTEM : System Description

INFOID:0000000012519413

OUTLINE
- BCM incorporates a power saving control function that reduces the power consumption according to the vehicle status.
- BCM switches the status (control mode) by itself with the power saving control function. It performs the sleep request to each unit (IPDM E/R and combination meter) that operates with the ignition switch OFF.

Normal mode (wake-up)
- CAN communication is normally performed with other units
- Each control with BCM is operating properly

CAN communication sleep mode (CAN sleep)
- CAN transmission is stopped
- Control with BCM only is operating

Low power consumption mode (BCM sleep)
- Low power consumption control is active
- CAN transmission is stopped

LOW POWER CONSUMPTION CONTROL WITH BCM
BCM reduces the power consumption with the following operation in the low power consumption mode.
- The reading interval of the switches changes from 10 ms interval to 60 ms interval.

Sleep mode activation
- BCM receives the sleep-ready signal (ready) from IPDM E/R and combination meter via CAN communication.
- BCM transmits the sleep wake up signal (sleep) to each unit when all of the CAN sleep conditions are fulfilled.
- Each unit stops the transmission of CAN communication with the sleep wake up signal. BCM is in CAN communication sleep mode.
- BCM is in the low power consumption mode and performs the low power consumption control when all of the BCM sleep conditions are fulfilled with CAN sleep condition.

Sleep condition

CAN sleep condition	BCM sleep condition
• Receiving the sleep-ready signal (ready) from all units • Ignition switch: OFF • Vehicle security system and panic alarm: No operation • Warning chime: No operation • Stop lamp switch: OFF • Turn signal indicator lamp: No operation • Exterior lamp: OFF • Door lock status: No change • CONSULT communication status: No communication • Door switch status: No change • Rear window defogger: OFF • Driver door lock status: No change • Key switch status: No change	• Interior room lamp battery saver: Time out • RAP system: OFF • Nissan Vehicle Immobilizer System (NVIS) - NATS: No operation • Remote keyless entry receiver communication status: No communication

Wake-up operation
- BCM transmits sleep wake up signal (wake up) to each unit when any condition listed below is established, and then goes into normal mode from low power consumption mode.
- Each unit starts transmissions with CAN communication by receiving sleep wake up signals. Each unit transmits wake up signals to BCM with CAN communication to convey the start of CAN communication.

Wake-up condition

- Receiving the sleep-ready signal (Not-ready) from any units
- Hazard switch: ON
- HI BEAM switch: OFF → ON, ON → OFF
- PASSING switch: OFF → ON, ON → OFF
- HEADLAMP 1 switch: OFF → ON, ON → OFF
- HEADLAMP 2 switch: OFF → ON, ON → OFF
- TAIL LAMP switch: OFF → ON
- TURN RH: OFF → ON, ON → OFF
- TURN LH: OFF → ON, ON → OFF
- Driver door switch: OFF → ON, ON → OFF
- Passenger door switch: OFF → ON, ON → OFF
- Back door switch RH: OFF → ON, ON → OFF
- Back door switch LH: OFF → ON, ON → OFF
- Stop lamp switch: ON
- Door lock and unlock switch:
  NEUTRAL → LOCK, NEUTRAL → UNLOCK
- Front door lock assembly (driver side) (door key cylinder switch):
  NEUTRAL → LOCK, NEUTRAL → UNLOCK
- Remote keyless entry receiver communication: Receiving

SHIPPING MODE CONTROL SYSTEM

SHIPPING MODE CONTROL SYSTEM : System Description   *INFOID:0000000012519414*

SYSTEM DIAGRAM

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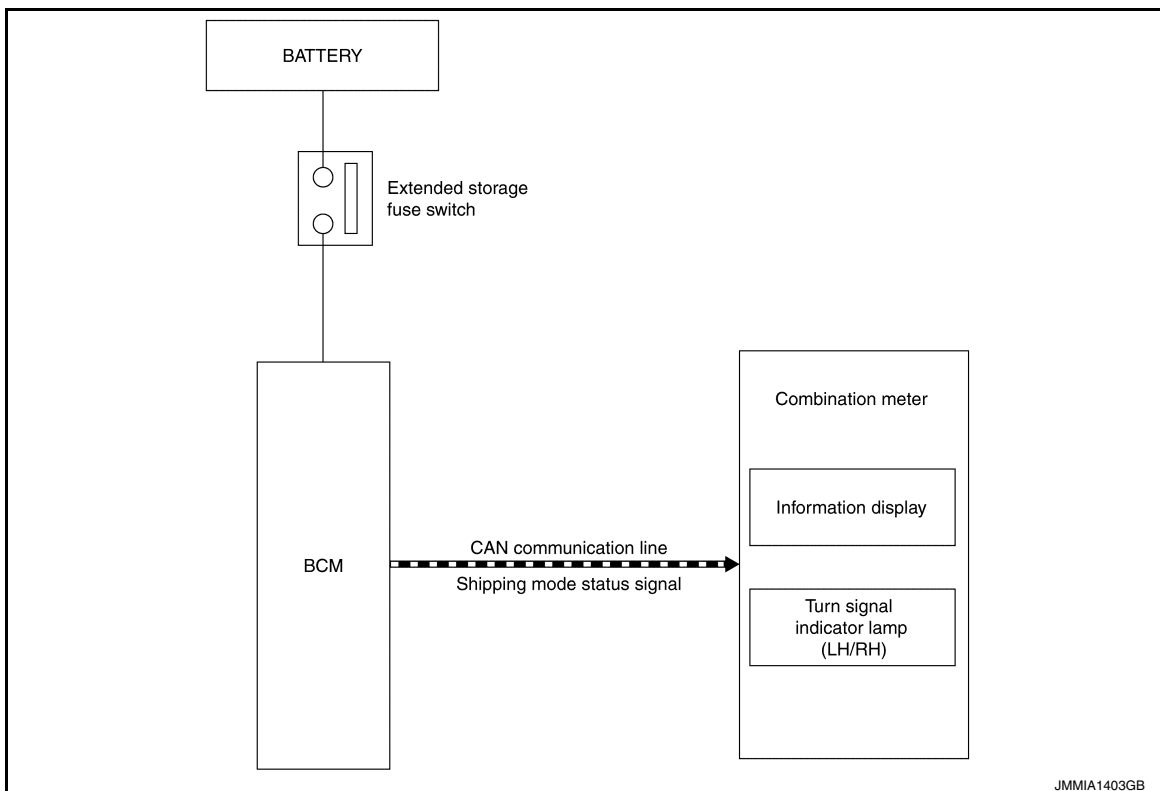
DESCRIPTION

- The BCM switches the status (shipping mode or normal mode) by itself according to the extended storage switch condition, and transmits the shipping mode status signal to the combination meter and each unit via CAN communication.
- When the shipping mode function is activated, the control units will not detect DTCs.
- BCM control functions are limited in shipping mode. Refer to BCS-61, "Description".
- When the BCM is in shipping mode, a message may be shown in the combination meter or display.
- For shipping mode cancel operation refer to BCS-50, "Work Procedure".

TRANSIT MODE CONTROL SYSTEM

TRANSIT MODE CONTROL SYSTEM : System Description

INFOID:0000000012519415

DESCRIPTION

Transit mode is a BCM function that disables several electrical functions such as door lock/unlock by remote, panic alarm, anti-theft alarm, etc. Vehicles are shipped with the BCM in transit mode to help prevent the battery from becoming discharged during dealer storage.

DETERMINING TRANSIT MODE STATUS

Use the table below to determine the transit mode status.

Status	Symptom
Transit Mode	When ignition switch is turned from OFF to ON, turn signal indicators will illuminate for 1 minute.
Normal Mode (not in transit mode)	When ignition switch is turned from OFF to ON, turn signal indicators stay OFF (do not illuminate).

CANCELING TRANSIT MODE

NOTE:

Transit mode can only be canceled. Once transit mode has been canceled, it cannot be activated again.

To cancel transit mode, refer to .

DIAGNOSIS SYSTEM (BCM)
COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000012519416

APPLICATION ITEM
CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION
BCM can perform the following functions.

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

DOOR LOCK

DOOR LOCK : CONSULT Function (BCM - DOOR LOCK)

INFOID:0000000012519417

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
KEY ON SW [On/Off]	Indicates condition of key switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of back door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of sliding door or back door switch.
BACK DOOR SW	Indicates condition of back door switch.
ACC ON SW [On/Off]	Indicates condition of ignition switch ACC position.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.
KEY CYL LK-SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN-SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
VEHICLE SPEED [km/h/mph]	Indicates vehicle speed signal received from combination meter on CAN communication line.

ACTIVE TEST

Test Item	Description
DOOR LOCK	This test is able to check door lock operation [OTR ULK/DR UNLK/ALL ULK/ALL LCK].
TRUNK/BACK DOOR	This test is able to check trunk/back door operation [OPEN].

