

SECTION **SEC**

SECURITY CONTROL SYSTEM

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

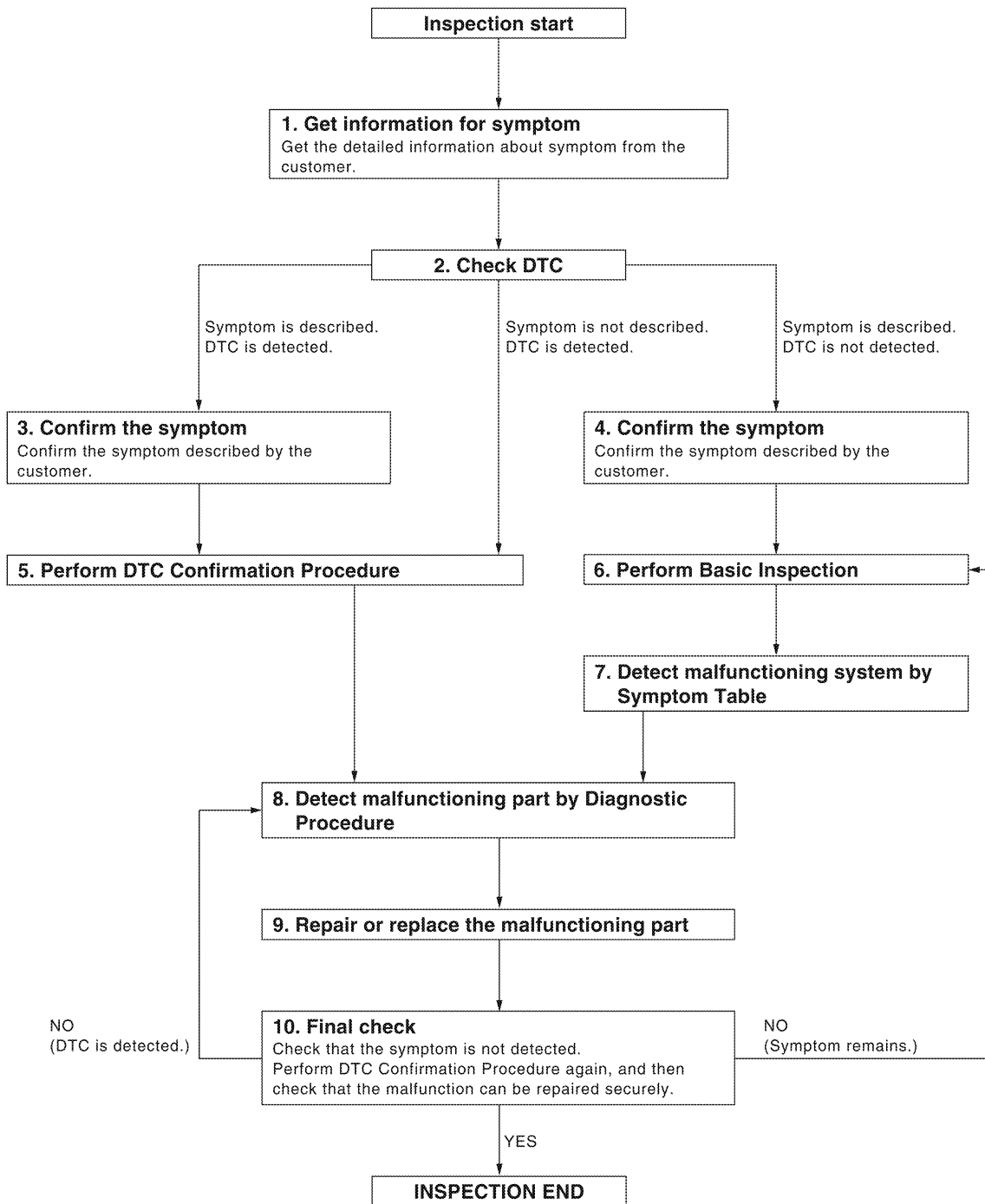
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000006246189

OVERALL SEQUENCE



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DETAILED FLOW

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

1. GET INFORMATION FOR SYMPTOM

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

>> GO TO 2

2. CHECK DTC

1. Check DTC for Intelligent Key unit and BCM.
2. Perform the following procedure if DTC is displayed.
 - 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.

Is any symptom described and any DTC detected?

Symptom is described, DTC is displayed>>GO TO 3

Symptom is described, DTC is not displayed>>GO TO 4

Symptom is not described, DTC is displayed>>GO TO 5

3. CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.

Connect CONSULT-III to the vehicle in "DATA MONITOR" mode and check real-time diagnosis results.

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-III to the vehicle in "DATA MONITOR" mode and check real-time diagnosis results.

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 displayed DTC, and then check that DTC is detected again.

If two or more DTCs are detected, refer to [SEC-69, "DTC Inspection Priority Chart"](#) (Intelligent Key unit), [BCS-45, "DTC Inspection Priority Chart"](#) (BCM) and determine trouble diagnosis order.

Is DTC detected?

YES >> GO TO 8

NO >> Refer to [GI-37, "Intermittent Incident"](#).

6. PERFORM BASIC INSPECTION

Perform Basic Inspection. Refer to [SEC-8, "Basic Inspection"](#).

>> GO TO 7

7. DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

Detect malfunctioning system according to Symptom Table based on the confirmed symptom in step 4.

>> GO TO 8

8. DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

NOTE:

The Diagnostic Procedure is described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

>> GO TO 9

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

9. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnostic Procedure again after repair and replacement.
3. Check DTC. If DTC is displayed, erase it.

>> GO TO 10

10. FINAL CHECK

When DTC was detected in step 9, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunctions have been fully repaired.

When symptom was described by the customer, refer to the 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 8
- YES (Symptom remains)>>GO TO 6
- NO >> Inspection End.

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PRE-INSPECTION FOR DIAGNOSTIC

[WITH INTELLIGENT KEY SYSTEM]

< BASIC INSPECTION >

PRE-INSPECTION FOR DIAGNOSTIC

Basic Inspection

INFOID:000000006246190

The engine start function, door lock function, power distribution system and NATS-IVIS/NVIS in the Intelligent Key system are closely related to each other regarding control. Narrow down the functional area in question by performing basic inspection to identify which function is malfunctioning. The vehicle security function can operate only when the door lock and power distribution system are operating normally. Therefore, it is easy to identify any factor unique to the vehicle security system by performing the vehicle security operation check after basic inspection.

1. CHECK DOOR LOCK OPERATION

Check the door lock for normal operation with the Intelligent Key controller and door request switch. Successful door lock operation with the Intelligent Key and request SW indicates that the remote keyless entry receiver and inside key antenna required for engine start are functioning normally. Identify the malfunctioning point by referring to the DLK section if the door cannot be unlocked.

Can the door be locked with the Intelligent Key and door request switch?

- YES >> GO TO 2
- NO >> Refer to [DLK-171, "Symptom Table"](#).

2. CHECK ENGINE STARTING

Check that the engine starts when operating the Intelligent Key.

Does the engine start?

- YES >> GO TO 3
- NO >> Refer to [SEC-107, "Symptom Table"](#).

3. CHECK STEERING LOCK

Does the steering lock when operating door switch after switching the power supply from ON position (or ACC position) to LOCK position?

If door switch is malfunctioning, BCM cannot lock the steering. If BCM does not detect DTC, steering lock unit is normal.

Does steering lock?

- YES >> GO TO 4
- NO >> Refer to [DLK-96, "Diagnosis Procedure"](#).

4. CHECK IGNITION KNOB SWITCH OPERATION

Press ignition knob to check switch operation.

Does the combination meter display any message?

- YES >> GO TO 5
- NO >> Refer to [SEC-50, "Ignition Knob Switch Check"](#).

5. CHECK VEHICLE SECURITY SYSTEM

Check the vehicle security system for normal operation.

The vehicle security function can operate only when the door lock and power distribution functions are operating normally.

Therefore, it is easy to identify any factor unique to the vehicle security by performing the vehicle security operation check after this basic inspection.

>> Refer to [SEC-8, "Vehicle Security Operation Check"](#).

Vehicle Security Operation Check

INFOID:000000006246191

1. INSPECTION START

Turn ignition switch "OFF".

NOTE:

Before starting operation check, open front windows.

>> GO TO 2

PRE-INSPECTION FOR DIAGNOSTIC

[WITH INTELLIGENT KEY SYSTEM]

< BASIC INSPECTION >

2. CHECK SECURITY INDICATOR LAMP

1. Lock doors using Intelligent Key or mechanical key.
2. Check that security indicator lamp illuminates for 30 seconds.

Does security indicator lamp illuminate?

YES >> GO TO 3

NO >> Perform diagnosis and repair. Refer to [SEC-53, "Diagnosis Procedure"](#).

3. CHECK ALARM FUNCTION

1. After 30 seconds, security indicator lamp will start to blink.
2. Open any door before unlocking with Intelligent Key or mechanical key, or open back door or glass hatch without the presence of Intelligent Key.

Does the alarm function properly?

YES >> GO TO 4

NO >> Check the following.

- The vehicle security system does not phase in alarm mode. Refer to [SEC-107, "Symptom Table"](#).
- Alarm (horn and headlamps) does not operate. Refer to [SEC-107, "Symptom Table"](#).

4. CHECK ALARM CANCEL OPERATION

Unlock any door using Intelligent Key or mechanical key.

Does alarm (horn and headlamps) stop?

YES >> Inspection End.

NO >> Check door lock function. Refer to [SEC-108, "Symptom Table"](#).

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INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[WITH INTELLIGENT KEY SYSTEM]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:000000006246192

Refer to the CONSULT-III Operation Manual-NATS.

ECM RE-COMMUNICATING FUNCTION

ECM RE-COMMUNICATING FUNCTION : Description

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Performing following procedure can automatically perform re-communication of ECM and BCM, but only when the ECM has been replaced with a new one (*1).

*1: New one means an ECM which has never been energized on-board.

(In this step, initialization procedure by CONSULT-III is not necessary)

NOTE:

- When registering new Key IDs or replacing the ECM that is not brand new, refer to CONSULT-III Operation Manual NATS.
- If multiple keys are attached to the key holder, separate them before work.
- Distinguish keys with unregistered key ID from those with registered ID.

ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement

INFOID:000000006246194

1. PERFORM ECM RE-COMMUNICATING FUNCTION

1. Install ECM.
2. Using a registered key (*2), turn ignition switch to "ON".
*2: To perform this step, use the key that has been used before performing ECM replacement.
3. Maintain ignition switch in "ON" position for at least 5 seconds.
4. Turn ignition switch to "OFF".
5. Start engine.

Can engine be started?

YES >> Procedure is completed.

NO >> Initialize control unit. Refer to CONSULT-III Operation Manual.

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

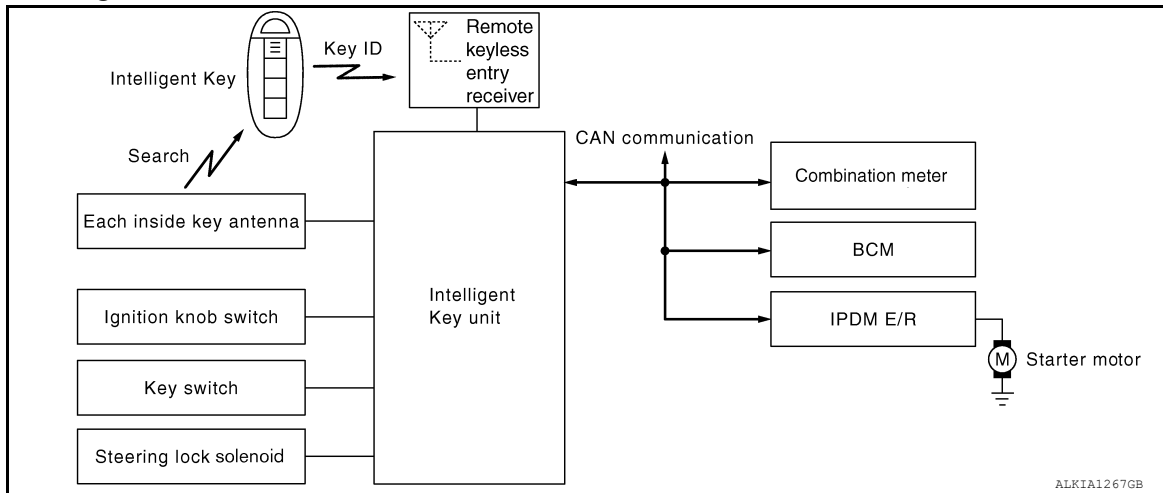
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[WITH INTELLIGENT KEY SYSTEM]

SYSTEM DESCRIPTION

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

System Diagram



System Description

INFOID:000000006246196

INPUT/OUTPUT SIGNAL CHART

Intelligent Key Unit

Switch/Input signal	Input signal to Intelligent Key unit	Intelligent Key unit function	Actuator/Output signal
Key switch	Mechanical key (insert/remove)	Engine start function	<ul style="list-style-type: none"> KEY warning lamp/buzzer Steering lock unit Starter relay request (to IPDM E/R) Inside key antenna (Instrument panel, center console, luggage areas) Key interlock solenoid
Ignition knob switch	Ignition knob (push/release)		
Steering lock unit	Steering lock (lock/unlock)		
Inside key antenna (Front and rear center console, luggage areas)	Intelligent Key (inside antenna detection area or not.)		

IPDM E/R

Switch/Input signal	Input signal to IPDM E/R	IPDM E/R function	Actuator/Output signal
Transmission range switch	P, N range	Engine start function	<ul style="list-style-type: none"> Starter relay Starter motor

BCM

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
Key switch	Brake (press/release)	Engine start function	<ul style="list-style-type: none"> Inside key antenna (Instrument panel, center console, luggage areas)

SYSTEM DESCRIPTION

- The engine start function of Intelligent Key system is a system that makes it possible to start and stop the engine without using the key. It verifies the electronic ID using two-way communications when pressing the ignition knob switch while carrying the Intelligent Key, which operates based on the results of electronic ID verification for Intelligent Key using two-way communications between the Intelligent Key and the vehicle.

NOTE:

The driver should carry the Intelligent Key at all times.

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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

- Intelligent Key has 2 IDs (for Intelligent Key and for NATS). It can perform the door lock/unlock operation and the engine start operation when the registered Intelligent Key is carried.
- When the Intelligent Key battery is discharged, it can be used as emergency back-up by inserting the mechanical key set in the Intelligent Key to the ignition key cylinder. At that time, perform the NATS ID verification. If it is used when the Intelligent Key is carried, perform the Intelligent Key ID verification.
- If the ID is successfully verified, and when the ignition knob switch is pressed, steering lock will be released and initiating the engine will be possible.
- The door lock/unlock operation can be performed when the Intelligent Key battery is discharged, by operating the driver door key cylinder using the mechanical key set in the Intelligent Key.
- Up to 4 Intelligent Keys can be registered (including the standard Intelligent Key) on request from the owner.

NOTE:

- Refer to [BCS-16, "COMMON ITEM : CONSULT-III Function \(BCM - COMMON ITEM\)"](#) for any functions other than engine start function of Intelligent Key system.

PRECAUTIONS FOR INTELLIGENT KEY SYSTEM

- **For vehicles equipped with the Intelligent Key system, the transponder [the chip for NATS ID verification] is integrated into the Intelligent Key. Therefore, the Intelligent Key alone is capable of providing security clearance for the engine to start. Also, when the mechanical key alone is inserted into the key cylinder, performs the NATS ID verification to allow the engine to start. For vehicles without Intelligent Key system, the transponder is integrated into the mechanical key which must be inserted into the key cylinder to perform the NATS ID verification to allow the engine to start.**

OPERATION WHEN INTELLIGENT KEY IS CARRIED

1. When the ignition knob switch is ON, the Intelligent Key unit transmits the request signal to the Intelligent Key.
2. The Intelligent Key receives the request signal and transmits the Intelligent Key ID signal to the Intelligent Key unit.
3. The Intelligent Key unit receives the Intelligent Key ID signal and verifies it with the registered ID.
4. Intelligent Key unit transmits the steering lock/unlock signal to steering lock unit if the verification results are OK. For detail of key warning lamp operation, refer to [SEC-19, "System Description"](#).
5. Release of the steering lock.
6. BCM transmits the starter request signal via CAN communication to IPDM E/R and turns the starter relay in IPDM E/R ON if BCM judges that the engine start condition is satisfied.
7. IPDM E/R turns the starter control relay ON when receiving the starter request signal.
8. When shift position is in P or N position, battery power is supplied through the starter relay and operate the starter motor and to start the cranking.

CAUTION:

If a malfunction is detected in the Intelligent Key system, the "NO KEY" warning message will be displayed in the combination meter. At that time, the engine cannot be started.

OPERATION RANGE

Engine can be started when Intelligent Key is inside the vehicle. However, sometimes engine might not start when Intelligent Key is on instrument panel or in glove box.

OPERATION WHEN MECHANICAL KEY IS USED

When the Intelligent Key battery is discharged, performs the NATS ID verification between the integrated transponder and BCM by inserting the mechanical key into the key cylinder, and then the engine can be started. For details relating to starting the engine using mechanical key, refer to [SEC-15, "System Description"](#).

STEERING LOCK OPERATION

Steering is locked by steering lock unit when ignition switch is in the LOCK position (the ignition knob is released) and key switch is OFF (key is removed from ignition key cylinder).

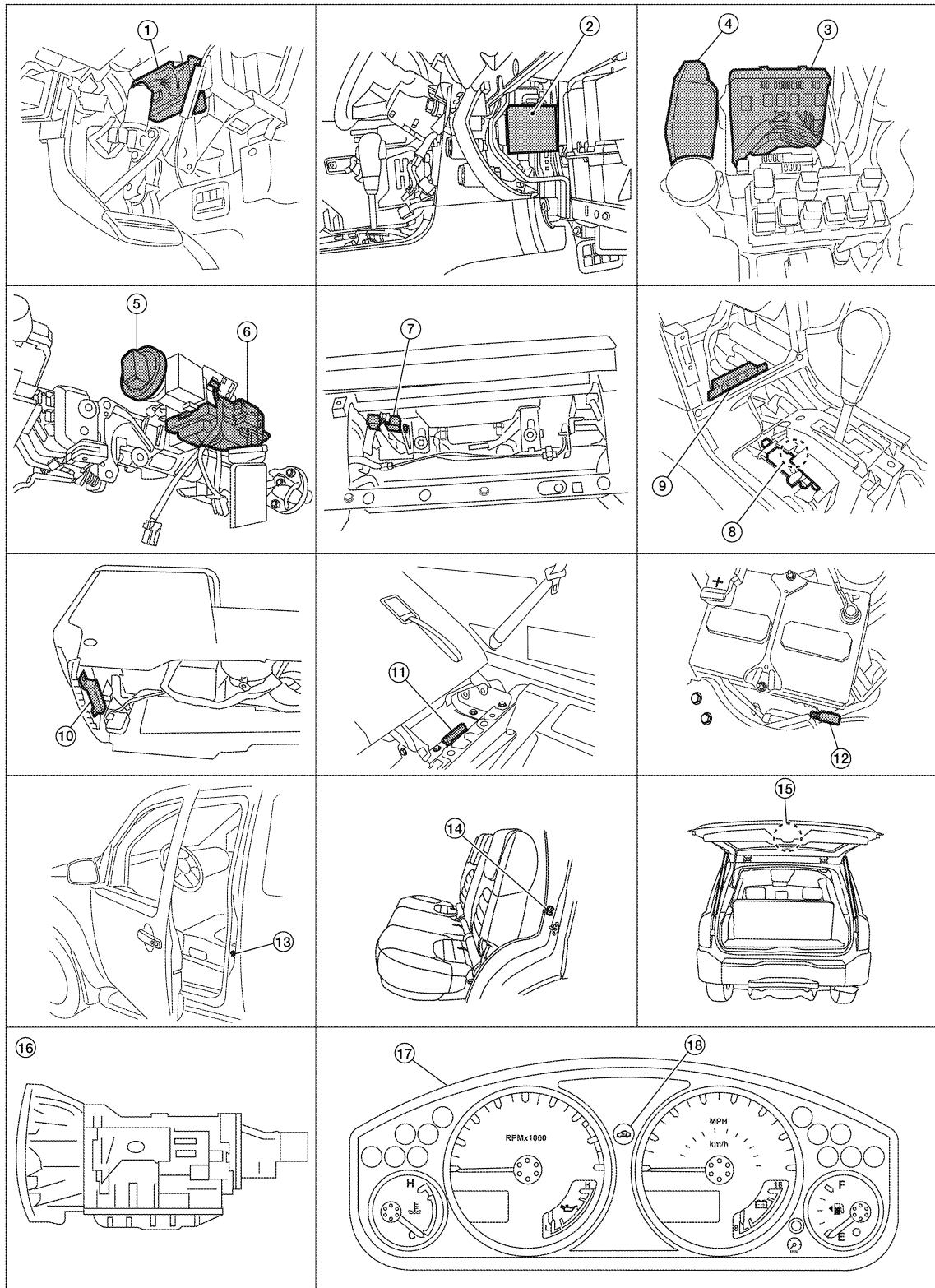
INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Component Parts Location

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1. BCM M18, M19, M20
(view with instrument panel LH removed)
4. ECM E16

2. Intelligent Key unit M164
(view with glove box removed)
5. Key switch and ignition knob switch M66
6. Steering lock solenoid M65
(view with steering column removed)

3. IPDM E/R
E119, E120, E122, E124

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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

- | | | |
|---|---|--|
| 7. Remote keyless entry receiver M67
(view with instrument panel RH removed) | 8. A/T shift selector (park position switch) M158
(view with center console removed) | 9. Instrument panel area antenna M68
(view with center console removed) |
| 10. Center console area antenna M212
(view with center console removed) | 11. Luggage area antenna B129
(behind 3 rd row seat) | 12. Intelligent Key warning buzzer E60 |
| 13. Front door switch LH B8
RH B108 | 14. Rear door switch LH B18
RH B116 | 15. Back door latch (door ajar switch) D502 |
| 16. A/T assembly F9 | 17. Combination meter M24 | 18. Vehicle security indicator lamp |

Component Description

INFOID:000000006246198

Item	Function
Intelligent Key unit	Receives lock/unlock signal from remote keyless entry receiver, and then transmits to BCM.
BCM	Verifies the received signal from Intelligent Key, then informs ECM whether to allow engine start.
Remote keyless entry receiver	Receives lock/unlock signal from the Intelligent Key, and then transmits to Intelligent Key unit.
Intelligent Key	Transmits button operation to remote keyless entry receiver.
Ignition knob switch	Monitors the status of the ignition knob switch.
Steering lock solenoid	Locks the steering wheel when the ignition key is off and the Intelligent Key is outside the vehicle.
Inside key antenna	Detects if Intelligent Key is inside the vehicle.
Intelligent Key warning buzzer	Warns the user of the lock/unlock condition and inappropriate operations with the buzzer sound.
A/T shift selector (park position switch)	Detects whether the shift lever is in park.

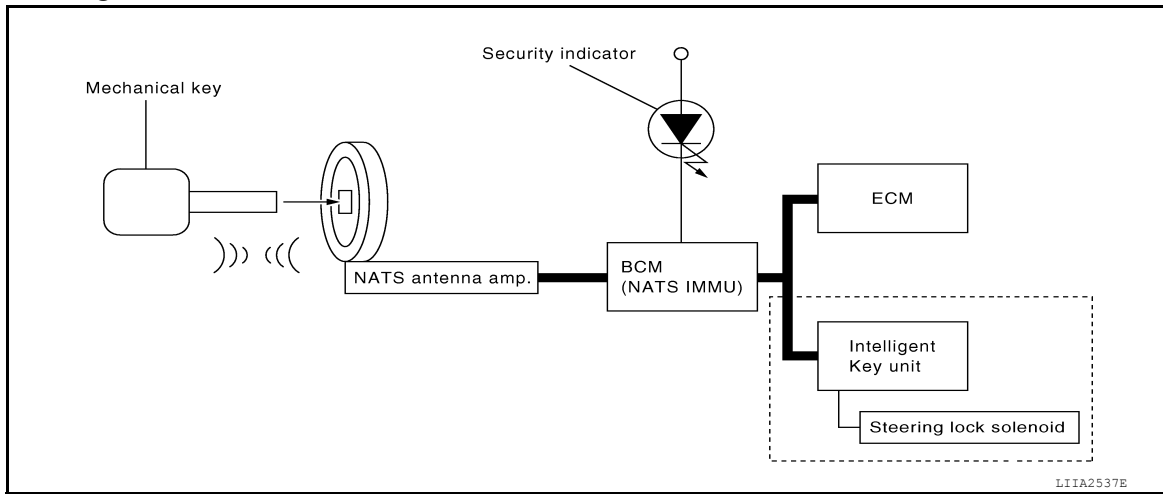
NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

System Diagram



System Description

INFOID:000000006246200

INPUT/OUTPUT SIGNAL CHART

Intelligent Key Unit

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
Ignition knob switch	Ignition knob (push/release)	NATS	• Steering lock unit
Key switch	Mechanical key (Insert/remove)		
Steering lock unit	Steering (lock/unlock)		
ECM	Engine status signal		

BCM

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
NATS antenna amp.	Key ID	NATS	• Security indicator lamp • Starter request
ECM	Engine status signal		

SYSTEM DESCRIPTION

NATS (Nissan Anti-Theft System) has the following immobilizer functions:

- Engine immobilizer shows high anti-theft performance to prevent engine from starting by other than the owner.
- Only a key with key ID registered in BCM and ECM can start engine, and shows high anti-theft performance to prevent key from being copied or stolen.
- Security indicator always flashes with mechanical key removed condition (key switch: OFF) and ignition knob released condition on LOCK position (ignition knob switch: OFF).
- Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system. Refer to [SEC-19, "System Description"](#).
- If system detects malfunction, security indicator illuminates when ignition switch is turned to ON position.
- If the owner requires, ignition key ID or mechanical key ID can be registered for up to 4 keys.
- During trouble diagnosis or when the following parts have been replaced, and if mechanical key is added, registration* is required.

*1: All keys kept by the owner of the vehicle should be registered with mechanical key.

- ECM
- BCM

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NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

- Mechanical key
- Intelligent Key unit
- Remote keyless entry receiver
- Steering lock solenoid
- NATS trouble diagnosis, system initialization and additional registration of other mechanical key IDs must be carried out using CONSULT-III.
When NATS initialization has been completed, the ID of the inserted mechanical key or mechanical key IDs can be carried out.
- Possible symptom of NATS malfunction is “Engine cannot start”. Identify the possible causes according to “Work Flow”, Refer to [SEC-5. "Work Flow"](#).
- If ECM other than Genuine NISSAN is installed, the engine cannot be started. For ECM replacement procedure, refer to [SEC-10. "ECM RE-COMMUNICATING FUNCTION : Description"](#).

PRECAUTIONS FOR KEY REGISTRATION

- The key registration is a procedure that erases the current NATS ID once, and then re-registers a new ID. Therefore the registered Intelligent Key is necessary for this procedure. Before starting the registration operation collect all registered Intelligent Keys from the customer.
- The NATS ID registration is the procedure that registers the ID stored into the transponder (integrated in mechanical key) to BCM.
The Intelligent Key ID registration is the procedure that registers the ID to Intelligent Key unit.
- When performing the Intelligent Key system registration only, the engine cannot be started by inserting the key into the key cylinder. When performing the NATS registration only, the engine cannot be started by using the mechanical key.

SECURITY INDICATOR

- Always flashes with ignition knob released (ignition knob switch: LOCK) condition on ignition knob LOCK position.
- Always flashes with ignition knob released (ignition knob switch: LOCK) condition on mechanical key removed position.

MAINTENANCE INFORMATION

CAUTION:

It is necessary to perform NATS ID registration when replacing any of the following part. If it's not (or fail to do so), the electrical system may not operate properly.

- **Intelligent Key unit**
- **BCM**
- **ECM**
- **Mechanical key**
- **Steering lock solenoid**
- **NATS antenna amp.**

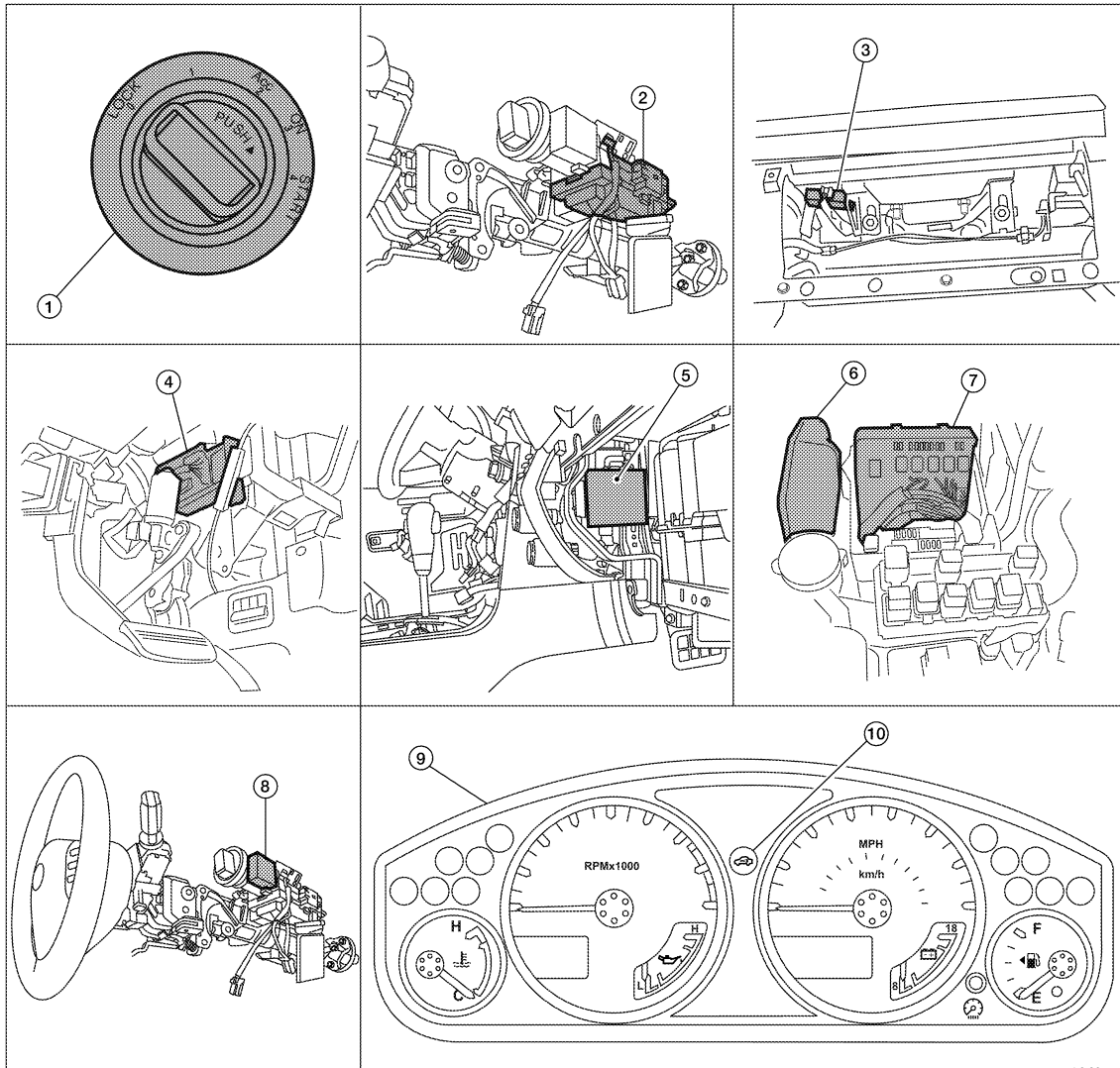
NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Component Parts Location

INFOID:000000006246201



- | | | |
|--|--|---|
| 1. Key switch and ignition knob switch M66 | 2. Steering lock solenoid M65
(view with steering column removed) | 3. Remote keyless entry receiver M67
(view with glove box removed) |
| 4. BCM M18, M20
(view with instrument panel LH removed) | 5. Intelligent Key unit M164
(view with glove box removed) | 6. ECM E16 |
| 7. IPDM E/R E121
(view with cover removed) | 8. NATS antenna amp. M21 | 9. Combination meter M24 |
| 10. Security indicator lamp | | |

Component Description

INFOID:000000006246202

Item	Function
Intelligent Key unit	Receives lock/unlock signal from remote keyless entry receiver, and then transmits to BCM.
BCM	Controls the door lock function and room lamp function.
Remote keyless entry receiver	Receives lock/unlock signal from the Intelligent Key, and then transmits to Intelligent Key unit.
Intelligent Key	Transmits button operation to remote keyless entry receiver.
Steering lock solenoid	Locks the steering wheel when the ignition key is off and the Intelligent Key is outside the vehicle.
NATS antenna amp.	Detects the mechanical key presence in the ignition key cylinder.

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NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Item	Function
Security indicator	Indicates the status of the security system.
IPDM E/R	Monitors the ignition switch and the park switch signal from the TCM.

VEHICLE SECURITY SYSTEM

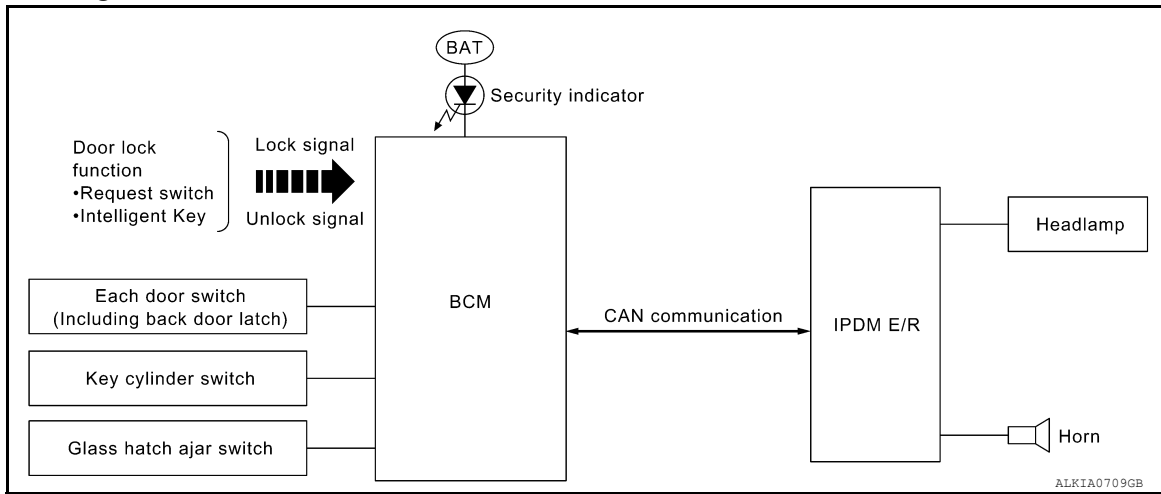
[WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

VEHICLE SECURITY SYSTEM

System Diagram

INFOID:000000006246203



System Description

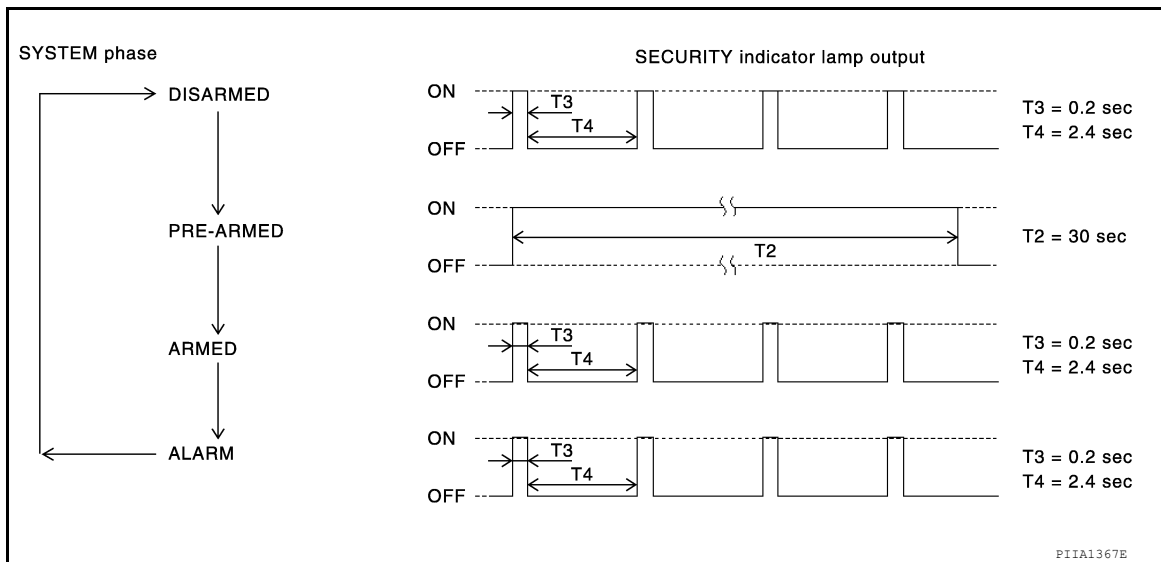
INFOID:000000006246204

DESCRIPTION

The security system provides an audible and visual alarm when an unauthorized access to the vehicle is detected while the system is in armed phase.

