SECTION BCS **BODY CONTROL SYSTEM** С

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< PRECAUTION > PRECAUTION PRECAUTIONS

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

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. 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.

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

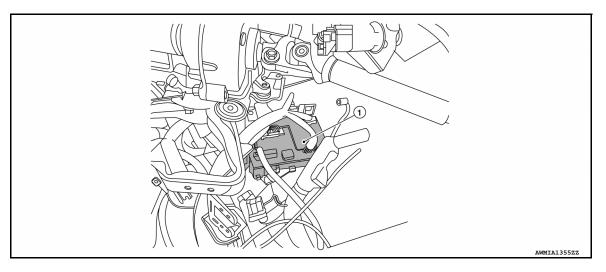
SYSTEM DESCRIPTION

COMPONENT PARTS

BODY CONTROL SYSTEM

BODY CONTROL SYSTEM : Component Parts Location

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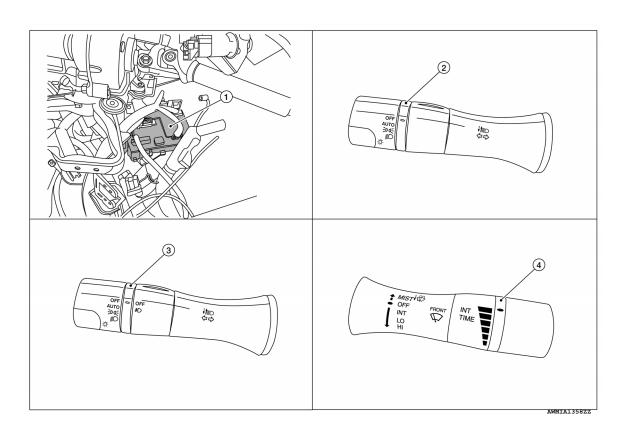


1. BCM (view with instrument panel removed)

COMBINATION SWITCH READING SYSTEM

COMBINATION SWITCH READING SYSTEM : Component Parts Location

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< SYSTEM DESCRIPTION >

COMPONENT PARTS

[WITH INTELLIGENT KEY SYSTEM]

- 1. BCM (view with combination meter removed)
- 2. Combination switch (lighting and turn signal) (with fog lamps)
- 3. Combination switch (lighting and turn signal) (without fog lamps)

- Combination switch (wiper and 4. washer)

- POWER CONSUMPTION CONTROL SYSTEM **POWER CONSUMPTION CONTROL SYSTEM : Component Parts Location** С INFOID:000000009014188 D Е (2 1 F 0 Н J
 - IPDM E/R 1

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2 BCM (view with instrument panel re- 3 Combination meter moved)

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< SYSTEM DESCRIPTION > SYSTEM BODY CONTROL SYSTEM

BODY CONTROL SYSTEM : System Description

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OUTLINE

- BCM (Body Control Module) controls the various electrical components. It inputs the information required to the control from CAN communication and the signal received from each switch and sensor.
- BCM has combination switch reading function for reading the operation status of combination switches (light, turn signal, wiper and washer) in addition to a function for controlling the operation of various electrical components. It also has the signal transmission function as the passed point of signal and the power saving control function that reduces the power consumption with the ignition switch OFF.
- BCM is equipped with the diagnosis function that performs the diagnosis with CONSULT and various settings.

BCM CONTROL FUNCTION LIST

System	Reference		
Combination switch reading system	BCS-9, "COMBINATION SWITCH READING SYSTEM : System Description"		
Signal buffer system	BCS-13, "SIGNAL BUFFER SYSTEM : System Description"		
Power consumption control system	BCS-13, "POWER CONSUMPTION CONTROL SYSTEM System Description"		
Headlamp system	EXL-8, "HEADLAMP SYSTEM : System Description"		
Daytime light system	EXL-9, "DAYTIME RUNNING LIGHT SYSTEM : System De- scription"		
Turn signal and hazard warning lamp system	EXL-10, "TURN SIGNAL AND HAZARD WARNING LAMPS : System Description"		
Parking, license plate and tail lamps system	EXL-11, "PARKING, LICENSE PLATE AND TAIL LAMPS : System Description"		
Front fog lamp system	EXL-10. "FRONT FOG LAMP SYSTEM : System Descrip- tion"		
Exterior lamp battery saver system	EXL-8, "HEADLAMP SYSTEM : System Description"		
Interior room lamp control system	INL-8, "INTERIOR ROOM LAMP CONTROL SYSTEM : Sys- tem Description"		
Interior room lamp battery saver system	INL-8, "INTERIOR ROOM LAMP CONTROL SYSTEM : Sys- tem Description"		
Front wiper and washer system	WW-8, "System Description"		
Rear window defogger system	DEF-6, "System Description"		
Manual air conditioning system	HAC-120, "System Description"		
Automatic air conditioning system	HAC-12, "System Description"		
Warning chime system	WCS-6. "WARNING CHIME SYSTEM : System Description"		
Power door lock system	DLK-22, "System Description"		
Trunk lid opener system	DLK-34, "System Description"		
Nissan vehicle immobilizer system (NVIS)	SEC-16, "NISSAN ANTI-THEFT SYSTEM : System Descrip- tion"		
Vehicle security system	SEC-18, "VEHICLE SECURITY SYSTEM : System Descrip- tion"		
Panic alarm	SEC-18, "VEHICLE SECURITY SYSTEM : System Descrip- tion"		

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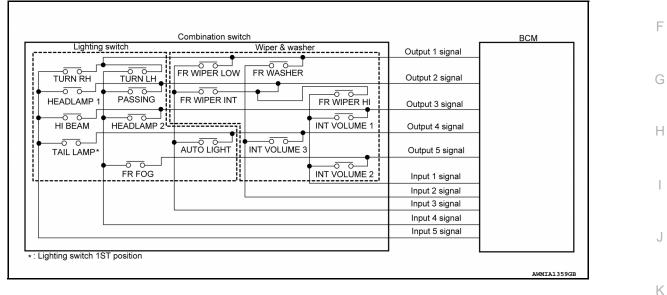
[WITH INTELLIGENT KEY SYSTEM]

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System		Reference	
Intelligent Key system/engine start system	Door lock function	DLK-25, "DOOR LOCK FUNCTION : System Description"	
	Trunk open function	DLK-27, "TRUNK OPEN FUNCTION : System Description"	
	Warning function	DLK-31, "WARNING FUNCTION : System Description"	
	Key reminder function	DLK-30, "KEY REMINDER FUNCTION : System Descrip- tion"	
Power window system		PWC-8, "System Description"	
RAP (retained accessory power) system		BCS-26, "RETAINED PWR : CONSULT Function (BCM - RE- TAINED PWR)"	
TPMS (tire pressure monitoring system)		WT-8, "TIRE PRESSURE MONITORING SYSTEM : System Description"	

COMBINATION SWITCH READING SYSTEM : System Diagram



COMBINATION SWITCH READING SYSTEM : System Description

OUTLINE

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

COMBINATION SWITCH MATRIX

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< SYSTEM DESCRIPTION >

Combination switch circuit

Combination switch		BCM
Lighting switch Wiper & washer	Output 1 signal	t
	Output 2 signal	
HEADLAMP 1 PASSING FR WIPER INT FR WIPER HI	Output 3 signal	
	Output 4 signal	
	Output 5 signal	CPU
FR FOG	Input 1 signal	
	Input 2 signal	
	Input 3 signal	
	Input 4 signal	
	Input 5 signal	
* : Lighting switch 1ST position	-	
		AWMIA1360GB

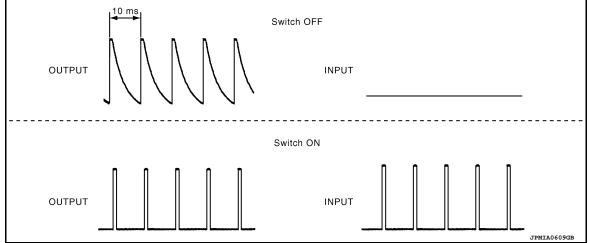
Combination switch INPUT-OUTPUT system list

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

COMBINATION SWITCH READING FUNCTION

Description

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



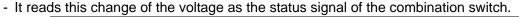
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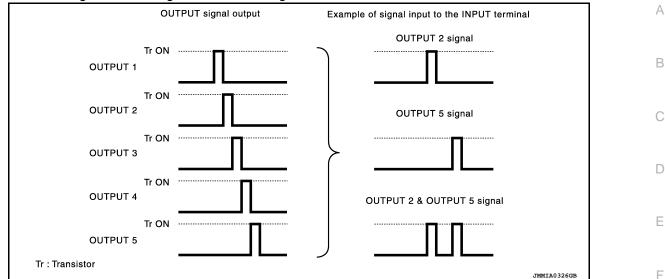
BCM reads the status of the combination switch at 60 ms intervals when BCM is controlled at low power consumption control mode.

- BCM operates as follows and judges the status of the combination switch.
- It operates the transistor on OUTPUT side in the following order: OUTPUT $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5$, and outputs voltage waveform.
- The voltage waveform of OUTPUT corresponding to the formed circuit is input into the interface on INPUT side if any (1 or more) switches are ON.

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]





Operation Example

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

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

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

Lighting switch	Combination switch Wiper & washer		BCM
	Wiper & washer	Output 1 signal	t
		Output 2 signal	A B
HEADLAMP 1 PASSING		PER HI Output 3 signal	t
		o⊣€ UME 1 Output 4 signal	 ئے
		Output 5 signal	
FR FOG		o-⊣ _UME 2Input 1 signal	
		Input 2 signal	
		Input 3 signal	
		Input 4 signal	
	→	Input 5 signal	
ighting switch 1ST position		I	

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

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



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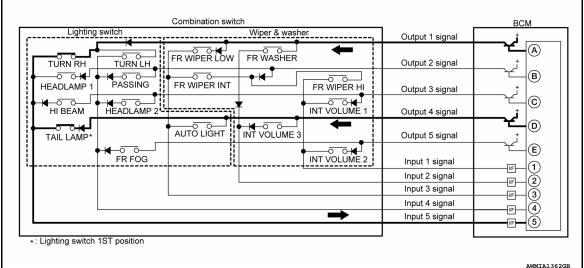
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 The circuits between OUTPUT 1 and INPUT 5 and between OUTPUT 4 and INPUT 5 are formed when the TURN RH switch and TAIL LAMP switch are turned ON.



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

WIPER INTERMITTENT DIAL POSITION

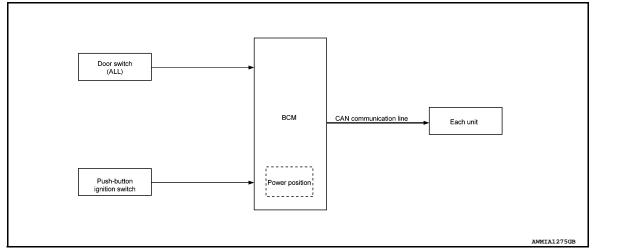
BCM judges the wiper intermittent dial 1 - 7 by the status of INT VOLUME 1, 2 and 3 switches.

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

NOTE:

For details of wiper intermittent dial position, refer to <u>WW-8, "System Description"</u>. SIGNAL BUFFER SYSTEM

SIGNAL BUFFER SYSTEM : System Diagram



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< SYSTEM DESCRIPTION >

SIGNAL BUFFER SYSTEM : System Description

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[WITH INTELLIGENT KEY SYSTEM]

OUTLINE

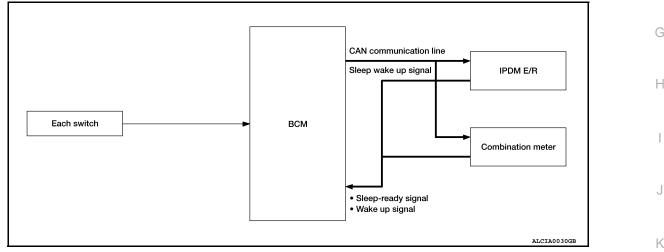
BCM has the signal transmission function that outputs/transmits each input/received signal to each unit.

Signal transmission function list

Signal name	Input	Output	Description	0
Ignition switch ON signalIgnition switch signal	Engine switch (push switch)	IPDM E/R (CAN)	Inputs the push-button ignition switch (push switch) signal and transmits the ignition switch sta- tus judged with BCM via CAN communication.	
Door switch signal	Any door switch	Combination meter (CAN) IPDM E/R (CAN)	Inputs the door switch signal and transmits it via CAN com- munication.	E

POWER CONSUMPTION CONTROL SYSTEM

POWER CONSUMPTION CONTROL SYSTEM : System Diagram



POWER CONSUMPTION CONTROL SYSTEM : System Description

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 each switch changes from 10 ms interval to 60 ms interval.

Sleep mode activation

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< SYSTEM DESCRIPTION >

- 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 wakeup 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 alarm and panic alarm: No operation Warning lamp: Not operation Intelligent Key system buzzer: No operation Brake switch: OFF Turn signal indicator lamp: No operation Exterior lamp: OFF Door lock status: No change CONSULT communication status: No communication Meter display signal: Non-transmission Door switch status: No change Rear window defogger: OFF 	 Interior room lamp battery saver: Time out RAP system: OFF Push-button ignition switch (push switch) illumination: OFF NATS: No operation Remote keyless entry receiver communication status: No communication Tire pressure monitoring system: Stop

Wake-up operation

- BCM changes from the low power consumption mode to the CAN communication sleep mode when the any of the BCM wake-up conditions are fulfilled. Only the control with BCM is activated.
- BCM transmits the sleep wake up signal (wake up) to each unit when any of the CAN wake-up conditions are fulfilled. It changes from the low power consumption mode or the CAN communication sleep mode to the normal mode.
- Each unit starts the transmission of CAN communication with the sleep wake up signal. In addition, the combination meter transmits the wake up signal to BCM via CAN communication to report the CAN communication start.

BCM wake-up condition	CAN wake-up condition
 Door lock assembly LH (key cylinder switch): Lock or unlock Door lock switch: OFF→ON Door unlock switch: OFF→ON Trunk opener switch: OFF→ON Remote keyless entry receiver: Receiving valid keyfob 	 Receiving the sleep-ready signal (Not-ready) from any units Push-button ignition switch (push switch): OFF→ON Hazard switch: OFF→ON PASSING switch: OFF→ON, ON→OFF TAIL LAMP switch: OFF→ON, ON→OFF Driver door switch: OFF→ON, ON→OFF Passenger door switch: OFF → ON, ON → OFF Trunk switch: OFF→ON, ON→OFF Driver door request switch: OFF→ON Passenger door request switch: OFF→ON Stop lamp switch 2 signal: ON Remote keyless entry receiver: Receiving valid keyfob

< SYSTEM DESCRIPTION > DIAGNOSIS SYSTEM (BCM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

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APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

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

SYSTEM APPLICATION

BCM can perform the following functions.

				Direct I	Diagnosti	c Mode			H
System	Sub System	ECU identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN DIAG SUPPORT MNTR	- H
Door lock	DOOR LOCK		×	×	×	×			
Rear window defogger	REAR DEFOGGER			×	×				-
Warning chime	BUZZER			×	×				L
Interior room lamp timer	INT LAMP			×	×	×			=
Exterior lamp	HEAD LAMP			×	×	×			DOO
Wiper and washer	WIPER			×	×	×			BCS
Turn signal and hazard warning lamps	FLASHER			×	×	×			
Air conditioner	AIR CONDITIONER			×					Ν
Intelligent Key system	INTELLIGENT KEY		×	×	×	×			-
Combination switch	COMB SW			×					=
BCM	BCM	×	×			×	×	×	0
Immobilizer	IMMU		×	×	×	×			=
Interior room lamp battery saver	BATTERY SAVER			×	×	×			Р
Trunk open	TRUNK			×					_
Vehicle security system	THEFT ALM			×	×	×			-
RAP system	RETAINED PWR			×					-
Signal buffer system	SIGNAL BUFFER			×					-
TPMS	AIR PRESSURE MONITOR		×	×	×	×			-

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM) [WITH INTELLIGENT KEY SYSTEM]

DOOR LOCK

DOOR LOCK : CONSULT Function (BCM - DOOR LOCK)

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DATA MONITOR

Monitor Item [Unit]	Description
REQ SW-DR [On/Off]	Indicates condition of door request switch LH.
REQ SW-AS [On/Off]	Indicates condition of door request switch RH.
REQ SW -BD/TR [On/Off]	Indicates condition of trunk open switch.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
DOOR SW-BK [On/Off]	Indicates condition of trunk 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.
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.

ACTIVE TEST

Test Item	Description
DOOR LOCK	This test is able to check door lock operation [OTR ULK/AS UNLK/DR UNLK/ALL UNLK/ALL LOCK].

WORK SUPPORT

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

*: Initial setting

REAR DEFOGGER

REAR DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER)

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DATA MONITOR

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[WITH INTELLIGENT KEY SYSTEM]

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REAR DEF SW [On/Off]	Indicates condition of rear window defogger switch.	
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.	
Monitor Item [Unit]	Description	А

ACTIVE TEST

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

BUZZER

BUZZER : CONSULT Function (BCM - BUZZER)

DATA MONITOR

Monitor Item [Unit]	Description			
PUSH -SW [On/Off]	Indicates condition of push-button ignition switch.			
UNLK SEN -DR [On/Off]	Indicates condition of driver door unlock sensor.			
VEH SPEED 1 [km/h]	Indicates vehicle speed signal received from ABS on CAN communication line.			
TAIL LAMP 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.	H		
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.			

ACTIVE TEST

Test Item	Description	
ID REGIST WARNING	This test is able to check TPMS transmitter ID regist warning chime operation [On/Off].	J
SEAT BELT WARN TEST	This test is able to check seat belt warning chime operation [On/Off].	
LIGHT WARN ALM	This test is able to check light warning chime operation [On/Off].	
		K

INT LAMP

INT LAMP : CONSULT Function (BCM - INT LAMP)

DATA MONITOR

Monitor Item [Unit]	Description	BCS
REQ SW -DR [On/Off]	Indicates condition of door request switch LH.	
REQ SW -AS [On/Off]	Indicates condition of door request switch RH.	N
PUSH -SW [On/Off]	Indicates condition of push-button ignition switch.	
UNLK SEN -DR [On/Off]	Indicates condition of driver door unlock sensor.	
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.	0
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.	
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.	
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.	P
DOOR SW-BK [On/Off]	Indicates condition of trunk 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.	
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.	

Revision: October 2012



< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description
TRNK/HAT MNTR [On/Off]	Indicates condition of trunk room lamp switch.
RKE-LOCK [On/Off]	Indicates condition of lock signal from Intelligent Key.
RKE-UNLOCK [On/Off]	Indicates condition of unlock signal from Intelligent Key.

ACTIVE TEST

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

WORK SUPPORT

Support Item	Set	ting	Description
R LAMP TIMER LOGIC SET	MODE 2		Interior room lamp timer activates with all doors.
R LAMP TIMER LOGIC SET	MODE 1*		Interior room lamp timer activates with the driver door only.
SET I/L D-UNLCK INTCON	On*		Interior room lamp timer function ON.
SET I/E D-UNLER INTEON	Off		Interior room lamp timer function OFF.
	MODE 4	30 sec.	
ROOM LAMP TIMER SET	MODE 3*	15 sec.	Sets the interior room lamp ON time. (Timer operating time).
	MODE 2	7.5 sec.	

*: Initial setting

HEADLAMP

HEADLAMP : CONSULT Function (BCM - HEAD LAMP)

INFOID:000000009014201

DATA MONITOR

Monitor Item [Unit]	Description				
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.				
ENGINE STATE [Stop/Stall/Crank/Run]	Indicates engine status received from ECM on CAN communication line.				
VEH SPEED 1 [km/h]	Indicates vehicle speed signal received from ABS on CAN communication line.				
TURN SIGNAL R [On/Off]					
TURN SIGNAL L [On/Off]					
TAIL LAMP SW [On/Off]					
HI BEAM SW [On/Off]					
HEAD LAMP SW 1 [On/Off]	Indicates condition of combination switch.				
HEAD LAMP SW 2 [On/Off]					
PASSING SW [On/Off]					
AUTO LIGHT SW [On/Off]					
FR FOG SW [On/Off]					
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.				
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.				
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.				
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.				
DOOR SW-BK [On/Off]	Indicates condition of trunk switch.				
OPTI SEN (DTCT) [V]	Indicates outside brightness voltage signal from optical sensor.				
OPTI SEN (FILT) [V]	Indicates outside brightness voltage signal from optical sensor filtered by BCM.				

ACTIVE TEST

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Test Item	Description	A
FR FOG LAMP	This test is able to check front fog lamp operation [On/Off].	
HEAD LAMP	This test is able to check head lamp operation [Hi/Low/Off].	
ILL DIM SIGNAL	This test is able to check head lamp illumination dimming operation [On/Off].	— В
TAIL LAMP	This test is able to check tail lamp operation [On/Off].	

WORK SUPPORT

Support Item	Setting		Description	
	MODE6		Twilight OFF without wiper.	D
	MODE5		Twilight OFF with wiper LO and HI.	
CUSTOM A/LIGHT SETTING	MODE4		Twilight OFF with wiper INT, LO and HI.	F
COSTOM A/LIGHT SETTING	MODE3		Twilight ON without wiper.	
	MODE2		Twilight ON with wiper LO and HI.	
	MODE1*		Twilight ON with wiper INT, LO and HI.	F
BATTERY SAVER SET	On*		Exterior lamp battery saver function ON.	
BATTERT SAVER SET	Off		Exterior lamp battery saver function OFF.	
	MODE4		Less sensitive than normal setting (turns ON later).	G
CUSTOM A/LIGHT SETTING	MODE3		More sensitive than MODE2.	
	MODE2		More sensitive than normal setting (turns ON earlier).	Н
	MODE1*		Normal setting.	
	MODE 8	180 sec.		
	MODE 7	150 sec.		I
	MODE 6	120 sec.	Sets delay timer function operation time (All doors closed).	
ILL DELAY SET	MODE 4	60 sec.		J
	MODE 5	90 sec.		
	MODE 3	30 sec.		
	MODE 2	OFF		K
	MODE 1*	45 sec.		

*: Initial setting

WIPER

WIPER : CONSULT Function (BCM - WIPER)

DATA MONITOR

Monitor Item [Unit]	Description				
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.				
VEH SPEED 1 [km/h]	Indicates vehicle speed signal received from ABS on CAN communication line.	-			
FR WIPER HI [On/Off]		-			
FR WIPER LOW [On/Off]	Indicates condition of winer expection of combination switch				
FR WASHER SW [On/Off]	 Indicates condition of wiper operation of combination switch. 				
FR WIPER INT [On/Off]					
FR WIPER STOP [On/Off]	Indicates front wiper auto stop signal received from IPDM E/R on CAN communication line.	-			
INT VOLUME [1 – 7]	Indicates condition of intermittent wiper operation of combination switch.	-			

ACTIVE TEST

BCS

INFOID:000000009014202

L

С

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

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

WORK SUPPORT

Support Item	Setting	Description
WIPER SPEED SETTING	On	Front wiper intermittent time linked with vehicle speed and wiper dial position.
	Off*	Front wiper intermittent time linked with wiper dial position.

* : Initial setting FLASHER FLASHER : CONSULT Function (BCM - FLASHER)

INFOID:000000009014203

DATA MONITOR

Monitor Item [Unit]	Description	
REQ SW -DR [On/Off]	Indicates condition of door request switch LH.	
REQ SW -AS [On/Off]	Indicates condition of door request switch RH.	
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.	
TURN SIGNAL R [On/Off]	Indicates condition of turn signal function of combination quitch	
TURN SIGNAL L [On/Off]	Indicates condition of turn signal function of combination switch.	
HAZARD SW [On/Off]	Indicates condition of hazard switch.	
RKE-LOCK [On/Off]	Indicates condition of lock signal from Intelligent Key.	
RKE-UNLOCK [On/Off]	Indicates condition of unlock signal from Intelligent Key.	
RKE-PANIC [On/Off]	Indicates condition of panic alarm signal from Intelligent Key.	

ACTIVE TEST

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

WORK SUPPORT

Support Item	Setting	Description
HAZARD ANSWER BACK	Lock/Unlock*	Hazard warning lamp activation when doors are locked or unlocked with Intelligent Key.
	Unlock Only	Hazard warning lamp activation when doors are unlocked with Intelligent Key.
	Lock Only	Hazard warning lamp activation when doors are locked with Intelligent Key.
	Off	No hazard warning lamp activation when doors are locked or unlocked with Intelligent Key.

* : Initial setting

AIR CONDITIONER

AIR CONDITIONER : CONSULT Function (BCM - AIR CONDITIONER)

INFOID:000000009014204

DATA MONITOR

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description	Α
FAN ON SIG [On/Off]	Indicates condition of fan switch.	_
AIR COND SW [On/Off]	Indicates condition of A/C switch.	_
		— В

INTELLIGENT KEY

INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)

SELF DIAGNOSTIC RESULT

Refer to BCS-50, "DTC Index".

DATA MONITOR

D

INFOID:000000009014205

Monitor Item [Unit]	Main	Description	Е
REQ SW -DR [On/Off]	×	Indicates condition of door request switch LH.	
REQ SW -AS [On/Off]	×	Indicates condition of door request switch RH.	
REQ SW -BD/TR [On/Off]	×	Indicates condition of trunk open switch.	F
PUSH SW [On/Off]		Indicates condition of push-button ignition switch.	
BRAKE SW 1 [On/Off]	×	Indicates condition of brake switch.	G
BRAKE SW 2 [On/Off]		Indicates condition of brake switch.	G
DETE/CANCL SW [On/Off]	×	Indicates condition of P (park) position.	
SFT PN/N SW [On/Off]	×	Indicates condition of P (park) or N (neutral) position.	Н
UNLK SEN -DR [On/Off]	×	Indicates condition of driver door unlock sensor.	
PUSH SW -IPDM [On/Off]		Indicates condition of push-button ignition switch received from IPDM E/R on CAN communication line.	I
IGN RLY1 -F/B [On/Off]		Indicates condition of ignition relay 1 received from IPDM E/R on CAN commu- nication line.	
DETE SW -IPDM [On/Off]		Indicates condition of detent switch received from TCM on CAN communication line.	J
SFT PN -IPDM [On/Off]		Indicates condition of P (park) or N (neutral) position from TCM on CAN com- munication line.	K
SFT P -MET [On/Off]		Indicates condition of P (park) position from TCM on CAN communication line.	
SFT N -MET [On/Off]		Indicates condition of N (neutral) position from IPDM E/R on CAN communica- tion line.	L
ENGINE STATE [Stop/Start/Crank/Run]	×	Indicates condition of engine state from ECM on CAN communication line.	
VEH SPEED 1 [mph/km/h]	×	Indicates condition of vehicle speed signal received from ABS on CAN commu- nication line.	BC
VEH SPEED 2 [mph/km/h]	×	Indicates condition of vehicle speed signal received from combination meter on CAN communication line.	
DOOR STAT -DR [LOCK/READY/UNLK]	×	Indicates condition of driver side door status.	Ν
DOOR STAT -AS [LOCK/READY/UNLK]	×	Indicates condition of passenger side door status.	
ID OK FLAG [Set/Reset]		Indicates condition of Intelligent Key ID.	0
PRMT ENG STRT [Set/Reset]		Indicates condition of engine start possibility.	
PRMT RKE STRT [Set/Reset]		Indicates condition of engine start possibility from Intelligent Key.	
RKE OPE COUN1 [0-19]	×	When remote keyless entry receiver receives the signal transmitted while oper- ating on Intelligent Key, the numerical value start changing.	Ρ
RKE OPE COUN2 [0-19]	×	When remote keyless entry receiver receives the signal transmitted while oper- ating on Intelligent Key, the numerical value start changing.	

