

# SECTION **SEC**

## SECURITY CONTROL SYSTEM

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**SEC**

**PRECAUTION**

## PRECAUTIONS

## Precaution for Technicians Using Medical Electric

INFOID:000000007071869

## OPERATION PROHIBITION

**WARNING:**

- Parts with strong magnet is used in this vehicle.
- Technicians using a medical electric device such as pacemaker must never perform operation on the vehicle, as magnetic field can affect the device function by approaching to such parts.

## NORMAL CHARGE PRECAUTION

**WARNING:**

- If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.
- As radiated electromagnetic wave generated by on board charger at normal charge operation may effect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not enter the vehicle compartment (including luggage room) during normal charge operation.

## Precaution at telematics system operation

**WARNING:**

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of TCU might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), when using the service, etc.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator(ICD), the electromagnetic wave of TCU might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before TCU use.

## Precaution at intelligent key system operation

**WARNING:**

- If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.
- The electromagnetic wave of intelligent key might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), at door operation, at each request switch operation, or at engine starting.
- If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of intelligent key might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before intelligent key use.

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

INFOID:000000006991359

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

Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

**WARNING:**

**Always observe the following items for preventing accidental activation.**

# PRECAUTIONS

[WITH INTELLIGENT KEY SYSTEM]

< PRECAUTION >

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 "SRS AIR BAG".
- Never 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:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the power switch ON, never 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 power switch OFF, disconnect the 12V battery, and wait at least 3 minutes before performing any service.

## Precaution for Removing 12V Battery

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When removing the 12V battery, turn ON/OFF the power switch and check that the charging status indicator does not blink. The 12V battery must be removed within one hour after checking the indicator lamp.

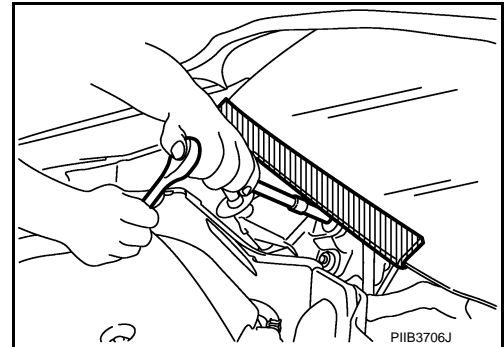
### NOTE:

- The automatic 12V battery charge control may start even when the power switch is in OFF state.
- The automatic 12V battery charge control does not start within approximately one hour when the power switch is turned ON/OFF.

## Precaution for Procedure without Cowl Top Cover

INFOID:000000006991360

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



## Point to Be Checked Before Starting Maintenance Work

INFOID:000000007079440

The high voltage system may start automatically. It is required to check that the timer air conditioner and timer charge (during EVSE connection) are not set before starting maintenance work.

### NOTE:

If the timer air conditioner or timer charge (during EVSE connection) is set, the high voltage system starts automatically even when the power switch is in OFF state.

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

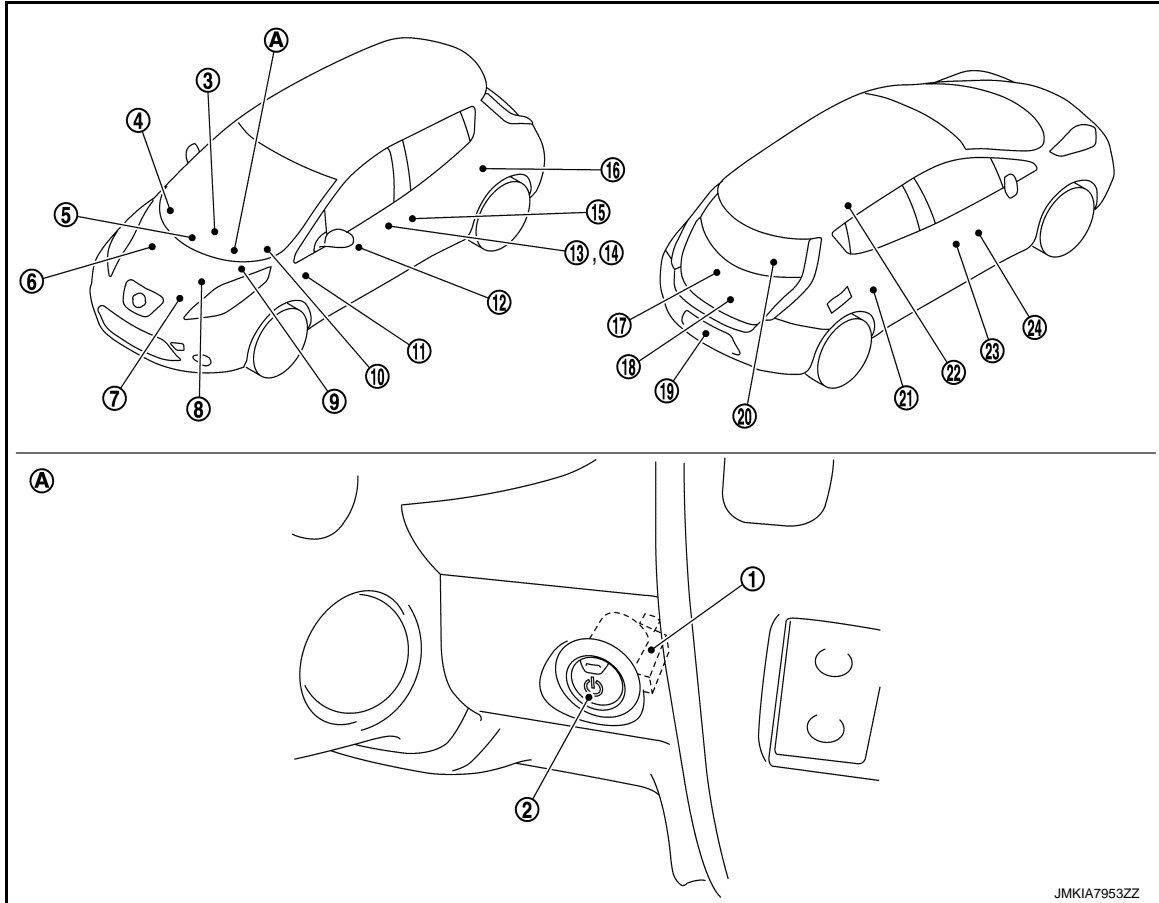
[WITH INTELLIGENT KEY SYSTEM]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000006962938



A. Behind power switch

No.	Component	Function
1	NATS antenna amp.	The ID verification is performed between BCM and transponder integrated into Intelligent Key via NATS antenna amp. when Intelligent Key backside is contacted to power switch in case that Intelligent Key battery is discharged. If the ID verification result is OK, the operation of power switch is available.
2	Power switch	Power switch has push switch inside which detects that power switch is pressed, and then transmits the signal to BCM. BCM changes the power supply position with the operation of power switch. BCM maintains the power supply position status while power switch is not operated.
3	Electric shift control module	Electric shift control module detects the shift position, and then transmits the P position signal to BCM and IPDM E/R. And electric shift control module transmits the P/N position signal to BCM. BCM confirms the shift position with the following 4 signals. <ul style="list-style-type: none"> <li>• P position signal from electric shift control module</li> <li>• P/N position signal from electric shift control module</li> <li>• P position signal from IPDM E/R (CAN)</li> <li>• Shift position signal from VCM (CAN)</li> </ul> Refer to <a href="#">TM-26. "Component Parts Location"</a> for detailed installation location.
4	Remote keyless entry receiver	Remote keyless entry receiver receives each button operation signal and electronic key ID signal from Intelligent Key, and then transmits the signal to BCM. Refer to <a href="#">DLK-12. "Component Parts Location"</a> for detailed installation location.

## COMPONENT PARTS

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

No.	Component	Function
5	Inside key antenna (Instrument center)	Inside key antenna (Instrument center) detects whether Intelligent Key is inside the vehicle or not, and transmits the signal to BCM. Refer to <a href="#">DLK-12, "Component Parts Location"</a> for detailed installation location.
6	VCM	VCM controls the vehicle. When power switch is turned to the ON position, BCM starts communication with VCM and performs the ID verification between BCM and VCM. If the verification result is OK, the vehicle can be set to READY. If the verification result is NG, the vehicle can not be set to READY. Refer to <a href="#">EVC-14, "Component Parts Location"</a> for detailed installation location.
7	Stop lamp switch	Stop lamp switch detects that brake pedal is depressed, and then transmits the signal to BCM. Refer to <a href="#">BRC-9, "Component Parts Location"</a> for detailed installation location.
8	ABS actuator and electric unit (control unit)	ABS actuator and electric unit (control unit) transmits the vehicle speed signal to BCM via CAN communication. BCM also receives the vehicle speed signal from combination meter via CAN communication. BCM compares both signals to detect the vehicle speed. Refer to <a href="#">BRC-9, "Component Parts Location"</a> for detailed installation location.
9	IPDM E/R	IPDM E/R has headlamp relays inside. Headlamp relays are used for the vehicle security function. IPDM E/R controls these relays while communicating with BCM. When IPDM E/R receives the alarm request signal from BCM, IPDM E/R activates vehicle security horn and headlamps intermittently. Refer to <a href="#">PCS-5, "Component Parts Location"</a> for detailed installation location.
10	Combination meter	Combination meter transmits the vehicle speed signal to BCM via CAN communication. BCM also receives the vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication. BCM compares both signals to detect the vehicle speed. Security indicator lamp is located on combination meter. Security indicator lamp blinks when power switch is in any position other than ON to warn that NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)] is on board.
11	BCM	BCM controls INTELLIGENT KEY SYSTEM (READY SET FUNCTION), NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)] and VEHICLE SECURITY SYSTEM. BCM performs the ID verification between BCM and Intelligent Key when the Intelligent Key is carried into the detection area of inside key antenna, and power switch is pressed. If the ID verification result is OK, power switch operation is available. Then, when the power switch is turned to the ON position, BCM performs ID verification between BCM and VCM. If the ID verification result is OK, vehicle can be set to READY. Refer to <a href="#">BCS-5, "BODY CONTROL SYSTEM : Component Parts Location"</a> for detailed installation location.
12	Door lock and unlock switch	Door lock and unlock switch is integrated into the power window main switch and front power window switch (passenger side). Door lock and unlock switch transmits door lock/unlock operation signal to BCM.
13	Outside door handle (Driver side)	Outside key antenna and door request switch are integrated into outside door handle. <ul style="list-style-type: none"> <li>• Outside key antenna detects whether Intelligent Key is within the detection area or not, and then transmits signal to BCM.</li> <li>• Front door request switch transmits door lock/unlock request signal to BCM.</li> </ul>
14	Door key cylinder switch	Door key cylinder switch detects door LOCK/UNLOCK operation using mechanical key, and then transmits door lock/unlock operation signal to BCM.
15	Front door switch (Driver side)	Door switch detects door open/close condition, and then transmits ON/OFF signal to BCM.
16	Rear door switch LH	Door switch detects door open/close condition, and then transmits ON/OFF signal to BCM.
17	Back door opener switch assembly	Back door opener switch and back door request switch are integrated into back door switch assembly. <ul style="list-style-type: none"> <li>• Back door opener switch transmits back door opening operation signal to BCM.</li> <li>• Back door request switch transmits door lock/unlock request signal to BCM.</li> </ul>
18	Back door lock assembly	Back door switch is integrated into back door lock assembly. Back door switch detects back door open/close condition, and then transmits ON/OFF signal to BCM.
19	Outside key antenna (Rear bumper)	Outside key antenna (Rear bumper) detects whether Intelligent Key is within the detection area or not, and then transmits signal to BCM. Refer to <a href="#">DLK-12, "Component Parts Location"</a> for detailed installation location.

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## COMPONENT PARTS

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

No.	Component	Function
20	Inside key antenna (Luggage room)	Inside key antenna (Luggage room) detects whether Intelligent Key is inside the vehicle or not, and transmits the signal to BCM. Refer to <a href="#">DLK-12, "Component Parts Location"</a> for detailed installation location.
21	Rear door switch RH	Door switch detects door open/close condition, and then transmits ON/OFF signal to BCM.
22	Inside key antenna (Rear seat)	Inside key antenna (Rear seat) detects whether Intelligent Key is inside the vehicle or not, and then transmits the signal to BCM. Refer to <a href="#">DLK-12, "Component Parts Location"</a> for detailed installation location.
23	Front door switch (Passenger side)	Door switch detects door open/close condition, and then transmits ON/OFF signal to BCM.
24	Outside door handle (Passenger side)	Outside key antenna and door request switch are integrated into outside door handle. <ul style="list-style-type: none"><li>• Outside key antenna detects whether Intelligent Key is within the detection area or not, and then transmits signal to BCM.</li><li>• Front door request switch transmits door lock/unlock request signal to BCM.</li></ul>



# SYSTEM

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

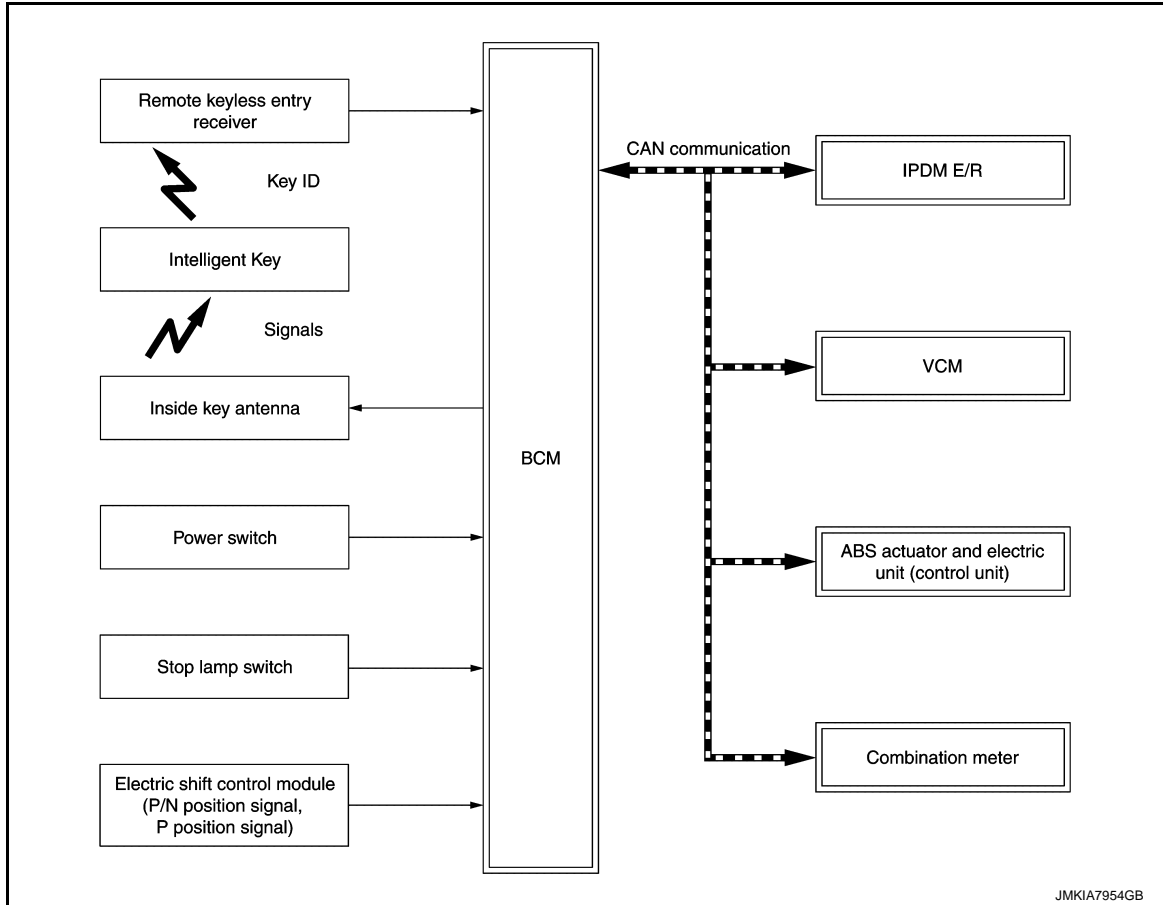
## SYSTEM

### INTELLIGENT KEY SYSTEM/READY SET FUNCTION

### INTELLIGENT KEY SYSTEM/READY SET FUNCTION : System Description

INFOID:000000006962940

#### SYSTEM DIAGRAM



#### INPUT/OUTPUT SIGNAL CHART

##### Input Signal Item

Transmit unit	Signal name	
VCM	CAN communication	ID verification signal VCM status signal READY set signal Shift position signal
IPDM E/R		Power switch status signal P position signal
Combination meter		Vehicle speed signal
ABS actuator and electric unit (control unit)		Vehicle speed signal
Remote keyless entry receiver	Key ID signal	
Power switch	Power switch operation signal	
Stop lamp switch	Brake pedal operation signal	
Electric shift control module	P position signal P/N position signal	

##### Output Signal Item

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# SYSTEM

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[WITH INTELLIGENT KEY SYSTEM]

Reception unit	Signal name	
Combination meter	CAN communication	Key warning lamp signal
VCM		ID verification signal
Inside key antenna	READY signal	
	Key ID request signal	

## SYSTEM DESCRIPTION

- The READY set function of Intelligent Key system makes it possible to set the vehicle to READY without using the key, based on the electronic ID verification. The electronic ID verification is performed between BCM and Intelligent Key when the power switch is pressed while the Intelligent Key is within the detection area of inside key antenna.

### NOTE:

The driver should carry the Intelligent Key at all times.

- Intelligent Key has 2 IDs [Intelligent Key ID and NVIS (NATS) ID]. It can perform the door lock/unlock operation and the power switch operation when the registered Intelligent Key is carried.
- If the ID is successfully verified, power switch operation can be available and the vehicle can be set to READY.
- Up to 4 Intelligent Keys can be registered upon request from the customer.

### NOTE:

Refer to [DLK-17. "INTELLIGENT KEY SYSTEM : System Description"](#) for any functions other than the READY set function of Intelligent Key system.

## PRECAUTIONS FOR INTELLIGENT KEY SYSTEM

**The transponder [the chip for NVIS (NATS) ID verification] is integrated into the Intelligent Key. Therefore, ID verification cannot be performed using mechanical key only.**

**When Intelligent Key battery is discharged, the NVIS (NATS) ID verification can be performed by operating power switch after contacting Intelligent Key backside to power switch. If verification result is OK, the vehicle can be set to READY.**

## OPERATION WHEN INTELLIGENT KEY IS CARRIED

1. When the power switch is pressed, BCM activates the inside key antenna and transmits the request signal to the Intelligent Key.
2. The Intelligent Key receives the request signal and transmits the Intelligent Key ID signal to BCM.
3. BCM receives the Intelligent Key ID signal via remote keyless entry receiver, and verifies it with the registered ID.
4. BCM turns ACC relay ON and transmits ON power supply signal to IPDM E/R if the verification results are OK.
5. IPDM E/R turns the ignition relay ON to start ON power supply.
6. BCM detects that the shift position and brake pedal operating condition.
7. BCM transmits READY signal to VCM if BCM judges that the READY set condition\* is satisfied.

\*: For READY set condition, refer to "READY SET CONDITION TABLE BY POWER SWITCH OPERATION" below.

### NOTE:

- If a malfunction is detected in the Intelligent Key system, "I-KEY system fault" on information display appears. In this case, BCM does not transmits READY signal.
  - When the Intelligent Key is carried outside of the vehicle (inside key antenna detection area) while the power switch position is ACC or ON, BCM does not transmits READY signal even if READY set condition\* is satisfied.
8. When BCM receives feedback signal from VCM indicating that the vehicle is set to READY, BCM stops transmitting READY signal.

## OPERATION RANGE

Vehicle can be set to READY when Intelligent Key is inside the vehicle. However, sometimes vehicle may not be set to READY when Intelligent Key is on instrument panel or in glove box.

## READY SET OPERATION WHEN INTELLIGENT KEY IS CONTACTED TO POWER SWITCH

# SYSTEM

## < SYSTEM DESCRIPTION >

## [WITH INTELLIGENT KEY SYSTEM]

When Intelligent Key battery is discharged, the NVIS (NATS) ID verification between transponder integrated into Intelligent Key and BCM is performed when Intelligent Key backside is contacted to power switch. If the verification result is OK, vehicle can be set to READY.

### READY SET CONDITION TABLE BY POWER SWITCH OPERATION

The vehicle can be set to READY by the following operations.

For details for the power supply position, refer to [PCS-34, "POWER DISTRIBUTION SYSTEM : System Description"](#).

#### NOTE:

- When an Intelligent Key is within the detection area of inside key antenna and when Intelligent Key backside is contacted to power switch, it is equivalent to the operations below.
- When setting the vehicle to READY, the BCM monitors READY set conditions,
  - Brake pedal operating condition
  - Shift position
  - Vehicle speed

Vehicle speed: less than 4 km/h (2.5 MPH)

	Vehicle condition		Power switch operation frequency
	Shift position	Brake pedal operation condition	
OFF → ACC	—	Not depressed	1
OFF → ACC → ON	—	Not depressed	2
OFF → ACC → ON → OFF	—	Not depressed	3
OFF → READY ACC → READY ON → READY	P or N	Depressed	1
READY → OFF	—	—	1

Vehicle speed: 4 km/h (2.5 MPH) or more

	Vehicle condition		Power switch operation frequency
	Shift position	Brake pedal operation condition	
READY → ACC	—	—	Emergency stop operation
ACC → READY (Return operation after emergency stop operation while driving)	N position	—	1

Emergency stop operation

- Press and hold the power switch for 2 seconds or more.
- Press the power switch 3 times or more within 1.5 seconds.