The security system consist of the BCM managing the audible alarm (horn) and the visual alarm (headlamps).

OPERATION FLOW



Disarmed Phase

When the vehicle is being driven or when doors are open, the theft warning system is set in the disarmed phase on the assumption that the owner is inside or near the vehicle.

Pre-Armed Phase And Armed Phase

The vehicle security system turns into the pre-armed phase when ignition switch is in OFF position, all doors including glass hatch are closed and locked (using Intelligent Key, door request switch or auto relock function). The system automatically shifts into the armed phase.

Condition of Activating The System

When the following condition is performed in armed phase, the system sounds the horns and flashes the headlamps for about 50 seconds.

- Any door is opened.

VEHICLE SECURITY SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

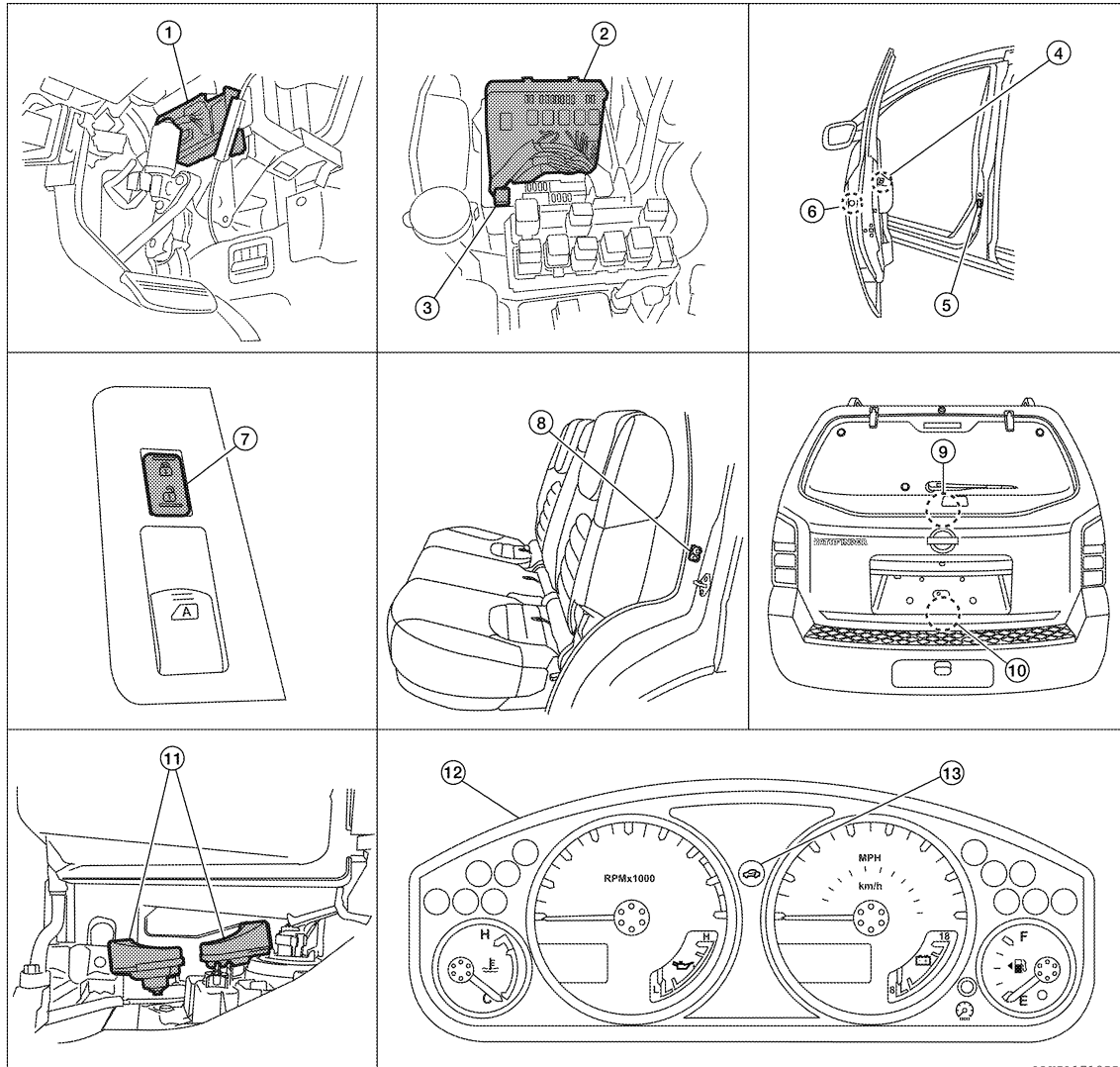
Condition of Deactivating The System

When one of the following operations is performed, the armed phase is canceled.

- Unlock the doors with Intelligent Key or door request switch.
- Use the mechanical key to unlock the driver door using the door key cylinder.

Component Parts Location

INFOID:000000006246205



- | | | |
|--|---|---|
| 1. BCM M18, M19, M20
(view with instrument panel LH removed) | 2. IPDM E/R E122, E123, E124
(view with cover removed) | 3. Horn relay H-1 |
| 4. Main power window and door lock/
unlock switch D7, D8 | 5. Front door switch LH B8
RH B108 | 6. Front door lock assembly LH (key cylinder
switch) D14 |
| 7. Power window and door lock/unlock
switch RH D105 | 8. Rear door switch LH B18
RH B116 | 9. Glass hatch ajar switch D503 |
| 10. Back door latch (door ajar switch)
D502
Glass hatch ajar switch D503 | 11. Horn E3
(behind front combination lamp LH) | 12. Combination meter M24 |
| 13. Security indicator lamp | | |

VEHICLE SECURITY SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

Component Description

INFOID:000000006246206

Item	Function
BCM	Controls the door lock function and room lamp function.
Door switch	Provides the BCM with the status of each monitored door.
Security indicator	Indicates the status of the security system.
IPDM E/R	Controls the horn and headlamp operation.
Horn	Sounds when the vehicle security system is triggered.

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DIAGNOSIS SYSTEM (BCM)

[WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:000000006766973

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Direct Diagnostic Mode	Description
Ecu Identification	The BCM part number is displayed.
Self Diagnostic Result	The BCM self diagnostic results are displayed.
Data Monitor	The BCM input/output data is displayed in real time.
Active Test	The BCM activates outputs to test components.
Work support	The settings for BCM functions can be changed.
Configuration	<ul style="list-style-type: none"> • The vehicle specification can be read and saved. • The vehicle specification can be written when replacing BCM.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

SYSTEM APPLICATION

BCM can perform the following functions.

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

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:000000006766974

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.

ACTIVE TEST

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

THEFT ALM

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

INFOID:000000006766975

DATA MONITOR

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

* : with Intelligent Key

** : without Intelligent Key

ACTIVE TEST

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

WORK SUPPORT

Support Item	Setting	Description
SECURITY ALARM SET	Off	Security alarm OFF.
	On*	Security alarm ON.

DIAGNOSIS SYSTEM (BCM)

[WITH INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

Support Item	Setting	Description
THEFT ALM TRG	Off/On	The switch which triggered vehicle security alarm is recorded [On]. This mode is able to confirm and erase the record of vehicle security alarm. The trigger data can be erased by touching [CLEAR].
	CLEAR	

*: Initial setting

DIAGNOSIS SYSTEM (INTELLIGENT KEY UNIT)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

DIAGNOSIS SYSTEM (INTELLIGENT KEY UNIT)

CONSULT-III Function (INTELLIGENT KEY)

INFOID:000000006827756

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with Intelligent Key unit.

Diagnosis mode	Function Description
ECU IDENTIFICATION	The Intelligent Key unit part number is displayed.
SELF DIAGNOSTIC RESULT	Displays the diagnosis results judged by Intelligent Key unit.
DATA MONITOR	The Intelligent Key unit input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from Intelligent Key unit.
WORK SUPPORT	Changes the setting for each system function.
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from Intelligent Key unit.

SELF-DIAG RESULT

Refer to [BCS-46. "DTC Index"](#).

DATA MONITOR

Monitor Item	Condition
PUSH SW	Indicates [ON (pushed)/OFF (released)] condition of ignition knob switch.
KEY SW	Indicates [ON (inserted)/OFF (removed)] condition of key switch.
DR REQ SW	Indicates [ON (pressed)/OFF (released)] condition of door request switch (driver side).
AS REQ SW	Indicates [ON (pressed)/OFF (released)] condition of door request switch (passenger side).
BD/TR REQ SW	Indicates [ON (pressed)/OFF (released)] condition of back door request switch.
IGN SW	Indicates [ON (ON or START position)/OFF (other than ON and START position)] condition of ignition switch ON position.
ACC SW	Indicates [ON/OFF] condition of ignition switch ACC position.
STOP LAMP SW	Indicates [ON/OFF] condition of stop lamp switch.
P RANGE SW	Indicates [ON/OFF] position of shift lever park position switch.
BD OPEN SW	Indicates [ON (pressed)/OFF (released)] condition of back door opener switch.
DOOR LOCK SIG	Indicates [ON/OFF] condition of LOCK signal from Intelligent Key.
DOOR UNLOCK SIG	Indicates [ON/OFF] condition of UNLOCK signal from Intelligent Key.
KEYLESS PANIC	Indicates [ON (pressed)/OFF (released)] condition of Intelligent Key panic button.
KEYLS PBD SIG	Indicates [ON (pressed)/OFF (released)] condition of Intelligent Key back door button.
DOOR SW DR	Indicates [OPEN/CLOSE] condition of front door switch (driver side) from BCM via CAN communication.
DOOR SW AS	Indicates [OPEN/CLOSE] condition of front door switch (passenger side) from BCM via CAN communication.
DOOR SW RR	Indicates [OPEN/CLOSE] condition of rear door switch (RH) from BCM via CAN communication.
DOOR SW RL	Indicates [OPEN/CLOSE] condition of rear door switch (LH) from BCM via CAN communication.
DOOR BK SW	Indicates [OPEN/CLOSE] condition of back door switch from BCM via CAN communication.
VEHICLE SPEED	Displays the vehicle speed signal received from combination meter by numerical value [km/h].

ACTIVE TEST

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DIAGNOSIS SYSTEM (INTELLIGENT KEY UNIT)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Test item	Description
DOOR LOCK/UNLOCK	<p>This test is able to check door lock/unlock operation.</p> <ul style="list-style-type: none"> • ALL UNLK: All door lock actuators are unlocked. • DR UNLK: Door lock actuator (driver side) is unlocked. • AS UNLK: Door lock actuator (passenger side) is unlocked. • BK UNLK: This item is indicated, but inactive. • LOCK: All door lock actuator is locked.
ANTENNA	<p>This test is able to check Intelligent Key antenna operation. When the following condition are met, hazard warning lamps flash.</p> <ul style="list-style-type: none"> • ROOM ANT1: Instrument panel area antenna detects Intelligent Key when "ROOM ANT1" is selected. • ROOM ANT2: Center console and luggage area antennas detect Intelligent Key when "ROOM ANT2" is selected. • LUG ANT: This selection is not used. • DRIVER ANT: Outside key antenna (driver side) detects Intelligent Key when "DR ANT" is selected. • ASSIST ANT: Outside key antenna (passenger side) detects Intelligent Key when "AS ANT" is selected. • BK DOOR ANT: Outside key antenna (rear bumper) detects Intelligent Key when "BK DR ANT" is selected.
OUTSIDE BUZZER	<p>This test is able to check Intelligent Key warning buzzer operation.</p> <ul style="list-style-type: none"> • ON • OFF
INSIDE BUZZER	<p>This test is able to check warning chime in combination meter operation.</p> <ul style="list-style-type: none"> • TAKE OUT: Take away warning chime sounds. • KNOB: Ignition knob switch warning chime sounds. • KEY: Key warning chime sounds. • OFF
INDICATOR	<p>This test is able to check Intelligent Key warning lamps operation.</p> <ul style="list-style-type: none"> • Green "KEY" warning lamp illuminates when "BLUE ON" on CONSULT-III screen is touched. • Red "KEY" warning lamp illuminates when "RED ON" on CONSULT-III screen is touched. • Shift to park warning lamp illuminates when "KNOB ON" on CONSULT-III screen is touched. • Green "KEY" warning lamp flashes when "BLUE IND" on CONSULT-III screen is touched. • Red "KEY" warning lamp flashes when "RED IND" on CONSULT-III screen is touched. • Shift to park warning lamp (P-SHIFT) flashes when "KNOB IND" on CONSULT-III screen is touched. • OFF

WORK SUPPORT

Support item	Description	Selection item	Condition
CONFIRM KEY FOB ID	It can check whether Intelligent Key ID code is registered or not.	—	—
TAKE OUT FROM WINDOW WARN	Take away warning chime (from window) mode can be changed.	ON	Active
		OFF	Inactive
LOW BATT OF KEY FOB WARN	Intelligent Key low battery warning mode can be changed.	ON	Active
		OFF	Inactive
HAZARD ANSWER BACK	Hazard reminder operation mode can be changed.	LOCK/UNLOCK	Active
		LOCK ONLY	
		UNLOCK ONLY	
		OFF	Inactive
ANSWER BACK WITH I-KEY LOCK	Buzzer reminder operation (lock operation) mode by each door request switch can be changed.	HORN CHIRP	Active
		BUZZER	
		OFF	Inactive
ANSWER BACK WITH I-KEY UNLOCK	Buzzer reminder operation (unlock operation) mode by each door request switch can be changed.	ON	Active
		OFF	Inactive
AUTO RELOCK TIMER	Auto door lock operation mode can be changed.	1 min	Active
		5 min	
		OFF	Inactive

DIAGNOSIS SYSTEM (INTELLIGENT KEY UNIT)

< SYSTEM DESCRIPTION >

[WITH INTELLIGENT KEY SYSTEM]

Support item	Description	Selection item	Condition
PANIC ALARM DELAY	Panic alarm button pressing time on Intelligent Key button can be selected from the following with this mode.	0.5 sec	Active
		1.5 sec	
		OFF	Inactive
ENGINE START BY I-KEY	Engine start function (by Intelligent Key) mode can be changed.	ON	Active
		OFF	Inactive
LOCK/UNLOCK BY I-KEY	Door lock function by door request switch can be changed.	ON	Active
		OFF	Inactive

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U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:000000006246211

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. CAN Communication Signal Chart, refer to [LAN-53, "CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000006246212

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When Intelligent Key unit cannot communicate CAN communication signal continuously for 2 seconds or more.	In CAN communication system, any item (or items) of the following listed below is malfunctioning. <ul style="list-style-type: none">• Transmission• Receiving (BCM)• Receiving (ECM)• Receiving (METER/M&A)

Diagnosis Procedure

INFOID:000000006246213

1. PERFORM SELF DIAGNOSTIC

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

Is "CAN COMM CIRCUIT" displayed?

- YES >> Refer to [LAN-5, "CAN Communication Control Circuit"](#).
NO >> Refer to [GI-37, "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

U1010 CONTROL UNIT (CAN)

Description

INFOID:000000006246214

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. CAN Communication Signal Chart, refer to [LAN-53, "CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000006246215

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1010	CONTROL UNIT (CAN)	When detecting error during the initial diagnosis of CAN controller of Intelligent Key unit.	Intelligent Key unit

Diagnosis Procedure

INFOID:000000006246216

1. REPLACE INTELLIGENT KEY UNIT

When DTC [U1010] is detected, replace Intelligent Key unit.

>> Replace Intelligent Key unit. Refer to [SEC-113, "Removal and Installation"](#).

Special Repair Requirement

INFOID:000000006246217

1. REQUIRED WORK WHEN REPLACING INTELLIGENT KEY UNIT

Initialize control unit. Refer to CONSULT-III Operation Manual.

>> Inspection End.

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B2013 ID DISCORD I-KEY-STRG

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2013 ID DISCORD I-KEY-STRG

Description

INFOID:000000006246218

Intelligent Key unit performs the ID verification with the steering lock unit and releases the steering lock if both Intelligent Key unit and steering lock unit ID are same. Intelligent Key unit starts the communication with the steering lock unit when Intelligent Key is carried into the vehicle and the ignition knob switch is pressed.

DTC Logic

INFOID:000000006246219

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2013	STRG COMM 1	The ID verification results between Intelligent Key unit and steering control unit are NG. The registration is necessary.	Steering lock unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Press the ignition knob switch
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-30. "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246220

Regarding Wiring Diagram information, refer to [SEC-78. "Wiring Diagram"](#).

1. PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all mechanical keys. For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can steering lock be released with re-registered mechanical key?

- YES >> Steering lock solenoid was unregistered.
NO >> GO TO 2

2. CHECK STEERING LOCK SOLENOID POWER SUPPLY-1

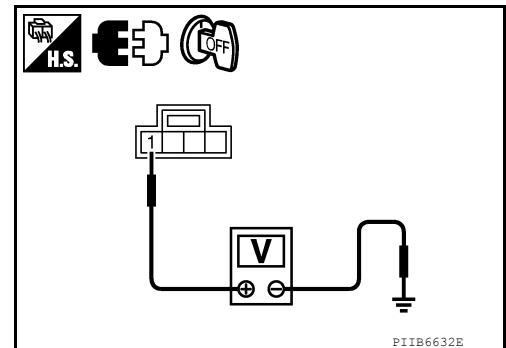
1. Turn ignition switch OFF.
2. Disconnect steering lock solenoid connector.
3. Check voltage between steering lock solenoid harness connector and ground.

Terminals		Voltage (V) (Approx.)
(+)	(-)	
Steering lock solenoid connector	Terminal	
M65	1	Battery voltage

Is the inspection result normal?

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

3. CHECK STEERING LOCK SOLENOID GROUND CIRCUIT



B2013 ID DISCORD I-KEY-STRG

< DTC/CIRCUIT DIAGNOSIS >

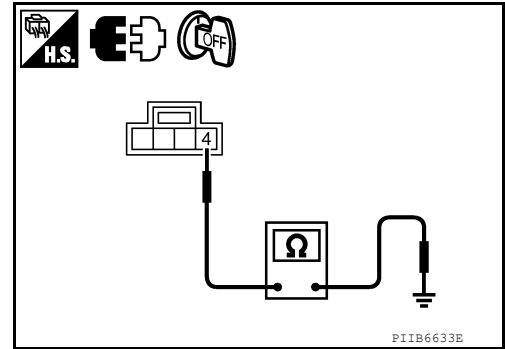
[WITH INTELLIGENT KEY SYSTEM]

Check continuity between steering lock solenoid harness connector and ground.

Terminals		(-)	Continuity
(+) Steering lock solenoid connector			
Terminal			
M65	4	Ground	Yes

Is the inspection result normal?

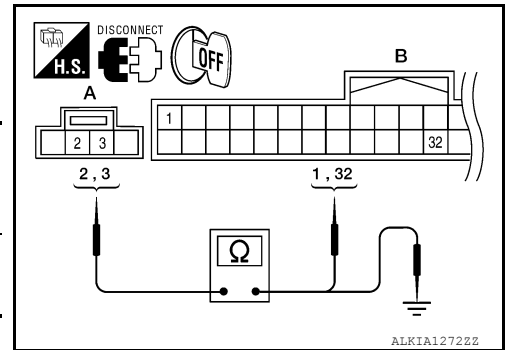
- YES >> GO TO 4
- NO >> Repair or replace harness.



4. CHECK STEERING LOCK SOLENOID COMMUNICATION CIRCUITS

1. Disconnect Intelligent Key unit connector.
2. Check continuity between steering lock solenoid connector M65 (A) terminals 2, 3 and Intelligent Key unit connector M164 (B) terminals 1, 32.

Terminals				Continuity
Steering lock solenoid connector	Terminal	Intelligent Key unit connector	Terminal	
M65	2	M164	1	Yes
	3		32	



3. Check continuity between steering lock solenoid connector M65 (A) terminals 2, 3 and ground.

Terminals		Terminals	Continuity
Steering lock solenoid connector			
M65	2	Ground	No
	3		

Is the inspection result normal?

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

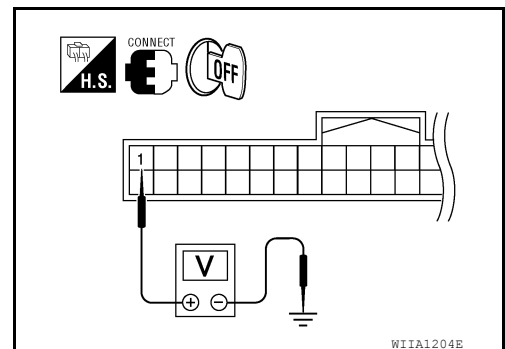
5. CHECK INTELLIGENT KEY UNIT POWER SUPPLY-2

1. Connect Intelligent Key unit connector.
2. Check voltage between Intelligent Key unit harness connector and ground.

Terminals			Voltage (V) (Approx.)
(+) Intelligent Key unit connector		(-) Terminal	
M164	1	Ground	5

Is the inspection result normal?

- YES >> GO TO 6
- NO >> Replace Intelligent Key unit. Refer to [SEC-113. "Removal and Installation"](#).



6. CHECK STEERING LOCK SOLENOID COMMUNICATION CIRCUIT

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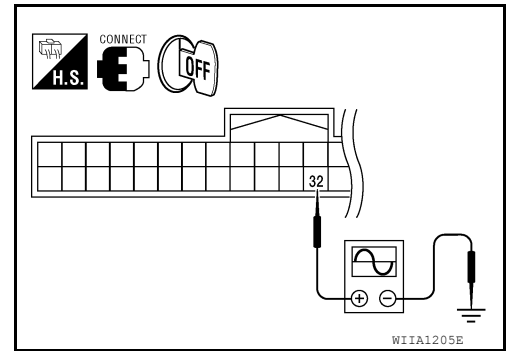
SEC

B2013 ID DISCORD I-KEY-STRG

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

1. Connect steering lock solenoid connector.
2. Using an oscilloscope, check voltage between Intelligent Key unit connector and ground.



Terminals		(-)	Condition	Voltage (V) (Approx.)
(+)	Terminal			
Intelligent Key unit connector				
M164	32	Ground	Steering lock	
			Ignition knob is pushed	
			LOCK status	5
			LOCK ⇔ UNLOCK	
			For 15 seconds after UNLOCK	5
			15 seconds later UNLOCK	0

Is the inspection result normal?

YES >> Replace Steering lock solenoid.

NO >> Replace Intelligent Key unit. Refer to [SEC-113, "Removal and Installation"](#).

B2190, P1614 NATS ANTENNA AMP.

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2190, P1614 NATS ANTENNA AMP.

Description

INFOID:000000006246221

Performs ID verification through BCM and NATS antenna amplifier when ignition knob switch is pressed. Prohibits the release of steering lock or start of engine when an unregistered ID of mechanical key is used.

DTC Logic

INFOID:000000006246222

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2190	NATS ANTENNA AMP	• Inactive communication between NATS antenna amp. and BCM. • Mechanical key is malfunctioning.	• Harness or connectors (The NATS antenna amp. circuit is open or shorted) • Mechanical key • NATS antenna amp. • BCM
P1614			

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Insert mechanical key into the key cylinder.
2. Press the ignition knob switch.
3. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

YES >> Refer to [SEC-33, "Diagnosis Procedure"](#).

NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246223

Regarding Wiring Diagram information, refer to [SEC-101, "Wiring Diagram - With Intelligent Key System"](#).

1. CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to [SEC-112, "Removal and Installation"](#).

Is the inspection result normal?

YES >> GO TO 2

NO >> Reinstall NATS antenna amp. correctly.

2. CHECK NVIS (NATS) IGNITION KEY ID CHIP

Start engine with another registered NATS ignition key.

Does the engine start?

YES >> • Ignition key ID chip is malfunctioning.
• Replace the ignition key.
• Perform initialization with CONSULT-III.
For initialization, refer to "CONSULT-III Operation Manual".

NO >> GO TO 3

3. CHECK POWER SUPPLY FOR NATS ANTENNA AMP.

1. Turn ignition switch ON.
2. Check voltage between NATS antenna amp. connector M21 terminal 1 and ground.

B2190, P1614 NATS ANTENNA AMP.

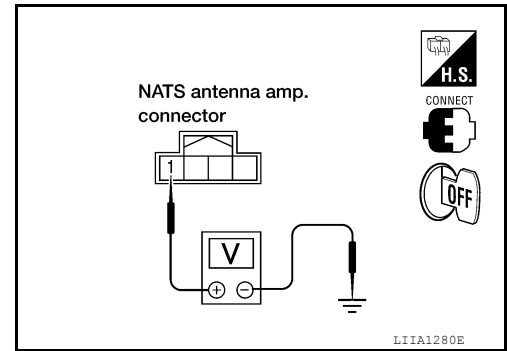
< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

1 - Ground : **Battery voltage**

Is the inspection result normal?

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



4. CHECK NATS ANTENNA AMP. GROUND LINE CIRCUIT

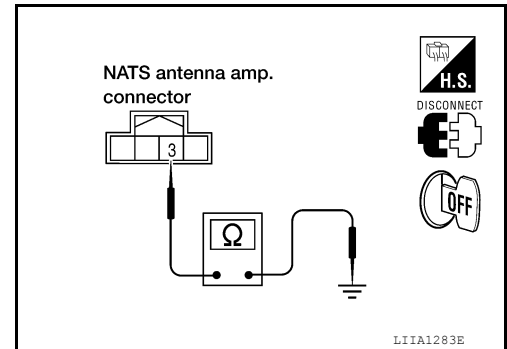
1. Turn ignition switch OFF.
2. Disconnect NATS antenna amp. connector.
3. Check continuity between NATS antenna amp. connector M21 terminal 3 and ground.

3 - Ground : **Continuity should exist.**

Is the inspection result normal?

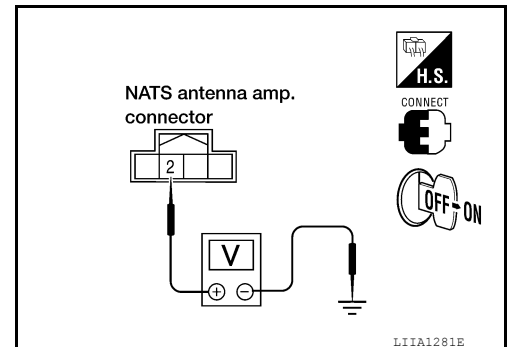
- YES >> GO TO 5
- NO >> • Repair or replace harness.

NOTE:
If harness is OK, replace BCM, refer to [BCS-55, "Removal and Installation"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual".



5. CHECK NATS ANTENNA AMP. SIGNAL LINE- 1

1. Connect NATS antenna amp. connector.
2. Turn ignition switch ON.
3. Check voltage between NATS antenna amp. connector M21 terminal 2 and ground with analog tester.



Terminals		Position of ignition key cylinder	Voltage (V) (Approx.)
(+)	(-)		
2	Ground	Before inserting ignition key	Battery voltage
		After inserting ignition key	Pointer of tester should move for approx. 30 seconds, then return to battery voltage
		Just after turning ignition switch ON	Pointer of tester should move for approx. 1 second, then return to battery voltage

Is the inspection result normal?

- YES >> GO TO 6
- NO >> • Repair or replace harness.

NOTE:
If harness is OK, replace BCM, refer to [BCS-55, "Removal and Installation"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual".

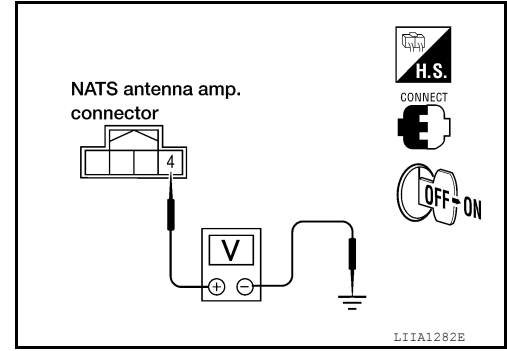
B2190, P1614 NATS ANTENNA AMP.

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

6. CHECK NATS ANTENNA AMP. SIGNAL LINE- 2

Check voltage between NATS antenna amp. connector M21 terminal 4 and ground with analog tester.



Terminals		Position of ignition key cylinder	Voltage (V) (Approx.)
(+)	(-)		
4	Ground	Before inserting ignition key	Battery voltage
		After inserting ignition key	Pointer of tester should move for approx. 30 seconds, then return to battery voltage
		Just after turning ignition switch ON	Pointer of tester should move for approx. 1 second, then return to battery voltage

Is the inspection result normal?

YES >> NATS antenna amp. is malfunctioning.

NO >> • Repair or replace harness.

NOTE:

If harness is OK, replace BCM, refer to [BCS-55. "Removal and Installation"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual".

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B2191, P1615 DIFFERENCE OF KEY

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2191, P1615 DIFFERENCE OF KEY

Description

INFOID:000000006246224

Performs ID verification through BCM when ignition knob switch is pressed.
Prohibits the release of steering lock or start of engine when an unregistered ID of mechanical key is used.

DTC Logic

INFOID:000000006246225

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2191 P1615	DIFFERENCE OF KEY	The ID verification results between BCM and mechanical key are NG. The registration is necessary.	Mechanical key

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Insert mechanical key into the key cylinder.
2. Press the ignition knob switch.
3. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-36, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246226

1. PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started with re-registered mechanical key?

- YES >> Mechanical key was unregistered.
NO >> BCM is malfunctioning.
 - Replace BCM. Refer to [BCS-55, "Removal and Installation"](#).
 - Perform initialization again.

B2192, P1611 ID DISCORD, IMMUECM

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2192, P1611 ID DISCORD, IMMUECM

Description

INFOID:000000006246227

BCM performs the ID verification with ECM that allows the engine to start. BCM starts the communication with ECM if ignition switch is turned ON and starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000006246228

DTC DETECTION LOGIC

NOTE:

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-28, "DTC Logic"](#).
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-29, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2192	ID DISCORD BCM-ECM	The ID verification results between BCM and ECM are NG. The registration is necessary.	• BCM • ECM
P1611			

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-37, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246229

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all mechanical keys.

For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started with re-registered mechanical key?

- YES >> ID was unregistered.
NO >> GO TO 2

2.REPLACE BCM

1. Replace BCM. Refer to [BCS-55, "Removal and Installation"](#).
2. Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started with re-registered mechanical key?

- YES >> BCM is malfunctioning.
NO >> GO TO 3

3.REPLACE ECM

1. Replace ECM. Refer to Removal and Installation.
2. Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started with re-registered mechanical key?

- YES >> ECM is malfunctioning.
NO >> GO TO 4

4.CHECK INTERMITTENT INCIDENT

Refer to [GI-37, "Intermittent Incident"](#).

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B2192, P1611 ID DISCORD, IMMUECM

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

>> Inspection End.

B2193, P1612 CHAIN OF ECM-IMMU

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2193, P1612 CHAIN OF ECM-IMMU

Description

INFOID:000000006246230

BCM performs the ID verification with ECM that allows the engine to start. BCM starts the communication with ECM if ignition switch is turned ON and starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000006246231

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-28, "DTC Logic"](#).
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-29, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2193	CHAIN OF BCM-ECM	Inactive communication between ECM and BCM	<ul style="list-style-type: none">• Harness or connectors (The CAN communication line is open or short)• BCM• ECM
P1612			

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-39, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246232

1. REPLACE BCM

1. Replace BCM. Refer to [BCS-55, "Removal and Installation"](#).
2. Perform initialization with CONSULT-III.
For initialization, refer to "CONSULT-III Operation Manual".

Does the engine start?

- YES >> BCM was malfunctioning.
NO >> ECM is malfunctioning.
 - Replace ECM.
 - Perform ECM re-communicating function.

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B2194 ID DISCORD IMMU-I-KEY

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2194 ID DISCORD IMMU-I-KEY

Description

INFOID:000000006246233

BCM performs the ID verification with Intelligent Key unit that allows the engine to start. BCM starts the communication with Intelligent Key unit if ignition switch is turned ON and starts the engine if the ID is OK. BCM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000006246234

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2194	DISCORD BCM-I-KEY	The ID verification results between BCM and Intelligent Key unit are NG. The registration is necessary.	<ul style="list-style-type: none">• BCM• Intelligent Key unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-40, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246235

1. PERFORM INITIALIZATION

1. Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> GO TO 2
NO >> ID was unregistered.

2. REPLACE BCM

1. Turn ignition switch OFF.
2. Replace BCM. Refer to [BCS-55, "Removal and Installation"](#).
3. Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started?

- YES >> BCM is malfunctioning.
NO >> GO TO 3

3. CHECK INTERMITTENT INCIDENT

Refer to [GI-37, "Intermittent Incident"](#).

>> Inspection End.

B2552 INTELLIGENT KEY

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2552 INTELLIGENT KEY

Description

INFOID:000000006246236

Intelligent Key unit performs engine start operation and steering lock control by crosschecking ID with the Intelligent Key.

DTC Logic

INFOID:000000006246237

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2552	INTELLIGENT KEY UNIT	Malfunction is detected inside Intelligent Key unit.	Intelligent Key unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-41, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246238

1.REPLACE INTELLIGENT KEY UNIT

1. Replace Intelligent Key unit.
2. Perform initialization with CONSULT-III. Re-register all mechanical keys. Refer to "CONSULT-III Operation Manual".
3. Start the engine.

Does the engine start?

- YES >> Inspection End.
NO >> Perform "DTC confirmation procedure". Refer to [SEC-41, "DTC Logic"](#).

Special Repair Requirement

INFOID:000000006246239

1.REQUIRED WORK WHEN REPLACING INTELLIGENT KEY UNIT

Initialize control unit. Refer to CONSULT-III Operation Manual.

>> Inspection End.

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B2590 ID DISCORD BCM-I-KEY

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

B2590 ID DISCORD BCM-I-KEY

Description

INFOID:000000006246240

Intelligent Key unit performs the ID verification with BCM that allows the engine to start. BCM starts the engine if the ID is OK and prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000006246241

DTC DETECTION LOGIC

NOTE:

- If DTC B2590 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-28, "DTC Logic"](#).
- If DTC B2590 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-29, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2590	ID DISCORD BCM-I-KEY	The ID verification results between BCM and Intelligent Key unit are NG. The registration is necessary.	<ul style="list-style-type: none">• BCM• Intelligent Key unit

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-42, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246242

1. PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all mechanical keys. For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started with re-registered mechanical key?

- YES >> ID was unregistered.
NO >> BCM is malfunctioning.
 - Replace BCM. Refer to [BCS-55, "Removal and Installation"](#).
 - Perform initialization again

P1610 LOCK MODE

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

P1610 LOCK MODE

Description

INFOID:000000006246243

When the starting operation is carried more than five times consecutively under the following conditions, NATS will shift to the mode which prevents the engine from being started.

- Unregistered mechanical key is used.
- BCM or ECM's malfunctioning.

DTC Logic

INFOID:000000006246244

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When the starting operation is carried out five or more times consecutively under the following conditions. <ul style="list-style-type: none">• Unregistered mechanical key• BCM or ECM's malfunctioning.	—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-43, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246245

1.CHECK ENGINE START FUNCTION

1. Perform the check for DTC except DTC P1610.
2. Use CONSULT-III to erase DTC after fixing.
3. Check that engine can start with registered mechanical key.

Does the engine start?

- YES >> Inspection End.
NO >> GO TO 2

2.CHECK INTERMITTENT INCIDENT

Refer to [GI-37, "Intermittent Incident"](#).

>> Inspection End.

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POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

POWER SUPPLY AND GROUND CIRCUIT INTELLIGENT KEY UNIT

INTELLIGENT KEY UNIT : Diagnosis Procedure

INFOID:000000006827749

Regarding Wiring Diagram information, refer to [DLK-151. "Wiring Diagram"](#).

1. CHECK POWER SUPPLY CIRCUIT

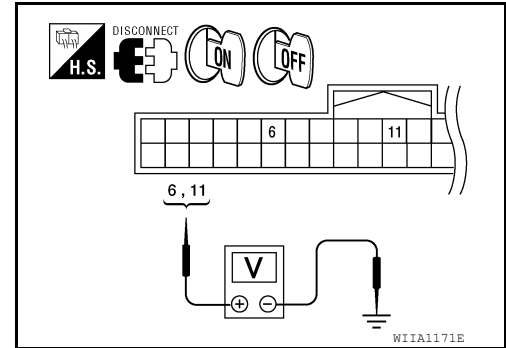
1. Turn ignition switch OFF.
2. Disconnect Intelligent Key unit connector.
3. Check voltage between Intelligent Key unit harness connector M70 terminals 6, 11 and ground.

Connector	Terminals		Ignition switch position	
	(+)	(-)	OFF	ON
M70	6	Ground	0V	Battery voltage
	11		Battery voltage	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace Intelligent Key power supply circuit.