TRNK/HAT MNTR [On/Off]

RKE-LOCK [On/Off]

RKE-UNLOCK [On/Off]

Indicates condition of trunk room lamp switch.

Indicates condition of lock signal from Intelligent Key.

Indicates condition of unlock signal from Intelligent Key.

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Main	Description
RKE-TR/BD [On/Off]		Indicates condition of trunk open signal from Intelligent Key.
RKE-PANIC [On/Off]		Indicates condition of panic signal from Intelligent Key.
RKE-MODE CHG [On/Off]		Indicates condition of mode change signal from Intelligent Key.

ACTIVE TEST

Test Item	Description
INSIDE BUZZER	This test is able to check combination meter warning chime operation [Take Out/Knob/Key/ Off].
LCD	This test is able to check combination meter display information [Off/LK WN/OUTKEY/NO KY/BATT/INSRT/SFT P/ROTAT/ID NG/B&P I/B&P N].
BATTERY SAVER	This test is able to check battery saver operation [On/Off].
ENGINE SW ILLUMI	This test is able to check push-button ignition switch START indicator operation [On/Off].
PUSH SWITCH INDICATOR	This test is able to check push-button ignition switch indicator operation [On/Off].
TRUNK/BACK DOOR	This test is able to check trunk actuator operation [Open].
INT LAMP	This test is able to check interior room lamp operation [On/Off].
INDICATOR	This test is able to check combination meter warning lamp operation [KEY ON/KEY IND/Off].
FLASHER	This test is able to check hazard lamp operation [LH/RH/Off].
OUTSIDE BUZZER	This test is able to check Intelligent Key warning buzzer operation [On/Off].
HORN	This test is able to check horn operation [On].
P RANGE	This test is able to check CVT shift selector illumination operation [On/Off].

WORK SUPPORT

Support Item	Setting	Description
LOCK/UNLOCK BY I-KEY	On*	Door lock/unlock function from Intelligent Key ON.
LOCKUNLOCK BY I-RET	Off	Door lock/unlock function from Intelligent Key OFF.
TRUNK/GLASS HATCH OPEN	On*	Buzzer reminder function from trunk opener switch.
IRONNOLASS HATCH OPEN	Off	No buzzer reminder function from trunk opener switch.
ANTI KEY LOCK IN FUNCTI	On*	Anti lock out setting ON.
ANTI KET LOCK IN FUNCTI	Off	Anti lock out setting OFF.
ANS BACK I-KEY UNLOCK	Off	No buzzer reminder when doors are unlocked with request switch.
ANS BACK FRET UNLOCK	On*	Buzzer reminder when doors are unlocked with request switch.
	Horn Chirp	Horn chirp reminder when doors are locked with request switch.
ANS BACK I-KEY LOCK	Buzzer*	Buzzer reminder when doors are locked with request switch.
	Off	No reminder when doors are locked with request switch.
HORN WITH KEYLESS LOCK	Off	Horn chirp reminder when doors are locked with Intelligent Key.
HORN WITTRE TELSS LOCK	On*	No horn chirp reminder when doors are locked with Intelligent Key.
ENGINE START BY I-KEY	On*	Engine start function from Intelligent Key ON.
ENGINE START BT FRET	Off	Engine start function from Intelligent Key OFF.
	Lock/Unlock*	Hazard warning lamp activation when doors are locked/unlocked with Intelligent Key or request switch.
HAZARD ANSWER BACK	Unlock Only	Hazard warning lamp activation when doors are unlocked with Intel- ligent Key or request switch.
	Lock Only	Hazard warning lamp activation when doors are locked with Intelli- gent Key or request switch.
	Off	No hazard warning lamp activation when doors are locked/unlocked with Intelligent Key or request switch.

[WITH INTELLIGENT KEY SYSTEM]

Support Item	Se	tting	Description	_
INSIDE ANT DIAGNOSIS	-	_	This function allows inside key antenna self-diagnosis.	_
CONFIRM KEY FOB ID	-		Intelligent Key ID code can be checked.	
		70 msec		
SHORT CRANKING OUTPUT	Start	100 msec	Starter motor operation duration time setting.	
SHORT CRAINING OUTFUT		200 msec		
	End		—	_
	MODE 3	1.5 sec		
PANIC ALARM SET	MODE 2	OFF	Intelligent Key panic alarm button setting.	
	MODE 1*	0.5 sec		
LO- BATT OF KEY FOB WARN	On*		Intelligent Key low battery warning ON.	
LO- BATT OF RET FOB WARN	Off		Intelligent Key low battery warning OFF.	
	MODE7	5 min	Auto door lock time setting.	
	MODE6	4 min		
	MODE5	3 min		
AUTO LOCK SET	MODE4	2 min		
	MODE3*	1 min		
	MODE2	30 sec		
	MODE1	Off		
	MODE 3	1.5 sec		
TRUNK OPEN DELAY	MODE 2	OFF	Intelligent Key trunk open button setting.	
	MODE 1*	0.5 sec		

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

INFOID:000000009014206

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Κ

DATA MONITOR

*: Initial Setting

< SYSTEM DESCRIPTION >

Monitor Item [Unit]	Description	
FR WIPER HI [On/Off]		L
FR WIPER LOW [On/Off]	Indicates condition of wines exerction of combination quitab	
FR WASHER SW [On/Off]	 Indicates condition of wiper operation of combination switch. 	
FR WIPER INT [On/Off]		BCS
INT VOLUME [1 - 7]	Indicates condition of intermittent wiper operation of combination switch.	
TURN SIGNAL R [On/Off]	Indicates condition of right turn signal operation of combination switch.	N
TURN SIGNAL L [On/Off]	Indicates condition of left turn signal operation of combination switch.	
TAIL LAMP SW [On/Off]	Indicates condition of tail lamp switch operation of combination switch.	
HI BEAM SW [On/Off]	Indicates condition of Hi beam switch operation of combination switch.	0
HEAD LAMP SW 1 [On/Off]	Indicates condition of head lamp switch 1 operation of combination switch.	
HEAD LAMP SW 2 [On/Off]	Indicates condition of head lamp switch 2 operation of combination switch.	Р
PASSING SW [On/Off]	Indicates condition of passing switch operation of combination switch.	
AUTO LIGHT SW [On/Off]	Indicates condition of auto light switch operation of combination switch.	
FR FOG SW [On/Off]	Indicates condition of front fog lamp switch operation of combination switch.	

BCM

BCM : CONSULT Function (BCM - BCM)

ECU IDENTIFICATION

The BCM part number is displayed.

SELF DIAGNOSTIC RESULT

Refer to BCS-50, "DTC Index".

WORK SUPPORT

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

CONFIGURATION

Refer to BCS-62, "CONFIGURATION (BCM) : Description".

CAN DIAG SUPPORT MNTR

Refer to <u>LAN-13, "CAN Diagnostic Support Monitor"</u>. IMMU

IMMU : CONSULT Function (BCM - IMMU)

SELF DIAGNOSTIC RESULT

Refer to <u>BCS-50, "DTC Index"</u>.

DATA MONITOR

Monitor Item [Unit]	Description	
CONFRM ID ALL [Yet/DONE]		
CONFIRM ID4 [Yet/DONE]		
CONFIRM ID3 [Yet/DONE]	Switches to DONE when an Intelligent Key is registered.	
CONFIRM ID2 [Yet/DONE]		
CONFIRM ID1 [Yet/DONE]		
TP 4 [Yet/DONE]		
TP 3 [Yet/DONE]	DONE indicates the number of Intelligent Key ID which has been registered	
TP 2 [Yet/DONE]	— DONE indicates the number of Intelligent Key ID which has been registered.	
TP 1 [Yet/DONE]	1	
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.	

ACTIVE TEST

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

WORK SUPPORT

Support Item	Setting	Description
CONFIRM DONGLE ID	—	Dongle ID code can be read.

BATTERY SAVER

BATTERY SAVER : CONSULT Function (BCM - BATTERY SAVER)

INFOID:000000009014209

INFOID:000000009014208

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description	A
REQ SW -DR [On/Off]	Indicates condition of door request switch LH.	
REQ SW -AS [On/Off]	Indicates condition of door request switch RH.	
PUSH SW [On/Off]	Indicates condition push-button ignition switch.	
UNLK SEN -DR [On/Off]	Indicates condition of driver door unlock sensor.	
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.	(
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.	
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.	
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.	[
DOOR SW-BK [On/Off]	Indicates condition of trunk switch.	
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.	F
CDL UNLOCK SW [On/Off]	Indicates condition of unlock signal from door lock and unlock 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.	F
TRNK/HAT MNTR [On/Off]	Indicates condition of trunk room lamp switch.	
RKE-LOCK [On/Off]	Indicates condition of lock signal from Intelligent Key.	
RKE-UNLOCK [On/Off]	Indicates condition of unlock signal from Intelligent Key.	(

ACTIVE TEST

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

WORK SUPPORT

Support Item	Setting		Description	J
	ON*		Exterior lamp battery saver function ON.	
BATTERY SAVER SET	OFF		Exterior lamp battery saver function OFF.	
ROOM LAMP TIMER SET	MODE 3*	10 min.		K
	MODE 2	60 min.	Sets interior room lamp battery saver timer operating time.	
	MODE 1	15 min.		1

*: Initial setting

TRUNK

TRUNK : CONSULT Function (BCM - TRUNK)

DATA MONITOR

Monitor Item [Unit]	Description	
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.	0
UNLK SEN -DR [On/Off]	Indicates condition of driver door unlock sensor.	0
VEH SPEED 1 [km/h]	Indicates vehicle speed signal received from ABS on CAN communication line.	
TR/BD OPEN SW [On/Off]	Indicates condition of trunk open switch.	Р
TRNK/HAT MNTR [On/Off]	Indicates condition of trunk room lamp switch.	
RKE-TR/BD [On/Off]	Indicates condition of trunk open signal from Intelligent Key.	

THEFT ALM

BCS

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INFOID:000000009014210

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< SYSTEM DESCRIPTION >

THEFT ALM : CONSULT Function (BCM - THEFT)

INFOID:000000009014211

[WITH INTELLIGENT KEY SYSTEM]

DATA MONITOR

Monitored Item	Description
REQ SW -DR [On/Off]	Indicates condition of door request switch LH.
REQ SW -AS [On/Off]	Indicates condition of door request switch RH.
REQ SW -BD/TR [On/Off]	Indicates condition of trunk open switch.
PUSH SW [On/Off]	Indicates condition of push-button ignition switch.
UNLK SEN -DR [On/Off]	Indicates condition of driver door unlock sensor.
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
DOOR SW-BK [On/Off]	Indicates condition of trunk 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.
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.
TR/BD OPEN SW [On/Off]	Indicates condition of trunk open switch.
TRNK/HAT MNTR [On/Off]	Indicates condition of trunk room lamp switch.
RKE-LOCK [On/Off]	Indicates condition of lock signal from Intelligent Key.
RKE-UNLOCK [On/Off]	Indicates condition of unlock signal from Intelligent Key.
RKE-TR/BD [On/Off]	Indicates condition of trunk open signal from Intelligent Key.

DIAGNOSIS SYSTEM (BCM)

ACTIVE TEST

Test Item	Description
VEHICLE SECURITY HORN	This test is able to check vehicle security horn operation [On].
FLASHER	This test is able to check turn signal lamp operation [LH/RH/Off].
THEFT IND	This test is able to check security indicator lamp operation [On/Off].
HEADLAMP(HI)	This test is able to check vehicle security lamp operation [On].

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
	CLEAR	to confirm and erase the record of vehicle security alarm. The trigger data can be erased by touching [CLEAR].

*: Initial setting

RETAINED PWR

RETAINED PWR : CONSULT Function (BCM - RETAINED PWR)

INFOID:000000009014212

DATA MONITOR

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description	А			
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.				
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.	5			
SIGNAL BUFFER		В			
SIGNAL BUFFER : COM	NSULT Function (BCM - SIGNAL BUFFER)	С			
DATA MONITOR		C			
Monitor Item [Unit]	Description	D			
PUSH SW [On/Off]	Indicates condition of the push-button ignition switch.				
AIR PRESSURE MONI	TOR	Е			
AIR PRESSURE MONIT	FOR : CONSULT Function (BCM - AIR PRESSURE MONI-				
TOR)	INFOID:00000009014214	F			
,		I			
NOTE: The Signal Tech II Tool (J-501) User Guide for additional inform • Activate and display TPMS tr • Display tire pressure reported • Read TPMS DTCs • Register TPMS transmitter IE • Check Intelligent Key relative	ansmitter IDs d by the TPMS transmitter Ds	G			
Confirm vehicle Intelligent Ke					
SELF DIAGNOSTIC RESUL	Л	I			
NOTE: Before performing self diagnos ent from that displayed on CON Refer to <u>BCS-50, "DTC Index"</u>		J			
DATA MONITOR		K			
Monitor Item [Unit]	Description				
AIR PRESS FL [kPa, kg/cm ² or Psi]	Indicates air pressure of front LH tire.	L			
AIR PRESS FR [kPa, kg/cm ² or Psi]	Indicates air pressure of front RH tire.				
AIR PRESS RR [kPa, kg/cm ² or Psi]	Indicates air pressure of rear RH tire.	BCS			
AIR PRESS RL [kPa, kg/cm ² or Psi]	Indicates air pressure of rear LH tire.				
ID REGST FL1 [Done/Yet]					
ID REGST FR1 [Done/Yet]	Indicates ID registration status of front RH transmitter.	Ν			
ID REGST RR1 [Done/Yet]	Indicates ID registration status of rear RH transmitter.				
ID REGST RL1 [Done/Yet]	Indicates ID registration status of rear LH transmitter.	0			

BUZZER [Off/On]

WARNING LAMP [Off/On]

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

Indicates condition of buzzer in combination meter.

Indicates condition of low tire pressure warning lamp in combination meter.

Ρ

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Test Item	Description
ID REGIST WARNING	This test is able to check ID registration warning chime operation [On/Off].
WARNING LAMP	This test is able to check tire pressure warning lamp operation [On/Off].

WORK SUPPORT

Support Item	Description
ID READ	The registered ID number is displayed.
ID REGIST	Refer to <u>WT-22, "Description"</u> .

< ECU DIAGNOSIS INFORMATION >

a can be used to perform the following func- tion. smitter IDs y the TPMS transmitter gnal strength antenna signal strength S TOOL Condition DFF DN e air pressure value re air pressure value	INFOID:00000000014215 tions. Refer to the Signal Tech II Value/Status Off On kPa, kg/cm², psi Off Off On kPa, kg/cm², psi kPa, kg/cm², psi Off On off On
tion. smitter IDs y the TPMS transmitter gnal strength antenna signal strength S TOOL Condition DFF DN a air pressure value re air pressure value air pressure value air pressure value te air pressure value te air pressure value	Value/Status Off On kPa, kg/cm², psi Off
Condition Condition OFF DN e air pressure value re air pressure value air pressure value e air pressure value ce air pressure value	Off On kPa, kg/cm², psi kPa, kg/cm², psi kPa, kg/cm², psi kPa, kg/cm², psi Off
Condition DFF DN e air pressure value re air pressure value air pressure value re air pressure value te air pressure value te air pressure value	Off On kPa, kg/cm², psi kPa, kg/cm², psi kPa, kg/cm², psi kPa, kg/cm², psi Off
DFF DN e air pressure value re air pressure value air pressure value re air pressure value re air pressure value	OffOnkPa, kg/cm², psikPa, kg/cm², psikPa, kg/cm², psikPa, kg/cm², psiOff
DN e air pressure value re air pressure value air pressure value re air pressure value re air pressure value re air pressure value	On kPa, kg/cm ² , psi Off
e air pressure value re air pressure value air pressure value re air pressure value re air pressure value	kPa, kg/cm², psi kPa, kg/cm², psi kPa, kg/cm², psi kPa, kg/cm², psi Off
re air pressure value air pressure value re air pressure value ich OFF	kPa, kg/cm², psi kPa, kg/cm², psi kPa, kg/cm², psi Off
air pressure value re air pressure value rch OFF	kPa, kg/cm ² , psi kPa, kg/cm ² , psi Off
re air pressure value tch OFF	kPa, kg/cm ² , psi Off
ich OFF	Off
	Off
	On
ake pedal is released	On
ake pedal is depressed	Off
released	Off
depressed	On
mbination meter OFF	Off
mbination meter ON	On
nlock switch does not operate	Off
ock/unlock switch to the LOCK side	On
nlock switch does not operate	Off
ock/unlock switch to the UNLOCK side	On
loes not match any key ID registered to BCM.	Yet
natches any key ID registered to BCM.	DONE
does not match the fourth key ID registered to BCM.	Yet
natches the fourth key ID registered to BCM.	DONE
does not match the third key ID registered to BCM.	Yet
natches the third key ID registered to BCM.	DONE
does not match the second key ID registered to BCM.	Yet
natches the second key ID registered to BCM.	DONE
does not match the first key ID registered to BCM.	Yet
natches the first key ID registered to BCM.	DONE
	Off
	lock switch does not operate bck/unlock switch to the LOCK side lock switch does not operate bck/unlock switch to the UNLOCK side loes not match any key ID registered to BCM. Inatches any key ID registered to BCM. loes not match the fourth key ID registered to BCM. loes not match the third key ID registered to BCM. loes not match the third key ID registered to BCM. loes not match the third key ID registered to BCM. loes not match the second key ID registered to BCM. loes not match the second key ID registered to BCM.

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item	Condition	Value/Status		
	When selector lever is in P position	Off		
DETE/CANCL SW	When selector lever is in any position other than P	On		
	Passenger door LOCK status	LOCK		
DOOR STAT-AS	Passenger door UNLOCK status	UNLK		
	Wait with selective UNLOCK operation (5 seconds)	READY		
	Driver door LOCK status	LOCK		
DOOR STAT-DR	Driver door UNLOCK status	UNLK		
	Wait with selective UNLOCK operation (5 seconds)	READY		
	Front door RH closed	Off		
DOOR SW-AS	Front door RH opened	On		
	Trunk closed	Off		
DOOR SW-BK	Trunk opened	On		
	Front door LH closed	Off		
DOOR SW-DR	Front door LH opened	On		
	Rear door LH closed	Off		
DOOR SW-RL	Rear door LH opened	On		
	Rear door RH closed	Off		
DOOR SW-RR	Rear door RH opened	On		
	Engine stopped	Stop		
	While the engine stalls	Stall		
ENGINE STATE	At engine cranking	Crank		
	Engine running	Run		
	Blower motor fan switch OFF	Off		
FAN ON SIG	Blower motor fan switch ON	On		
	Front fog lamp switch OFF	Off		
FR FOG SW	Front fog lamp switch ON	On		
	Front washer switch OFF	Off		
FR WASHER SW	Front washer switch ON	On		
	Front wiper switch OFF	Off		
FR WIPER LOW	Front wiper switch LO	On		
	Front wiper switch OFF	Off		
FR WIPER HI	Front wiper switch HI	On		
	Front wiper switch OFF	Off		
FR WIPER INT	Front wiper switch INT	On		
	Any position other than front wiper stop position	Off		
FR WIPER STOP	Front wiper stop position	On		
	When hazard switch is not pressed	Off		
HAZARD SW	When hazard switch is pressed	On		
	Headlamp switch OFF	Off		
HEAD LAMP SW 1	Headlamp switch 1st	On		
	Headlamp switch OFF	Off		
HEAD LAMP SW 2	Headlamp switch 1st	On		
	High beam switch OFF	Off		
		1 VIII		

< ECU DIAGNOSIS INFORMATION >

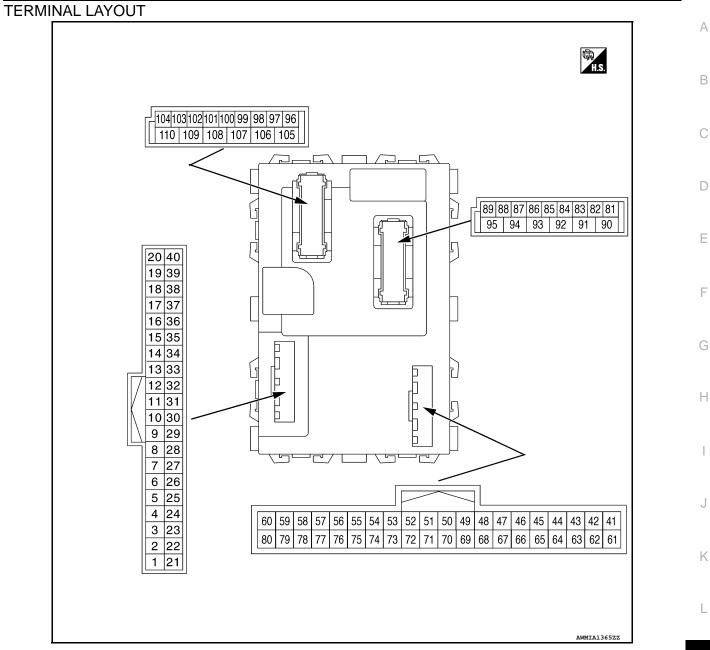
[WITH INTELLIGENT KEY SYSTEM]

Monitor Item	Condition	Value/Status
D OK FLAG	Ignition switch ACC or ON	Reset
O OK I EKG	Ignition switch OFF	Set
D REGST FL1	ID registration of front left tire incomplete	YET
	ID registration of front left tire complete	DONE
D REGST FR1	ID registration of front right tire incomplete	YET
DIREGULTIKI	ID registration of front right tire complete	DONE
D REGST RL1	ID registration of rear left tire incomplete	YET
D REGST RET	ID registration of rear left tire complete	DONE
D REGST RR1	ID registration of rear right tire incomplete	YET
DREGSTRAT	ID registration of rear right tire complete	DONE
	Ignition switch OFF or ACC	Off
GN RLY1 F/B	Ignition switch ON	On
NT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
	Door key cylinder LOCK position	Off
KEY CYL LK-SW	Door key cylinder other than LOCK position	On
	Door key cylinder UNLOCK position	Off
KEY CYL UN-SW	Door key cylinder other than UNLOCK position	On
	Bright outside of the vehicle	Close to 5V
OPTI SEN (DTCT)	Dark outside of the vehicle	Close to 0V
	Bright outside of the vehicle	Close to 5V
OPTI SEN (FILT)	Dark outside of the vehicle	Close to 0V
	Other than lighting switch PASS	Off
ASSING SW	Lighting switch PASS	On
	When the engine start is prohibited	Reset
PRMT ENG STRT	When the engine start is permitted	Set
	When the engine start is prohibited	Reset
PRMT RKE STRT	When the engine start is permitted	Set
	Return ignition switch to LOCK position	Off
PUSH SW	Press ignition switch	On
	When engine switch (push switch) is not pressed	Off
PUSH SW-IPDM	When engine switch (push switch) is pressed	On
	Rear window defogger switch OFF	Off
REAR DEF SW	Rear window defogger switch ON	On
	When passenger door request switch is not pressed	Off
REQ SW-AS	When passenger door request switch is pressed	On
	When trunk open switch is not pressed	Off
REQ SW -BD/TR	When trunk open switch is pressed	On
	When driver door request switch is not pressed	Off
REQ SW-DR	When driver door request switch is pressed	On
	When LOCK button of Intelligent Key is not pressed	Off
RKE-LOCK	When LOCK button of Intelligent Key is pressed	On
	When LOCK/UNLOCK button of Intelligent Key is not pressed and held simultaneously	Off
RKE-MODE CHG	When LOCK/UNLOCK button of Intelligent Key is pressed and held simultaneously	On

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item	Condition	Value/Status
RKE OPE COUN1	Operation frequency of Intelligent Key	0-19
RKE OPE COUN2	Operation frequency of Intelligent Key	0-19
RKE-PANIC	When PANIC button of Intelligent Key is not pressed	Off
	When PANIC button of Intelligent Key is pressed	On
RKE-TR/BD	When TRUNK OPEN button of Intelligent Key is not pressed	Off
RRE-TR/DD	When TRUNK OPEN button of Intelligent Key is pressed	On
	When UNLOCK button of Intelligent Key is not pressed	Off
RKE-UNLOCK	When UNLOCK button of Intelligent Key is pressed	On
	When selector lever is in any position other than N	Off
SFT N-MET	When selector lever is in N position	On
	When selector lever is in any position other than P	Off
SFT P-MET	When selector lever is in P position	On
	When selector lever is in any position other than P or N	Off
SFT PN -IPDM	When selector lever is in P or N position	On
	When selector lever is in any position other than P or N	Off
SFT PN/N SW	When selector lever is in P or N position	On
	Other than lighting switch 1ST and 2ND	Off
TAIL LAMP SW	Lighting switch 1ST or 2ND	On
	The ID of fourth key is not registered to BCM	Yet
TP 4	The ID of fourth key is registered to BCM	DONE
	The ID of third key is not registered to BCM	Yet
TP 3	The ID of third key is registered to BCM	DONE
TD 0	The ID of second key is not registered to BCM	Yet
TP 2	The ID of second key is registered to BCM	DONE
	The ID of first key is not registered to BCM	Yet
TP 1	The ID of first key is registered to BCM	DONE
	Trunk lid closed	Off
TRNK/HAT MNTR	Trunk lid opened	On
	Trunk opener switch OFF	Off
TR/BD OPEN SW	While the trunk opener switch is turned ON	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
	Driver door UNLOCK status	Off
UNLK SEN-DR	Driver door LOCK status	On
VEH SPEED 1	While driving, equivalent to speedometer reading	mph, km/h
VEH SPEED 2	While driving, equivalent to speedometer reading	mph, km/h
	Low tire pressure warning lamp in combination meter OFF	Off
WARNING LAMP	Low tire pressure warning lamp in combination meter ON	On



PHYSICAL VALUES

< ECU DIAGNOSIS INFORMATION >

	inal No.	Description				Value	
(Wire +	e color)	Signal name	Input/ Output	Condition		(Approx.)	Ν
					OFF	0 V	
					TURN RH		0
					HEADLAMP 1	(V) 15	
2	Ground	Ground INPUT 5 signal Input	Input	Combination	HI BEAM		Þ
(L)			switch	TAIL LAMP	- 0 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 	I	
						PKIB4958J 1.0 V	

BCS

[WITH INTELLIGENT KEY SYSTEM]