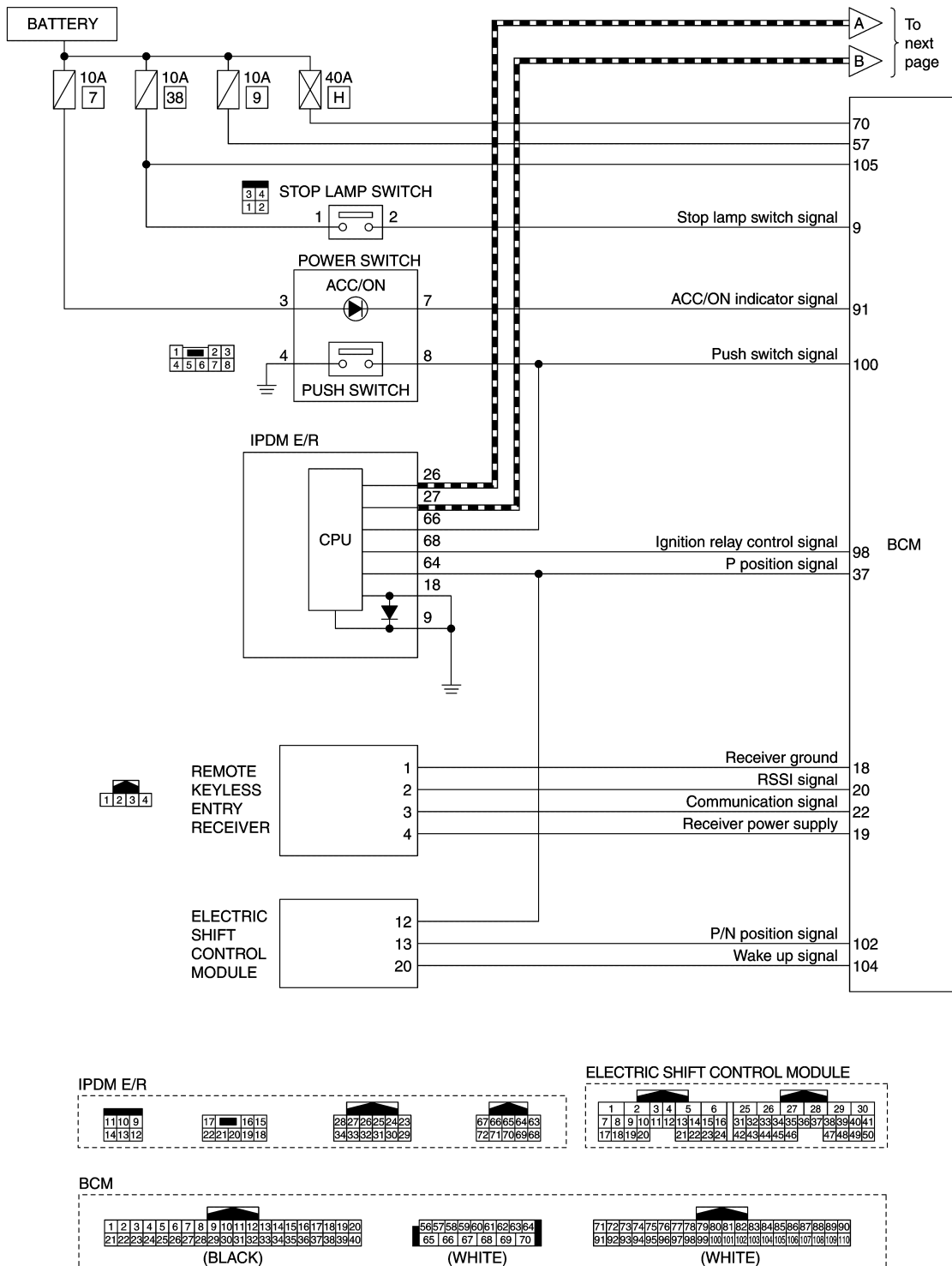
# SYSTEM

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

## INTELLIGENT KEY SYSTEM/READY SET FUNCTION : Schematic

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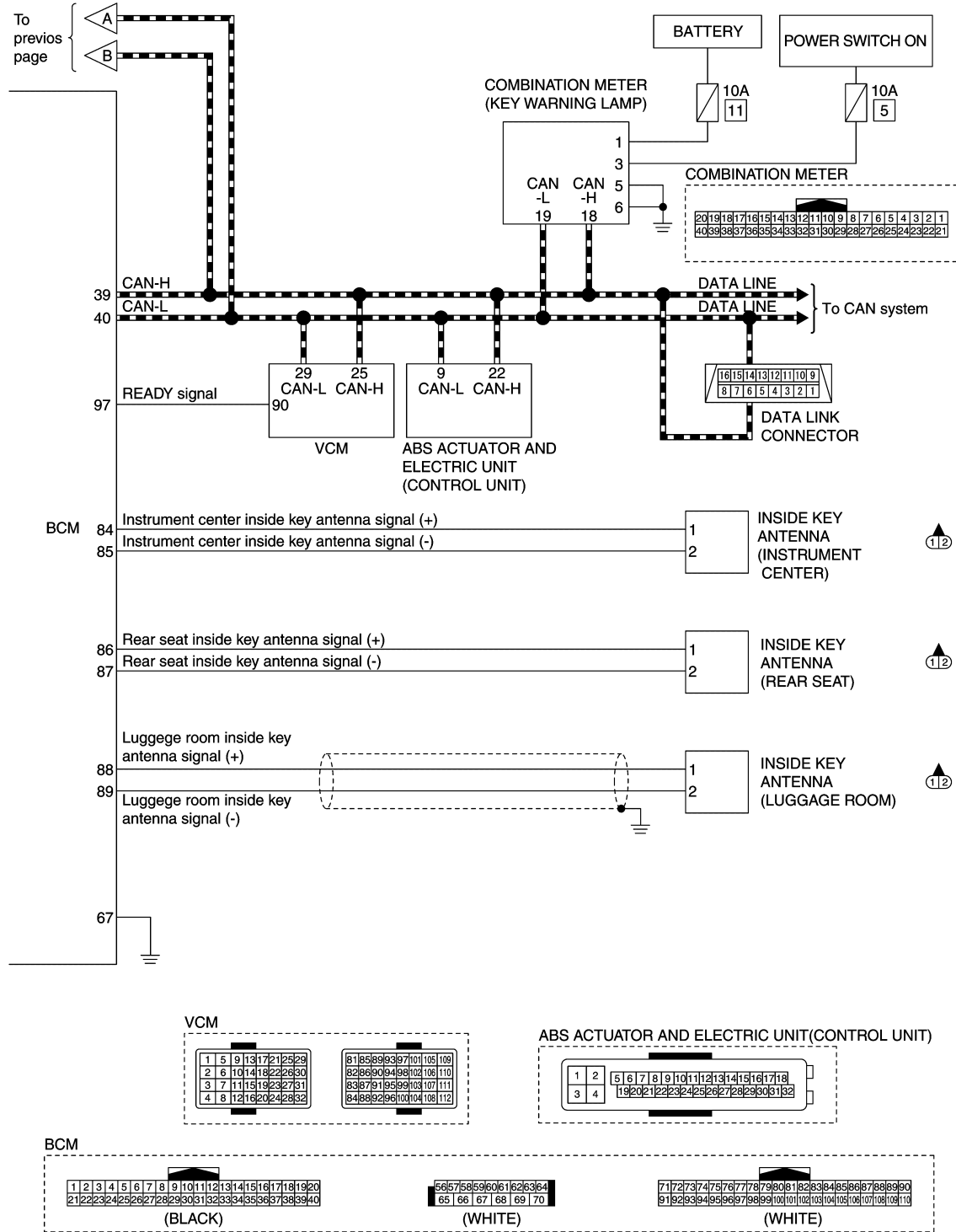


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# SYSTEM

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]



JMKIA7958GB

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS

# SYSTEM

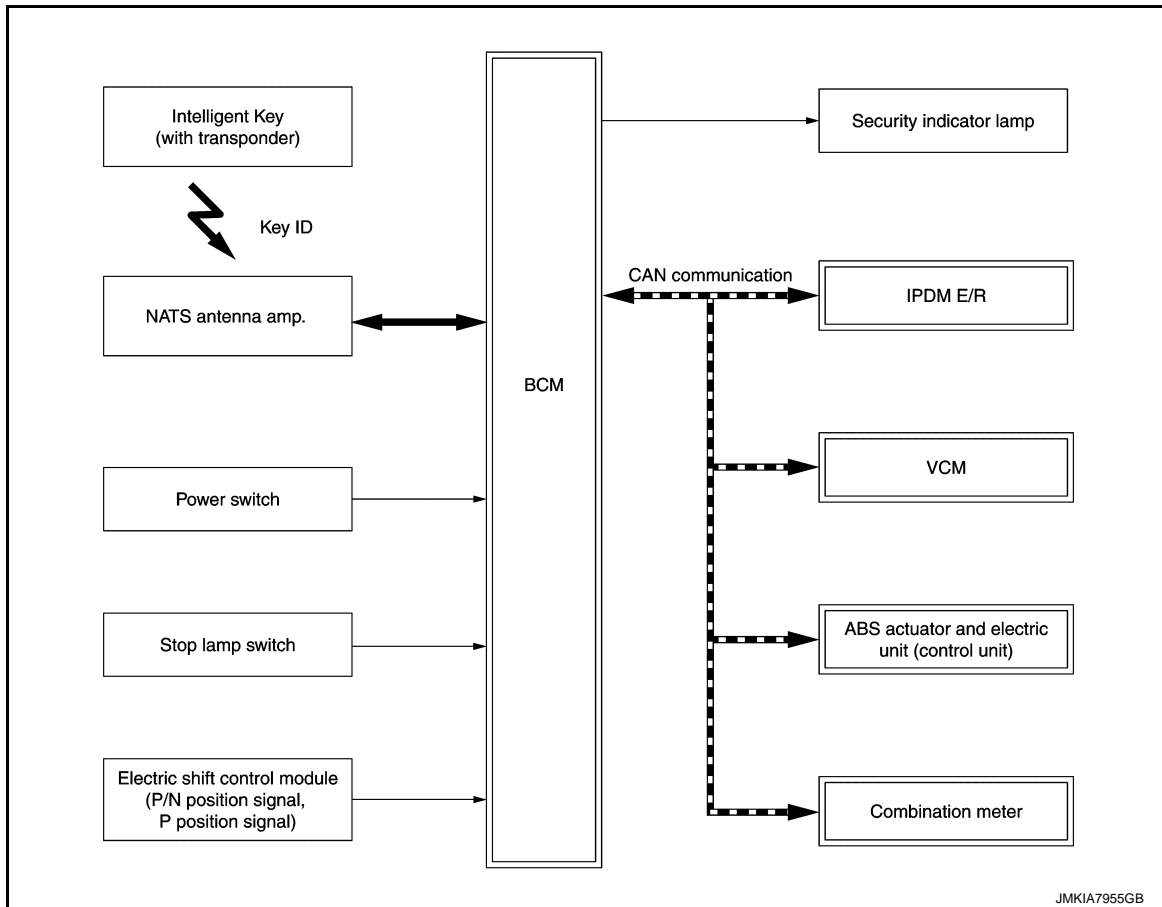
< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : System Description

INFOID:000000006962942

### SYSTEM DIAGRAM



### INPUT/OUTPUT SIGNAL CHART

#### Input Signal Item

Transmit unit	Signal name	
VCM	CAN communication	ID verification signal VCM status signal READY set signal Shift position signal
IPDM E/R		Power switch status signal P position signal
Combination meter		Vehicle speed signal
ABS actuator and electric unit (control unit)		Vehicle speed signal
NATS antenna amp.	Key ID signal	
Power switch	Power switch operation signal	
Stop lamp switch	Brake pedal operation signal	
Electric shift control module	P position signal P/N position signal	

#### Output Signal Item

# SYSTEM

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Reception unit	Signal name	
VCM	CAN communication	ID verification signal
	READY signal	
Combination meter	Security indicator lamp signal	

## SYSTEM DESCRIPTION

- The NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS [NVIS (NATS)] prevents the vehicle from being set to READY by Intelligent Key whose ID is not registered to the vehicle (BCM). It has higher protection against auto theft involving the duplication of mechanical keys.
- The mechanical key integrated into the Intelligent Key cannot set the vehicle to READY. When the Intelligent Key battery is discharged, the NVIS (NATS) ID verification is performed between the transponder integrated into Intelligent Key and BCM via NATS antenna amp. when the Intelligent Key backside is contacted to power switch. If the verification results are OK, the vehicle can be set to READY by the power switch operation.
- Security indicator lamp is located on combination meter, and always blinks when the power switch is in any position other than ON to warn that the vehicle is equipped with NVIS (NATS).
- Up to 4 Intelligent Keys can be registered upon request from the owner.
- When replacing VCM, BCM or Intelligent Key, the specified procedure (Initialization and registration) using CONSULT is required.
- Possible symptom of NVIS (NATS) malfunction is "Vehicle cannot be set to READY". This symptom also occurs because of other than NVIS (NATS) malfunction, so start the trouble diagnosis according to [SEC-46. "Work Flow"](#).
- If VCM other than genuine part is installed, the vehicle cannot be set to READY. For VCM replacement procedure, refer to [EVC-315. "Removal and Installation"](#).

## PRECAUTIONS FOR KEY REGISTRATION

- When registering the Intelligent Key, perform the procedure following the instruction of CONSULT display.
- The ID registration procedure erases the current NVIS (NATS) ID once, and then reregisters a new ID. Therefore before starting the registration procedure, collect all registered Intelligent Keys from the customer.

## SECURITY INDICATOR LAMP

Security indicator lamp always blinks when the power switch is in any position other than ON, to warn that the vehicle is equipped with NVIS (NATS).

### NOTE:

Because security indicator lamp is highly efficient, the 12V battery is barely affected.

## OPERATION WHEN INTELLIGENT KEY IS CONTACTED TO POWER SWITCH

1. When brake pedal is depressed while shift position is P, BCM activates NATS antenna amp. which is located behind power switch.
2. When Intelligent Key (transponder built-in) backside is contacted to power switch, BCM starts NVIS (NATS) ID verification between BCM and Intelligent Key (transponder built-in) via NATS antenna amp.
3. When the NVIS (NATS) ID verification result is OK, buzzer in combination meter sounds.
4. BCM turns ACC relay ON and transmits ON power supply signal to IPDM E/R.
5. IPDM E/R turns the ignition relay ON to start ON power supply.
6. BCM detects that the shift position and brake pedal operating position.
7. BCM transmits READY signal to VCM if BCM judges that the READY set condition\* is satisfied.  
\*: For READY set condition, refer to "READY SET CONDITION TABLE BY POWER SWITCH OPERATION" below.
8. When BCM receives feedback signal from VCM indicating that the vehicle is set to READY, BCM stops transmitting READY signal.

## READY SET CONDITION TABLE BY POWER SWITCH OPERATION

The vehicle can be set to READY by the following operations.

For details for the power supply position, refer to [PCS-34, "POWER DISTRIBUTION SYSTEM : System Description"](#).

### NOTE:

- When an Intelligent Key is within the detection area of inside key antenna and when Intelligent Key backside is contacted to power switch, it is equivalent to the operations below.

# SYSTEM

**[WITH INTELLIGENT KEY SYSTEM]**

## < SYSTEM DESCRIPTION >

- When setting the vehicle to READY, the BCM monitors READY set conditions,
  - Brake pedal operating condition
  - Shift position
  - Vehicle speed

Vehicle speed: less than 4 km/h (2.5 MPH)

	Vehicle condition		Power switch operation frequency
	Shift position	Brake pedal operation condition	
OFF → ACC	—	Not depressed	1
OFF → ACC → ON	—	Not depressed	2
OFF → ACC → ON → OFF	—	Not depressed	3
OFF → READY ACC → READY ON → READY	P or N	Depressed	1
READY → OFF	—	—	1

Vehicle speed: 4 km/h (2.5 MPH) or more

	Vehicle condition		Power switch operation frequency
	Shift position	Brake pedal operation condition	
READY → ACC	—	—	Emergency stop operation
ACC → READY (Return operation after emergency stop operation while driving)	N position	—	1

Emergency stop operation

- Press and hold the power switch for 2 seconds or more.
- Press the power switch 3 times or more within 1.5 seconds.



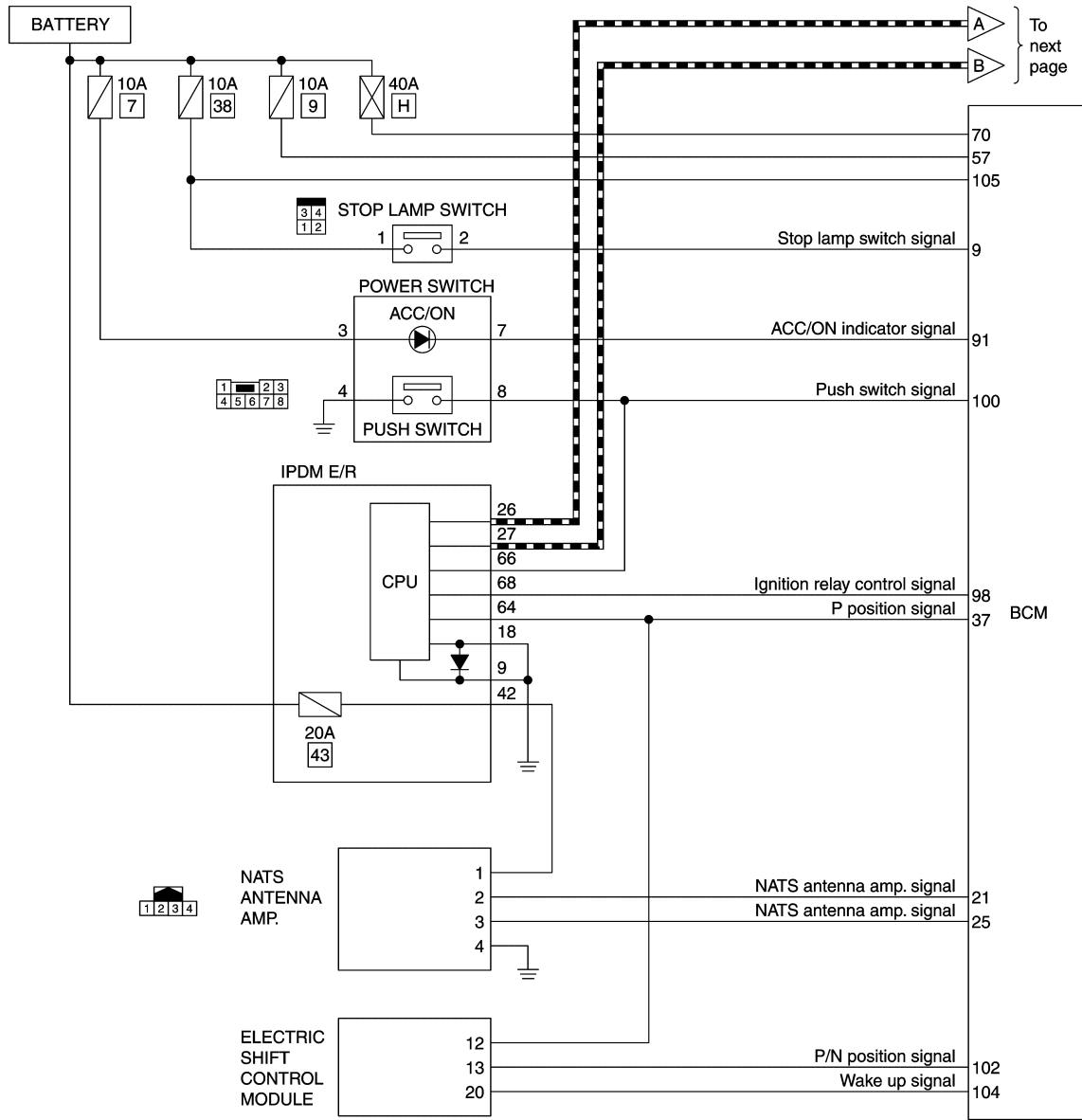
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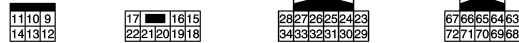
[WITH INTELLIGENT KEY SYSTEM]

## NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS : Schematic

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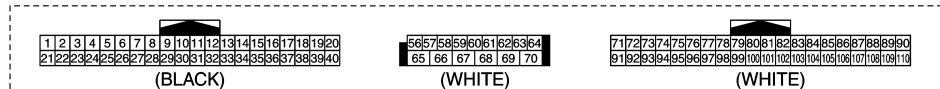
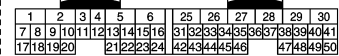


IPDM E/R



BCM

ELECTRIC SHIFT CONTROL MODULE



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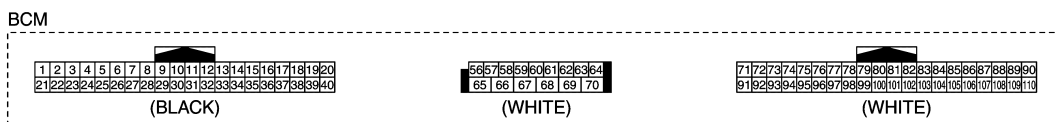
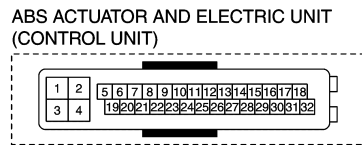
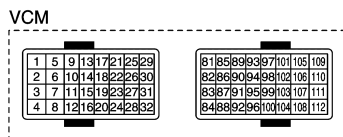
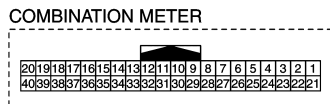
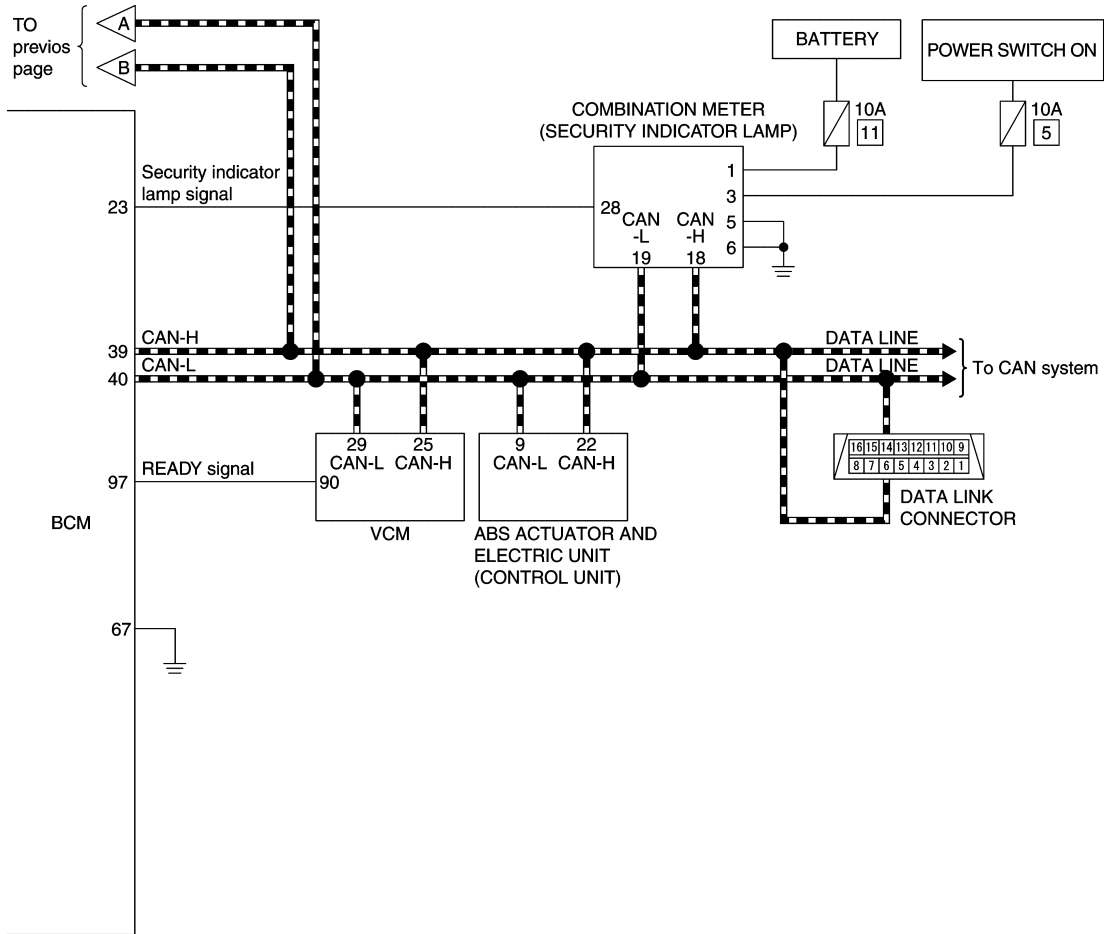
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[WITH INTELLIGENT KEY SYSTEM]