2. CHECK GROUND CIRCUIT

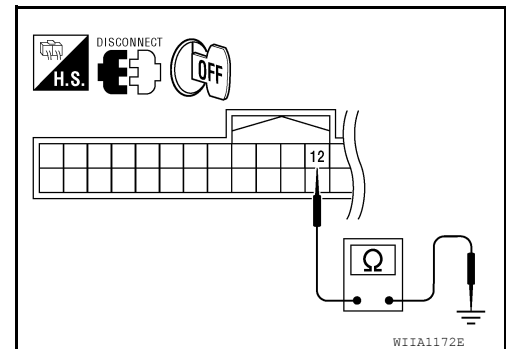
Check continuity between Intelligent Key unit harness connector M70 terminal 12 and ground.

12 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> Power supply and ground circuits are OK.

NO >> Repair or replace the Intelligent Key unit ground circuit.



BCM

BCM : Diagnosis Procedure

INFOID:00000000676001

Regarding Wiring Diagram information, refer to [BCS-48. "Wiring Diagram"](#).

1. CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
57	Battery power supply	21 (10A)
70		G (50A)
11	Ignition ACC or ON	4 (10A)
38	Ignition ON or START	1 (10A)

Is the fuse blown?

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

POWER SUPPLY AND GROUND CIRCUIT

[WITH INTELLIGENT KEY SYSTEM]

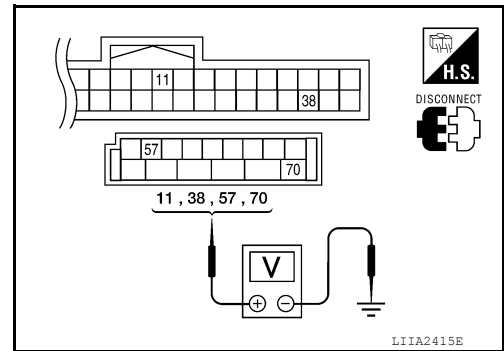
< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 2

2. CHECK POWER SUPPLY CIRCUIT

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

Connector	Terminals		Power source	Condition	Voltage (V) (Approx.)
	(+)	(-)			
M18	11	Ground	ACC power supply	Ignition switch ACC or ON	Battery voltage
	38	Ground	Ignition power supply	Ignition switch ON or START	Battery voltage
M20	57	Ground	Battery power supply	Ignition switch OFF	Battery voltage
	70	Ground	Battery power supply	Ignition switch OFF	Battery voltage



Is the measurement value normal?

YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK GROUND CIRCUIT

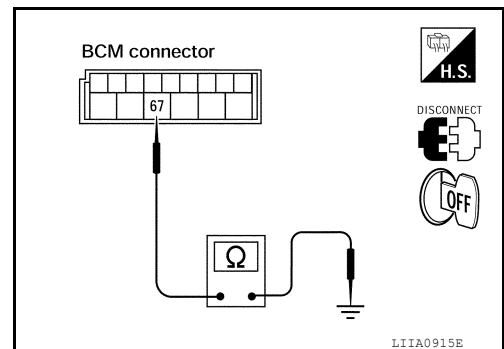
Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	67		Yes

Does continuity exist?

YES >> Inspection End.

NO >> Repair or replace harness.



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KEY CYLINDER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

KEY CYLINDER SWITCH

Description

INFOID:000000006246248

The main power window and door lock/unlock switch detects condition of the door key cylinder switch and transmits to BCM as the LOCK or UNLOCK signal.

Component Function Check

INFOID:000000006246249

1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

Check "KEY CYL LK-SW" AND "KEY CYL UN-SW" in DATA MONITOR mode for "POWER DOOR LOCK SYSTEM" with CONSULT-III.

Monitor item	Condition
KEY CYL LK-SW	Lock : ON
	Neutral / Unlock : OFF
KEY CYL UN-SW	Unlock : ON
	Neutral / Lock : OFF

Is the inspection result normal?

- YES >> Key cylinder switch is OK.
- NO >> Refer to [SEC-46. "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000006246250

Regarding Wiring Diagram information, refer to [SEC-91. "Wiring Diagram"](#).

1. CHECK DOOR KEY CYLINDER SWITCH LH

Ⓜ With CONSULT-III

Check front door lock assembly LH (key cylinder switch) ("KEY CYL LK-SW") and ("KEY CYL UN-SW") in DATA MONITOR mode with CONSULT-III.

- When key inserted in left front key cylinder is turned to LOCK:

KEY CYL LK-SW : ON

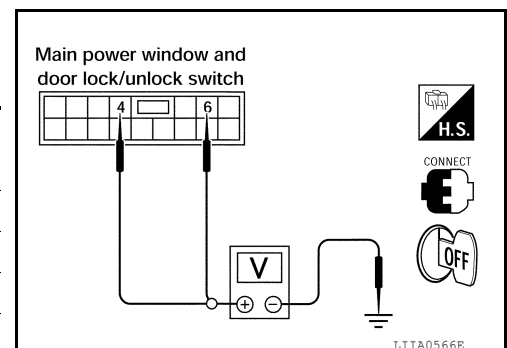
- When key inserted in left front key cylinder is turned to UNLOCK:

KEY CYL UN-SW : ON

ⓧ Without CONSULT-III

Check voltage between main power window and door lock/unlock switch connector D7 terminals 4, 6 and ground.

Connector	Terminals		Condition of left front key cylinder	Voltage (V) (Approx.)
	(+)	(-)		
D7	4	Ground	Neutral/Unlock	5
			Lock	0
	6		Neutral/Lock	5
			Unlock	0



Is the inspection result normal?

- YES >> Key cylinder switch signal is OK.

KEY CYLINDER SWITCH

[WITH INTELLIGENT KEY SYSTEM]

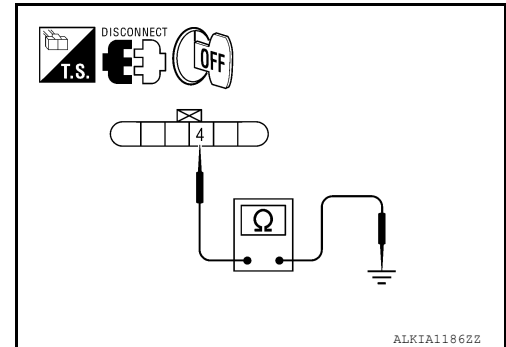
< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 2

2. CHECK DOOR KEY CYLINDER SWITCH LH GROUND HARNESS

1. Turn ignition switch OFF.
2. Disconnect front door lock assembly LH (key cylinder switch).
3. Check continuity between front door lock assembly LH (key cylinder switch) connector (A) D14 terminal 4 and body ground.

Connector	Terminals	Continuity
D14	4 – Ground	Yes



Is the inspection result normal?

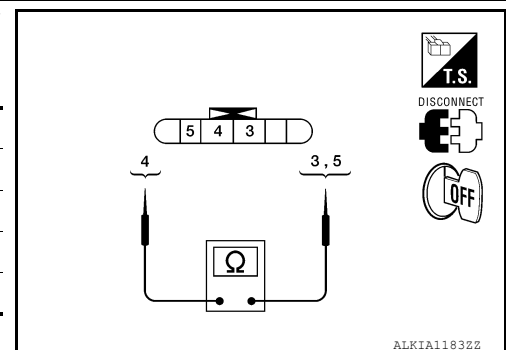
YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK DOOR KEY CYLINDER SWITCH LH

Check continuity between front door lock assembly LH (key cylinder switch) terminals.

Terminals	Condition	Continuity
3 – 4	Key is turned to LOCK or neutral.	No
	Key is turned to UNLOCK.	Yes
4 – 5	Key is turned to UNLOCK or neutral.	No
	Key is turned to LOCK.	Yes



Is the inspection result normal?

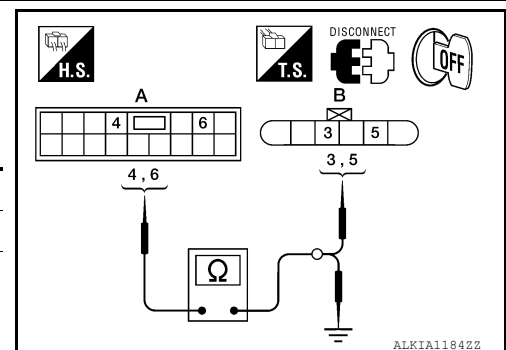
YES >> GO TO 4

NO >> Replace front door lock assembly LH (key cylinder switch). Refer to [DLK-201. "Removal and Installation"](#).

4. CHECK DOOR KEY CYLINDER HARNESS

Check continuity between main power window and door lock/unlock switch connector (A) D7 terminals 4, 6 and front door lock assembly LH (key cylinder switch) connector (B) D14 terminals 3, 5 and body ground.

Connector	Terminals	Connector	Terminals	Continuity
A: Main power window and door lock/unlock switch	4	B: Front door lock assembly LH (key cylinder switch)	5	Yes
	6		3	Yes
	4, 6	Ground	No	



Is the inspection result normal?

YES >> Replace main power window and door lock/unlock switch.

NO >> Repair or replace harness.

GLASS HATCH AJAR SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

GLASS HATCH AJAR SWITCH

Description

INFOID:000000006246251

Detects glass hatch open/close condition.

Component Function Check

INFOID:000000006246252

1.CHECK FUNCTION

With CONSULT-III

Check glass hatch switch in data monitor mode with CONSULT-III.

Monitor item	Condition
GLASS HATCH SW	CLOSE → OPEN: OFF → ON

Is the inspection result normal?

- YES >> Glass hatch switch is OK.
- NO >> Refer to [SEC-48, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000006246253

Regarding Wiring Diagram information, refer to [SEC-91, "Wiring Diagram"](#).

1.CHECK GLASS HATCH AJAR SWITCH INPUT SIGNAL

With CONSULT-III

Check glass hatch ajar switch "GLASS HATCH SW" in DATA MONITOR mode with CONSULT-III.

- When glass hatch is open:

GLASS HATCH SW :ON

- When glass hatch is closed:

GLASS HATCH SW :OFF

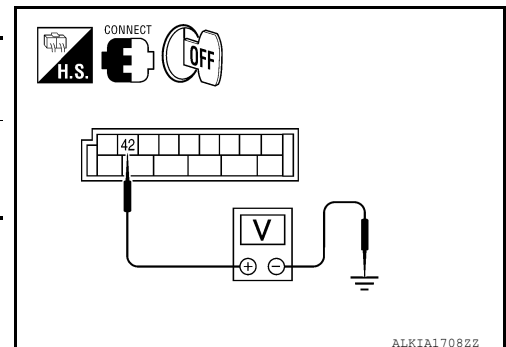
Without CONSULT-III

Check voltage between BCM connector M19 terminal 42 and ground.

Connector	Item	Terminals		Condition	Voltage (V) (Approx.)
		(+)	(-)		
M19	BCM	42	Ground	Open ↓ Closed	0 ↓ Battery voltage

Is the inspection result normal?

- YES >> Glass hatch ajar switch circuit is OK.
- NO >> GO TO 2



2.CHECK GLASS HATCH AJAR SWITCH CIRCUIT

- Turn ignition switch OFF.
- Disconnect glass hatch ajar switch and BCM.
- Check continuity between BCM connector M19 (A) terminal 42 and glass hatch ajar switch connector D503 (B) terminal 1.

GLASS HATCH AJAR SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

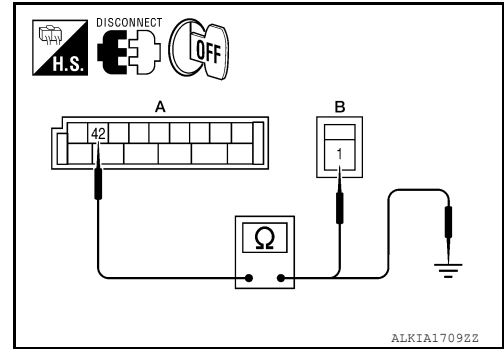
42 - 1 :Continuity should exist

4. Check continuity between BCM connector M19 (A) terminal 42 and ground.

42 - Ground :Continuity should not exist

Is the inspection result normal?

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



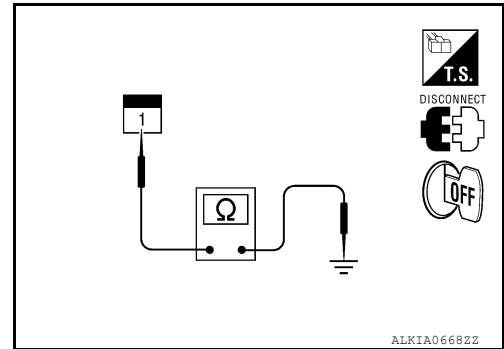
3. CHECK GLASS HATCH AJAR SWITCH

Check continuity between glass hatch ajar switch connector terminal 1 and ground.

	Terminals	Condition	Continuity
Glass hatch ajar switch	1 – Ground	Open	Yes
		Closed	No

Is the inspection result normal?

- YES >> Refer to [GI-37, "Intermittent Incident"](#).
- NO >> Replace glass hatch ajar switch.



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SEC

IGNITION KNOB SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

IGNITION KNOB SWITCH

Ignition Knob Switch Check

INFOID:000000006246254

Regarding Wiring Diagram information, refer to [SEC-78. "Wiring Diagram"](#).

1. CHECK IGNITION KNOB SWITCH

With CONSULT-III

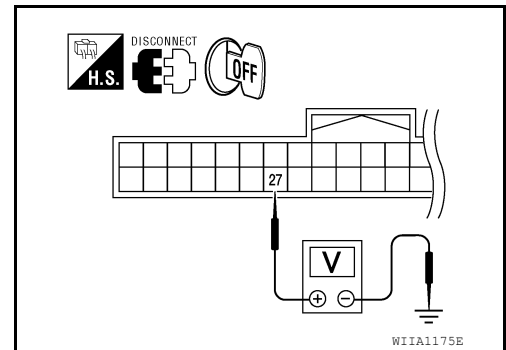
Display "PUSH SW" on DATA MONITOR screen, and check if ON/OFF display is linked to ignition switch operation.

Monitor item	Condition
PUSH SW	Ignition switch is pushed: ON
	Ignition switch is released: OFF

Without CONSULT-III

- Turn ignition switch OFF.
- Disconnect Intelligent Key unit connector.
- Check voltage between Intelligent Key unit harness connector M164 terminal 27 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M164	27	Ground	Ignition switch is pushed	Battery voltage
			Ignition switch is released	0



Is the inspection result normal?

- YES >> Ignition knob switch is OK.
 NO >> GO TO 2

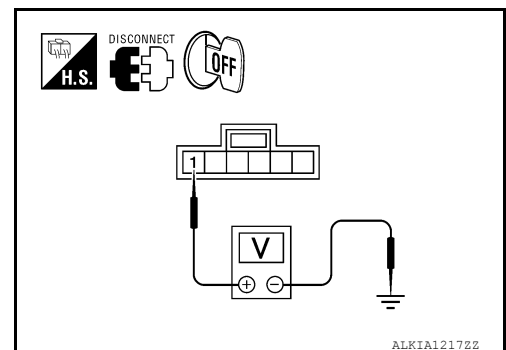
2. CHECK IGNITION KNOB SWITCH POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect key switch and ignition knob switch connector.
- Check voltage between key switch and ignition knob switch harness connector M66 terminal 1 and ground.

1 - Ground : Battery voltage

Is the inspection result normal?

- YES >> GO TO 3
 NO >> Repair or replace key switch and ignition knob switch power supply circuit.



3. CHECK IGNITION KNOB SWITCH OPERATION

IGNITION KNOB SWITCH

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

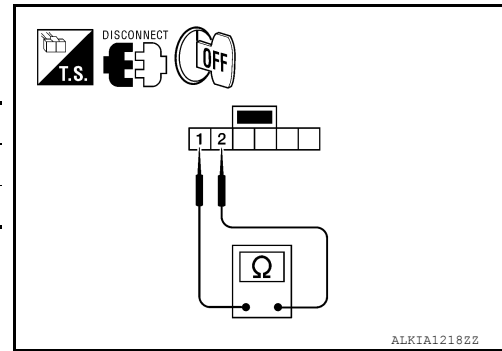
Check continuity between key switch and ignition knob switch terminals 1 and 2.

Component	Terminals		Condition	Continuity
Ignition knob switch	1	2	Ignition switch is pushed	Yes
			Ignition switch is released	No

Is the inspection result normal?

YES >> GO TO 4

NO >> Replace key switch and ignition knob switch.



4. CHECK IGNITION KNOB SWITCH CIRCUIT

- Check continuity between Intelligent Key unit harness connector M164 (A) terminal 27 and key switch and ignition knob switch harness connector M66 (B) terminal 2.

27 - 2 : Continuity should exist.

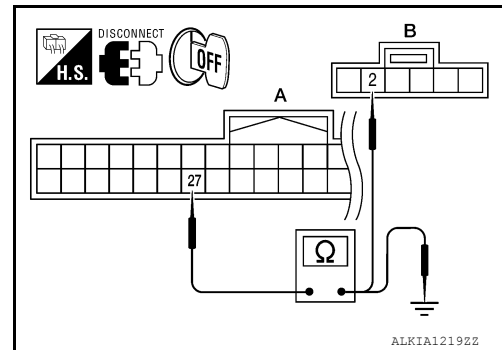
- Check continuity between Intelligent Key unit harness connector M164 (A) terminal 27 and ground.

27 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> Check the condition of harness and harness connector.

NO >> Repair or replace harness between Intelligent Key unit and key switch and ignition knob switch.



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SEC

HORN FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

HORN FUNCTION

Symptom Table

INFOID:000000006246255

HAZARD AND HORN REMINDER FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check “Work flow”. Refer to [SEC-5, "Work Flow"](#).
- If the following symptoms are detected, check systems shown in the “Diagnosis/service procedure” column in this order.

Conditions of Vehicle (Operating Conditions)

- “ANSWER BACK FUNCTION” is ON when setting on CONSULT-III.
- Ignition switch is in OFF position.
- All doors are closed.

Symptom	Diagnosis/service procedure	Reference page
Hazard reminder does not operate by request switch. (Horn reminder operate.)	1. Check “HAZARD ANSWER BACK” setting in “WORK SUPPORT”.	BCS-23
	2. Check hazard function.	EXL-4
	3. Check Intermittent Incident.	GI-37
Hazard reminder does not operate by Intelligent Key. (Horn reminder operate.)	1. Check “HAZARD ANSWER BACK” setting in “WORK SUPPORT”.	BCS-23
	2. Check hazard function.	EXL-4
	3. Check Intelligent Key battery inspection.	DLK-103
Horn reminder does not operate by request switch. (Hazard reminder operate.)	1. Check “ANSWER BACK WITH I-KEY LOCK” or “ANSWER BACK WITH I-KEY UNLOCK” setting in “WORK SUPPORT”.	BCS-23
	2. Check Intelligent Key warning buzzer.	DLK-88
	3. Check Intermittent Incident.	GI-37
Horn reminder does not operate by Intelligent Key. (Hazard reminder operate.)	1. Check “HORN WITH KEYLESS LOCK” setting in “WORK SUPPORT”.	BCS-23
	2. Check horn function.	SEC-91
	3. Check Intermittent Incident.	GI-37

VEHICLE SECURITY INDICATOR

< DTC/CIRCUIT DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

VEHICLE SECURITY INDICATOR

Description

INFOID:000000006246256

- Vehicle security indicator is built in combination meter.
- NATS (Nissan Anti-Theft System) and vehicle security system conditions are indicated by blink or illumination of vehicle security indicator.

Component Function Check

INFOID:000000006246257

1. CHECK FUNCTION

1. Perform "THEFT IND" in the "Active Test" mode with CONSULT-III.
2. Check vehicle security indicator operation.

Test item		Description	
THEFT IND	ON	Vehicle security indicator	ON
	OFF		OFF

Is the inspection result normal?

- YES >> Inspection End.
 NO >> Refer to [SEC-53, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000006246258

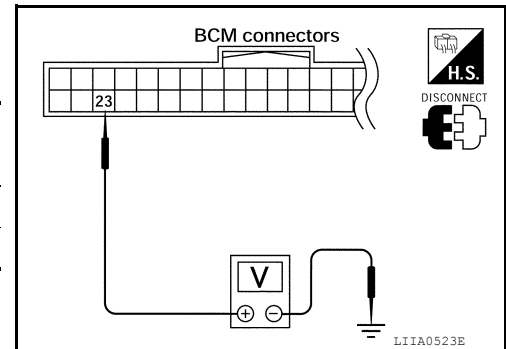
Regarding Wiring Diagram information, refer to [SEC-78, "Wiring Diagram"](#).

1. SECURITY INDICATOR LAMP ACTIVE TEST

With CONSULT-III
 Check "THEFT IND" in "ACTIVE TEST" mode with CONSULT-III.

- Without CONSULT-III
1. Disconnect BCM.
 2. Turn ignition switch ON.
 3. Check voltage between BCM harness connector M18 terminal 23 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M18	23	Ground	ON	0
			OFF	Battery voltage



Is the inspection result normal?

- YES >> Security indicator lamp is OK.
 NO >> GO TO 2

2. SECURITY INDICATOR LAMP CHECK

Check security indicator lamp condition.

Is the inspection result normal?

- YES >> GO TO 3
 NO >> Replace combination meter. Refer to [MWI-88, "Removal and Installation"](#).

3. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and security indicator lamp connector.

VEHICLE SECURITY INDICATOR

[WITH INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

3. Check continuity between BCM connector M18 (A) terminal 23 and combination meter connector M24 (B) terminal 39.

23 - 39 : Continuity should exist.

4. Check continuity between BCM connector M18 (A) terminal 23 and ground.

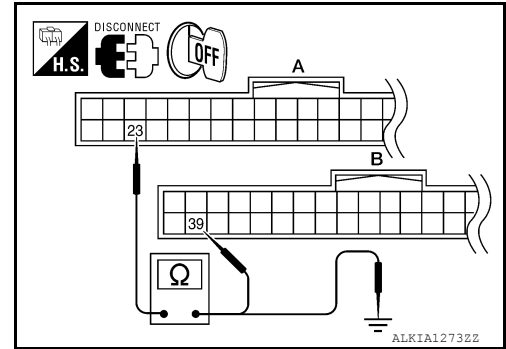
23 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> Check the following:

- 10A fuse [No. 19, located in fuse block (J/B)]
- Harness for open or short between security indicator lamp and fuse

NO >> Repair or replace harness.



BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000006767003

NOTE:

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

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

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF or ON	Off
	Ignition switch ACC	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm ² , psi
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
BACK DOOR SW	Back door closed	Off
	Back door opened	On
BRAKE SW	Brake pedal released	Off
	Brake pedal applied	On
BUCKLE SW	Seat belt buckle unfastened	Off
	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
	Buzzer in combination meter ON	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Front door RH closed	Off
	Front door RH opened	On
DOOR SW-DR	Front door LH closed	Off
	Front door LH opened	On
DOOR SW-RL	Rear door LH closed	Off
	Rear door LH opened	On
DOOR SW-RR	Rear door RH closed	Off
	Rear door RH opened	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item	Condition	Value/Status
FAN ON SIG	Blower motor fan switch OFF	Off
	Blower motor fan switch ON	On
FR FOG SW	Front fog lamp switch OFF	Off
	Front fog lamp switch ON	On
FR WASHER SW	Front washer switch OFF	Off
	Front washer switch ON	On
FR WIPER LOW	Front wiper switch OFF	Off
	Front wiper switch LO	On
FR WIPER HI	Front wiper switch OFF	Off
	Front wiper switch HI	On
FR WIPER INT	Front wiper switch OFF	Off
	Front wiper switch INT	On
FR WIPER STOP	Any position other than front wiper stop position	Off
	Front wiper stop position	On
HAZARD SW	When hazard switch is not pressed	Off
	When hazard switch is pressed	On
HEAD LAMP SW 1	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HEAD LAMP SW 2	Headlamp switch OFF	Off
	Headlamp switch 1st	On
HI BEAM SW	High beam switch OFF	Off
	High beam switch HI	On
ID REGST FL1	ID registration of front left tire incomplete	YET
	ID registration of front left tire complete	DONE
ID REGST FR1	ID registration of front right tire incomplete	YET
	ID registration of front right tire complete	DONE
ID REGST RL1	ID registration of rear left tire incomplete	YET
	ID registration of rear left tire complete	DONE
ID REGST RR1	ID registration of rear right tire incomplete	YET
	ID registration of rear right tire complete	DONE
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
I-KEY LOCK ¹	LOCK button of Intelligent Key is not pressed	Off
	LOCK button of Intelligent Key is pressed	On
I-KEY PANIC ¹	PANIC button of Intelligent Key is not pressed	Off
	PANIC button of Intelligent Key is pressed	On
I-KEY PW DWN ¹	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed for greater than 3 seconds and driver's window operating in DOWN direction	On
I-KEY UNLOCK ¹	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Monitor Item	Condition	Value/Status	
KEY CYL LK-SW	Door key cylinder LOCK position	Off	A
	Door key cylinder other than LOCK position	On	
KEY CYL UN-SW	Door key cylinder UNLOCK position	Off	B
	Door key cylinder other than UNLOCK position	On	
KEY ON SW	Mechanical key is removed from key cylinder	Off	C
	Mechanical key is inserted to key cylinder	On	
KEYLESS LOCK ²	LOCK button of key fob is not pressed	Off	D
	LOCK button of key fob is pressed	On	
KEYLESS PANIC ²	PANIC button of key fob is not pressed	Off	E
	PANIC button of key fob is pressed	On	
KEYLESS UNLOCK ²	UNLOCK button of key fob is not pressed	Off	F
	UNLOCK button of key fob is pressed	On	
LIGHT SW 1ST	Lighting switch OFF	Off	G
	Lighting switch 1st	On	
OIL PRESS SW	<ul style="list-style-type: none"> • Ignition switch OFF or ACC • Engine running 	Off	H
	Ignition switch ON	On	
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5V	I
	Dark outside of the vehicle	Close to 0V	
PASSING SW	Other than lighting switch PASS	Off	J
	Lighting switch PASS	On	
PUSH SW ¹	Return to ignition switch to LOCK position	Off	K
	Press ignition switch	On	
REAR DEF SW	Rear window defogger switch OFF	Off	L
	Rear window defogger switch ON	On	
RR WASHER SW	Rear washer switch OFF	Off	M
	Rear washer switch ON	On	
RR WIPER INT	Rear wiper switch OFF	Off	N
	Rear wiper switch INT	On	
RR WIPER ON	Rear wiper switch OFF	Off	O
	Rear wiper switch ON	On	
RR WIPER STOP	Rear wiper stop position	Off	P
	Other than rear wiper stop position	On	
TURN SIGNAL L	Turn signal switch OFF	Off	
	Turn signal switch LH	On	
TURN SIGNAL R	Turn signal switch OFF	Off	
	Turn signal switch RH	On	
VEHICLE SPEED	While driving	Equivalent to speedometer reading	
WARNING LAMP	Low tire pressure warning lamp in combination meter OFF	Off	
	Low tire pressure warning lamp in combination meter ON	On	

1: With Intelligent Key

2: With remote keyless entry system

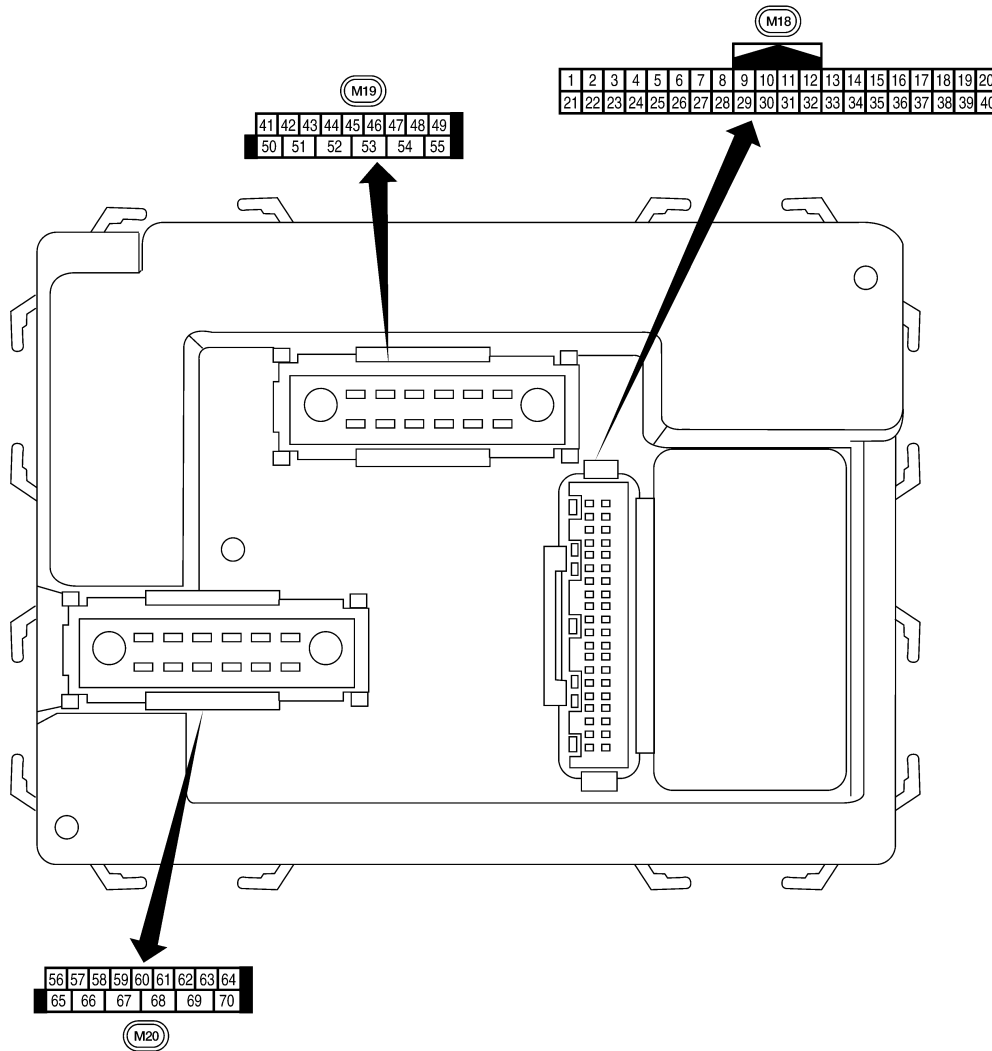
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal Layout

INFOID:000000006767004



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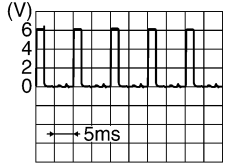
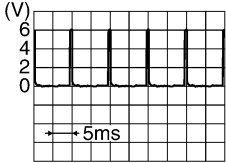
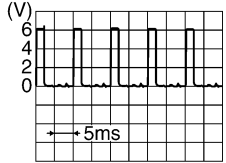
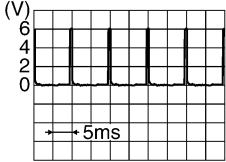
Physical Values

INFOID:000000006767005

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW ON)	0V
2	P	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
3	SB	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
4	V	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
5	L	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
6	R	Combination switch input 1				
9	Y	Rear window defogger switch	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
11	G/B	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	LG	Front door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
13	L	Rear door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	W	Tire pressure warning check connector	Input	OFF	—	5V
18	BR	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	—	0V

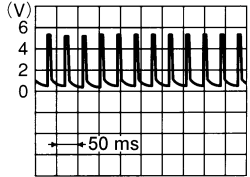
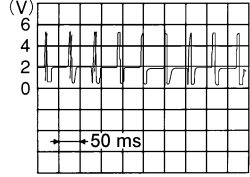
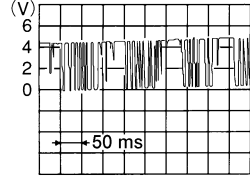
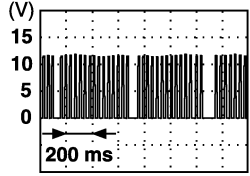
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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

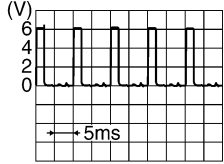

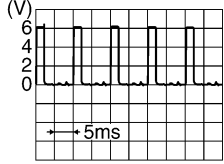
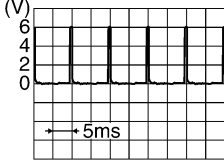
[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
19	V	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	 <p style="text-align: right; font-size: small;">L1IA1893E</p>
20	G	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	 <p style="text-align: right; font-size: small;">L1IA1894E</p>
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	 <p style="text-align: right; font-size: small;">L1IA1895E</p>
21	GR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	V	BUS	—	—	Ignition switch ON or power window timer operates	 <p style="text-align: right; font-size: small;">P1IA2344E</p>
23	G	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
27	W	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V
28	R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	G	Hazard switch	Input	OFF	ON	0V
					OFF	5V
30 ¹	G	Back door opener switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
30 ²	SB	Back door opener switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	O	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
33	GR	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
34	G	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
35	BR	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
36	LG	Combination switch output 1				
37 ¹	B	Key switch and key lock solenoid	Input	OFF	Key inserted	Battery voltage
					Key removed	0V
37 ²	B	Key switch and ignition knob switch	Input	OFF	Intelligent Key inserted	Battery voltage
					Intelligent Key removed	0V
38	W/R	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
42	LG	Glass hatch ajar switch	Input	ON	Glass hatch open	0V
					Glass hatch closed	Battery voltage
43	P	Back door latch switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

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SEC

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
44	O	Rear wiper auto stop switch	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating
47	GR	Front door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
48	P	Rear door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
49	L	Cargo lamp	Output	OFF	Any door open (ON)	0V
					All doors closed (OFF)	Battery voltage
51	O	Trailer turn signal (right)	Output	ON	Turn right ON	
52	LG	Trailer turn signal (left)	Output	ON	Turn left ON	
53	L	Back door latch actuator	Output	OFF	OFF	0
					ON	Battery voltage
55	W	Rear wiper output circuit 1	Output	ON	OFF	0
					ON	Battery voltage
56	R/Y	Battery saver output	Output	OFF	15 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	R/Y	Battery power supply	Input	OFF	—	Battery voltage
58	W	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
					When optical sensor is not illuminated	0.6V or less
59	GR	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
60	LG	Turn signal (left)	Output	ON	Turn left ON	<p>SKIA3009J</p>
61	G	Turn signal (right)	Output	ON	Turn right ON	<p>SKIA3009J</p>
63	BR	Interior room/map lamp	Output	OFF	Any door switch	ON (open) 0V
					OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)	0V
					ON (lock)	Battery voltage
66	L	Front door lock actuator RH, rear door lock actuators LH/RH and glass hatch lock actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
67	B	Ground	Input	ON	—	0V
68	O	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
69	L	Power window power supply	Output	—	—	Battery voltage
70	W	Battery power supply	Input	OFF	—	Battery voltage

1: With remote keyless entry system

2: With Intelligent Key system

Fail Safe

INFOID:000000006767006

Fail-safe index

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

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

DTC Inspection Priority Chart

INFOID:000000006767007

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Priority	DTC
1	<ul style="list-style-type: none"> U1000: CAN COMM CIRCUIT
2	<ul style="list-style-type: none"> B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM B2013: STRG COMM 1 B2552: INTELLIGENT KEY B2590: NATS MALFUNCTION
3	<ul style="list-style-type: none"> C1729: VHCL SPEED SIG ERR C1735: IGNITION SIGNAL
4	<ul style="list-style-type: none"> C1704: LOW PRESSURE FL C1705: LOW PRESSURE FR C1706: LOW PRESSURE RR C1707: LOW PRESSURE RL C1708: [NO DATA] FL C1709: [NO DATA] FR C1710: [NO DATA] RR C1711: [NO DATA] RL C1712: [CHECKSUM ERR] FL C1713: [CHECKSUM ERR] FR C1714: [CHECKSUM ERR] RR C1715: [CHECKSUM ERR] RL C1716: [PRESSDATA ERR] FL C1717: [PRESSDATA ERR] FR C1718: [PRESSDATA ERR] RR C1719: [PRESSDATA ERR] RL C1720: [CODE ERR] FL C1721: [CODE ERR] FR C1722: [CODE ERR] RR C1723: [CODE ERR] RL C1724: [BATT VOLT LOW] FL C1725: [BATT VOLT LOW] FR C1726: [BATT VOLT LOW] RR C1727: [BATT VOLT LOW] RL

DTC Index

INFOID:000000006767008

NOTE:

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

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. Further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-29
B2013: STRG COMM 1	—	—	—	SEC-30
B2190: NATS ANTENNA AMP	—	—	—	SEC-33 (with I-Key) SEC-131 (without I-Key)
B2191: DIFFERENCE OF KEY	—	—	—	SEC-36 (with I-Key) SEC-134 (without I-Key)