(Wire color) Signal name Input/ Output Condition + - OFF 3 Ground INPUT 4 signal Input GR0 Ground INPUT 4 signal Input	Value (Approx.) 0 V
3 Cround INDUT Asignal Legut Combination HEADLAMP 2	0 V
3 Cround INDUT 4 signal Lenut Combination HEADLAMP 2	
3 Cround INDUT 4 signal Lanut Combination HEADLAMP 2	
3 Cround INDUT 4 signal Lanut Combination HEADLAMP 2	
(GR) Ground INPOT 4 signal input switch FR FOG	+++10ms
	рків4958j 1.0 V
OFF	0 V
FR WIPER LO	
4 (BR) Ground INPUT 3 signal Input Combination switch FR WIPER INT (any intermittent position)	
(BR) Ground INPOT S signal input switch AUTO LIGHT	• •10ms
	рків4958j 1.0 V
OFF	0 V
FR WASHER	
Wiper intermittent dial 1	
5 (O) Ground INPUT 2 signal Input Combination witch	
Wiper intermittent dial 6	← 1 Oms
	1.0 V
OFF	0 V
FR WIPER HI	
6 Ground INPUT 1 signal Input Combination Wiper intermittent dial 2	
wiper intermittent dial 5	+ +10ms
Wiper intermittent dial 7	pkib4958j 1.0 V
7 (L) Ground Key cylinder unlock sw signal Input Key cylinder switch N position	+ 10ms рктв4960J 7.0 - 8.0 V
UNLOCK position	0 V

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< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal No. (Wire color)		Description		Condition		Value	
(vvire +		Signal name	Input/ Output		Condition	(Approx.)	
8 (V)	Ground	Key cylinder lock sw signal	Input	Key cylinder switch	N position	(V) 15 10 5 0 • 10ms • FKIB4960J	
						7.0 - 8.0 V	
					LOCK position OFF (Brake pedal	0 V	
9	Ground	Stop Jamp quitch 1	Innut	Stop lamp	released)	0 V	
(R)	Ground	Stop lamp switch 1	Input	switch	ON (Brake pedal depressed)	Battery voltage	
12 (GR)	Ground	Central door lock sw signal	Input	Door lock and unlock switch	NEUTRAL position	(V) 15 10 5 0 10 ms JPMIA0012GB 1.0 - 1.5 V	
					LOCK position	0 V	
13 (BR)	Ground	Central door unlock sw signal	Input	Door lock and unlock switch	NEUTRAL position	(V) 15 10 5 0 10 ms JENIA00126B	
						1.0 - 1.5 V	
					UNLOCK position	0 V 5 V	
14 (SB)	Ground	Optical sensor	Input	Push-button ig- nition switch ON	Daylight Night	0 V	
15 (W)	Ground	Rear defogger switch signal	Input	Rear window defogger switch	Released	(V) 15 10 5 0 10 ms JPMIA0012GB	
					Depressed	1.0 - 1.5 V 0 V	
16 (O)	_	MR output				_	
(17 (Y)	Ground	Sensor power sup- ply	Output	Push-button ig- nition switch	OFF ON	0 V 5.5 V	
18 (V)	Ground	Keyless tuner ground	Input	Push-button ig- nition switch	ON	0 V	

Revision: October 2012

[WITH INTELLIGENT KEY SYSTEM]

	nal No.	Description				Value
(vvire +	e color) _	Signal name	Input/ Output		Condition	(Approx.)
19 (BR)	Ground	Keyless tuner power supply	Output	Push-button ig- nition switch	OFF	(V) 15 10 5 0 <i>I</i> <i>I</i> <i>I</i> <i>I</i> <i>I</i> <i>I</i> <i>I</i> <i>I</i>
					ACC or ON	5 V
20	Ground	Keyless tuner signal	Input	Push-button ig- nition switch	Waiting	(V) 15 5 0 1111111111111111111111111111111
(LG)				OFF	When operating either button on Intelligent Key	(V) 15 10 5 0 <i>www.www.www.www.www.www.www.www.www.ww</i>
21 (P)	Ground	Immobilizer one way communication (CLOCK) signal	Input/ Output	Intelligent Key battery is re- moved	Brake pedal depressed NOTE: Waveform varies each time when brake pedal is depressed	(V) 15 10 50 0 ★ 40ms JMKIA6232JP
					Brake pedal released	Battery voltage
22	Ground	Ground Keyless tuner RSSI Input signal	Input	Push-button ig- nition switch	Waiting	(V) 6 4 0
(W)			OFF	When pressing and hold- ing either button on Intelli- gent Key	(V) 6 2 0 100 ms JMKIA5953GB	

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Terminal No. D (Wire color)		Description				Value	А
(VVire	e color)	Signal name	Input/ Output		Condition	(Approx.)	A
					ON	0 – 0.5 V	В
23 (Y)	Ground	Security indicator output	Output	Security indica- tor lamp	Blinking (push-button igni- tion switch OFF)	(V) 15 10 5 0 •••••15 JU JU JU JU JU JU JU JU JU JU JU JU JU	C
					OFF	12.0 V Battery voltage	
24		Donglo link (SEDI	loout/	Ruch hutton ia		Dattery voltage	E
24 (SB)	Ground	Dongle link (SERI- AL)	Input/ Output	Push-button ig- nition switch	OFF	5 V	
25	Ground	Immobilizer two way communication sig-	Input/	During waiting	Brake pedal depressed NOTE: Waveform varies each	(V) 15 10 5 10 5 10 5 10 10 10 10 10 10 10 10 10 10 10 10 10	F
(LG)	Cround	nal	Output		time when brake pedal is depressed	JMKIA6233JP	Н
					Brake pedal released	Battery voltage	
27 (Y)	Ground	Air con sw signal	Input	Push-button ig- nition switch ON and blower fan switch ON	A/C switch OFF A/C switch ON	Battery voltage 0 V	I
					OFF	0 V	J
28 (LG)	Ground	Blower fan sw signal	Input	Fan switch	ON	(V) 15 0 • • 10ms PKIB4960J	K
						7.0 - 8.0 V	
29 (SD)	Ground	Hazard sw signal	Input	Hazard switch	OFF	Battery voltage	BC
(SB)			•		ON	0 – 1.5 V	
					Depressed	0 V	Ν
30 (L)	Ground	Trunk lid opener switch	Input	Trunk lid opener switch	Released	(V) 15 10 5 0 	0
	1					JPMIA0012GB	Ρ

< ECU DIAGNOSIS INFORMATION >

	nal No.	Description				Value
(VVire +	e color)	Signal name	Input/ Output	Condition		(Approx.)
31 (R)	Ground	Driver door unlock sensor signal	Input	Driver door un- lock sensor	OFF (LOCK)	(V) 10 5 0 + 10ms PRIE4960J 7.0 - 8.0 V
					ON (UNLOCK)	0 V
					OFF	(V) 15 0 • 10ms • 10ms • FKIB4960J
32 (LG)	Ground	OUTPUT 5	Output	Combination switch	50 500	7.0 - 8.0 V
(LO)					FR FOG Wiper intermittent dial 1	(V)
					Wiper intermittent dial 2	(V) 15 10 5
					Wiper intermittent dial 6	ŏ
					Wiper intermittent dial 7	++10ms PKIB4956J 1.0 V
33				Combination	OFF	(V) 15 10 50 • • • 10ms • • • • 10ms • • • • • • • • • • • • • • • • • • •
(Y)	Ground	OUTPUT 4	Output	switch	AUTO LIGHT	
					TAIL LAMP	(V) 15
					Wiper intermittent dial 1	
					Wiper intermittent dial 5	
					Winor intermitter to die LO	+ +10ms ↓ ↓ ↓ ↓ ↓ ↓
					Wiper intermittent dial 6	_{рків4958j} 1.2 V

	nal No.	Description		Oraclitica		Value	
(Wire	e color) _	Signal name	Input/ Output		Condition	(Approx.)	А
					OFF	(V) 15 10 5 0 + 10ms	B
34 (V)	Ground	OUTPUT 3	Output	Combination switch	HEADLAMP 2 HI BEAM Wiper intermittent dial 1 Wiper intermittent dial 2	(V) 5 0 ++10ms	D E F
					Wiper intermittent dial 3	 рків4958j 1.2 V	
					OFF	(V) 15 10 5 0 + 10ms PKIB4960J	G H I
35 (R)	Ground	OUTPUT 2	Output	Combination switch	HEADLAMP 1	7.0 - 8.0 V	
					PASSING FR WIPER HI	(V) 15 10 5	J
					FR WIPER INT (any intermittent position)	50 + 10ms PKIB4958J 1.2 V	K
					OFF	(V) 15 0 • • 10ms • • • 10ms • • • 10ms • • • • 10ms	BC
36 (SB)	Ground	OUTPUT 1	Output	Combination switch	TURN RH	7.0 - 8.0 V	0
					TURN LH FR WIPER LO	(V) 15 10 5 0 • • • 10ms	Ρ
					FR WASHER	рків4958 <i>ј</i> 1.2 V	

< ECU DIAGNOSIS INFORMATION >

	nal No.	Description				Value
(Wire	color)	Signal name	Input/ Output		Condition	(Approx.)
37 ¹		Park position switch			P (Park) position	0 – 1.5 V
(P)		signal	Input	Selector lever	Any position other than P (Park)	Battery voltage
37 ²	Ground	Clutch cancel switch	Input	Clutch pedal	OFF (clutch pedal de- pressed)	0 – 1.5 V
(P)		signal	input	position switch	ON (clutch pedal re- leased)	Battery voltage
38 (LG)	Ground	Keyless intelligent tuner signal	Input	Push-button ig- nition switch	OFF or ACC ON	0 – 0.5 V Battery voltage
39 (L)	Ground	CAN-H	Input/ Output		-	
40 (P)	Ground	CAN-L	Input/ Output		_	
41		Push-button ignition	-	Push-button ig-	ON	Battery voltage
(W)	Ground	switch illumination power supply	Output	nition switch il- lumination	OFF	0 – 1.5 V
42		, Inside key antenna		Push-button ig- nition switch ON	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 10 5 0 1 s JMKIA5951GB
(BR)	Ground	(trunk room) -	Output		Intelligent Key in antenna detection area (80 cm or less)	(V) 15 0 1 5 0 1 5 0 1 1 5 0 1 5 0 1 1 5 0 1 5 0 1 5 0 1 5 0 1 5 0 1 1 5 0 1 1 5 1 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1
43		Ground Inside key antenna (trunk room) + Output			Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 0 0 1 s JMKIA5951GB
			Push-button ig- nition switch ON	Intelligent Key in antenna detection area (80 cm or less)	(V) 15 0 0 1 s JMKIA3839GB	

< ECU DIAGNOSIS INFORMATION >

	nal No.	Description				Value	
(vvire +	e color) _	Signal name	Input/ Output		Condition	(Approx.)	А
		Inside key antenna		Push-button ig-	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 10 5 0 •••••••••••••••••••••••••••••	B C D
(R)	Ground	(console) -	Output	nition switch ON	Intelligent Key in antenna detection area (80 cm or less)	(V) 15 10 5 0 1 s JMKIA38390B	E
45	0	Inside key antenna	0.444	Push-button ig-	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 10 5 0 1 s JMKIA5951GB	G H
(G)	Ground	(console) +	Output	nition switch ON	Intelligent Key in antenna detection area (80 cm or less)	(V) 15 10 5 0 1 s JMKIA3839GB	J K L
46	Ground	Inside key antenna	Quitout	Push-button ig-	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 10 50 1 s JMKIA59510B	BCS
(GR)	Ground	(instrument center) -	Output	nition switch ON	Intelligent Key in antenna detection area (80 cm or less)	(V) 15 10 5 0 1 s JMKIA3839GB	P

< ECU DIAGNOSIS INFORMATION >

	nal No.	Description			0	Value				
(vvire +	e color)	Signal name	Input/ Output		Condition	(Approx.)				
47	Ground	Inside key antenna	Output	Push-button ig-	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 10 5 0 1 1 5 0 1 1 5 0 1 1 5 0 1 1 5 0 1 5 0 1 5 0 1 5 0 1 5 1 5				
(BR)	Ground	(instrument center) +	Output	Push-button ig- nition switch ON	Intelligent Key in antenna detection area (80 cm or less)	(V) 15 0 5 0 1 5 0 1 5 1 1 5 1 5				
48	Ground	Outside key antenna	Output	When the trunk lid opener	lid opener	lid opener	lid opener	When the trunk lid opener	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 0 50 500 ms JMKIA5954GB
(R)		(rear bumper) -		ed with push- button ignition switch ON	Intelligent Key in antenna detection area (80 cm or less)	(V) 15 10 50 500 ms JMKIA5955GB				
49	Ground	Outside key antenna	Output	Push-button ig- nition switch ON Trunk lid opener switch pressed	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 10 50 500 ms JMKIA5954GB				
(W)	Ground	(rear bumper) +	Juput		Intelligent Key in antenna detection area (80 cm or less)	(V) 15 0 500 ms JMKIA5955GB				

[WITH INTELLIGENT KEY SYSTEM]

Terminal No. (Wire color)		Description		Condition		Value	
+		Signal name	Input/ Output		Condition	(Approx.)	
50	0	D(40)	0.000	Push-button ig- nition switch ON	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 10 5 0 500 ms 500 ms 500 ms	
(Y)	Ground	Door antenna (AS) -	Output	Passenger door request switch pressed	Intelligent Key in antenna detection area (80 cm or less)	(V) 15 10 5 0 500 ms JMKIA5955GB	
51	Ground	Door antenna (AS) +	Output	Push-button ig- nition switch ON	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 10 50 500 ms JMKIA5954GB	
(BR)	Ground	Door antenna (AS) +	Output	Passenger door request switch pressed	Intelligent Key in antenna detection area (80 cm or less)	(V) 15 10 5 0 0 1 5 1 5 5 5 5 5 5 5 5 5 5 5 5 5	
52	Ground	Door antenna (DR) -	Output	Push-button ig- nition switch ON Driver door re-	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 10 50 500 ms JMKIA5954GB	
(LG)	Ground	Door antenna (DR) -	Juiput	Driver door re- quest switch pressed	Intelligent Key in antenna detection area (80 cm or less)	(V) 15 10 5 0 500 ms JMKIA5955GB	

< ECU DIAGNOSIS INFORMATION >

< ECU DIAGNOSIS INFORMATION >

	nal No. color)	Description				Value
+	-	Signal name	Input/ Output		Condition	(Approx.)
53	Crowned		0. to t	Push-button ig- nition switch ON	Intelligent Key not in an- tenna detection area (Approx. 2 m)	(V) 15 0 500 ms JMKIA5954GB
(P)	Ground	Door antenna (DR) +	Uutput		Intelligent Key in antenna detection area (80 cm or less)	(V) 15 10 5 0 500 ms JMKIA5955GB
55		E	1	Push-button ig-	START pressed	0 – 1.5 V
(LG)	Ground	Engine start sw	Input	nition switch	Not pressed	Battery voltage
56	Ground	Request sw (DR)	Driver door re-	ON (Pressed)	0 – 1.5 V	
(G)	Giouna	signal	Input	quest switch	OFF (Not pressed)	Battery voltage
57 (V)		und Auto retractable mir- ror output	Output	Output Ignition switch OFF	Within 6 seconds of doors locked with LOCK button of Intelligent Key or re- quest switch	0 V
					6 seconds after doors are locked	Battery voltage
65	Ground	Blower relay control	Output	Push-button ig-	OFF or ACC	0 – 0.5 V
(P)	Giouna	blower relay control	Output	nition switch	ON	Battery voltage
66 (V)	Ground	Stop lamp switch 2	Input	Push-button ig- nition switch	OFF	Battery voltage
67 (SB)	Ground	CVT shift selector (park position switch) power sup- ply	Output	Push-button ig- nition switch	ON	Battery voltage
		0		Selector lever	P (Park) or N (Neutral) po- sition	Battery voltage
69 (L)	Ground	Shift N/P ¹	Input	Selector level	Except P (Park) or N (Neutral) position	0 – 1.5 V
(L)					NEUTRAL position	Battery voltage
		Neutral switch ²		Control lever	Except NEUTRAL posi- tion	0 – 1.5 V
				Selector lever	P (Park) or N (Neutral) po- sition	Battery voltage
70 (O)	Ground	Inhibit relay output ¹	Input		Except P (Park) or N (Neutral) position	0 – 0.5 V
		Clutch interlock		Clutch pedal	Depressed	0 – 0.5 V
		switch ²		Ciuton pedal	Released	Battery voltage
71	Ground	Request sw (AS)	Input	Passenger door	ON (Pressed)	0 – 1.5 V
(GR)	Cround	signal	input	request switch	OFF (Not pressed)	Battery voltage

< ECU DIAGNOSIS INFORMATION >

Terminal No. (Wire color)		Description		4		Value
+	_	Signal name	Input/ Output		Condition	(Approx.)
72	Ground	Ignition relay (F/B)	Output	Push-button ig-	OFF or ACC	0 – 0.5 V
(R)	Ciouna	control	Output	nition switch	ON	Battery voltage
73	Ground	Ignition relay (IPDM	Output	Push-button ig-	OFF or ACC	Battery voltage
(V)	Ciouna	E/R) control	Output	nition switch	ON	0 – 0.5 V
74				Push-button ig-	Selector lever in P (Park) or N (Neutral) position	Battery voltage
(SB)	Ground	Starter relay control	Output	nition switch ON	Selector lever not in P (Park) or N (Neutral) posi- tion	0 – 0.5 V
75	Ground	Accessory relay	Output	Ignition Push-	OFF	0-0.5 V
(W)	Giouna	control	Output	button switch	ACC or ON	Battery voltage
78	Crownd	Intelligent Key warn-	Quitaut	Intelligent Key	Sounding	0 – 1.5 V
(W)	Ground	ing buzzer	Output	warning buzzer	Not sounding	Battery voltage
79		Push-button ignition	_	Push-button ig-	ON	5.5 V
(R)	Ground	switch illumination lamp	Output	nition switch il- lumination	OFF	0 – 1.5 V
80	Ground	ACC/ON indicator	Output	Push-button ig-	OFF	Battery voltage
(V)	Ground	lamp	Juipui	nition switch	ACC or ON	0 – 1.5 V
					Engine stopped, selector lever in P (Park) position	0 – 0.5 V
81 (G)	Ground	Starter output en- able input	Input	Push-button ig- nition switch ON	Engine stopped, selector lever not in P (Park) posi- tion	Battery voltage
					Engine running	Battery voltage
82	<u> </u>	6	6 / /	Interior room	OFF	Battery voltage
(BR)	Ground	Room lamp control	Output	lamp	ON	0 – 1.0 V
					Turn signal switch OFF	0 V
84 (W)	Ground	Flasher output (RIGHT)	Output	Push-button ig- nition switch ON	Turn signal switch RH	(V) 15 0 10 10 10 10 10 10 10 10 10
					Turn signal switch OFF	6.5 V 0 V
85 (Y)	Ground	Flasher output (LEFT)	Output	Push-button ig- nition switch ON	Turn signal switch LH	(V) 15 10 5 0 15 10 10 10 10 10 10 10 10 10 10
86	Ground	Door unlock output	Output	Front RH door	UNLOCK (Actuator is activated)	Battery voltage
	(SB) Ground (AS)	Output				

< ECU DIAGNOSIS INFORMATION >

	nal No.	Description				Value
(Wire +	color)	Signal name	Input/ Output		Condition	(Approx.)
88 (O)	Ground	Battery power sup- ply	Input	Push-button ig- nition switch	OFF	Battery voltage
89 (P)	Ground	Battery saver output	Output	Interior room lamp	Battery saver timed out Except battery saver timed out	0 V Battery voltage
90 (Y)	Ground	Battery power sup- ply	Input	Push-button ig- nition switch	OFF	Battery voltage
91 (G)	Ground	Power window pow- er supply (BATT)	Output	Push-button ig- nition switch	OFF	Battery voltage
92 (L)	Ground	Power window pow- er supply (RAP/IGN)	Output	Push-button ig- nition switch	ON	Battery voltage
93 (B)	Ground	Ground	Output	Push-button ig- nition switch	ON	0 V
94 (SB)	Ground	Door unlock output (DR)	Output	Front LH door	UNLOCK (Actuator is activated)	Battery voltage
()		× /			Actuator is not activated	0 V
95 (O)	Ground	Door lock output	Output	All doors	LOCK (Actuator is activat- ed)	Battery voltage
(-)					Actuator is not activated	0 V
96	Ground	Luggage lamp con-	Output	Trunk lid closed	Trunk room lamp OFF	Battery voltage
(LG)	Croana	trol	Output	Trunk lid open	Trunk room lamp ON	0 – 1 V
97 (GR)	Ground	Door switch (RL) signal		Rear door switch LH	OFF (rear LH door closed)	(V) 15 0 • 10ms • 10ms • 10ms • TXE4960J 7.0 - 8.0 V
					ON (rear LH door open)	0 V
98 (Y)	Ground	Door switch (DR) signal	Input	Front door switch LH	OFF (front LH door closed)	(V) 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
					ON (front LH door open)	0 V
99 (P)	Ground	Door switch (RR) signal	Input	Rear door switch RH	OFF (rear RH door closed)	(V) 15 10 5 0 •••••••••••••••••••••••••••••••
						7.0 - 8.0 V
					ON (rear RH door open)	0 V

[WITH INTELLIGENT KEY SYSTEM]

Terminal No. (Wire color)		Description	ı			Value		
(VVire +		Signal name	Input/ Output		Condition	(Approx.)		
100 (R)	Ground	Door switch (AS) signal	S) Input Front door closed)		(V) 15 10 5 0 10 10 10 10 10 10 10 10 10			
					ON (front RH door open)	0 V		
103 (V)	Ground	Trunk room lamp switch signal	Input	Trunk room lamp switch	OFF (trunk lid closed)	(V) 15 10 50 • • • 10ms • • • • 0 • • • • • • • • • • • • • • •		
					ON (trunk lid open)	0 V		
105 (G)	Ground	Door unlock output (RR, RL)	Output	Rear doors	UNLOCK (Actuator is activated)	Battery voltage		
(0)		(NN, KL)			Actuator is not activated	0 V		
107	Ground	Trunk open output	Output	Trunk opener request switch released	Trunk lid actuator idle	0 V		
(GR)	Cround		Culput	Trunk opener request switch depressed	Trunk lid actuator activat- ed	Battery voltage		
109	Ground	Request sw (trunk)	Input	Trunk opener	Depressed	0 – 1.5 V		
(SB)	Ground	signal	input	request switch	Released	Battery voltage		

¹: with CVT

< ECU DIAGNOSIS INFORMATION >

²: with M/T

Fail-safe

INFOID:000000009014216

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BCM performs fail-safe control when the following DTCs are detected.

CONSULT Display	Fail-safe	Cancellation
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 $ON \rightarrow OFF$
B2196: DONGLE NG	Inhibit engine cranking	Erase DTC
B2198: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC
B2557: VEHICLE SPEED	_	 When the following CAN signal status (vehicle speed signal) becomes consistent Vehicle speed signal (ABS) Vehicle speed signal (Meter)
B2601: SHIFT P SIGNAL	_	500 ms after the following signal reception status becomes consistentPark position switch signalP range signal (CAN)

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< ECU DIAGNOSIS INFORMATION >

CONSULT Display	Fail-safe	Cancellation
B2602: SHIFT P DIAG	_	 5 seconds after the following BCM recognition conditions are fulfilled Ignition switch is in the ON position Park position switch signal: P position (push selector button) or except P position (9 – 16 V) Vehicle speed: 4 km/h (2.5 MPH) or more
B2603: SHIFT POSITION	_	 500 ms after any of the following BCM recognition conditions are fulfilled Status 1 Ignition switch is in the ON position Park position switch signal: P position (push selector button) or except P position signal: Except P and N positions (0 – 1.5 V) Pr/N position switch is in the ON position Park position switch signal: P position (release selector button) (0 – 1.5 V) P/N position signal: P or N positions (9 – 16 V)
B2604: SHIFT PN DIAG CAN		 500 ms after any of the following BCM recognition conditions are fulfilled Status 1 Ignition switch is in the ON position P/N position signal: P or N position (9 – 16 V) Shift position signal (CAN): P or N position Status 2 Ignition switch is in the ON position P/N position signal: Except P and N positions (0 – 1.5 V) Shift position signal (CAN): Except P and N position
B2605: SHIFT PN DIAG IPDM	_	 500 ms after any of the following BCM recognition conditions are fulfilled Status 1 Ignition switch is in the ON position P/N position signal: Except P and N positions (0 – 1.5 V) Status 2 Ignition switch is in the ON position P/N position signal: P or N position (9 – 16 V)
B2608: STARTER RELAY	Inhibit engine cranking	 500 ms after the following signal communication status becomes consistent Starter motor relay control signal Starter relay status signal (CAN)
B260F: ECM CAN COMM	Inhibit engine cranking	When any of the following conditions are fulfilledIgnition switch changes to ACCReceives engine status signal (CAN)
B261F: ASCD CNCL/CLTCH SW	_	BCM detects clutch pedal position switch signal (CAN) status [ON (Clutch pedal is released)]
B2620: NEUTRAL SW	_	BCM detects neutral switch signal status [OFF (9 – 16 V: Control lever except NEUTRAL position)]
B26E8: CLUTCH SW		 When any of the following BCM recognition conditions are fulfilled Status 1 Clutch pedal position switch signal: ON (9 – 16 V: Clutch pedal is released) Clutch interlock switch signal: OFF (0 – 0.5 V: Clutch pedal is released) Status 2 Clutch pedal position switch signal: OFF (0 – 1.5 V: Clutch pedal is depressed) Clutch interlock switch signal: OFF (0 – 1.5 V: Clutch pedal is depressed)
B26F1: IGN RELAY OFF	Inhibit engine cranking	 When the following conditions are fulfilled Ignition switch ON signal (CAN: Transmitted from BCM): ON Ignition switch ON signal (CAN: Transmitted from IPDM E/R): ON
B26F2: IGN RELAY ON	Inhibit engine cranking	 When the following conditions are fulfilled Ignition switch ON signal (CAN: Transmitted from BCM): OFF Ignition switch ON signal (CAN: Transmitted from IPDM E/R): OFF

< ECU DIAGNOSIS INFORMATION >

CONSULT Display	Fail-safe	Cancellation	Δ
B26F3: START CONT RLY ON	Inhibit engine cranking	 When the following conditions are fulfilled Starter control relay signal (CAN: Transmitted from BCM): OFF Starter control relay signal (CAN: Transmitted from IPDM E/R): OFF 	A
B26F4: START CONT RLY OFF	Inhibit engine cranking	 When the following conditions are fulfilled Starter control relay signal (CAN: Transmitted from BCM): ON Starter control relay signal (CAN: Transmitted from IPDM E/R): ON 	В
B26F7: BCM	Inhibit engine cranking by Intelligent Key sys-	When room antenna and luggage room antenna functions normally	С

DTC Inspection Priority Chart

U0415: VDC CAN CIR2

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[WITH INTELLIGENT KEY SYSTEM]

When vehicle speed signal (Meter) (CAN) is received normally

If more than one DTC is displayed at the same time, perform inspections based on the following priority chart.