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## VEHICLE SECURITY SYSTEM

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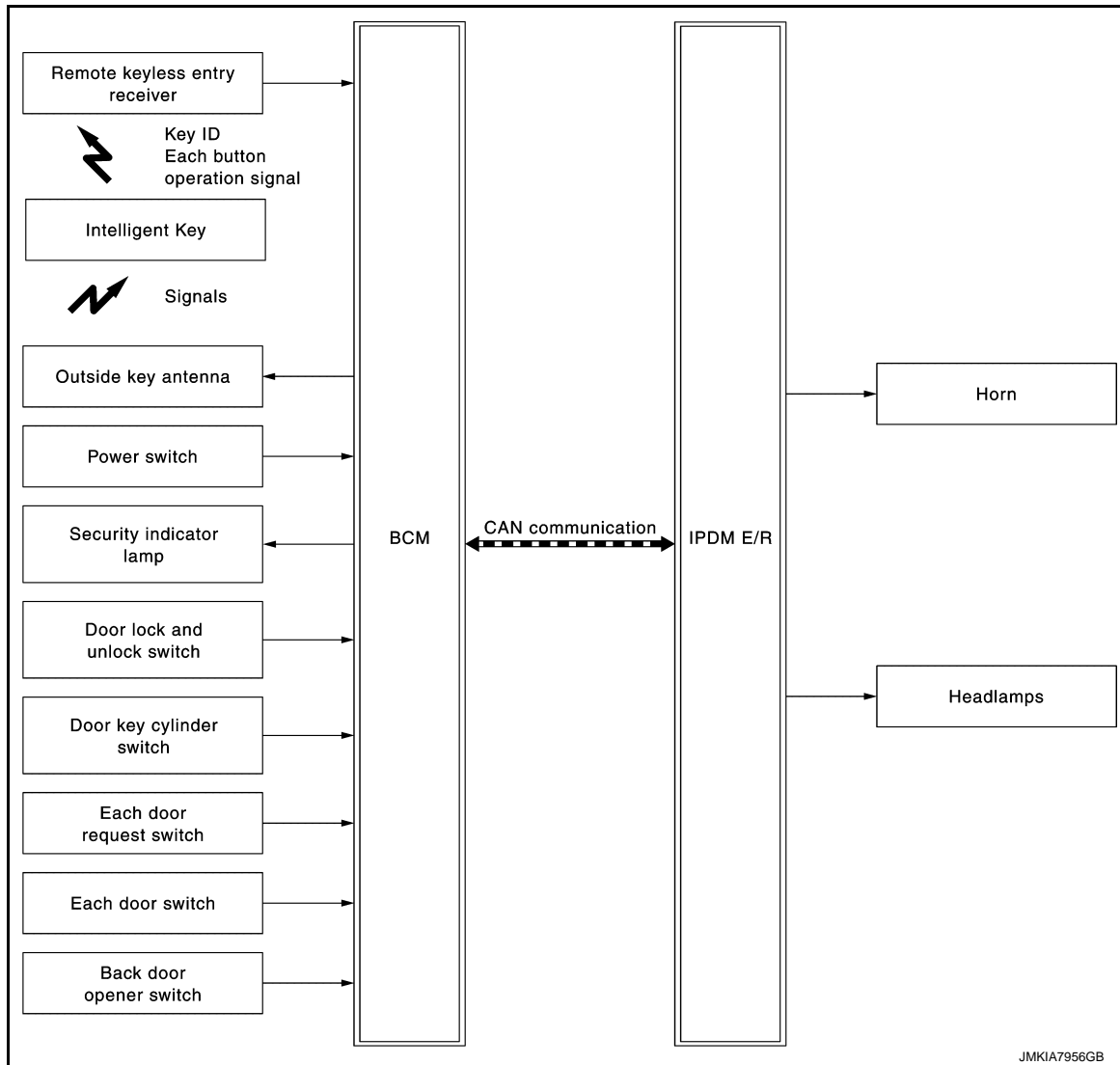
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[WITH INTELLIGENT KEY SYSTEM]

## VEHICLE SECURITY SYSTEM : System Diagram

INFOID:000000006968050

### SYSTEM DIAGRAM



### INPUT/OUTPUT SIGNAL CHART

#### Input Signal Item

Transmit unit	Signal name	
IPDM E/R	CAN communication	Power switch status signal
Remote keyless entry receiver	Key ID signal Intelligent Key button operation signal	
Power switch	Power switch operation signal	
Each door switch	Door open/close condition signal	
Each door request switch	Door lock/unlock request signal	
Back door opener switch	Back door opener operation signal	
Door key cylinder switch	Door key cylinder lock/unlock switch signal	
Door lock and unlock switch	Door lock/unlock switch operation signal	

#### Output Signal Item

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[WITH INTELLIGENT KEY SYSTEM]

Reception unit	Signal name	
Combination meter	CAN communication	Security indicator lamp signal
IPDM E/R		Vehicle security horn request signal
		High beam request signal
Outside key antenna	Key ID request signal	

## SYSTEM DESCRIPTION

- The vehicle security system has two alarm functions (theft warning alarm and panic alarm), and reduces the possibility of a theft or mischief by activating horns and headlamps intermittently.
- The panic alarm does not start when the theft warning alarm is activating, and the panic alarm stops when the theft warning alarm is activated.

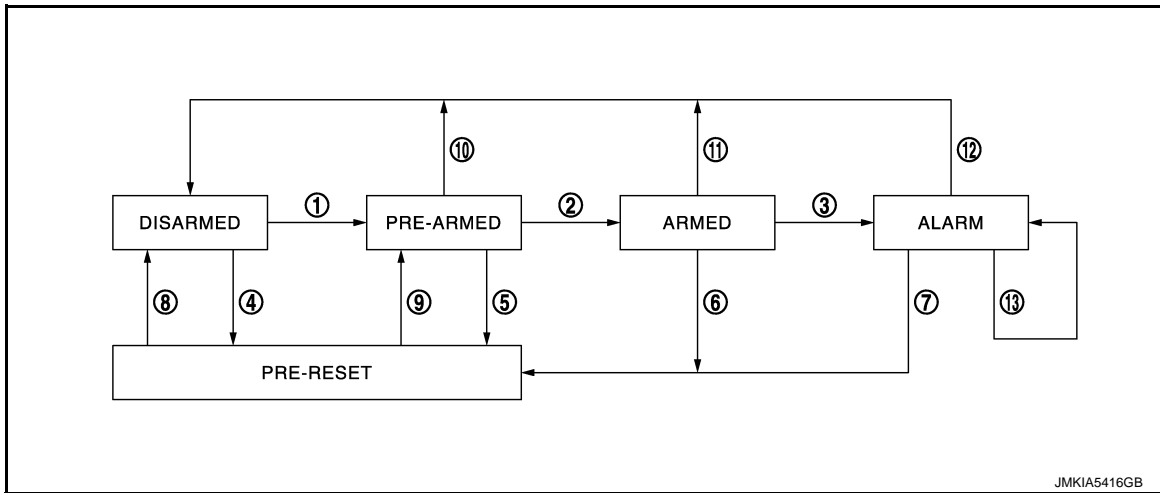
The priority of the functions are as per the following.

Priority	Function
1	Theft warning alarm
2	Panic alarm

## THEFT WARNING ALARM

- The theft warning alarm function activates horns and headlamps intermittently when BCM detects that any door is opened by unauthorized means, while the system is in the ARMED state.
- Security indicator lamp on combination meter always blinks when power supply position is any position other than ON. Security indicator lamp blinking warns that the vehicle is equipped with a vehicle security system.

Operation Flow



No.	System state	Switching condition	Switching condition	
			A	B
1	DISARMED to PRE-ARMED	When all conditions of A and one condition of B is satisfied.	<ul style="list-style-type: none"> <li>Power switch: OFF</li> <li>All doors: Closed</li> </ul>	All doors are locked by: <ul style="list-style-type: none"> <li>Door key cylinder LOCK switch</li> <li>LOCK button of Intelligent Key</li> <li>Door request switch</li> <li>Door lock and unlock switch</li> </ul>
2	PRE-ARMED to ARMED	When all of the following conditions are satisfied for 30 seconds.	<ul style="list-style-type: none"> <li>Power switch: OFF</li> <li>All doors: Locked</li> </ul>	
3	ARMED to ALARM	When all conditions of A and of B are satisfied.	A	B
			Intelligent Key: Not used	<ul style="list-style-type: none"> <li>Any door: Open</li> </ul>

# SYSTEM

## < SYSTEM DESCRIPTION >

## [WITH INTELLIGENT KEY SYSTEM]

No.	System state	Switching condition	
4	DISARMED to PRE-RESET	No conditions.	
5	PRE-ARMED to PRE-RESET		
6	ARMED to PRE-RESET		
7	ALARM to PRE-RESET		
8	PRE-RESET to DISARMED		
9	PRE-RESET to PRE-ARMED		
10	PRE-ARMED to DISARMED	When one of the following condition is satisfied.	<ul style="list-style-type: none"> <li>• Power switch: ACC/ON</li> <li>• Door key cylinder UNLOCK switch: ON</li> <li>• UNLOCK button of Intelligent Key: ON</li> <li>• Door request switch: ON</li> <li>• Back door opener switch: ON</li> <li>• Any door: Open</li> </ul>
11	ARMED to DISARMED	When one of the following condition is satisfied.	<ul style="list-style-type: none"> <li>• Power switch: ACC/ON</li> <li>• Door key cylinder UNLOCK switch: ON</li> <li>• UNLOCK button of Intelligent Key: ON</li> <li>• Door request switch: ON</li> <li>• Back door opener switch: ON</li> </ul>
12	ALARM to DISARMED		
13	RE-ALARM	When the following condition is satisfied after the ALARM operation is finished.	<ul style="list-style-type: none"> <li>• Any door: Open</li> </ul>

**NOTE:**

- BCM ignores the door key cylinder UNLOCK switch signal input for 1 second after the door key cylinder LOCK switch signal input.
- To lock/unlock all doors by operating remote controller button of Intelligent Key or door request switch, Intelligent Key must be within the detection area of outside key antenna. For details, refer to [DLK-21, "DOOR LOCK FUNCTION : System Description"](#).
- To open back door by operating back door opener switch, Intelligent Key must be within the detection area of outside key antenna. For details, refer to [DLK-21, "DOOR LOCK FUNCTION : System Description"](#).

**DISARMED Phase**

The vehicle security system is not set in the DISARMED phase. The vehicle security system stays in this phase while any door is open, because it is assumed that the owner is inside or nearby the vehicle. Security indicator lamp blinks every 2.4 seconds.

When the vehicle security system is reset, each phase switches to the DISARMED phase directly.

**PRE-ARMED Phase**

The PRE-ARMED phase is the transient state between the DISARMED phase and the ARMED phase. This phase is maintained for 30 seconds, so that the owner can reset the setting due to a mis-operation. This phase switches to the ARMED phase when vehicle conditions are not changed for 30 seconds. Security indicator lamp illuminates while being in this phase.

To reset the PRE-ARMED phase, refer to the switching condition of No. 10 in the table above.

**ARMED Phase**

The vehicle security system is set, and BCM monitors all necessary inputs. If any door is opened without using Intelligent Key, vehicle security system switches to the ALARM phase. Security indicator lamp blinks every 2.4 seconds.

To reset the ARMED phase, refer to the switching condition of No. 11 in the table above.

**ALARM Phase**

BCM transmits "Theft Warning Horn Request" signal and "High Beam Request" signal intermittently to IPDM E/R via CAN communication. In this phase, horns and headlamps are activated intermittently for approximately 50 seconds to warn that the vehicle is accessed by unauthorized means. ON/OFF timing of horns and headlamps are synchronized. After 50 seconds, the vehicle security system returns to the ARMED phase. At this time, if BCM still detects unauthorized access to the vehicle, the system is switched to the ALARM phase again. This RE-ALARM operation is carried out a maximum of 2 times.

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## [WITH INTELLIGENT KEY SYSTEM]

To cancel the ALARM operation, refer to the switching condition of No. 12 in the table above.

### **NOTE:**

If a battery terminal is disconnected during the ALARM phase, theft warning alarm stops. But when the battery terminal is reconnected, theft warning alarm is activated again.

### PRE-RESET Phase

The PRE-RESET phase is the transient state between each phase and DISARMED phase.

The PRE-RESET phase is not available for this models.

### PANIC ALARM

- The panic alarm function activates horns and headlamps intermittently when the owner presses the PANIC ALARM button of Intelligent Key outside the vehicle while the power supply position is OFF.
- When BCM receives panic alarm signal from Intelligent Key, BCM transmits "Theft Warning Horn Request" signal and "High Beam Request" signal intermittently to IPDM E/R via CAN communication. To prevent the activation due to mis-operation of Intelligent Key by owner, the panic alarm function is activated when BCM receives the signal for 0.4 - 0.6 seconds.
- Panic alarm operation is maintained for 25 seconds.
- Panic alarm operation is cancelled when BCM receives one of the following signals.
  - LOCK button of Intelligent Key: ON
  - UNLOCK button of Intelligent Key: ON
  - PANIC ALARM button of Intelligent Key: Long pressed
  - Any door request switch: ON

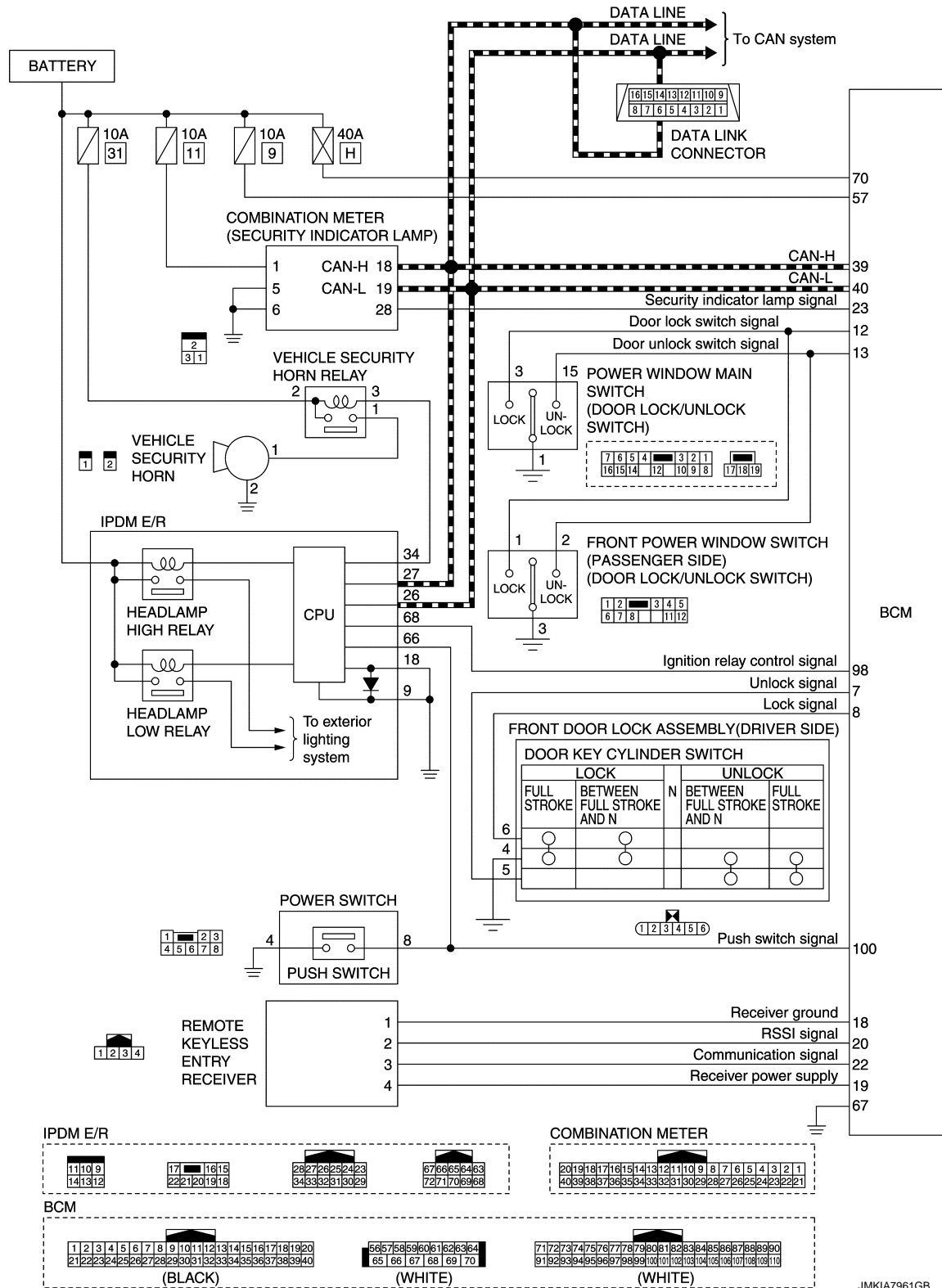
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[WITH INTELLIGENT KEY SYSTEM]

## VEHICLE SECURITY SYSTEM : Schematic

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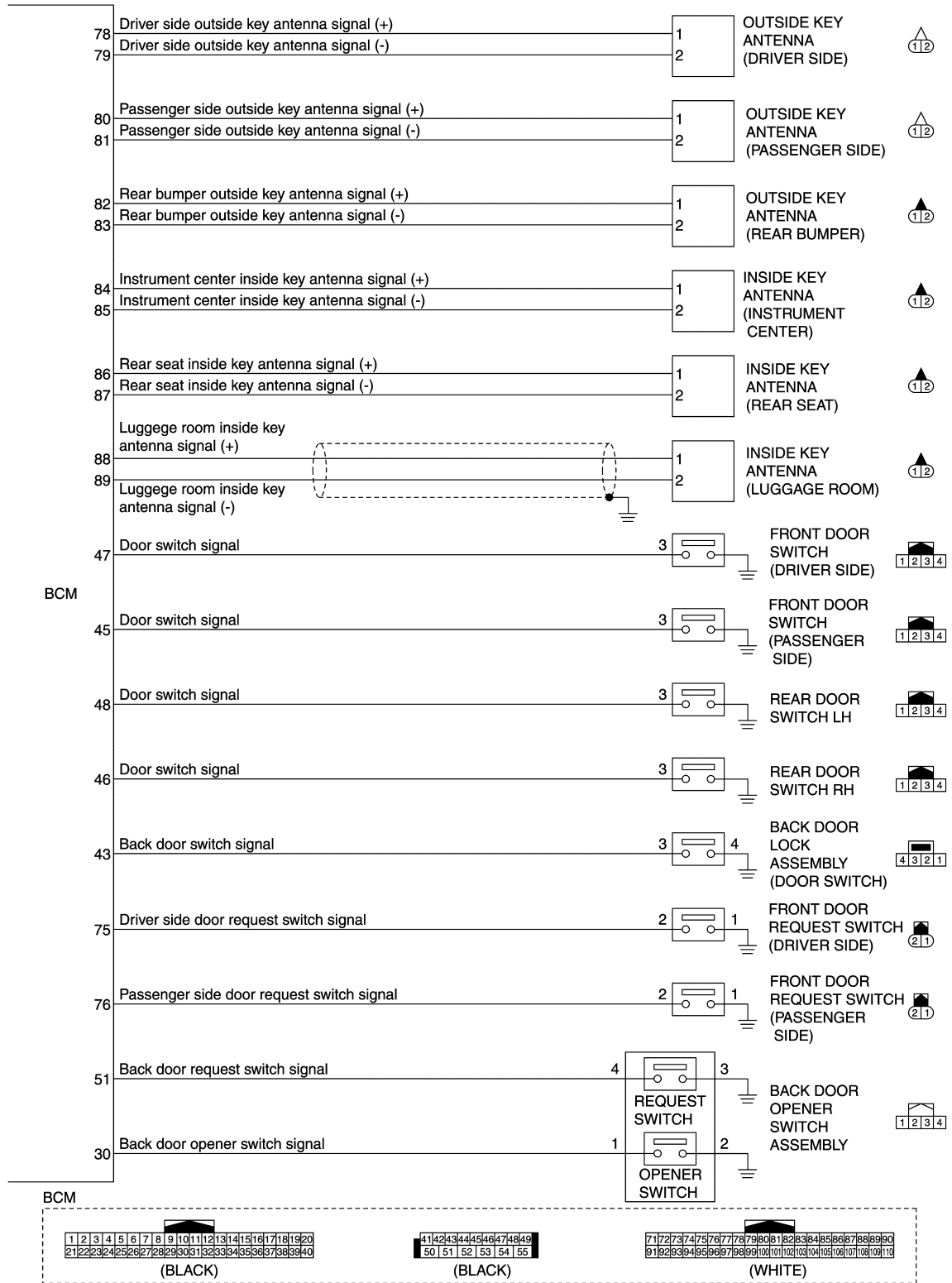
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[WITH INTELLIGENT KEY SYSTEM]



JMKIA7962GB



# DIAGNOSIS SYSTEM (BCM)

[WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (BCM)

### COMMON ITEM

#### COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:000000006991364

#### APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	<ul style="list-style-type: none"> <li>Read and save the vehicle specification.</li> <li>Write the vehicle specification when replacing BCM.</li> </ul>

#### SYSTEM APPLICATION

BCM can perform the following functions for each system.

#### NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER	×	×	×
—	AIR CONDITONER*		×	×
Intelligent Key system	INTELLIGENT KEY	×	×	×
Combination switch	COMB SW		×	
Body control system	BCM	×		
NVIS - NATS	IMMU	×	×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	
Theft warning alarm	THEFT ALM	×	×	×
RAP system	RETAINED PWR		×	
Signal buffer system	SIGNAL BUFFER		×	×
TPMS	AIR PRESSURE MONITOR	×	×	×

\*: This item is displayed, but not used.

#### FREEZE FRAME DATA (FFD)

The BCM records the following vehicle condition at the time a particular DTC is detected, and displays on CONSULT.

# DIAGNOSIS SYSTEM (BCM)

[WITH INTELLIGENT KEY SYSTEM]

## < SYSTEM DESCRIPTION >

CONSULT screen item	Indication/Unit	Description	
Vehicle Speed	km/h	Vehicle speed of the moment a particular DTC is detected	
Odo/Trip Meter	km	Total mileage (Odometer value) of the moment a particular DTC is detected	
Vehicle Condition	SLEEP>LOCK	Power supply position status of the moment a particular DTC is detected*	While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (LOCK)]
	SLEEP>OFF		While turning BCM status from low power consumption mode to normal mode [Power supply position is OFF (OFF)]
	LOCK>ACC		While turning power supply position from OFF (LOCK) to ACC
	ACC>ON		While turning power supply position from ACC to ON
	RUN>ACC		While turning power supply position from READY (RUN) to ACC (Except emergency stop operation)
	CRANK>RUN		While turning power supply position from READY (CRANK) to READY (RUN)
	RUN>URGENT		While turning power supply position from READY (RUN) to ACC (Emergency stop operation)
	ACC>OFF		While turning power supply position from ACC to OFF (OFF)
	OFF>LOCK		While turning power supply position from OFF (OFF) to OFF (LOCK)
	OFF>ACC		While turning power supply position from OFF (OFF) to ACC
	ON>CRANK		While turning power supply position from ON to READY (CRANK)
	OFF>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (OFF)] to low power consumption mode
	LOCK>SLEEP		While turning BCM status from normal mode [Power supply position is OFF (LOCK)] to low power consumption mode
	LOCK		Power supply position is OFF (LOCK)
	OFF		Power supply position is OFF (OFF)
	ACC		Power supply position is ACC
	ON		Power supply position is ON
	ENGINE RUN		Power supply position is READY (RUN)
CRANKING	Power supply position is READY (CRANK)		
IGN Counter	0 - 39	<p>The number of times that power switch is turned ON after DTC is detected</p> <ul style="list-style-type: none"> <li>• The number is 0 when a malfunction is detected now.</li> <li>• The number increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever power switch OFF → ON.</li> <li>• The number is fixed to 39 until the self-diagnosis results are erased if it is over 39.</li> </ul>	

### NOTE:

\*: Refer to the following for details of the power supply position.

- OFF (OFF, LOCK): Power switch OFF
- ACC: Power switch ACC
- ON: Power switch ON
- READY (CRANK): Shifting to vehicle condition READY (Transmitting the READY signal from BCM to VCM)
- READY (RUN): Vehicle condition READY

Power supply position shifts to "OFF (LOCK)" from "OFF (OFF)", when power switch is in the OFF position, shift position is in the P position, and any of the following conditions are met.

- Closing door
- Opening door
- Door is locked using door request switch
- Door is locked using Intelligent Key

The power supply position shifts to "ACC" when the power switch (push switch) is pushed at "OFF (LOCK)".

## INTELLIGENT KEY

# DIAGNOSIS SYSTEM (BCM)

[WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

## INTELLIGENT KEY : CONSULT Function (BCM - INTELLIGENT KEY)

INFOID:000000006991363

### WORK SUPPORT

Monitor item	Description
INSIDE ANT DIAGNOSIS	This function allows inside key antenna self-diagnosis
LOCK/UNLOCK BY I-KEY	Door lock/unlock function by door request switch mode can be changed to operation in this mode <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
ENGINE START BY I-KEY	READY set function mode can be changed to operation with this mode <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
TRUNK/GLASS HATCH OPEN	<b>NOTE:</b> This item is displayed, but cannot be used
HORN WITH KEYLESS LOCK	Horn reminder function mode by Intelligent Key button can be changed to operate (ON) or not operate (OFF) with this mode <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
PANIC ALARM SET	Panic alarm button pressing time on Intelligent Key remote control button can be selected from the following with this mode <ul style="list-style-type: none"> <li>MODE 1: 0.5 sec.</li> <li>MODE 2: Non-operation</li> <li>MODE 3: 1.5 sec.</li> </ul>
TRUNK OPEN DELAY	<b>NOTE:</b> This item is displayed, but cannot be used
LO- BATT OF KEY FOB WARN	Intelligent Key low battery warning mode can be changed to operation with this mode <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
ANTI KEY LOCK IN FUNCTI	Key reminder function mode can be changed to operation with this mode <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
HAZARD ANSWER BACK	Hazard reminder function mode by door request switch and Intelligent Key button can be selected from the following with this mode <ul style="list-style-type: none"> <li>Lock Only: Door lock operation only</li> <li>Unlock Only: Door unlock operation only</li> <li>Lock/Unlock: Lock and unlock operation</li> <li>Off: Non-operation</li> </ul>
ANS BACK I-KEY LOCK	Buzzer reminder function (lock operation) mode by door request switch can be selected from the following with this mode <ul style="list-style-type: none"> <li>Horn Chirp: Sound horn</li> <li>Buzzer: Sound Intelligent Key warning buzzer</li> <li>Off: Non-operation</li> </ul>
ANS BACK I-KEY UNLOCK	Buzzer reminder function (unlock operation) mode by door request switch can be changed to operation with this mode <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
SHORT CRANKING OUTPUT	<b>NOTE:</b> This item is displayed, but cannot be used
CONFIRM KEY FOB ID	It can be checked whether Intelligent Key ID code is registered or not in this mode
AUTO LOCK SET	Auto door lock operation time can be changed in this mode <ul style="list-style-type: none"> <li>MODE 1: OFF</li> <li>MODE 2: 30 sec.</li> <li>MODE 3: 1 minute</li> <li>MODE 4: 2 minutes</li> <li>MODE 5: 3 minutes</li> <li>MODE 6: 4 minutes</li> <li>MODE 7: 5 minutes</li> </ul>

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# DIAGNOSIS SYSTEM (BCM)

[WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

## SELF-DIAG RESULT

Refer to [BCS-54. "DTC Index"](#).

## DATA MONITOR

Monitor Item	Condition
REQ SW -DR	Indicates [On/Off] condition of door request switch (driver side)
REQ SW -AS	Indicates [On/Off] condition of door request switch (passenger side)
REQ SW -BD/TR	Indicates [On/Off] condition of back door request switch
PUSH SW	Indicates [On/Off] condition of power switch
CLUTCH SW	<b>NOTE:</b> This item is displayed, but cannot be monitored
BRAKE SW 1	Indicates [On/Off]* condition of stop lamp switch power supply
BRAKE SW 2	Indicates [On/Off] condition of stop lamp switch
DETE/CANCL SW	Indicates [On/Off] condition of P position
SFT PN/N SW	Indicates [On/Off] condition of P or N position
UNLK SEN -DR	Indicates [On/Off] condition of driver door UNLOCK status
PUSH SW -IPDM	Indicates [On/Off] condition of power switch
IGN RLY1 -F/B	Indicates [On/Off] condition of ignition relay 1
DETE SW -IPDM	Indicates [On/Off] condition of P position
SFT PN -IPDM	<b>NOTE:</b> This item is displayed, but cannot be monitored
SFT P -MET	Indicates [On/Off] condition of P position
SFT N -MET	Indicates [On/Off] condition of N position
ENGINE STATE	<b>NOTE:</b> This item is displayed, but cannot be monitored
S/L LOCK-IPDM	<b>NOTE:</b> This item is displayed, but cannot be monitored
S/L UNLK-IPDM	<b>NOTE:</b> This item is displayed, but cannot be monitored
S/L RELAY-REQ	<b>NOTE:</b> This item is displayed, but cannot be monitored
VEH SPEED 1	Display the vehicle speed signal received from combination meter by numerical value [km/h]
VEH SPEED 2	Display the vehicle speed signal received from ABS actuator and electric unit (control unit) by numerical value [km/h]
DOOR STAT-DR	Indicates [LOCK/READY/UNLK] condition of driver side door status
DOOR STAT-AS	Indicates [LOCK/READY/UNLK] condition of passenger side door status
ID OK FLAG	Indicates [Set/Reset] condition of key ID
PRMT ENG STRT	Indicates [Set/Reset] condition of ENGINE START BY I-KEY setting in WORK SUPPORT mode
PRMT RKE STRT	<b>NOTE:</b> This item is displayed, but cannot be monitored
TRNK/HAT MNTR	<b>NOTE:</b> This item is displayed, but cannot be monitored
RKE-LOCK	Indicates [On/Off] condition of LOCK signal from Intelligent Key
RKE-UNLOCK	Indicates [On/Off] condition of UNLOCK signal from Intelligent Key
RKE-TR/BD	<b>NOTE:</b> This item is displayed, but cannot be monitored
RKE-PANIC	Indicates [On/Off] condition of PANIC button of Intelligent Key
RKE-MODE CHG	Indicates [On/Off] condition of MODE CHANGE signal from Intelligent Key

# DIAGNOSIS SYSTEM (BCM)

[WITH INTELLIGENT KEY SYSTEM]

## < SYSTEM DESCRIPTION >

Monitor Item	Condition
RKE OPE COUN1	When remote keyless entry receiver receives the signal transmitted while operating on Intelligent Key, the numerical value start changing
RKE OPE COUN2	<b>NOTE:</b> This item is displayed, but cannot be monitored

\*: OFF is displayed when brake pedal is depressed while brake switch power supply is OFF.

## ACTIVE TEST

Test item	Description
OUTSIDE BUZZER	This test is able to check Intelligent Key warning buzzer operation <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
INSIDE BUZZER	This test is able to check warning chime in combination meter operation <ul style="list-style-type: none"> <li>Take Out: Take away warning chime sounds when CONSULT screen is touched</li> <li>Key: Key warning chime sounds when CONSULT screen is touched</li> <li>Knob: OFF position warning chime sounds when CONSULT screen is touched</li> <li>Off: Non-operation</li> </ul>
INDICATOR	This test is able to check warning lamp operation <ul style="list-style-type: none"> <li>KEY ON: "KEY" Warning lamp illuminates when CONSULT screen is touched</li> <li>KEY IND: "KEY" Warning lamp blinks when CONSULT screen is touched</li> <li>Off: Non-operation</li> </ul>
INT LAMP	This test is able to check interior room lamp operation <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
LCD	This test is able to check meter display information <ul style="list-style-type: none"> <li>Traction motor start information displays when "BP N" on CONSULT screen is touched</li> <li>Traction motor start information displays when "BP I" on CONSULT screen is touched</li> <li>Key ID warning displays when "ID NG" on CONSULT screen is touched</li> <li>ROTAT: This item is displayed, but cannot be used</li> <li>INSRT: This item is displayed, but cannot be used</li> <li>Intelligent Key low battery warning displays when "BATT" on CONSULT screen is touched</li> <li>Take away warning displays when "OUTKEY" on CONSULT screen is touched</li> <li>OFF position warning displays when "LK WN" on CONSULT screen is touched</li> </ul>
FLASHER	This test is able to check security hazard lamp operation The hazard lamps are activated after "LH/RH/Off" on CONSULT screen is touched
HORN	This test is able to check horn operation <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
P RANGE	This test is able to check P position signal from electric shift control unit <ul style="list-style-type: none"> <li>On: Operate</li> <li>Off: Non-operation</li> </ul>
ENGINE SW ILLUMI	This test is able to check power switch illumination operation Power switch illumination illuminates when "ON" on CONSULT screen is touched
PUSH SWITCH INDICATOR	This test is able to check LOCK indicator in power switch operation LOCK indicator in power switch illuminates when "ON" on CONSULT screen is touched
BATTERY SAVER	This test is able to check interior room lamp operation. The interior room lamp will be activated after "ON" on CONSULT screen is touched.
TRUNK/BACK DOOR	This test is able to check back door opener actuator open operation. This actuator opens when "Open" on CONSULT screen is touched.

## THEFT ALM

### THEFT ALM : CONSULT Function (BCM - THEFT)

INFOID:000000006968054

## WORK SUPPORT

# DIAGNOSIS SYSTEM (BCM)

[WITH INTELLIGENT KEY SYSTEM]

## < SYSTEM DESCRIPTION >

Service Item	Description
SECURITY ALARM SET	This mode is able to confirm and change security alarm ON-OFF setting.
THEFT ALM TRG	The switch which triggered vehicle security alarm is recorded. This mode is able to confirm and erase the record of vehicle security alarm. The trigger data can be erased by touching "CLEAR" on CONSULT screen.

## DATA MONITOR

Monitored Item	Description
REQ SW -DR	Indicates [On/Off] condition of door request switch (driver side).
REQ SW -AS	Indicates [On/Off] condition of door request switch (passenger side).
REQ SW -RR	<b>NOTE:</b> This is displayed even when it is not equipped.
REQ SW -RL	<b>NOTE:</b> This is displayed even when it is not equipped.
REQ SW -BD/TR	Indicates [On/Off] condition of back door request switch.
PUSH SW	Indicates [On/Off] condition of power switch
UNLK SEN -DR	Indicates [On/Off] condition of driver door UNLOCK status.
DOOR SW-DR	Indicates [On/Off] condition of front door switch (driver side).
DOOR SW-AS	Indicates [On/Off] condition of front door switch (passenger side).
DOOR SW-RR	Indicates [On/Off] condition of rear door switch RH.
DOOR SW-RL	Indicates [On/Off] condition of rear door switch LH.
DOOR SW-BK	Indicates [On/Off] condition of back door switch.
CDL LOCK SW	Indicates [On/Off] condition of lock signal from door lock/unlock switch.
CDL UNLOCK SW	Indicates [On/Off] condition of unlock signal from door lock/unlock switch.
KEY CYL LK-SW	Indicates [On/Off] condition of lock signal from door key cylinder.
KEY CYL UN-SW	Indicates [On/Off] condition of unlock signal from door key cylinder.
TR/BD OPEN SW	Indicates [On/Off] condition of back door opener switch.
TRNK/HAT MNTR	<b>NOTE:</b> This is displayed even when it is not equipped.
RKE-LOCK	Indicates [On/Off] condition of LOCK signal from Intelligent Key.
RKE-UNLOCK	Indicates [On/Off] condition of UNLOCK signal from Intelligent Key.
RKE-TR/BD	<b>NOTE:</b> This is displayed even when it is not equipped.

## ACTIVE TEST

Test Item	Description
THEFT IND	This test is able to check security indicator lamp operation. Security indicator lamp is turned on when "ON" on CONSULT screen is touched.
VEHICLE SECURITY HORN	This test is able to check horns operation. Horns are activated for 0.5 seconds after "ON" on CONSULT screen is touched.
HEADLAMP(HI)	This test is able to check headlamp operation. Headlamps are activated for 0.5 seconds after "ON" on CONSULT screen is touched.
FLASHER	This test is able to check hazard warning lamp operation. Hazard warning lamps are activated after "ON" on CONSULT screen is touched.

## IMMU

### IMMU : CONSULT Function (BCM - IMMU)

INFOID:000000006962946

## DATA MONITOR

# DIAGNOSIS SYSTEM (BCM)

[WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

Monitor item	Content	
CONFIRM ID ALL	Indicates [YET] at all time. Switches to [DONE] when a registered Intelligent Key backside is contacted to power switch.	A
CONFIRM ID4		B
CONFIRM ID3		
CONFIRM ID2		
CONFIRM ID1		C
NOT REGISTERED	Indicates [ID OK] when key ID that is registered is received or is not yet received. Indicates [ID NG] when key ID that is not registered is received.	
TP 4	Indicates the number of IDs that are registered.	D
TP 3		
TP 2		
TP 1		E
PUSH SW	Indicates [ON/OFF] condition of power switch.	

## ACTIVE TEST

Test item	Description	
THEFT IND	This test is able to check security indicator lamp operation. Security indicator lamp is turned on when "ON" on CONSULT screen touched.	F G

## WORK SUPPORT

Service item	Description	
CONFIRM DONGLE ID	It is possible to check that dongle unit is applied to the vehicle.	H I

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# DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

## DIAGNOSIS SYSTEM (IPDM E/R)

### CONSULT Function (IPDM E/R)

INFOID:000000006991365

#### APPLICATION ITEM

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

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

#### SELF DIAGNOSTIC RESULT

Refer to [PCS-18. "DTC Index"](#).

#### DATA MONITOR

Monitor item

Monitor Item [Unit]	MAIN SIGNALS	Description
AC COMP REQ [Off/On]	×	<b>NOTE:</b> The item is indicated, but not monitored.
TAIL&CLR REQ [Off/On]	×	Displays the status of the position light request signal received from BCM via CAN communication.
HL LO REQ [Off/On]	×	Displays the status of the low beam request signal received from BCM via CAN communication.
HL HI REQ [Off/On]	×	Displays the status of the high beam request signal received from BCM via CAN communication.
FR FOG REQ [Off/On]	×	Displays the status of the front fog light request signal received from BCM via CAN communication.
FR WIP REQ [Stop/1LOW/Low/Hi]	×	Displays the status of the front wiper request signal received from BCM via CAN communication.
WIP AUTO STOP [STOP P/ACT P]	×	Displays the status of the front wiper auto stop signal judged by IPDM E/R.
WIP PROT [Off/BLOCK]	×	Displays the status of the front wiper fail-safe operation judged by IPDM E/R.
IGN RLY1 -REQ [Off/On]		Displays the status of the power switch ON signal received from BCM via CAN communication.
IGN RLY [Off/On]	×	Displays the status of the ignition relay judged by IPDM E/R.
PUSH SW [Off/On]		Displays the status of the power switch judged by IPDM E/R.
INTER/NP SW [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
ST RLY CONT [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
IHBT RLY -REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
ST/INHI RLY [Off/ ST ON/INHI ON/UNKWN]		<b>NOTE:</b> The item is indicated, but not monitored.
DETENT SW [Off/On]		Displays the status of the P position signal judged by IPDM E/R.



# DIAGNOSIS SYSTEM (IPDM E/R)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item [Unit]	MAIN SIGNALS	Description
S/L RLY -REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
S/L STATE [LOCK/UNLK/UNKWN]		<b>NOTE:</b> The item is indicated, but not monitored.
DTRL REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
OIL P SW [Open/Close]		<b>NOTE:</b> The item is indicated, but not monitored.
HOOD SW [Off/On]		Displays the status of the hood switch judged by IPDM E/R.
HL WASHER REQ [Off/On]		<b>NOTE:</b> The item is indicated, but not monitored.
THFT HRN REQ [Off/On]		Displays the status of the theft warning horn request signal received from BCM via CAN communication.
HORN CHIRP [Off/On]		Displays the status of the horn reminder signal received from BCM via CAN communication.

## ACTIVE TEST

Test item

Test item	Operation	Description
HORN	On	Operates horn relay for 20 ms.
REAR DEFOGGER	Off	OFF
	On	Operates the rear window defogger relay.
FRONT WIPER	Off	OFF
	Lo	Operates the front wiper relay.
	Hi	Operates the front wiper relay and front wiper high relay.
MOTOR FAN	1	<b>NOTE:</b> This item is indicated, but cannot be tested.
	2	
	3	
	4	
HEAD LAMP WASHER	On	<b>NOTE:</b> This item is indicated, but cannot be tested.
EXTERNAL LAMPS	Off	OFF
	TAIL	Operates the tail lamp relay.
	Lo	Operates the headlamp low relay.
	Hi	Operates the headlamp low relay and ON/OFF the headlamp high relay at 1 second intervals.
	Fog	Operates the front fog lamp relay.