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
B2192: ID DISCORD BCM-ECM	—	—	—	SEC-37 (with I-Key) SEC-135 (without I-Key)
B2193: CHAIN OF BCM-ECM	—	—	—	SEC-39 (with I-Key) SEC-137 (without I-Key)
B2552: INTELLIGENT KEY	—	—	—	SEC-41
B2590: NATS MALFUNCTION	—	—	—	SEC-42
C1708: [NO DATA] FL	—	—	—	WT-14
C1709: [NO DATA] FR	—	—	—	WT-14
C1710: [NO DATA] RR	—	—	—	WT-14
C1711: [NO DATA] RL	—	—	—	WT-14
C1712: [CHECKSUM ERR] FL	—	—	—	WT-16
C1713: [CHECKSUM ERR] FR	—	—	—	WT-16
C1714: [CHECKSUM ERR] RR	—	—	—	WT-16
C1715: [CHECKSUM ERR] RL	—	—	—	WT-16
C1716: [PRESSDATA ERR] FL	—	—	—	WT-18
C1717: [PRESSDATA ERR] FR	—	—	—	WT-18
C1718: [PRESSDATA ERR] RR	—	—	—	WT-18
C1719: [PRESSDATA ERR] RL	—	—	—	WT-18
C1720: [CODE ERR] FL	—	—	—	WT-16
C1721: [CODE ERR] FR	—	—	—	WT-16
C1722: [CODE ERR] RR	—	—	—	WT-16
C1723: [CODE ERR] RL	—	—	—	WT-16
C1724: [BATT VOLT LOW] FL	—	—	—	WT-16
C1725: [BATT VOLT LOW] FR	—	—	—	WT-16
C1726: [BATT VOLT LOW] RR	—	—	—	WT-16
C1727: [BATT VOLT LOW] RL	—	—	—	WT-16
C1729: VHCL SPEED SIG ERR	—	—	—	WT-20
C1735: IGNITION SWITCH	—	—	—	—

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SEC

INTELLIGENT KEY UNIT

< ECU DIAGNOSIS INFORMATION >

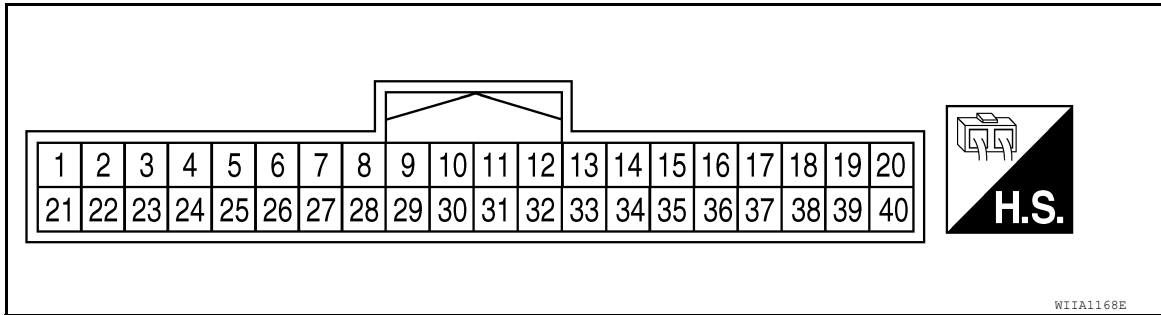
[WITH INTELLIGENT KEY SYSTEM]

INTELLIGENT KEY UNIT

Reference Value - Intelligent Key Unit

INFOID:000000006246267

TERMINAL LAYOUT



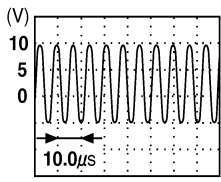
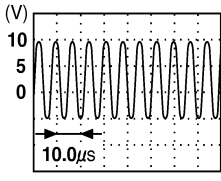
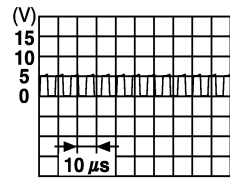
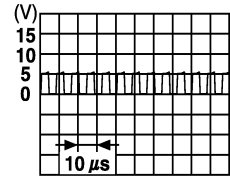
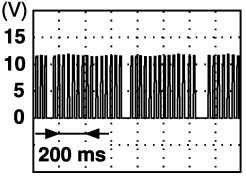
PHYSICAL VALUES

Terminal	Wire Color	Item	Condition		Voltage (V) Approx.	
			Ignition Switch Position	Operation or Conditions		
1	O	Steering lock solenoid power supply	LOCK	—	5	
2	L	CAN-H	—	—	—	
3	P	CAN-L	—	—	—	
4	GR	Intelligent Key warning buzzer (front of vehicle)	LOCK	Operate door request switch.	Buzzer OFF	Battery voltage
					Buzzer ON	0
5	LG	Front door request switch LH	—	Press front door request switch LH.		0
				Other than above		Battery voltage
6	W/G	Ignition switch (ON)	ON	—	Battery voltage	
7	SB	Key switch	LOCK	Insert mechanical key into ignition key cylinder.		Battery voltage
				Remove mechanical key from ignition key cylinder.		0
8	O	Remote keyless entry receiver ground	—	—	0	
9	R	Remote keyless entry receiver signal	—	When remote keyless entry receiver receives signal from keyfob.		
				Stand-by		
11	R/B	Power source (Fuse)	—	—	Battery voltage	
12	B	Ground	—	—	0	

INTELLIGENT KEY UNIT

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire Color	Item	Condition		Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions	
13	W	Luggage area antenna (+) signal	LOCK	Press ignition knob switch: ON (Ignition knob switch)	 <p style="text-align: right; font-size: small;">PIIB7441E</p>
14	BR	Luggage area antenna (-) signal			
15	V	Instrument panel area antenna (+) signal	LOCK	Any door open → all doors closed	 <p style="text-align: right; font-size: small;">PIIB7441E</p>
16	LG	Instrument panel area antenna (-) signal			
17	R	Rear bumper antenna (+) signal	LOCK	Press back door request switch.	 <p style="text-align: right; font-size: small;">SIIA1910J</p>
18	L	Rear bumper antenna (-) signal			
19	Y	Front outside antenna LH (+) signal	LOCK	Press front door request switch LH.	 <p style="text-align: right; font-size: small;">SIIA1910J</p>
20	W	Front outside antenna LH (-) signal			
21	BR	Remote keyless entry receiver RSSI signal	—	—	 <p style="text-align: right; font-size: small;">PIIA2344E</p>
23	SB	Back door control unit signal	—	Back door release switch ON.	0
				Back door release switch OFF.	Battery voltage
24	W	Back door opener switch input	—	Back door opener switch ON.	0
				Back door opener switch OFF.	5
25	R	Front door request switch RH	—	Press front door request switch RH.	0
				Other than above	Battery voltage
27	G	Ignition knob switch	—	Press ignition switch.	Battery voltage
				Return ignition switch to LOCK position.	0
28	P	Unlock sensor (driver side)	—	Door (driver side) is locked.	5
				Door (driver side) is unlocked.	0

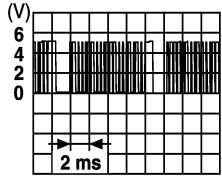
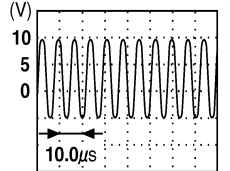
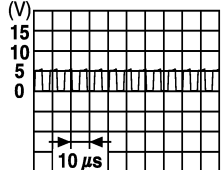
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INTELLIGENT KEY UNIT

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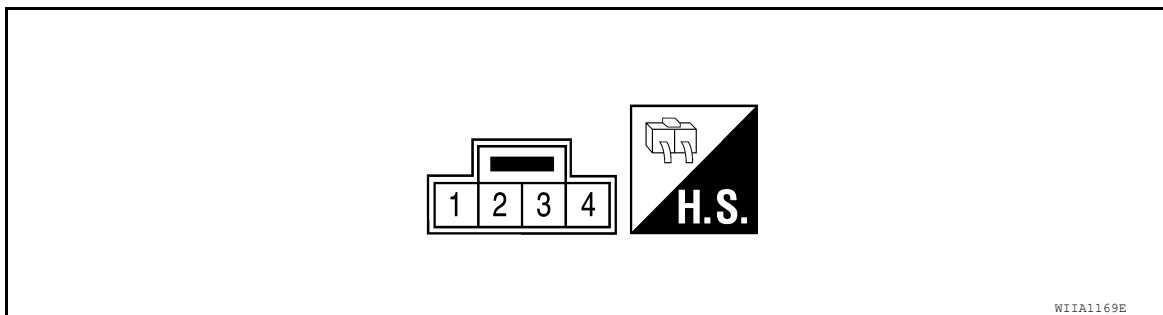
[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire Color	Item	Condition		Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions	
29	GR	Back door request switch	—	Back door request switch ON.	0
				Back door request switch OFF.	5
30	W	Remote keyless entry receiver power supply	—	—	5
32	V	Steering lock solenoid communication signal	LOCK	When Intelligent Key is inside vehicle, press ignition knob switch.	 SIIA1911J
				Other than above	5
33	G	Center console area antenna (+) signal	LOCK	Any door open → all doors closed	 PIIB7441E
34	R	Center console area antenna (-) signal			
37	P	Front outside antenna (+) signal RH	LOCK	Press front door request switch RH.	 SIIA1910J
38	V	Front outside antenna (-) signal RH			
39	SB	P range switch	—	Selector lever is in "P" position.	0
				Other than above	Battery voltage
40	R	AS select unlock output	—	UNLOCK with rear door locks disabled.	0
				Other than above	Battery voltage

Reference Value - Steering Lock Solenoid

INFOID:000000006246268

TERMINAL LAYOUT



PHYSICAL VALUES

INTELLIGENT KEY UNIT

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire Color	Signal Designation	Condition		Voltage (V) Approx.
			Ignition Switch Position	Operation or Conditions	
1	R/B	Power source (fuse)	LOCK	—	Battery voltage
2	O	Steering lock solenoid power supply	LOCK	—	5
3	V	Steering lock solenoid communication signal	LOCK	When Intelligent Key is inside vehicle, press ignition knob switch.	
				Other than the above	5
4	SB	Steering lock solenoid ground	—	—	0

Fail Safe

INFOID:000000006246270

Fail-safe operation

The Intelligent Key system operation will be interrupted if the Intelligent Key unit loses power or communication with the BCM.

DTC Inspection Priority Chart

INFOID:000000006246271

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

Priority	DTC
1	<ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN) • B2552: INTELLIGENT KEY
2	<ul style="list-style-type: none"> • B2013: STRG COMM 1 • B2590: NATS MALFUNCTION

SEC

DTC Index

INFOID:000000006246272

NOTE:

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

CONSULT display	Detection condition	Fail-safe	Diagnosis
No DTC is detected. further testing may be required.	—	—	—
U1000: CAN COMM CIRCUIT	Intelligent Key unit cannot receive CAN communication signal continuously for 2 seconds or more.	—	Check CAN communication system. Refer to SEC-28 .
U1010: CONTROL UNIT (CAN)	Intelligent Key unit detects internal CAN communication circuit malfunction.	—	Replace Intelligent Key unit. Refer to SEC-113 .

INTELLIGENT KEY UNIT

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

CONSULT display	Detection condition	Fail-safe	Diagnosis
B2013: STRG COMM 1	The ID verification result between Intelligent Key unit and steering lock solenoid are NG. Or Intelligent Key unit cannot communicate with steering lock solenoid.	×	Perform steering lock unit ID registration with CONSULT-III
B2552: INTELLIGENT KEY	Intelligent Key unit internal malfunction.	×	Replace Intelligent Key unit. Refer to SEC-113 .
B2590: NATS MALFUNCTION	The ID verification result between Intelligent Key unit and BCM are NG. Or Intelligent Key unit cannot communicate with BCM.	×	Check NATS Refer to SEC-42 .

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

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

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

Reference Value

INFOID:000000006767017

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1, 2, 3, 4
AC COMP REQ	A/C switch OFF		Off
	A/C switch ON		On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND HI or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		<ul style="list-style-type: none"> Front fog lamp switch ON Daytime light activated (Canada only) 	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
ST RLY REQ	Ignition switch OFF or ACC		Off
	Ignition switch START		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
RR DEF REQ	Rear defogger switch OFF		Off
	Rear defogger switch ON		On
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
DTRL REQ	Daytime light system requested OFF with CONSULT-III.		Off
	Daytime light system requested ON with CONSULT-III.		On
THFT HRN REQ	Not operated		Off
	<ul style="list-style-type: none"> Panic alarm is activated Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM 		On

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

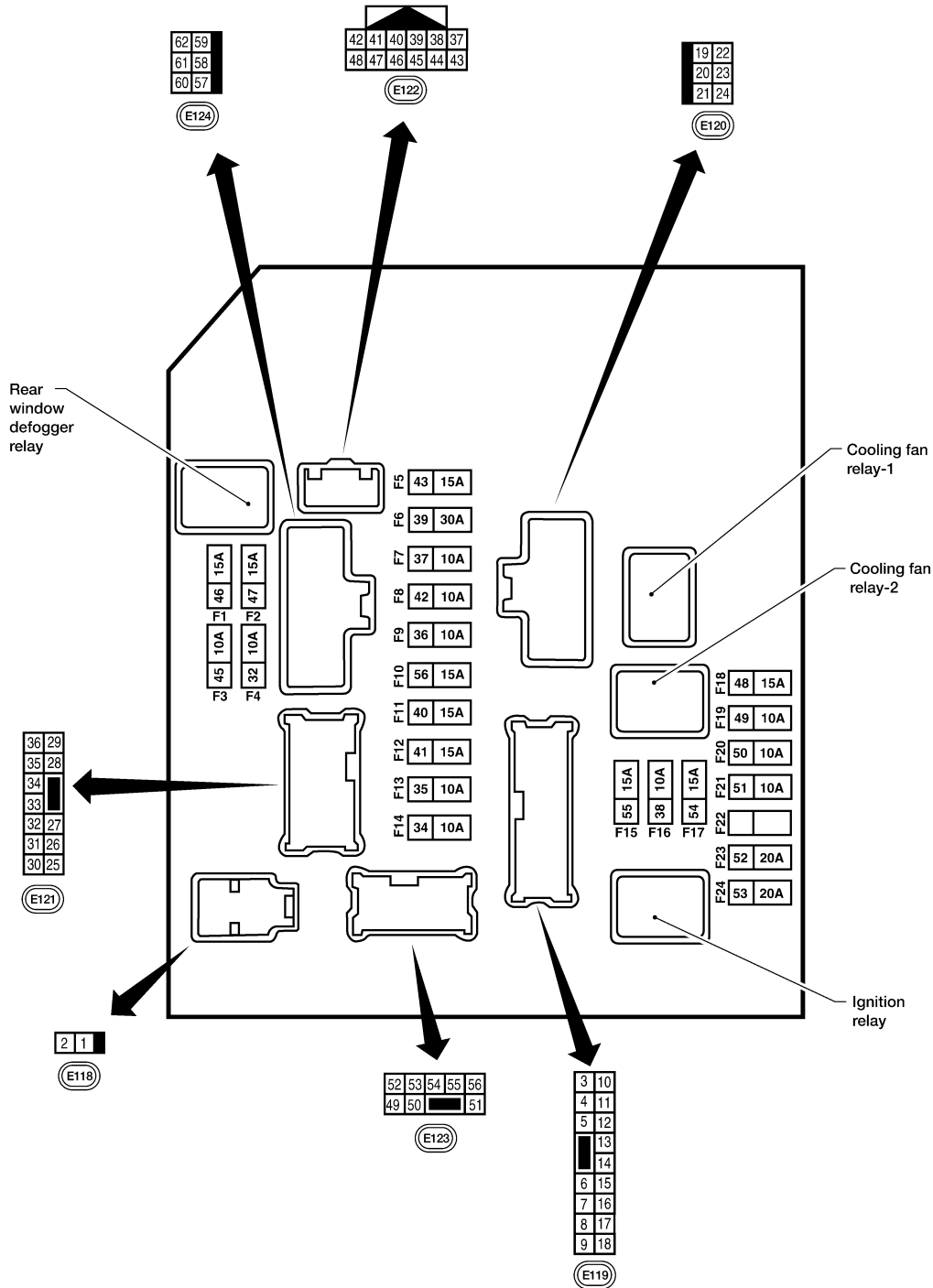
< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

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

Terminal Layout

INFOID:000000006767018



NOTE:

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

AAMIA0386B

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

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Physical Values

INFOID:000000006767019

PHYSICAL VALUES

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
1	W	Battery power supply	Input	OFF	—	Battery voltage
2	R	Battery power supply	Input	OFF	—	Battery voltage
3	G	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
4	P	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
6	V	Throttle control motor relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
7	BR	ECM relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
8	W/R	Fuse 54	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
10	R/B	Fuse 45	Output	ON	Daytime light system active	0V
					Daytime light system inactive	Battery voltage
11	Y	A/C compressor	Output	ON or START	A/C switch ON or defrost A/C switch	Battery voltage
					A/C switch OFF or defrost A/C switch	0V
12	W/G	Ignition switch supplied power	Input	—	OFF or ACC	0V
					ON or START	Battery voltage
13	R	Fuel pump relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
14	W/G	Fuse 49	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
15	W/R	Fuse 50 (ABS)	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
16	W/G	Fuse 51	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
17	W/G	Fuse 55	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
19	W	Starter motor	Output	START	—	Battery voltage
20	BR	Cooling fan motor (low)	Output	ON or START	—	Battery voltage
21	GR	Ignition switch supplied power	Input	—	OFF or ACC	0V
					START	Battery voltage
22	G	Battery power supply	Output	OFF	—	Battery voltage
23	LG	Door mirror defogger output signal	Output	—	When rear defogger switch is ON	Battery voltage
					When raker defogger switch is OFF	0V

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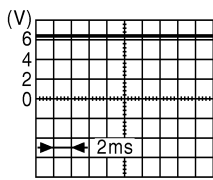
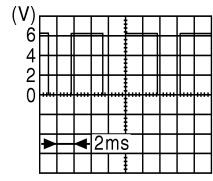
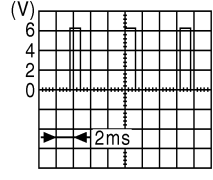
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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
24	P	Cooling fan motor (high)	Output	—	Conditions correct for cooling fan operation	Battery voltage
					Conditions not correct for cooling fan operation	0V
27	W	Fuse 38	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
28	R	LH front parking and front side marker lamp	Output	OFF	Lighting switch 1st position OFF	0V
					Lighting switch 1st position ON	Battery voltage
29	G	Trailer tow relay	Output	ON	Lighting switch 1st position OFF	0V
					Lighting switch 1st position ON	Battery voltage
30	R/B	Fuse 53	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
32	GR	Wiper low speed signal	Output	ON or START	Wiper switch OFF	Battery voltage
					Wiper switch LO or INT	0V
35	L	Wiper high speed signal	Output	ON or START	Wiper switch OFF, LO, INT	Battery voltage
					Wiper switch HI	0V
37	Y	Power generation command signal	Output	—	Ignition switch ON	 <p style="text-align: right; font-size: small;">JPMIA0001GB</p> <p style="text-align: center;">6.3 V</p>
					40% is set on "Active test," "ALTERNATOR DUTY" of "ENGINE"	 <p style="text-align: right; font-size: small;">JPMIA0002GB</p> <p style="text-align: center;">3.8 V</p>
					40% is set on "Active test," "ALTERNATOR DUTY" of "ENGINE"	 <p style="text-align: right; font-size: small;">JPMIA0003GB</p> <p style="text-align: center;">1.4 V</p>
38	B	Ground	Input	—	—	0V
39	L	CAN-H	—	ON	—	—
40	P	CAN-L	—	ON	—	—
42	GR	Oil pressure switch	Input	—	Engine running	Battery voltage
					Engine stopped	0V

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

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
43	G	Wiper auto stop signal	Input	ON or START	Wiper switch OFF, LO, INT	Battery voltage
44	R	Daytime light relay control	Input	ON	Daytime light system active	0V
					Daytime light system inactive	Battery voltage
45	LG	Horn relay control	Input	ON	When door locks are operated using keyfob or Intelligent Key (if equipped) (OFF → ON)*	Battery voltage → 0V
46	V	Fuel pump relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
47	O	Throttle control motor relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
48	R	Starter relay (range switch)	Input	ON or START	Selector lever in "P" or "N"	0V
					Selector lever any other position	Battery voltage
49	GR	Front RH parking and front side marker lamp	Output	OFF	Lighting switch 1st position OFF	0V
					Lighting switch 1st position ON	Battery voltage
50	W	Front fog lamp (LH)	Output	ON or START	Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch OFF	0V
					Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch ON	Battery voltage
51	V	Front fog lamp (RH)	Output	ON or START	Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch OFF	0V
					Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch ON	Battery voltage
52	P	LH low beam headlamp	Output	—	Lighting switch in 2nd position	Battery voltage
54	R	RH low beam headlamp	Output	—	Lighting switch in 2nd position	Battery voltage
55	G	LH high beam headlamp	Output	—	Lighting switch in 2nd position and placed in HIGH or PASS position	Battery voltage
56	L	RH high beam headlamp	Output	—	Lighting switch in 2nd position and placed in HIGH or PASS position	Battery voltage
57	GR	Parking, license, and tail lamp	Output	ON	Lighting switch 1st position OFF	0V
					Lighting switch 1st position ON	Battery voltage
59	B	Ground	Input	—	—	0V
60	GR	Rear window defogger relay	Output	ON or START	Rear defogger switch ON	Battery voltage
					Rear defogger switch OFF	0V
61	R/B	Fuse 32	Output	OFF	—	Battery voltage

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

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

*: When horn reminder is ON

Fail Safe

INFOID:000000006767020

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

Control part	Fail-safe in operation
Cooling fan	<ul style="list-style-type: none">• Turns ON the cooling fan relay when the ignition switch is turned ON• Turns OFF the cooling fan relay when the ignition switch is turned OFF

If No CAN Communication Is Available With BCM

Control part	Fail-safe in operation
Headlamp	<ul style="list-style-type: none">• Turns ON the headlamp low relay when the ignition switch is turned ON• Turns OFF the headlamp low relay when the ignition switch is turned OFF• Headlamp (LH/RH) high relays OFF
<ul style="list-style-type: none">• Parking lamps• License plate lamps• Tail lamps	<ul style="list-style-type: none">• Turns ON the tail lamp relay when the ignition switch is turned ON• Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	<ul style="list-style-type: none">• The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed.• The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Rear window defogger	Rear window defogger relay OFF
A/C compressor	A/C relay OFF
Front fog lamps (if equipped)	Front fog lamp relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

Ignition switch	Ignition relay	Tail lamp relay
ON	ON	—
OFF	OFF	—

NOTE:

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

FRONT WIPER CONTROL

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

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

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

NOTE:

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

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

< ECU DIAGNOSIS INFORMATION >

[WITH INTELLIGENT KEY SYSTEM]

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

INFOID:000000006767021

CONSULT-III display	Fail-safe	TIME ^{NOTE}		Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	1 – 39	PCS-13

NOTE:

The details of TIME display are as follows.

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

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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

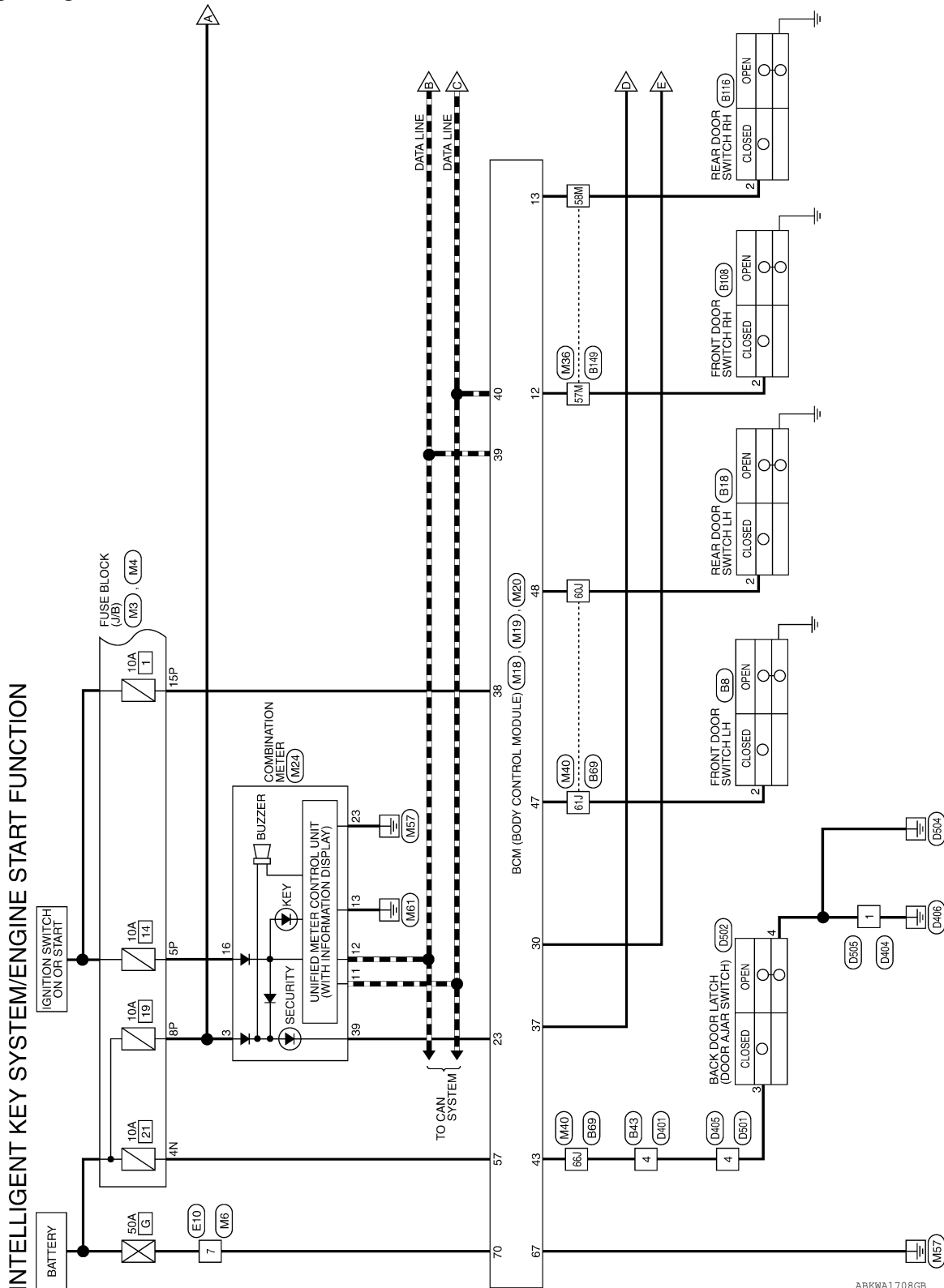
[WITH INTELLIGENT KEY SYSTEM]

WIRING DIAGRAM

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

Wiring Diagram

INFOID:000000006545128

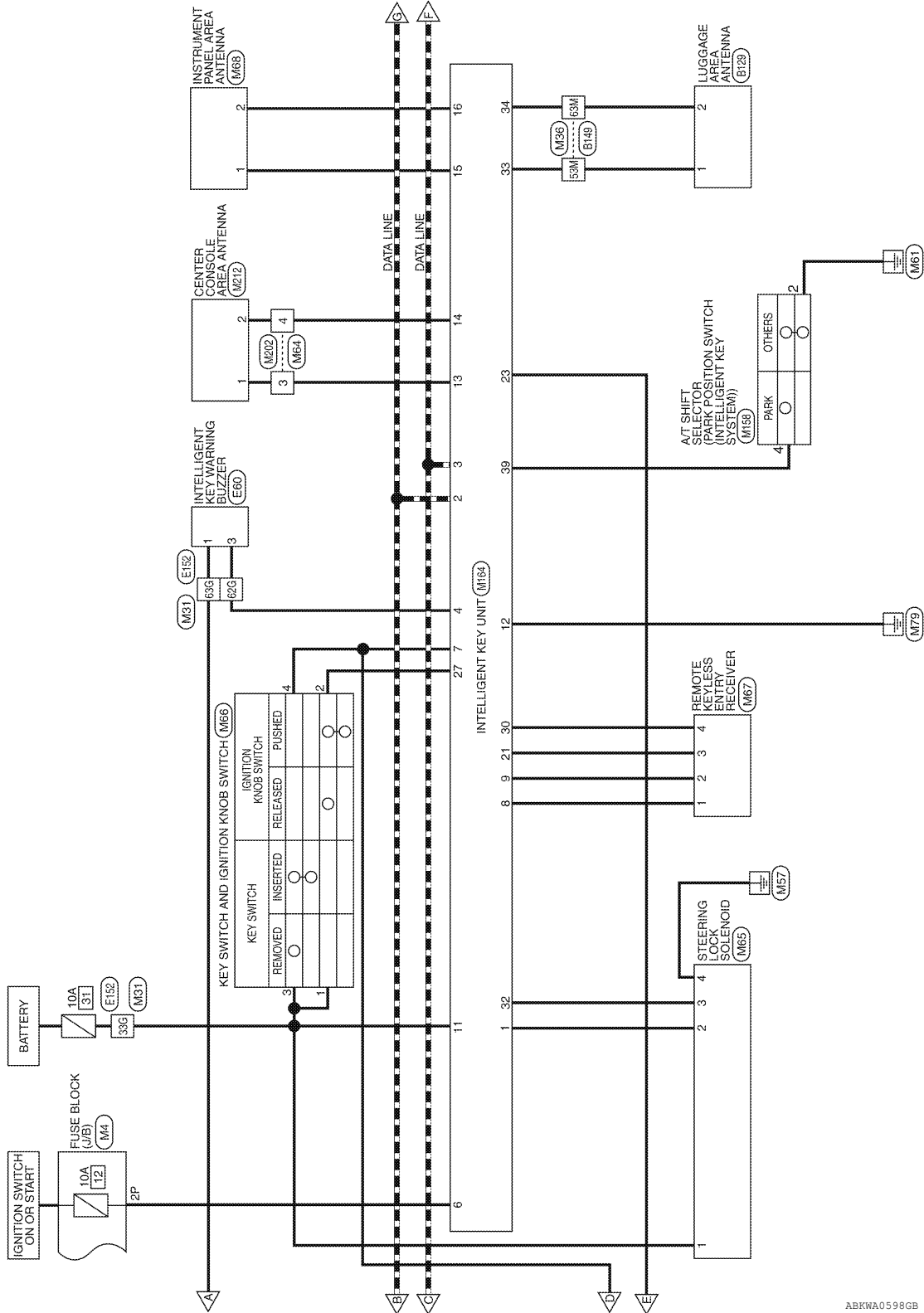


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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]



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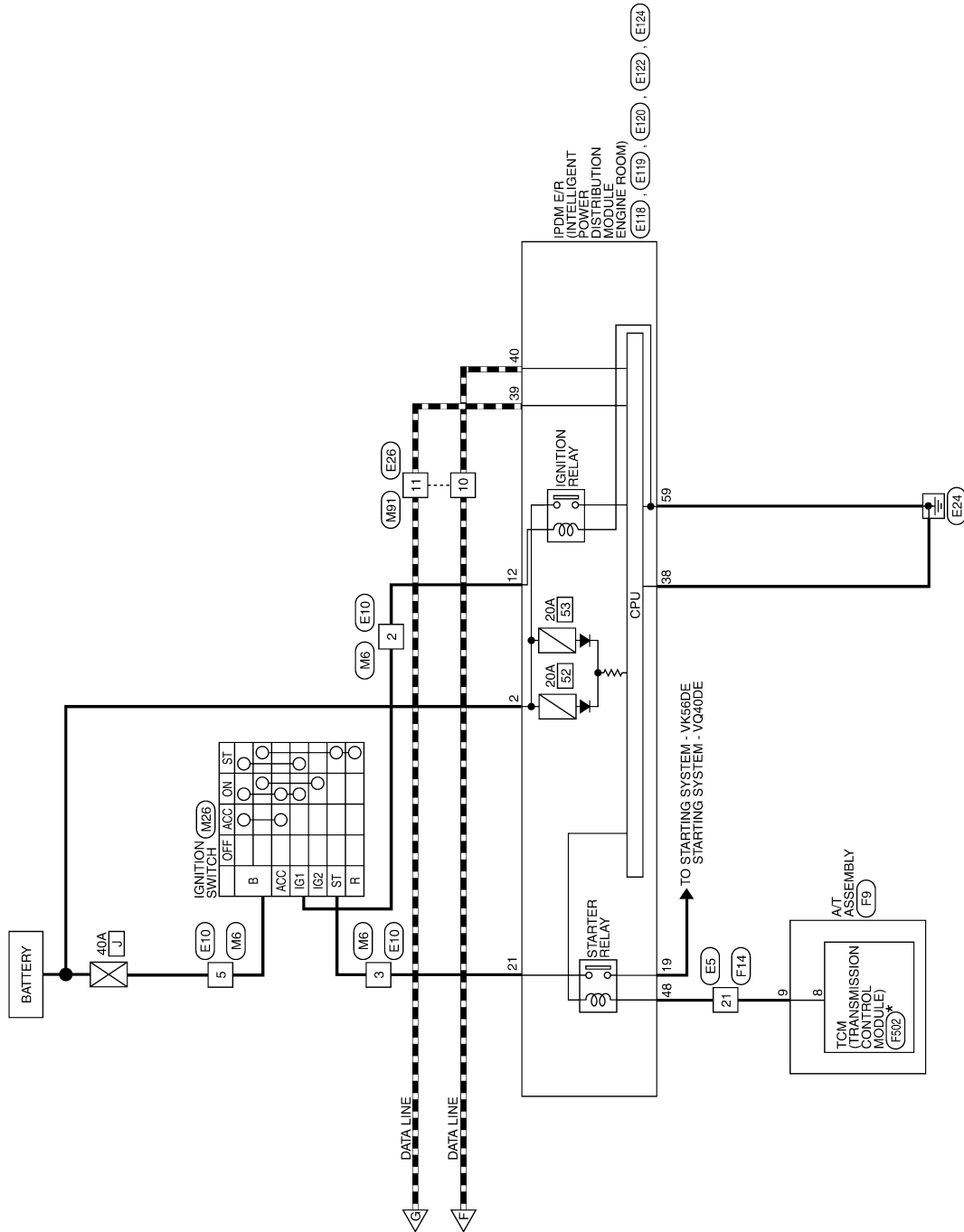
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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]



* : THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT" OF PG SECTION.