WORK SUPPORT

Support Item	Setting	Description
DOOR LOCK-UNLOCK SET	On*	Automatic door locks function ON.
	Off	Automatic door locks function OFF.
AUTOMATIC DOOR LOCK SELECT	P RANGE	Doors lock automatically when shifted out of P (Park).
	VH SPD*	Doors lock automatically when vehicle speed reaches 24 km/h (15 mph).
AUTOMATIC DOOR UNLOCK SELECT	MODE6	Doors unlock automatically when key is removed.
	MODE5	Driver's door unlocks automatically when key is removed.
	MODE4	Driver's door unlocks automatically when shifted into P (Park).
	MODE3	Driver's door unlocks automatically when ignition is switched from ON to OFF.
	MODE2*	Doors unlock automatically when shifted into P (Park).
	MODE1	Doors unlock automatically when ignition is switched from ON to OFF.
AUTOMATIC LOCK/UNLOCK SELECT	Lock/Unlock*	Automatic lock and unlock functions ON.
	Lock Only	Automatic lock function only ON.
	Unlock Only	Automatic unlock function only ON.
	Off	Automatic lock/unlock function OFF.

* : Initial setting

REAR DEFOGGER

REAR DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER)   *INFOID:0000000012519418*

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
ACC ON SW [On/Off]	Indicates condition of ignition switch ACC position.
REAR DEF SW [On/Off]	Indicates condition of rear window defogger switch.
RR DEF TIME [On/Off]	Indicates condition of rear defogger switch timer.

ACTIVE TEST

Test Item	Description
REAR DEFOGGER	This test is able to check rear window defogger operation [Off/On].

BUZZER

BUZZER : CONSULT Function (BCM - BUZZER)   *INFOID:0000000012519419*

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
KEY ON SW [On/Off]	Indicates condition of key switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
REVERSE SW CAN [On/Off]	Indicates reverse switch signal received from TCM on CAN communication line.
TAIL LAMP SW [On/Off]	Indicates condition of lighting switch.
FR FOG SW [On/Off]	Indicates condition of front fog lamp switch.
BUCKLE SW [On/Off]	Indicates condition of seat belt buckle switch.
VEHICLE SPEED [km/h/mph]	Indicates vehicle speed signal received from combination meter on CAN communication line.

ACTIVE TEST

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

INT LAMP

INT LAMP : CONSULT Function (BCM - INT LAMP)   *INFOID:0000000012519420*

DATA MONITOR

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

DIAGNOSIS SYSTEM (BCM)

Monitor Item [Unit]	Description
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.
KEY CYL LK-SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN-SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
ACC SW [On/Off]	Indicates condition of ignition switch ACC position.

ACTIVE TEST

Test Item	Description
INT LAMP	This test is able to check interior room lamp operation [Off/On].

WORK SUPPORT

Support Item	Setting		Description
SET I/L D-UNLCK INTCON	Off		Interior room lamp timer function OFF.
	On*		Interior room lamp timer function ON.
ROOM LAMP TIMER SET	MODE4*	30 sec.	Sets the interior room lamp ON time (timer operation).
	MODE3	15 sec.	
	MODE2	7.5 sec.	
	MODE1	0 sec.	
ROOM LAMP ON TIME SET	MODE7	0 sec.	Sets the interior room lamp gradual brightening time.
	MODE6	5 sec.	
	MODE5	4 sec.	
	MODE4	3 sec.	
	MODE3	2 sec.	
	MODE2*	1 sec.	
	MODE1	0.5 sec.	
ROOM LAMP OFF TIME SET	MODE7	0 sec.	Sets the interior room lamp gradual dimming time.
	MODE6	5 sec.	
	MODE5	4 sec.	
	MODE4	3 sec.	
	MODE3	2 sec.	
	MODE2*	1 sec.	
	MODE1	0.5 sec.	
R LAMP TIMER LOGIC SET	MODE2		Interior room lamp timer activation synchronizing all doors.
	MODE1*		Interior room lamp timer activation synchronizing driver door only.

* : Initial setting

MULTI REMOTE ENT

MULTI REMOTE ENT : CONSULT Function (BCM - MULTI REMOTE ENT)

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
KEY ON SW [On/Off]	Indicates condition of key switch.
ACC ON SW [On/Off]	Indicates condition of ignition switch ACC position.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of back door switch.
DOOR SW-RL [On/Off]	Indicates condition of sliding door switch.
BACK DOOR SW [On/Off]	Indicates condition of back door switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
KEYLESS PANIC [On/Off]	Indicates condition of panic signal from keyfob.

ACTIVE TEST

Test Item	Description
INT LAMP	This test is able to check interior room lamp operation [Off/On].
FLASHER	This test is able to check hazard reminder operation [Off/RH/LH].
HORN	This test is able to check horn operation [On].

WORK SUPPORT

Support Item	Setting		Description
REMO CONT ID REGIST	—		Keyfob ID code can be registered.
REMO CONT ID ERASUR	—		Keyfob ID code can be erased.
REMO CONT ID CONFIR	—		Keyfob ID code registration is displayed.
HORN CHIRP SET	Off		Horn chirp function can be changed in this mode.
	On*		
HAZARD LAMP SET	MODE4*	Lock and Unlock	Hazard warning lamp function can be changed in this mode.
	MODE3	Lock Only	
	MODE2	Unlock Only	
	MODE1	OFF	
PANIC ALARM SET	MODE3	1.5 sec	Panic alarm operation can be changed in this mode.
	MODE2	OFF	
	MODE1*	0.5 sec	
AUTO LOCK SET	MODE7	5 min	Auto locking function can be changed in this mode.
	MODE6	4 min	
	MODE5	3 min	
	MODE4	2 min	
	MODE3*	1 min	
	MODE2	30 sec	
	MODE1	OFF	

*: Initial setting

HEAD LAMP

HEAD LAMP : CONSULT Function (BCM - HEADLAMP)

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
ACC ON SW [On/Off]	Indicates condition of ignition switch ACC position.
HI BEAM SW [On/Off]	Indicates condition of combination switch.
HEAD LAMP SW 1 [On/Off]	Indicates condition of lighting switch.
HEAD LAMP SW 2 [On/Off]	
TAIL LAMP SW [On/Off]	
PASSING SW [On/Off]	Indicates condition of combination switch.
FR FOG SW [On/Off]	Indicates condition of front fog lamp switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of back door switch.
DOOR SW-RL [On/Off]	Indicates condition of sliding door switch.
BACK DOOR SW [On/Off]	Indicates condition of back door switch.
TURN SIGNAL R [On/Off]	Indicates condition of combination switch.
TURN SIGNAL L [On/Off]	
KEY ON SW [On/Off]	Indicates condition of key switch.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
PKB SW [On/Off]	Indicates parking brake switch signal received from combination meter on CAN communication line.
ENGINE RUN [On/Off]	Indicates run condition of engine.
VEHICLE SPEED [km/h/mph]	Indicates vehicle speed signal received from combination meter on CAN communication line.

ACTIVE TEST

Test Item	Description
TAIL LAMP	This test is able to check tail lamp operation [Off/On].
HEAD LAMP	This test is able to check head lamp operation [Off/Lo/Hi].
FR FOG LAMP	This test is able to check front fog lamp operation [Off/On].
DAYTIME RUNNING LIGHT	This test is able to check daytime running light operation [Off/On].
ILL DIM SIGNAL	This test is able to check illumination dimming operation [Off/On].

WORK SUPPORT

Support Item	Setting	Description
BATTERY SAVER SET	Off	Exterior lamp battery saver function OFF.
	On*	Exterior lamp battery saver function ON.
AUTO LIGHT LOGIC SET	MODE1*	With twilight ON custom & with wiper INT, LO and HI
	MODE2	With twilight ON custom & with wiper LO and HI
	MODE3	With twilight ON custom & without
	MODE4	Without twilight ON custom & with wiper INT, LO and HI
	MODE5	Without twilight ON custom & with wiper LO and HI
	MODE6	Without twilight ON custom & without

Support Item	Setting		Description
ILL DELAY SET	MODE8	180 sec	Sets delay timer function operation time (all doors closed).
	MODE7	150 sec	
	MODE6	120 sec	
	MODE5	90 sec	
	MODE4	60 sec	
	MODE3	30 sec	
	MODE2	OFF	
	MODE1*	45 sec	

*: Initial setting

WIPER

WIPER : CONSULT Function (BCM - WIPER)   INFOID:0000000012519423

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
IGN SW CAN [On/Off]	Indicates ignition switch ON signal received from IPDM E/R on CAN communication line.
FR WIPER HI [On/Off]	Indicates condition of front wiper operation of combination switch.
FR WIPER LOW [On/Off]	
FR WIPER INT [On/Off]	
FR WASHER SW [On/Off]	
INT VOLUME [1 - 5]	
FR WIPER STOP [On/Off]	Indicates front wiper motor auto stop signal received from IPDM E/R on CAN communication line.
REVERSE SW CAN [On/Off]	Indicates reverse switch signal received from TCM on CAN communication line.
VEHICLE SPEED [km/h]	Indicates vehicle speed signal received from ABS on CAN communication line.

ACTIVE TEST

Test Item	Description
FR WIPER	This test is able to check front wiper operation [Off/INT/Lo/Hi].

WORK SUPPORT

Support Item	Setting	Description
WIPER SPEED SETTING	On	Front wiper intermittent time linked with vehicle speed and wiper intermittent dial position.
	Off*	Front wiper intermittent time is not linked with vehicle speed and wiper intermittent dial position.

*: Initial Setting

FLASHER

FLASHER : CONSULT Function (BCM - FLASHER)   INFOID:0000000012519424

DATA MONITOR

Monitor Item [Unit]	Description
HAZARD SW [On/Off]	Indicates condition of hazard switch.