# ECU DIAGNOSIS INFORMATION

## VCM, IPDM E/R, BCM

### List of ECU Reference

INFOID:000000006962948

ECU		Reference
VCM	Reference Value	<a href="#">EVC-60, "Reference Value"</a>
	Fail-safe	<a href="#">EVC-73, "Fail-Safe"</a>
	DTC Inspection Priority Chart	<a href="#">EVC-76, "DTC Inspection Priority Chart"</a>
	DTC Index	<a href="#">EVC-76, "DTC Inspection Priority Chart"</a>
IPDM E/R	Reference Value	<a href="#">PCS-14, "Reference Value"</a>
	Fail-safe	<a href="#">PCS-17, "Fail-Safe"</a>
	DTC Index	<a href="#">PCS-18, "DTC Index"</a>
BCM	Reference Value	<a href="#">BCS-32, "Reference Value"</a>
	Fail-safe	<a href="#">BCS-52, "Fail-safe"</a>
	DTC Inspection Priority Chart	<a href="#">BCS-53, "DTC Inspection Priority Chart"</a>
	DTC Index	<a href="#">BCS-54, "DTC Index"</a>



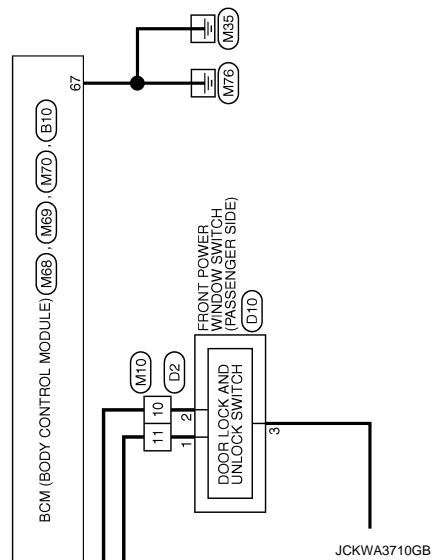


# SECURITY CONTROL SYSTEM

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]

A  
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P



SEC

# SECURITY CONTROL SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

## SECURITY CONTROL SYSTEM

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH2MW-NH



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
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Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	R	-
3	SHIELD	-
4	B	-
5	W	-
6	R	-
7	G	-
8	R	-
9	L	-
10	G	-
11	C	-
12	L	-
13	G	-
14	L	-
15	L	-
16	G	-
17	L	-
18	BR	-
19	BR	-
20	Y	-
21	B	-
22	B	-
23	L	-
24	L	-
25	L	-
26	P	-
27	L	-
28	L	-
29	L	-
30	P	-
31	L	-
32	P	-

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	TH2MW-NH



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

Terminal No.	Color of Wire	Signal Name [Specification]
8	BR	-
11	R	-
12	G	-
17	G	-
18	R	-
20	B	-
21	W	-

22	V	-
23	LG	-
24	SHIELD	-

Connector No.	B10
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FB-THA6-SA



41	42	43	44	45	46	47	48	49
50	51	52	53	54	55			

Terminal No.	Color of Wire	Signal Name [Specification]
43	Y	BACK DOOR SW
44	LC	REAR WIPER STOP POSITION
45	BR	PASSENGER DOOR SW
46	R	REAR RH DOOR SW
47	SB	DRIVER DOOR SW
48	W	REAR LH DOOR SW
49	L	LUGGAGE LAMP OUTPUT
50	P	BACK DOOR REQ SW
51	GR	BK DOOR OPEN OUTPUT
52	P	REAR WIPER OUTPUT
53	GR	REAR WIPER OUTPUT
54	P	PASS. RR DOOR UNLK OUTPUT
55	GR	PASS. RR DOOR UNLK OUTPUT

Connector No.	B18
Connector Name	WIRE TO WIRE
Connector Type	NH10MR-GS10



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

Terminal No.	Color of Wire	Signal Name [Specification]
5	P	-
6	R	-
7	P	-
9	P	-
10	Y	-
11	B	-

12	W	-
13	R	-
14	L	-
15	LG	-
17	SHIELD	-
18	B	-
20	GR	-

Connector No.	B48
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	TH04FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
3	SB	-

Connector No.	B49
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	TH04FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
3	BR	-

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	TH04FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
3	R	-

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	TH04FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
3	W	-

Connector No.	BB1
Connector Name	INSIDE KEY ANTENNA (REAR SEAT)
Connector Type	RK02FL



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

JCKWA3711GB

# SECURITY CONTROL SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

## SECURITY CONTROL SYSTEM

Connector No.	B82
Connector Name	INSIDE KEY ANTENNA (LUGGAGE ROOM)
Connector Type	RK02FL



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	-
2	LG	-

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Type	TH02FW-CS15



Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	-
2	R	-
3	Y	-
4	V	-
10	BR	-
11	Y	-
12	B	-
13	W	-
14	SB	-
15	R	-
24	Y	-
25	BR	-
26	SHIELD	-
36	B	-
37	P	-
38	Y	-
39	LG	-
44	V	-
45	W	-
46	EG	-

Connector No.	D10
Connector Name	FRONT POWER WINDOW SWITCH (PASSENGER SIDE)
Connector Type	NS12FT-CS



Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	-
2	BR	-
3	B	-
6	Y	-
7	R	-
8	R	-
11	SB	-
12	W	-

Connector No.	D15
Connector Name	FRONT DOOR REQUEST SWITCH (PASSENGER SIDE)
Connector Type	RK02FE



Terminal No.	Color of Wire	Signal Name [Specification]
1	P	-
2	B	-

Connector No.	D22
Connector Name	WIRE TO WIRE
Connector Type	TH02FW-CS15



Terminal No.	Color of Wire	Signal Name [Specification]
1	L	-
2	V	-
3	SB	-
4	V	-
7	B	-
8	BR	-
9	LG	-
10	Y	-
11	W	-
12	SB	-
13	B	-
14	V	-
15	R	-
24	R	-
25	G	-
26	SHIELD	-
37	LG	-
38	V	-
39	P	-
40	Y	-
41	GR	-
42	V	-
43	L	-
44	L	-
45	LG	-
46	BR	-
47	G	-
48	R	-
49	R	-
50	BR	-

Connector No.	D34
Connector Name	FRONT DOOR REQUEST SWITCH (DRIVER SIDE)
Connector Type	RK02FE



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	-
2	B	-

Connector No.	D35
Connector Name	POWER WINDOW MAIN SWITCH
Connector Type	NS16PW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
1	B	-
2	SB	-
3	Y	-
4	W	-
5	Y	-
6	Y	-
7	LG	-
8	BR	-
9	P	-
10	V	-
12	R	-
14	G	-
15	BR	-
16	W	-

JCKWA3712GB

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SEC

# SECURITY CONTROL SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

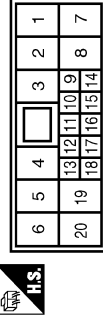
## SECURITY CONTROL SYSTEM

Connector No.	D38
Connector Name	FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE)
Connector Type	EDFCY-RS



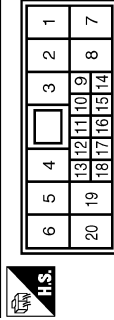
Terminal No.	1	2	3	4	5	6
Color of Wire	V	SB	G	B	L	R
Signal Name [Specification]	-	-	-	-	-	-

Connector No.	D71
Connector Name	WIRE TO WIRE
Connector Type	NH1DFW-CS10



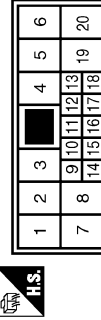
Terminal No.	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Color of Wire	W	R	P	P	P	P	B	W	W	R	LG	LG	Y	Y	GR	-
Signal Name [Specification]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Connector No.	D73
Connector Name	WIRE TO WIRE
Connector Type	NH1DFW-CS10



Terminal No.	5	6	7	9	10	12	13	14	15	16	17	18	20
Color of Wire	W	R	P	P	P	W	R	L	LG	LG	SHIELD	Y	GR
Signal Name [Specification]	-	-	-	-	-	-	-	-	-	-	-	-	-

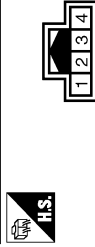
Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	NH10MW-CS10



Terminal No.	5	6	7	9	10	11	12	13	14	15	16	17	18	19	20
Color of Wire	P	R	R	P	P	P	W	W	R	L	LG	LG	Y	Y	SHIELD
Signal Name [Specification]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

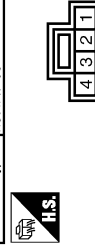
Terminal No.	18	20
Color of Wire	B	GR
Signal Name [Specification]	-	-

Connector No.	D111
Connector Name	BACK DOOR OPENER SWITCH ASSEMBLY
Connector Type	TH4MNGY-RC



Terminal No.	1	2	3	4
Color of Wire	L	B	B	P
Signal Name [Specification]	-	-	-	-

Connector No.	D112
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	NSMFW-CS



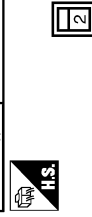
Terminal No.	1	2	3	4
Color of Wire	GR	B	P	B
Signal Name [Specification]	-	-	-	-

Connector No.	E6
Connector Name	VEHICLE SECURITY HORN
Connector Type	PO1FB-A



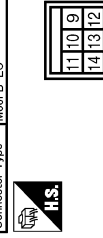
Terminal No.	1
Color of Wire	G
Signal Name [Specification]	-

Connector No.	E7
Connector Name	VEHICLE SECURITY HORN
Connector Type	PO1FB-A



Terminal No.	2
Color of Wire	B/Y
Signal Name [Specification]	-

Connector No.	E11
Connector Name	VEHICLE INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	IM08FB-LC



Terminal No.	9	14
Color of Wire	B	R
Signal Name [Specification]	-	-

JCKWA3713GB



# SECURITY CONTROL SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

## SECURITY CONTROL SYSTEM

Connector No.	E12
Connector Name	IPW/E-PI INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	NS08FBR-CS



17	16	15
22	21	20
19	18	19

Terminal No.	Color of Wire	Signal Name [Specification]
18	B/W	-
19	W	-
20	V	-

Connector No.	E13
Connector Name	IPW/E-PI INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH12FW-NH



28	27	26	25	24	23
34	33	32	31	30	29

Terminal No.	Color of Wire	Signal Name [Specification]
25	R	-
26	P	-
27	L	-
34	W	-

Connector No.	E14
Connector Name	IPW/E-PI INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	NS12FBR-OS



39	38	37	36	35
46	45	44	43	42
41	40			

Terminal No.	Color of Wire	Signal Name [Specification]
35	G	-
36	GR	-
37	V	-
38	L	-
41	W	-
42	R	-
43	O	-
44	LG	-
45	Y	-

Connector No.	E17
Connector Name	IPW/E-PI INTELLIGENT POWER DISTRIBUTION MODULE (ENGINE ROOM)
Connector Type	TH10FBR-NH



67	66	65	64	63
72	71	70	69	68

Terminal No.	Color of Wire	Signal Name [Specification]
64	P	-
66	W	-
68	O	-

Connector No.	E35
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	RM25FEB-NUH-DH



1	2	3	4
15	14	13	12
11	10	9	8
7	6	5	4

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	MOTOR BATTERY
2	R	VALVE BATTERY
3	B	GND
4	B	GND
5	P	ESP OFF SW SIGNAL
6	O	BRAKE SW SIGNAL

7	L/Y	PRESS SENSOR SIGNAL
8	SB	STOP LAMP SW SIGNAL
9	B	CAN-L
10	W/L	PRESS SENSOR POWER SUPPLY
11	BR	FR RH WHEEL SENSOR POWER SUPPLY
12	W	FR RH WHEEL SENSOR SIGNAL
13	G	G SENSOR POWER SUPPLY
14	B	G SENSOR SIGNAL (+)
15	LG	RR RH WHEEL SENSOR SIGNAL
16	V	POWER SWITCH ON
20	B	BRAKE COMM
21	B	FR RH WHEEL SENSOR POWER SUPPLY
22	L	CAN-H
23	R	FR LH WHEEL SENSOR POWER SUPPLY
26	B	FR LH WHEEL SENSOR SIGNAL
27	Y	FR LH WHEEL SENSOR SIGNAL
28	R	G SENSOR GND
29	V	G SENSOR SIGNAL (-)
30	G	RR LH WHEEL SENSOR SIGNAL
32	L/O	PRESS SENSOR GND

Connector No.	E81
Connector Name	V/OM
Connector Type	RH24FGY-R23-R-RH



1	5	9	13	17	21	25	29
2	6	10	14	18	22	26	30
3	7	11	15	19	23	27	31
4	8	12	16	20	24	28	32

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	POWER ON POWER SUPPLY
4	B/R	GROUND
5	SB	A/C RELAY
6	R	BATTERY POWER SUPPLY
7	W	SSOPF RELAY
8	B/R	GROUND
9	L	EV SYSTEM CAN-H
13	G	EV SYSTEM CAN-L
15	O	ASC2 BRAKE SWITCH SIGNAL
18	SB	STOP LAMP SW SIGNAL
21	R	POWER ON POWER SUPPLY
23	P	HIGH VOLTAGE CABLE INTERLOCK
25	L	CAN-H
26	Y	WATER PUMP 2 SIGNAL
28	W	WATER PUMP 1 SIGNAL
29	P	CAN-L

Connector No.	E63
Connector Name	V/OM
Connector Type	RM24FEB-R23-L-RH



81	85	86	87	88
82	86	90	93	97
83	87	91	107	111
84	88	92	108	112

Terminal No.	Color of Wire	Signal Name [Specification]
81	GR	K-LINE
84	LG	EV SYSTEM ACTIVATION REQUEST SIGNAL
85	P	CHARGING STATUS INDICATOR 2
86	V	CHARGING STATUS INDICATOR 1
87	L	PLUG IN INDICATOR LAMP
88	Y	AVSFP CONTROL SIGNAL
89	V	IMMEDIATE CHARGING SWITCH
90	W	STARTER RELAY CONT
91	O	ELECTRIC SHIFT WARNING SIGNAL
92	G	CHARGING STATUS INDICATOR 3
96	GR	EV SYSTEM ACTIVATION REQUEST SIGNAL
104	SB	ASC2 STEERING SWITCH
105	L/O	PRE-CHARGE RELAY
107	W/L	SYSTEM MAIN RELAY 1
108	BR	ASC2 STEERING SWITCH GROUND
110	L/Y	SYSTEM MAIN RELAY 2
111	B/R	GROUND
112	B/R	GROUND

Connector No.	E13
Connector Name	VEHICLE SECURITY HORN RELAY
Connector Type	MS03FW-R-LC



2	3	1
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Terminal No.	Color of Wire	Signal Name [Specification]
1	R	-
2	O	-
3	G	-

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SEC

JCKWA3714GB

# SECURITY CONTROL SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

## SECURITY CONTROL SYSTEM

Connector No.	E102
Connector Name	STOP LAMP SWITCH
Connector Type	M04RV-LC



3	4
1	2

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	
2	SB	
3	LG	
4	P	

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS1F-TM4



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	
2	R	
3	GR	
4	LG	
6	W	
7	V	
8	P	
9	G	
10	R	
11	O	
12	W	
13	B	
14	Y	
15	BR	
16	LG	
17	L	
18	G	
19	G	
20	Y	

21	P	
22	LG	
23	GR	
24	L	
25	R	
26	SB	
27	B	
29	BR	
30	W	
31	V	
32	LG	
33	O	
34	L	
35	BR	
38	SB	
39	GR	
40	Y	
41	R	
42	W	
43	SB	
44	GR	
45	G	
46	P	
47	LG	
48	V	
49	G	
50	L	
51	W	
54	P	
55	O	
56	Y	
57	P	
58	LG	
60	LG	
61	GR	
62	BR	
64	R	
65	Y	
66	G	
67	V	
68	W	
69	SB	
71	Y	
72	L	
73	R	
74	L	
75	V	
76	P	
80	O	
81	L	
82	SB	
83	G	

84	BR	
85	LG	
86	GR	
88	B	
89	W	
90	SHIELD	
91	Y	
92	BR	
93	W	
94	R	
95	V	
96	P	
97	G	
98	SB	
99	O	

Connector No.	M4
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



1	2	3	4	5	6	7	8
11	12	13	14	15	16		

Terminal No.	Color of Wire	Signal Name [Specification]
3	LG	
4	B	
5	B	
6	L	
7	GR	
8	G	
11	SB	
12	G	
13	L	
14	P	
16	Y	

Connector No.	M10
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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Terminal No.	Color of Wire	Signal Name [Specification]
1	R	
2	G	
3	LG	
4	V	
10	BR	
11	Y	
12	B	
13	W	
14	SB	
15	L	
24	Y	
25	BR	
26	SHIELD	
36	B	
37	P	
38	Y	
39	LG	
44	L	
45	LG	
46	BR	

# SECURITY CONTROL SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

## SECURITY CONTROL SYSTEM

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS-5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Terminal No.	Color of Wire	Signal Name [Specification]
1	P	-
2	L	-
3	G	-
4	V	-
7	BR	-
8	Y	-
9	LG	-
10	Y	-
11	W	-
12	SB	-
13	B	-
14	L	-
15	R	-
24	R	-
25	G	-
26	SHIELD	-
37	LG	-
38	V	-
39	P	-
40	Y	-
41	B	-
42	P	-
43	L	-
44	L	-
45	LG	-
46	BR	-
47	W	-
48	GR	-
49	R	-
50	BR	-

Connector No.	M21
Connector Name	WIRE TO WIRE
Connector Type	TR32FW-NH

15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
1	W	-
3	SHIELD	-
4	B	-
5	W	-
6	V	-
11	G	-
13	L	-
16	G	-
18	BR	-
19	G	-
20	V	-
22	B	-
27	L	-
31	L	-
32	P	-

Connector No.	M24
Connector Name	INSIDE KEY ANTENNA (INSTRUMENT CENTER)
Connector Type	FK02FL

1	2
---	---

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	-
2	Y	-

Connector No.	M25
Connector Name	POWER SWITCH
Connector Type	TK08FBR

4	5	6	7	8
9	10	11	12	13

Terminal No.	Color of Wire	Signal Name [Specification]
3	G	-
4	B	-
5	W	-
6	B	-
7	V	-
8	SB	-

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH

30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	BATTERY POWER SUPPLY
2	R	BATTERY POWER SUPPLY (FOR UPPER METER)
3	GR	POWER SWITCH SUPPLY
4	BR	POWER SWITCH SUPPLY (FOR UPPER METER)
5	B	GROUND
6	B	GROUND
7	V	ELECTRIC SHIFT WARNING SIGNAL
9	G	PLUG IN SIGNAL
10	L	COMMUNICATION SIGNAL (METER → VSP)
11	P	COMMUNICATION SIGNAL (VSP → METER)
12	V	METER CONTROL SWITCH GROUND
13	LG	ENTER SWITCH SIGNAL
14	W	SELECT SWITCH SIGNAL
15	BR	TRIP RESET SWITCH SIGNAL
16	BR	ILLUMINATION CONTROL SWITCH SIGNAL
17	V	ILLUMINATION CONTROL SIGNAL FOR UPPER METER

18	P	CAN-L
19	L	CAN-H
20	V	SEAT BELT BUCKLE SWITCH SIGNAL (PASSENGER SIDE)
22	GR	GROUND (FOR UPPER METER)
24	BR	ELECTRIC PARKING BRAKE CONTROL MODULE INVERSE SIGNAL
25	SB	BRAKE FLUID LEVEL SWITCH SIGNAL
26	B	ILLUMINATION CONTROL SIGNAL
27	R	AIR BAG SIGNAL
28	R	SECURITY SIGNAL
30	GR	VEHICLE SPEED SIGNAL (9-PULSE)
32	W	COMMUNICATION SIGNAL (METER → UPPER)
33	LG	COMMUNICATION SIGNAL (UPPER → METER)
34	L	PLUG IN INDICATOR LAMP SIGNAL
38	V	LED HEADLAMP (RH) WARNING SIGNAL
39	LG	LED HEADLAMP (LH) WARNING SIGNAL
40	Y	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)

Connector No.	M49
Connector Name	NATS ANTENNA AMP.
Connector Type	TH40FW-NH

1	2	3	4
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Terminal No.	Color of Wire	Signal Name [Specification]
1	P	BAT
2	P	CLK
3	LG	DATA
4	B	GND

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SEC

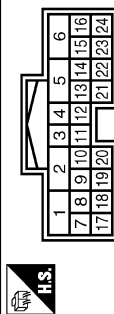
# SECURITY CONTROL SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

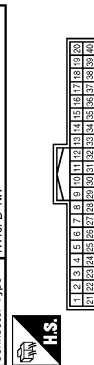
## SECURITY CONTROL SYSTEM

Connector No.	M58
Connector Name	ELECTRIC SHIFT CONTROL MODULE
Connector Type	TH20FW-TE4-1V



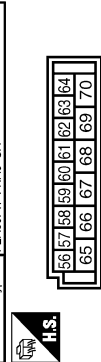
Terminal No.	Color of Wire	Signal Name [Specification]
1	L	MOTOR COIL A U-PHASE
2	W	MOTOR COIL A V-PHASE
3	B	GND
4	B	GND
5	V	MOTOR COIL A W-PHASE
6	B	GND (MOTOR)
7	W	MAIN POWER SUPPLY 1
8	R	BACK UP POWER SUPPLY
9	BR	POWER SW 1
10	Y	ANGLE SENSOR 1 POWER SUPPLY
11	L	ANGLE SENSOR 1 SIGNAL
12	W	P POSITION SIGNAL
13	R	P/N POSITION SIGNAL
14	P	STOP LAMP SWITCH
15	LG	ENCODER SIGNAL B
16	R	ENCODER POWER SUPPLY
17	V	ELECTRIC SHIFT POWER SUPPLY RELAY
18	SB	PARKING ACTUATOR RELAY A
19	P	ELECTRIC SHIFT SENSOR POWER SUPPLY 1
20	LG	WAKE UP SIGNAL
21	GR	ANGLE SENSOR 1 GND
22	L	N POSITION OUTPUT
23	G	ENCODER GND
24	W	ENCODER SIGNAL A

Connector No.	M58
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color of Wire	Signal Name [Specification]
2	L	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	BR	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	P	COMBI SW INPUT 1
7	GR	KEY CYL UNLK SW
8	R	KEY CYL LOCK SW
9	BR	STOP LAMP SW 1
12	Y	DOOR LK & UNLK SW LOCK
13	BR	DOOR LK & UNLK SW UNLOCK
14	G	OPTICAL SENS
15	W	REAR WINDOW DEF SW
16	R	DIMMER
17	Y	OPTICAL SENS PWR SPLY
18	V	SENS/RECEIV GND
21	P	NATS ANTENNA AMP
23	R	SECURITY IND LAMP CONT
25	LG	NATS ANTENNA AMP
29	P	HAZARD SW
30	L	BK DOOR OPENER SW
31	W	DR DOOR UNLK SENS
32	LG	COMBI SW OUTPUT 5
33	Y	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R	COMBI SW OUTPUT 2
36	P	COMBI SW OUTPUT 1
37	W	P POSITION
38	SB	RECEIVER COMM
39	L	CAN-H
40	P	CAN-L

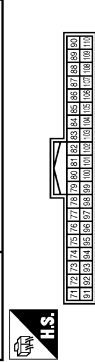
Connector No.	M69
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FE409FW-FH4&S-A



Terminal No.	Color of Wire	Signal Name [Specification]
56	P	INT ROOM LAMP PWR SPLY
57	P	BAT (FUSE)
59	LG	PASS DOOR UNLK OUTPUT
60	V	TURN SIG LH OUTPUT