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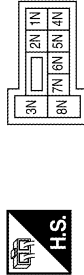
INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]

INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



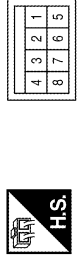
Terminal No.	Color of Wire	Signal Name
4N	R/Y	--

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



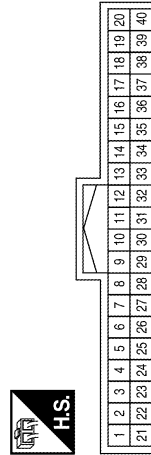
Terminal No.	Color of Wire	Signal Name
2P	W/G	--
5P	W/G	--
8P	R/Y	--
15P	W/R	--

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



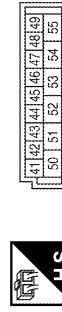
Terminal No.	Color of Wire	Signal Name
2	W/G	--
3	GR	--
5	G	--
7	W	--

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



Terminal No.	Color of Wire	Signal Name
12	LG	DOOR SW (AS)
13	L	DOOR SW (RR)
23	G	SECURITY INDICATOR OUTPUT
30	SB	BACK DOOR AUTO CLOSURE
37	B	KEY SW
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

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



Terminal No.	Color of Wire	Signal Name
43	P	BACK DOOR SW
47	GR	DOOR SW (DR)
48	P	DOOR SW (RL)

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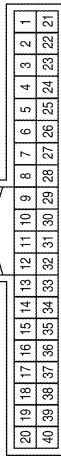
INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

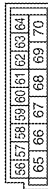
[WITH INTELLIGENT KEY SYSTEM]

Terminal No.	Color of Wire	Signal Name
3	R/Y	BATTERY
11	P	CAN-L
12	L	CAN-H
13	GR	GROUND
16	W/G	RUN START
23	B	POWER GND
39	G	SECURITY

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



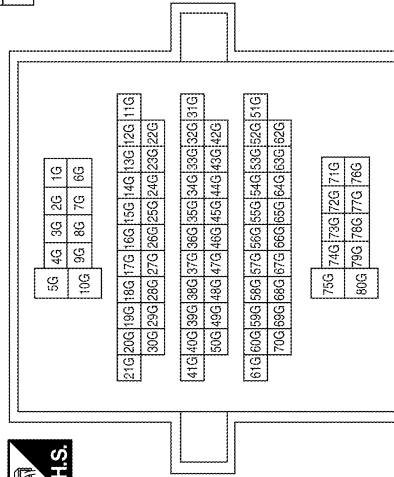
Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
57	R/Y	BAT (FUSE)
67	B	GND (POWER)
70	W	BAT (F/L)

Terminal No.	Color of Wire	Signal Name
33G	R/B	--
62G	GR	--
63G	R/B	--

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	M26
Connector Name	IGNITION SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
B	G	--
ST	GR	--
IG1	W/G	--

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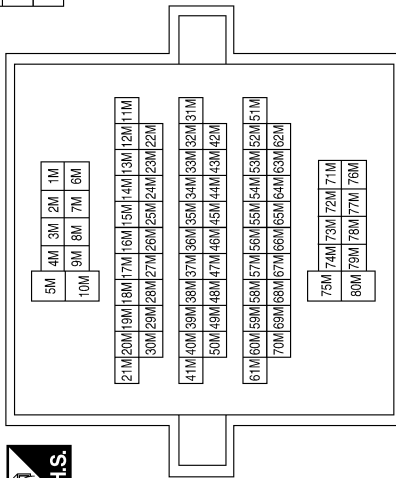
INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]

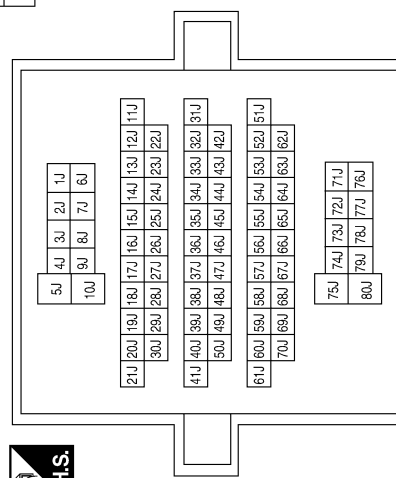
Terminal No.	Color of Wire	Signal Name
53M	G	-
57M	LG	-
58M	L	-
63M	R	-

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE

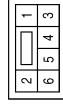


Terminal No.	Color of Wire	Signal Name
60J	P	-
61J	GR	-
66J	P	-

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	M64
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	W	-
4	BR	-

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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]

Connector No.	M65
Connector Name	STEERING LOCK SOLENOID
Connector Color	WHITE



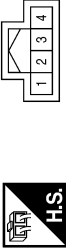
Terminal No.	Color of Wire	Signal Name
1	R/B	+B
2	O	+5V
3	V	SIG
4	SB	GND

Connector No.	M66
Connector Name	KEY SWITCH AND IGNITION KNOB SWITCH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	R	-
2	G	-
3	R/B	-
4	SB	-

Connector No.	M67
Connector Name	REMOTE KEYLESS ENTRY RECEIVER
Connector Color	WHITE



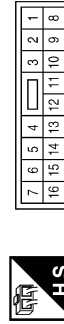
Terminal No.	Color of Wire	Signal Name
1	O	-
2	R	-
3	BR	-
4	W	-

Connector No.	M68
Connector Name	INSTRUMENT PANEL AREA ANTENNA
Connector Color	GRAY



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

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
10	P	-
11	L	-

Connector No.	M158
Connector Name	A/T SHIFT SELECTOR (WITH MANUAL MODE SWITCH AND INTELLIGENT KEY SYSTEM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	B	-
4	V	-

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]

Terminal No.	Color of Wire	Signal Name
32	V	STRG LOCK SIG
33	G	3RD ROW ANT(+)
34	R	3RD ROW ANT(-)
39	SB	P RANGE SW

Terminal No.	Color of Wire	Signal Name
7	SB	KEY SW INPUT
8	O	GND
9	R	SINGAL
11	R/B	BAT
12	B	GND
13	W	ANT 2(+)
14	BR	ANT 2(-)
15	V	ANT 1(+)
16	LG	ANT 1(-)
21	BR	RSSI
23	SB	BACKDOOR AUTO CLOSURE
27	G	PUSH SW INPUT
30	W	5V

Connector No.	M164
Connector Name	INTELLIGENT KEY UNIT
Connector Color	WHITE



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	33	34	35	36	37	38	39	40

Terminal No.	Color of Wire	Signal Name
1	O	5V OUTPUT
2	L	CAN-H
3	P	CAN-L
4	GR	BUZZER DR OUTPUT
6	W/G	IGN SW INPUT

Connector No.	E5
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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
21	R	-

Connector No.	M212
Connector Name	CENTER CONSOLE AREA ANTENNA
Connector Color	GRAY



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Terminal No.	Color of Wire	Signal Name
1	W	-
2	BR	-

Connector No.	M202
Connector Name	WIRE TO WIRE
Connector Color	WHITE



1	2
3	4
5	6

Terminal No.	Color of Wire	Signal Name
3	W	-
4	BR	-

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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

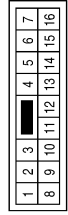
[WITH INTELLIGENT KEY SYSTEM]

Connector No.	E60
Connector Name	INTELLIGENT KEY WARNING BUZZER
Connector Color	BROWN



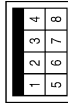
Terminal No.	Color of Wire	Signal Name
1	R/B	-
3	GR	-

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE



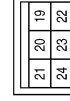
Terminal No.	Color of Wire	Signal Name
10	P	-
11	L	-

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



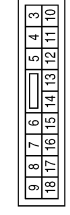
Terminal No.	Color of Wire	Signal Name
2	W/G	-
3	GR	-
5	G	-
7	W	-

Connector No.	E120
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
19	W	STARTER MTR
21	GR	IGN SW (ST)

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



Terminal No.	Color of Wire	Signal Name
12	W/G	IGN SW (IG)

Connector No.	E118
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



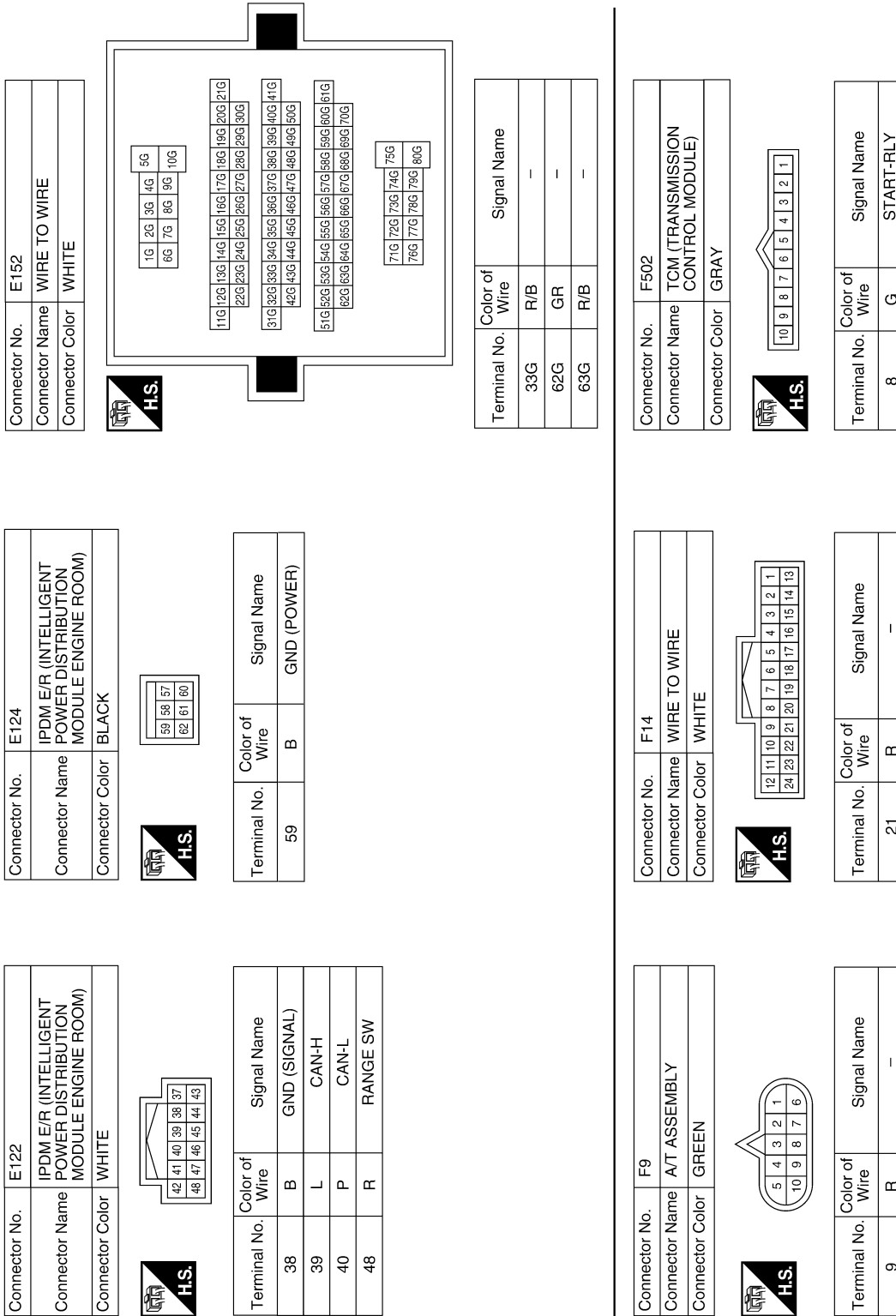
Terminal No.	Color of Wire	Signal Name
2	R	F/L MAIN

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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]



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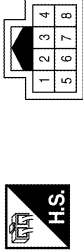
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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]

Connector No.	B43
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	4	P	Signal Name	--
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Connector No.	B18
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE



Terminal No.	2	P	Signal Name	--
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Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE



Terminal No.	2	GR	Signal Name	--
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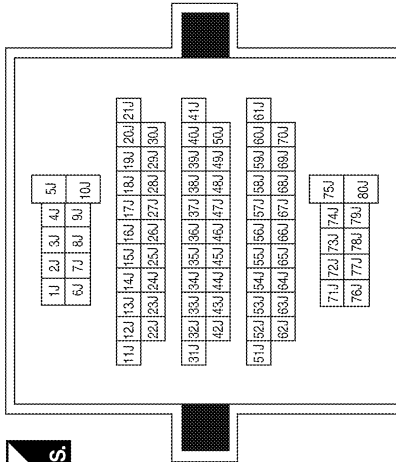
Connector No.	B108
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE



Terminal No.	2	LG	Signal Name	--
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Terminal No.	60J	P	Signal Name	--
	61J	GR	Signal Name	--
	66J	P	Signal Name	--

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]

Connector No.	B129
Connector Name	LUGGAGE AREA ANTENNA
Connector Color	GRAY



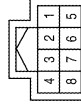
Terminal No.	Color of Wire	Signal Name
1	G	--
2	R	--

Connector No.	B116
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	L	--

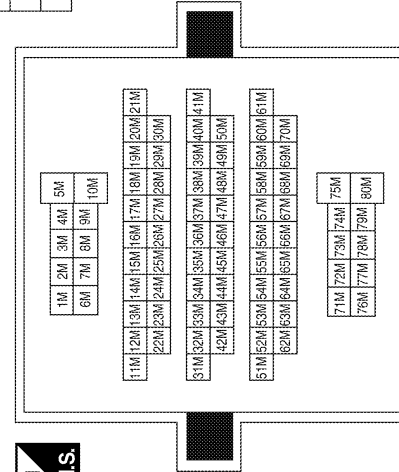
Connector No.	D401
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	P	--

Terminal No.	Color of Wire	Signal Name
53M	G	--
57M	LG	--
58M	L	--
63M	R	--

Connector No.	B149
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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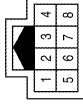
SEC

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

< WIRING DIAGRAM >

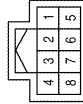
[WITH INTELLIGENT KEY SYSTEM]

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Color	WHITE



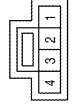
Terminal No.	4	Color of Wire	P	Signal Name	--
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Connector No.	D405
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	4	Color of Wire	P	Signal Name	--
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Connector No.	D404
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	1	Color of Wire	B	Signal Name	--
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Connector No.	D505
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	1	Color of Wire	B	Signal Name	--
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Connector No.	D502
Connector Name	BACK DOOR LATCH
Connector Color	WHITE



Terminal No.	3	Color of Wire	P	Signal Name	--
Terminal No.	4	Color of Wire	BR	Signal Name	--

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VEHICLE SECURITY SYSTEM

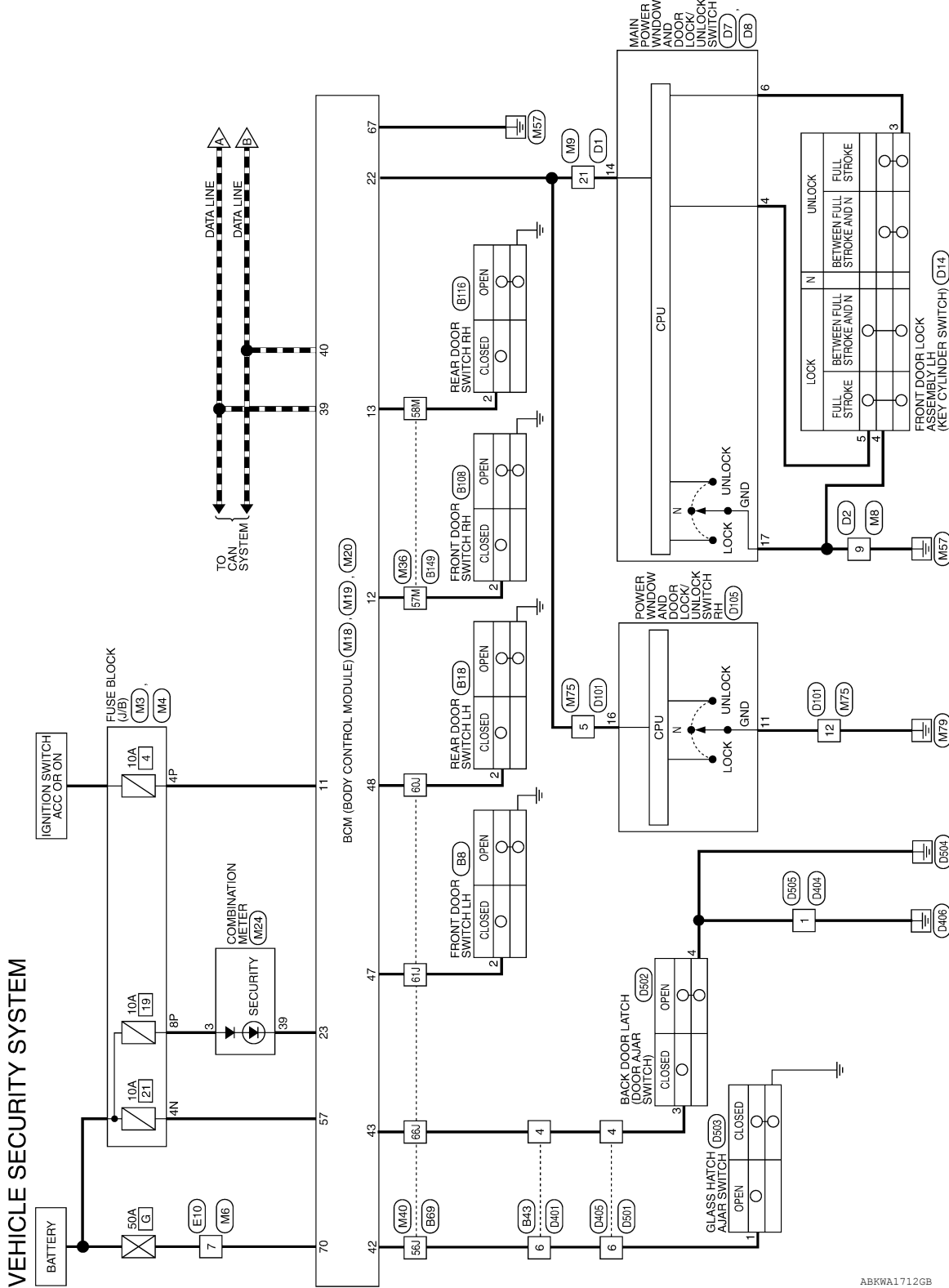
[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

VEHICLE SECURITY SYSTEM

Wiring Diagram

INFOID:000000006545122



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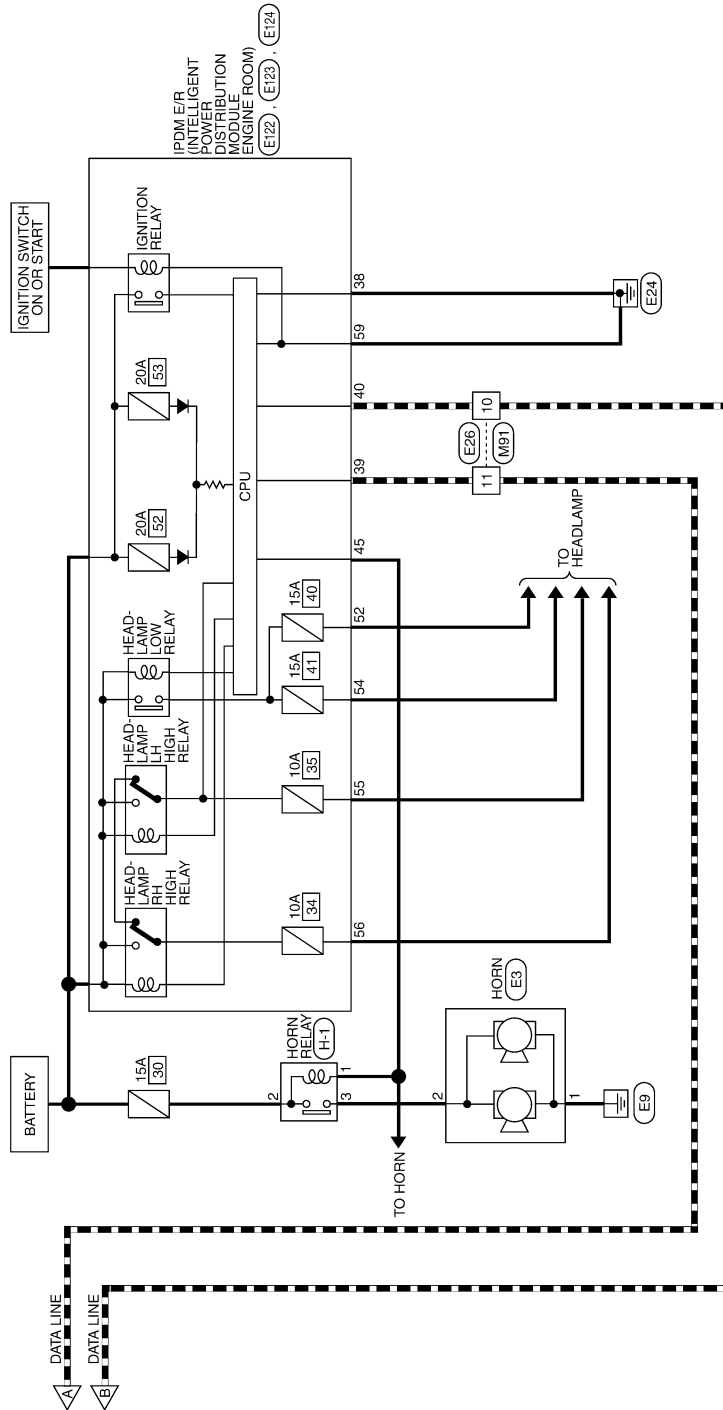
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VEHICLE SECURITY SYSTEM

< WIRING DIAGRAM >

[WITH INTELLIGENT KEY SYSTEM]



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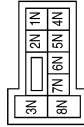
VEHICLE SECURITY SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

VEHICLE SECURITY SYSTEM CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



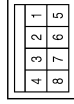
Terminal No.	4N	Color of Wire	R/Y	Signal Name	-
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Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



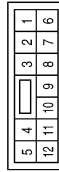
Terminal No.	4P	Color of Wire	G/B	Signal Name	-
8P	R/Y				-

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



Terminal No.	7	Color of Wire	W	Signal Name	-
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Connector No.	M8
Connector Name	WIRE TO WIRE
Connector Color	BROWN



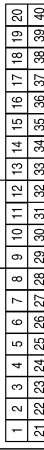
Terminal No.	9	Color of Wire	B	Signal Name	-
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Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	21	Color of Wire	V	Signal Name	-
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Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
11	G/B	ACC SW
12	LG	DOOR SW (AS)
13	L	DOOR SW (RR)
22	V	ANTI-PINCH SERIAL LINK (RX, TX)
23	G	SECURITY INDICATOR OUTPUT
39	L	CAN-H
40	P	CAN-L

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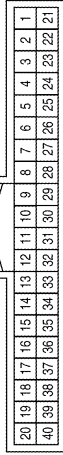
SEC

VEHICLE SECURITY SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

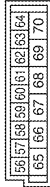
< WIRING DIAGRAM >

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



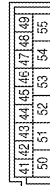
Terminal No.	Color of Wire	Signal Name
3	R/Y	BATTERY
39	G	SECURITY

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



Terminal No.	Color of Wire	Signal Name
57	R/Y	BAT (FUSE)
67	B	GND (POWER)
70	W	BAT (F/L)

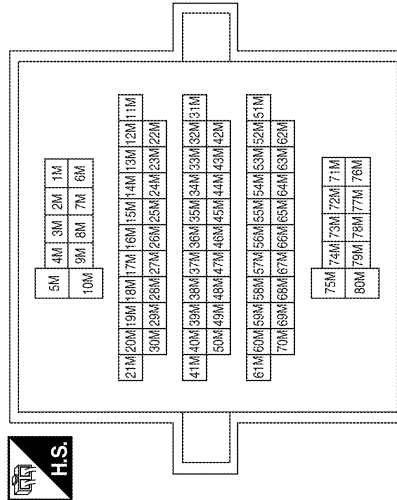
Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
42	LG	GLASS HATCH SW
43	P	BACK DOOR SW
47	GR	DOOR SW (DR)
48	P	DOOR SW (RL)

Terminal No.	Color of Wire	Signal Name
57M	LG	--
58M	L	--

Connector No.	M36
Connector Name	WIRE TO WIRE
Connector Color	WHITE



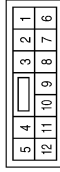
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VEHICLE SECURITY SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

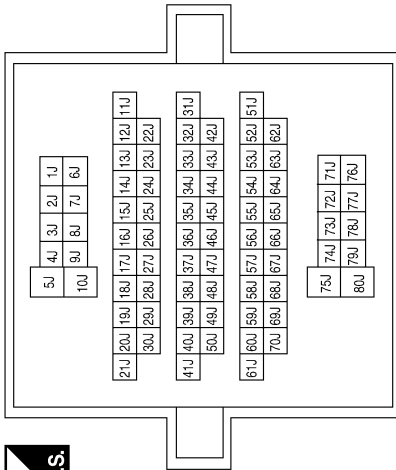
Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5	V	-
12	B	-

Terminal No.	Color of Wire	Signal Name
56J	LG	-
60J	P	-
61J	GR	-
66J	P	-

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



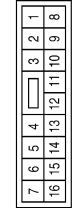
Terminal No.	Color of Wire	Signal Name
7	W	-

Connector No.	E3
Connector Name	HORN
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
2	G	-

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
10	P	-
11	L	-

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VEHICLE SECURITY SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE

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



Terminal No.	Color of Wire	Signal Name
10	P	-
11	L	-

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

42	41	40	39	38	37
48	47	46	45	44	43



Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L
45	LG	ANT THEFT HORN

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

51	50	49		
56	55	54	53	52



Terminal No.	Color of Wire	Signal Name
52	P	H/LAMP LO LH
54	R	H/LAMP LO RH
55	G	H/LAMP HI LH
56	L	H/LAMP HI RH

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK

59	58	57
62	61	60



Terminal No.	Color of Wire	Signal Name
59	B	GND (POWER)

Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE

1	2	3
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Terminal No.	Color of Wire	Signal Name
2	GR	-

Connector No.	B18
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE

1	2	3
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Terminal No.	Color of Wire	Signal Name
2	P	-

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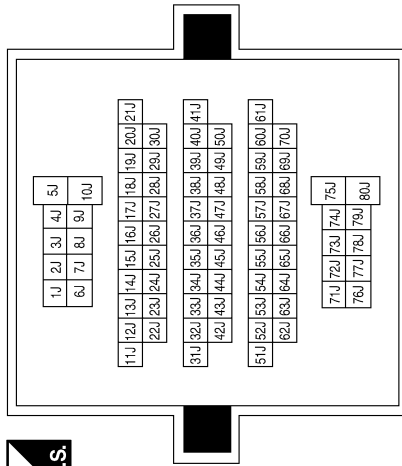
VEHICLE SECURITY SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

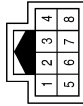
< WIRING DIAGRAM >

Terminal No.	Color of Wire	Signal Name
56J	LG	-
60J	P	-
61J	GR	-
66J	P	-

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

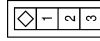


Connector No.	B43
Connector Name	WIRE TO WIRE
Connector Color	WHITE



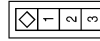
Terminal No.	Color of Wire	Signal Name
4	P	-
6	LG	-

Connector No.	B116
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	L	-

Connector No.	B108
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	LG	-

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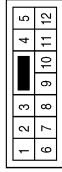
SEC

VEHICLE SECURITY SYSTEM

< WIRING DIAGRAM >

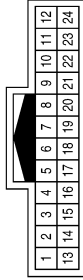
[WITH INTELLIGENT KEY SYSTEM]

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	BROWN



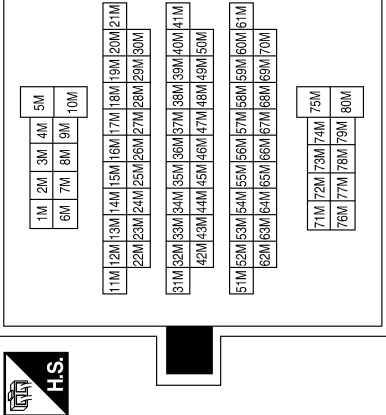
Terminal No.	9	Color of Wire	B	Signal Name	-
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Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



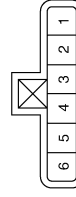
Terminal No.	21	Color of Wire	V	Signal Name	-
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Connector No.	B149
Connector Name	WIRE TO WIRE
Connector Color	WHITE



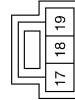
Terminal No.	57M	Color of Wire	LG	Signal Name	-
	58M		L		-

Connector No.	D14
Connector Name	FRONT DOOR LOCK ASSEMBLY LH
Connector Color	GRAY



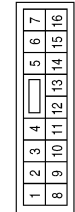
Terminal No.	3	Color of Wire	R/W	Signal Name	-
	4		B		-
	5		SB		-

Connector No.	D8
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH
Connector Color	WHITE



Terminal No.	17	Color of Wire	B	Signal Name	GND
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Connector No.	D7
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH
Connector Color	WHITE



Terminal No.	4	Color of Wire	SB	Signal Name	KEY CYL LOCK SW
	6		R/W		KEY CYL UNLOCK SW
	14		V		POWER WINDOW SERIAL LINK

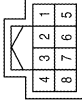
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VEHICLE SECURITY SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

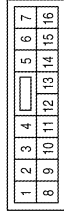
< WIRING DIAGRAM >

Connector No.	D401
Connector Name	WIRE TO WIRE
Connector Color	WHITE



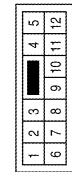
Terminal No.	Color of Wire	Signal Name
4	P	--
6	LG	--

Connector No.	D105
Connector Name	POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH
Connector Color	WHITE



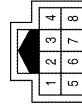
Terminal No.	Color of Wire	Signal Name
11	B	GND
16	V	POWER WINDOW SERIAL LINK

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



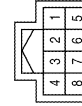
Terminal No.	Color of Wire	Signal Name
5	V	--
12	B	--

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Color	WHITE



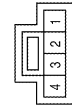
Terminal No.	Color of Wire	Signal Name
4	P	--
6	LG	--

Connector No.	D405
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	P	--
6	LG	--

Connector No.	D404
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	B	--

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VEHICLE SECURITY SYSTEM

[WITH INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

Connector No.	D505
Connector Name	WIRE TO WIRE
Connector Color	WHITE



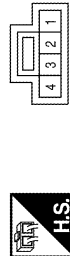
Terminal No.	Color of Wire	Signal Name
1	B	--

Connector No.	D503
Connector Name	GLASS HATCH AJAR SWITCH
Connector Color	BLACK



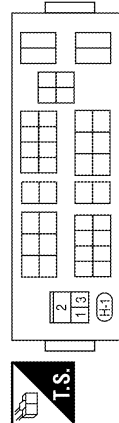
Terminal No.	Color of Wire	Signal Name
1	LG	--

Connector No.	D502
Connector Name	BACK DOOR LATCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	P	--
4	BR	--

Connector No.	H-1
Connector Name	FUSE AND FUSIBLE LINK BOX (HORN RELAY)
Connector Color	--



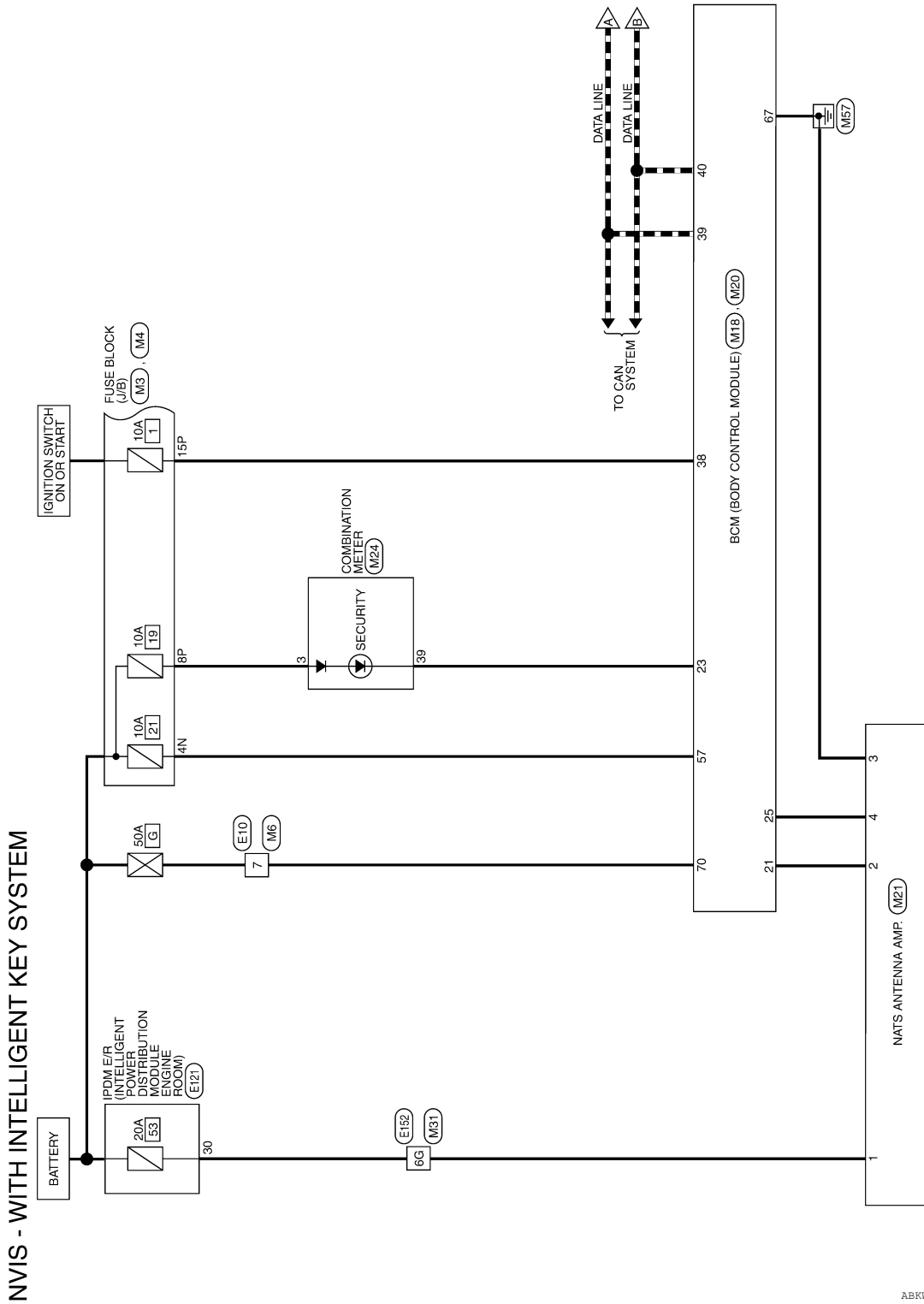
Terminal No.	Color of Wire	Signal Name
1	BR	--
2	O	--
3	G	--

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NVIS

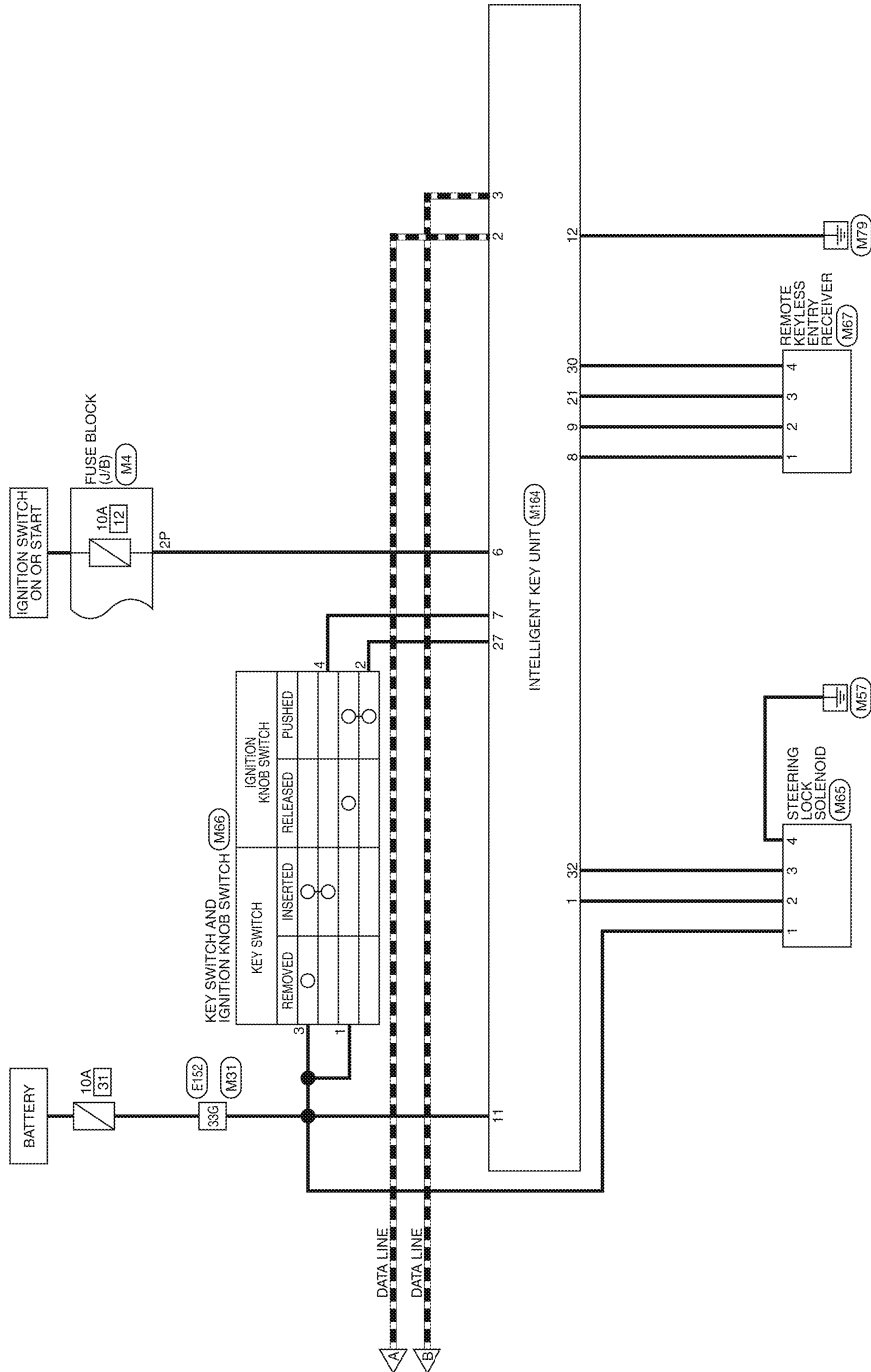
Wiring Diagram - With Intelligent Key System

INFOID:000000006545121



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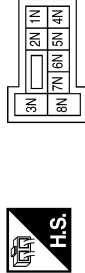
SEC



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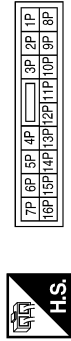
NVIS CONNECTORS - WITH INTELLIGENT KEY SYSTEM

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



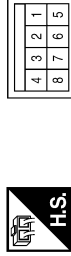
Terminal No.	Color of Wire	Signal Name
4N	R/Y	-

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



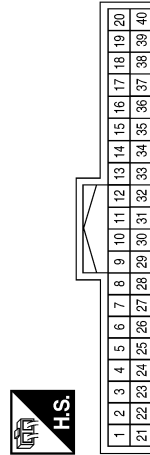
Terminal No.	Color of Wire	Signal Name
2P	W/G	-
8P	R/Y	-
15P	W/R	-