Monitor Item [Unit]	Description
TURN SIGNAL R [On/Off]	Indicates condition of turn signal function of combination switch.
TURN SIGNAL L [On/Off]	

ACTIVE TEST

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

AIR CONDITIONER

AIR CONDITIONER : CONSULT Function (BCM - AIR CONDITIONER)   *INFOID:0000000012519425*

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
FAN ON SIG [On/Off]	Indicates condition of fan switch.
AIR COND SW [On/Off]	Indicates condition of A/C switch.
FR DEF SW [On/Off]	Indicates condition of front defroster switch.

COMB SW

COMB SW : CONSULT Function (BCM - COMB SW)   *INFOID:0000000012519426*

DATA MONITOR

Monitor Item [Unit]	Description
TURN SIGNAL R [On/Off]	Indicates condition of turn signal operation of combination switch.
TURN SIGNAL L [On/Off]	
HI BEAM SW [On/Off]	Indicates condition of HI beam operation of combination switch.
HEAD LAMP SW 1 [On/Off]	Indicates condition of lighting switch.
HEAD LAMP SW 2 [On/Off]	
TAIL LAMP SW [On/Off]	
PASSING SW [On/Off]	Indicates condition of passing switch operation of combination switch.
FR FOG SW [On/Off]	Indicates condition of front fog lamp switch.
FR WIPER HI [On/Off]	Indicates condition of front wiper operation of combination switch.
FR WIPER LOW [On/Off]	
FR WIPER INT [On/Off]	
FR WASHER SW [On/Off]	Indicates condition of front washer operation of combination switch.
INT VOLUME [1 - 5]	Indicates condition of intermittent wiper operation of combination switch.

BCM

BCM : CONSULT Function (BCM - BCM)   *INFOID:0000000012519427*

ECU IDENTIFICATION
The BCM part number is displayed.

SELF DIAGNOSTIC RESULT
Refer to BCS-39, "DTC Index".

WORK SUPPORT

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

CONFIGURATION
Refer to BCS-48, "CONFIGURATION (BCM) : Description".

CAN DIAG SUPPORT MNTR
Refer to LAN-13, "CAN Diagnostic Support Monitor".

IMMU

IMMU : CONSULT Function (BCM - IMMU)   INFOID:0000000012519428

SELF DIAGNOSTIC RESULT
Refer to BCS-39, "DTC Index".

DATA MONITOR

Monitor Item [Unit]	Description
CONFRM ID ALL [Yet/DONE]	Switches to DONE when a registered Intelligent Key is inserted into the key slot.
CONFIRM ID4 [Yet/DONE]	
CONFIRM ID3 [Yet/DONE]	
CONFIRM ID2 [Yet/DONE]	
CONFIRM ID1 [Yet/DONE]	
NOT REGISTERED	Indicates [ID OK] when key ID that is registered is received or is not yet received. Indicates {ID NG] when key ID that is not registered is received.
TP 4 [Yet/DONE]	DONE indicates the number of Intelligent Key ID which has been registered.
TP 3 [Yet/DONE]	
TP 2 [Yet/DONE]	
TP 1 [Yet/DONE]	

WORK SUPPORT

Test Item	Setting	Description
CONFIRM DONGLE ID	—	Dongle ID can be checked.

ACTIVE TEST

Test Item	Description
THEFT IND	This test is able to check security indicator operation [Off/On].

BATTERY SAVER

BATTERY SAVER : CONSULT Function (BCM - BATTERY SAVER)   INFOID:0000000012519429

DATA MONITOR

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

Monitor Item [Unit]	Description
DOOR SW-RL [On/Off]	Indicates condition of sliding door switch.
BACK DOOR SW [On/Off]	Indicates condition of back door switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.
KEY CYL LK-SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN-SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
ACC SW [On/Off]	Indicates condition of ignition switch ACC position.

WORK SUPPORT

Support Item	Setting		Description
ROOM LAMP TIMER SET	MODE3	10 min	Sets the interior room lamp battery saver timer operating time.
	MODE2	60 min	
	MODE1*	15 min	

*: Initial setting

THEFT ALM

THEFT ALM : CONSULT Function (BCM - THEFT ALM)

INFOID:0000000012519430

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
ACC ON SW [On/Off]	Indicates condition of ignition switch ACC position.
KEY ON SW [On/Off]	Indicates condition of key switch.
KEYLESS LOCK [On/Off]	Indicates condition of lock signal from keyfob.
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of back door switch.
DOOR SW-RL [On/Off]	Indicates condition of sliding door switch.
BACK DOOR SW [On/Off]	Indicates condition of back door switch.
KEY CYL LK-SW [On/Off]	Indicates condition of lock signal from door key cylinder switch.
KEY CYL UN-SW [On/Off]	Indicates condition of unlock signal from door key cylinder switch.
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock switch.
TRANSPONDER [On/Off]	Indicates condition of key ID verification results.
LOCK STATUS [On/Off]	Indicates condition of lock status.
AUTO RELOCK [On/Off]	Indicates condition of auto relock.

ACTIVE TEST

Test Item	Description
THEFT IND	This test is able to check security indicator lamp operation [Off/On].
VEHICLE SECURITY HORN	This test is able to check vehicle security horn operation [On].

DIAGNOSIS SYSTEM (BCM)

Test Item	Description
HEAD LAMP(HI)	This test is able to check vehicle security lamp operation [On].
FLASHER	This test is able to check hazard reminder operation [Off/RH/LH].

WORK SUPPORT

Support Item	Setting	Description
SECURITY ALARM SET	Off	Security alarm OFF.
	On*	Security alarm ON.
THEFT ALM TRG	Off/On	The switch which triggered vehicle security alarm is recorded [On]. This mode is able to confirm and erase the record of vehicle security alarm. The trigger data can be erased by touching [CLEAR].
	CLEAR	
SECURITY ALARM SET (SIREN)	Off	Security alarm (siren) OFF.
	On	Security alarm (siren) ON.

*: Initial setting

RETAINED POWER

RETAINED POWER : CONSULT Function (BCM - RETAINED PWR)   *INFOID:0000000012519431*

DATA MONITOR

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

WORK SUPPORT

Support Item	Setting		Description
RETAINED PWR SET	MODE3	2 min	Sets the retained accessory power operating time.
	MODE2	OFF	
	MODE1*	45 sec	

*: Initial setting

SIGNAL BUFFER

SIGNAL BUFFER : CONSULT Function (BCM - SIGNAL BUFFER)   *INFOID:0000000012519432*

DATA MONITOR

Monitor Item [Unit]	Description
OIL PRESS SW [On/Off]	Indicates condition of oil pressure switch signal received from IPDM E/R on CAN communication line.
BRAKE SW [On/Off]	Indicates condition of stop lamp switch.

ACTIVE TEST

Test Item	Description
OIL PRESSURE SW	This test is able to check the oil pressure gauge operation [Off/On].

PANIC ALARM

PANIC ALARM : CONSULT Function (BCM - PANIC ALARM)

INFOID:0000000012519433

ACTIVE TEST

Test Item	Description
HEAD LAMP (HI)	This test is able to check head lamp HI operation [On].
VEHICLE SECURITY HORN	This test is able to check vehicle security horn operation [On].

A

B

C

D

E

F

G

H

I

J

K

L

BCS

N

O

P

ECU DIAGNOSIS INFORMATION
BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000012519434

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
ACC SW	Ignition switch OFF or ON	Off
	Ignition switch ACC	On
ACC ON SW	Ignition switch OFF or ON	Off
	Ignition switch ACC	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
BACK DOOR SW	Back door switch OFF	Off
	Back door switch ON	On
BRAKE SW	Brake pedal released	Off
	Brake pedal applied	On
BUCKLE SW	Seat belt buckle unfastened	Off
	Seat belt buckle fastened	On
CDL LOCK SW	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 to the UNLOCK side	On
CONFRM ID ALL	The key ID does not match any key ID registered to BCM.	Yet
	The key ID matches any key ID registered to BCM.	DONE
CONFIRM ID4	The key ID does not match the fourth key ID registered to BCM.	Yet
	The key ID matches the fourth key ID registered to BCM.	DONE
CONFIRM ID3	The key ID does not match the third key ID registered to BCM.	Yet
	The key ID matches the third key ID registered to BCM.	DONE
CONFIRM ID2	The key ID does not match the second key ID registered to BCM.	Yet
	The key ID matches the second key ID registered to BCM.	DONE
CONFIRM ID1	The key ID does not match the first key ID registered to BCM.	Yet
	The key ID matches the first key ID registered to BCM.	DONE
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	Sliding door or back doors closed	Off
	Sliding door or back doors opened	On
DOOR SW-RR	Back door RH closed	Off
	Back door RH opened	On
FAN ON SIG	Blower motor fan switch OFF	Off
	Blower motor fan switch ON	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On

Monitor Item	Condition	Value/Status
FR WASHER SW	Front washer switch OFF	Off
	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
FR WIPER STOP	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
HEAD LAMP SW 1	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HEAD LAMP SW 2	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HI BEAM SW	High beam switch OFF	Off
	High beam switch HI	On
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position of 1 - 5	1 - 5
KEY CYL LK-SW	Door key cylinder LOCK position	On
	Door key cylinder other than LOCK position	Off
KEY CYL UN-SW	Door key cylinder UNLOCK position	On
	Door key cylinder other than UNLOCK position	Off
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted into key cylinder	On
KEYLESS LOCK	LOCK button of keyfob is not pressed	Off
	LOCK button of keyfob is pressed	On
KEYLESS PANIC	PANIC button of keyfob is not pressed	Off
	PANIC button of keyfob is pressed	On
KEYLESS UNLOCK	UNLOCK button of keyfob is not pressed	Off
	UNLOCK button of keyfob is pressed	On
LOCK STATUS	Driver door is locked	Off
	Driver door is unlocked	On
NOT REGISTERED	BCM detects registered Intelligent Key ID, or BCM does not detect Intelligent Key ID	ID OK
	BCM detects non-registration Intelligent Key ID	ID NG
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On