Priority	DTC	
1	B2562: LOW VOLTAGE	F
2	U1000: CAN COMM CIRCUITU1010: CONTROL UNIT (CAN)	
3	 B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM B2195: ANTI SCANNING B2196: DONGLE NG B2198: NATS ANTENNA AMP 	G
	 B2553: IGN POWER CIRCUIT B2555: STOP LAMP CIRCUIT B2556: ENG START SW B2557: VEHICLE SPEED B2601: SHIFT P SIGNAL 	1
	 B2602: SHIFT P DIAG B2603: SHIFT POSITION B2604: SHIFT PN DIAG CAN B2605: SHIFT PN DIAG IPDM 	J
	 B2608: STARTER RELAY B260F: ECM CAN COMM B2614: ACC RELAY REQ FB B2615: IGN RELAY3 REQ FB 	K
4	 B2616: IGN RELAY2 REQ FB B2618: IGN RELAY1 REQ FB B261A: ENGINE SW 	L
	 B261F: ASCD CNCL/CLTCH SW B2620: NEUTRAL SW B26E8: CLUTCH SW B26F1: IGN RELAY OFF 	BC
	 B26F2: IGN RELAY ON B26F3: START CONT RLY ON B26F4: START CONT RLY OFF B26F6: BCM 	Ν
	 B26F7: BCM B26FC: KEY REGISTRATION U0415: VDC CAN CIR2 	0
5	B2621: INSIDE ANTENNA 1 B2622: INSIDE ANTENNA 2 B2623: INSIDE ANTENNA 3	P

< ECU DIAGNOSIS INFORMATION >

Priority	DTC
6	 B2626: OUTSIDE 1 ANTENNA B2627: OUTSIDE 2 ANTENNA B2628: OUTSIDE 3 ANTENNA
7	 C1704: LOW PRESSURE FL C1705: LOW PRESSURE FR C1706: LOW PRESSURE RR C1707: LOW PRESSURE RL C1708: [NO DATA] FL C1709: [NO DATA] FR C1710: [NO DATA] RR C1711: [NO DATA] RL C1716: [PRESS DATA ERR] FL C1717: [PRESS DATA ERR] FR C1718: [PRESS DATA ERR] RR C1719: [PRESS DATA ERR] RL C1729: VHCL SPEED SIG ERR

DTC Index

NOTE:

The details of time display are as follows.

• CRNT: A malfunction is detected now.

• PAST: A malfunction was detected in the past.

IGN counter is displayed on Freeze Frame Data.

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warning lamp ON	Low tire pressure warning lamp ON	Reference page
No DTC is detected. further testing may be required.	_	_	_	—	_
U1000: CAN COMM CIRCUIT	—	—	_	—	BCS-64
U1010: CONTROL UNIT (CAN)	_	—	_	_	BCS-65
U0415: VDC CAN CIR2	×	—	×	—	BCS-66
B209F: STR CUT OFF OPEN	×	—	—	—	<u>SEC-120</u>
B20A0: STR CUT OFF SHORT	×	—	—	—	<u>SEC-122</u>
B2192: ID DISCORD BCM-ECM	×	—	—	—	<u>SEC-69</u>
B2193: CHAIN OF BCM-ECM	×	—	—	—	<u>SEC-70</u>
B2195: ANTI SCANNING	×	—	_	—	<u>SEC-71</u>
B2196: DONGLE NG	×	—	—	—	<u>SEC-72</u>
B2198: NATS ANTENNA AMP	×	—	_	—	<u>SEC-74</u>
B2555: STOP LAMP CIRCUIT	—	×	×	—	<u>SEC-77</u>
B2556: ENG START SW	—	×	×	—	<u>SEC-80</u>
B2557: VEHICLE SPEED	×	×	×	—	<u>SEC-82</u>
B2562: LOW VOLTAGE	—	×	—	—	BCS-67
B2601: SHIFT P SIGNAL	×	×	×	—	<u>SEC-83</u>
B2602: SHIFT P DIAG	×	×	×	—	<u>SEC-85</u>
B2603: SHIFT POSITION	×	×	×	—	<u>SEC-88</u>
B2604: SHIFT PN DIAG CAN	×	×	×	—	<u>SEC-92</u>
B2605: SHIFT PN DIAG IPDM	×	×	×	—	<u>SEC-95</u>
B2608: STARTER RELAY	×	×	×	—	<u>SEC-97</u>
B260F: ECM CAN COMM	×	×	×	—	<u>SEC-99</u>

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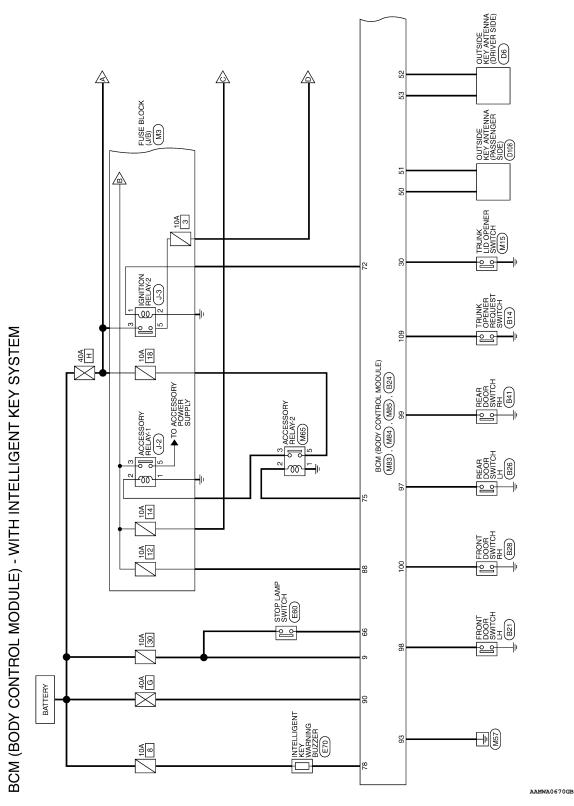
< ECU DIAGNOSIS INFORMATION >

CONSULT display	Fail-safe	Freeze Frame Data •Vehicle Speed •Odo/Trip Meter •Vehicle Condition	Intelligent Key warning lamp ON	Low tire pressure warning lamp ON	Reference page	A
B2614: ACC RELAY REQ FB	—	×	×	—	PCS-82	В
B2615: IGN RELAY3 REQ FB	—	×	×	—	PCS-84	-
B2616: IGN RELAY2 REQ FB	_	×	×	—	PCS-86	-
B2618: IGN RELAY1 REQ FB	—	×	×	—	PCS-88	С
B261A: ENGINE SW	—	×	×	—	PCS-90	-
B261F: ASCD CANCLE SW	×	×	×	—	<u>SEC-100</u>	D
B2620: NEUTRAL SW	×	×	×	—	<u>SEC-103</u>	
B2621: INSIDE ANTENNA 1	—	×	_	—	<u>DLK-72</u>	-
B2622: INSIDE ANTENNA 2	—	×	—	—	DLK-74	E
B2623: INSIDE ANTENNA 3	_	×	_	_	<u>DLK-76</u>	-
B2626: OUTSIDE 1 ANTENNA	—	×	—	—	DLK-78	F
B2627: OUTSIDE 2 ANTENNA	—	×	_	_	DLK-80	- 1
B2628: OUTSIDE 3 ANTENNA	—	×		_	DLK-82	_
B26E8: CLUTCH SW	×	×	×		<u>SEC-106</u>	G
B26F1: IGN RELAY OFF	×	×	×	_	PCS-92	_
B26F2: IGN RELAY ON	×	×	×		PCS-94	-
B26F3: START CONT RLY ON	×	×	×		<u>SEC-110</u>	- H
B26F4: START CONT RLY OFF	×	×	×		<u>SEC-111</u>	_
B26F6: BCM		×	×		PCS-96	-
B26F7: BCM	×	×	×	_	<u>SEC-112</u>	-
B26F8: BCM	_	×	×		<u>SEC-113</u>	-
B26F9: CRANK REQ CIR SHORT		×	×		<u>SEC-114</u>	J
B26FA: CRANK REQ CIR OPEN	—	×	×	_	<u>SEC-116</u>	_
B26FB: CLUTCH SWITCH	_	×	×	_	<u>SEC-118</u>	K
B26FC: KEY REGISTRATION		×	×		<u>SEC-119</u>	_
C1704: LOW PRESSURE FL	—	—	—	×		-
C1705: LOW PRESSURE FR	—	—	—	×		L
C1706: LOW PRESSURE RR	_	—	_	×	<u>WT-25</u>	
C1707: LOW PRESSURE RL	—	—		×		BCS
C1708: [NO DATA] FL	—	—	—	×		500
C1709: [NO DATA] FR	—	—		×		
C1710: [NO DATA] RR		—		×	<u>WT-26</u>	Ν
C1711: [NO DATA] RL	—	—	_	×		
C1716: [PRESS DATA ERR] FL		—	_	×		
C1717: [PRESS DATA ERR] FR		—		×		0
C1718: [PRESS DATA ERR] RR		—	_	×	<u>WT-29</u>	
C1719: [PRESS DATA ERR] RL		—	_	×		Р
C1729: VHCL SPEED SIG ERR	_	—	_	×	<u>WT-30</u>	_

WIRING DIAGRAM

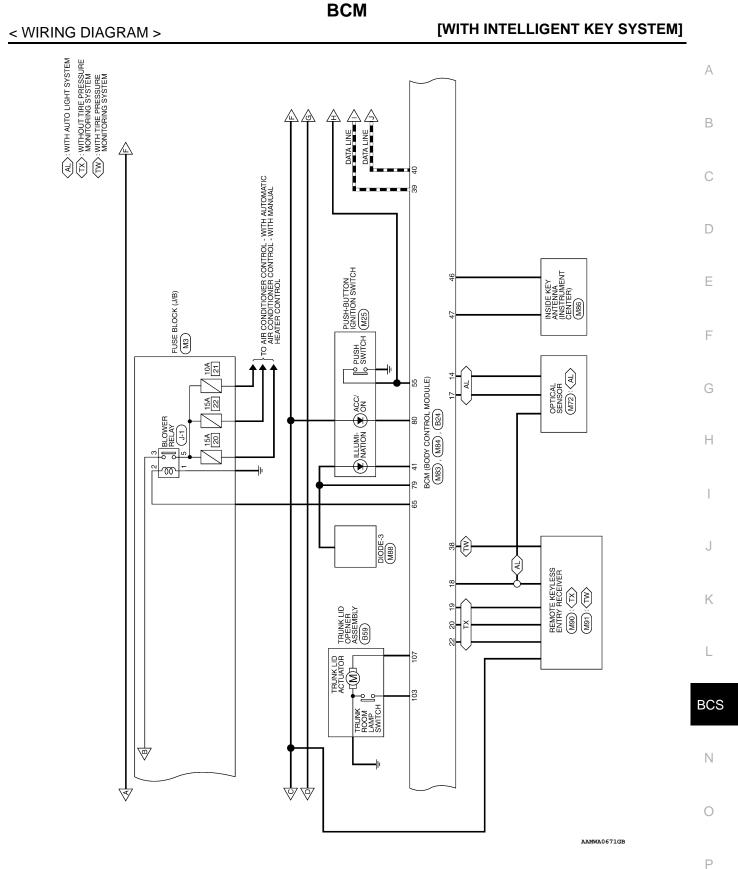
BCM

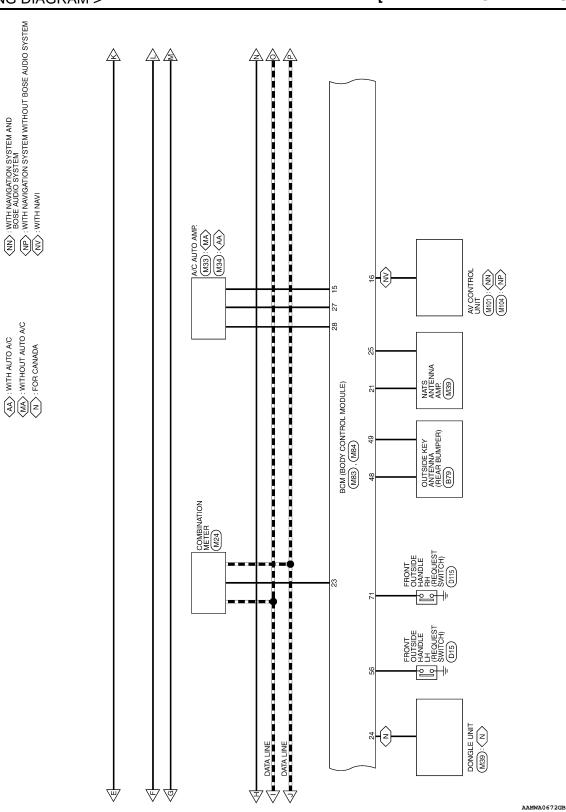
Wiring Diagram

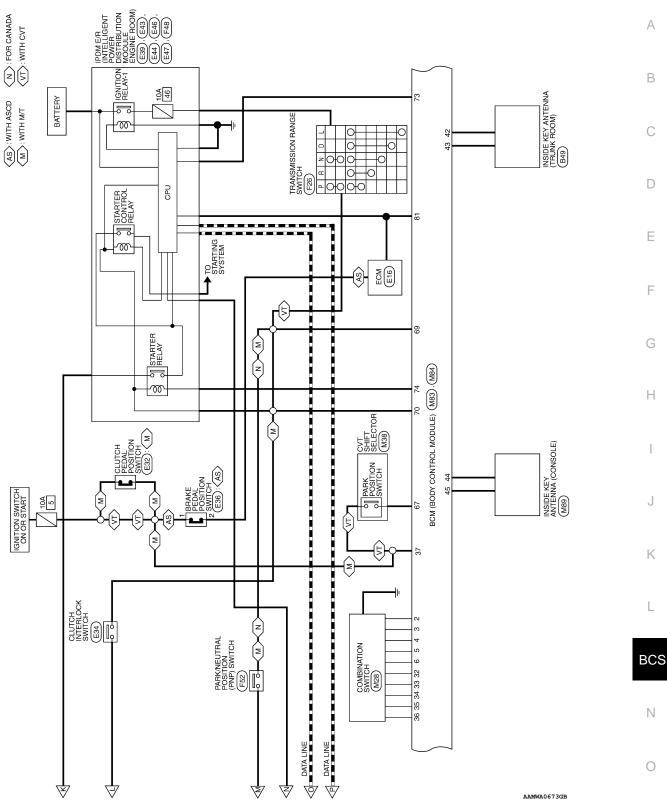


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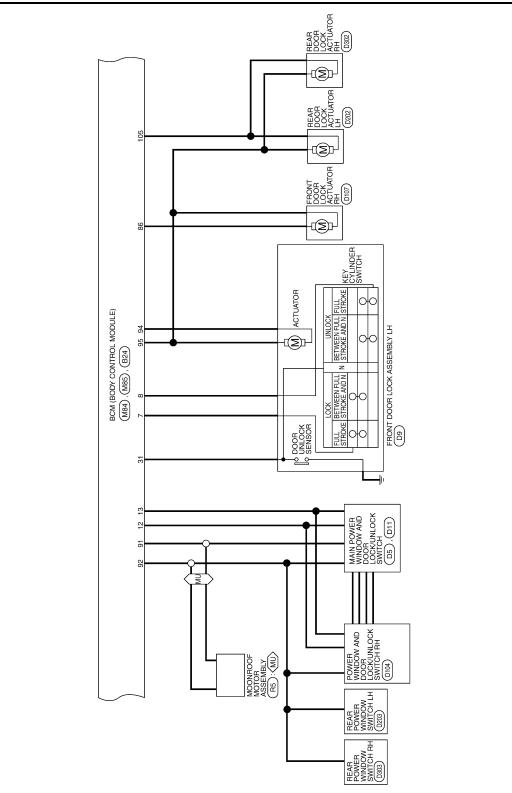






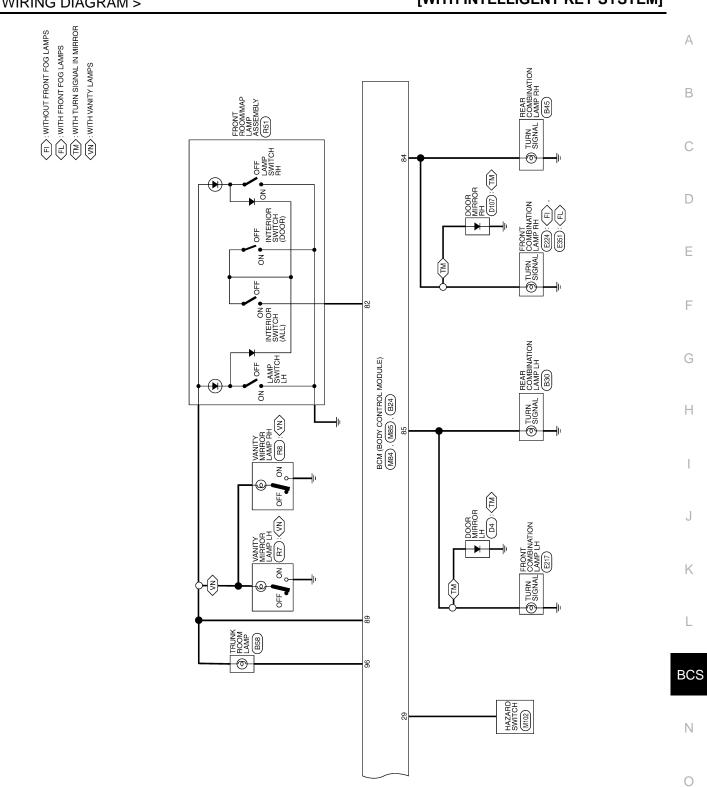
[WITH INTELLIGENT KEY SYSTEM]

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AAMWA0674GB

MUS: WITH MOONROOF



AAMWA0675GB

< WIRING DIAGRAM >

EY SYSTEM
ELLIGENT KE
S - WITH INTELLI
BCM (BODY CONTROL MODULE) CONNECTORS - WITH INTELLIGENT KEY SYS'
L MODULE) (
Y CONTRO
BCM (BOD

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

Revision: October 2012

	4 5	0 11 12 13	
	3	9	
5	2	8	
	1	7	
L	SH		

Signal Name	I	I	I	I	I	I	Ι	I	I	Ι	I	I
Color of Wire	σ	GR	BR	в	>	_	В	≻	SB	Μ	ГG	0
Terminal No.	-	2	5	9	7	8	6	10	11	12	13	14

BCS-58

AAMIA1357GB

2013 Sentra NAM

				⊢
	Connector No.	. M83		
N SWITCH	Connector Name		BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)	
	Connector Color	lor WHITE	ITE	
6 14	Æ			
ו	H.S.			
	60 59 58 57 56 80 79 78 77 76	55 54 53 5 75 74 73 7	52 51 50 49 48 47 46 45 44 43 42 41 72 71 70 69 68 67 66 65 64 63 62 61	
hal Name	Terminal No.	Color of Wire	Signal Name	
1	41	×	HIGH SIDE ENGINE SW ILLUMINATION LED	
1	42	ВВ	ROOM ANTENNA 3 -	
1	43	≻	ROOM ANTENNA 3 +	
1	44	æ	ROOM ANTENNA 2 -	
1	45	თ	ROOM ANTENNA 2 +	
I	46	GR	ROOM ANTENNA 1 -	
1	47	BR	ROOM ANTENNA 1 +	
1	48	щ	BACK DOOR ANTENNA -	
1	49	×	BACK DOOR ANTENNA +	
1	50	≻	DOOR ANTENNA (AS) +	
1	51	BR	DOOR ANTENNA (AS) -	
-	52	ГG	DOOR ANTENNA (DR) -	
	53	Р	DOOR ANTENNA (DR) +	

Signal Name	I	1	I	BLOWER FAN MOTOR RELAY OUTPUT	BRAKE SW2	AT DEVICE OUTPUT	I	SHIFT N, P	NEUTRAL SW	INHIBIT RLY OUTPUT	CLUTCH SW	REQUEST SW (AS)	IGN RELAY OUTPUT 2 (ELEC)	IGN RELAY OUTPUT 1 (USM)	STARTER RELAY OUTPUT	ACC RELAY INPUT	I	I	SMART KEYLESS BUZZER OUTPUT	LOW SIDE ENGINE START SW ILLUMINATION LED OUTPUT	POWER POSITION LED
Color of Wire	I	I	I	٩	>	SB	I	L	_	0	0	GR	В	V	SB	Μ	I	I	Μ	В	٧
Terminal No.	62	63	64	65	66	67	68	69	69	70	70	11	72	73	74	75	76	17	78	62	80

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Т Т Т

ENGINE START SW REQUEST SW (DR)

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54

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AUTO RETRACTABLE MIRROR OUTPUT

57

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58 59 61

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Terminal No		Signal Namo	Connector No.	M85	
18	Wire V	KEYLESS TUNER, AUTO LIGHT SENSOR GND	Connector Name		BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)
19	BR	KEYLESS TUNER POWER SUPPLY	Connector Color	or WHITE	ITE
20	LG	KEYLESS TUNER SIGNAL		89 88 87 8 95 94	89 87 86 85 84 83 82 81 95 94 93 92 91 90
2	C	IMMOBILIZER ONE WAY	0.1		
LZ.	۲.	CUMMUNICATION (CLOCK)	Terminal No.	Color of Wire	Signal Name
22	×	KEYLESS TUNER RSSI	81	J	STARTER OUTPUT
23	≻		82	aa	ENABLE INPUT ROOM LAMP OLITPLIT
24	SB	AUDIO DONGLE LINK (SERIAL)	83	Ξ I	
25	ГG	IMMOBILIZER TWO WAY COMMUNICATION	84	8	FLASHER OUTPUT (RIGHT)
26	I	1	85	۲	FLASHER OUTPUT
27	≻	AIR CON SW			(LEFI)
28	ГG	BLOWER FAN SW	86	SB	DOOR UNLOCK OUTPUT (AS)
29	SB	HAZARD SW	87	I	
30	_	TRUNK/OPENER SW	88	0	BATTERY (FUSE)
31	ш	DOOR LOCK STATUS SW	68	٩	BATTERY SAVER OUTPUT
32	LG	COMBINATION SW OUTPUT 5	06	≻	BATTERY (F/L)
33	7	COMBINATION SW OUTPUT 4	91	ი	POWER WINDOW POWER SUPPLY (BATTERY)
34	>	COMBINATION SW OUTPUT 3	92		
35	æ	COMBINATION SW OUTPUT 2	93	В	GND
36	SB	COMBINATION SW OUTPUT 1	94	SB	DOOR UNLOCK OUTPUT (DR)
37	٩	SHIFT P POSITION, PARKING POSITION SW (CVT)	95	ο	DOOR LOCK OUTPUT (ALL)
37	٩	ASCD CANCEL SW (CLUTCH CANCEL SW)			
38	ГG	INTELLIGENT TUNER			
39	Γ	CAN-H			
40	٩	CAN-L			

				19 20																			
	BCM (BODY CONTROL MODULE) (WITH INTELLIGENT KEY SYSTEM)	ACK		9 10 11 12 13 14 15 16 17 18 1	30 31 32 33 34 35 36 37 38	Signal Name	1	COMBINATION SW INPUT 5	COMBINATION SW INPUT 4	COMBINATION SW INPUT 3	COMBINATION SW INPUT 2	COMBINATION SW INPUT 1	KEY CYLINDER UNLOCK SW	KEY CYLINDER LOCK SW	BRAKE SW1	I	I	CENTRAL DOOR LOCK SW	CENTRAL DOOR UNLOCK SW	AUTO LIGHT SENSOR INPUT	REAR DEFOGGER SW	MR OUTPUT	AUTO LIGHT SENSOR POWER SUPPLY OUTPUT
M84		Ы	L	6 7 8	26 27 28	Color of Wire	I	_	GR	BR	0	N	_	>	æ	I	Т	GR	BR	SB	Ν	0	~
Connector No.	Connector Name	Connector Color	四 日 日	1 2 3 4 5	23 24 25	Terminal No.	-	N	e	4	5	9	2	ø	6	10	11	12	13	14	15	16	17

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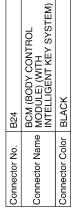
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Signal Name	LUGGAGE LAMP OUTPUT	DOOR SW (RL)	DOOR SW (DR)	DOOR SW (RR)	DOOR SW (AS)	I	I	TRUNK / SW	I	DOOR UNLOCK OUTPUT (RR, RL)	I	TRUNK / OPEN OUTPUT	I	REQUEST SW (TRUNK)	Ι
Color of Wire	ГG	GR	≻	٩	В	I	I	^	I	ŋ	I	GR	Ι	SB	I
erminal No.	96	97	98	66	100	101	102	103	104	105	106	107	108	109	110

BCM

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<pre> INSPECTION AND ADJUSTMENT < BASIC INSPECTION > [WITH INTELLIGENT KEY SYSTEM] </pre>	
BASIC INSPECTION	_
INSPECTION AND ADJUSTMENT	A
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM)	D
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Description	В
BEFORE REPLACEMENT	С
When replacing BCM, save or print current vehicle specification with CONSULT configuration before replace- ment.	D
NOTE: If "Before Replace ECU" cannot be used, use the "After Replace ECU" or "Manual Configuration" after replac- ing BCM.	
AFTER REPLACEMENT	E
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. 	F
 Configuration is different for each vehicle model. Confirm configuration of each vehicle model. When replacing BCM, perform the system initialization (NATS). 	G
ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Work Proce-	
dure INFOID:000000000014221	Н
1.SAVING VEHICLE SPECIFICATION	
CONSULT Enter "Re/Programming, Configuration" and perform "Before Replace ECU" to save or print current vehicle specification.	I
NOTE: If "Before Replace ECU" cannot be used, use the "After Replace ECU" or "Manual Configuration" after replac- ing BCM.	J
>> GO TO 2.	Κ
2.REPLACE BCM	
Replace BCM. Refer to BCS-74, "Removal and Installation".	L
>> GO TO 3.	
3. WRITING VEHICLE SPECIFICATION	BC
 CONSULT Enter "Re/Programming, Configuration". 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 <u>BCS-61, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM):</u> 	N
 Work Procedure". If "Before Replace ECU" operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to <u>BCS-61, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Work Procedure"</u>. 	P
>> GO TO 4.	
4.INITIALIZE BCM (NATS)	
Perform BCM initialization. (NATS)	

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

>> Work End. CONFIGURATION (BCM)

CONFIGURATION (BCM) : Description

INFOID:000000009014222

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 CON-SULT.

- 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:000000009014223

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.

 ${f 3.}$ perform "after replace ECU" or "manual configuration"

CONSULT

- 1. Select "After Replace ECU" or "Manual Configuration".
- Identify the correct model and configuration list. Refer to <u>BCS-63, "CONFIGURATION (BCM) : Configura-</u> tion list".
- 3. Confirm and/or change setting value for each item. CAUTION:

Thoroughly read and understand the vehicle specification. ECU control may not operate normally if the setting is not correct.

4. Select "Next". CAUTION:

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

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

>> GO TO 4.

4.OPERATION CHECK

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

Confirm that each function controlled by BCM operates normally.

>> Work End.

CONFIGURATION (BCM) : Configuration list

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CAUTION:

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

SETTIN	NG ITEM	
Items	Setting value	D
TRANSMISSION	AT with ABS ⇔ MT with ABS	•
BLOWE FAN SIG	$MODE1 \Leftrightarrow MODE2$	E

⇔: Items which confirm vehicle specifications

BCS

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DTC/CIRCUIT DIAGNOSIS U1000 CAN COMM CIRCUIT

Description

Refer to LAN-7, "CAN COMMUNICATION SYSTEM : System Description".

DTC Logic

DTC DETECTION LOGIC

NOTE:

U1000 can be set if a module harness was disconnected and reconnected, perhaps during a repair. Confirm that there are actual CAN diagnostic symptoms and a present DTC by performing the Self Diagnostic Result procedure.