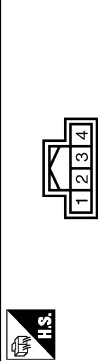
Terminal No.	Color of Wire	Signal Name [Specification]
61	W	TURN SIG RH OUTPUT
63	BR	INT ROOM LAMP CONT
65	V	ALL DOOR LOCK OUTPUT
66	G	DR DOOR UNLK OUTPUT
67	B	GND
68	L	PW PWR SPLY (ON)
69	P	PW PWR SPLY (BAT)
70	Y	BAT (F/L)

Connector No.	M70
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
75	LG	DR DOOR REQ SW
76	SB	POWER SW (PUSH SW)
78	P	DRIVER DOOR ANT+
79	V	DRIVER DOOR ANT-
80	LG	PASS DOOR ANT+
81	Y	PASS DOOR ANT-
82	W	REAR BMPR ANT+
83	B	REAR BMPR ANT-
84	BR	ROOM ANT 1+
85	Y	ROOM ANT 1-
86	G	ROOM ANT 2+
87	R	ROOM ANT 2-
88	V	LUGGAGE ROOM ANT+
89	LG	LUGGAGE ROOM ANT-
90	W	POWER SW (LLE PWR)
91	V	ACC-7 ON IND
92	B	POWER SW (LL GND CONT)
93	GR	T-KEY WARN BUZZER
96	BR	ACC RELAY CONT
97	W	READY
98	G	IGN RELAY (PDM E/R CONT)
99	R	IGN RELAY (F/B CONT)
100	P	PASS DOOR REQ SW
102	R	P/N POSITION
104	LG	WAKE-UP
105	P	STOP LAMP SW 2

Connector No.	M75
Connector Name	REMOTE KEYLESS ENTRY RECEIVER
Connector Type	TH40FW-NH



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	GND
2	SB	SIGNAL
4	V	POWER

# SECURITY CONTROL SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

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## SECURITY CONTROL SYSTEM

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FN-CS1.6-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	-
2	V	-
3	GR	-
4	LG	-
5	W	-
6	W	-
7	Y	-
8	P	-
9	SB	-
10	L	-
11	LG	-
12	W	-
13	R	-
14	Y	-
15	R	-
16	GR	-
17	BR	-
18	G	-
19	G	-
20	G	-
21	P	-
22	LG	-
23	GR	-
24	L	-
25	V	-
26	W	-
27	L	-
28	V	-
30	W	-
31	SB	-
32	LG	-
33	V	-
34	L	-
35	SB	-
38	LG	-
39	GR	-
40	Y	-
41	R	-
42	W	-
43	SB	-

44	GR	-
45	P	-
46	R	-
47	W	-
48	L	-
49	G	-
50	L	-
51	L	-
54	W	-
55	G	-
56	BR	-
57	P	-
58	R	-
60	Y	-
61	GR	-
62	SB	-
64	G	-
65	V	-
66	P	-
67	Y	-
68	P	-
69	BR	-
71	Y	-
72	L	-
73	G	-
74	L	-
75	V	-
76	R	-
80	W	-
81	L	-
82	SB	-
83	R	-
84	BR	-
85	R	-
86	GR	-
88	R	-
89	W	-
90	SHIELD	-
91	Y	-
92	BR	-
93	W	-
94	P	-
95	V	-
96	P	-
97	G	-
98	R	-
99	LG	-

Connector No.	M79
Connector Name	WIRE TO WIRE
Connector Type	TH24FN-NH



Terminal No.	Color of Wire	Signal Name [Specification]
8	BR	-
11	R	-
12	G	-
17	G	-
18	V	-
20	B	-
21	W	-
22	V	-
23	LG	-
24	SHIELD	-

JCKWA3718GB

SEC

# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

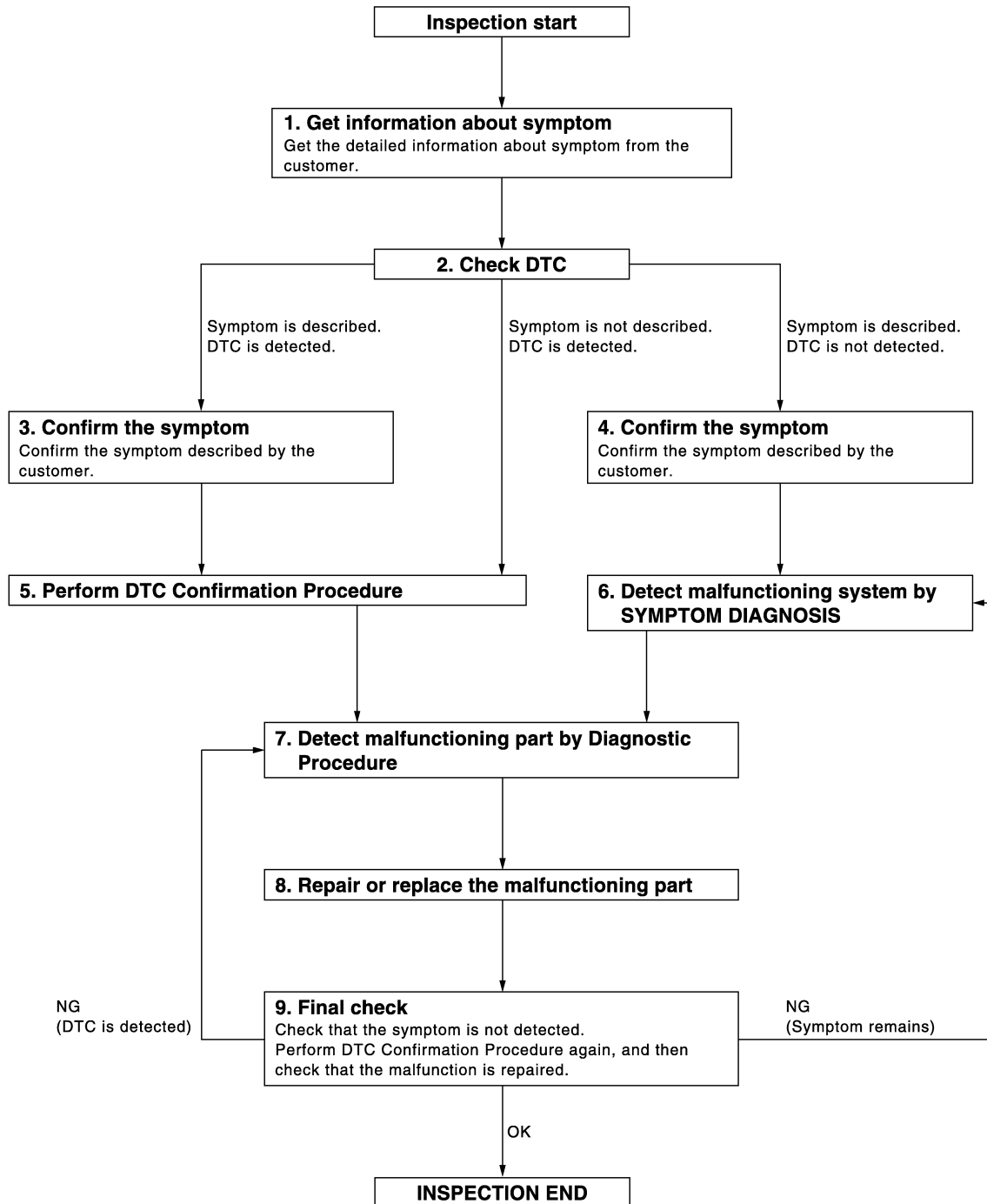
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

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OVERALL SEQUENCE



DETAILED FLOW

JMKIA3449GB

# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

## 1.GET INFORMATION ABOUT SYMPTOM

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

>> GO TO 2.

## 2.CHECK DTC

1. Check DTC of "EV/HEV, "BCM" and "IPDM E/R" using CONSULT.
2. Perform the following procedure if DTC is detected.
  - Record DTC and freeze frame data (Print them out using CONSULT.)
  - Erase DTC.
  - Study the relationship between the cause detected by DTC and the symptom described by the customer.
3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.

Symptom is described, DTC is not detected>>GO TO 4.

Symptom is not described, DTC is detected>>GO TO 5.

## 3.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.

Connect CONSULT to the vehicle, and check self diagnostic results in real time.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

## 4.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.

Connect CONSULT to the vehicle, and check self diagnostic results in real time.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

## 5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.

If two or more DTCs are detected, refer to [BCS-53. "DTC Inspection Priority Chart"](#) (BCM) or [PCS-18. "DTC Index"](#) (IPDM E/R), and determine trouble diagnosis order.

Is DTC detected?

YES >> GO TO 7.

NO >> Refer to [GI-51. "Intermittent Incident"](#).

## 6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

Detect malfunctioning system according to SYMPTOM DIAGNOSIS based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

>> GO TO 7.

## 7.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

**NOTE:**

The Diagnostic Procedure is described based on open and short circuit inspection.

Is malfunctioning part detected?

YES >> GO TO 8.

NO >> Check voltage of related BCM terminals or IPDM E/R terminals using CONSULT.

## 8.REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.

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## DIAGNOSIS AND REPAIR WORK FLOW

[WITH INTELLIGENT KEY SYSTEM]

< BASIC INSPECTION >

2. Reconnect parts or connectors disconnected during Diagnostic Procedure again after repair and replacement.
3. Check DTC. If DTC is detected, erase it.

>> GO TO 9.

### 9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.

When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Does the symptom reappear?

YES (DTC is detected)>>GO TO 7.

YES (Symptom remains)>>GO TO 6.

NO >> INSPECTION END



# ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

## ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

### VCM

#### VCM : Description

INFOID:000000006962951

Performing the following procedure can automatically activate recommunication of VCM and BCM, but only when the VCM is replaced with a new one\*.

\*: New one means a virgin VCM that has never been energized on-board.

(In this step, initialization procedure using CONSULT is not necessary)

#### NOTE:

- When the replaced VCM is not a brand new, the initialization of BCM using CONSULT is necessary.
- If multiple keys are attached to the key holder, separate them before beginning work.
- Distinguish keys with unregistered key IDs from those with registered IDs.

#### VCM : Work Procedure

INFOID:000000006962952

### 1.PERFORM VCM RECOMMUNICATING FUNCTION

1. Install VCM.
2. Contact backside of registered Intelligent key\* to power switch while brake pedal is depressed, then turn power switch to the ON position.  
\*: To perform this step, use the key that is used before performing VCM replacement.
3. Maintain power switch in the ON position for at least 5 seconds.
4. Turn power switch to the OFF position.
5. Check that the vehicle can be set to READY.

>> GO TO 2.

### 2.PERFORM ADDITIONAL SERVICE WHEN REPLACING VCM

Perform the following procedure [EVC-315, "Removal and Installation"](#).

>> END

### BCM

#### BCM : Description

INFOID:000000006991366

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#### BEFORE REPLACEMENT

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

#### NOTE:

If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing BCM.

#### AFTER REPLACEMENT

#### CAUTION:

When replacing BCM, always perform "WRITE CONFIGURATION" with CONSULT. Or not doing so, BCM control function does not operate normally.

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

#### NOTE:

When replacing BCM, perform the system initialization (NATS).

#### BCM : Work Procedure

INFOID:000000006991367

### 1.SAVING VEHICLE SPECIFICATION

#### CONSULT Configuration

Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to [BCS-63, "CONFIGURATION \(BCM\) : Description"](#).

## ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

[WITH INTELLIGENT KEY SYSTEM]

< BASIC INSPECTION >

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### NOTE:

If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing BCM.

>> GO TO 2.

## 2. REPLACE BCM

---

Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).

>> GO TO 3.

## 3. WRITING VEHICLE SPECIFICATION

---

### ⓈCONSULT Configuration

Perform "WRITE CONFIGURATION - Config file" or "WRITE CONFIGURATION - Manual selection" to write vehicle specification. Refer to [BCS-63, "CONFIGURATION \(BCM\) : Work Procedure"](#).

>> GO TO 4.

## 4. INITIALIZE BCM (NATS)

---

Perform BCM initialization. (NATS)

>> WORK END

# DTC/CIRCUIT DIAGNOSIS

## P1610 LOCK MODE

### Description

INFOID:000000006962957

VCM forcibly switches to the mode that inhibits vehicle to be READY, when READY set operation is performed 5 times or more while communication between VCM and BCM is not normal.

### DTC Logic

INFOID:000000006962958

### DTC DETECTION LOGIC

**NOTE:**

If DTC P1610 is displayed with other DTC (for BCM or EV/HEV), first perform the trouble diagnosis for other DTC.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When VCM detects a communication malfunction between VCM and BCM 5 times or more.	—

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn power switch ON.
2. Check DTC in "Self Diagnostic Result" mode of "EV/HEV" using CONSULT.

Is DTC detected?

- YES >> Go to [SEC-51. "Diagnosis Procedure"](#).
- NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962959

#### 1. CHECK VEHICLE READY SET FUNCTION

1. Check that DTC except DTC P1610 is not detected.  
If detected, erase the DTC after fixing.
2. Turn power switch OFF.
3. Contact the registered Intelligent Key backside to power switch and wait 5 seconds.
4. Turn power switch ON.
5. Turn power switch OFF and wait 5 seconds.
6. Repeat steps 3 and 5 twice (a total of 3 times).
7. Check that vehicle can be set to READY.

>> INSPECTION END



# P1611 ID DISCORD, IMMU-VCM

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## P1611 ID DISCORD, IMMU-VCM

### DTC Logic

INFOID:000000006962960

### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1611	ID DISCORD, IMMU-VCM	The ID verification results between BCM and VCM are NG.	<ul style="list-style-type: none"><li>• BCM</li><li>• VCM</li></ul>

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn power switch ON.
2. Check DTC in "Self Diagnostic Result" mode of "EV/HEV" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-52. "Diagnosis Procedure"](#).  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962961

#### 1.PERFORM INITIALIZATION

1. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.
2. Check that the vehicle can be set to READY using registered Intelligent Key.

#### Is the inspection result normal?

- YES >> INSPECTION END  
NO >> GO TO 2.

#### 2.CHECK SELF DIAGNOSTIC RESULT

1. Select "Self Diagnostic Result" mode of "EV/HEV" using CONSULT.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC P1611. Refer to [SEC-52. "DTC Logic"](#).

#### Is DTC detected?

- YES >> GO TO 3.  
NO >> INSPECTION END

#### 3.REPLACE BCM

1. Replace BCM. Refer to [BCS-76. "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.
3. Check that the vehicle can be set to READY using registered Intelligent Key.

#### Is the inspection result normal?

- YES >> INSPECTION END  
NO >> GO TO 4.

#### 4.REPLACE VCM

Replace VCM. Refer to [EVC-315. "Removal and Installation"](#).

>> INSPECTION END

# P1612 CHAIN OF VCM-IMMU

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## P1612 CHAIN OF VCM-IMMU

### DTC Logic

INFOID:000000006962962

### DTC DETECTION LOGIC

#### NOTE:

- If DTC P1612 is displayed with DTC U1000 (for BCM), first perform the trouble diagnosis for DTC U1000. Refer to [BCS-65, "DTC Logic"](#).
- If DTC P1612 is displayed with DTC U1010 (for BCM), first perform the trouble diagnosis for DTC U1010. Refer to [BCS-66, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1612	CHAIN OF VCM-IMMU	Inactive communication between VCM and BCM	<ul style="list-style-type: none"><li>• Harness or connectors (The CAN communication line is open or shorted.)</li><li>• BCM</li><li>• VCM</li></ul>

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn power switch ON.
2. Check DTC in "Self Diagnostic Result" mode of "EV/HEV" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-53, "Diagnosis Procedure"](#).  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962963

#### 1.REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.
3. Check that the vehicle can be set to READY using registered Intelligent Key.

#### Is the inspection result normal?

- YES >> INSPECTION END  
NO >> GO TO 2.

#### 2.REPLACE VCM

Replace VCM. Refer to [EVC-315, "Removal and Installation"](#).

>> INSPECTION END

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# B2192 ID DISCORD, IMMUECM

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B2192 ID DISCORD, IMMUECM

### DTC Logic

INFOID:000000006962964

### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2192	ID DISCORD BCM-ECM*	The ID verification results between BCM and VCM are NG.	<ul style="list-style-type: none"><li>• BCM</li><li>• VCM</li></ul>

\*: "ECM" is indicated on CONSULT display, however this means VCM on this vehicle.

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn power switch ON.
2. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-54, "Diagnosis Procedure"](#).  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962965

#### 1. PERFORM INITIALIZATION

1. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.
2. Check that the vehicle can be set to READY using registered Intelligent Key.

#### Is the inspection result normal?

- YES >> INSPECTION END  
NO >> GO TO 2.

#### 2. CHECK SELF-DIAGNOSIS RESULT

1. Select "Self Diagnostic Result" mode of "BCM" using CONSULT.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2192. Refer to [SEC-54, "DTC Logic"](#).

#### Is DTC detected?

- YES >> GO TO 3.  
NO >> INSPECTION END

#### 3. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.
3. Check that the vehicle can be set to READY using registered Intelligent Key.

#### Is the inspection result normal?

- YES >> INSPECTION END  
NO >> GO TO 4.

#### 4. REPLACE VCM

Replace VCM. Refer to [EVC-315, "Removal and Installation"](#).

>> INSPECTION END

# B2193 CHAIN OF ECM-IMMU

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

## B2193 CHAIN OF ECM-IMMU

### DTC Logic

INFOID:000000006962966

### DTC DETECTION LOGIC

#### NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-65, "DTC Logic"](#).
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-66, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2193	CHAIN OF BCM-ECM*	Inactive communication between BCM and VCM	<ul style="list-style-type: none"><li>• Harness or connectors (The CAN communication line is open or shorted.)</li><li>• BCM</li><li>• VCM</li></ul>

\*: "ECM" is indicated on CONSULT display, however this means VCM on this vehicle.

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn power switch ON.
2. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-55, "Diagnosis Procedure"](#).  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962967

#### 1. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.
3. Check that the vehicle can be set to READY using registered Intelligent Key.

#### Is the inspection result normal?

- YES >> INSPECTION END  
NO >> GO TO 2.

#### 2. REPLACE VCM

Replace VCM. Refer to [EVC-315, "Removal and Installation"](#).

>> INSPECTION END

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# B2195 ANTI-SCANNING

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

## B2195 ANTI-SCANNING

### DTC Logic

INFOID:000000006962968

#### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2195	ANTI-SCANNING	ID verification between BCM and VCM that is out of the specified specification is detected.	ID verification request out of the specified specification

#### DTC CONFIRMATION PROCEDURE

##### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn power switch ON.
2. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

##### Is DTC detected?

- YES >> Refer to [SEC-56, "Diagnosis Procedure"](#).  
NO >> INSPECTION END

#### Diagnosis Procedure

INFOID:000000006962969

##### 1. CHECK SELF DIAGNOSTIC RESULT 1

1. Select "Self Diagnostic Result" mode of "BCM" using CONSULT.
2. Erase DTC.
3. Perform DTC CONFIRMATION PROCEDURE for DTC B2195. Refer to [SEC-56, "DTC Logic"](#).

##### Is DTC detected?

- YES >> GO TO 2.  
NO >> INSPECTION END

##### 2. CHECK EQUIPMENT OF THE VEHICLE

Check that unspecified accessory part related to set vehicle to READY is not installed.

##### Is unspecified accessory part installed?

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

##### 3. CHECK SELF DIAGNOSTIC RESULT 2

1. Obtain the customers approval to remove unspecified accessory part related to set vehicle to READY, and then remove it.
2. Select "Self Diagnostic Result" of "BCM" using CONSULT.
3. Erase DTC.
4. Perform DTC CONFIRMATION PROCEDURE for DTC B2195. Refer to [SEC-56, "DTC Logic"](#).

##### Is DTC detected?

- YES >> GO TO 4.  
NO >> INSPECTION END

##### 4. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END



# B2198 NATS ANTENNA AMP.

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B2198 NATS ANTENNA AMP.

### DTC Logic

INFOID:000000006962970

### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2198	NATS ANTENNA AMP.	Inactive communication between NATS antenna amp. and BCM is detected when BCM enters in the low power consumption mode (BCM sleep condition)	<ul style="list-style-type: none"> <li>• Harness or connectors (NATS antenna amp. circuit is open or shorted.)</li> <li>• NATS antenna amp.</li> <li>• BCM</li> </ul>

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Make the conditions that BCM enters in the low power consumption mode (BCM sleep condition), and wait 15 to 60 minutes. Refer to [BCS-11, "POWER CONSUMPTION CONTROL SYSTEM : System Description"](#).
2. Turn power switch ON.
3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-57, "Diagnosis Procedure"](#).  
 NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962971

#### 1.CHECK FUSE

1. Turn power switch OFF.
2. Check that the following fuse in IPDM E/R is not blown.

Signal name	Fuse No.
Battery power supply	43

#### Is the inspection result normal?

- YES >> GO TO 2.  
 NO >> Replace the blown fuse after repairing the cause of blowing.

#### 2.CHECK NATS ANTENNA AMP. POWER SUPPLY

1. Disconnect NATS antenna amp. connector.
2. Check voltage between NATS antenna amp. harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
NATS antenna amp.			
Connector	Terminal		
M49	1	Ground	6 – 16

#### Is the inspection result normal?

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

#### 3.CHECK NATS ANTENNA AMP. POWER SUPPLY CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and NATS antenna amp. connector.

IPDM E/R		NATS antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
E14	42	M49	1	Existed

## B2198 NATS ANTENNA AMP.

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-28, "Removal and Installation"](#).

NO >> Repair or replace harness.

### 4. CHECK NATS ANTENNA AMP. GROUND CIRCUIT

Check continuity between NATS antenna amp. harness connector and ground.

NATS antenna amp.		Ground	Continuity
Connector	Terminal		
M49	4		Existed

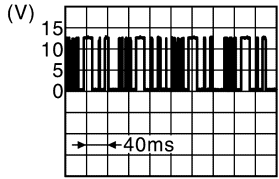
Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness.

### 5. CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 1

Check voltage signal between NATS antenna amp. harness connector and ground using an oscilloscope.

(+)		(-)	Condition	Voltage (V) (Approx.)
NATS antenna amp.				
Connector	Terminal			
M49	2	Ground	Intelligent Key: Intelligent Key battery is removed	
			Brake pedal: Released	9 - 16

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 6.