Monitor Item	Condition	Value/Status
PKB SW	Parking brake switch disengaged	Off
	Parking brake switch engaged	On
REVERSE SW CAN	Reverse switch OFF	Off
	Reverse switch On	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
TAIL LAMP SW	Lighting switch OFF	Off
	Lighting switch 1st position	On
TP 4	The ID of fourth key is not registered to BCM	Yet
	The ID of fourth key is registered to BCM	DONE
TP 3	The ID of third key is not registered to BCM	Yet
	The ID of third key is registered to BCM	DONE
TP 2	The ID of second key is not registered to BCM	Yet
	The ID of second key is registered to BCM	DONE
TP 1	The ID of first key is not registered to BCM	Yet
	The ID of first key is registered to BCM	DONE
TRANSPONDER	Key ID not verified	Off
	Key ID verified	On
TRNK/HAT MNTR	Back door closed	Off
	Back door open	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading

TERMINAL LAYOUT

ALMIA0502ZZ
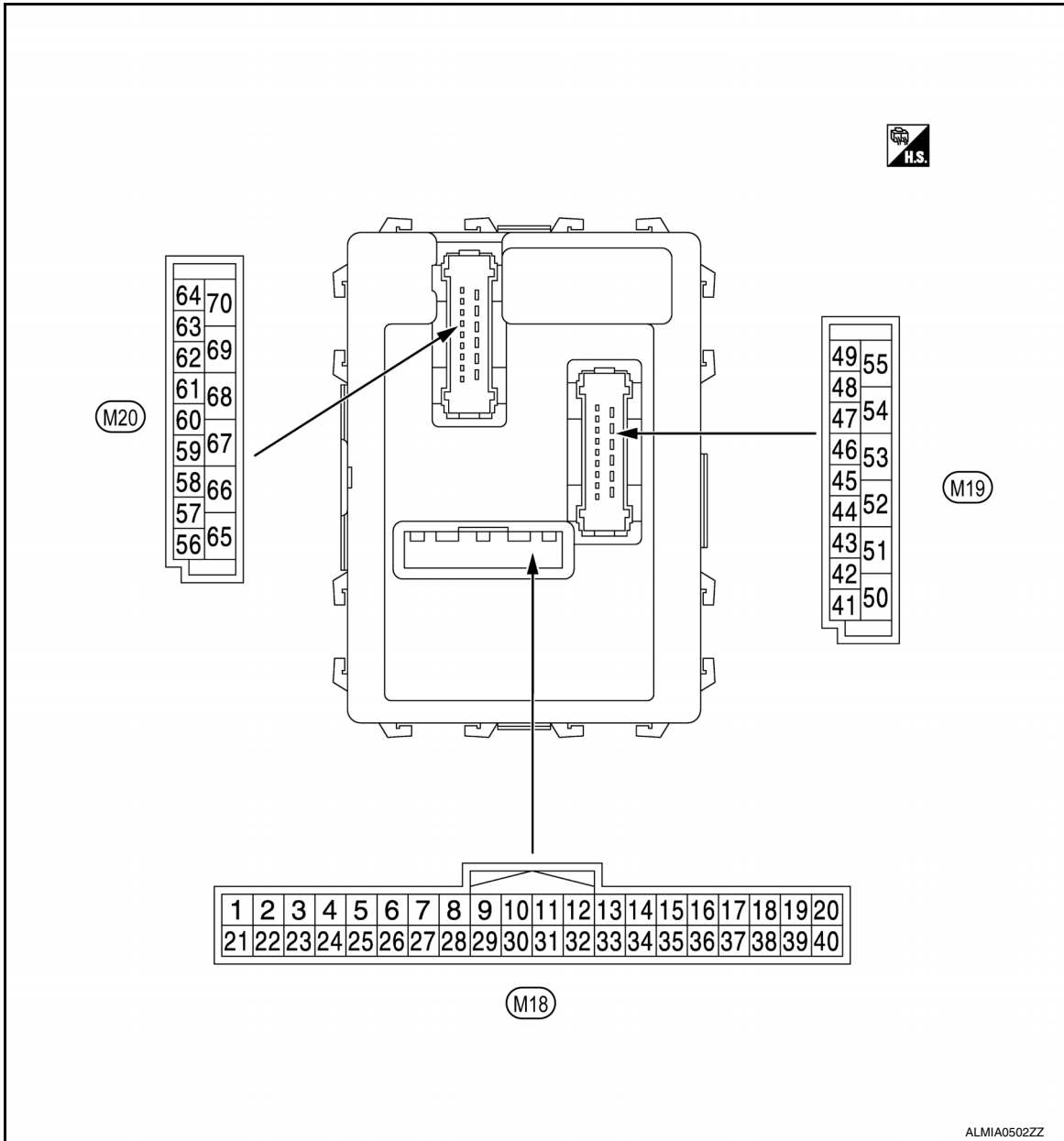
PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
2 (L)	Ground	Input 5 signal	Input	Combination and lighting switches	OFF	0 V
				Combination switch	TURN RH	
					HI BEAM	PKIB4958J
				Lighting switch	HEADLAMP 1	
					TAIL LAMP	1.0 V
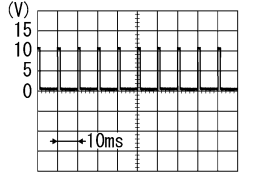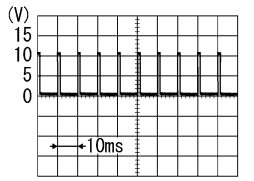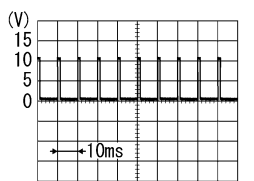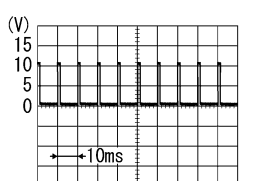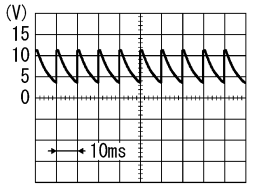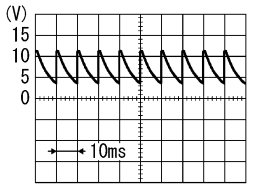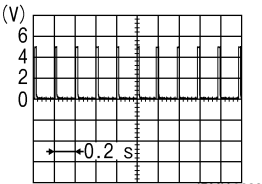
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
3 (P)	Ground	Input 4 signal	Input	Combination, front fog lamps and lighting switches	OFF	0 V
				Front fog lamps switch	ON	PKIB4958J 1.0 V
				Combination switch	TURN LH	
					PASSING	
				Lighting switch	HEADLAMP 2	
4 (LG)	Ground	Input 3 signal	Input	Combination switch	OFF	0 V
					FR WIPER LOW	PKIB4958J 1.0 V
					FR WIPER INT (any intermittent position)	
5 (O)	Ground	Input 2 signal	Input	Combination switch	OFF	0 V
					FR WASHER	PKIB4958J 1.0 V
					Wiper intermittent dial 2	
					Wiper intermittent dial 3	
6 (R)	Ground	Input 1 signal	Input	Combination switch	OFF	0 V
					FR WIPER HI	PKIB4958J 1.0 V
					Wiper intermittent dial 1	
					Wiper intermittent dial 2	
					Wiper intermittent dial 5	
7 (Y)	Ground	Key cylinder unlock sw signal	Input	Key cylinder switch	NEUTRAL position	5 V
					UNLOCK position	0 V
8 (SB)	Ground	Key cylinder lock sw signal	Input	Key cylinder switch	NEUTRAL position	5 V
					LOCK position	0 V
9 (LG)	Ground	Brake sw 1 signal	Input	Stop lamp switch	OFF (Brake pedal released)	0 V
					ON (Brake pedal depressed)	Battery voltage

BCM (BODY CONTROL MODULE)