CONSULT Display	DTC Detection Condition	Possible Cause
CAN COMM CIRCUIT [U1000]	When any listed module cannot communicate with CAN communication signal continuously for 2 seconds or more with ignition switch ON	In CAN communication system, any item (or items) of the following listed below is malfunc- tioning. • Transmission • Receiving (ECM) • Receiving (VDC/TCS/ABS) • Receiving (METER/M&A) • Receiving (TCM) • Receiving (IPDM E/R)

Diagnosis Procedure

1. PERFORM SELF DIAGNOSTIC RESULT

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

2. Check "SELF- DIAG RESULTS".

Is "CAN COMM CIRCUIT" displayed?

YES >> Perform CAN Diagnosis as described in DIAGNOSIS section of CONSULT Operation Manual.

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

INFOID:0000000009014226

INFOID:000000009014227

INFOID:000000009014225

[WITH INTELLIGENT KEY SYSTEM] < DTC/CIRCUIT DIAGNOSIS > U1010 CONTROL UNIT (CAN) А **DTC** Logic INFOID:000000009014228 DTC DETECTION LOGIC В CONSULT Display **DTC** Detection Condition **Possible Cause** С CONTROL UNIT (CAN) BCM detected internal CAN communication cir-BCM [U1010] cuit malfunction. **Diagnosis Procedure** INFOID:000000009014229 D **1.**REPLACE BCM When DTC "U1010" is detected, replace BCM. Е >> Replace BCM. Refer to BCS-74, "Removal and Installation". F Н Κ L BCS Ν 0 Ρ

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

U0415 VEHICLE SPEED

DTC Logic

INFOID:000000009014230

[WITH INTELLIGENT KEY SYSTEM]

DTC DETECTION LOGIC

NOTE:

- If DTC U0415 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to <u>BCS-64, "DTC Logic"</u>.
- If DTC U0415 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to <u>BCS-65, "DTC Logic"</u>.

CONSULT Display	DTC Detection Condition	Probable Cause
VDC CAN CIR2 [U0415]	When the vehicle speed signal received from the ABS actuator and electric unit (control unit) remains abnormal for 2 seconds or more.	ABS systemCombination meter systemCAN bus harness

DTC CONFIRMATION PROCEDURE

1. DTC CONFIRMATION

- 1. Erase the DTC.
- 2. Turn ignition switch OFF.
- Perform Self Diagnostic Result of BCM with CONSULT, after the ignition switch has been turned ON for 2 seconds or more.

Is any DTC detected?

- YES >> Refer to <u>BCS-50, "DTC Index"</u>.
- NO >> Inspection End.

Diagnosis Procedure

INFOID:000000009014231

1. ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) SELF DIAGNOSTIC RESULT

Perform Self Diagnostic Result of ABS with CONSULT. Refer to <u>BRC-31, "CONSULT Function (ABS)"</u>. Is any DTC detected?

YES >> Perform the trouble diagnosis related to the detected DTC. Refer to <u>BRC-43, "DTC Index"</u>. NO >> GO TO 2.

2. CHECK ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) POWER SUPPLY AND GROUND CIRCUIT

Check ABS actuator and electric unit (control unit) power and ground. Refer to <u>BRC-60. "Diagnosis Proce-dure"</u>.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

 $\mathbf{3.}$ COMBINATION METER SELF DIAGNOSTIC RESULT

Perform Self Diagnostic Result of METER M&A with CONSULT. Refer to <u>MWI-17, "CONSULT Function</u> (<u>METER/M&A)"</u>.

Is any DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to MWI-26, "DTC Index".
- NO >> Refer to <u>GI-43, "Intermittent Incident"</u>.

< DTC/CIRCUIT DIAGNOSIS >

B2562 LOW VOLTAGE

DTC Logic

INFOID:000000009014232

DTC DETECTION LOGIC

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CONSULT Display	DTC Detection Condition	Possible Cause
LOW VOLTAGE [B2562]	When the power supply voltage to BCM remains less than 8.8 V for 120 seconds or more	Harness or connector (power supply circuit)Vehicle battery
DTC CONFIRMATION	PROCEDURE	
1. DTC CONFIRMATION	1	
1. Erase DTC.		
 Turn ignition switch C Perform the Self Diag for 120 seconds or m 	gnostic Result of BCM with CONSULT, afte	er the ignition switch has been turned ON
Is any DTC detected?		
	<u>-67, "Diagnosis Procedure"</u> .	
I		
Diagnosis Procedur	Ð	INF0ID:000000009014233
1. CHECK BATTERY VO	DLTAGE	
Check battery voltage.		
Is battery voltage less that		
<u>CHG-17, "Wo</u>	ry and retest. Refer to <u>CHG-14. "Work Flow</u> ork Flow (Without EXP-800 NI or GR8-1200	
-		
Z. CHECK POWER SUP		
	PLY AND GROUND CIRCUIT	
	and ground circuit. Refer to BCS-68, "Diag	gnosis Procedure".
Is the inspection result no	and ground circuit. Refer to BCS-68, "Diag	gnosis Procedure".
Is the inspection result no YES >> GO TO 3.	and ground circuit. Refer to BCS-68, "Diag	gnosis Procedure".
Is the inspection result no YES >> GO TO 3.	/ and ground circuit. Refer to <u>BCS-68. "Diagonale stread </u>	gnosis Procedure".
Is the inspection result no YES >> GO TO 3. NO >> Repair or rep 3. BCM SELF DIAGNOS	/ and ground circuit. Refer to <u>BCS-68. "Diagonale stread </u>	
Is the inspection result not YES >> GO TO 3. NO >> Repair or rep 3. BCM SELF DIAGNOS Perform Self Diagnostic F BCM)". Is DTC B2562 CRNT?	v and ground circuit. Refer to <u>BCS-68. "Dia</u> <u>rmal?</u> lace harness or connectors. STIC RESULT Result of BCM with CONSULT. Refer to <u>BCS</u>	S-24, "BCM : CONSULT Function (BCM -
Is the inspection result no YES >> GO TO 3. NO >> Repair or rep 3. BCM SELF DIAGNOS Perform Self Diagnostic F <u>BCM)"</u> . Is DTC B2562 CRNT? YES >> Replace BCM	and ground circuit. Refer to <u>BCS-68. "Diagon rmal?</u> lace harness or connectors. STIC RESULT Result of BCM with CONSULT. Refer to <u>BCS</u> 1. Refer to <u>BCS-74, "Removal and Installati</u>	S-24, "BCM : CONSULT Function (BCM -
Is the inspection result no YES >> GO TO 3. NO >> Repair or rep 3. BCM SELF DIAGNOS Perform Self Diagnostic F <u>BCM)"</u> . Is DTC B2562 CRNT? YES >> Replace BCM	v and ground circuit. Refer to <u>BCS-68. "Dia</u> <u>rmal?</u> lace harness or connectors. STIC RESULT Result of BCM with CONSULT. Refer to <u>BCS</u>	S-24, "BCM : CONSULT Function (BCM -

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

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Regarding Wiring Diagram information, refer to BCS-52, "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.
88	Battery power supply	12 (10A)
90	Ballery power supply	G (40A)

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. Disconnect BCM connector M85.

2. Check voltage between BCM connector M85 and ground.

BCM		Ground	Voltogo	
Connector	Terminal	Giouna	Voltage	
M85	88		Battory voltago	
CSIM	90	_	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 M85 and ground.

B	CM	Ground	Continuity	
Connector	Terminal	Ground		
M85	93	—	Yes	

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair harness or connector.

COMBINATION SWITCH INPUT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

COMBINATION SWITCH INPUT CIRCUIT

Diagnosis Procedure

Regarding Wiring Diagram information, refer to BCS-52, "Wiring Diagram".

1.CHECK INPUT 1 - 5 CIRCUIT FOR OPEN

1. Turn ignition switch OFF.

- 2. Disconnect BCM and combination switch connectors.
- 3. Check continuity between BCM connector and combination switch connector.

Combination switch B signal Connector	BC	M	Combinati	Combination switch		
	Terminal	Connector	Terminal	Continuity		
INPUT 1		36		11		
INPUT 2		35		9	-	
INPUT 3	M84	34	M28	7	Yes	
INPUT 4		33		10	-	
INPUT 5		32	-	13		
INPUT 5	ult normal?	32		13		
YES >> GO TO 2						

NO >> Repair harness or connectors.

2.CHECK INPUT 1 - 5 CIRCUIT FOR SHORT

Check for continuity between BCM connector and ground.

Combination switch	BCM			Continuity	J
signal	Connector	Terminal	_	Continuity	
INPUT 1		36	_		
INPUT 2		35	Ground		K
INPUT 3	M84	34	_	No	
INPUT 4		33	_		L
INPUT 5		32			

Is the inspection result normal?

YES >> Repair harness or connectors.

3.CHECK BCM OUTPUT VOLTAGE

1. Connect BCM connector.

2. Check voltage between BCM connector and ground.

[WITH INTELLIGENT KEY SYSTEM]

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COMBINATION SWITCH INPUT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

BCM signal	(+)		(-)	Voltage
	BCM			voltage
	Connector	Terminal	_	
OUTPUT 1		36		
OUTPUT 2		35	Ground	
OUTPUT 3	M84	34		Refer to <u>BCS-29, "Refer-</u> ence Value".
OUTPUT 4		33		
OUTPUT 5		32		

Is the inspection result normal?

YES >> Replace combination switch.

NO >> Replace BCM. Refer to <u>BCS-74, "Removal and Installation"</u>.

COMBINATION SWITCH OUTPUT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

COMBINATION SWITCH OUTPUT CIRCUIT

Regarding Wiring Diagram information, refer to BCS-52, "Wiring Diagram".

1. CHECK OUTPUT 1 - 5 CIRCUIT FOR OPEN

1. Turn ignition switch OFF.

- 2. Disconnect BCM and combination switch connectors.
- 3. Check continuity between BCM connector and combination switch connector.

Combination switch signal Connector	BCM	N	Combinati	Combination switch		
	Terminal	Connector	Terminal	Continuity	Continuity	
OUTPUT 1		6		12		
OUTPUT 2	-	5		14		
OUTPUT 3	M84	4	M28	5	Yes	
OUTPUT 4	-	3		2		
OUTPUT 5	-	2		8	-	
s the inspection resu	ult normal?					_
YES >> GO TO 2 NO >> Repair h	2. arness or connect	ors				

2. CHECK OUTPUT 1 - 5 CIRCUIT FOR SHORT

Check for continuity between BCM connector and ground.

Combination switch	BCM			Continuity	J
signal	Connector	Terminal		Continuity	
OUTPUT 1		6	_		
OUTPUT 2		5	Ground		K
OUTPUT 3	M84	4		No	
OUTPUT 4		3			L
OUTPUT 5		2			

Is the inspection result normal?

YES >> Repair harness or connectors.

NO >> GO TO 3.

3.CHECK BCM INPUT SIGNAL

1. Connect BCM and combination switch connectors.

2. Turn ON any switch in the system that is malfunctioning.

3. Check voltage between BCM connector and ground.

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COMBINATION SWITCH OUTPUT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

	Terminals			
BCM signal	(+)		()	Voltage
DOW Signal	BCM			voltage
	Connector	Terminal		
INPUT 1		6		
INPUT 2	M84	5	Ground	
INPUT 3		4	*	Refer to <u>BCS-29, "Refer-</u> ence Value".
INPUT 4		3	*	
INPUT 5		2	*	

Is the inspection result normal?

Yes >> Replace BCM. Refer to <u>BCS-74, "Removal and Installation"</u>.

No >> Replace combination switch.

COMBINATION SWITCH SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

COMBINATION SWITCH SYSTEM SYMPTOMS

Symptom Table

- 1. Perform the data monitor of CONSULT to check for any malfunctioning item.
- 2. Check the malfunction combinations.

						[Data mo	nitor ite	em						-
Malfunction combination	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	AUTO LIGHT SW	FR FOG SW	-
А		×	×			×	×								-
В	×			×						×		×			-
С					×				×		×				-
D					×			×					×		-
E					×									×	-
F	×				×										-
G			×		×										-
Н		×		×									×		-
I							×				×	×		×	-
J						×		×	×	×					-
К		1	1				All I	tems	1		1				-
L		lf o	nly one	item is	detecte	d or the	item is	not ap	plicable	to the	combina	ations A	to K		-

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

Malfunction combination	Malfunctioning part	Repair or replace		
А	Combination switch INPUT 1 circuit		L	
В	Combination switch INPUT 2 circuit			
С	Combination switch INPUT 3 circuit	Inspect the combination switch input circuit applicable to the malfunctioning part. Refer to <u>BCS-69</u> , "Diagnosis Procedure".	BCS	
D	Combination switch INPUT 4 circuit	part. Refer to <u>DCS-09. Diagnosis Procedure</u> .		
Е	Combination switch INPUT 5 circuit			
F	Combination switch OUTPUT 1 circuit		Ν	
G	Combination switch OUTPUT 2 circuit			
Н	Combination switch OUTPUT 3 circuit	Inspect the combination switch output circuit applicable to the malfunction- ing part. Refer to <u>BCS-71, "Diagnosis Procedure"</u> .	\bigcirc	
I	Combination switch OUTPUT 4 circuit		0	
J	Combination switch OUTPUT 5 circuit			
К	BCM	Replace BCM. Refer to BCS-74, "Removal and Installation".	Ρ	
L	Combination switch	Replace the combination switch.		

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Malfunction item: ×

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< REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION

BCM

Removal and Installation

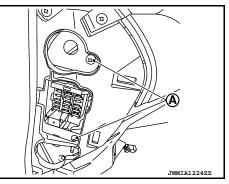
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NOTE:

Before replacing BCM, perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to <u>BCS-62, "CONFIGURATION (BCM) : Description"</u>.

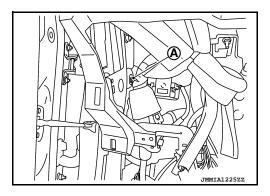
REMOVAL

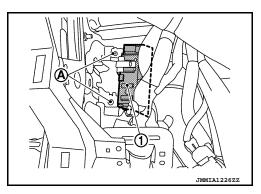
- 1. Disconnect the negative battery terminal. Refer to PG-52, "Removal and Installation".
- 2. Remove instrument lower panel LH and instrument side finisher LH. Refer to <u>IP-21. "Removal and Instal-</u> lation".
- 3. Remove fuse block (J/B) screws (A) and position (BCM) aside.



4. Remove harness clip (A).

5. Remove the screws (A) from the BCM (1).





6. Disconnect the harness connectors and remove the BCM.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

 Perform "CONFIGURATION (BCM)" when replacing BCM. Refer to <u>BCS-62, "CONFIGURATION (BCM)</u> <u>: Description"</u>

< REMOVAL AND INSTALLATION >

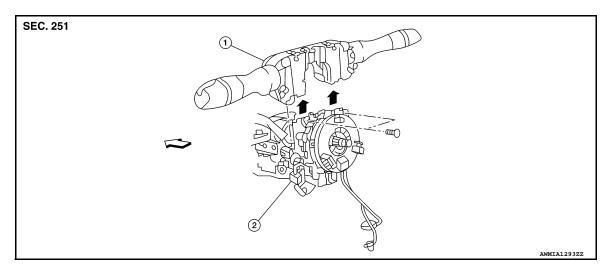
< REMOVAL AND INSTALLATION >		
Be sure to perform the system initialization (NATS) when <u>TIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCR</u>	M) : Work Procedure".	A
 When replacing BCM, if new BCM does not come with keyfor re-registered. 	bus attached, all existing keylobs must be	
		В
		С
		D
		Е
		F
		G
		Н
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< REMOVAL AND INSTALLATION >

COMBINATION SWITCH

Exploded View

INFOID:000000009020461



1. Combination switch 2. Combination switch harness connector <

NOTE:

Shown with the steering wheel removed for clarity only.

Removal and Installation

INFOID:000000009020462

REMOVAL

CAUTION:

- Before servicing, turn the ignition switch OFF, disconnect both battery terminals and wait at least three minutes.
- Do not use air or electric tools when removing or installing the combination switch.
- 1. Disconnect both the negative and positive battery terminals, then wait at least three minutes. Refer to <u>PG-50, "Removal and Installation (Battery)"</u>.
- 2. Remove the steering column covers. Refer to IP-16, "Removal and Installation".
- 3. Rotate steering wheel clockwise to access first combination switch bolt and remove.
- 4. Rotate steering wheel counter-clockwise to access second combination switch bolt and remove.
- 5. Disconnect the harness connector from the combination switch and remove.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- After the work is completed, make sure no system malfunction is detected by air bag warning lamp.
- In case a malfunction is detected by the air bag warning lamp, reset with the self-diagnosis function and delete the memory with CONSULT.
- If a malfunction is still detected after the above operation, perform self-diagnosis to repair malfunctions. Refer to <u>SRC-41</u>, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair <u>Requirement"</u>.

< PRECAUTION > PRECAUTION

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PRECAUTIONS

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

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. 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.

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

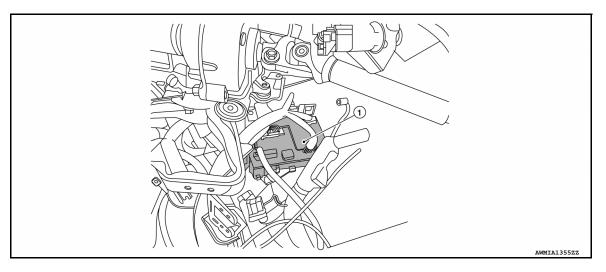
SYSTEM DESCRIPTION

COMPONENT PARTS

BODY CONTROL SYSTEM

BODY CONTROL SYSTEM : Component Parts Location

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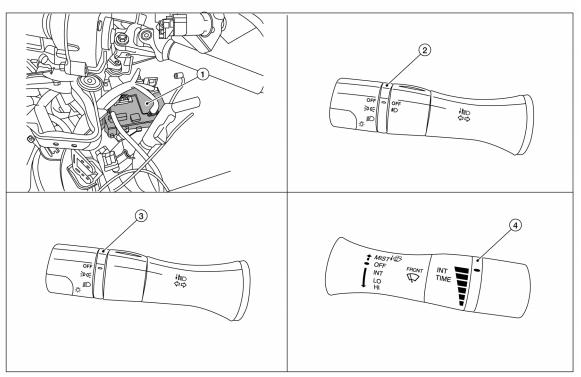


1. BCM (view with instrument panel removed)

COMBINATION SWITCH READING SYSTEM

COMBINATION SWITCH READING SYSTEM : Component Parts Location

INFOID:000000009014239



AWMIA1356ZZ

< SYSTEM DESCRIPTION >

COMPONENT PARTS

[WITHOUT INTELLIGENT KEY SYSTEM]

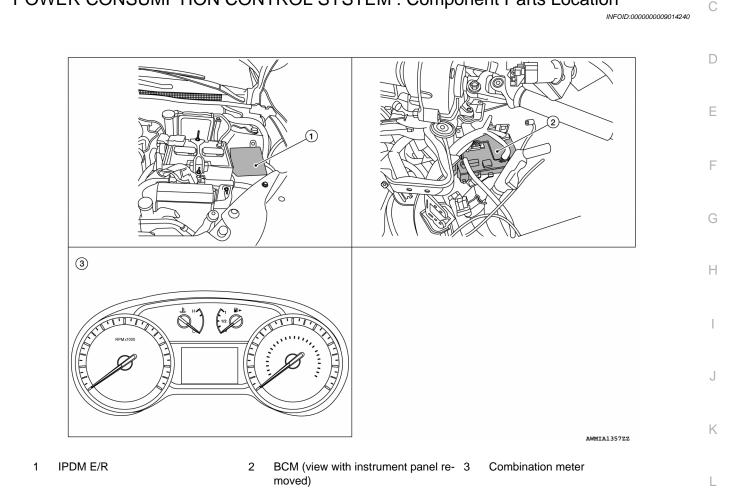
- 1. BCM (view with combination meter removed)
- 2. Combination switch (lighting and turn signal) (with fog lamps)
- 3. Combination switch (lighting and turn signal) (without fog lamps)

- Combination switch (wiper and 4. washer)

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POWER CONSUMPTION CONTROL SYSTEM **POWER CONSUMPTION CONTROL SYSTEM : Component Parts Location**



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SYSTEM BODY CONTROL SYSTEM

BODY CONTROL SYSTEM : System Description

INFOID:000000009014241

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 switch reading function for reading the status of combination switch (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 switch reading system	BCS-81, "COMBINATION SWITCH READING SYSTEM : System Diagram"
Signal buffer system	BCS-84, "SIGNAL BUFFER : System Diagram"
Power consumption control system	BCS-84. "POWER CONSUMPTION CONTROL SYSTEM : System Diagram"
Headlamp system	EXL-8, "HEADLAMP SYSTEM : System Description"
Daytime running light system	EXL-9, "DAYTIME RUNNING LIGHT SYSTEM : System Descrip- tion"
Turn signal and hazard warning lamp system	EXL-10, "TURN SIGNAL AND HAZARD WARNING LAMPS : Sys- tem Description"
Parking, license plate, side maker and tail lamps system	EXL-11, "PARKING, LICENSE PLATE AND TAIL LAMPS : System Description"
Exterior lamp battery saver system	EXL-8, "HEADLAMP SYSTEM : System Description"
Interior room lamp control system	INL-8, "INTERIOR ROOM LAMP CONTROL SYSTEM : System De- scription"
Interior room lamp battery saver system	INL-8, "INTERIOR ROOM LAMP CONTROL SYSTEM : System De- scription"
Front wiper and washer system	WW-8. "System Description"
Manual air conditioner system	HAC-120, "System Description"
Warning chime system	WCS-6, "WARNING CHIME SYSTEM : System Description"
Power door lock system	DLK-215, "POWER DOOR LOCK SYSTEM : System Description"
Nissan vehicle immobilizer system-NATS (NVIS)	SEC-143, "NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : System Description"
Rear window defogger system	DEF-6. "System Description"
Remote keyless entry system	DLK-216, "REMOTE KEYLESS ENTRY SYSTEM : System De- scription"
Power window system	PWC-8, "System Description"
Retained accessory power (RAP) system	BCS-96. "RETAINED PWR : CONSULT Function (BCM - RE- TAINED PWR)"

COMBINATION SWITCH READING SYSTEM

< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

	C-	ombination switch				
Lightin	g switch	Wiper & wa	asher	Output 1 signal	BCM	
				o uput roignui		
		R WIPER LOW FR WASHE	R	Output 2 signal	-	
				Output 3 signal		
	HEADLAMP 2		INT VOLUME 1	Output 4 signal	-	
			E 3	Output 5 signal	_	
	FR FOG			Input 1 signal		
·		'-	·	Input 2 signal	-	
				Input 3 signal		
				Input 4 signal	_	
				Input 5 signal	-	
*: Lighting switch 1	ST position			J		
					A	MIA1224GB
NE reads the statu s of each switch	is of the com	EADING SYST	ght, turn signal	, wiper and wa	asher) and	-
NE reads the statu s of each switch has a combina mum of 20 swite	is of the coml ion of 5 outpu ch states.	bination switch (lig t terminals (OUTP	ght, turn signal	, wiper and wa	asher) and	l recognize
NE reads the status s of each switch	is of the coml ion of 5 outpu ch states.	oination switch (lig t terminals (OUTP X	ght, turn signal	, wiper and wa	asher) and	l recognize
NE reads the statu s of each switch has a combina mum of 20 swite	is of the coml ion of 5 outpu ch states.	oination switch (lig t terminals (OUTP X	ght, turn signal PUT 1 - 5) and 5	, wiper and wa	asher) and	l recognize
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NE reads the statu s of each switch has a combina mum of 20 switch SINATION SWI	is of the coml i. ion of 5 outpu ch states. TCH MATRIX	bination switch (lig t terminals (OUTP X Combination	ght, turn signal PUT 1 - 5) and 5	, wiper and wa	asher) anc Is (INPUT	l recognize 1 - 5). It rea
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NE reads the statu s of each switch has a combina mum of 20 switch SINATION SWI	us of the coml i. ion of 5 output th states. TCH MATRIX	t terminals (OUTP Combination Wiper & wa Wiper & wa	ght, turn signal PUT 1 - 5) and 5 switch circuit	, wiper and wa 5 input termina	asher) anc Is (INPUT	l recognize 1 - 5). It rea
NE reads the status s of each switch has a combina mum of 20 switch SINATION SWI	us of the coml i. ion of 5 output th states. TCH MATRIX	t terminals (OUTP X Combination wiper & wa R WIPER LOW FR WASHE	ght, turn signal PUT 1 - 5) and 5 switch circuit	, wiper and wa 5 input termina Output 1 signal	asher) anc Is (INPUT	l recognize 1 - 5). It rea
NE reads the statu s of each switch has a combina mum of 20 switch INATION SWI	us of the coml i. ion of 5 output th states. TCH MATRIX	t terminals (OUTP Combination Wiper & wa Wiper & wa	ght, turn signal PUT 1 - 5) and 5 switch circuit	, wiper and wa 5 input termina 0utput 1 signal 0utput 2 signal 0utput 3 signal	asher) anc Is (INPUT	l recognize 1 - 5). It rea
NE reads the statu s of each switch has a combina mum of 20 switch INATION SWI	us of the coml i. ion of 5 output th states. TCH MATRIX	oination switch (lig t terminals (OUTP X Combination wiper & wa R Wiper Low FR WASHE R Wiper INT	ght, turn signal PUT 1 - 5) and 5 switch circuit	, wiper and wa 5 input termina 0utput 1 signal 0utput 2 signal	asher) anc Is (INPUT	I recognize
NE reads the statu s of each switch has a combina mum of 20 switch INATION SWI	is of the coml in of 5 output th states. TCH MATRIX	t terminals (OUTP Combination Wiper & wa Wiper & wa	ght, turn signal 2UT 1 - 5) and 5 switch circuit	, wiper and wa 5 input termina 0utput 1 signal 0utput 2 signal 0utput 3 signal	asher) anc Is (INPUT	l recognize 1 - 5). It rea
NE reads the statu s of each switch has a combina mum of 20 switch SINATION SWI	us of the coml i. ion of 5 output th states. TCH MATRIX	oination switch (lig t terminals (OUTP X Combination wiper & wa R Wiper Low FR WASHE R Wiper INT	ght, turn signal PUT 1 - 5) and 5 switch circuit	, wiper and wa 5 input termina Output 1 signal Output 2 signal Output 3 signal Output 4 signal Output 5 signal	BCM	I recognize
NE reads the statu s of each switch has a combina mum of 20 switch INATION SWI	Is of the coml i. ion of 5 output ch states. TCH MATRIX	oination switch (lig t terminals (OUTP X Combination wiper & wa R Wiper Low FR WASHE R Wiper INT	ght, turn signal 2UT 1 - 5) and 5 switch circuit	, wiper and wa 5 input termina 0utput 1 signal 0utput 2 signal 0utput 3 signal 0utput 4 signal	BCM	I recognize
NE reads the statu s of each switch has a combina mum of 20 switch INATION SWI	Is of the coml i. ion of 5 output ch states. TCH MATRIX	oination switch (lig t terminals (OUTP X Combination wiper & wa R Wiper Low FR WASHE R Wiper INT	ght, turn signal 2UT 1 - 5) and 5 switch circuit	, wiper and wa 5 input termina 0utput 1 signal 0utput 2 signal 0utput 3 signal 0utput 4 signal 0utput 5 signal Input 1 signal	BCM	I recognize
NE reads the statu s of each switch has a combina mum of 20 switch INATION SWI	Is of the coml i. ion of 5 output ch states. TCH MATRIX	oination switch (lig t terminals (OUTP X Combination wiper & wa R Wiper Low FR WASHE R Wiper INT	ght, turn signal 2UT 1 - 5) and 5 switch circuit	, wiper and wa 5 input termina 0utput 1 signal 0utput 2 signal 0utput 3 signal 0utput 4 signal 0utput 5 signal Input 1 signal Input 2 signal	BCM	I recognize

Combination switch INPUT-OUTPUT system list

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

COMBINATION SWITCH READING FUNCTION

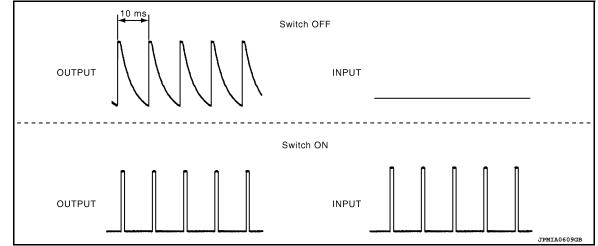
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< SYSTEM DESCRIPTION >

Description

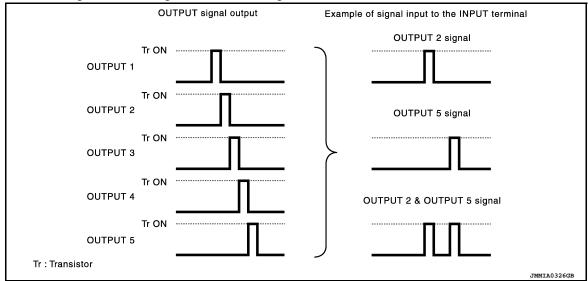
• BCM reads the status of the combination switch at 10 ms intervals normally.