### 6. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL CIRCUIT 1

1. Disconnect BCM connector.
2. Check continuity between NATS antenna amp. harness connector and BCM connector.

NATS antenna amp.		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M49	2	M68	21	Existed

3. Check continuity between NATS antenna amp. harness connector and ground.

NATS antenna amp.		Ground	Continuity
Connector	Terminal		
M49	2		Not existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace harness.

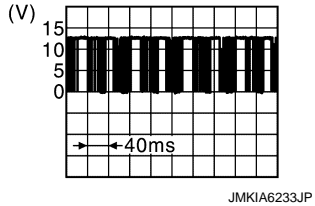
### 7. CHECK NATS ANTENNA AMP. COMMUNICATION SIGNAL 2

Check voltage signal between NATS antenna amp. harness connector and ground using an oscilloscope.

# B2198 NATS ANTENNA AMP.

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

(+)		(-)	Condition		Voltage (V) (Approx.)
NATS antenna amp.					
Connector	Terminal				
M49	3	Ground	Intelligent Key: Intelligent Key battery is removed	Brake pedal: Depressed	
				NOTE: Waveform varies each time when brake pedal is depressed	
Brake pedal: Released				9 - 16	

Is the inspection result normal?

YES >> Replace NATS antenna amp. Refer to [SEC-93, "Removal and Installation"](#).

NO >> GO TO 8.

## 8. CHECK NATS ANTENNA AMP. OUTPUT SIGNAL CIRCUIT 2

1. Disconnect BCM connector.
2. Check continuity between NATS antenna amp. harness connector and BCM connector.

NATS antenna amp.		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M49	3	M68	25	Existed

3. Check continuity between NATS antenna amp. harness connector and ground.

NATS antenna amp.		Ground	Continuity
Connector	Terminal		
M49	3		Not existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace harness.

## 9. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

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# B2555 STOP LAMP

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B2555 STOP LAMP

### DTC Logic

INFOID:000000006962976

### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2555	STOP LAMP	BCM makes a comparison between the upper voltage and the lower voltage of stop lamp switch. It judges from their values to detect the malfunctioning circuit.	<ul style="list-style-type: none"> <li>• Harness or connectors (Stop lamp switch circuit is open or shorted.)</li> <li>• Stop lamp switch</li> <li>• Fuse</li> <li>• BCM</li> </ul>

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Depress brake pedal and wait 1 second or more.
2. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-60. "Diagnosis Procedure"](#).  
 NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962977

#### 1. CHECK STOP LAMP SWITCH INPUT SIGNAL 1

1. Turn power switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M70	105	Ground	9 – 16

#### Is the inspection normal?

- YES >> GO TO 2.  
 NO-1 >> Check 10 A fuse [No. 38, located in the fuse block (J/B)].  
 NO-2 >> Check harness for open or short between BCM and fuse.

#### 2. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Disconnect stop lamp switch connector.
2. Check voltage between stop lamp switch harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
Stop lamp switch			
Connector	Terminal		
E102	1	Ground	9 – 16

#### Is the inspection result normal?

- YES >> GO TO 3.  
 NO >> Check harness for open or short between stop lamp switch and fuse.

#### 3. CHECK STOP LAMP SWITCH INPUT SIGNAL 2

1. Connect stop lamp switch connector.
2. Check voltage between BCM harness connector and ground.

# B2555 STOP LAMP

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

(+)		(-)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M68	9	Ground	Brake pedal	Depressed	9 – 16
				Not depressed	0

Is the inspecting result normal?

YES >> GO TO 4.

NO >> GO TO 5.

## 4. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

## 5. CHECK STOP LAMP SWITCH CIRCUIT

1. Disconnect stop lamp switch connector.
2. Check continuity between stop lamp switch harness connector and BCM harness connector.

Stop lamp switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E102	2	M68	9	Existed

3. Check continuity between stop lamp switch harness connector and ground.

Stop lamp switch		Ground	Continuity
Connector	Terminal		
E102	2		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

## 6. CHECK STOP LAMP SWITCH

Refer to [SEC-61, "Component Inspection"](#).

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace stop lamp switch. Refer to [BR-211, "Removal and Installation"](#).

## 7. CHECK INTERMITTENT INCIDENT

Refer to [GI-51, "Intermittent Incident"](#).

>> INSPECTION END

## Component Inspection

INFOID:000000006962978

### 1. CHECK STOP LAMP SWITCH

1. Turn power switch OFF.
2. Disconnect stop lamp switch connector.
3. Check continuity between stop lamp switch terminals.

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SEC

## B2555 STOP LAMP

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Stop lamp switch		Condition		Continuity
Terminal				
1	2	Brake pedal	Not depressed	Not existed
			Depressed	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch. Refer to [BR-211, "Removal and Installation"](#).

# B2556 POWER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B2556 POWER SWITCH

### DTC Logic

INFOID:000000006962979

### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2556	PUSH-BTN IGN SW*	BCM detects the power switch stuck at ON for 100 seconds or more.	<ul style="list-style-type: none"> <li>• Harness or connectors (Power switch circuit is shorted.)</li> <li>• Power switch</li> <li>• BCM</li> </ul>

\*: "PUSH-BTN IGN SW" is indicated on CONSULT screen, however this means power switch on this vehicle.

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press power switch under the following condition.
  - Brake pedal: Not depressed
2. Release power switch and wait 100 seconds or more.
3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-63. "Diagnosis Procedure"](#).  
 NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962980

#### 1.CHECK POWER SWITCH INPUT SIGNAL

1. Turn power switch OFF.
2. Disconnect power switch connector.
3. Check voltage between power switch harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
Power switch			
Connector	Terminal	Ground	9 – 16
M25	8		

#### Is the inspection result normal?

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

#### 2.CHECK POWER SWITCH CIRCUIT

1. Disconnect BCM connector and IPDM E/R connector.
2. Check continuity between power switch harness connector and BCM harness connector.

Power switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M25	8	M70	76	Existed

3. Check continuity between power switch harness connector and ground.

Power switch		Ground	Continuity
Connector	Terminal		
M25	8		Not existed

#### Is the inspection result normal?

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

# B2556 POWER SWITCH

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

## 3. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

## 4. CHECK POWER SWITCH GROUND CIRCUIT

Check continuity between power switch harness connector and ground.

Power switch		Ground	Continuity
Connector	Terminal		
M25	4		Existed

Is the inspection result normal?

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

## 5. CHECK POWER SWITCH

Refer to [SEC-64, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 6.  
NO >> Replace power switch. Refer to [SEC-94, "Removal and Installation"](#).

## 6. CHECK INTERMITTENT INCIDENT

Refer to [GI-51, "Intermittent Incident"](#).

>> INSPECTION END

## Component Inspection

INFOID:000000006962981

## 1. CHECK POWER SWITCH

1. Turn power switch OFF.
2. Disconnect power switch connector.
3. Check continuity between power switch terminals.

Power switch		Condition	Continuity
Terminal			
8	4	Power switch	Pressed Existed
			Not pressed Not existed

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace power switch. Refer to [SEC-94, "Removal and Installation"](#).



# B2557 VEHICLE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B2557 VEHICLE SPEED

### DTC Logic

INFOID:000000006962982

### DTC DETECTION LOGIC

#### NOTE:

- If DTC B2557 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-65, "DTC Logic"](#).
- If DTC B2557 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-66, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible causes
B2557	VEHICLE SPEED	BCM detects one of the following conditions for 10 seconds continuously. <ul style="list-style-type: none"><li>• Vehicle speed signal from combination meter is 10 km/h (6.2 MPH) or more, and vehicle speed signal from ABS actuator and electric unit (control unit) is 4 km/h (2.5 MPH) or less.</li><li>• Vehicle speed signal from combination meter is 4 km/h (2.5 MPH) or less, and vehicle speed signal from ABS actuator and electric unit (control unit) is 10 km/h (6.2 MPH) or more.</li></ul>	<ul style="list-style-type: none"><li>• Harness or connectors (The CAN communication line is open or shorted.)</li><li>• Combination meter</li><li>• ABS actuator and electric unit (control unit)</li></ul>

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Set vehicle to READY and wait 10 seconds or more.
2. Drive vehicle at a vehicle speed of 10 km/h (6.2 MPH) or more for 10 seconds or more.
3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-65, "Diagnosis Procedure"](#).  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962983

#### 1. CHECK DTC OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check DTC in "Self Diagnostic Result" mode of "ABS" using CONSULT.

#### Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [BRC-48, "DTC Index"](#).  
NO >> GO TO 2.

#### 2. CHECK DTC OF COMBINATION METER

Check DTC in "Self Diagnostic Result" mode of "METER/M&A" using CONSULT.

#### Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [MWI-61, "DTC Index"](#).  
NO >> GO TO 3.

#### 3. CHECK INTERMITTENT INCIDENT

Refer to [GI-51, "Intermittent Incident"](#).

>> INSPECTION END

# B2601 SHIFT POSITION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B2601 SHIFT POSITION

### DTC Logic

INFOID:000000006962984

### DTC DETECTION LOGIC

#### NOTE:

- If DTC B2601 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-65, "DTC Logic"](#).
- If DTC B2601 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-65, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2601	SHIFT POSITION	When there is a difference between P position signal from electric shift control module and P position signal from IPDM E/R (CAN).	<ul style="list-style-type: none"> <li>• Harness or connectors (CAN communication line is open or shorted.)</li> <li>• Harness or connectors (Electric shift control module circuit is open or shorted.)</li> <li>• IPDM E/R</li> <li>• BCM</li> </ul>

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn power switch ON.
2. Operate electric shift selector to change shift position to P, and wait 2 seconds or more.
3. Operate electric shift selector to change shift position to any position other than P, and wait 2 seconds or more.
4. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-66, "Diagnosis Procedure"](#).  
 NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962985

#### 1. CHECK P POSITION SIGNAL CIRCUIT 1

1. Turn power switch OFF.
2. Disconnect BCM connector.
3. Disconnect electric shift control module connector.
4. Check continuity between BCM harness connector and electric shift control module harness connector.

BCM		Electric shift control module		Continuity
Connector	Terminal	Connector	Terminal	
M68	37	M58	12	Existed

#### Is the inspection result normal?

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

#### 2. CHECK P POSITION SIGNAL CIRCUIT 2

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and electric shift control module harness connector.

IPDM E/R		Electric shift control module		Continuity
Connector	Terminal	Connector	Terminal	
E17	64	M58	12	Existed

#### Is the inspection result normal?

## B2601 SHIFT POSITION

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

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

### 3.REPLACE BCM

1. Replace BCM. Refer to [BCS-76. "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.
3. Perform DTC CONFIRMATION PROCEDURE for B2601. Refer to [SEC-66. "DTC Logic"](#).

Is DTC detected?

- YES >> Replace IPDM E/R. Refer to [PCS-28. "Removal and Installation"](#).  
NO >> INSPECTION END

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# B2602 SHIFT POSITION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B2602 SHIFT POSITION

### DTC Logic

INFOID:000000006962986

### DTC DETECTION LOGIC

#### NOTE:

- If DTC B2602 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-65, "DTC Logic"](#).
- If DTC B2602 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-66, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2602	SHIFT POSITION	BCM detects the following status for 10 seconds. <ul style="list-style-type: none"><li>• Electric shift selector is in the P position</li><li>• Vehicle speed is 4 km/h (2.5 MPH) or more</li><li>• Power switch is in the ON position</li></ul>	<ul style="list-style-type: none"><li>• Harness or connectors (CAN communication line is open or shorted.)</li><li>• Harness or connectors (Electric shift control module circuit is open or shorted.)</li><li>• Electric shift control module</li><li>• ABS actuator and electric unit (control unit)</li><li>• Combination meter</li><li>• BCM</li></ul>

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Set vehicle to READY.
2. Drive vehicle at a speed of 4 km/h (2.5 MPH) or more for 10 seconds or more.
3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-68, "Diagnosis Procedure"](#).  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962987

#### 1. CHECK DTC OF ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check DTC in "Self Diagnostic Result" mode of "ABS" using CONSULT.

#### Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [BRC-48, "DTC Index"](#).  
NO >> GO TO 2.

#### 2. CHECK DTC OF COMBINATION METER

Check DTC in "Self Diagnostic Result" mode of "METER/M&A" using CONSULT.

#### Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [MWI-61, "DTC Index"](#).  
NO >> GO TO 3.

#### 3. CHECK DTC OF ELECTRIC SHIFT CONTROL MODULE

Check DTC in "Self Diagnostic Result" mode of "SHIFT" using CONSULT.

#### Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [TM-44, "DTC Index"](#).  
NO >> GO TO 4.

#### 4. CHECK P POSITION SIGNAL CIRCUIT

1. Turn power switch OFF.
2. Disconnect BCM connector.
3. Disconnect electric shift control module connector.
4. Check continuity between BCM harness connector and electric shift control module harness connector.

## B2602 SHIFT POSITION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

BCM		Electric shift control module		Continuity
Connector	Terminal	Connector	Terminal	
M68	37	M58	12	Existed

5. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		Continuity
M68	37		Not existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace harness.

### 5. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

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# B2603 SHIFT POSITION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B2603 SHIFT POSITION

### DTC Logic

INFOID:000000006962988

### DTC DETECTION LOGIC

#### NOTE:

- If DTC B2603 is displayed with DTC B2601, first perform the trouble diagnosis for DTC B2601. Refer to [SEC-66, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible causes
B2603	SHIFT POSI STATUS	BCM detects the following status. <ul style="list-style-type: none"> <li>• P position signal from electric shift control module: approx. 0 V (P position)</li> <li>• P/N position signal from electric shift control module: approx. 0 V (Other than P/N position)</li> </ul>	<ul style="list-style-type: none"> <li>• Harness or connector (Electric shift control module circuit is open or shorted.)</li> <li>• Electric shift control module</li> <li>• BCM</li> </ul>

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE 1

1. Turn power switch ON.
2. Operate electric shift selector to change shift position to P, and wait 1 second or more.
3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-70, "Diagnosis Procedure"](#).  
 NO >> GO TO 2.

#### 2. PERFORM DTC CONFIRMATION PROCEDURE 2

1. Operate electric shift selector to change shift position to any position other than P, and wait 1 second or more.
2. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-70, "Diagnosis Procedure"](#).  
 NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962989

#### 1. INSPECTION START

Perform inspection in accordance with the procedure that confirms DTC.

#### Which procedure confirms DTC?

- DTC confirmation procedure 1 >> GO TO 2.  
 DTC confirmation procedure 2 >> GO TO 5.

#### 2. CHECK DTC OF ELECTRIC SHIFT CONTROL MODULE

Check DTC in "Self Diagnostic Result" mode of "SHIFT" using CONSULT.

#### Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [TM-44, "DTC Index"](#).  
 NO >> GO TO 3.

#### 3. CHECK P/N POSITION SIGNAL CIRCUIT

1. Turn power switch OFF.
2. Disconnect BCM connector.
3. Disconnect electric shift control module connector.
4. Check continuity between BCM harness connector and electric shift control module harness connector.

BCM		Electric shift control module		Continuity
Connector	Terminal	Connector	Terminal	
M70	102	M58	13	Existed

## B2603 SHIFT POSITION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

5. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M70	102		Not existed

Is the inspection result normal?

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

### 4.REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

### 5.CHECK DTC OF ELECTRIC SHIFT CONTROL MODULE

Check DTC in "Self Diagnostic Result" mode of "SHIFT" using CONSULT.

Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [TM-44, "DTC Index"](#).  
NO >> GO TO 6.

### 6.CHECK P POSITION SIGNAL CIRCUIT

1. Turn power switch OFF.
2. Disconnect BCM connector.
3. Disconnect electric shift control module connector.
4. Check continuity between BCM harness connector and electric shift control module harness connector.

BCM		Electric shift control module		Continuity
Connector	Terminal	Connector	Terminal	
M68	37	M58	12	Existed

5. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M68	37		Not existed

Is the inspection result normal?

- YES >> GO TO 7.  
NO >> Repair or replace harness.

### 7.REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

# B2604 SHIFT POSITION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B2604 SHIFT POSITION

### DTC Logic

INFOID:000000006962990

#### DTC DETECTION LOGIC

**NOTE:**

- If DTC B2604 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-65, "DTC Logic"](#).
- If DTC B2604 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-66, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2604	PNP/CLUTCH SW	<p>The following states are detected for 5 seconds while power switch is ON.</p> <ul style="list-style-type: none"> <li>• P/N position signal is sent from electric shift control module but shift position signal input (CAN) from VCM is other than P and N</li> <li>• P/N position signal is not sent from electric shift control module but shift position signal input (CAN) from VCM is P or N</li> </ul>	<ul style="list-style-type: none"> <li>• Harness or connectors (CAN communication line is open or shorted.)</li> <li>• Harness or connectors (Electric shift control module circuit is open or shorted.)</li> <li>• Electric shift control module</li> <li>• VCM</li> <li>• BCM</li> </ul>

#### DTC CONFIRMATION PROCEDURE

### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn power switch ON.
2. Operate electric shift selector to change shift position to P, and wait 5 seconds or more.
3. Operate electric shift selector to change shift position to N, and wait 5 seconds or more.
4. Operate electric shift selector to change shift position to any position other than P and N, and wait 5 seconds or more.
5. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

Is DTC detected?

- YES >> Go to [SEC-72, "Diagnosis Procedure"](#).  
 NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006962991

### 1.CHECK DTC OF VCM

Check DTC in "Self Diagnostic Result" mode of "EV/HEV" using CONSULT.

Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [EVC-78, "DTC Index"](#).  
 NO >> GO TO 2.

### 2.CHECK DTC OF ELECTRIC SHIFT CONTROL MODULE

Check DTC in "Self Diagnostic Result" mode of "SHIFT" using CONSULT.

Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [TM-44, "DTC Index"](#).  
 NO >> GO TO 3.

### 3.CHECK BCM INPUT SIGNAL

1. Turn power switch ON.
2. Check voltage between BCM harness connector and ground.



# B2604 SHIFT POSITION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

(+)		(-)	Condition		Voltage (V) (Approx.)
BCM					
Connector	Terminal				
M70	102	Ground	Shift position	P or N	9 – 16
				Other than above	0 – 1.5

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

## 4. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

## 5. CHECK BCM INPUT SIGNAL CIRCUIT

1. Turn power switch OFF.
2. Disconnect BCM connector.
3. Disconnect electric shift control module connector.
4. Check continuity between BCM harness connector and electric shift control module harness connector.

BCM		Electric shift control module		Continuity
Connector	Terminal	Connector	Terminal	
M70	102	M58	13	Existed

5. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M70	102		Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

## 6. CHECK INTERMITTENT INCIDENT

Refer to [GI-51, "Intermittent Incident"](#).

>> INSPECTION END

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# B2617 READY SIGNAL CIRCUIT

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

## B2617 READY SIGNAL CIRCUIT

### DTC Logic

INFOID:000000006963002

### DTC DETECTION LOGIC

#### NOTE:

- If DTC B2617 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-65, "DTC Logic"](#).
- If DTC B2617 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-66, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2617	BCM	An immediate operation of setting vehicle to READY is requested by BCM, but there is no response for more than 1 second from VCM	<ul style="list-style-type: none"><li>• Harness or connectors (READY signal circuit is open or shorted.)</li><li>• BCM</li><li>• VCM</li></ul>

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Press power switch under the following conditions, and wait at least 1 second.
  - Shift position: P or N
  - Brake pedal: Depressed
2. Check DTC in "Self diagnostic result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-74, "Diagnosis Procedure"](#).  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006963003

#### 1. CHECK DTC OF VCM

Check DTC in "Self Diagnostic Result" mode of "EV/HEV" using CONSULT.

#### Is DTC detected?

- YES >> Perform the trouble diagnosis related to the detected DTC. Refer to [EVC-78, "DTC Index"](#).  
NO >> GO TO 2.

#### 2. CHECK READY SIGNAL

1. Turn power switch ON.
2. Check voltage between VCM harness connector and ground.

(+)		(-)	Condition	Voltage (V) (Approx.)
VCM				
Connector	Terminal			
E63	90	Ground	Power switch ON	9 – 16
			Power switch ON → Vehicle READY	0 – 0.5

#### Is the inspection result normal?

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

#### 3. CHECK READY SIGNAL CIRCUIT

1. Turn power switch OFF.
2. Disconnect BCM connector and VCM connector.
3. Check continuity between BCM harness connector and VCM harness connector.

# B2617 READY SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

BCM		VCM		Continuity
Connector	Terminal	Connector	Terminal	
M70	97	E63	90	Existed

4. Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M70	97		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness or connector.

## 4.CHECK INTERMITTENT INCIDENT

Refer to [GI-51, "Intermittent Incident"](#).

>> INSPECTION END

## 5.REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

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&lt; DTC/CIRCUIT DIAGNOSIS &gt;

**B2619 BCM****DTC Logic**

INFOID:000000006963004

**DTC DETECTION LOGIC**

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2619	BCM	There is a difference between power supply output to steering lock unit and steering lock unit F/B result.	BCM

**DTC CONFIRMATION PROCEDURE****1.PERFORM DTC CONFIRMATION PROCEDURE**

1. Press power switch under the following conditions and wait 1 second or more.
  - Shift position: P
  - Brake pedal: Not depressed
2. Check DTC in "Self Diagnostic Result" of "BCM" using CONSULT.

**Is DTC detected?**

- YES >> Go to [SEC-76, "Diagnosis Procedure"](#).  
 NO >> INSPECTION END

**Diagnosis Procedure**

INFOID:000000006963005

**1.INSPECTION START**

1. Turn power switch ON.
2. Select "Self Diagnostic Result" mode of "BCM" using CONSULT.
3. Touch "ERASE".
4. Perform DTC CONFIRMATION PROCEDURE for DTC B2619. Refer to [SEC-76, "DTC Logic"](#).