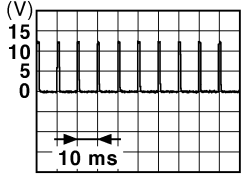| Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/Output			
10 (BR)	Ground	Rear defogger sw signal	Input	Rear window defogger switch	OFF (Released)	12 V
					ON (Pressed)	0 V
11 (O)	Ground	ACC sw signal	Input	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
12 (O)	Ground	Door switch (AS) signal	Input	Front door switch RH	OFF (Front door RH closed)	(V) 15 10 5 0 ←10ms→ PKIB4960J 7.0 - 8.0 V
					ON (Front door RH open)	0 V
13 (GR)	Ground	Door switch (RR) signal	Input	Back door switch upper RH	OFF (Back door RH closed)	(V) 15 10 5 0 ←10ms→ PKIB4960J 7.0 - 8.0 V
					ON (Back door RH open)	0 V
18 (P)	Ground	Keyless gnd signal	Input	Ignition switch ON		0 V
19 (V)	Ground	Keyless tuner power supply signal	Input	Ignition switch OFF	Key inserted into ignition key cylinder	0 V
					Key removed from ignition key cylinder (Any door open)	5 V
					Key removed from ignition key cylinder (Any door closed)	(V) 6 4 2 0 ←0.2 s→ JPMIA0338JP
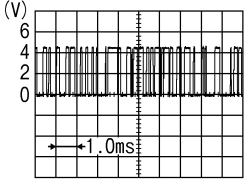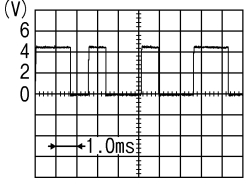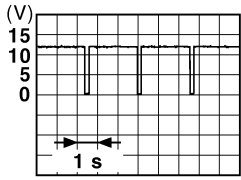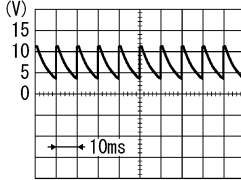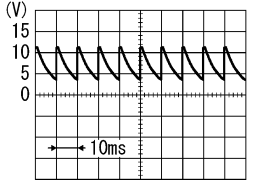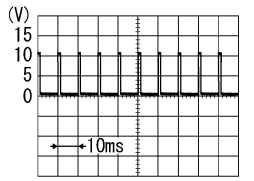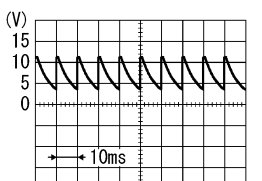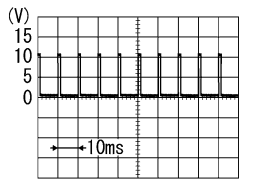
Terminal No. (Wire color)		Description			Condition		Value (Approx.)
+	−	Signal name	Input/ Output				
20 (W)	Ground	Keyless tuner signal	Input	Ignition switch OFF	Key inserted into ignition key cylinder		0 V
					Waiting		PIIB7728J
					Signal receiving		PIIB7729J
21 (G)	Ground	Immobilizer one way communication (Clock) signal	Input/ Output	While waiting	Turn ignition switch ON.		Turn ignition switch ON: Pointer of tester should move.
23 (G)	Ground	Security indicator output signal	Input	Security indicator	ON		0 V
					Blinking (Ignition switch OFF)		JPMIA0014GB 11.3 V
					OFF		12 V
25 (BR)	Ground	Immobilizer two way communication signal	Input/ Output	While waiting	Turn ignition switch ON.		Turn ignition switch ON: Pointer of tester should move.
27 (GR)	Ground	Air con sw signal	Input	A/C switch	OFF		JPMIA0012GB 1.0 - 1.5 V
					ON		0 V
28 (Y)	Ground	Blower fan sw signal	Input	Fan switch	Blower fan switch OFF		PKIB4960J 7.0 - 8.0 V
					Blower fan switch ON		0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
29 (O)	Ground	Hazard sw signal	Input	Hazard switch	OFF	Battery voltage
					ON	0 V
32 (SB)	Ground	Output 5 signal	Output	Combination switch	OFF	PKIB4960J 7.0 - 8.0 V
				Front fog lamps switch	ON	PKIB4958J 1.2 V
				Combination switch	Wiper intermittent dial 1	
					Wiper intermittent dial 2	
					Wiper intermittent dial 5	
33 (G)	Ground	Output 4 signal	Output	Combination and lighting switches	OFF	PKIB4960J 7.0 - 8.0 V
				Lighting switch	TAIL LAMP	PKIB4958J 1.2 V
				Combination switch	Wiper intermittent dial 2	
					Wiper intermittent dial 3	
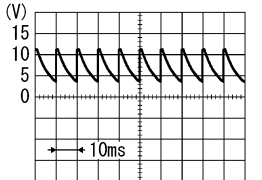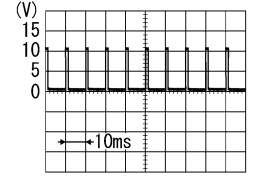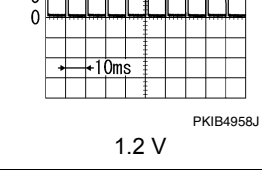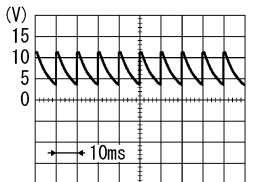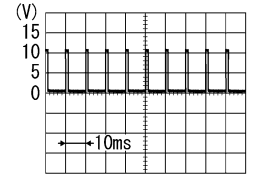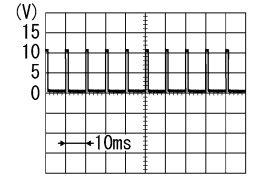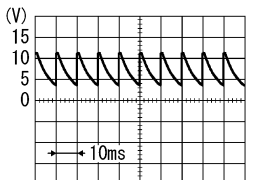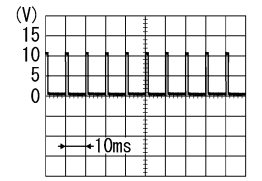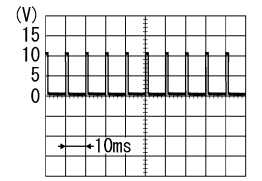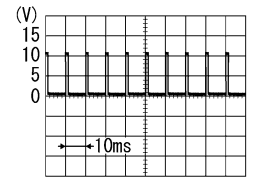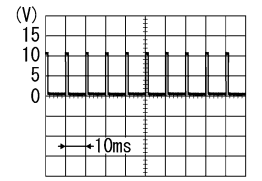
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
34 (Y)	Ground	Output 3 signal	Output	Combination and lighting switches	OFF	(V) 15 10 5 0 →←10ms PKIB4960J 7.0 - 8.0 V
				Lighting switch	HEADLAMP 2	(V) 15 10 5 0 →←10ms PKIB4958J 1.2 V
				Combination switch	HI BEAM	
					Wiper intermittent dial 5	
35 (BR)	Ground	Output 2 signal	Output	Combination and lighting switches	OFF	(V) 15 10 5 0 →←10ms PKIB4960J 7.0 - 8.0 V
				Lighting switch	HEADLAMP 1	(V) 15 10 5 0 →←10ms PKIB4958J 1.2 V
				Combination switch	PASSING	
					FR WIPER HI	
					FR WIPER INT (any intermittent position)	
36 (Y)	Ground	Output 1 signal	Output	Combination switch	OFF	(V) 15 10 5 0 →←10ms PKIB4960J 7.0 - 8.0 V
					TURN RH	(V) 15 10 5 0 →←10ms PKIB4958J 1.2 V
					TURN LH	
					FR WIPER LOW	
					FR WASHER	
37 (BR)	Ground	Key sw signal	Input	Key inserted into ignition key cylinder		Battery voltage
				Key removed from ignition key cylinder		0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
38 (R)	Ground	Ign sw signal	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
39 (L)	Ground	CAN high signal	Input/ Output	—		—
40 (P)	Ground	CAN low signal	Input/ Output	—		—
45 (GR)	Ground	Central door lock sw signal	Input	Door lock/un-lock switch	NEUTRAL position	JPMIA0012GB 1.0 - 1.5 V
					LOCK position	0 V
46 (R)	Ground	Central door unlock sw signal	Input	Door lock/un-lock switch	NEUTRAL position	JPMIA0012GB 1.0 - 1.5 V
					UNLOCK position	0 V
47 (SB)	Ground	Door switch (DR) signal	Input	Front door switch LH	OFF (Front door LH closed)	PKIB4960J 7.0 - 8.0 V
					ON (Front door LH open)	0 V
48 (O)	Ground	Door switch (RL) signal	Input	Back door switch lower LH, back door lower RH, secondary sliding door switch (with high roof) or sliding door switch	OFF (Back door LH, back door RH or sliding door closed)	PKIB4960J 7.0 - 8.0 V
					ON (Back door LH, back door RH or sliding door open)	0 V
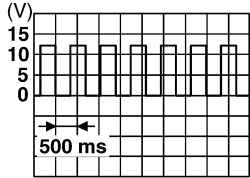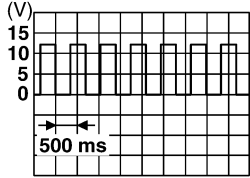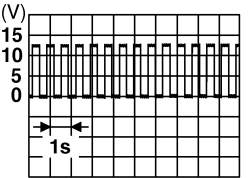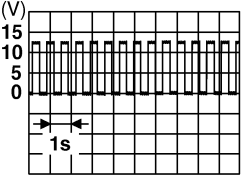
BCM (BODY CONTROL MODULE)