NOTE:

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

- BCM operates as follows and judges the status of the combination switch.
- It operates the transistor on OUTPUT side in the following order: OUTPUT $1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5$, and outputs voltage waveform.
- The voltage waveform of OUTPUT corresponding to the formed circuit is input into the interface on INPUT side if any (1 or more) switches are ON.
- It reads this change of the voltage as the status signal of the combination switch.



Operation Example

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

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

< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

The circuit between OUTPUT 4 and INPUT 5 is formed when the TAIL LAMP switch is turned ON. А Combination switch BCM Lighting switch Wiper & washer Output 1 signal A FR WASHER В TURN LH TURN RH Output 2 signal **⊷ (B**) -ō 0-FR WIPER INT FR WIPER HI HEADLAMP Output 3 signal C HEADLAMP 2 HIBEAM -----Output 4 signal D TAIL LAMP Output 5 signal 1 **E**) 0 0 FR FOG D Input 1 signal I/F (1) Input 2 signal 2 I/F Input 3 signal I/F 3 Input 4 signal (4) I/F-Ε \rightarrow Input 5 signal 5 I/F *: Lighting switch 1ST position F • BCM detects the combination switch status signal "5D" when the signal of OUTPUT 4 is input to INPUT 5. BCM judges that the TAIL LAMP switch is ON when the signal "5D" is detected. Example 2: When some switches (TURN RH, TAIL LAMP) are turned ON • The circuits between OUTPUT 1 and INPUT 5 and between OUTPUT 4 and INPUT 5 are formed when the TURN RH switch and TAIL LAMP switch are turned ON. Н Combination switch BCM Lighting switch Wiper & washer Output 1 signal **(**A) FR WASHER FR WIPER LOW TURN LH TURN RH Output 2 signal ₽₩J ⊽₩ **(B**) FR WIPER INT FR WIPER HI HEADLAMP Output 3 signal © HIBEAM Output 4 signal D 04 TAIL LAMP Output 5 signal Ľ, (E) _____ FR FOG Input 1 signal Κ (1) I/F Input 2 signal -[/F]-2 Input 3 signal -[/F]-3 Input 4 signal (4) I/F Input 5 signal L -(5) I/F *: Lighting switch 1ST position BCS BCM detects the combination switch status signal "5AD" when the signals of OUTPUT 1 and OUTPUT 4 are input to INPUT 5. BCM judges that the TURN RH switch and TAIL LAMP switch are ON when the signal "5AD" is detected. Ν SIGNAL BUFFER

SYSTEM

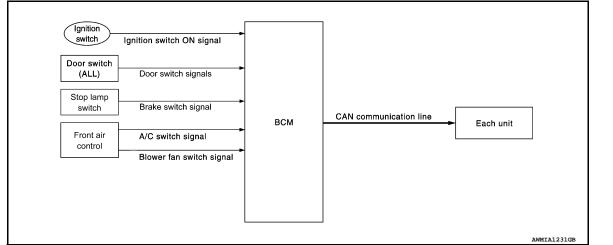
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< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

SIGNAL BUFFER : System Diagram



SIGNAL BUFFER : System Description

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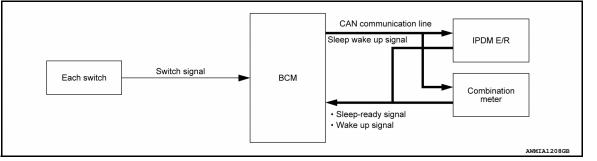
OUTLINE

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 com- munication.
Brake switch signal	Stop lamp switch	IPDM E/R (CAN)	Inputs the brake switch signal and transmits it with CAN com- munication.
Door switch signal	Any door switch	Combination meter (CAN) IPDM E/R (CAN)	Inputs the door switch signal and transmits it with CAN com- munication.
Blower fan ON signal			Inputs each signals, and trans-
A/C ON signal	Front air control	ECM (CAN)	mits the blower fan ON signal and A/C ON signal via CAN communication.

POWER CONSUMPTION CONTROL SYSTEM

POWER CONSUMPTION CONTROL SYSTEM : System Diagram



POWER CONSUMPTION CONTROL SYSTEM : System Description

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OUTLINE

• BCM incorporates a power saving control function that reduces the power consumption according to the vehicle status.

< SYSTEM DESCRIPTION >					
 BCM switches the status (control mode) by itself with request to each unit (IPDM E/R and combination me 	n the power saving control function. It performs the sleep eter) that operates with the ignition switch OFF.				
Normal mode (wake-up) - CAN communication is normally performed with othe - Each control with BCM is operating properly	er units				
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 reduces the power consumption with the followir The reading interval of the switches changes from 1	ng operation in the low power consumption mode.				
Sleep mode activation					
 BCM receives the sleep-ready signal (ready) from I tion. 					
 tion. BCM transmits the sleep wake up signal (sleep) to filled. Each unit stops the transmission of CAN communication sleep mode. 	each unit when all of the CAN sleep conditions are ful- ation with the sleep wake up signal. BCM is in CAN com- forms the low power consumption control when all of the				
 tion. BCM transmits the sleep wake up signal (sleep) to filled. Each unit stops the transmission of CAN communication sleep mode. BCM is in the low power consumption mode and per BCM sleep conditions are fulfilled with CAN sleep condition 	each unit when all of the CAN sleep conditions are ful- ation with the sleep wake up signal. BCM is in CAN com- forms the low power consumption control when all of the ondition.				
 tion. BCM transmits the sleep wake up signal (sleep) to filled. Each unit stops the transmission of CAN communication sleep mode. BCM is in the low power consumption mode and per BCM sleep conditions are fulfilled with CAN sleep conditions 	each unit when all of the CAN sleep conditions are ful- ation with the sleep wake up signal. BCM is in CAN com- forms the low power consumption control when all of the				

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.

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Wake-up condition

Wake-up condition

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

DIAGNOSIS SYSTEM (BCM) [WITHOUT INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION > DIAGNOSIS SYSTEM (BCM) COMMON ITEM

COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000009014248

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.	E
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.	F
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication is displayed.	

SYSTEM APPLICATION

BCM can perform the following functions.

				Direct [Diagnosti	ic Mode			Н
System	Sub System	ECU identification	Self Diagnostic Result	Data Monitor	Active Test	Work support	Configuration	CAN DIAG SUPPORT MNTR	J
Door lock	DOOR LOCK		×	×	×	×			
Rear window defogger	REAR DEFOGGER			×	×				
Warning chime	BUZZER			×	×				L
Interior room lamp timer	INT LAMP			×	×	×			
Remote keyless entry system	MULTI REMOTE ENT			×	×	×			
Exterior lamp	HEAD LAMP			×	×	×			BCS
Wiper and washer	WIPER			×	×	×			-
Turn signal and hazard warning lamps	FLASHER			×	×				Ν
Air conditioner	AIR CONDITIONER			×					
Combination switch	COMB SW			×					
BCM	BCM	×	×			×	×	×	0
Immobilizer	IMMU		×		×	×			
Interior room lamp battery saver	BATTERY SAVER			×	×	×			Р
Trunk open	TRUNK			×					
RAP system	RETAINED PWR			×		×			-
Signal buffer system	SIGNAL BUFFER			×					-
TPMS	AIR PRESSURE MONITOR		×	×	×	×			-
Panic alarm system	PANIC ALARM				×				

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< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM) [WITHOUT INTELLIGENT KEY SYSTEM]

DOOR LOCK

DOOR LOCK : CONSULT Function (BCM - DOOR LOCK)

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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 rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
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 UNLK/ALL LCK].

WORK SUPPORT

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

REAR DEFOGGER

REAR DEFOGGER : CONSULT Function (BCM - REAR DEFOGGER)

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DATA MONITOR

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

[WITHOUT INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description	A
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.	B
RR DEF TIME [On/Off]	Indicates condition of rear window defogger switch timer.	

ACTIVE TEST

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

BUZZER

BUZZER : CONSULT Function (BCM - BUZZER)

DATA MONITOR

Description
Indicates condition of ignition switch ON position.
Indicates condition of key switch.
Indicates condition of front door switch LH.
Indicates reverse switch signal received from TCM on CAN communication line.
Indicates condition of combination switch.
Indicates condition of front fog lamp switch.
Indicates condition of seat belt buckle switch.
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 [On/Off].	K
SEAT BELT WARN TEST	This test is able to check seat belt warning chime operation [On/Off].	
LIGHT WARN ALM	This test is able to check light warning chime operation [On/Off].	

INT LAMP

INT LAMP : CONSULT Function (BCM - INT LAMP)

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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.	0
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.	
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.	
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.	P
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.	
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.	

Revision: October 2012

< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description
TRNK/HAT MNTR [On/Off]	Indicates condition of trunk lid 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.
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 [On/Off].

WORK SUPPORT

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

* : Initial setting

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

INFOID:000000009014253

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.



< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description	
KEYLESS UNLOCK [On/Off]	Indicates condition of unlock signal from keyfob.	А
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.	
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.	 В
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.	
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.	
CDL LOCK SW [On/Off]	Indicates condition of lock signal from door lock and unlock switch.	С
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.	D

ACTIVE TEST

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

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 registeration is displayed.
HORN CHIRP SET	Off		Harn shirp function can be shanged in this mode
NORN CHIRP SEI	On*		Horn chirp function can be changed in this mode.
	MODE4*	Lock and Unlock	
HAZARD LAMP SET	MODE3	Lock Only	Hazard warning lamp function can be changed in this mode.
HAZARD LAWP SET	MODE2	Unlock Only	
	MODE1	OFF	
	MODE3	1.5 sec	
PANIC ALRM SET	MODE2	OFF	Panic alarm operation can be changed in this mode.
	MODE1*	0.5 sec	
	MODE7	5 min	
	MODE6	4 min	
AUTO LOCK SET	MODE5	3 min	
	MODE4	2 min	Auto locking function can be changed in this mode.
	MODE3*	1 min	
	MODE2	30 sec	
	MODE1	OFF	

*: Initial setting

HEADLAMP

HEADLAMP : CONSULT Function (BCM - HEAD LAMP)

INFOID:000000009014254

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.

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM) [WITHOUT INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description
HI BEAM SW [On/Off]	
HEAD LAMP SW 1 [On/Off]	
HEAD LAMP SW 2 [On/Off]	Indiantes condition of combination quitab
TAIL LAMP SW [On/Off]	Indicates condition of combination switch.
PASSING SW [On/Off]	
FR FOG SW [On/Off]	
DOOR SW-DR [On/Off]	Indicates condition of front door switch LH.
DOOR SW-AS [On/Off]	Indicates condition of front door switch RH.
DOOR SW-RR [On/Off]	Indicates condition of rear door switch RH.
DOOR SW-RL [On/Off]	Indicates condition of rear door switch LH.
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 park brake switch signal received from combination meter on CAN communica- tion line.
ENGINE RUN [On/Off]	Indicates engine run signal received from ECM on CAN communication line.
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 [On/Off].
HEAD LAMP	This test is able to check head lamp operation [Hi/Low/Off].
FR FOG LAMP	This test is able to check front fog lamp operation [On/Off].
ILL DIM SIGNAL	This test is able to check head lamp illumination dimming operation [On/Off].

WORK SUPPORT

Support Item	Setting		Description
BATTERY SAVER SET	On*		Exterior lamp battery saver function ON.
BATTERT SAVER SET	Off		Exterior lamp battery saver function OFF.
	MODE 8	180 sec.	
	MODE 7	150 sec.	
	MODE 6	120 sec.	-
ILL DELAY SET	MODE 4	60 sec.	Sets delay timer function operation time
ILL DELAT SET	MODE 5	90 sec.	(All doors closed).
	MODE 3	30 sec.	
	MODE 2	OFF	
	MODE 1*	45 sec.	

WIPER

WIPER : CONSULT Function (BCM - WIPER)

DATA MONITOR

INFOID:000000009014255

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

[WITHOUT INTELLIGENT KEY SYSTEM]

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]		
FR WIPER LOW [On/Off]		
FR WIPER INT [On/Off]	Indicates condition of wiper operation of combination switch.	
FR WASHER SW [On/Off]		
INT VOLUME [1 – 7]	Indicates condition of intermittent wiper operation of combination switch.	
FR WIPER STOP [On/Off]	Indicates front wiper 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/mph]	Indicates vehicle speed signal received from combination meter on CAN communication line.	

ACTIVE TEST

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

WORK SUPPORT

Support Item	Setting	Description	Н
WIPER SPEED SETTING	On	Front wiper intermittent time linked with vehicle speed and wiper dial position.	
WIFER OF LED SETTING	Off*	Front wiper intermittent time linked with wiper dial position.	I

* : Initial setting

FLASHER

FLASHER : CONSULT Function (BCM - FLASHER)

DATA MONITOR

Monitor Item [Unit]	Description	
HAZARD SW [On/Off]	Indicates condition of hazard switch.	
TURN SIGNAL R [On/Off]	Indicator condition of turn signal function of combination quitch	
TURN SIGNAL L [On/Off]	Indicates condition of turn signal function of combination switch.	BCS

ACTIVE TEST

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

AIR CONDITIONER

AIR CONDITIONER : CONSULT Function (BCM - AIR CONDITIONER)

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INFOID:000000009014256

INFOID:000000009014257

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.

< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]

Description

THERMO AMP [On/Off] Indicates condition of thermo amp. FR DEF SW [On/Off] Indicates condition of front defrost switch.

COMB SW

COMB SW : CONSULT Function (BCM - COMB SW)

INFOID:000000009014258

DATA MONITOR

Monitor Item [Unit]	Description
TURN SIGNAL R [On/Off]	Indicates condition of right turn signal operation of combination switch.
TURN SIGNAL L [On/Off]	Indicates condition of left turn signal operation of combination switch.
HI BEAM SW [On/Off]	Indicates condition of Hi beam switch operation of combination switch.
HEAD LAMP SW 1 [On/Off]	Indicates condition of head lamp switch 1 operation of combination switch.
HEAD LAMP SW 2 [On/Off]	Indicates condition of head lamp switch 2 operation of combination switch.
TAIL LAMP SW [On/Off]	Indicates condition of tail lamp switch operation of combination switch.
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 operation of combination switch.
FR WIPER HI [On/Off]	
FR WIPER LOW [On/Off]	Indicator condition of winer operation of combination switch
FR WIPER INT [On/Off]	Indicates condition of wiper operation of combination switch.
FR WASHER SW [On/Off]	
INT VOLUME [1 - 7]	Indicates condition of intermittent wiper operation of combination switch.

BCM

BCM : CONSULT Function (BCM - BCM)

ECU IDENTIFICATION

The BCM part number is displayed.

SELF DIAGNOSTIC RESULT

Refer to BCS-110, "DTC Index".

WORK SUPPORT

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

CONFIGURATION

Refer to BCS-117, "CONFIGURATION (BCM) : Description".

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

IMMU : CONSULT Function (BCM - IMMU)

SELF DIAGNOSTIC RESULT Refer to BCS-110, "DTC Index".

ACTIVE TEST

INFOID:000000009014260

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< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Test Item	Description					
THEFT IND	This test is able to check s	This test is able to check security indicator operation [On/Off].				
WORK SUPPORT						
Support Item	Setting	Description				
CONFIRM DONGLE ID	_	Dongle ID code can be read.				
BATTERY SAVER BATTERY SAVER : CO DATA MONITOR	ONSULT Function (BCM - BATTERY SAVER)	19014261			
Monitor Item [Unit]		Description				
IGN ON SW [On/Off]	Indicates condition of	ignition switch ON position.				
KEY ON SW [On/Off]	Indicates condition of	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	Indicates condition of front door switch RH.				
DOOR SW-RR [On/Off]	Indicates condition of	rear door switch RH.				
DOOR SW-RL [On/Off]	Indicates condition of	rear door switch LH.				
CDL LOCK SW [On/Off]	Indicates condition of	lock signal from door lock and unlock switch.				
CDL UNLOCK SW [On/Off]	Indicates condition of	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	Indicates condition of unlock signal from keyfob.				
TRNK/HAT MNTR [On/Off]	Indicates condition of	trunk lid 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.				
ACC SW [On/Off]	Indicates condition of	ignition switch ACC position.				
ACTIVE TEST						
Test item		Description				
BATTERY SAVER	This test is able to ch	eck battery saver operation [On/Off].				

WORK SUPPORT

Support Item	Set	ting	Description	-
ROOM LAMP TIMER SET	MODE 3*	10 min.	Sets interior room lamp battery saver timer operating time.	
	MODE 2	60 min.		N
	MODE 1	15 min.		

* : Initial setting

TRUNK

TRUNK : CONSULT Function (BCM - TRUNK)

DATA MONITOR

Monitor Item [Unit]	Description
KEY ON SW [On/Off]	Indicates condition of key switch.

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< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.
VEHICLE SPEED [km/h/mph]	Indicates vehicle speed signal received from combination meter on CAN communication line.

RETAINED PWR

RETAINED PWR : CONSULT Function (BCM - RETAINED PWR)

INFOID:000000009014263

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:000000009014264

DATA MONITOR

Monitor Item [Unit]	Description
BRAKE SW [On/Off]	Indicates condition of stop lamp switch signal received from ABS actuator and electric unit (control unit) on CAN communication line.

AIR PRESSURE MONITOR

AIR PRESSURE MONITOR : CONSULT Function (BCM - AIR PRESSURE MONI-TOR)

NOTE:

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

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

SELF DIAGNOSTIC RESULT

NOTE:

Before performing self diagnostic result, be sure to register the ID, or else the actual malfunction may be different from that displayed on CONSULT. Refer to <u>BCS-110</u>, "<u>DTC Index</u>".

DATA MONITOR

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

[WITHOUT INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	Description	ļ.
AIR PRESS FL [kPa, kg/cm ² or Psi]	Indicates air pressure of front LH tire.	
AIR PRESS FR [kPa, kg/cm ² or Psi]	Indicates air pressure of front RH tire.	F
AIR PRESS RR [kPa, kg/cm ² or Psi]	Indicates air pressure of rear RH tire.	L
AIR PRESS RL [kPa, kg/cm ² or Psi]	Indicates air pressure of rear LH tire.	
ID REGST FL1 [Done/Yet]	Indicates ID registration status of front LH transmitter.	(
ID REGST FR1 [Done/Yet]	Indicates ID registration status of front RH transmitter.	
ID REGST RR1 [Done/Yet]	Indicates ID registration status of rear RH transmitter.	[
ID REGST RL1 [Done/Yet]	Indicates ID registration status of rear LH transmitter.	
WARNING LAMP [Off/On]	Indicates condition of low tire pressure warning lamp in combination meter.	
BUZZER [Off/On]	Indicates condition of buzzer in combination meter.	E

ACTIVE TEST

Test Item	Description	
WARNING LAMP	This test is able to check tire pressure warning lamp operation [On/Off].	
ID REGIST WARNING	This test is able to check ID registration warning chime operation [On/Off].	G
FLASHER	This test is able to check turn signal lamp operation [Off/LH/RH].	

WORK SUPPORT

Support Item	Description	
ID READ	The registered ID number is displayed.	
ID REGIST	Refer to WT-22, "Description".	-

PANIC ALARM

PANIC ALARM : CONSULT Function (BCM - PANIC ALARM)

ACTIVE TEST

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

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ECU DIAGNOSIS INFORMATION BCM

Reference Value

INFOID:000000009014267

NOTE:

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

- Activate and display TPMS transmitter IDs
- Display tire pressure reported by the TPMS transmitter
- Read TPMS DTCs
- Register TPMS transmitter IDs
- Test remote keyless entry keyfob relative signal strength

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
ACC SW	Ignition switch OFF	Off
ACC SW	Ignition switch ACC or ON	On
ACC ON SW	Ignition switch OFF	Off
	Ignition switch ACC or ON	On
	A/C switch OFF	Off
AIR COND SW	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm ² , psi
BRAKE SW	Brake pedal released	Off
BRAKE SW	Brake pedal depressed	On
	Seat belt buckle unfastened	Off
BUCKLE SW	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
DUZZEN	Buzzer in combination meter ON	On
CDL LOCK SW	Door lock/unlock switch neutral	Off
CDL LOCK SW	Door lock/unlock switch LOCK	On
CDL UNLOCK SW	Door lock/unlock switch neutral	Off
CDL UNLOCK SW	Door lock/unlock switch UNLOCK	On
DOOR SW-AS	Passenger door closed	Off
DOOR 3W-AS	Passenger door open	On
DOOR SW-DR	Driver's door closed	Off
DOOR 3W-DR	Driver's door open	On
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door open	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door open	On
ENGINE RUN	Engine stopped	Off
	Engine running	On

< ECU DIAGNOSIS INFORMATION >

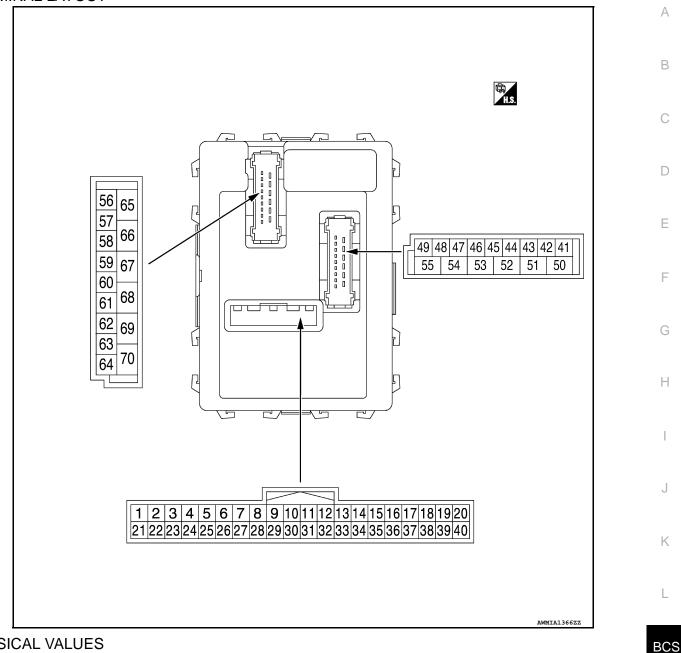
Monitor Item	Condition	Value/Status					
	ON SIG						
an on Sig	Blower fan ON	On					
R FOG SW	Front fog lamp switch OFF	Off					
R FOG 3W	Front fog lamp switch ON	On					
R WASHER SW	Front washer switch OFF	Off					
R WASHER SW	Front washer switch ON	On					
R WIPER LOW	Front wiper switch OFF	Off					
R WIFER LOW	Front wiper switch LO	On					
R WIPER HI	Front wiper switch OFF	Off					
	Front wiper switch HI	On					
R WIPER INT	Front wiper switch OFF	Off					
	Front wiper switch INT	On					
R WIPER STOP	Any position other than front wiper stop position	Off					
	Front wiper stop position	On					
IAZARD SW	Hazard switch OFF	Off					
	Hazard switch ON	On					
	Lighting switch OFF	Off					
HEAD LAMP SW 1	Lighting switch 1ST	On					
HEAD LAMP SW 2	Lighting switch OFF	Off					
	Lighting switch 2ND	On					
HI BEAM SW	Lighting switch OFF	Off					
	Lighting switch HI	On					
REGST FL1	ID registration of front left tire incomplete	Yet					
REGSTELI	ID registration of front left tire complete	Done					
	ID registration of front right tire incomplete	Yet					
0 REGST FR1	ID registration of front right tire complete	Done					
REGST RL1	ID registration of rear left tire incomplete	Yet					
REGUTAET	ID registration of rear left tire complete	Done					
D REGST RR1	ID registration of rear right tire incomplete	Yet					
	ID registration of rear right tire complete	Done					
GN ON SW	Ignition switch OFF or ACC	Off					
	Ignition switch ON	On					
GN SW CAN	Ignition switch OFF or ACC	Off					
	Ignition switch ON	On					
IT VOLUME	Intermittent wiper position	1 - 7					
EY CYL LK-SW	Key cylinder switch in N position	Off					
	Key cylinder switch in LOCK position	On					
EY CYL UN-SW	Key cylinder switch in N position	Off					
	Key cylinder switch in UNLOCK position	On					
EY ON SW	Key removed from ignition key cylinder	Off					
	Key inserted into ignition key cylinder	On					
	LOCK button of keyfob not pressed	Off					
EYLESS LOCK	LOCK button of keyfob pressed	On					

< ECU DIAGNOSIS INFORMATION >

Monitor Item	Condition	Value/Status
KEYLESS PANIC	PANIC button of keyfob not pressed	Off
KETLESS PAINIC	PANIC button of keyfob pressed	On
KEYLESS UNLOCK	UNLOCK button of keyfob not pressed	Off
KETLESS UNLOCK	UNLOCK button of keyfob pressed	On
DASSING SW	Other than lighting switch PASS	Off
PASSING SW	Lighting switch PASS	On
PKB SW	Parking brake released	Off
PKB SVV	Parking brake engaged	On
	Rear window defogger switch OFF	Off
REAR DEF SW	Rear window defogger switch ON	On
	Reverse switch OFF	Off
REVERSE SW CAN	Reverse switch ON	On
	Lighting switch OFF	Off
TAIL LAMP SW	Lighting switch 1ST	On
	A/C and fan ON switch OFF	Off
THERMO AMP	A/C and fan ON switch ON	On
	Trunk lid switch OFF	Off
TRNK OPEN MNTR	Trunk lid switch ON	On
	Trunk lid closed	Off
TRNK/HAT MNTR	Trunk lid open	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	mph, km/h
	Low tire pressure warning lamp in combination meter OFF	Off
WARNING LAMP	Low tire pressure warning lamp in combination meter ON	On