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



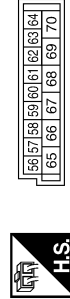
Terminal No.	Color of Wire	Signal Name
7	W	-

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



Terminal No.	Color of Wire	Signal Name
21	GR	IMMOBILIZER ANTENNA SIG (CLOCK)
23	G	SECURITY INDICATOR OUTPUT
25	BR	IMMOBILIZER ANTENNA SIG (TX, RX)
38	W/R	IGN SW
39	L	CAN-H
40	P	CAN-L

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

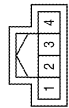


Terminal No.	Color of Wire	Signal Name
57	R/Y	BAT (FUSE)
67	B	GND (POWER)
70	W	BAT (F/L)

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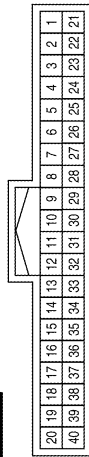
SEC

Connector No.	M21
Connector Name	NATS ANTENNA AMP.
Connector Color	WHITE



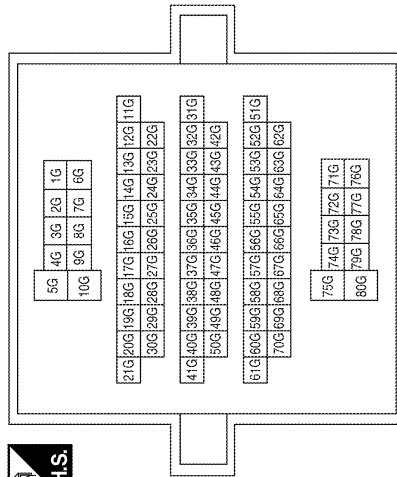
Terminal No.	Color of Wire	Signal Name
1	R/B	VB (12V)
2	GR	CLOCK
3	B	GND
4	BR	RX, TX

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



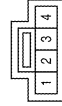
Terminal No.	Color of Wire	Signal Name
3	R/Y	BATTERY
39	G	SECURITY

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



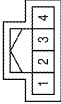
Terminal No.	Color of Wire	Signal Name
6G	R/B	-
33G	R/B	-

Connector No.	M65
Connector Name	STEERING LOCK SOLENOID
Connector Color	WHITE



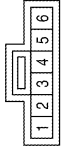
Terminal No.	Color of Wire	Signal Name
1	R/B	+B
2	O	+5V
3	V	SIG
4	SB	GND

Connector No.	M67
Connector Name	REMOTE KEYLESS ENTRY RECEIVER
Connector Color	WHITE



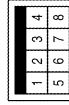
Terminal No.	Color of Wire	Signal Name
1	O	-
2	R	-
3	BR	-
4	W	-

Connector No.	M66
Connector Name	KEY SWITCH AND IGNITION KNOB SWITCH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	R	-
2	G	-
3	R/B	-
4	SB	-

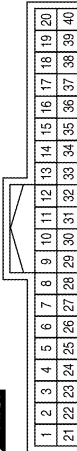
Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	W	-

Terminal No.	Color of Wire	Signal Name
8	O	GND
9	R	SINGAL
11	R/B	BAT
12	B	GND
21	BR	RSSI
27	G	PUSH SW INPUT
30	W	5V
32	V	STRG LOCK SIG

Connector No.	M164
Connector Name	INTELLIGENT KEY UNIT
Connector Color	WHITE

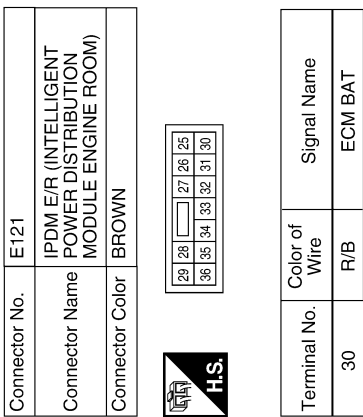
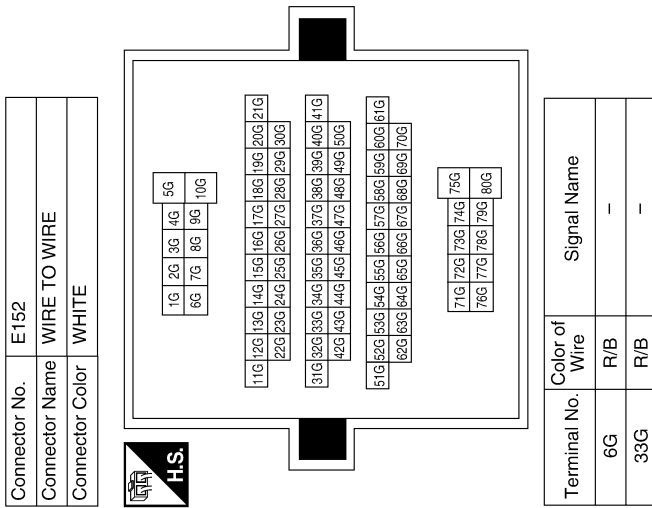


Terminal No.	Color of Wire	Signal Name
1	O	5V OUTPUT
2	L	CAN-H
3	P	CAN-L
6	W/G	IGN SW INPUT
7	SB	KEY SW INPUT

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INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

SYMPTOM DIAGNOSIS

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION SYMPTOMS

Symptom Table

INFOID:000000006246279

NOTE:

- Before performing the diagnosis in the following table, check "[SEC-5. "Work Flow"](#)".
- Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- Engine cranking is enabled when the shift lever is in the "Park" position, and in the "Neutral" position only if the brake pedal is depressed.
- If the following symptoms are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

- Engine start function is ON when setting on CONSULT-III.
- Mechanical key is not inserted in key cylinder.
- One or more of Intelligent Keys with registered Intelligent Key ID is in the vehicle.

Symptom	Diagnosis/service procedure	Reference page
Ignition switch does not turn on with Intelligent Key. [green "KEY" lamp is displayed]	1. Check steering lock solenoid.	SEC-30
	2. Replace Intelligent Key unit.	SEC-113
Ignition switch does not turn on with Intelligent Key. ["KEY" lamp does not display]	1. Check Intelligent Key unit power supply and ground circuit.	DLK-54
	2. Check ignition knob switch.	DLK-113
	3. Check key switch (BCM input).	DLK-112
	4. Check key switch (Intelligent Key unit input).	DLK-110
	5. Replace Intelligent Key unit.	SEC-113
	6. Check green "KEY" indicator.	DLK-91
	7. Check red "KEY" indicator.	DLK-91
Ignition switch does not turn on with Intelligent Key. [red "KEY" lamp is displayed]	1a. Check inside key antenna 1 (instrument panel).	DLK-48
	1b. Check inside key antenna 2 (luggage compartment).	DLK-50
	1c. Check inside key antenna 3 (center console).	DLK-52
	2. Replace Intelligent Key unit.	SEC-113
Ignition switch does not turn on with mechanical key	1. Check key switch (BCM input).	DLK-112
	2. Check key switch (Intelligent Key unit input).	DLK-110
Engine cannot be cranked with transmission in "Park" or in "Neutral" position with brake pedal depressed	1. Check transmission signal.	TM-50
	2. Check stop lamp switch.	SEC-78
"P-SHIFT" indicator does not operate properly	1. Check "P-SHIFT" indicator.	DLK-91

VEHICLE SECURITY SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

VEHICLE SECURITY SYSTEM SYMPTOMS

Symptom Table

INFOID:000000006246280

Procedure		Diagnostic procedure	Refer to page	
Symptom				
1	Vehicle security system cannot be set by	Door switch	Check door switch (LF, RF, LR, RR, back)	DLK-56
		Glass ajar switch	Check glass ajar switch	DLK-59
		Intelligent Key	Check Intelligent Key system	SEC-11
		Key cylinder switch	Check key cylinder switch	SEC-46
		—	Check Intermittent Incident	GI-37
	Security indicator does not turn ON.		Check vehicle security indicator	SEC-53
		Check Intermittent Incident	GI-37	
2	* Vehicle security system does not sound alarm when	Any door is opened.	Check door switch (LF, RF, LR, RR, back)	DLK-56
		Glass ajar switch	Check glass ajar switch	DLK-59
		—	Check Intermittent Incident	GI-37
3	Vehicle security alarm does not activate.	Horn alarm	Check horn switch	SEC-91
			Check Intermittent Incident	GI-37
4	Vehicle security system cannot be canceled by	Intelligent Key	Check Intelligent Key system	SEC-11
		Key cylinder switch	Check key cylinder switch	SEC-46
		—	Check Intermittent Incident	GI-37

*: Check the system is in the armed phase.

NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITH INTELLIGENT KEY SYSTEM]

NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS SYMPTOMS

Symptom Table

INFOID:000000006246281

NOTE:

- Before performing the diagnosis in the following table, check "[SEC-5. "Work Flow"](#)".
- Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following symptoms are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

- Mechanical key is not inserted into key cylinder.
- Ignition knob switch is not depressed.

Symptom	Diagnosis/service procedure	Reference page
Security indicator does not turn ON or flash.	1. Check vehicle security indicator	SEC-53
	2. Check Intermittent Incident	GI-37

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PRECAUTION

PRECAUTIONS

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

INFOID:000000006246282

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

WARNING:

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

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000006246283

NOTE:

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

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

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

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

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

PRECAUTIONS

< PRECAUTION >

[WITH INTELLIGENT KEY SYSTEM]

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

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NATS ANTENNA AMP.

< REMOVAL AND INSTALLATION >

[WITH INTELLIGENT KEY SYSTEM]

REMOVAL AND INSTALLATION

NATS ANTENNA AMP.

Removal and Installation

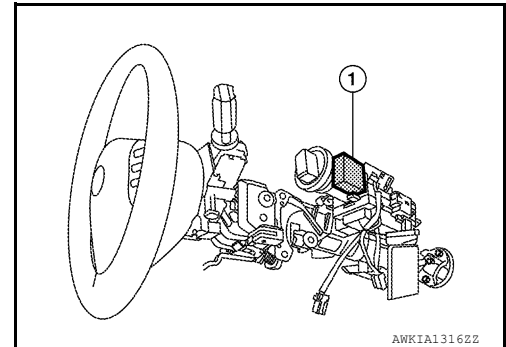
INFOID:000000006246284

NOTE:

- If NATS antenna amp. is not installed correctly, NVIS (NATS) system will not operate properly and "SELF-DIAG RESULTS" on CONSULT-III screen will show "LOCK MODE" or "CHAIN OF IMMU-KEY".
- Initialization is not necessary when only the NATS antenna amp. is replaced with a new one.

REMOVAL

1. Disconnect the battery negative terminal. Refer to [PG-76. "Removal and Installation"](#).
2. Remove cluster lid A. Refer to [IP-11. "Exploded View"](#).
3. Remove the bolt, disconnect the electrical connector and remove the NATS antenna amp (1).



INSTALLATION

Installation is in the reverse order of removal.

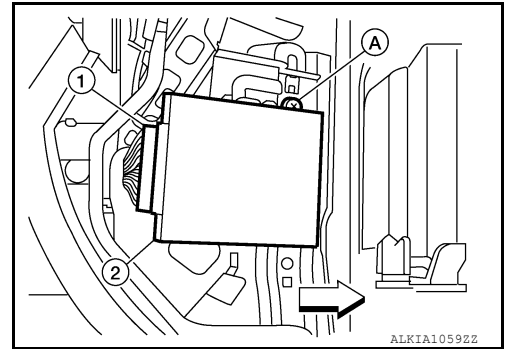
INTELLIGENT KEY UNIT

Removal and Installation

INFOID:000000006246285

REMOVAL

1. Remove the front pillar upper finisher (RH). Refer to [INT-18. "Component"](#).
2. Remove the side ventilator grille (RH). Refer to [VTL-33. "Removal and Installation"](#).
3. Remove the lower dash side finisher. Refer to [INT-19. "Removal and Installation"](#).
4. Remove the upper glove box. Refer to [IP-11. "Exploded View"](#).
5. Remove the bolt (A), disconnect the electrical connector (1), and remove the intelligent key unit (2).
 - ⇐: Front



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

- When replacing the intelligent key unit, perform ID registration procedure of low tire pressure warning system. Refer to [WT-6. "ID Registration Procedure"](#).

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REMOTE KEYLESS ENTRY RECEIVER

< REMOVAL AND INSTALLATION >

[WITH INTELLIGENT KEY SYSTEM]

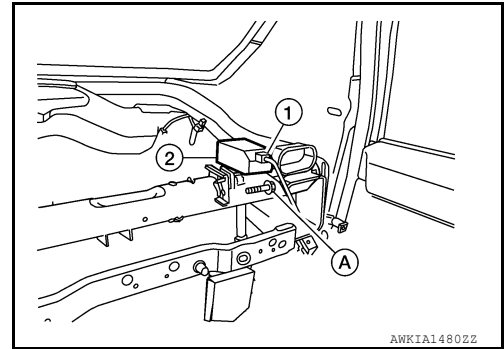
REMOTE KEYLESS ENTRY RECEIVER

Removal and Installation

INFOID:000000006246286

REMOVAL

1. Remove the front pillar upper finisher (RH). Refer to [INT-18. "Component"](#).
2. Remove the side ventilator grille (RH). Refer to [VTL-33. "Removal and Installation"](#).
3. Remove the lower dash side finisher. Refer to [INT-19. "Removal and Installation"](#).
4. Remove the upper glove box. Refer to [IP-11. "Exploded View"](#).
5. Remove the bolt (A), disconnect the harness connector (1) and remove the remote keyless entry receiver (2).



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

- When replacing the remote keyless entry receiver, perform ID registration procedure of low tire pressure warning system. Refer to [WT-6. "ID Registration Procedure"](#).

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

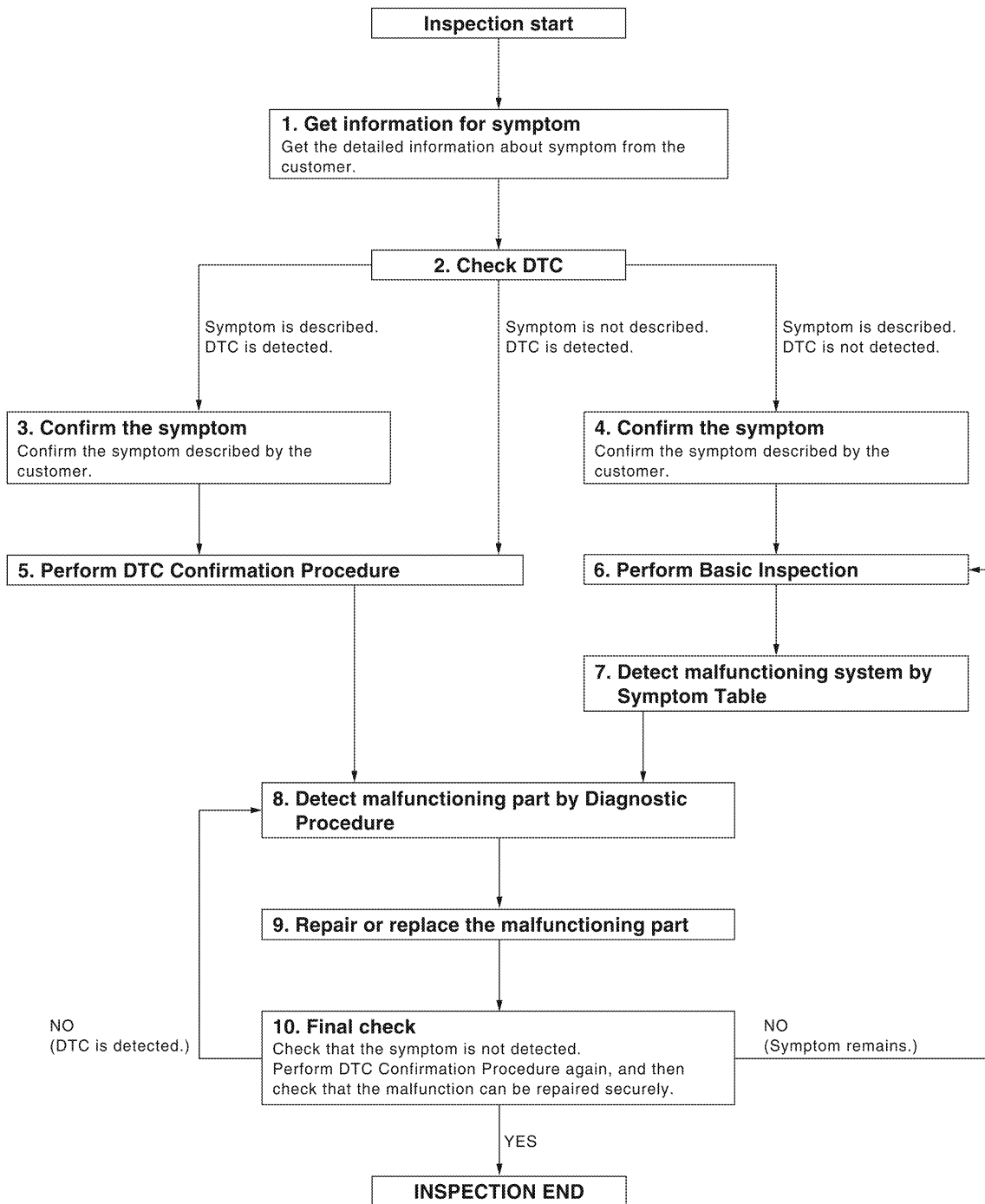
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000006246287

OVERALL SEQUENCE



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DETAILED FLOW

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2

2.CHECK DTC

1. Check DTC for BCM.
2. Perform the following procedure if DTC is displayed.
 - 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.

Is any symptom described and any DTC detected?

Symptom is described, DTC is displayed>>GO TO 3

Symptom is described, DTC is not displayed>>GO TO 4

Symptom is not described, DTC is displayed>>GO TO 5

3.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.

Connect CONSULT-III to the vehicle in "DATA MONITOR" mode and check real-time diagnosis results.

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-III to the vehicle in "DATA MONITOR" mode and check real-time diagnosis results.

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 displayed DTC, and then check that DTC is detected again.

If two or more DTCs are detected, refer to [BCS-45, "DTC Inspection Priority Chart"](#) (BCM) and determine trouble diagnosis order.

Is DTC detected?

YES >> GO TO 8

NO >> Refer to [GI-37, "Intermittent Incident"](#).

6.PERFORM BASIC INSPECTION

Perform Basic Inspection. Refer to [SEC-118, "Basic Inspection"](#).

>> GO TO 7

7.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

Detect malfunctioning system according to Symptom Table based on the confirmed symptom in step 4.

>> GO TO 8

8.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

NOTE:

The Diagnostic Procedure is described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

>> GO TO 9

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

9. REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.
2. Reconnect parts or connectors disconnected during Diagnostic Procedure again after repair and replacement.
3. Check DTC. If DTC is displayed, erase it.

>> GO TO 10

10. FINAL CHECK

When DTC was detected in step 9, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunctions have been fully repaired.

When symptom was described by the customer, refer to the 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 8
- YES (Symptom remains)>>GO TO 6
- NO >> Inspection End.

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PRE-INSPECTION FOR DIAGNOSTIC

[WITHOUT INTELLIGENT KEY SYSTEM]

< BASIC INSPECTION >

PRE-INSPECTION FOR DIAGNOSTIC

Basic Inspection

INFOID:000000006246288

1.INSPECTION START

Turn ignition switch "OFF".

NOTE:

Before starting operation check, open front windows.

>> GO TO 2

2.CHECK SECURITY INDICATOR LAMP

1. Lock doors using keyfob or mechanical key.
2. Check that security indicator lamp illuminates for 30 seconds.

Does the security indicator lamp illuminate?

YES >> GO TO 3

NO >> Perform diagnosis and repair. Refer to [SEC-123, "System Description"](#).

3.CHECK ALARM FUNCTION

1. After 30 seconds, security indicator lamp will start to blink.
2. Open any door before unlocking with keyfob or mechanical key, or open back door or glass hatch without keyfob.

Does the alarm function properly?

YES >> GO TO 4

NO >> Check the following.

- The vehicle security system does not phase in alarm mode. Refer to [SEC-180, "Symptom Table"](#).
- Alarm (horn and headlamps) does not operate. Refer to [SEC-180, "Symptom Table"](#).

4.CHECK ALARM CANCEL OPERATION

Unlock any door using keyfob or mechanical key.

Alarm (horn and headlamps) should stop.

YES >> Inspection End.

NO >> Check door lock function. Refer to [DLK-214, "DOOR LOCK AND UNLOCK SWITCH : System Description"](#).

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:000000006246289

Refer to the CONSULT-III Operation Manual-NATS.

ECM RE-COMMUNICATING FUNCTION

ECM RE-COMMUNICATING FUNCTION : Description

INFOID:000000006246290

Performing following procedure can automatically perform re-communication of ECM and BCM, but only when the ECM has been replaced with a new one (*1).

*1: New one means an ECM which has never been energized on-board.

(In this step, initialization procedure by CONSULT-III is not necessary)

NOTE:

- When registering new Key IDs or replacing the ECM that is not brand new, refer to CONSULT-III Operation Manual.
- If multiple keys are attached to the key holder, separate them before work.
- Distinguish keys with unregistered key ID from those with registered ID.

ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement

INFOID:000000006246291

1. PERFORM ECM RE-COMMUNICATING FUNCTION

1. Install ECM.
2. Using a registered key (*2), turn ignition switch to "ON".
*2: To perform this step, use the key that has been used before performing ECM replacement.
3. Maintain ignition switch in "ON" position for at least 5 seconds.
4. Turn ignition switch to "OFF".
5. Start engine.

Can engine be started?

YES >> Procedure is completed.

NO >> Initialize control unit. Refer to CONSULT-III Operation Manual.

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NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

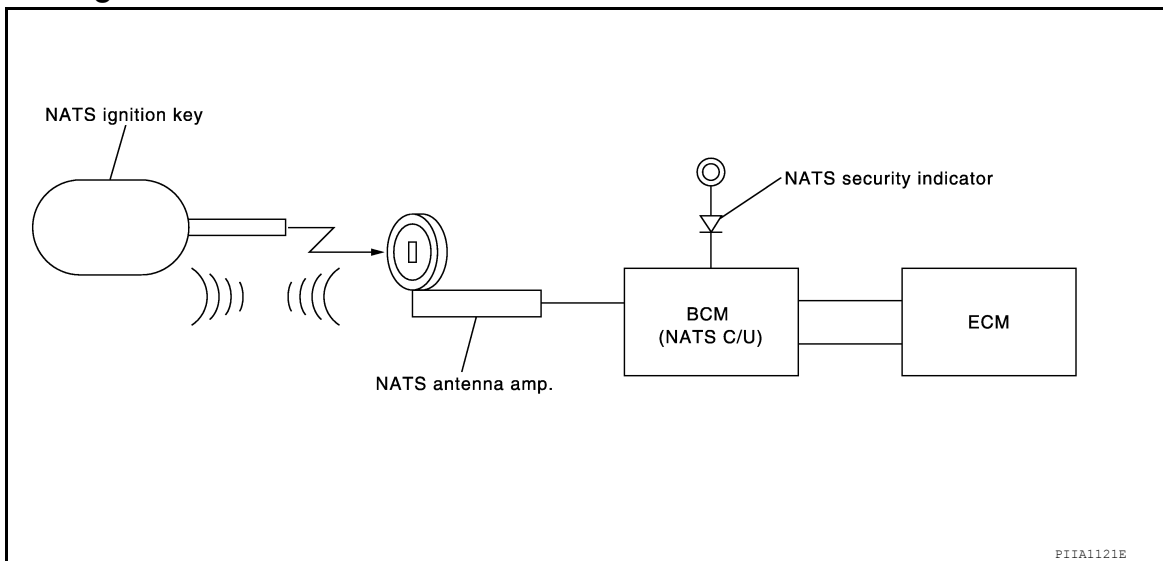
< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

SYSTEM DESCRIPTION

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

System Diagram



System Description

INFOID:000000006246293

INPUT/OUTPUT SIGNAL CHART

BCM

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
NATS antenna amp.	Key ID	NATS	<ul style="list-style-type: none"> • Security indicator lamp • Starter request
ECM	Engine status signal		

SYSTEM DESCRIPTION

NATS (Nissan Anti-Theft System) has the following immobilizer functions:

- Engine immobilizer shows high anti-theft performance to prevent engine from starting by other than the owner.
- Only a key with key ID registered in BCM and ECM can start engine, and shows high anti-theft performance to prevent key from being copied or stolen.
- Security indicator always flashes with mechanical key removed condition (key switch: OFF) and ignition knob released condition on LOCK position (ignition knob switch: OFF).
- Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system. Refer to [SEC-123, "System Description"](#).
- If system detects malfunction, security indicator illuminates when ignition switch is turned to ON position.
- If the owner requires, ignition key ID or mechanical key ID can be registered for up to 5 keys.
- During trouble diagnosis or when the following parts have been replaced, and if ignition key is added, registration* is required.

*1: All keys kept by the owner of the vehicle should be registered with mechanical key.

- ECM
 - BCM
 - Ignition key
 - Remote keyless entry receiver
 - NATS trouble diagnosis, system initialization and additional registration of other mechanical key IDs must be carried out using CONSULT-III.
- When NATS initialization has been completed, the ID of the inserted mechanical key or mechanical key IDs can be carried out.

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

[WITHOUT INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

- Possible symptom of NATS malfunction is "Engine cannot start". Identify the possible causes according to "Work Flow", Refer to [SEC-115, "Work Flow"](#).
- If ECM other than Genuine NISSAN is installed, the engine cannot be started. For ECM replacement procedure, refer to [SEC-119, "ECM RE-COMMUNICATING FUNCTION : Description"](#).

PRECAUTIONS FOR KEY REGISTRATION

- The key registration is a procedure that erases the current NATS ID once, and then re-registers a new ID. Therefore the registered key is necessary for this procedure. Before starting the registration operation collect all registered Keys from the customer.
- The NATS ID registration is the procedure that registers the ID stored into the transponder (integrated in mechanical key) to BCM.
The key ID registration is the procedure that registers the ID to the BCM.
- When performing the key system registration only, the engine cannot be started by inserting the key into the key cylinder. When performing the NATS registration only, the engine cannot be started by using the ignition key.

SECURITY INDICATOR

- Always flashes with ignition key in the OFF position.

MAINTENANCE INFORMATION

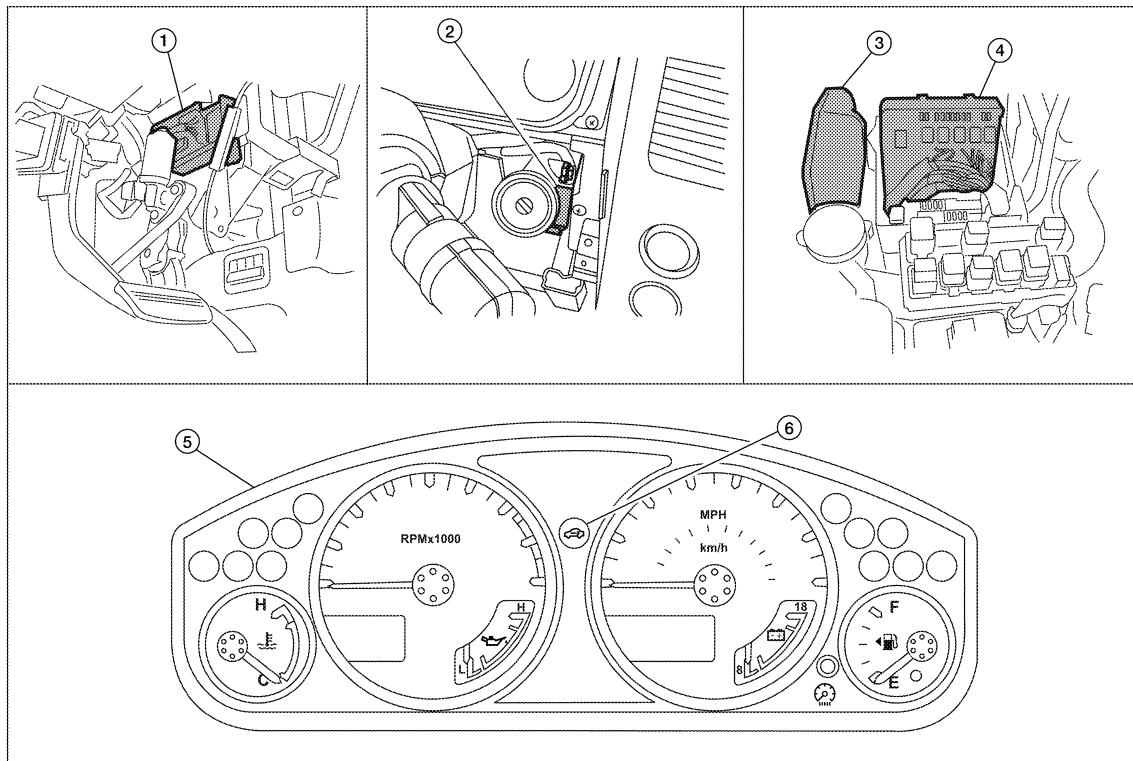
CAUTION:

It is necessary to perform NATS ID registration when replacing any of the following part. If it's not (or fail to do so), the electrical system may not operate properly.

- BCM
- ECM
- IPDM E/R
- Ignition key
- NATS antenna amp.
- Combination meter

Component Parts Location

INFOID:000000006246294



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SEC

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

- | | | |
|--|--------------------------|----------------------------|
| 1. BCM M18, M20
(view with instrument panel LH removed) | 2. NATS antenna amp. M21 | 3. ECM E16 |
| 4. IPDM E/R E121
(view with cover removed) | 5. Combination meter M24 | 6. Security indicator lamp |

Component Description

INFOID:000000006246295

Item	Function
BCM	Verifies the received signal from the ignition key ID, then informs ECM whether to allow engine start.
Remote keyless entry receiver	Receives lock/unlock signal from the keyfob, and then transmits to the BCM.
A/T shift selector (park position switch)	Detects whether the shift lever is in park.
NATS antenna amp.	Detects the ignition key presence in the ignition key cylinder.
Security indicator	Indicates the status of the security system.
IPDM E/R	Powers-up the horn and the headlamps in case of a security breach.

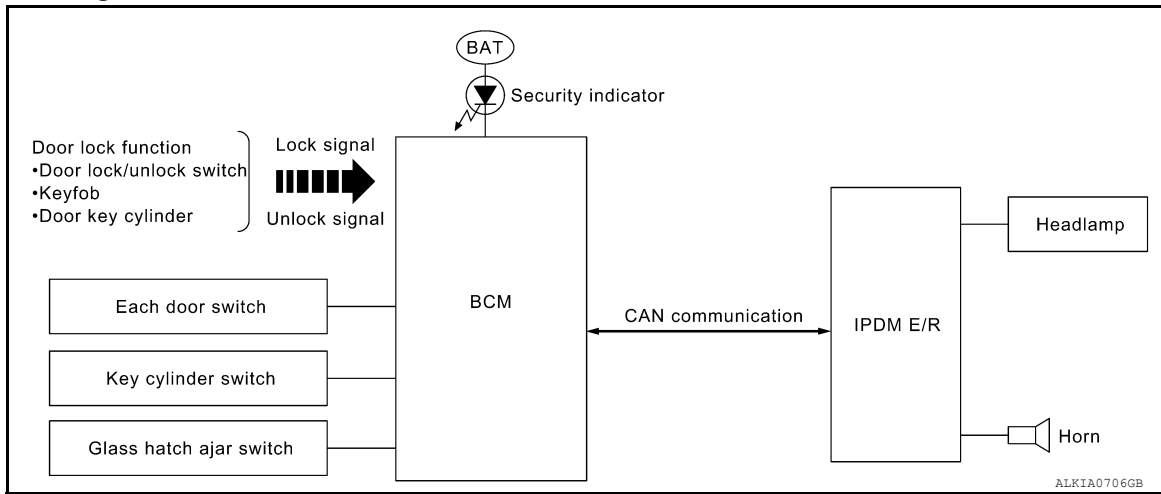
VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

VEHICLE SECURITY SYSTEM

System Diagram



System Description

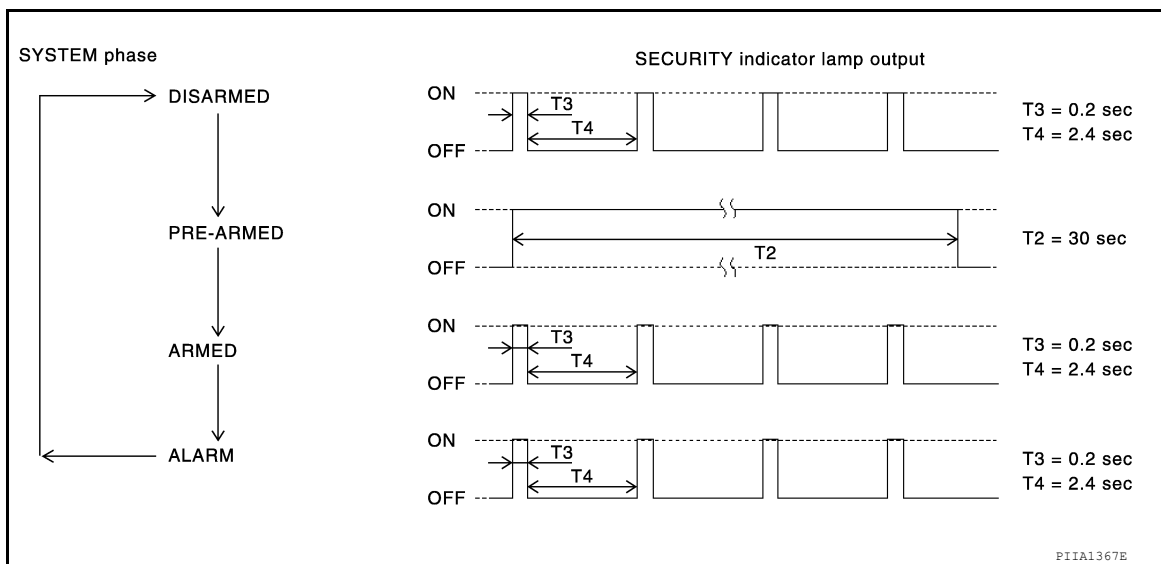
INFOID:000000006246297

DESCRIPTION

The security system provides an audible and visual alarm when an unauthorized access to the vehicle is detected while the system is in armed phase.

The security system consist of the BCM managing the audible alarm (horn) and the visual alarm (headlamps).

OPERATION FLOW



Disarmed Phase

When the vehicle is being driven or when doors are open, the theft warning system is set in the disarmed phase on the assumption that the owner is inside or near the vehicle.

Pre-Armed Phase And Armed Phase

The vehicle security system turns into the pre-armed phase when ignition switch is in OFF position, all doors including glass hatch are closed and locked (using keyfob, doorlock/unlock switch, driver key cylinder or auto relock function). The system automatically shifts into the armed phase.

Condition of Activating The System

When the following condition is performed in armed phase, the system sounds the horns and flashes the headlamps for about 50 seconds.

- Any door is opened.

VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

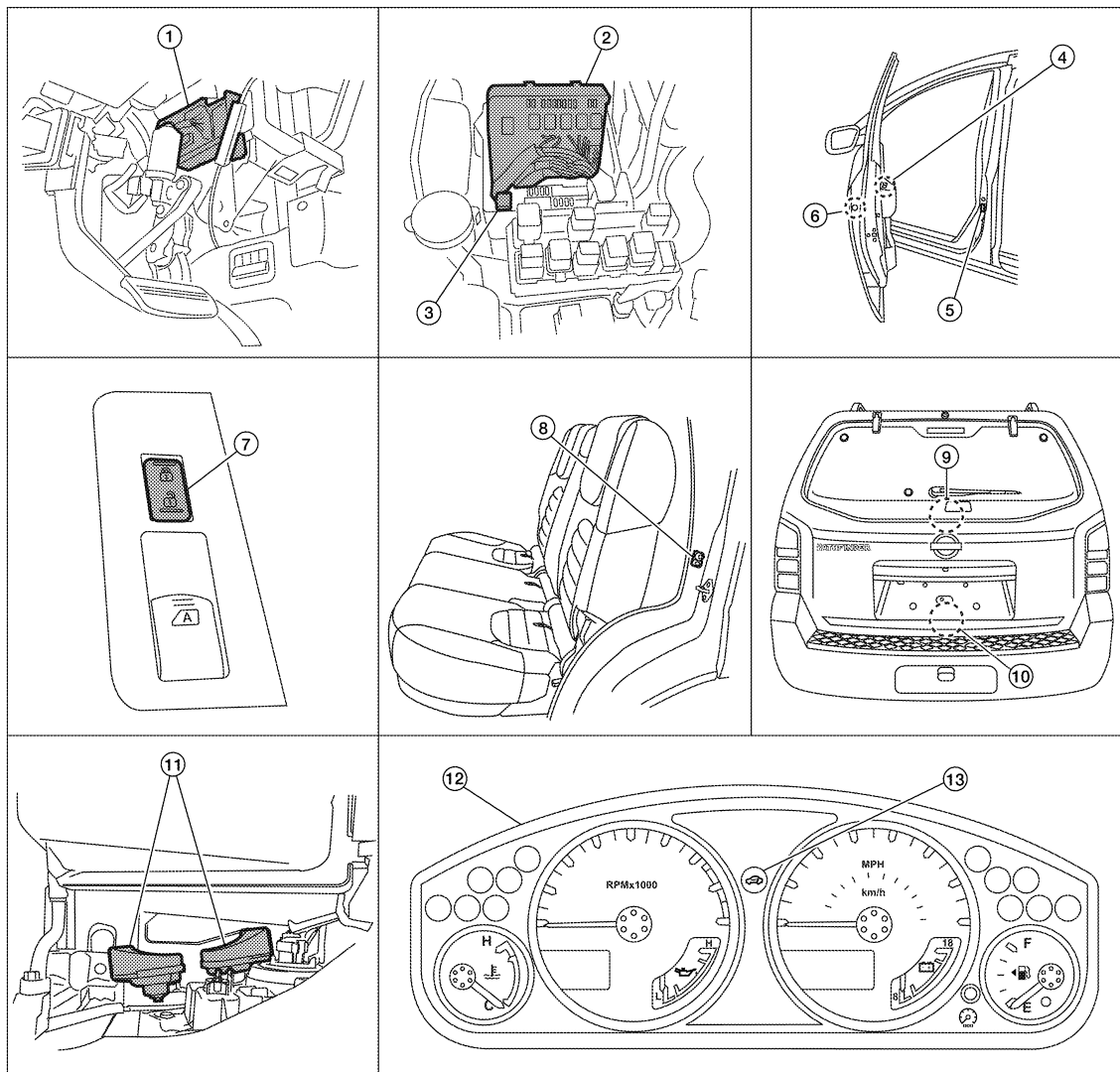
Condition of Deactivating The System

When one of the following operations is performed, the armed phase is canceled.

- Unlock the doors with keyfob.
- Use the mechanical key to unlock the driver door using the door key cylinder.

Component Parts Location

INFOID:000000006246298



- | | | |
|---|---|--|
| 1. BCM M18, M19, M20
(view with instrument panel LH removed) | 2. IPDM E/R E122, E123, E124
(view with cover removed) | 3. Horn relay H-1 |
| 4. Main power window and door lock/unlock switch D7, D8 | 5. Front door switch LH B8
RH B108 | 6. Front door lock assembly LH (key cylinder switch) D14 |
| 7. Power window and door lock/unlock switch RH D105 | 8. Rear door switch LH B18
RH B116 | 9. Glass hatch ajar switch D503 |
| 10. Back door latch (door ajar switch) D502
Glass hatch ajar switch D503 | 11. Horn E3
(behind front combination lamp LH) | 12. Combination meter M24 |
| 13. Security indicator lamp | | |

VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

Component Description

INFOID:000000006246299

Item	Function
BCM	Verifies the received signal from ignition key, then informs ECM whether to allow engine start.
Door switch	Provides the BCM with the status of each monitored door.
Security indicator	Indicates the status of the security system.
IPDM E/R	Controls the horn and headlamps operation.
Horn	Sounds when the vehicle security system is triggered.

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DIAGNOSIS SYSTEM (BCM)

[WITHOUT INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:000000006766976

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Direct Diagnostic Mode	Description
Ecu Identification	The BCM part number is displayed.
Self Diagnostic Result	The BCM self diagnostic results are displayed.
Data Monitor	The BCM input/output data is displayed in real time.
Active Test	The BCM activates outputs to test components.
Work support	The settings for BCM functions can be changed.
Configuration	<ul style="list-style-type: none"> • The vehicle specification can be read and saved. • The vehicle specification can be written when replacing BCM.
CAN Diag Support Mntr	The result of transmit/receive diagnosis of CAN communication is displayed.

SYSTEM APPLICATION

BCM can perform the following functions.

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

DIAGNOSIS SYSTEM (BCM)

[WITHOUT INTELLIGENT KEY SYSTEM]

< SYSTEM DESCRIPTION >

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:000000006766977

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [On/Off]	Indicates condition of ignition switch ON position.

ACTIVE TEST

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

THEFT ALM

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

INFOID:000000006766978

DATA MONITOR

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

* : with Intelligent Key

** : without Intelligent Key

ACTIVE TEST

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

WORK SUPPORT

Support Item	Setting	Description
SECURITY ALARM SET	Off	Security alarm OFF.
	On*	Security alarm ON.

DIAGNOSIS SYSTEM (BCM)

< SYSTEM DESCRIPTION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Support Item	Setting	Description
THEFT ALM TRG	Off/On	The switch which triggered vehicle security alarm is recorded [On]. This mode is able to confirm and erase the record of vehicle security alarm. The trigger data can be erased by touching [CLEAR].
	CLEAR	

*: Initial setting

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:000000006246303

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. CAN Communication Signal Chart, refer to [LAN-53, "CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000006246304

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When BCM cannot communicate CAN communication signal continuously for 2 seconds or more.	In CAN communication system, any item (or items) of the following listed below is malfunctioning. <ul style="list-style-type: none">• Receiving (TCM)• Receiving (IPDM E/R)• Receiving (ECM)• Receiving (METER/M&A)• Receiving (MULTI AV)

Diagnosis Procedure

INFOID:000000006246305

1. PERFORM SELF DIAGNOSTIC

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

Is "CAN COMM CIRCUIT" displayed?

- YES >> Refer to [LAN-5, "CAN Communication Control Circuit"](#).
NO >> Refer to [GI-37, "Intermittent Incident"](#).

SEC

U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

U1010 CONTROL UNIT (CAN)

Description

INFOID:000000006246306

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Modern vehicle is equipped with many electronic control unit, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN-H line, CAN-L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. CAN Communication Signal Chart, refer to [LAN-53. "CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000006246307

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1010	CONTROL UNIT (CAN)	When detecting error during the initial diagnosis of CAN controller of BCM.	BCM

Diagnosis Procedure

INFOID:000000006246308

1. REPLACE BCM

When DTC [U1010] is detected, replace BCM.

>> Replace BCM. Refer to [BCS-55. "Removal and Installation"](#).

Special Repair Requirement

INFOID:000000006246309

1. REQUIRED WORK WHEN REPLACING BCM

Initialize BCM. Refer to CONSULT-III Operation Manual.

>> Inspection End.

B2190, P1614 NATS ANTENNA AMP.

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

B2190, P1614 NATS ANTENNA AMP.

Description

INFOID:000000006246310

Performs ID verification through BCM and NATS antenna amplifier when ignition key is inserted and ignition switch turned ON.

Prohibits the start of engine when an unregistered ID of ignition key is used.

DTC Logic

INFOID:000000006246311

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2190	NATS ANTENNA AMP	• Inactive communication between NATS antenna amp. and BCM. • Ignition key is malfunctioning.	• Harness or connectors (The NATS antenna amp. circuit is open or shorted) • Ignition key • NATS antenna amp. • BCM
P1614			

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Insert ignition key into the key cylinder.
2. Turn ignition switch ON.
3. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-131, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246312

Regarding Wiring Diagram information, refer to [SEC-176, "Wiring Diagram - Without Intelligent Key System"](#).

1. CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to [SEC-183, "Removal and Installation"](#).

Is the inspection result normal?

- YES >> GO TO 2
NO >> Reinstall NATS antenna amp. correctly.

2. CHECK NVIS (NATS) IGNITION KEY ID CHIP

Start engine with another registered NATS ignition key.

Does the engine start?

- YES >> • Ignition key ID chip is malfunctioning.
• Replace the ignition key.
• Perform initialization with CONSULT-III.
For initialization, refer to "CONSULT-III Operation Manual".
NO >> GO TO 3

3. CHECK POWER SUPPLY FOR NATS ANTENNA AMP.

1. Turn ignition switch OFF.
2. Check voltage between NATS antenna amp. connector M21 terminal 1 and ground.

B2190, P1614 NATS ANTENNA AMP.

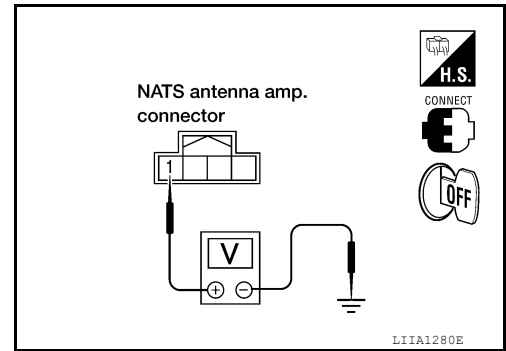
< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

1 - Ground : **Battery voltage**

Is the inspection result normal?

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



4. CHECK NATS ANTENNA AMP. GROUND LINE CIRCUIT

1. Disconnect NATS antenna amp. connector.
2. Check continuity between NATS antenna amp. connector M21 terminal 3 and ground.

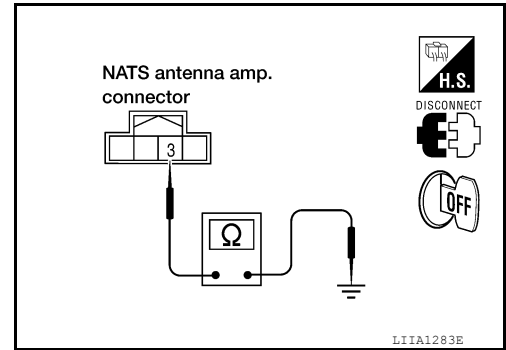
3 - Ground : **Continuity should exist.**

Is the inspection result normal?

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

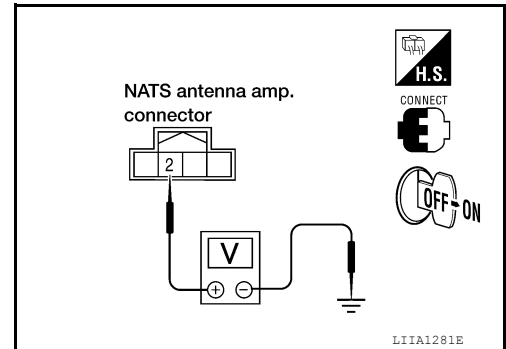
NOTE:

If harness is OK, replace BCM, refer to [BCS-55, "Removal and Installation"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual".



5. CHECK NATS ANTENNA AMP. SIGNAL LINE- 1

1. Connect NATS antenna amp. connector.
2. Turn ignition switch ON.
3. Check voltage between NATS antenna amp. connector M21 terminal 2 and ground with analog tester.



Terminals		Position of ignition key cylinder	Voltage (V) (Approx.)
(+)	(-)		
2	Ground	Before inserting ignition key	Battery voltage
		After inserting ignition key	Pointer of tester should move for approx. 30 seconds, then return to battery voltage
		Just after turning ignition switch ON	Pointer of tester should move for approx. 1 second, then return to battery voltage

Is the inspection result normal?

- YES >> GO TO 6
- NO >> • Repair or replace harness.

NOTE:

If harness is OK, replace BCM, refer to [BCS-55, "Removal and Installation"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual".

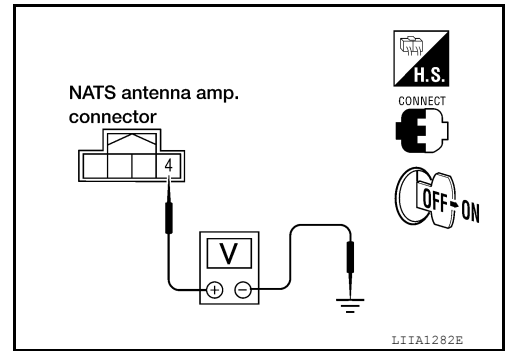
6. CHECK NATS ANTENNA AMP. SIGNAL LINE- 2

B2190, P1614 NATS ANTENNA AMP.

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

Check voltage between NATS antenna amp. connector M21 terminal 4 and ground with analog tester.



Terminals		Position of ignition key cylinder	Voltage (V) (Approx.)
(+)	(-)		
4	Ground	Before inserting ignition key	Battery voltage
		After inserting ignition key	Pointer of tester should move for approx. 30 seconds, then return to battery voltage
		Just after turning ignition switch ON	Pointer of tester should move for approx. 1 second, then return to battery voltage

Is the inspection result normal?

YES >> NATS antenna amp. is malfunctioning.

NO >> • Repair or replace harness.

NOTE:

If harness is OK, replace BCM, refer to [BCS-55. "Removal and Installation"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual".

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B2191, P1615 DIFFERENCE OF KEY

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

B2191, P1615 DIFFERENCE OF KEY

Description

INFOID:000000006246313

Performs ID verification through BCM when ignition knob switch is pressed.
Prohibits the release of steering lock or start of engine when an unregistered ID of mechanical key is used.

DTC Logic

INFOID:000000006246314

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2191 P1615	DIFFERENCE OF KEY	The ID verification results between BCM and mechanical key are NG. The registration is necessary.	Mechanical key

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Insert mechanical key into the key cylinder.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-134. "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246315

1. PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started with re-registered mechanical key?

- YES >> Mechanical key was unregistered.
NO >> BCM is malfunctioning.
- Replace BCM. Refer to [BCS-55. "Removal and Installation"](#).
 - Perform initialization again.

B2192, P1611 ID DISCORD, IMMU-ECM

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

B2192, P1611 ID DISCORD, IMMU-ECM

Description

INFOID:000000006246316

BCM performs the ID verification with ECM that allows the engine to start. BCM starts the communication with ECM if ignition switch is turned ON and starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000006246317

DTC DETECTION LOGIC

NOTE:

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-129, "DTC Logic"](#).
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-130, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2192	ID DISCORD BCM-ECM	The ID verification results between BCM and ECM are NG. The registration is necessary.	• BCM • ECM
P1611			

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-135, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246318

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all mechanical keys.

For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started with re-registered mechanical key?

- YES >> ID was unregistered.
NO >> GO TO 2

2.REPLACE BCM

1. Replace BCM. Refer to [BCS-55, "Removal and Installation"](#).
2. Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started with re-registered mechanical key?

- YES >> BCM is malfunctioning.
NO >> GO TO 3

3.REPLACE ECM

1. Replace ECM. Refer to Removal and Installation.
2. Perform initialization with CONSULT-III. Re-register all mechanical keys.
For initialization and registration of mechanical key. Refer to "CONSULT-III Operation Manual".

Can the system be initialized and can the engine be started with re-registered mechanical key?

- YES >> ECM is malfunctioning.
NO >> GO TO 4

4.CHECK INTERMITTENT INCIDENT

Refer to [GI-37, "Intermittent Incident"](#).

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B2192, P1611 ID DISCORD, IMMU-ECM

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

>> Inspection End.

B2193, P1612 CHAIN OF ECM-IMMU

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

B2193, P1612 CHAIN OF ECM-IMMU

Description

INFOID:000000006246319

BCM performs the ID verification with ECM that allows the engine to start. BCM starts the communication with ECM if ignition switch is turned ON and starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:000000006246320

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-129, "DTC Logic"](#).
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-130, "DTC Logic"](#).

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2193	CHAIN OF BCM-ECM	Inactive communication between ECM and BCM	<ul style="list-style-type: none">• Harness or connectors (The CAN communication line is open or short)• BCM• ECM
P1612			

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-137, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246321

1. REPLACE BCM

1. Replace BCM. Refer to [BCS-55, "Removal and Installation"](#).
2. Perform initialization with CONSULT-III.
For initialization, refer to "CONSULT-III Operation Manual".

Does the engine start?

- YES >> BCM was malfunctioning.
NO >> ECM is malfunctioning.
 - Replace ECM.
 - Perform ECM re-communicating function.

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P1610 LOCK MODE

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

P1610 LOCK MODE

Description

INFOID:000000006246322

When the starting operation is carried more than five times consecutively under the following conditions, NATS will shift to the mode which prevents the engine from being started.

- Unregistered mechanical key is used.
- BCM or ECM's malfunctioning.

DTC Logic

INFOID:000000006246323

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When the starting operation is carried out five or more times consecutively under the following conditions. <ul style="list-style-type: none">• Unregistered mechanical key• BCM or ECM's malfunctioning.	—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check "Self diagnostic result" with CONSULT-III.

Is DTC detected?

- YES >> Refer to [SEC-138, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000006246324

1.CHECK ENGINE START FUNCTION

1. Perform the check for DTC except DTC P1610.
2. Use CONSULT-III to erase DTC after fixing.
3. Check that engine can start with registered mechanical key.

Does the engine start?

- YES >> Inspection End.
NO >> GO TO 2

2.CHECK INTERMITTENT INCIDENT

Refer to [GI-37, "Intermittent Incident"](#).

>> Inspection End.

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

POWER SUPPLY AND GROUND CIRCUIT

BCM

BCM : Diagnosis Procedure

INFOID:000000006767002

Regarding Wiring Diagram information, refer to [BCS-48, "Wiring Diagram"](#).

1. CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
57	Battery power supply	21 (10A)
70		G (50A)
11	Ignition ACC or ON	4 (10A)
38	Ignition ON or START	1 (10A)

Is the fuse blown?

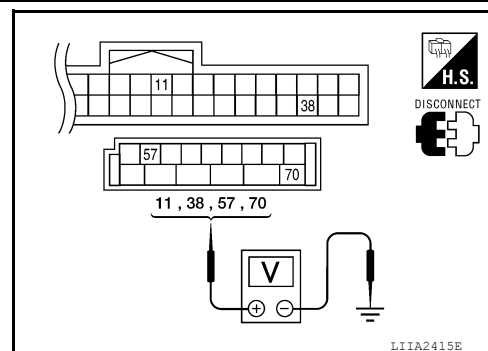
YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

NO >> GO TO 2

2. CHECK POWER SUPPLY CIRCUIT

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

Connector	Terminals		Power source	Condition	Voltage (V) (Approx.)
	(+)	(-)			
M18	11	Ground	ACC power supply	Ignition switch ACC or ON	Battery voltage
	38	Ground	Ignition power supply	Ignition switch ON or START	Battery voltage
M20	57	Ground	Battery power supply	Ignition switch OFF	Battery voltage
	70	Ground	Battery power supply	Ignition switch OFF	Battery voltage



Is the measurement value normal?

YES >> GO TO 3

NO >> Repair or replace harness.

3. CHECK GROUND CIRCUIT

POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

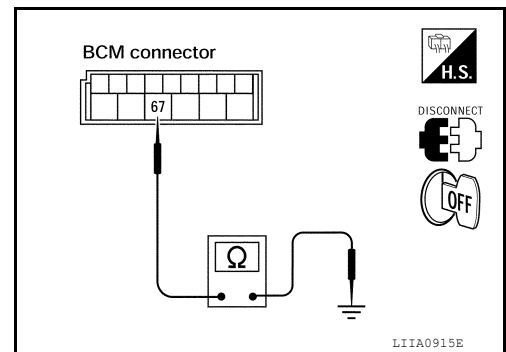
[WITHOUT INTELLIGENT KEY SYSTEM]

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M20	67		Yes

Does continuity exist?

- YES >> Inspection End.
- NO >> Repair or replace harness.



KEY CYLINDER SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

KEY CYLINDER SWITCH

Description

INFOID:000000006246326

The main power window and door lock/unlock switch detects condition of the door key cylinder switch and transmits to BCM as the LOCK or UNLOCK signal.

Component Function Check

INFOID:000000006246327

1. CHECK DOOR KEY CYLINDER SWITCH INPUT SIGNAL

Check "KEY CYL LK-SW" AND "KEY CYL UN-SW" in DATA MONITOR mode for "POWER DOOR LOCK SYSTEM" with CONSULT-III.

Monitor item	Condition
KEY CYL LK-SW	Lock : ON
	Neutral / Unlock : OFF
KEY CYL UN-SW	Unlock : ON
	Neutral / Lock : OFF

Is the inspection result normal?

- YES >> Key cylinder switch is OK.
- NO >> Refer to [SEC-141, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000006246328

Regarding Wiring Diagram information, refer to [SEC-166, "Wiring Diagram"](#).

1. CHECK DOOR KEY CYLINDER SWITCH LH

With CONSULT-III

Check front door lock assembly LH (key cylinder switch) ("KEY CYL LK-SW") and ("KEY CYL UN-SW) in DATA MONITOR mode with CONSULT-III.

- When key inserted in left front key cylinder is turned to LOCK:

KEY CYL LK-SW : ON

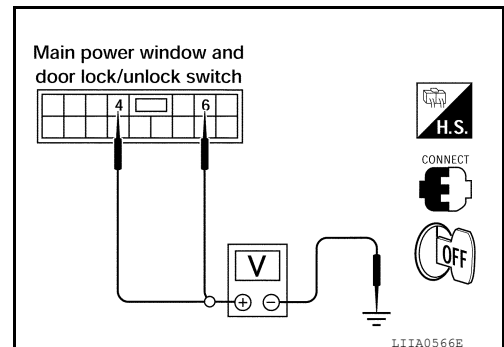
- When key inserted in left front key cylinder is turned to UNLOCK:

KEY CYL UN-SW : ON

Without CONSULT-III

1. Turn ignition switch OFF.
2. Check voltage between main power window and door lock/unlock switch connector D7 terminals 4, 6 and ground.

Connector	Terminals		Condition of left front key cylinder	Voltage (V) (Approx.)
	(+)	(-)		
D7	4	Ground	Neutral/Unlock	5
			Lock	0
	6		Neutral/Lock	5
			Unlock	0



Is the inspection result normal?

KEY CYLINDER SWITCH

[WITHOUT INTELLIGENT KEY SYSTEM]

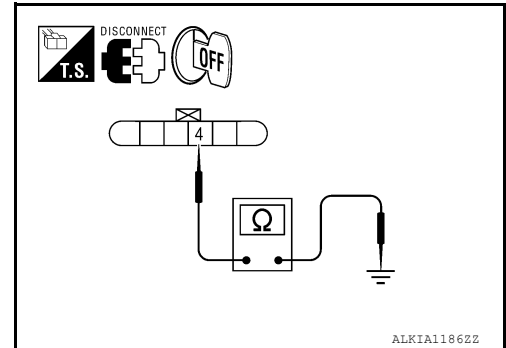
< DTC/CIRCUIT DIAGNOSIS >

- YES >> Key cylinder switch signal is OK.
- NO >> GO TO 2

2. CHECK DOOR KEY CYLINDER SWITCH LH GROUND HARNESS

1. Turn ignition switch OFF.
2. Disconnect front door lock assembly LH (key cylinder switch).
3. Check continuity between front door lock assembly LH (key cylinder switch) connector D14 terminal 4 and body ground.

Connector	Terminals	Continuity
D14	4 – Ground	Yes



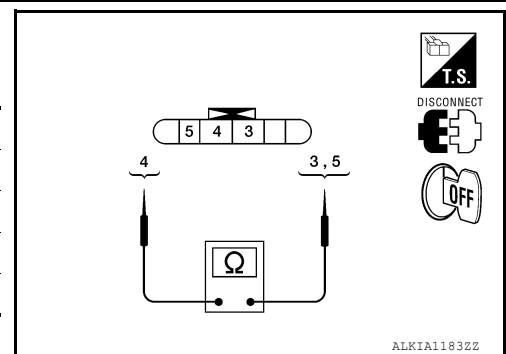
Is the inspection result normal?

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

3. CHECK DOOR KEY CYLINDER SWITCH LH

Check continuity between front door lock assembly LH (key cylinder switch) terminals.

Terminals	Condition	Continuity
3 – 4	Key is turned to LOCK or neutral.	No
	Key is turned to UNLOCK.	Yes
4 – 5	Key is turned to UNLOCK or neutral.	No
	Key is turned to LOCK.	Yes



Is the inspection result normal?

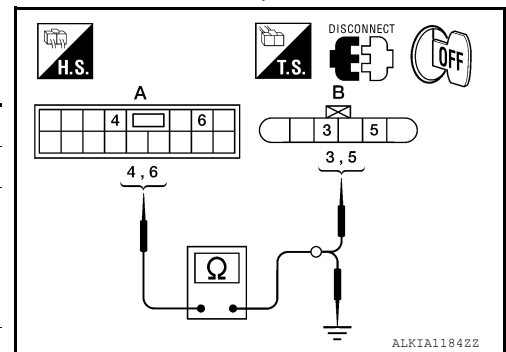
- YES >> GO TO 4
- NO >> Replace front door lock assembly LH (key cylinder switch). Refer to [DLK-324, "Removal and Installation"](#).

4. CHECK DOOR KEY CYLINDER HARNESS

Check continuity between main power window and door lock/unlock switch connector D7 (

A) terminals 4, 6 and front door lock assembly LH (key cylinder switch) connector D14 (B) terminals 3, 5 and body ground.

Connector	Terminals	Connector	Terminals	Continuity
A: Main power window and door lock/unlock switch	4	B: Front door lock assembly LH (key cylinder switch)	5	Yes
	6		3	Yes
	4, 6	Ground	No	



Is the inspection result normal?

- YES >> Replace main power window and door lock/unlock switch.
- NO >> Repair or replace harness.

GLASS HATCH AJAR SWITCH

[WITHOUT INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

GLASS HATCH AJAR SWITCH

Description

INFOID:000000006246329

Detects glass hatch open/close condition.

Component Function Check

INFOID:000000006246330

1. CHECK FUNCTION

With CONSULT-III

Check glass hatch switch in data monitor mode with CONSULT-III.

Monitor item	Condition
GLASS HATCH SW	CLOSE → OPEN: OFF → ON

Is the inspection result normal?

- YES >> Glass hatch switch is OK.
- NO >> Refer to [SEC-143, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000006246331

Regarding Wiring Diagram information, refer to [SEC-166, "Wiring Diagram"](#).

1. CHECK GLASS HATCH AJAR SWITCH INPUT SIGNAL

With CONSULT-III

Check glass hatch ajar switch "GLASS HATCH SW" in DATA MONITOR mode with CONSULT-III.

- When glass hatch is open:

GLASS HATCH SW :ON

- When glass hatch is closed:

GLASS HATCH SW :OFF

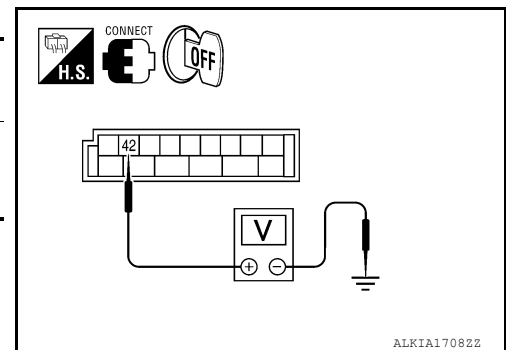
Without CONSULT-III

1. Turn ignition switch OFF.
2. Check voltage between BCM connector M19 terminals 42 and ground.

Connector	Item	Terminals		Condition	Voltage (V) (Approx.)
		(+)	(-)		
M19	BCM	42	Ground	Open ↓ Closed	0 ↓ Battery voltage

Is the inspection result normal?

- YES >> Glass hatch ajar switch circuit is OK.
- NO >> GO TO 2



2. CHECK GLASS HATCH AJAR SWITCH CIRCUIT

1. Disconnect glass hatch ajar switch and BCM.
2. Check continuity between BCM connector M19 (A) terminal 42 and glass hatch ajar switch connector D503 (B) terminal 1.

GLASS HATCH AJAR SWITCH

[WITHOUT INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

42 - 1 :Continuity should exist

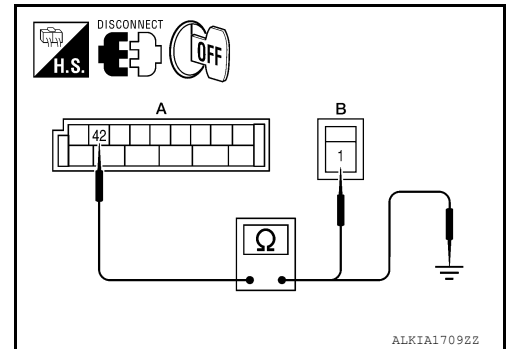
3. Check continuity between BCM connector M19 (A) terminal 42 and ground.

42 - Ground :Continuity should not exist

Is the inspection result normal?

YES >> GO TO 3

NO >> Repair or replace harness.



3. CHECK GLASS HATCH AJAR SWITCH

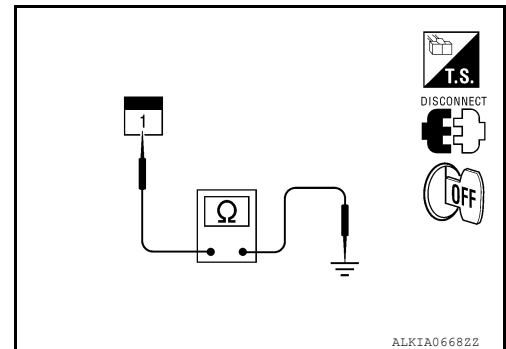
Check continuity between glass hatch ajar switch connector terminal 1 and ground.

	Terminals	Condition	Continuity
Glass hatch ajar switch	1 – Ground	Open	Yes
		Closed	No

Is the inspection result normal?

YES >> Refer to [GI-37, "Intermittent Incident"](#).

NO >> Replace glass hatch ajar switch.



HORN FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

HORN FUNCTION

Symptom Table

INFOID:000000006246332

HAZARD AND HORN REMINDER FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check “Work flow”. Refer to [SEC-115, "Work Flow"](#).
- If the following symptoms are detected, check systems shown in the “Diagnosis/service procedure” column in this order.

Conditions of Vehicle (Operating Conditions)

- “ANSWER BACK FUNCTION” is ON when setting on CONSULT-III.
- Ignition switch is in OFF position.
- All doors are closed.

Symptom	Diagnosis/service procedure	Reference page
Hazard reminder does not operate by key fob. (Horn reminder operate.)	1. Check “HAZARD ANSWER BACK” setting in “WORK SUPPORT”.	BCS-19
	2. Check hazard function.	EXL-4
	3. Check keyfob battery inspection.	DLK-253
Horn reminder does not operate by key fob. (Hazard reminder operate.)	1. Check “HORN WITH KEYLESS LOCK” setting in “WORK SUPPORT”.	BCS-19
	2. Check horn function.	SEC-166
	3. Check Intermittent Incident.	GI-37

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VEHICLE SECURITY INDICATOR

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

VEHICLE SECURITY INDICATOR

Description

INFOID:000000006246333

- Vehicle security indicator is built in combination meter.
- NATS (Nissan Anti-Theft System) and vehicle security system conditions are indicated by blink or illumination of vehicle security indicator.

Component Function Check

INFOID:000000006246334

1. CHECK FUNCTION

1. Perform "THEFT IND" in the "Active Test" mode with CONSULT-III.
2. Check vehicle security indicator operation.

Test item		Description	
THEFT IND	ON	Vehicle security indicator	ON
	OFF		OFF

Is the inspection result normal?

- YES >> Inspection End.
 NO >> Refer to [SEC-146, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000006246335

Regarding Wiring Diagram information, refer to [SEC-176, "Wiring Diagram - Without Intelligent Key System"](#).

1. SECURITY INDICATOR LAMP ACTIVE TEST

With CONSULT-III
 Check "THEFT IND" in "ACTIVE TEST" mode with CONSULT-III.

- Without CONSULT-III
1. Disconnect BCM.
 2. Turn ignition switch ON.
 3. Check voltage between BCM harness connector M18 terminal 23 and ground.

Connector	Terminals		Condition	Voltage (V) (Approx.)
	(+)	(-)		
M18	23	Ground	ON	0
			OFF	Battery voltage

Is the inspection result normal?

- YES >> Security indicator lamp is OK.
 NO >> GO TO 2

2. SECURITY INDICATOR LAMP CHECK

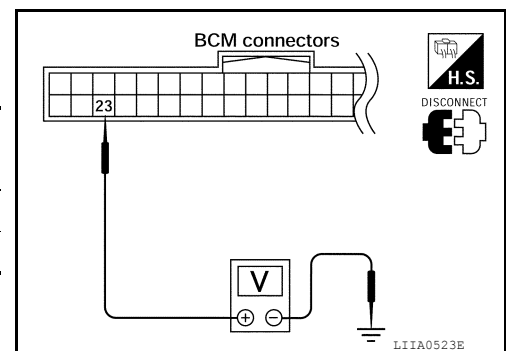
Check security indicator lamp condition.

Is the inspection result normal?

- YES >> GO TO 3
 NO >> Replace combination meter. Refer to [MWI-88, "Removal and Installation"](#).

3. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and security indicator lamp connector.



VEHICLE SECURITY INDICATOR

[WITHOUT INTELLIGENT KEY SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

3. Check continuity between BCM connector M18 (A) terminal 23 and combination meter connector M24 (B) terminal 39.

23 - 39 : Continuity should exist.

4. Check continuity between BCM connector M18 (A) terminal 23 and ground.

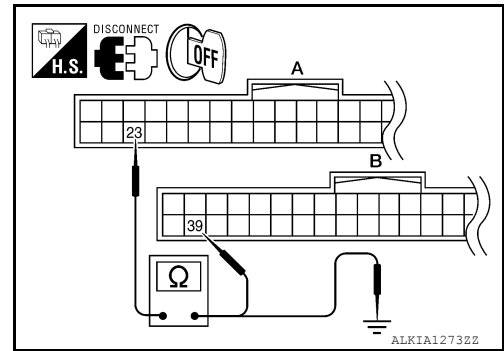
23 - Ground : Continuity should not exist.

Is the inspection result normal?

YES >> Check the following:

- 10A fuse [No. 19, located in fuse block (J/B)]
- Harness for open or short between security indicator lamp and fuse

NO >> Repair or replace harness.