Terminal No. (Wire color) +	−	Signal name	Input/ Output	Condition		Value (Approx.)
51 (V)	Ground	Trailer flasher output (right) signal	Output	Turn signal switch RH ON		500 ms SKIA3009J
52 (G)	Ground	Trailer flasher output (left) signal	Output	Turn signal switch LH ON		500 ms SKIA3009J
56 (SB)	Ground	Battery saver output signal	Output	Interior room lamp battery saver activated		0 V
				Interior room lamp battery saver not activated		12 V
57 (LG)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
59 (W)	Ground	Door unlock output (DR) signal	Output	Front door LH actuator	Actuated to UNLOCK position	12 V
					Other than actuated to UNLOCK position	0 V
60 (Y)	Ground	Flasher output (left) signal	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH ON	1s PKIC6370E 6.0 V
61 (G)	Ground	Flasher output (right) signal	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH ON	1s PKIC6370E 6.0 V
62 (W)	Ground	Step lamp output signal	Output	Step lamp	OFF	12 V
					ON	0 V
63 (L)	Ground	Room lamp output signal	Output	Interior room lamp	OFF	12 V
					ON	0 V
65 (G)	Ground	Door lock output signal	Output	All door actuators	Actuated to LOCK position	12 V
					Other than actuated to LOCK position	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/Output			
66 (Y)	Ground	Door unlock output (AS, SD, BD) signal	Output	Back door lock, front door lock RH and sliding door lock actuators	Actuated to UNLOCK position	12 V
					Other than actuated to UNLOCK position	0 V
67 (B)	Ground	Ground	Output	Ignition switch ON		0 V
68 (W)	Ground	Power window power supply (RAP) signal	Output	Ignition switch ON		12 V
69 (L)	Ground	Power window power supply (battery) signal	Output	Ignition switch OFF		12 V
70 (R)	Ground	Battery power supply (F/L)	Input	Ignition switch OFF		Battery voltage

Fail-safe

INFOID:0000000012519435

FAIL-SAFE CONTROL BY DTC

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

CONSULT display	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC
B2195: ANTI SCANNING	Inhibit engine cranking	Ignition switch ON → OFF

HIGH FLASHER OPERATION

BCM detects the turn signal lamp circuit status by the current value.
BCM increases the turn signal lamp blinking speed if a bulb or harness open is detected with the turn signal lamp operating.
NOTE:
The blinking speed is normal while activating the hazard warning lamp.

DTC Inspection Priority Chart

INFOID:0000000012519436

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 • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2195: ANTI SCANNING
3	C1735: IGN CIRCUIT OPEN

DTC Index

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NOTE:
Details of time display

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

CONSULT display	Fail-safe	Reference
U1000: CAN COMM	—	BCS-52
U1010: CONTROL UNIT (CAN)	—	BCS-53
B2190: NATS ANTENNA AMP	×	SEC-43
B2191: DIFFERENCE OF KEY	×	SEC-45
B2192: ID DISCORD BCM-ECM	×	SEC-46
B2193: CHAIN OF BCM-ECM	×	SEC-48
B2195: ANTI SCANNING	×	SEC-49
C1735: IGN CIRCUIT OPEN	—	BCS-54

WIRING DIAGRAM

BCM (BODY CONTROL MODULE)

Wiring Diagram

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AAMWA1902GB

PS : WITH POWER SEATS
PW : WITH POWER WINDOWS
VY : PASSENGER VAN

CY : CARGO VAN
FH : WITH HIGH ROOF
PL : WITH POWER DOOR LOCKS

68 PW

MAIN POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH (D7) : PW

46 PW
45 PW

POWER WINDOW AND DOOR LOCK/ UNLOCK SWITCH RH (D105) : PW

69 PS

POWER SEAT SWITCH LH (B216) : PS

REAR COMBINATION LAMP RH (TURN SIGNAL) (B52) : VY (R17) : CY

FRONT COMBINATION LAMP RH (TURN SIGNAL) (E107)

FRONT DOOR LOCK ASSEMBLY LH (D14) : PL

KEY CYLINDER SWITCH
UNLOCK
N
LOCK

UNLOCK LOCK ACTUATOR (M)

59 PL
65

61

REAR COMBINATION LAMP LH (TURN SIGNAL) (B51) : VY (R16) : CY

FRONT COMBINATION LAMP LH (TURN SIGNAL) (E11)

BCM (BODY CONTROL MODULE) (M18), (M19), (M20)

60

SLIDING DOOR CONTACT SWITCH (PILLAR) (B102)
SLIDING DOOR CONTACT SWITCH (DOOR)

SECONDARY SLIDING DOOR SWITCH (D301) : FH

SLIDING DOOR LOCK ASSEMBLY (D303) : PL

KEY CYLINDER SWITCH
UNLOCK
N
LOCK

UNLOCK LOCK ACTUATOR (M)

HAZARD SWITCH (M55)

29

66 PL

LOW TIRE PRESSURE WARNING CONTROL UNIT (M90)

BACK DOOR LOCK ASSEMBLY (D609) : PL

KEY CYLINDER SWITCH
UNLOCK
N
LOCK

UNLOCK LOCK ACTUATOR (M)

FRONT DOOR LOCK ACTUATOR RH (D114) : PL

A B C D E

F G

AAMWA1903GB

AAMWA1904GB

BCM (BODY CONTROL MODULE) CONNECTORS

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

Terminal No.	Color of Wire	Signal Name
16	–	–
17	–	–
18	P	KEYLESS GND
19	V	KEYLESS TUNER POWER SUPPLY
20	W	KEYLESS TUNER SIGNAL
21	G	IMMOBILIZER ONE WAY COMMUNICATION (CLOCK)
22	–	–
23	G	SECURITY INDICATOR OUTPUT
24	–	–
25	BR	IMMOBILIZER TWO WAY COMMUNICATION
26	–	–
27	GR	AIR CON SW
28	Y	BLOWER FAN SW
29	O	HAZARD SW
30	–	–
31	–	–
32	SB	OUTPUT 5
33	G	OUTPUT 4
34	Y	OUTPUT 3
35	BR	OUTPUT 2
36	Y	OUTPUT 1
37	BR	KEY SW
38	R	IGN SW
39	L	CAN-H
40	P	CAN-L

H.S.

Terminal No.	Color of Wire	Signal Name
1	–	–
2	L	INPUT 5
3	P	INPUT 4
4	LG	INPUT 3
5	O	INPUT 2
6	R	INPUT 1
7	Y	KEY CYLINDER UNLOCK SW
8	SB	KEY CYLINDER LOCK SW
9	LG	BRAKE SW 1
10	BR	REAR DEFOGGER SW
11	O	ACC SW
12	O	DOOR SW (AS)
13	GR	DOOR SW (RR)
14	–	–
15	–	–

Connector No.	M10
Connector Name	FRONT FOG LAMP SWITCH
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1	SB	–
2	P	–
4	V	–
5	BR	–

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Connector No.	M28
Connector Name	COMBINATION SWITCH
Connector Color	WHITE

H.S.
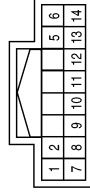
Terminal No.	Color of Wire	Signal Name
1	R	–
2	P	–
5	LG	–
6	V	–
7	Y	–
8	L	–
9	BR	–
10	G	–
11	Y	–
12	R	–
13	SB	–
14	O	–

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

H.S.
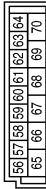
Terminal No.	Color of Wire	Signal Name
56	SB	BATTERY SAVER OUTPUT
57	LG	BATTERY (FUSE)
58	–	–
59	W	DOOR UNLOCK OUTPUT (DR)
60	Y	FLASHER OUTPUT (LEFT)
61	G	FLASHER OUTPUT (RIGHT)
62	W	STEP LAMP OUTPUT
63	L	ROOM LAMP OUTPUT
64	–	–
65	G	DOOR LOCK OUTPUT
66	Y	DOOR UNLOCK OUTPUT (AS, RR, RL, BD)
67	B	GND
68	W	POWER WINDOW POWER SUPPLY (RAP)
69	L	POWER WINDOW POWER SUPPLY (BATTERY)
70	R	BATTERY (F/L)

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

H.S.
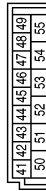
Terminal No.	Color of Wire	Signal Name
41	–	–
42	–	–
43	–	–
44	–	–
45	GR	CENTRAL DOOR LOCK SW
46	R	CENTRAL DOOR UNLOCK SW
47	SB	DOOR SW (DR)
48	O	DOOR SW (SLIDE, BK LWR)
49	–	–
50	–	–
51	V	TRAILER FLASHER OUTPUT (RIGHT)
52	G	TRAILER FLASHER OUTPUT (LEFT)
53	–	–
54	–	–
55	–	–

ABMIA5707GB

Connector No.	M34
Connector Name	LIGHTING SWITCH
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
1	V	–
2	BR	–
3	Y	–
4	G	–
5	L	–
6	P	–
8	BR	–

ABMIA5708GB

BASIC INSPECTION

INSPECTION AND ADJUSTMENT
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM)

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Description

INFOID:0000000012519439

BEFORE REPLACEMENT
When replacing BCM, save or print current vehicle specification with CONSULT configuration before replacement. Refer to BCS-47, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Work Procedure".
NOTE:
If "Before Replace ECU" cannot be used, use the "After Replace ECU" or "Manual Configuration" after replacing BCM.

AFTER REPLACEMENT
CAUTION:
- **When replacing BCM, you must perform "After Replace ECU" with CONSULT.**
- **Complete the procedure of "After Replace ECU" in order.**
- **If you set incorrect "After Replace ECU", incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**
- **When replacing BCM, perform the system initialization (NATS).**

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Work Procedure

INFOID:0000000012519440

1.SAVING VEHICLE SPECIFICATION

CONSULT
Enter "Re/Programming, Configuration" and perform "Before Replace ECU" to save or print current vehicle specification.
NOTE:
If "Before Replace ECU" cannot be used, use the "After Replace ECU" or "Manual Configuration" after replacing BCM.

>> GO TO 2.