< ECU DIAGNOSIS INFORMATION >

TERMINAL LAYOUT



PHYSICAL VALUES

	nal No.	Description				Value	
(Wire +	e color)	Signal name	Input/ Output		Condition	(Approx.)	Ν
					OFF	0 V	
					TURN RH		0
					HEADLAMP 1	(V) 15	
2	Ground	Input 5 signal	Input	Combination	HI BEAM		P
(L)		input o oignai		switch	TAIL LAMP	0 → +10ms	I
						pkib4958j 1.0 V	

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

(Wire color) Signal name Input Output Input (Reprox) OFF OV 3 (GR) Ground Input 4 signal Input switch Input (Paper) OFF OV 4 (BR) Ground Input 3 signal Input switch Input (Paper) OFF OV 4 (BR) Ground Input 3 signal Input (Paper) Combination switch OFF OV 5 (O) Ground Input 2 signal Input (Paper) Combination switch OFF OV 5 (O) Ground Input 2 signal Input 2 signal Input (Paper) OFF OV 6 (W) Ground Input 2 signal Input (Paper) Combination switch OFF OV 6 (W) Ground Input 1 signal Input (Paper) Combination switch OFF OV 7 (L) Ground Input 1 signal Input (Paper) Combination switch OFF OV 7 (L) Ground Input 1 signal Input (Paper) Combination switch OFF OV		nal No.	Description				Value
$ \begin{pmatrix} 3 \\ (GR) \\ $		color)	Signal name			Condition	
						OFF	0 V
3 (GR) Ground Input 4 signal Input Combination switch HEADLAMP 2 FR FOG Input 4 signal Input 4 signal 4 (BR) Ground Input 3 signal Input 5 signal Input 6 OFF 0 V 5 (O) Ground Input 2 signal Input 7 The signal Input 7 OFF 0 V 6 (D) Ground Input 2 signal Input 7 Input 7 OFF 0 V 6 (O) Ground Input 2 signal Input 7 Input 7 OFF 0 V 6 (O) Ground Input 2 signal Input 7 Input 7 OFF 0 V 6 (W) Ground Input 1 signal Input 7 Input 7 OFF 0 V 7 (L) Ground Input 1 signal Input 7 Input 7 OFF 0 V 7 (L) Ground Key cylinder unlock Input 8 Key cylinder N position Input 9						TURN LH	
3 (GR) Ground Input 4 signal Input Combination switch HEADLAMP 2 FR FOG Input 4 signal Input 4 signal 4 (BR) Ground Input 3 signal Input 5 signal Input 6 OFF 0 V 5 (O) Ground Input 2 signal Input 7 The signal Input 7 OFF 0 V 6 (D) Ground Input 2 signal Input 7 Input 7 OFF 0 V 6 (O) Ground Input 2 signal Input 7 Input 7 OFF 0 V 6 (O) Ground Input 2 signal Input 7 Input 7 OFF 0 V 6 (W) Ground Input 1 signal Input 7 Input 7 OFF 0 V 7 (L) Ground Input 1 signal Input 7 Input 7 OFF 0 V 7 (L) Ground Key cylinder unlock Input 8 Key cylinder N position Input 9						PASSING	(V) 15
(GR) Ground input 4 signal input switch FR FOG 4 (BR) Ground Input 3 signal Input Combination switch OFF 0 V 5 (O) Ground Input 2 signal Input Combination switch OFF 0 V 6 (W) Ground Input 2 signal Input 2 signal Input Combination switch OFF 0 V 6 (W) Ground Input 1 signal Input 2 signal Input Combination switch OFF 0 V 6 (W) Ground Input 1 signal Input 1 signal Input Combination switch OFF 0 V 7 (L) Ground Key cylinder unlock sw signal Input Key cylinder Input N position OFF 0 V 7 (L) Ground Key cylinder unlock Input Key cylinder Input N position Input Input Key cylinder switch N position Input Inpu	3			1	Combination	HEADLAMP 2	
		Ground	Input 4 signal	Input			
$ \begin{array}{ c c c } \hline \begin{tabular}{ c c } \hline \hline \begin{tabular}{ c c } \hline \be$							→ →10ms
							PKIB4958J
$ \begin{pmatrix} 4 \\ (BR) \\ R \\ (BR) \\ (BR$							
$ \frac{4}{(BR)} Ground Input 3 signal Input Input 2 signal Input Input 2 signal Input Input 2 signal Input Input 2 signal Input Input Input Input I signal Input Input I signal Input Input I signal Input $						OFF	0 V
4 (BR) Ground Input 3 signal Input Combination switch FR WIPER INT (any intermittent position) Imput 1 signal 5 (O) Ground Input 2 signal Input 1 signal Input 1 signal OFF OV 6 (W) Ground Input 1 signal Input 1 signal Input 1 signal Input 1 signal OFF OV 7 (L) Ground Ground Input 1 signal Input 1 signal <td></td> <td></td> <td></td> <td></td> <td></td> <td>FR WIPER LOW</td> <td>(1)</td>						FR WIPER LOW	(1)
4 (BR) Ground Input 3 signal Input Combination switch FR WIPER INT (any intermittent position) 5 (any intermittent position) 6 (any intermittent position) 7 (any intermittent position) 7 (any intermittent position)<							
6 (W) Ground Input 2 signal Input Combination switch OFF 0 V 6 (W) Ground Input 1 signal Input Combination switch OFF 0 V 6 (W) Ground Input 1 signal Input Combination switch OFF 0 V 7 (L) Ground Key cylinder unlock sw signal Input Key cylinder unlock switch Input Key cylinder unlock switch Input Key cylinder unlock switch Input Key cylinder unlock switch N position Input Input Input Input Input Input Key cylinder unlock switch N position Input Input Input Input Key cylinder unlock switch N position Input Input Input Input Key cylinder unlock switch N position Input Input Input Input Input Key cylinder unlock switch N position Input Input Input Input Key cylinder switch N position Input Input Input Input Input Input Key cylinder switch N position Input Input Input Input Input </td <td></td> <td>Ground</td> <td>Input 3 signal</td> <td>Input</td> <td></td> <td></td> <td>5</td>		Ground	Input 3 signal	Input			5
$ \begin{bmatrix} 6 \\ (V) \end{bmatrix} \\ \begin{bmatrix} 1 \\ 10 \\ 10 \\ 10 \end{bmatrix} \\ \begin{bmatrix} 1 \\ 10 \\ 10 \\ 10 \end{bmatrix} \\ \begin{bmatrix} 1 \\ 10 \\ 10 \\ 10 \\ 10 \end{bmatrix} \\ \begin{bmatrix} 1 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \end{bmatrix} \\ \begin{bmatrix} 1 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \end{bmatrix} \\ \begin{bmatrix} 1 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 1$	(BR)				Switch		
$ \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix} \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix}$							→ ← I Ums ±
$ \begin{bmatrix} 5\\ (O) \end{bmatrix} Ground Input 2 signal \\ Input 2 signal \\ (O) \end{bmatrix} Input 2 signal \\ Input 2 signal \\ Input 3 signa$							
$ \begin{cases} 5 \\ (O) \\ (O)$						OFF	
5 (O) Ground Input 2 signal							
5 (O) Ground Input 2 signal Input Combination switch Wiper intermittent dial 5 Imput 1 signal Imput 1 signal Imput 1 signal OFF OV 6 (W) Ground Input 1 signal Input 1 signal Input 1 signal Imput 1 signal OFF OV 7 (L) Ground Key cylinder unlock sw signal Input Key cylinder switch N position N position Imput 1 signal							(V)
(O) Ground input 2 signal input switch Wiper intermittent dial 6 Imput 1 signal	5				Combination		
6 (W) Ground Input 1 signal Input Combination switch OFF 0V FR WIPER HI Wiper intermittent dial 1 Wiper intermittent dial 3 0V Wiper intermittent dial 3 Wiper intermittent dial 3 0V Wiper intermittent dial 4 Wiper intermittent dial 3 0V Wiper intermittent dial 3 Wiper intermittent dial 3 0V Wiper intermittent dial 6 Wiper intermittent dial 7 0V Viper intermittent dial 7 0V PKIB4558J 7 Ground Key cylinder unlock sw signal Input Key cylinder switch N position 8 Key cylinder unlock sw signal Input Key cylinder switch N position N position	(Ö)	Ground	Input 2 signal	Input			
$ \frac{6}{(W)} \begin{array}{ c c } \hline G \\ G \\ (W) \end{array} \begin{array}{ c c } \hline G \\ G \\ (W) \end{array} \begin{array}{ c c } \hline G \\ G \\ (W) \end{array} \begin{array}{ c c } \hline G \\ G \\ (W) \end{array} \begin{array}{ c } \hline G \\ G \\ (W) \end{array} \begin{array}{ c } \hline G \\ G \\ (W) \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} $ \\ \hline G \\ (W) \end{array} \end{array} \\ \hline G \\ (W) \end{array} \end{array} \begin{array}{ c } \hline G \\ (W) \end{array} \end{array} \begin{array}{ } \hline G \\ (W) \end{array} \end{array} \\ \hline G \\ \hline G \\ \end{array} \end{array} \begin{array}{ } G \\ (W) \end{array} \end{array} \\ \hline G \\ G \end{array} \end{array} \\ \hline G \\ \bigg{ } G \end{array} \end{array} \\ \hline G \\ G \end{array} \end{array} \\ \hline G \\ \bigg{ } G \end{array} \end{array} \\ \hline G \\ \bigg{ } G \end{array} \\ \hline G \\ \bigg{ } G \end{array} \\ \hline G \\ \bigg{ } G \end{array} \\ \hline G \\ G \end{array} \end{array} \\ \hline G \\ \bigg{ } G \end{array} \\ G \end{array} \end{array} \\ \hline G \\ \bigg{ } G \end{array} \\ \\ \\ G \end{array} \\ G \\ \bigg{ } G \\ \bigg{ } G \end{array} \\ G \\ \bigg{ } G \end{array} \\ G \\ \bigg{ } G \end{array} \\ G \\ \bigg{ } G \\ \bigg{ G \\ \bigg{ } G \end{array} \\ G \\ \bigg{ } G \\ \\ G \\ \bigg{ } G \\ \bigg{ } G \\ \bigg{ } G \\ \bigg{ G \\ \bigg{ } G \\							→ +10ms
6 (W) Ground Input 1 signal						Wiper intermittent dial 6	PKTB4958.T
6 (W) Ground Input 1 signal Input FR WIPER HI Wiper intermittent dial 1 Wiper intermittent dial 3 Wiper intermittent dial 3 Wiper intermittent dial 3 Wiper intermittent dial 7 Wiper intermittent dial 7 7 (L) Ground Key cylinder unlock sw signal Input Key cylinder switch N position							
6 (W) Ground Input 1 signal Input Combination switch Wiper intermittent dial 1 Wiper intermittent dial 3 Wiper intermittent dial 3 Wiper intermittent dial 6 Wiper intermittent dial 7 Input Rey cylinder unlock switch Input Key cylinder switch N position Input Input <td< td=""><td></td><td></td><td></td><td></td><td></td><td>OFF</td><td>0 V</td></td<>						OFF	0 V
6 (W) Ground Input 1 signal Input Combination switch Wiper intermittent dial 2 Wiper intermittent dial 3 Wiper intermittent dial 3 Wiper intermittent dial 7 Input Input 1 signal Input 1 sig						FR WIPER HI	
(W) Oround Input switch Wiper intermittent dial 3 Wiper intermittent dial 6 Wiper intermittent dial 7 Wiper intermittent dial 7 Viper intermittent dial 7 PRIBA958J 1.0 V Imput Key cylinder unlock sw signal Imput Key cylinder switch N position						Wiper intermittent dial 1	
(VV) Wiper intermittent dial 3 (VV) Wiper intermittent dial 3 Wiper intermittent dial 6 Wiper intermittent dial 7 Wiper intermittent dial 7 Viper intermittent dial 7	6	Ground	Input 1 signal	Input		Wiper intermittent dial 2	
Topological and the second of the second	(VV)			•	SWITCH	-	
7 (L) Ground Key cylinder unlock sw signal Input Key cylinder switch N position (V) 15 0 + 10ms 7 (L) Ground Key cylinder unlock sw signal Input Key cylinder switch N position (V) 15 0 + 10ms Input						Wiper intermittent dial 6	→ →10ms
7 (L) Ground Key cylinder unlock sw signal Input Key cylinder switch N position ^(V) ¹⁵ ¹⁰ ¹⁵ ¹⁰						Wiper intermittent dial 7	
7 (L) Ground Key cylinder unlock sw signal Input Key cylinder switch N position							1.0 V
7 (L) Ground Key cylinder unlock sw signal Input Key cylinder switch N position							(V)
7 (L) Ground Key cylinder unlock sw signal Input Key cylinder switch N position Input Input Key cylinder switch							
(L) Ground sw signal Input switch switch rx10ms 7.0 - 8.0 V	7		Kov ovlindor unlock		Kovovlindor	N position	5 NNNNNNNN 0
рківа9603 7.0 - 8.0 V	(L)	Ground		Input			
7.0 - 8.0 V			Sw Signal				
UNLOCK position 0 V							
						UNLOCK position	0 V

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< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal No. (Wire color)		Description		4	O a sa diti a sa	Value
(wire +	-	Signal name	Input/ Output		Condition	(Approx.)
8 (V)	Ground	Key cylinder lock sw signal	Input	Key cylinder switch	N position	(V) 15 0 • • 10ms PKIB4960J
						7.0 - 8.0 V
					LOCK position OFF (brake pedal re-	0 V
9	Ground	Brake sw signal	Input	Stop lamp	leased)	0 V
(R)	Liound		mpar	switch	ON (brake pedal de- pressed)	Battery voltage
10	Ground	Rear defogger sw	Input	Rear window	OFF	Battery voltage
(W)		signal	L	defogger switch	ON	0 V
11 (G)	Ground	ACC switch signal	Input	Ignition switch	OFF ACC or ON	0 V Battery voltage
12 (GR)	Ground	Central door lock sw signal	Input	Door lock and unlock switch	N position	(V) 15 10 5 10 10 ms JPHIA012GB
						1.0 - 1.5 V
13 (BR)	Ground	Central door unlock sw signal	Input	Door lock and unlock switch	LOCK position	0 V (V) 15 0 10 ms 10 ms JPMIA0012GB 1.0 - 1.5 V
					UNLOCK position	0 V
18 (V)	Ground	Keyless gnd signal	Input	Ignition switch O	N	0 V
(-)					Key inserted into ignition key cylinder	0 V
					Key removed from ignition key cylinder (Any door open)	5 V
19 (BR)	Ground	Keyless tuner power supply	Input	Ignition switch OFF	Key removed from ignition key cylinder (Any door closed)	(V) 6 4 2 0 •••0.2 s JPMIA0338JP

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< ECU DIAGNOSIS INFORMATION >

	nal No.	Description) (alua
(Wire +	color)	Signal name	Input/ Output		Condition	Value (Approx.)
					Key inserted into ignition key cylinder	0 V
20 (LG)	Ground	Keyless tuner signal	Input	Ignition switch OFF	Waiting	(V) 6 4 2 0 • • • • 1.0ms PIIB7728J
					Signal receiving	(V) 6 4 2 0 • • • 1.0ms • • • 1.0ms • • • • • • • • • • • • • • • • • • •
21 (P)	Ground	Immobilizer one way communication (clock) signal	Input/ Output	While waiting	Turn ignition switch ON.	Turn ignition switch ON: Pointer of tester should move.
					ON	0 V
23 (Y)	Ground	Security indicator output signal	Input	Security indica- tor	Blinking (Ignition switch OFF)	(V) 15 10 5 0 15 15 15 15 15 15 15 15 15 15
					OFF	Battery voltage
24 (SB)	Ground	Audio/dongle link (serial) signal	Input/ Output	Ignition switch O	FF.	5 V
25 (LG)	Ground	Immobilizer two way communication sig- nal	Input/ Output	While waiting	Turn ignition switch ON.	Turn ignition switch ON: Pointer of tester should move.
27	Ground	Air con sw signal	Input	A/C and fan ON	OFF	Battery voltage
(Y)			•	switch	ON	0 V
28 (LG)	Ground	Blower fan sw signal	Input	Fan switch	OFF I, II, III or IIII	0 V (V) 10 5 0 • 10ms • 10ms • 10ms • 7.0 - 8.0 V
29	Ground	Hazard sw signal	Input	Hazard switch	OFF	Battery voltage
(SB)		5			ON	0 – 1.5 V

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal No. (Wire color)		Description				Value	
+	-	Signal name	Input/ Output		Condition	(Approx.)	
					Depressed	0 V	
30 (L)	Ground	Trunk lid opener switch	Input	Trunk lid opener switch	Released	(V) 15 10 5 0 	
						JPMIA0012gb 1.0 - 1.5 V	
					OFF		
32	Ground	Output 5 signal	Output	Combination		+ + 10ms → + 10ms ГКТВ4960J 7.0 - 8.0 V	
(LG)	Ciouna		Output	switch	FR FOG		
					Wiper intermittent dial 1	(V) 15 10 5 0	
					Wiper intermittent dial 2		
					Wiper intermittent dial 6 Wiper intermittent dial 7	→ +10ms ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
						1.2 V	
					OFF	(V) 15 10 5 0 + 10ms + 10ms	
33 (Y) Ground	Ground	Output 4 signal	Output	Combination switch		^{рків4960j} 7.0 - 8.0 V	
				SWILLI	TAIL LAMP	(V) 15	
					Wiper intermittent dial 1 Wiper intermittent dial 5		
					Wiper intermittent dial 6	0 - ++10ms	
						pkib4958j 1.2 V	

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< ECU DIAGNOSIS INFORMATION >

Image: construction Imput/ Output Conduction (Approx.) 34 (V) Ground Output 3 signal Output Combination switch OFF Imput/ OFF Imput/ OFF Imput/ OFF 34 (V) Ground Output 3 signal Output Combination switch OFF Imput/ OFF Imput/ OFF Imput/ OFF Imput/ OFF Imput/ OFF 35 (R) Ground Output 2 signal Output Combination switch OFF Imput/ OFF Imput/ OFF Imput/ OFF 36 (R) Ground Output 2 signal Output Combination switch OFF Imput/ OFF Imput/ OFF Imput/ OFF Imput/ OFF 36 (R) Ground Output 2 signal Output Combination switch FR WIPER NT (Approx.) Imput/ OFF Imput/ OFF<		nal No.	Description				Value
34 (V) Ground Output 3 signal Output Combination switch OFF Image: second control of the second control			Signal name	Input/ Output		Condition	
(v) Ground Output 3 signal Output witch HEADLAMP 2 HI BEAM Wiper intermittent dial 1 Wiper intermittent dial 2 Wiper intermittent dial 3 Wiper intermittent dial 3 1.2 V result 0 output 2 signal Output 2 signal Output 2 signal Output 2 signal Output 3 signal Output 2 signal Output 2 signal Output 3 signal Output 2 signal Output 3 signal Output 4 signal Output 5 signal Output 6 signal Output 7 signal Output 7 signal Output 9 signal					Combination	OFF	10 0 → + 10ms PRIE4960J
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	(V)	Ground	Output 3 signal	Output		HI BEAM Wiper intermittent dial 1 Wiper intermittent dial 2	(V) 15 10 5 0 • +10ms • PKIB4958J
(K) FR WIPER HI FR WIPER HI FR WIPER INT (any intermittent position) PASSING HEADLAMP 1 Image: Structure of the structure of	35	Ground	Output 2 signal	Outout		OFF	10 0 → ← 10ms PRIE4960J
36 (SB) Ground Output 1 signal Output Combination switch OFF Image: Combination for the synthese of the synthes	(R)	Clouid		Cutput	switch	FR WIPER INT (any intermittent position)	0 transform from the stand produced transform from the
36 (SB) Ground Output 1 signal Output Combination switch OFF Iso 1000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						HEADLAMP 1	
(SB) Ground Output Fsignal Output switch FR WASHER FR WIPER LOW TURN LH TURN RH	36	Ground	Output 1 sized	Quécué		OFF	15 10 5 0 + 10ms PKIB4960J
TURN RH	(SB)	Ground	Oulpul I signal	Juipui			(V)
TURN RH							
1.2 V						TURN RH	

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal No. (Wire color)		Description				Value	
(vvire +	-	Signal name	Input/ Output		Condition	(Approx.)	
37	Ground	Key sw signal	Input	Ignition switch	Ignition key inserted into ignition key cylinder	Battery voltage	
(GR)	Ground	Ney sw signal	input	Ignition switch	Ignition key removed from ignition key cylinder	0 V	
38 (R)	Ground	lgn sw signal	Input	Ignition switch	OFF or ACC ON or START	0 V Battery voltage	
39 (L)	Ground	CAN-H signal	Input/ Output		_		
40 (P)	Ground	CAN-L signal	Input/ Output		_	_	
					Turn signal switch OFF	0 V	
41 (LG)	Ground	Flasher output (LEFT) signal	Output	Ignition switch ON	Turn signal switch LH	(V) 10 50 	
					Turn signal switch OFF	6.5 V (Turn signal lamp turn on: 9 - 16 V) 0 V	
42 (O)	Ground	Flasher output (RIGHT) signal	Output	Ignition switch ON	Turn signal switch RH	(V) 15 0 10 10 10 10 10 10 10 10 10	
45 (P)	Ground	Door sw (AS) signal	Input	Front door switch RH	OFF (front door RH closed)	6.5 V (Turn signal lamp turn on: 9 - 16 V)	
(R) Ground					ON (front door RH open)	+ 10ms рктв4960л 7.0 - 8.0 V 0 V	
46 (Y)	Ground	Door sw (DR) signal	Input	Front door switch LH	OFF (front door LH closed)	(V) 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
						7.0 - 8.0 V	

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< ECU DIAGNOSIS INFORMATION >

(Wire co	al No.	Description				Value
+	olor) –	Signal name	Input/ Output		Condition	(Approx.)
47 (GR)	Ground	Door sw (RL) signal	Input	Rear door switch LH	OFF (rear door LH closed)	(V) 15 10 5 0 + 10ms FKIE4960J 7.0 - 8.0 V
					ON (rear door LH open)	0 V
48 (P)	Ground	Door sw (RR) signal	Input	Rear door switch RH	OFF (rear door RH closed)	(V) 15 10 5 0 + 10ms FKIB4960J 7.0 - 8.0 V
					ON (rear door RH open)	0 V
50	Ground	Luggage lamp out-	Output	Trunk lid	Closed (trunk room lamp OFF)	Battery voltage
(LG)	Ground	put signal	Output	TUTK IId	Open (trunk room lamp ON)	0 – 1 V
51 (V)	Ground	Tr room lamp sw sig- nal	Input	Trunk lid switch	OFF (Trunk lid closed)	(V) 15 10 50 • • 10ms • • 10ms • • 10ms • • • • 10ms • • • • • • • • • • • • • • • • • • •
					ON (Trunk lid open)	0 V
55	Ground	Trunk open output	Output	Trunk opener request switch released	Trunk lid actuator idle	0 V
(GR)	Cround		Output	Trunk opener request switch depressed	Trunk lid actuator activat- ed	Battery voltage
60		Room lamp output		Interior room	OFF	Battery voltage
(BR) (Ground	signal	Output	lamp or map lamp	ON	Battery voltage
				-	DOOR	0 – 1 V
62 (P)	Ground	Battery saver output signal	Output		p battery saver activated p battery saver not activat-	0 V Battery voltage
63 (O)	Ground	Battery (FUSE)	Input	Ignition switch O	FF	Battery voltage
64	Ground	Door unlock output	Outout	Front door lock	Actuated to UNLOCK po- sition	Battery voltage
(SB)	Ground	(DR) signal	Output	actuator LH	Other than actuated to UNLOCK position	0 V

BCM

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

	nal No.	Description			Condition Value						
(Wire +	e color) _	Signal name	Input/ Output		Condition	(Approx.)	А				
65 (B)	Ground	Gnd	Output	Ignition switch O	N	0 V	В				
66	Ground	Door lock output sig-	Output	All door lock ac-	Actuated to LOCK posi- tion	Battery voltage					
(O)	Giouna	nal	Output	tuators	Other than actuated to LOCK position	0 V	С				
		_		Front door lock actuator RH,	Actuated to UNLOCK po- sition	Battery voltage	D				
67 (SB)	Ground	Door unlock output (AS, RR, RL) signal	Output	rear door lock actuator RH and rear door lock actuator LH	Other than actuated to UNLOCK position	0 V	E				
68 (L)	Ground	Power window pow- er supply (RAP) sig- nal	Output	Ignition switch O	N	Battery voltage	F				
69 (G)	Ground	Power window pow- er supply (BATT)	Output	Push-button ig- nition switch	OFF	Battery voltage					
70 (Y)	Ground	Battery (F/L)	Input	Ignition switch O	FF	Battery voltage	G				

Fail-safe

FAIL-SAFE CONTROL BY DTC

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

Display contents of CONSULT	Fail-safe	Cancellation	
B2190: NATS ANTENNA AMP	Inhibit engine cranking	Erase DTC	1
B2191: DIFFERENCE OF KEY	Inhibit engine cranking	Erase DTC	0
B2192: ID DISCORD BCM-ECM	Inhibit engine cranking	Erase DTC	
B2193: CHAIN OF BCM-ECM	Inhibit engine cranking	Erase DTC	K
B2195: ANTI SCANNING	Inhibit engine cranking	Ignition switch $ON \rightarrow OFF$	
B2196: DONGLE NG	Inhibit engine cranking	Erase DTC	

FAIL-SAFE CONTROL OF COMBINATION SWITCH READING FUNCTION CAUSED BY LOW POWER SUPPLY VOLTAGE

If voltage of battery power supply lower, BCM maintains combination switch reading to the status when input voltage is less than approximately 9 V.

NOTE:

When voltage of battery power supply is approximately 9 V or more, combination switch reading function returns to normal operation.