**Is DTC detected?**

- YES >> GO TO 2.  
 NO >> INSPECTION END

**2.REPLACE BCM**

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

&gt;&gt; INSPECTION END

# B261A POWER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B261A POWER SWITCH

### DTC Logic

INFOID:000000006963006

### DTC DETECTION LOGIC

#### NOTE:

- If DTC B261A is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-65, "DTC Logic"](#).
- If DTC B261A is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-66, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B261A	PUSH-BTN IGN SW*	BCM detects the mismatch between the following for 1 second or more <ul style="list-style-type: none"> <li>• Power switch status judged by push switch signal</li> <li>• Power switch status signal from IPDM E/R (CAN)</li> </ul>	<ul style="list-style-type: none"> <li>• Harness or connectors (Power switch circuit is open or shorted)               <ul style="list-style-type: none"> <li>- Between BCM and power switch</li> <li>- Between IPDM E/R and power switch</li> </ul> </li> <li>• IPDM E/R</li> <li>• BCM</li> </ul>

\*: "PUSH-BTN IGN SW" is indicated on CONSULT screen, however this means power switch on this vehicle.

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Press power switch for 1 second under the following conditions.
  - Shift position: P
  - Brake pedal: Not depressed
2. Release power switch and wait 1 second.
3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-77, "Diagnosis Procedure"](#)  
 NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006963007

#### 1. CHECK POWER SWITCH POWER SUPPLY CIRCUIT

1. Turn power switch OFF.
2. Disconnect power switch connector.
3. Disconnect IPDM E/R connector.
4. Check voltage between power switch harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
Power switch			
Connector	Terminal		
M25	8	Ground	9 – 16

#### Is the inspection result normal?

- YES >> GO TO 2.  
 NO >> GO TO 3.

#### 2. CHECK POWER SWITCH CIRCUIT 1

1. Check continuity between power switch harness connector and IPDM E/R harness connector.

Power switch		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
M25	8	E17	66	Existed

2. Check continuity between power switch harness connector and ground.

# B261A POWER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Power switch		Ground	Continuity
Connector	Terminal		
M25	8		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-28, "Removal and Installation"](#).

NO >> Repair harness or connector.

## 3. CHECK POWER SWITCH CIRCUIT 2

1. Disconnect BCM connector.
2. Check continuity between power switch harness connector and BCM harness connector.

Power switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M25	8	M70	76	Existed

3. Check continuity between power switch harness connector and ground.

Power switch		Ground	Continuity
Connector	Terminal		
M25	8		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

## 4. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

# B261E VEHICLE TYPE

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

## B261E VEHICLE TYPE

### Description

INFOID:0000000006963008

There are two types of vehicle.

- EV/HEV
- Conventional

### DTC Logic

INFOID:0000000006963009

### DTC DETECTION LOGIC

#### NOTE:

- If DTC B261E is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [BCS-65, "DTC Logic"](#).
- If DTC B261E is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [BCS-66, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B261E	VEHICLE TYPE	Difference of BCM configuration	BCM

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn power switch ON.
2. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-79, "Diagnosis Procedure"](#).  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:0000000006963010

#### 1. INSPECTION START

1. Turn power switch ON.
2. Select "Self Diagnostic Result" mode of "BCM" using CONSULT.
3. Touch "ERASE".
4. Perform DTC CONFIRMATION PROCEDURE for DTC B261E. Refer to [SEC-79, "DTC Logic"](#).

#### Is the DTC B261E detected again?

- YES >> GO TO 2.  
NO >> INSPECTION END

#### 2. REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

&lt; DTC/CIRCUIT DIAGNOSIS &gt;

**B26F7 BCM****DTC Logic**

INFOID:000000006963019

**DTC DETECTION LOGIC**

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26F7	BCM	Inside key antenna output circuit in BCM is malfunctioning.	BCM

**DTC CONFIRMATION PROCEDURE****1.PERFORM DTC CONFIRMATION PROCEDURE**

1. Press door request switch.
2. Turn power switch ON.
3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

**Is DTC detected?**

- YES >> Go to [SEC-80, "Diagnosis Procedure"](#).  
 NO >> INSPECTION END

**Diagnosis Procedure**

INFOID:000000006963020

**1.INSPECTION START**

1. Turn power switch ON.
2. Select "Self Diagnostic Result" mode of "BCM" using CONSULT.
3. Touch "ERASE".
4. Perform DTC CONFIRMATION PROCEDURE for DTC B26F7. Refer to [SEC-80, "DTC Logic"](#).

**Is DTC detected?**

- YES >> GO TO 2.  
 NO >> INSPECTION END

**2.REPLACE BCM**

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

&gt;&gt; INSPECTION END



# B26FC KEY REGISTRATION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## B26FC KEY REGISTRATION

### DTC Logic

INFOID:000000006963021

### DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B26FC	KEY REGISTRATION	Intelligent Key that does not match the vehicle is registered.	<ul style="list-style-type: none"><li>• Improper registration operation</li><li>• Intelligent Key</li><li>• BCM</li></ul>

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

1. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.
2. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> Go to [SEC-81. "Diagnosis Procedure"](#)  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000006963022

#### 1.REPLACE INTELLIGENT KEY

1. Prepare Intelligent Key that matches the vehicle.
2. Perform initialization of BCM and registration of Intelligent Key using CONSULT.
3. Check DTC in "Self Diagnostic Result" mode of "BCM" using CONSULT.

#### Is DTC detected?

- YES >> GO TO 2.  
NO >> INSPECTION END

#### 2.REPLACE BCM

1. Replace BCM. Refer to [BCS-76. "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

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SEC

# HEADLAMP FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## HEADLAMP FUNCTION

### Component Function Check

INFOID:000000006991368

#### 1.CHECK FUNCTION

1. Perform "HEAD LAMP(HI)" in "ACTIVE TEST" mode of "THEFT ALM" of "BCM" using CONSULT.
2. Check headlamps operation.

Test item		Description	
HEAD LAMP (HI)	ON	Headlamps (Hi)	Light
	OFF		Do not light

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Refer to [SEC-82, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000006991369

#### 1.CHECK HEADLAMP FUNCTION

Refer to [EXL-48, "Component Function Check"](#).

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace the malfunctioning parts.

#### 2.CHECK INTERMITTENT INCIDENT

Refer to [GI-51, "Intermittent Incident"](#).

>> INSPECTION END

# HORN FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## HORN FUNCTION

### Component Function Check

INFOID:000000006991370

#### 1.CHECK FUNCTION

1. Turn power switch ON.
2. Perform "VEHICLE SECURITY HORN" in "ACTIVE TEST" mode of "THEFT ALM" of "BCM" using CONSULT.
3. Check the horn operation.

Test item		Description	
VEHICLE SECURITY HORN	ON	Horn	Sounds (for 0.5 sec)

Is the operation normal?

- YES >> INSPECTION END  
NO >> Go to [SEC-83, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000006991372

#### 1.CHECK VEHICLE SECURITY HORN RELAY CONTROL SIGNAL

1. Turn power switch ON.
2. Select "VEHICLE SECURITY HORN" in "ACTIVE TEST" mode of "THEFT ALM" of "BCM" using CONSULT.
3. Check voltage between IPDM E/R harness connector and ground under the following conditions.

(+)		(-)	Condition	Voltage (V) (Approx.)
IPDM E/R			VEHICLE SECURITY HORN	
Connector	Terminal	Ground	ON	0 – 1
E13	34		OFF	9 – 16

Is the operation normal?

- YES >> GO TO 5.  
NO >> GO TO 2.

#### 2.CHECK VEHICLE SECURITY HORN RELAY POWER SUPPLY

1. Turn power switch OFF.
2. Disconnect vehicle security horn relay.
3. Check voltage between vehicle security horn relay harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
Vehicle security horn relay			
Connector	Terminal	Ground	Battery voltage
E73	2		

Is the inspection result normal?

- YES >> GO TO 3.  
NO-1 >> Check 10 A fuse [No. 31 located in the fuse block (J/B)].  
NO-2 >> Check harness for open or short between vehicle security horn relay and fuse.

#### 3.CHECK VEHICLE SECURITY HORN CONTROL CIRCUIT

1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector and vehicle security horn relay harness connector.

# HORN FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

IPDM E/R		Vehicle security horn relay		Continuity
Connector	Terminal	Connector	Terminal	
E13	34	E73	1	Existed

3. Check continuity between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
E13	34		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness.

## 4.CHECK VEHICLE SECURITY HORN RELAY

Refer to [SEC-84, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to [PCS-28, "Removal and Installation"](#).

NO >> Replace vehicle security horn relay.

## 5.CHECK VEHICLE SECURITY HORN CIRCUIT

1. Disconnect vehicle security horn relay.
2. Disconnect vehicle security horn connector.
3. Check continuity between vehicle security horn relay harness connector and vehicle security horn harness connector.

Vehicle security horn relay		Vehicle security horn		Continuity
Connector	Terminal	Connector	Terminal	
E73	3	E6	1	Existed

4. Check continuity between vehicle security horn relay harness connector and ground.

Vehicle security horn relay		Ground	Continuity
Connector	Terminal		
E73	3		Not existed

5. Check continuity between vehicle security horn harness connector and ground.

Vehicle security horn		Ground	Continuity
Connector	Terminal		
E7	2		Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness.

## 6.CHECK VEHICLE SECURITY HORN RELAY

Refer to [SEC-84, "Component Inspection"](#).

Is the inspection result normal?

YES >> Replace vehicle security horn.

NO >> Replace vehicle security horn relay.

## Component Inspection

INFOID:000000006991373

## 1.CHECK VEHICLE SECURITY HORN RELAY

1. Turn power switch OFF.
2. Disconnect vehicle security horn relay.

# HORN FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

3. Check voltage between vehicle security horn relay terminal and ground under the following conditions.

(+)	(-)	Condition	Voltage (V) (Approx.)
Vehicle security horn relay Terminal			
3	Ground	12 V direct current supply between terminals 1 and 2	12
		No current supply	0

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace vehicle security horn relay.

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SEC

# SECURITY INDICATOR LAMP

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## SECURITY INDICATOR LAMP

### Component Function Check

INFOID:000000006963029

#### 1.CHECK FUNCTION

1. Perform "THEFT IND" in "ACTIVE TEST" mode of "IMMU" of "BCM" using CONSULT.
2. Check security indicator lamp operation.

Test item		Description	
THEFT IND	ON	Security indicator lamp	Illuminates
	OFF		Does not illuminate

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Go to [SEC-86, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000006963030

#### 1.CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT

1. Turn power switch OFF.
2. Disconnect combination meter connector.
3. Check voltage between combination meter harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
Combination meter			
Connector	Terminal	Ground	Battery voltage
M34	1		

Is the inspection result normal?

- YES >> GO TO 2.  
NO-1 >> Check 10 A fuse [No. 11, located in the fuse block (J/B)].  
NO-2 >> Check harness for open or short between combination meter and fuse.

#### 2.CHECK SECURITY INDICATOR LAMP SIGNAL

1. Connect combination meter connector.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

(+)		(-)	Voltage (V) (Approx.)
BCM			
Connector	Terminal	Ground	9 – 16
M68	23		

Is the inspection result normal?

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

#### 3.REPLACE BCM

1. Replace BCM. Refer to [BCS-76, "Removal and Installation"](#).
2. Perform initialization of BCM and registration of all Intelligent Keys using CONSULT.

>> INSPECTION END

#### 4.CHECK SECURITY INDICATOR LAMP CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between combination meter harness connector and BCM harness connector.

# SECURITY INDICATOR LAMP

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

Combination meter		BCM		Continuity
Connector	Terminal	Connector	Terminal	
M34	28	M68	23	Existed

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

Combination meter		Ground	Continuity
Connector	Terminal		
M34	28		Not existed

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-89, "Removal and Installation"](#).
- NO >> Repair or replace harness.

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SEC

# VEHICLE CANNOT BE SET TO READY WHEN INTELLIGENT KEY IS INSIDE OF VEHICLE

< SYMPTOM DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## SYMPTOM DIAGNOSIS

### VEHICLE CANNOT BE SET TO READY WHEN INTELLIGENT KEY IS INSIDE OF VEHICLE

#### Description

INFOID:000000006963031

Vehicle cannot be set to READY when brake pedal is depressed and power switch is pressed while carrying Intelligent Key.

#### NOTE:

- Check that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- The vehicle READY set function, door lock function, power distribution system, and NATS-IVIS/NVIS in the Intelligent Key system are closely related to each other regarding control. The vehicle security function can operate only when the door lock and power distribution system are operating normally.

#### Conditions of Vehicle (Operating Conditions)

- “ENGINE START BY I-KEY”: ON  
Check the setting of “ENGINE START BY I-KEY” in “Work Support” mode of “INTELLIGENT KEY” of “BCM” using CONSULT.
- One or more of Intelligent Keys with registered Intelligent Key ID is in the vehicle.

#### Diagnosis Procedure

INFOID:000000006963032

#### 1.PERFORM WORK SUPPORT

Perform “INSIDE ANT DIAGNOSIS” in “Work Support” mode of “INTELLIGENT KEY” of “BCM” using CONSULT.

Refer to [SEC-27, "INTELLIGENT KEY : CONSULT Function \(BCM - INTELLIGENT KEY\)"](#).

>> GO TO 2.

#### 2.CHECK SELF-DIAGNOSIS RESULT

Select “Self-Diagnosis Result” mode of “BCM” using CONSULT, and check whether or not DTC of inside key antenna is detected.

##### Is DTC detected?

- YES >> Perform the trouble diagnosis for detected DTC. Refer to [BCS-54, "DTC Index"](#).  
NO >> GO TO 3.

#### 3.CHECK POWER SWITCH

Check power switch.

Refer to [PCS-63, "Component Function Check"](#).

##### Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Repair or replace malfunctioning parts.

#### 4.CHECK STOP LAMP SWITCH

Check stop lamp switch.

Refer to [SEC-61, "Component Inspection"](#).

##### Is the inspection result normal?

- YES >> GO TO 5.  
NO >> Repair or replace malfunctioning parts.

#### 5.CONFIRM THE OPERATION

Confirm the operation again.

##### Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-51, "Intermittent Incident"](#).  
NO >> GO TO 1.



# SECURITY INDICATOR LAMP DOES NOT TURN ON OR BLINK

< SYMPTOM DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## SECURITY INDICATOR LAMP DOES NOT TURN ON OR BLINK

### Description

INFOID:000000006963035

Security indicator lamp does not blink when power switch is in a position other than ON

#### NOTE:

- Before performing the diagnosis, check "Work Flow". Refer to [SEC-46, "Work Flow"](#).
- Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.

### Conditions of Vehicle (Operating Conditions)

Power switch is not in the ON position.

### Diagnosis Procedure

INFOID:000000006963036

#### 1. CHECK SECURITY INDICATOR LAMP

Check security indicator lamp.

Refer to [SEC-86, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the malfunctioning parts.

#### 2. CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to [GI-51, "Intermittent Incident"](#).

NO >> GO TO 1.

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SEC

# VEHICLE SECURITY SYSTEM CANNOT BE SET

< SYMPTOM DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## VEHICLE SECURITY SYSTEM CANNOT BE SET INTELLIGENT KEY

### INTELLIGENT KEY : Description

INFOID:000000006968068

Armed phase is not activated when all doors are locked using Intelligent Key.

**NOTE:**

Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

#### CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON

Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT.

### INTELLIGENT KEY : Diagnosis Procedure

INFOID:000000006968069

#### 1.CHECK INTELLIGENT KEY SYSTEM (REMOTE KEYLESS ENTRY FUNCTION)

Lock/unlock door with Intelligent Key.

Refer to [DLK-21, "DOOR LOCK FUNCTION : System Description"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check Intelligent Key system (remote keyless entry function). Refer to [DLK-113, "Diagnosis Procedure"](#).

#### 2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to [GI-51, "Intermittent Incident"](#).

NO >> GO TO 1.

## DOOR REQUEST SWITCH

### DOOR REQUEST SWITCH : Description

INFOID:000000006968070

Armed phase is not activated when all doors are locked using door request switch.

**NOTE:**

Check that vehicle is under the condition shown in “CONDITIONS OF VEHICLE (OPERATING CONDITIONS)” before starting diagnosis, and check each symptom.

#### CONDITION OF VEHICLE (OPERATING CONDITIONS)

“SECURITY ALARM SET”: ON

Check the setting of “SECURITY ALARM SET” in “Work Support” mode of “THEFT ALM” of “BCM” using CONSULT.

### DOOR REQUEST SWITCH : Diagnosis Procedure

INFOID:000000006968071

#### 1.CHECK INTELLIGENT KEY SYSTEM (DOOR LOCK FUNCTION)

Lock/unlock door with door request switch.

Refer to [DLK-21, "DOOR LOCK FUNCTION : System Description"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check Intelligent Key system (door lock function). Refer to [DLK-109, "ALL DOOR REQUEST SWITCHES : Diagnosis Procedure"](#).

#### 2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to [GI-51, "Intermittent Incident"](#).

# VEHICLE SECURITY SYSTEM CANNOT BE SET

[WITH INTELLIGENT KEY SYSTEM]

< SYMPTOM DIAGNOSIS >

NO >> GO TO 1.

## DOOR KEY CYLINDER

### DOOR KEY CYLINDER : Description

INFOID:000000006968072

ARMED phase is not activated when all doors are locked using mechanical key.

#### NOTE:

Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.

#### CONDITION OF VEHICLE (OPERATING CONDITION)

##### • SECURITY ALARM SET: ON

Check the setting of "SECURITY ALARM SET" in "Work Support" mode of "THEFT ALM" of "BCM" using CONSULT.

### DOOR KEY CYLINDER : Diagnosis Procedure

INFOID:000000006968073

#### 1.CHECK POWER DOOR LOCK SYSTEM

Lock or unlock doors using mechanical key.

Refer to [DLK-21. "DOOR LOCK FUNCTION : System Description"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check power door lock system. Refer to [DLK-112. "Diagnosis Procedure"](#).

#### 2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to [GI-51. "Intermittent Incident"](#).

NO >> GO TO 1.

## DOOR LOCK AND UNLOCK SWITCH

### DOOR LOCK AND UNLOCK SWITCH : Description

INFOID:000000006968074

Armed phase is not activated when all doors are locked by door lock and unlock switch.

#### NOTE:

Check that vehicle is under the condition shown in "CONDITIONS OF VEHICLE (OPERATING CONDITIONS)" before starting diagnosis, and check each symptom.

#### CONDITION OF VEHICLE (OPERATING CONDITIONS)

"SECURITY ALARM SET": ON

Check the setting of "SECURITY ALARM SET" in "Work Support" mode of "THEFT ALM" of "BCM" using CONSULT.

### DOOR LOCK AND UNLOCK SWITCH : Diagnosis Procedure

INFOID:000000006968075

#### 1.CHECK DOOR LOCK FUNCTION

Lock/unlock door using mechanical key inserted into door key cylinder.

Refer to [DLK-21. "DOOR LOCK FUNCTION : System Description"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check Intelligent Key system (remote keyless entry function). Refer to .

#### 2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to [GI-51. "Intermittent Incident"](#).

NO >> GO TO 1.

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# VEHICLE SECURITY ALARM DOES NOT ACTIVATE

< SYMPTOM DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

## VEHICLE SECURITY ALARM DOES NOT ACTIVATE

### Description

INFOID:000000006968076

Alarm does not operate when alarm operating condition is satisfied.

**NOTE:**

Check that vehicle is under the condition shown in "CONDITIONS OF VEHICLE (OPERATING CONDITIONS)" before starting diagnosis, and check each symptom.

#### CONDITION OF VEHICLE (OPERATING CONDITIONS)

"SECURITY ALARM SET": ON

Check the setting of "SECURITY ALARM SET" in "Work Support" mode of "THEFT ALM" of "BCM" using CONSULT.

### Diagnosis Procedure

INFOID:000000006968077

#### 1.CHECK DOOR SWITCH

Check door switch.

Refer to [DLK-92, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the malfunctioning door switch

#### 2.CHECK HEADLAMPS FUNCTION

Check head lamps function.

Refer to [SEC-82, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace the malfunctioning parts.

#### 3.CHECK HORN FUNCTION

Check horn function.

Refer to [SEC-83, "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace the malfunctioning parts.

#### 4.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to [GI-51, "Intermittent Incident"](#).

NO >> GO TO 1.

# NATS ANTENNA AMP.

< REMOVAL AND INSTALLATION >

[WITH INTELLIGENT KEY SYSTEM]

## REMOVAL AND INSTALLATION


### NATS ANTENNA AMP.

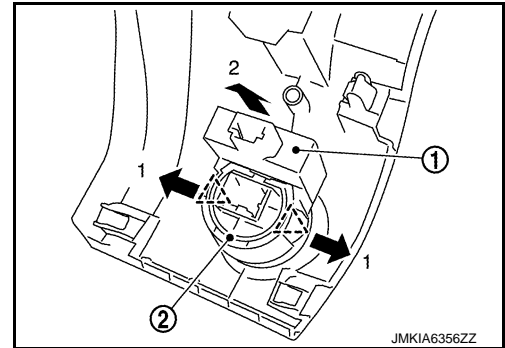
#### Removal and Installation

INFOID:000000006963037

#### REMOVAL

1. Remove the cluster lid A. Refer to [JP-13. "Removal and Installation"](#).
2. Remove the NATS antenna amp.
  1. Disengage the NATS antenna amp. (1) fixing pawls using minus driver etc.
  2. Pull NATS antenna amp. to remove it from power switch (2).

 : Pawl



#### INSTALLATION

Install in the reverse order of removal.

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

SEC

# POWER SWITCH

< REMOVAL AND INSTALLATION >

[WITH INTELLIGENT KEY SYSTEM]


## POWER SWITCH

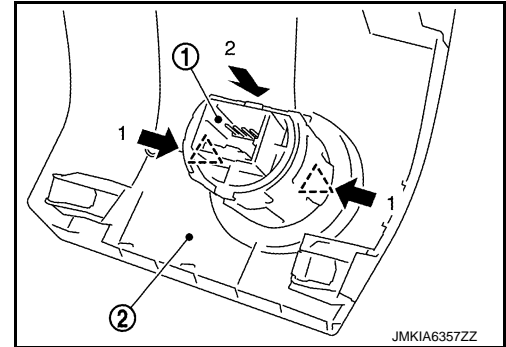
### Removal and Installation

INFOID:000000006963038

#### REMOVAL

1. Remove the NATS antenna amp. Refer to [SEC-93. "Removal and Installation"](#).
2. Remove the power switch (1).
  1. Disengage the power switch fixing pawls.
  2. Press the power switch to remove it from cluster lid A (2).

 : Pawl



#### INSTALLATION

Install in the reverse order of removal.