2.REPLACE BCM

Replace BCM. Refer to BCS-62, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT
1. Enter "Re/Programming, Configuration".
2. If "Before Replace ECU" operation was performed, automatically an "Operation Log Selection" screen will be displayed. Select the applicable file from the "Saved Data List" and press "Confirm" to write vehicle specification. Refer to BCS-48, "CONFIGURATION (BCM) : Work Procedure".
3. If "Before Replace ECU" operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to BCS-48, "CONFIGURATION (BCM) : Work Procedure".

>> GO TO 4 (with remote keyless entry system).
>> GO TO 6 (without remote keyless entry system).

4.REGISTER IGNITION KEYS

For initialization and registration of ignition keys, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

>> GO TO 5.

5.REGISTER MECHANICAL KEYS

For initialization and registration of mechanical keys, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

>> Work End.

CONFIGURATION (BCM)

CONFIGURATION (BCM) : Description

INFOID:0000000012519441

Vehicle specification needs to be written with CONSULT because it is not written after replacing BCM. Configuration has three functions as follows:

Function	Description
"Before Replace ECU"	• Reads the vehicle configuration of current BCM. • Saves the read vehicle configuration.
"After Replace ECU"	Writes the vehicle configuration with manual selection.
"Select Saved Data List"	Writes the vehicle configuration with saved data.

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

CONFIGURATION (BCM) : Work Procedure

INFOID:0000000012519442

1.WRITING MODE SELECTION

Ⓑ CONSULT
Select "Reprogramming, Configuration" of BCM.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2.PERFORM "SAVED DATA LIST"

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

>> Work End.

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

Ⓑ CONSULT
1. Select "After Replace ECU" or "Manual Configuration".
2. Identify the correct model and configuration list. Refer to .
3. Confirm and/or change setting value for each item.
   CAUTION:
   Thoroughly read and understand the vehicle specification. ECU control may not operate normally if the setting is not correct.
4. Select "Next".
   CAUTION:

Make sure to select "Next", confirm each setting value and press "OK" even if the indicated configuration of brand new BCM is same as the desirable configuration. If not, configuration which is set automatically by selecting vehicle model can not be memorized.

5. When "Completed", select "End".

>> GO TO 4.

4.OPERATION CHECK

Confirm that each function controlled by BCM operates normally.

>> Work End.

CONFIGURATION (BCM) : Configuration List

INFOID:0000000012519443

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

MANUAL SETTING ITEM		
Items	Setting value	
BATTERY SAVER FUNCTION	MODE11 ⇔ MODE16	• MODE11: 10 minutes (Passenger van) • MODE16: 15 minutes (Cargo van)
THEFT ALARM	WITH ⇔ WITHOUT	• WITH: With vehicle security system • WITHOUT: Without vehicle security system
KEYLESS ENTRY	WITH ⇔ WITHOUT	• WITH: With remote keyless entry • WITHOUT: Without remote keyless entry
DTRL	WITH ⇔ WITHOUT	• WITH: With daytime running lamps • WITHOUT: Without daytime running lamps

⇔: Items which confirm vehicle specifications

SHIPPING MODE CANCEL OPERATION

Work Procedure

1.SHIPPING MODE CANCEL OPERATION

1. Turn ignition switch OFF.
2. Press in (turn on) the extended storage switch. Refer to PG-90, "How To Check".
3. Turn ignition switch ON.
4. Turn ignition switch OFF and wait at least 2 seconds.

>> GO TO 2.

2.SHIPPING MODE CANCEL CHECK

1. Turn ignition switch ON.
2. Check that extended storage warning message is not displayed in combination meter or display.

>> WORK END

TRANSIT MODE CANCEL OPERATION

Work Procedure

INFOID:0000000012519445

1. TRANSIT MODE CANCEL OPERATION

1. Turn ignition switch OFF.
2. Do the following at the same time for 2 seconds:
- Turn and hold front wiper switch to HI position
- Move turn signal switch to left position (all the way down)

>> GO TO 2.

2. TRANSIT MODE CANCEL CHECK

1. Turn front wiper switch and turn signal switch OFF.
2. Turn ignition switch ON.
3. Check that turn signal indicators in combination meter do not turn ON.

>> Work End.

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM

Description
INFOID:0000000012519446

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. Refer to LAN-30, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

DTC Logic
INFOID:0000000012519447

DTC DETECTION LOGIC

DTC	DTC Detection Condition	Possible cause
U1000: CAN COMM	When BCM cannot communicate CAN communication signal continuously for 2 seconds or more.	CAN communication system

Diagnosis Procedure
INFOID:0000000012519448

1. PERFORM SELF DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check "Self Diagnostic Result" of BCM.

Is "CAN COMM CIRCUIT" displayed?

YES >> Refer to LAN-16, "Trouble Diagnosis Flow Chart".
NO   >> Refer to GI-43, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:0000000012519449

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible cause
U1010	CONTROL UNIT (CAN)	BCM detected internal CAN communication circuit malfunction.	BCM

Diagnosis Procedure

INFOID:0000000012519450

1.REPLACE BCM

When DTC "U1010" is detected, replace BCM.

>> Replace BCM. Refer to BCS-62, "Removal and Installation".

C1735 IGN CIRCUIT OPEN

DTC Logic

INFOID:000000012519451

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible cause
C1735	IGN CIRCUIT OPEN	Detected following signals are different for 2 seconds; • Ignition switch ON signal inputted from ignition switch • Ignition relay status signal received from IPDM E/R with CAN communication	• Harness or connector (Ignition power supply circuit) • BCM • IPDM E/R

NOTE:

BCM may detect that ignition switch is OFF when IGN power supply voltage is low.

DTC CONFIRMATION PROCEDURE

1.DTC CONFIRMATION

1. Erase DTC.
2. Turn the ignition switch OFF.
3. Perform "Self Diagnostic Result".

Is any DTC detected?

YES   >> Refer to BCS-54, "Diagnosis Procedure".
NO   >> Inspection End.

Diagnosis Procedure

INFOID:000000012519452

1.CHECK BCM IGNITION POWER SUPPLY CIRCUIT

Check BCM ignition power supply circuit. Refer to BCS-55, "Diagnosis Procedure".

Is the inspection result normal?

YES   >> GO TO 2.
NO   >> Repair the malfunctioning part.

2.CHECK IPDM E/R POWER SUPPLY CIRCUIT

Check IPDM E/R power supply circuit. Refer to PCS-24, "Diagnosis Procedure".

Is the inspection result normal?

YES   >> GO TO 3.
NO   >> Repair the malfunctioning part.

3.CHECK IPDM E/R IGNITION RELAY STATUS

CONSULT
1. Select "IGN RLY" of IPDM E/R data monitor item.
2. While operating the ignition switch, check the monitor status.

Monitor item	Condition		Monitor status
IGN RLY	Ignition switch	OFF	Off
		ON	On

Is the inspection result normal?

YES   >> Replace BCM. Refer to BCS-62, "Removal and Installation".
NO   >> Replace IPDM E/R. Refer to PCS-25, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000012519453

Regarding Wiring Diagram information, refer to BCS-41, "Wiring Diagram".

1. CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
57	Battery power supply	22 (10A)
70		J (40A)
11	Ignition ACC or ON	9 (10A)
38	Ignition ON or START	12 (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 connectors.
3. Check voltage between BCM connector and ground.

Terminals				Ignition switch position		
(+)			(−)			
BCM				OFF	ACC	ON
Connector	Terminal					
M20	70		Ground	Battery voltage	Battery voltage	Battery voltage
	57					
M18	11			Approx. 0 V	Battery voltage	Battery voltage
	38			Approx. 0 V	Approx. 0 V	Battery voltage

Is the inspection result normal?

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	67		Yes

Is the inspection result normal?

  YES   >> Inspection End.
  NO   >> Repair harness or connector.

COMBINATION AND LIGHTING SWITCH INPUT CIRCUIT

Diagnosis Procedure

INFOID:000000012519454

Regarding Wiring Diagram information, refer to BCS-41, "Wiring Diagram".

1.CHECK INPUT 1 - 5 CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BCM, combination switch, lighting switch and front fog lamps switch connectors.
3. Check continuity between BCM connector and combination switch connector.

Signal	BCM		Combination switch		Continuity
	Connector	Terminal	Connector	Terminal	
Input 1		36		11	
Input 2		35		9	
Input 3	M18	34	M28	7	Yes
Input 4		33		10	
Input 5		32		13	

4. Check continuity between BCM connector and lighting switch connector.

Signal	BCM		Lighting switch		Continuity
	Connector	Terminal	Connector	Terminal	
Input 2		35		2	
Input 3	M18	34	M34	3	Yes
Input 4		33		4	

5. Check continuity between BCM connector and front fog lamps switch connector.

Signal	BCM		Front fog lamps switch		Continuity
	Connector	Terminal	Connector	Terminal	
Input 5	M18	32	M10	1	Yes

Is the inspection result normal?

YES   >> GO TO 2.
NO   >> Repair harnesses or connectors.

2.CHECK INPUT 1 - 5 CIRCUIT FOR SHORT

Check for continuity between BCM connector and ground.

Signal	BCM			Continuity
	Connector	Terminal		
Input 1		36		
Input 2		35		
Input 3	M18	34	Ground	No
Input 4		33		
Input 5		32		

Is the inspection result normal?

YES   >> GO TO 3.
NO   >> Repair harnesses or connectors.