DTC Inspection Priority Chart

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

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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 B2196: DONGLE NG
3	 C1704: LOW PRESSURE FL C1705: LOW PRESSURE FR C1706: LOW PRESSURE RR C1707: LOW PRESSURE RL C1708: [NO DATA] FL C1709: [NO DATA] FR C1710: [NO DATA] RR C1711: [NO DATA] RL C1716: [PRESS DATA ERR] FL C1717: [PRESS DATA ERR] FR C1718: [PRESS DATA ERR] RR C1719: [PRESS DATA ERR] RL C1729: VHCL SPEED SIG ERR

DTC Index

NOTE:

Details of time display

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

CONSULT display	Fail-safe	Low tire pressure warning lamp ON	Reference
U1000: CAN COMM	_	_	BCS-119
U1010: CONTROL UNIT (CAN)	_	_	BCS-120
B2190: NATS ANTENNA AMP	×	_	<u>SEC-181</u>
B2191: DIFFERENCE OF KEY	×	_	<u>SEC-184</u>
B2192: ID DISCORD BCM-ECM	×	—	<u>SEC-185</u>
B2193: CHAIN OF BCM-ECM	×	—	<u>SEC-187</u>
B2195: ANTI SCANNING	×	_	<u>SEC-188</u>
B2196: DONGLE NG	×	_	<u>SEC-189</u>
C1704: LOW PRESSURE FL	_	×	
C1705: LOW PRESSURE FR	_	×	<u>WT-25</u>
C1706: LOW PRESSURE RR	_	×	<u>vv1-25</u>
C1707: LOW PRESSURE RL	_	×	
C1708: [NO DATA] FL	—	×	
C1709: [NO DATA] FR	—	×	<u>WT-26</u>
C1710: [NO DATA] RR	—	×	<u>vv1-20</u>
C1711: [NO DATA] RL		×	

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< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

	warning lamp ON	Reference	А
—	×		
—	×	WT 20	P
—	×	<u>W1-29</u>	D
—	×		
_	×	<u>WT-30</u>	С
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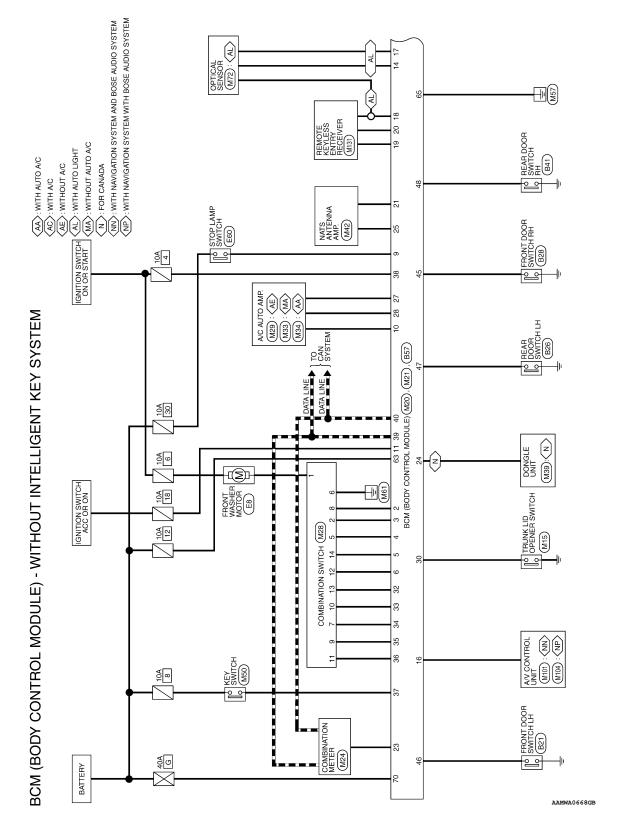
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WIRING DIAGRAM

BCM

Wiring Diagram

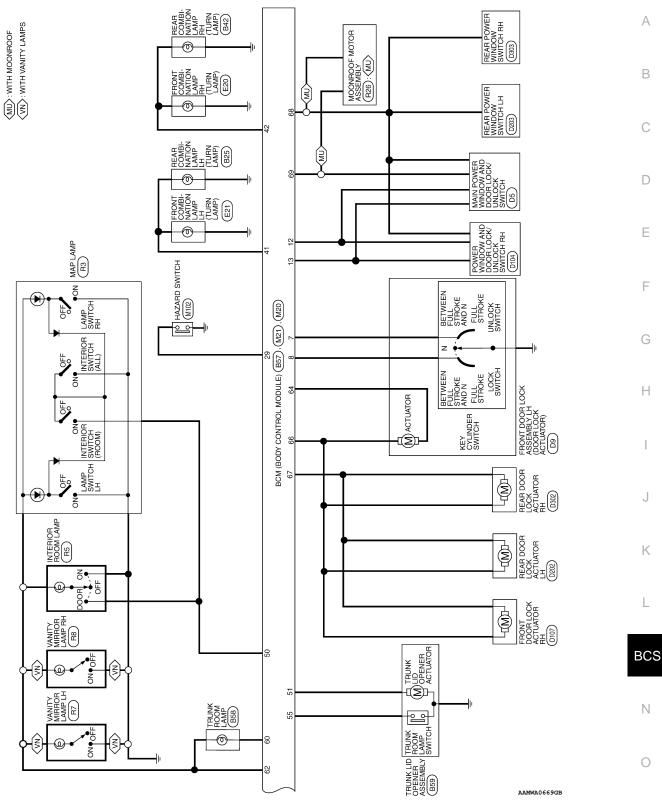


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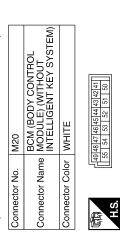
< WIRING DIAGRAM >

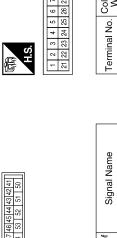
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Connector No.





Signal Name	I	I	I	I	ROOM LAMP OUTPUT	I	BATTERY SAVER OUTPUT	BATTERY (FUSE)	DOOR UNLOCK COMMON (DR)	GND	DOOR LOCK OUTPUT	DOOR UNLOCK OUTPUT (AS, RR, RL)	POWER WINDOW POWER SUPPLY (RAP)	POWER WINDOW POWER SUPPLY (BATTERY)	BATTERY (F/L)	
Color of Wire	I	1	I	I	ВВ	I	٩	0	SB	в	0	SB	L	9	≻	
Terminal No.	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	

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Terminal No.	18	19	20	21	22	23	24	5	C7	26	27	28	29	30	31	00	20	33
				19 20	39 40													
	BCM (BODY CONTROL MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)	ITE		9 10 11 12 13 14 15 16 17 18 1	29 30 31 32 33 34 35 36 37 38 3		Signal Name	I	INPUT 5	INPUT 4	INPUT 3	INPUT 2	INPUT 1	KEY CYLINDER UNLOCK SW	KEY CYLINDER	UNLOCK SW	BRAKE SW	REAR DEFOGGER SW
M21		or WHITE			26 27 28 2		Color of Wire	I	_	GR	ВВ	0	×	-		>	œ	8
Connector No.	Connector Name	Connector Color		H.S.	21 22 23 24 25 2		Terminal No.	Ţ	2	e	4	£	9	7	(β	6	10

	5	Wire	5
	18	^	KEYL LIGHT
	19	BR	KEYL
	20	LG	KEYL
	21	Ъ	IMMO WAY CC
6	22	Ι	
	23	٨	SECURI
	24	SB) YUDIO)
	25	ГG	IMMO WAY CC
	26	-	
	27	Y	AII
	28	LG	BLOV
	29	SB	۹H
	30	L	
	31	Ι	
	32	ГG	COME
	33	٢	COME
	34	٧	COME
	35	œ	COME
	36	SB	COME
	37	GR	
	38	н	
	39	L	
	40	٩	

BCM

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33		34	35	36	37	38	39	40	
DULE) (WITHOUT ELLIGENT KEY SYSTEM)	ΠE		9 10 11 12 13 14 15 16 17 18 19 20	31 32 33 34 35 36 37 38 39		Signal Name			INPUT 3	INPUT 2	INPUT 1	KEY CYLINDER UNLOCK SW	KEY CYLINDER UNLOCK SW	BRAKE SW	REAR DEFOGGER SW	ACC SW	CENTRAL DOOR LOCK SW	CENTRAL DOOR UNLOCK SW	AUTO LIGHT SENSOR			MR OUTPUT	AUTO LIGHT SENSOR POWER SUPPLY	OULPUI

al No.	Color of Wire	Signal Name
	>	KEYLESS & AUTO LIGHT SENSOR GND
	BR	KEYLESS TUNER POWER
	LG	KEYLESS TUNER SIGNAL
	٩	IMMOBILIZER ONE WAY COMMUNICATION (CLOCK)
	I	I
	~	SECURITY INDICATOR OUTPUT
	SB	AUDIO/DONGLE LINK (SERIAL)
	LG	IMMOBILIZER TWO WAY COMMUNICATION
	-	-
	≻	AIRCON SW
	ГG	BLOWER FAN SW
	SB	HAZARD SW
		TRUNK/BACK DOOR OPENER SW
	I	I
	LG	COMBINATION SW OUTPUT 5
	≻	COMBINATION SW OUTPUT 4
	>	COMBINATION SW OUTPUT 3
	ш	COMBINATION SW OUTPUT 2
	SB	COMBINATION SW OUTPUT 1
	GR	KEY SW
	æ	IGN SW
	_	CAN-H
	٩.	CAN-L

Revision: Octo	ber 20	12
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AAMIA1356GB

Connector No.	M28
Connector Nam	Connector Name COMBINATION SWITCH
Connector Color WHITE	r WHITE
SH	1 2 3 4 5 6
5	7 8 9 10 11 12 13 14

Connector Name MODULE) (WITHOUT INTELLIGENT KEY SYSTEM)

B57

Connector No.

Connector Color BLACK

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Signal Name	I	I	I	I	I	I	I	I	I	I	I	I	
Color of Wire	σ	GR	ВВ	ш	>	_	æ	۲	SB	N	ГG	0	
Terminal No. Color of Wire	-	2	5	9	7	8	б	10	11	12	13	14	

	Signal Name	FLASHER OUTPUT (LEFT)	FLASHER OUTPUT (RIGHT)	I	I	DOOR SW (AS)	DOOR SW (DR)	DOOR SW (RL)	DOOR SW (RR)	I	LUGGAGE LAMP OUTPUT	TRUNK	I	I	I	TRUNK OPEN OUTPUT
	Color of Wire	LG	0	I	I	ш	≻	GR	Р	I	LG	>	I	I	I	GR
H.S.	Terminal No.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

BASIC INSPECTION

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM)

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Description

INFOID:00000000000014272

BEFORE REPLACEMENT

When replacing BCM, save or print current vehicle specification with CONSULT configuration before replacement.

NOTE:

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

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-127, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT

- 1. Enter "Re/Programming, Configuration".
- 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 <u>BCS-117, "CONFIGURATION (BCM): Work Procedure"</u>.
- 3. If "Before Replace ECU" operation was not performed, select "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to <u>BCS-117, "CONFIGURATION (BCM) : Work Procedure"</u>.

>> GO TO 4.

4.INITIALIZE BCM (NATS)

Perform BCM initialization. (NATS)

>> Work End. CONFIGURATION (BCM)

INSPECTION AND ADJUSTMENT

INFOID:000000009014274

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CONFIGURATION (BCM) : Description

< BASIC INSPECTION >

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.
SULT. Complete the procedure of "Sele If you set incorrect "Select Save Configuration is different for eac	perform "Select Saved Data List" or "After Replace ECU" with CON- oct Saved Data List" or "After Replace ECU" in order. d Data List" or "After Replace ECU", incidents might occur. h vehicle model. Confirm configuration of each vehicle model. ta List" or "After Replace ECU" except for new BCM.
CONFIGURATION (BCM) : V	
.WRITING MODE SELECTION	
CONSULT elect "Reprogramming, Configuration	on" of BCM.
When writing saved data>>GO TO When writing manually>>GO TO 3.	2.
2.PERFORM "SAVED DATA LIST"	
CONSULT	on" window will display if "Before Replace ECU" was performed. Select st" and press "Confirm".
CONSULT Automatically "Operation Log Select applicable file from the "Save Data L >> Work End.	st" and press "Confirm".
CONSULT Automatically "Operation Log Select applicable file from the "Save Data L >> Work End. PERFORM "AFTER REPLACE E	
CONSULT Automatically "Operation Log Select applicable file from the "Save Data L >> Work End. CONSULT	st" and press "Confirm".
CONSULT Automatically "Operation Log Select pplicable file from the "Save Data L >> Work End. PERFORM "AFTER REPLACE E CONSULT Select "After Replace ECU" or "N dentify the correct model and co	st" and press "Confirm".
CONSULT Automatically "Operation Log Select pplicable file from the "Save Data L >> Work End. PERFORM "AFTER REPLACE E CONSULT Select "After Replace ECU" or "N Identify the correct model and co ration List".	st" and press "Confirm". CU" OR "MANUAL CONFIGURATION" Manual Configuration". onfiguration list. Refer to <u>BCS-118, "CONFIGURATION (BCM) : Configu-</u>
CONSULT Automatically "Operation Log Select pplicable file from the "Save Data Lines >> Work End. PERFORM "AFTER REPLACE E CONSULT Select "After Replace ECU" or "No. Identify the correct model and constant ration List". Confirm and/or change setting var CAUTION:	st" and press "Confirm". CU" OR "MANUAL CONFIGURATION" Manual Configuration". onfiguration list. Refer to <u>BCS-118, "CONFIGURATION (BCM) : Configu-</u> alue for each item.
CONSULT Automatically "Operation Log Select pplicable file from the "Save Data Li >> Work End. PERFORM "AFTER REPLACE E CONSULT Select "After Replace ECU" or "N Identify the correct model and constant Identify the correct model and constant Confirm and/or change setting variables CAUTION:	st" and press "Confirm". CU" OR "MANUAL CONFIGURATION" Manual Configuration". onfiguration list. Refer to <u>BCS-118, "CONFIGURATION (BCM) : Configu-</u>
CONSULT utomatically "Operation Log Select pplicable file from the "Save Data Li >> Work End. PERFORM "AFTER REPLACE E CONSULT Select "After Replace ECU" or "N Identify the correct model and car ration List". Confirm and/or change setting va CAUTION: Thoroughly read and understar if the setting is not correct. Select "Next".	st" and press "Confirm". CU" OR "MANUAL CONFIGURATION" Manual Configuration". onfiguration list. Refer to <u>BCS-118, "CONFIGURATION (BCM) : Configu-</u> alue for each item.
 CONSULT Automatically "Operation Log Select pplicable file from the "Save Data Lines and the "Save Data	st" and press "Confirm". CU" OR "MANUAL CONFIGURATION" Manual Configuration". onfiguration list. Refer to <u>BCS-118, "CONFIGURATION (BCM) : Configu-</u> alue for each item. alue for each item. Ind the vehicle specification. ECU control may not operate normally onfirm each setting value and press "OK" even if the indicated con- s same as the desirable configuration. If not, configuration which is vehicle model cannot be memorized.
 CONSULT Automatically "Operation Log Select applicable file from the "Save Data Lines and the "Save Data Lin	st" and press "Confirm". CU" OR "MANUAL CONFIGURATION" Manual Configuration". onfiguration list. Refer to <u>BCS-118, "CONFIGURATION (BCM) : Configu-</u> alue for each item. alue for each item. Ind the vehicle specification. ECU control may not operate normally onfirm each setting value and press "OK" even if the indicated con- s same as the desirable configuration. If not, configuration which is vehicle model cannot be memorized.
 CONSULT Automatically "Operation Log Select applicable file from the "Save Data Li	st" and press "Confirm". CU" OR "MANUAL CONFIGURATION" Manual Configuration". onfiguration list. Refer to <u>BCS-118, "CONFIGURATION (BCM) : Configu-</u> alue for each item. alue for each item. Ind the vehicle specification. ECU control may not operate normally onfirm each setting value and press "OK" even if the indicated con- s same as the desirable configuration. If not, configuration which is vehicle model cannot be memorized.

BCS-117

CONFIGURATION (BCM) : Configuration List

INFOID:000000009014276

CAUTION:

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

SETTING ITEM							
Items	Setting value						
CAN CONNECTION UNIT	$MODE4 \Leftrightarrow WITHOUT$						
BLOWE FAN SIG	MODE2						

 $\Leftrightarrow:$ Items which confirm vehicle specifications

Description

Refer to LAN-7, "CAN COMMUNICATION SYSTEM : System Description".

DTC Logic

DTC DETECTION LOGIC

< DTC/CIRCUIT DIAGNOSIS >

U1000 CAN COMM

DTC/CIRCUIT DIAGNOSIS

NOTE:

U1000 can be set if a module harness was disconnected and reconnected, perhaps during a repair. Confirm that there are actual CAN diagnostic symptoms and a present DTC by performing the Self Diagnostic Result procedure.

CONSULT Display	DTC Detection Condition	Possible Cause	
CAN COMM CIRCUIT [U1000]	When any listed module cannot communicate with CAN communication signal continuously for 2 seconds or more with ignition switch ON	In CAN communication system, any item (or items) of the following listed below is malfunc- tioning. • Transmission • Receiving (ECM) • Receiving (VDC/TCS/ABS) • Receiving (METER/M&A) • Receiving (TCM) • Receiving (IPDM E/R)	_

Diagnosis Procedure

1. PERFORM SELF DIAGNOSTIC RESULT

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

2. Check "SELF- DIAG RESULTS".

Is "CAN COMM CIRCUIT" displayed?

YES >> Perform CAN Diagnosis as described in DIAGNOSIS section of CONSULT Operation Manual.

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

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U1010 CONTROL UNIT (CAN) < DTC/CIRCUIT DIAGNOSIS > [WITHOUT]

U1010 CONTROL UNIT (CAN)

DTC Logic

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[WITHOUT INTELLIGENT KEY SYSTEM]

DTC DETECTION LOGIC

CONSULT Display	DTC Detection Condition	Possible Cause
CONTROL UNIT (CAN) [U1010]	BCM detected internal CAN communication cir- cuit malfunction.	ВСМ

Diagnosis Procedure

INFOID:000000009014281

1.REPLACE BCM

When DTC "U1010" is detected, replace BCM.

>> Replace BCM. Refer to <u>BCS-127, "Removal and Installation"</u>.

POWER SUPPLY AND GROUND CIRCUIT DSIS > [WITHOUT INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure							
Regarding Wiring Di	agram informatior	n, refer to <u>BCS-112.</u>	"Wiring Diagram'				
1.CHECK FUSES	AND FUSIBLE LIN	١K					
Check that the follow	ving fuses and fus	ible link are not blo	wn.				
Termina	No.	Signal n	ame	Fuses and fu	sible link No.		
63		Battery powe	ar oupply	12 (10A)			
70		Ballery powe		G (40A)			
11		Ignition switch	ACC or ON	18 (10A)			
NO >> GO TO 2.CHECK POWER 1. Turn ignition sw 2. Disconnect BCM	2. SUPPLY CIRCUI itch OFF. // connectors.	r fusible link after re T nector and ground.	pairing the affecte	ed circuit.			
BC	Μ			Ignition switch positio	n		
Connector	Terminal	Ground	OFF	ACC	ON		
M20	63 70		Battery voltage	Battery voltage	Battery voltage		
M21	11	_	0 V	Battery voltage	Battery voltage		
Is the inspection res							
YES >> GO TO	3.						

NO >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

Check continuity between BCM connector and ground.

BC	CM	Ground	Continuity	BCS	
Connector	Terminal	Giouna	Continuity		
M20	65	_	Yes	- NI	

Is the inspection result normal?

YES >> Inspection End.

NO >> Repair harness or connector.

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< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

COMBINATION SWITCH INPUT CIRCUIT

Diagnosis Procedure

INFOID:000000009014283

Regarding Wiring Diagram information, refer to BCS-112, "Wiring Diagram".

1.CHECK INPUT 1 - 5 CIRCUIT FOR OPEN

- 1. Turn ignition switch OFF.
- 2. Disconnect BCM and combination switch connectors.
- 3. Check continuity between BCM connector and combination switch connector.

Combination switch	BC	M	Combinati	Continuity		
signal	Connector	Terminal	Connector	Terminal	Continuity	
INPUT 1		36		11		
INPUT 2	-	35		9		
INPUT 3	M21	34	M28	7	Yes	
INPUT 4	-	33		10		
INPUT 5		32	-	13	-	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connectors.

2. CHECK INPUT 1 - 5 CIRCUIT FOR SHORT

Check for continuity between BCM connector and ground.

Combination switch	BC	М		Continuity
signal	Connector	Terminal		Continuity
INPUT 1		36		
INPUT 2	M21	35	Ground	No
INPUT 3		34		
INPUT 4		33		
INPUT 5	-	32		

Is the inspection result normal?

YES >> Repair harness or connectors.

NO >> GO TO 3.

3.CHECK BCM OUTPUT VOLTAGE

1. Connect BCM connector.

2. Check voltage between BCM connector and ground.

COMBINATION SWITCH INPUT CIRCUIT DSIS > [WITHOUT INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

		Terminals				
BCM signal	(+	+)	(-)) /= lt= ==		
	BC	CM		Voltage		
	Connector	Terminal				
OUTPUT 1		36				
OUTPUT 2		35	Ground			
OUTPUT 3	M21	34		Refer to <u>BCS-98, "Refer</u> ence Value".		
OUTPUT 4		33		<u></u> -		
OUTPUT 5		32				

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< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

COMBINATION SWITCH OUTPUT CIRCUIT

Diagnosis Procedure

INFOID:000000009014284

Regarding Wiring Diagram information, refer to BCS-112. "Wiring Diagram".

1.CHECK OUTPUT 1 - 5 CIRCUIT FOR OPEN

- 1. Turn ignition switch OFF.
- 2. Disconnect BCM and combination switch connectors.
- 3. Check continuity between BCM connector and combination switch connector.

Combination switch	BC	M	Combinati	Continuity		
signal	Connector	Terminal	Connector	Terminal	Continuity	
OUTPUT 1		6		12		
OUTPUT 2		5		14		
OUTPUT 3	M21	4	M28	5	Yes	
OUTPUT 4		3		2		
OUTPUT 5		2		8		

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connectors.

2. CHECK OUTPUT 1 - 5 CIRCUIT FOR SHORT

Check for continuity between BCM connector and ground.

Combination switch	B	СМ		Continuity		
signal	Connector	Terminal		Continuity		
OUTPUT 1		6				
OUTPUT 2		5	Ground			
OUTPUT 3	M21	4	_	No		
OUTPUT 4		3	_			
OUTPUT 5		2				

Is the inspection result normal?

YES >> Repair harness or connectors.

NO >> GO TO 3.

3.CHECK BCM INPUT SIGNAL

1. Connect BCM and combination switch connectors.

- 2. Turn ON any switch in the system that is malfunctioning.
- 3. Check voltage between BCM connector and ground.

COMBINATION SWITCH OUTPUT CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

BCM signal	(+)	(-)	Valtara	
	BCM			Voltage	
	Connector	Terminal			
INPUT 1		6			
INPUT 2		5	Ground		
INPUT 3	M21	4		Refer to <u>BCS-98, "Refer-</u> ence Value".	
INPUT 4		3		<u></u>	
INPUT 5		2			

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

Yes >> Replace BCM. Refer to <u>BCS-127, "Removal and Installation"</u>.

No >> Replace combination switch.

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COMBINATION SWITCH SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

COMBINATION SWITCH SYSTEM SYMPTOMS

Symptom Table

1. Perform the data monitor of CONSULT to check for any malfunctioning item.

2. Check the malfunction combinations.

	Data monitor item										
Malfunction combination	FR WIPER HI	FR WIPER LOW	FR WASHER SW	FR WIPER INT	TURN SIGNAL R	TURN SIGNAL L	TAIL LAMP SW	HI BEAM SW	HEAD LAMP SW 1	HEAD LAMP SW 2	PASSING SW
A		×	×		×	×					
В	×			×					×		×
С								×		×	
D							×				
E											
F	×										
G			×								
Н		×		х							
l						×				×	×
J					×		×	×	×		
К	All Items										
L	If only one item is detected or the item is not applicable to the combinations A to K										

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

Malfunction combination	Malfunctioning part	Repair or replace
А	Combination switch INPUT 1 circuit	
В	Combination switch INPUT 2 circuit	
С	Combination switch INPUT 3 circuit	Inspect the combination switch input circuit applicable to the malfunctioning part. Refer to <u>BCS-122</u> , "Diagnosis Procedure".
D	Combination switch INPUT 4 circuit	para noior to <u>Dee TEL, Dragnede recedure</u> .
E	Combination switch INPUT 5 circuit	
F	Combination switch OUTPUT 1 circuit	
G	Combination switch OUTPUT 2 circuit	
Н	Combination switch OUTPUT 3 circuit	Inspect the combination switch output circuit applicable to the malfunction- ing part. Refer to <u>BCS-124. "Diagnosis Procedure"</u> .
I	Combination switch OUTPUT 4 circuit	ing part folds to <u>DOD in in Diagnosis Freedoare</u> .
J	Combination switch OUTPUT 5 circuit	
К	ВСМ	Replace BCM. Refer to BCS-127, "Removal and Installation".
L	Combination switch	Replace the combination switch.

Malfunction item: ×

INFOID:000000009014285

[WITHOUT INTELLIGENT KEY SYSTEM]

BCM (BODY CONTROL MODULE) [WITHOUT INTELLIGENT KEY SYSTEM]

REMOVAL AND INSTALLATION

BCM (BODY CONTROL MODULE)

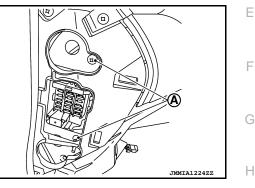
Removal and Installation

NOTE:

Before replacing BCM, perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to BCS-117, "CONFIGURATION (BCM) : Description".

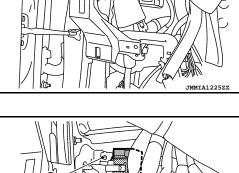
REMOVAL

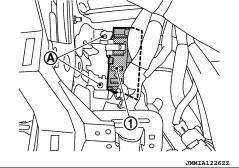
- Disconnect the negative battery terminal. Refer to <u>PG-52, "Removal and Installation"</u>.
- Remove instrument lower panel LH and instrument side finisher LH. Refer to IP-21, "Removal and Instal-2. lation".
- Remove fuse block (J/B) screws (A) and position (BCM) aside.



Remove harness clip (A). 4.

Remove the screws (A) from the BCM (1). 5.





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6. Disconnect the harness connectors and remove the BCM.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

• Perform "CONFIGURATION (BCM)" when replacing BCM. Refer to BCS-117, "CONFIGURATION (BCM) : Description"

BCM (BODY CONTROL MODULE)

< REMOVAL AND INSTALLATION >

- Be sure to perform the system initialization (NATS) when replacing BCM. Refer to <u>BCS-116, "ADDI-</u> <u>TIONAL SERVICE WHEN REPLACING CONTROL UNIT (BCM) : Work Procedure"</u>.
- When replacing BCM, if new BCM does not come with keyfobs attached, all existing keyfobs must be re-registered.

COMBINATION SWITCH [WITHOUT INTELLIGENT KEY SYSTEM]

< REMOVAL AND INSTALLATION >

COMBINATION SWITCH

Exploded View

INFOID:000000009020459

	В
SEC. 251	
2	F AWMIA1293ZZ
1. Combination switch 2. Combination switch harnes	ss connector <> Front
NOTE: Shown with the steering wheel removed for clarity only. Removal and Installation	INFOID:000000009020460
REMOVAL	
 CAUTION: Before servicing, turn the ignition switch OFF, distributed three minutes. Do not use air or electric tools when removing or i 	J
-	rminals, then wait at least three minutes. Refer to <u>PG-</u>
 Remove the steering column covers. Refer to <u>IP-16</u> Rotate steering wheel clockwise to access first com Rotate steering wheel counter-clockwise to access in the steering wheel counter-clockwise to access in	bination switch bolt and remove. second combination switch bolt and remove. $^{igsymbol{igsymbol{\square}}}$
INSTALLATION Installation is in the reverse order of removal.	BC
 CAUTION: After the work is completed, make sure no system In case a malfunction is detected by the air bag wa and delete the memory with CONSULT. 	arning lamp, reset with the self-diagnosis function
 If a malfunction is still detected after the above op tions. Refer to <u>SRC-41, "ADDITIONAL SERVICE WI</u> <u>Requirement"</u>. 	
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