3.CHECK BCM INPUT VOLTAGE

1. Connect BCM connector.
2. Check voltage between BCM connector and ground.

Signal	Terminals			Voltage (Approx.)
	(+)		(−)	
	BCM			
	Connector	Terminal		
Input 1		36		
Input 2		35		
Input 3		34	Ground	
Input 4	M18	33		
Input 5		32		7.0 - 8.0 V

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Is the inspection result normal?

YES   >> Replace malfunctioning switch.
NO   >> Replace BCM. Refer to BCS-62, "Removal and Installation".

COMBINATION AND LIGHTING SWITCH OUTPUT CIRCUIT

Diagnosis Procedure

INFOID:000000012519455

Regarding Wiring Diagram information, refer to **BCS-41, "Wiring Diagram"**.

1.CHECK OUTPUT 1 - 5 CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BCM, combination switch, lighting switch and front fog lamps switch connectors.
3. Check continuity between BCM connector and combination switch connector.

Signal	BCM		Combination switch		Continuity
	Connector	Terminal	Connector	Terminal	
Output 1		6		12	
Output 2		5		14	
Output 3	M18	4	M28	5	Yes
Output 4		3		2	
Output 5		2		8	

4. Check continuity between BCM connector and lighting switch connector.

Signal	BCM		Lighting switch		Continuity
	Connector	Terminal	Connector	Terminal	
Output 4	M18	3	M34	6	Yes
Output 5		2		5	

5. Check continuity between BCM connector and front fog lamps switch connector.

Signal	BCM		Front fog lamps switch		Continuity
	Connector	Terminal	Connector	Terminal	
Output 4	M18	3	M10	2	Yes

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harnesses or connectors.

2.CHECK OUTPUT 1 - 5 CIRCUIT FOR SHORT

Check for continuity between BCM connector and ground.

Signal	BCM			Continuity
	Connector	Terminal		
Output 1		6		
Output 2		5		
Output 3	M18	4	Ground	No
Output 4		3		
Output 5		2		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harnesses or connectors.

3.CHECK BCM OUTPUT SIGNAL

COMBINATION AND LIGHTING SWITCH OUTPUT CIRCUIT

1. Connect BCM, combination switch and lighting switch connectors.
2. Turn ON any switch in the system that is malfunctioning.
3. Check voltage between BCM connector and ground.

Signal	Terminals			Voltage (Approx.)
	(+)		(−)	
	BCM			
	Connector	Terminal		
Output 1		6		
Output 2		5	Ground	Refer to BCS-28, "Reference Value".
Output 3	M18	4		
Output 4		3		
Output 5		2		

<u>Is the inspection result normal?</u>

Yes   >> Replace BCM. Refer to BCS-62, "Removal and Installation".
No   >> Replace malfunctioning switch.

SYMPTOM DIAGNOSIS
COMBINATION AND LIGHTING SWITCH SYSTEM SYMPTOMS
Symptom Table

INFOID:0000000012519456

1. Perform "Data Monitor" of CONSULT to check for any malfunctioning item.
2. Check the malfunction combinations.

Malfunctioning item: ×

| Data monitor item | | | | | | | | | | | | | Malfunction combination |
FR FOG SW	FR WIPER HI	FR WIPER LOW	FR WASHER SW	FR WIPER INT	INT VOLUME	TURN SIGNAL R	TURN SIGNAL L	TAIL LAMP SW	HI BEAM SW	HEAD LAMP SW 1	HEAD LAMP SW 2	PASSING SW	
	×	×				×	×						A
	×			×						×		×	B
					×				×		×		C
					×			×					D
×					×								E
	×				×								F
			×		×								G
	×			×									H
×							×				×	×	I
					×			×	×	×			J
All Items													K
If only one item is detected or the item is not applicable to the combinations A to K													L

3. Identify the malfunctioning part from the agreed combination and repair or replace the part.

Malfunction combination	Malfunctioning part	Repair or replace
A	Output 1 signal circuit	Inspect the output signal circuit applicable to the malfunctioning part. Refer to BCS-56, "Diagnosis Procedure".
B	Output 2 signal circuit	
C	Output 3 signal circuit	
D	Output 4 signal circuit	
E	Output 5 signal circuit	
F	Input 1 signal circuit	Inspect the input signal circuit applicable to the malfunctioning part. Refer to BCS-58, "Diagnosis Procedure".
G	Input 2 signal circuit	
H	Input 3 signal circuit	
I	Input 4 signal circuit	
J	Input 5 signal circuit	
K	BCM	Replace BCM. Refer to BCS-62, "Removal and Installation".
L	Combination or lighting switch	Replace malfunctioning switch.

NORMAL OPERATING CONDITION

Description

INFOID:0000000012519457

SHIPPING MODE

- Shipping mode inhibits battery power consumption during transportation or storage of the vehicle. Vehicle is set to shipping mode before being shipped from the factory.
- When ignition switch is OFF, BCM operates shipping mode.
- BCM control function is limited in shipping mode. Remote keyless entry function does not operate in shipping mode.
- For shipping mode cancel operation, refer to BCS-50, "Work Procedure".
  NOTE:
  Do not cancel shipping mode during storage of the vehicle. Shipping mode should not be canceled until just prior to customer delivery.

TRANSIT MODE

- BCM is in transit mode if turn signal indicators in combination meter illuminate for 1 minute when ignition switch is turned from OFF to ON.
- In this case, cancel operation must be performed.
- For transit mode cancel operation, refer to BCS-51, "Work Procedure".
NOTE:
Do not cancel transit mode during storage of the vehicle. Transit mode should not be canceled until just prior to customer delivery.
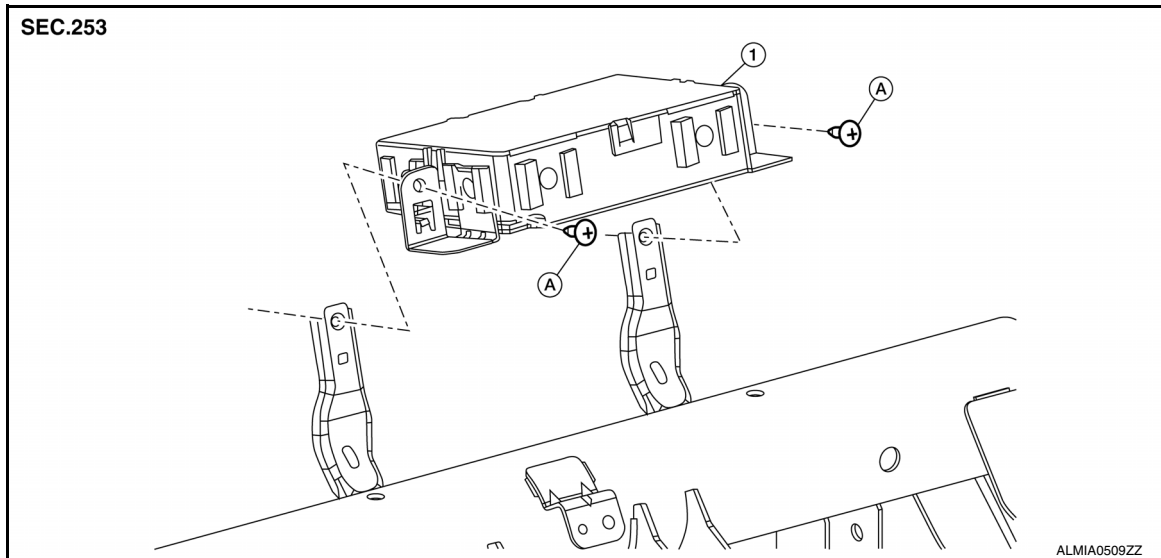
A

B

C

D

E

F

G

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BCS

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O

P

REMOVAL AND INSTALLATION

BCM (BODY CONTROL MODULE)

Exploded View

INFOID:0000000012519458

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1. Body control module (BCM)   A. Screws
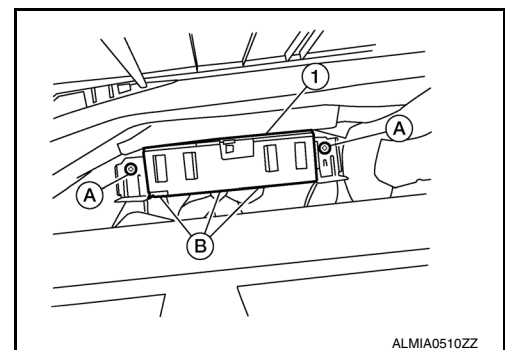
Removal and Installation

INFOID:0000000012519459

REMOVAL

CAUTION:
Before removing BCM, retrieve current BCM configuration to use for reference when configuring brand-new BCM after installation. Refer to **BCS-47, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Description".**

1. Disconnect the negative battery terminal. Refer to PG-95, "Removal and Installation".
2. Remove the combination meter. Refer to MWI-68, "Removal and Installation".
3. Remove the BCM screws (A).
4. Pull out the BCM (1).
5. Disconnect the harness connectors (B) from the BCM (1) and remove.

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INSTALLATION
Installation is in the reverse order of removal.
CAUTION:
- **When replacing BCM, perform "WRITE CONFIGURATION". Refer to** **BCS-48, "CONFIGURATION (BCM) : Description".**
- **When replacing BCM, perform the system initialization (NATS). Refer to** **BCS-47, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Description".**
- **When replacing BCM, if new BCM does not come with keyfobs attached, all existing keyfobs must bere-registered. Refer to the CONSULT immobilizer mode and follow the on-screen instructions.**