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BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000006767009

NOTE:

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

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

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF or ON	Off
	Ignition switch ACC	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
AIR PRESS FL	Front left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS FR	Front right tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RL	Rear left tire air pressure value	kPa, kg/cm ² , psi
AIR PRESS RR	Rear right tire air pressure value	kPa, kg/cm ² , psi
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
BACK DOOR SW	Back door closed	Off
	Back door opened	On
BRAKE SW	Brake pedal released	Off
	Brake pedal applied	On
BUCKLE SW	Seat belt buckle unfastened	Off
	Seat belt buckle fastened	On
BUZZER	Buzzer in combination meter OFF	Off
	Buzzer in combination meter ON	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Front door RH closed	Off
	Front door RH opened	On
DOOR SW-DR	Front door LH closed	Off
	Front door LH opened	On
DOOR SW-RL	Rear door LH closed	Off
	Rear door LH opened	On
DOOR SW-RR	Rear door RH closed	Off
	Rear door RH opened	On

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Monitor Item	Condition	Value/Status	
FAN ON SIG	Blower motor fan switch OFF	Off	A
	Blower motor fan switch ON	On	
FR FOG SW	Front fog lamp switch OFF	Off	B
	Front fog lamp switch ON	On	
FR WASHER SW	Front washer switch OFF	Off	C
	Front washer switch ON	On	
FR WIPER LOW	Front wiper switch OFF	Off	
	Front wiper switch LO	On	D
FR WIPER HI	Front wiper switch OFF	Off	
	Front wiper switch HI	On	
FR WIPER INT	Front wiper switch OFF	Off	E
	Front wiper switch INT	On	
FR WIPER STOP	Any position other than front wiper stop position	Off	F
	Front wiper stop position	On	
HAZARD SW	When hazard switch is not pressed	Off	
	When hazard switch is pressed	On	G
HEAD LAMP SW 1	Headlamp switch OFF	Off	
	Headlamp switch 1st	On	H
HEAD LAMP SW 2	Headlamp switch OFF	Off	
	Headlamp switch 1st	On	
HI BEAM SW	High beam switch OFF	Off	I
	High beam switch HI	On	
ID REGST FL1	ID registration of front left tire incomplete	YET	J
	ID registration of front left tire complete	DONE	
ID REGST FR1	ID registration of front right tire incomplete	YET	
	ID registration of front right tire complete	DONE	SEC
ID REGST RL1	ID registration of rear left tire incomplete	YET	
	ID registration of rear left tire complete	DONE	
ID REGST RR1	ID registration of rear right tire incomplete	YET	L
	ID registration of rear right tire complete	DONE	
IGN ON SW	Ignition switch OFF or ACC	Off	M
	Ignition switch ON	On	
IGN SW CAN	Ignition switch OFF or ACC	Off	
	Ignition switch ON	On	N
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7	
I-KEY LOCK ¹	LOCK button of Intelligent Key is not pressed	Off	O
	LOCK button of Intelligent Key is pressed	On	
I-KEY PANIC ¹	PANIC button of Intelligent Key is not pressed	Off	
	PANIC button of Intelligent Key is pressed	On	P
I-KEY PW DWN ¹	UNLOCK button of Intelligent Key is not pressed	Off	
	UNLOCK button of Intelligent Key is pressed for greater than 3 seconds and driver's window operating in DOWN direction	On	
I-KEY UNLOCK ¹	UNLOCK button of Intelligent Key is not pressed	Off	
	UNLOCK button of Intelligent Key is pressed	On	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Monitor Item	Condition	Value/Status
KEY CYL LK-SW	Door key cylinder LOCK position	Off
	Door key cylinder other than LOCK position	On
KEY CYL UN-SW	Door key cylinder UNLOCK position	Off
	Door key cylinder other than UNLOCK position	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
KEYLESS LOCK ²	LOCK button of key fob is not pressed	Off
	LOCK button of key fob is pressed	On
KEYLESS PANIC ²	PANIC button of key fob is not pressed	Off
	PANIC button of key fob is pressed	On
KEYLESS UNLOCK ²	UNLOCK button of key fob is not pressed	Off
	UNLOCK button of key fob is pressed	On
LIGHT SW 1ST	Lighting switch OFF	Off
	Lighting switch 1st	On
OIL PRESS SW	<ul style="list-style-type: none"> • Ignition switch OFF or ACC • Engine running 	Off
	Ignition switch ON	On
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5V
	Dark outside of the vehicle	Close to 0V
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
PUSH SW ¹	Return to ignition switch to LOCK position	Off
	Press ignition switch	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading
WARNING LAMP	Low tire pressure warning lamp in combination meter OFF	Off
	Low tire pressure warning lamp in combination meter ON	On

1: With Intelligent Key

2: With remote keyless entry system

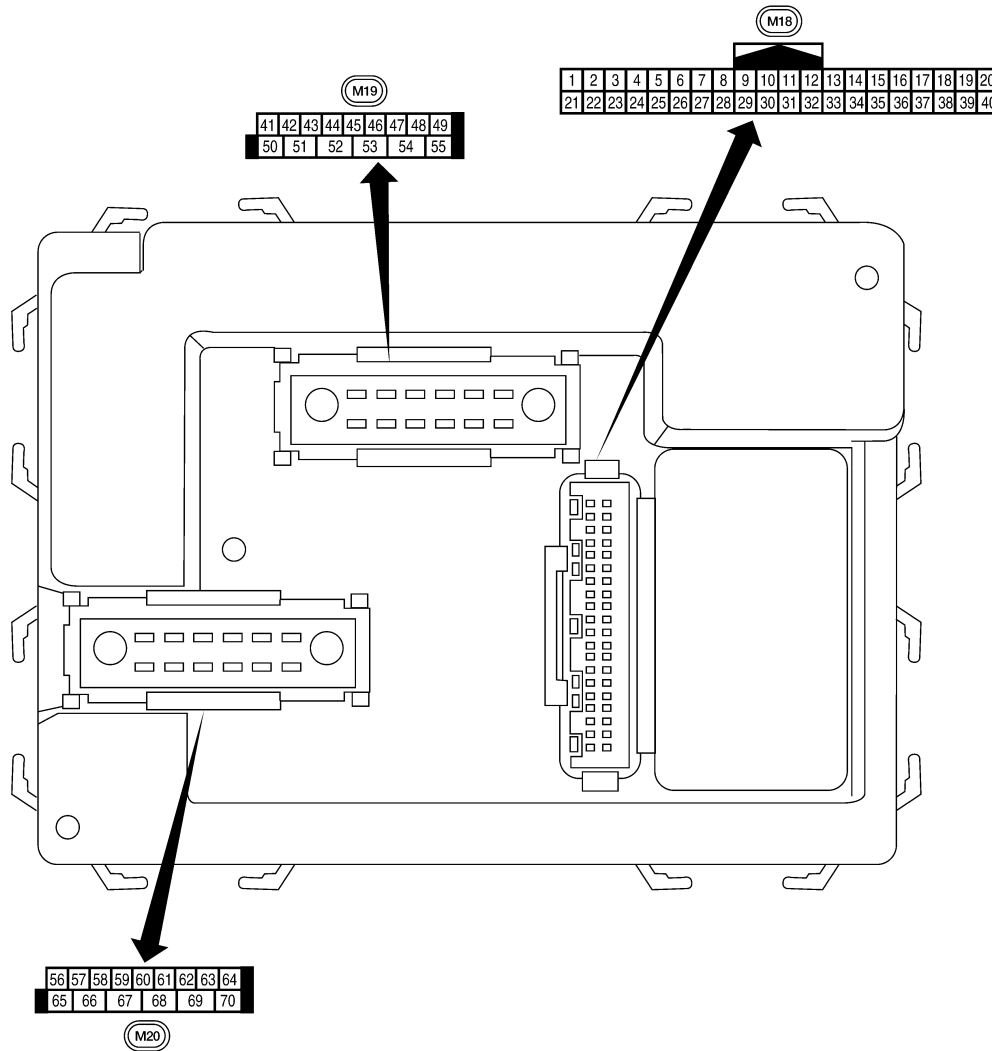
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal Layout

INFOID:000000006767010



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Physical Values


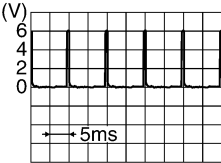
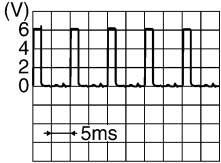
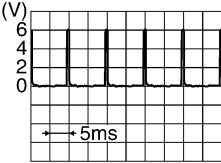
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BCM (BODY CONTROL MODULE)

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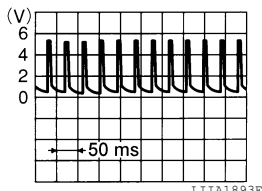
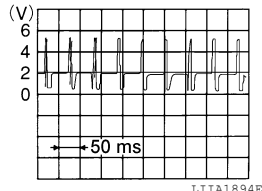
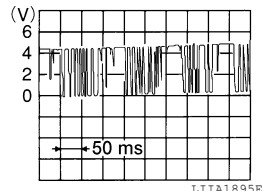
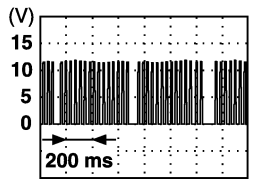
[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW ON)	0V
2	P	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
3	SB	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
4	V	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
5	L	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
6	R	Combination switch input 1				
9	Y	Rear window defogger switch	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
11	G/B	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	LG	Front door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
13	L	Rear door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	W	Tire pressure warning check connector	Input	OFF	—	5V
18	BR	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	—	0V

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
19	V	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	
20	G	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	
21	GR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	V	BUS	—	—	Ignition switch ON or power window timer operates	
23	G	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
27	W	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V
28	R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	G	Hazard switch	Input	OFF	ON	0V
					OFF	5V
30 ¹	G	Back door opener switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
30 ²	SB	Back door opener switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

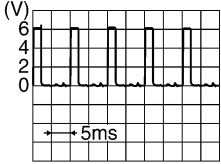
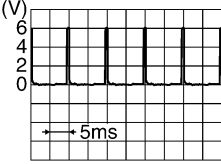
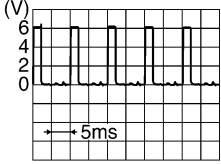
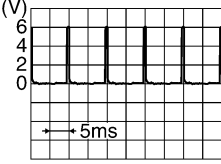
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SEC

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
32	O	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
33	GR	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
34	G	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
35	BR	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
36	LG	Combination switch output 1				
37 ¹	B	Key switch and key lock solenoid	Input	OFF	Key inserted	Battery voltage
					Key removed	0V
37 ²	B	Key switch and ignition knob switch	Input	OFF	Intelligent Key inserted	Battery voltage
					Intelligent Key removed	0V
38	W/R	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
42	LG	Glass hatch ajar switch	Input	ON	Glass hatch open	0V
					Glass hatch closed	Battery voltage
43	P	Back door latch switch	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
44	O	Rear wiper auto stop switch	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating
47	GR	Front door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
48	P	Rear door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
49	L	Cargo lamp	Output	OFF	Any door open (ON)	0V
					All doors closed (OFF)	Battery voltage
51	O	Trailer turn signal (right)	Output	ON	Turn right ON	<p style="text-align: right; font-size: small;">SKIA3009J</p>
52	LG	Trailer turn signal (left)	Output	ON	Turn left ON	<p style="text-align: right; font-size: small;">SKIA3009J</p>
53	L	Back door latch actuator	Output	OFF	OFF	0
					ON	Battery voltage
55	W	Rear wiper output circuit 1	Output	ON	OFF	0
					ON	Battery voltage
56	R/Y	Battery saver output	Output	OFF	15 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	R/Y	Battery power supply	Input	OFF	—	Battery voltage
58	W	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
					When optical sensor is not illuminated	0.6V or less
59	GR	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage

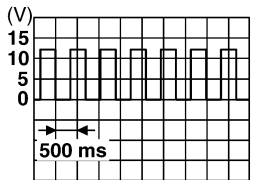
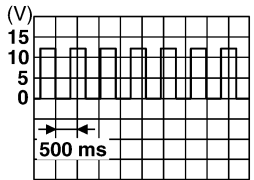
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SEC

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
60	LG	Turn signal (left)	Output	ON	Turn left ON	 <small>SKIA3009J</small>
61	G	Turn signal (right)	Output	ON	Turn right ON	 <small>SKIA3009J</small>
63	BR	Interior room/map lamp	Output	OFF	Any door switch ON (open)	0V
					OFF (closed)	Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)	0V
					ON (lock)	Battery voltage
66	L	Front door lock actuator RH, rear door lock actuators LH/RH and glass hatch lock actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
67	B	Ground	Input	ON	—	0V
68	O	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
69	L	Power window power supply	Output	—	—	Battery voltage
70	W	Battery power supply	Input	OFF	—	Battery voltage

1: With remote keyless entry system

2: With Intelligent Key system

Fail Safe

INFOID:000000006767012

Fail-safe index

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

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

DTC Inspection Priority Chart

INFOID:000000006767013

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Priority	DTC	
1	• U1000: CAN COMM CIRCUIT	A
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERENCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2013: STRG COMM 1 • B2552: INTELLIGENT KEY • B2590: NATS MALFUNCTION	B C
3	• C1729: VHCL SPEED SIG ERR • C1735: IGNITION SIGNAL	D
4	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1712: [CHECKSUM ERR] FL • C1713: [CHECKSUM ERR] FR • C1714: [CHECKSUM ERR] RR • C1715: [CHECKSUM ERR] RL • C1716: [PRESSDATA ERR] FL • C1717: [PRESSDATA ERR] FR • C1718: [PRESSDATA ERR] RR • C1719: [PRESSDATA ERR] RL • C1720: [CODE ERR] FL • C1721: [CODE ERR] FR • C1722: [CODE ERR] RR • C1723: [CODE ERR] RL • C1724: [BATT VOLT LOW] FL • C1725: [BATT VOLT LOW] FR • C1726: [BATT VOLT LOW] RR • C1727: [BATT VOLT LOW] RL	E F G H I J

DTC Index

INFOID:000000006767014

SEC

NOTE:

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

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. Further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-29
B2013: STRG COMM 1	—	—	—	SEC-30
B2190: NATS ANTENNA AMP	—	—	—	SEC-33 (with I-Key) SEC-131 (without I-Key)
B2191: DIFFERENCE OF KEY	—	—	—	SEC-36 (with I-Key) SEC-134 (without I-Key)

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
B2192: ID DISCORD BCM-ECM	—	—	—	SEC-37 (with I-Key) SEC-135 (without I-Key)
B2193: CHAIN OF BCM-ECM	—	—	—	SEC-39 (with I-Key) SEC-137 (without I-Key)
B2552: INTELLIGENT KEY	—	—	—	SEC-41
B2590: NATS MALFUNCTION	—	—	—	SEC-42
C1708: [NO DATA] FL	—	—	—	WT-14
C1709: [NO DATA] FR	—	—	—	WT-14
C1710: [NO DATA] RR	—	—	—	WT-14
C1711: [NO DATA] RL	—	—	—	WT-14
C1712: [CHECKSUM ERR] FL	—	—	—	WT-16
C1713: [CHECKSUM ERR] FR	—	—	—	WT-16
C1714: [CHECKSUM ERR] RR	—	—	—	WT-16
C1715: [CHECKSUM ERR] RL	—	—	—	WT-16
C1716: [PRESSDATA ERR] FL	—	—	—	WT-18
C1717: [PRESSDATA ERR] FR	—	—	—	WT-18
C1718: [PRESSDATA ERR] RR	—	—	—	WT-18
C1719: [PRESSDATA ERR] RL	—	—	—	WT-18
C1720: [CODE ERR] FL	—	—	—	WT-16
C1721: [CODE ERR] FR	—	—	—	WT-16
C1722: [CODE ERR] RR	—	—	—	WT-16
C1723: [CODE ERR] RL	—	—	—	WT-16
C1724: [BATT VOLT LOW] FL	—	—	—	WT-16
C1725: [BATT VOLT LOW] FR	—	—	—	WT-16
C1726: [BATT VOLT LOW] RR	—	—	—	WT-16
C1727: [BATT VOLT LOW] RL	—	—	—	WT-16
C1729: VHCL SPEED SIG ERR	—	—	—	WT-20
C1735: IGNITION SWITCH	—	—	—	—

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

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

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

Reference Value

INFOID:000000006767022

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1, 2, 3, 4
AC COMP REQ	A/C switch OFF		Off
	A/C switch ON		On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST, 2ND, HI or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND HI or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		<ul style="list-style-type: none"> Front fog lamp switch ON Daytime light activated (Canada only) 	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
ST RLY REQ	Ignition switch OFF or ACC		Off
	Ignition switch START		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
RR DEF REQ	Rear defogger switch OFF		Off
	Rear defogger switch ON		On
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
DTRL REQ	Daytime light system requested OFF with CONSULT-III.		Off
	Daytime light system requested ON with CONSULT-III.		On
THFT HRN REQ	Not operated		Off
	<ul style="list-style-type: none"> Panic alarm is activated Horn is activated with VEHICLE SECURITY (THEFT WARNING) SYSTEM 		On

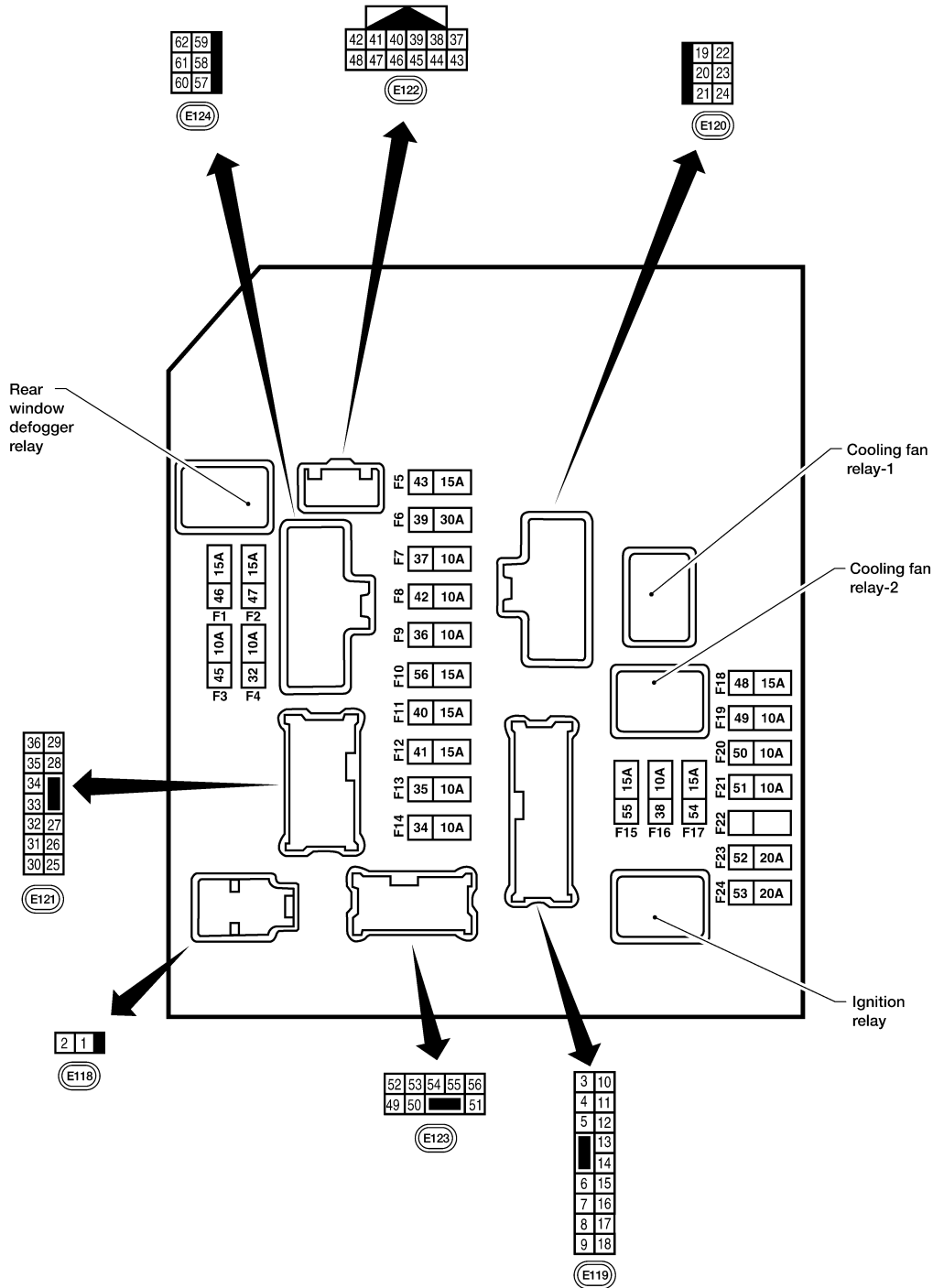
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) [WITHOUT INTELLIGENT KEY SYSTEM]

< ECU DIAGNOSIS INFORMATION >

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

Terminal Layout

INFOID:000000006767023



NOTE:

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

AAMIA0386GB

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

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Physical Values

INFOID:000000006767024

PHYSICAL VALUES

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
1	W	Battery power supply	Input	OFF	—	Battery voltage
2	R	Battery power supply	Input	OFF	—	Battery voltage
3	G	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
4	P	ECM relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
6	V	Throttle control motor relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
7	BR	ECM relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
8	W/R	Fuse 54	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
10	R/B	Fuse 45	Output	ON	Daytime light system active	0V
					Daytime light system inactive	Battery voltage
11	Y	A/C compressor	Output	ON or START	A/C switch ON or defrost A/C switch	Battery voltage
					A/C switch OFF or defrost A/C switch	0V
12	W/G	Ignition switch supplied power	Input	—	OFF or ACC	0V
					ON or START	Battery voltage
13	R	Fuel pump relay	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
14	W/G	Fuse 49	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
15	W/R	Fuse 50 (ABS)	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
16	W/G	Fuse 51	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
17	W/G	Fuse 55	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
19	W	Starter motor	Output	START	—	Battery voltage
20	BR	Cooling fan motor (low)	Output	ON or START	—	Battery voltage
21	GR	Ignition switch supplied power	Input	—	OFF or ACC	0V
					START	Battery voltage
22	G	Battery power supply	Output	OFF	—	Battery voltage
23	LG	Door mirror defogger output signal	Output	—	When rear defogger switch is ON	Battery voltage
					When raker defogger switch is OFF	0V

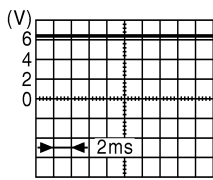
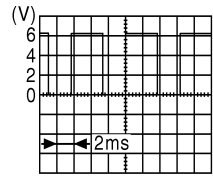
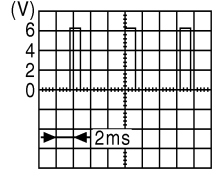
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SEC

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

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
24	P	Cooling fan motor (high)	Output	—	Conditions correct for cooling fan operation	Battery voltage
					Conditions not correct for cooling fan operation	0V
27	W	Fuse 38	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
28	R	LH front parking and front side marker lamp	Output	OFF	Lighting switch 1st position OFF	0V
					ON	Battery voltage
29	G	Trailer tow relay	Output	ON	Lighting switch 1st position OFF	0V
					ON	Battery voltage
30	R/B	Fuse 53	Output	—	Ignition switch ON or START	Battery voltage
					Ignition switch OFF or ACC	0V
32	GR	Wiper low speed signal	Output	ON or START	Wiper switch OFF	Battery voltage
					LO or INT	0V
35	L	Wiper high speed signal	Output	ON or START	Wiper switch OFF, LO, INT	Battery voltage
					HI	0V
37	Y	Power generation command signal	Output	—	Ignition switch ON	 <p style="text-align: right; font-size: small;">JPMIA0001GB</p> <p style="text-align: center;">6.3 V</p>
					40% is set on "Active test," "ALTERNATOR DUTY" of "ENGINE"	 <p style="text-align: right; font-size: small;">JPMIA0002GB</p> <p style="text-align: center;">3.8 V</p>
					40% is set on "Active test," "ALTERNATOR DUTY" of "ENGINE"	 <p style="text-align: right; font-size: small;">JPMIA0003GB</p> <p style="text-align: center;">1.4 V</p>
38	B	Ground	Input	—	—	0V
39	L	CAN-H	—	ON	—	—
40	P	CAN-L	—	ON	—	—
42	GR	Oil pressure switch	Input	—	Engine running	Battery voltage
					Engine stopped	0V

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

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value (Approx.)
				Ignition switch	Operation or condition	
43	G	Wiper auto stop signal	Input	ON or START	Wiper switch OFF, LO, INT	Battery voltage
44	R	Daytime light relay control	Input	ON	Daytime light system active	0V
					Daytime light system inactive	Battery voltage
45	LG	Horn relay control	Input	ON	When door locks are operated using keyfob or Intelligent Key (if equipped) (OFF → ON)*	Battery voltage → 0V
46	V	Fuel pump relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
47	O	Throttle control motor relay control	Input	—	Ignition switch ON or START	0V
					Ignition switch OFF or ACC	Battery voltage
48	R	Starter relay (range switch)	Input	ON or START	Selector lever in "P" or "N"	0V
					Selector lever any other position	Battery voltage
49	GR	Front RH parking and front side marker lamp	Output	OFF	Lighting switch 1st position OFF	0V
					Lighting switch 1st position ON	Battery voltage
50	W	Front fog lamp (LH)	Output	ON or START	Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch OFF	0V
					Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch ON	Battery voltage
51	V	Front fog lamp (RH)	Output	ON or START	Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch OFF	0V
					Lighting switch must be in the 2nd position (LOW beam is ON) and the front fog lamp switch ON	Battery voltage
52	P	LH low beam headlamp	Output	—	Lighting switch in 2nd position	Battery voltage
54	R	RH low beam headlamp	Output	—	Lighting switch in 2nd position	Battery voltage
55	G	LH high beam headlamp	Output	—	Lighting switch in 2nd position and placed in HIGH or PASS position	Battery voltage
56	L	RH high beam headlamp	Output	—	Lighting switch in 2nd position and placed in HIGH or PASS position	Battery voltage
57	GR	Parking, license, and tail lamp	Output	ON	Lighting switch 1st position OFF	0V
					Lighting switch 1st position ON	Battery voltage
59	B	Ground	Input	—	—	0V
60	GR	Rear window defogger relay	Output	ON or START	Rear defogger switch ON	Battery voltage
					Rear defogger switch OFF	0V
61	R/B	Fuse 32	Output	OFF	—	Battery voltage

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

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

*: When horn reminder is ON

Fail Safe

INFOID:000000006767025

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

Control part	Fail-safe in operation
Cooling fan	<ul style="list-style-type: none"> • Turns ON the cooling fan relay when the ignition switch is turned ON • Turns OFF the cooling fan relay when the ignition switch is turned OFF

If No CAN Communication Is Available With BCM

Control part	Fail-safe in operation
Headlamp	<ul style="list-style-type: none"> • Turns ON the headlamp low relay when the ignition switch is turned ON • Turns OFF the headlamp low relay when the ignition switch is turned OFF • Headlamp (LH/RH) high relays OFF
<ul style="list-style-type: none"> • Parking lamps • License plate lamps • Tail lamps 	<ul style="list-style-type: none"> • Turns ON the tail lamp relay when the ignition switch is turned ON • Turns OFF the tail lamp relay when the ignition switch is turned OFF
Front wiper	<ul style="list-style-type: none"> • The status just before activation of fail-safe control is maintained until the ignition switch is turned OFF while the front wiper is operating at LO or HI speed. • The wiper is operated at LO speed until the ignition switch is turned OFF if the fail-safe control is activated while the front wiper is set in the INT mode and the front wiper motor is operating.
Rear window defogger	Rear window defogger relay OFF
A/C compressor	A/C relay OFF
Front fog lamps (if equipped)	Front fog lamp relay OFF

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

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

Ignition switch	Ignition relay	Tail lamp relay
ON	ON	—
OFF	OFF	—

NOTE:

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

FRONT WIPER CONTROL

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

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

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

NOTE:

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

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

< ECU DIAGNOSIS INFORMATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

STARTER MOTOR PROTECTION FUNCTION

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

DTC Index

INFOID:000000006767026

CONSULT-III display	Fail-safe	TIME ^{NOTE}		Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	1 – 39	PCS-13

NOTE:

The details of TIME display are as follows.

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

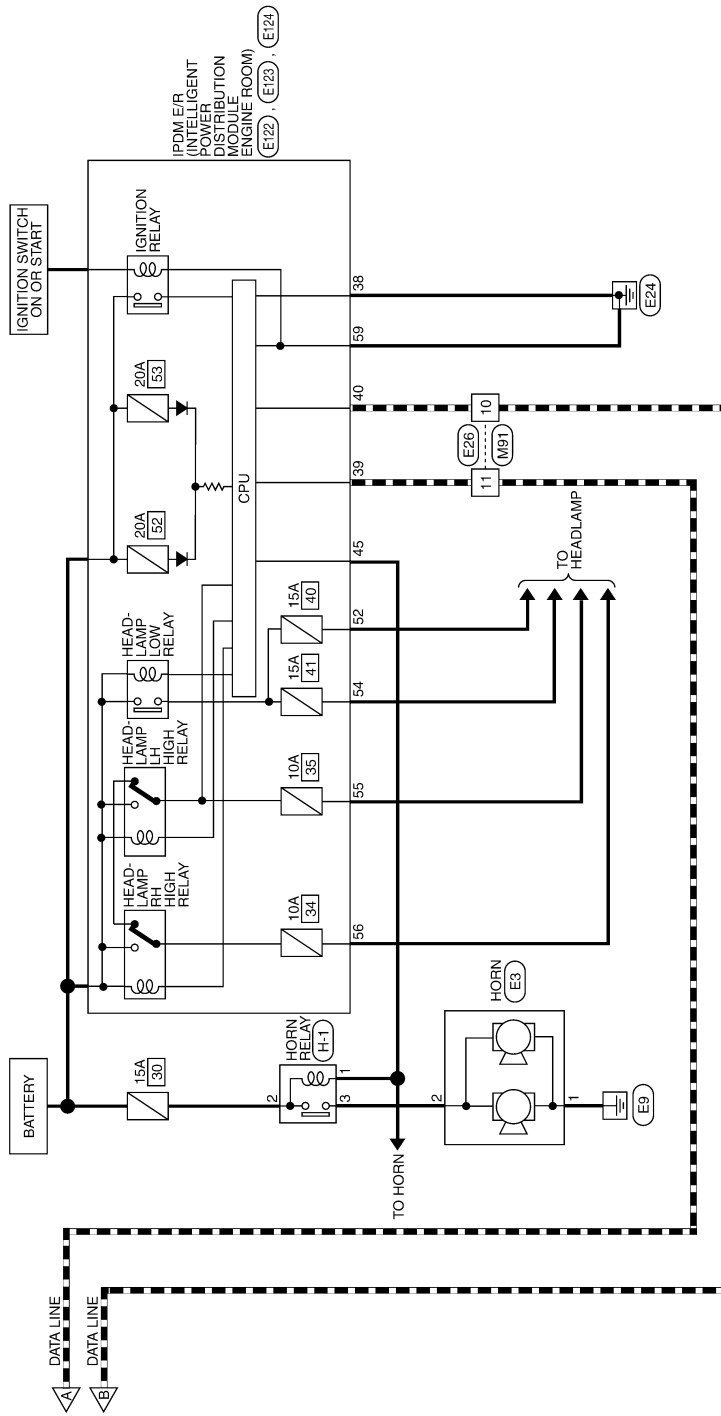
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VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

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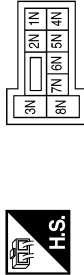
VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

VEHICLE SECURITY SYSTEM CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



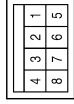
Terminal No.	Color of Wire	Signal Name
4N	R/Y	-

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



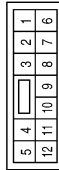
Terminal No.	Color of Wire	Signal Name
4P	G/B	-
8P	R/Y	-

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



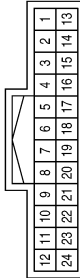
Terminal No.	Color of Wire	Signal Name
7	W	-

Connector No.	M8
Connector Name	WIRE TO WIRE
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
9	B	-

Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
21	V	-

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

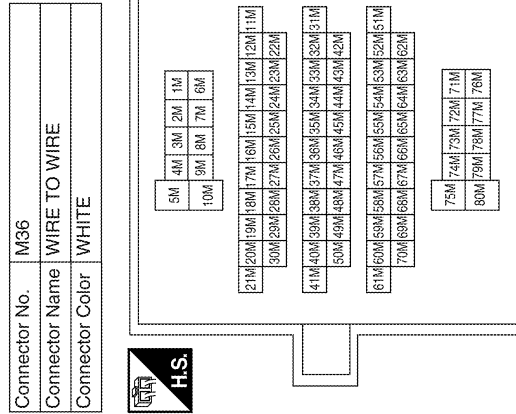
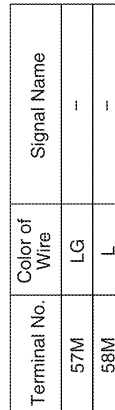
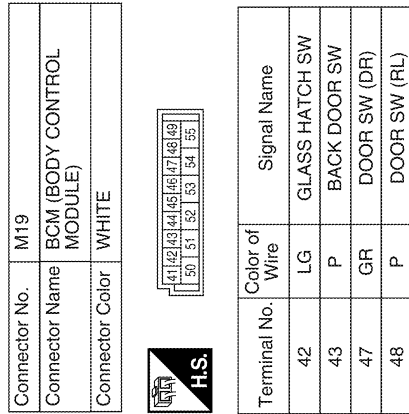
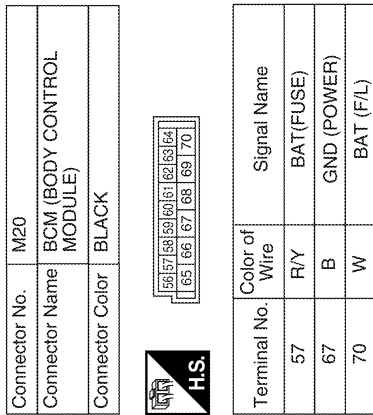
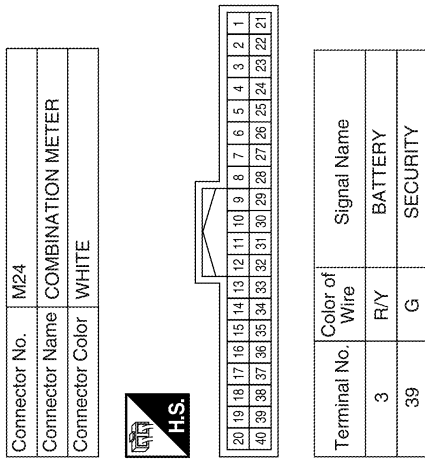


Terminal No.	Color of Wire	Signal Name
11	G/B	ACC SW
12	LG	DOOR SW (AS)
13	L	DOOR SW (RR)
22	V	ANTI-PINCH SERIAL LINK (RX, TX)
23	G	SECURITY INDICATOR OUTPUT
39	L	CAN-H
40	P	CAN-L

VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >



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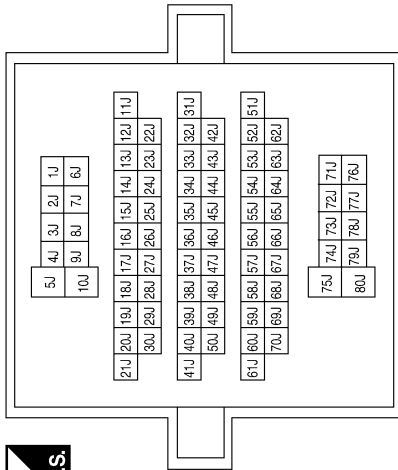
SEC

VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

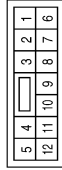
< WIRING DIAGRAM >

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE



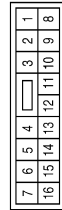
Terminal No.	Color of Wire	Signal Name
56J	LG	-
60J	P	-
61J	GR	-
66J	P	-

Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5	V	-
12	B	-

Connector No.	M91
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
10	P	-
11	L	-

Connector No.	E3
Connector Name	HORN
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
2	G	-

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7	W	-

VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

Connector No.	E26
Connector Name	WIRE TO WIRE
Connector Color	WHITE

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



Terminal No.	Color of Wire	Signal Name
10	P	-
11	L	-

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

42	41	40	39	38	37
48	47	46	45	44	43



Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L
45	LG	ANT THEFT HORN

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

51	50	49		
58	55	54	53	52



Terminal No.	Color of Wire	Signal Name
52	P	H/LAMP LO LH
54	R	H/LAMP LO RH
55	G	H/LAMP HI LH
56	L	H/LAMP HI RH

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK

59	58	57
62	61	60



Terminal No.	Color of Wire	Signal Name
59	B	GND (POWER)

Connector No.	B8
Connector Name	FRONT DOOR SWITCH LH
Connector Color	WHITE

1	2	3
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Terminal No.	Color of Wire	Signal Name
2	GR	-

Connector No.	B18
Connector Name	REAR DOOR SWITCH LH
Connector Color	WHITE

1	2	3
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Terminal No.	Color of Wire	Signal Name
2	P	-

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SEC

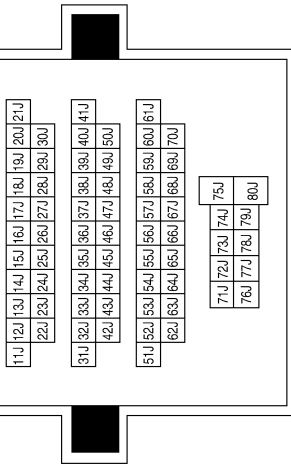
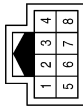
VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

Terminal No.	Color of Wire	Signal Name
56J	LG	-
60J	P	-
61J	GR	-
66J	P	-

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE

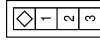


Connector No.	B43
Connector Name	WIRE TO WIRE
Connector Color	WHITE

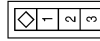


Terminal No.	Color of Wire	Signal Name
4	P	-
6	LG	-

Connector No.	B116
Connector Name	REAR DOOR SWITCH RH
Connector Color	WHITE



Connector No.	B108
Connector Name	FRONT DOOR SWITCH RH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	L	-

Terminal No.	Color of Wire	Signal Name
2	LG	-

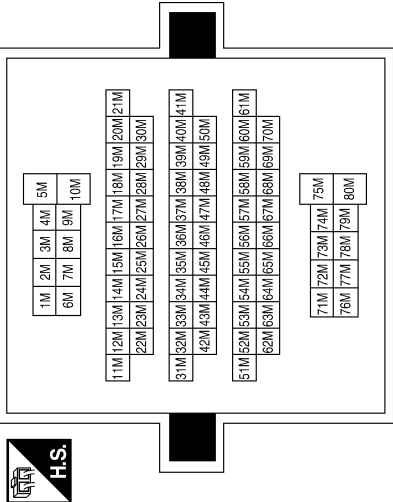
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VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

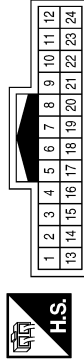
< WIRING DIAGRAM >

Connector No.	B149
Connector Name	WIRE TO WIRE
Connector Color	WHITE



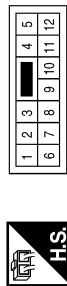
Terminal No.	Color of Wire	Signal Name
57M	LG	-
58M	L	-

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



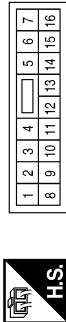
Terminal No.	21	Color of Wire	V	Signal Name	-
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Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	BROWN



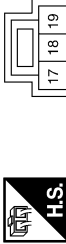
Terminal No.	9	Color of Wire	B	Signal Name	-
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Connector No.	D7
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH
Connector Color	WHITE



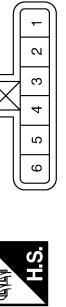
Terminal No.	Color of Wire	Signal Name
4	SB	KEY CYL LOCK SW
6	R/W	KEY CYL UNLOCK SW
14	V	POWER WINDOW SERIAL LINK

Connector No.	D8
Connector Name	MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH
Connector Color	WHITE



Terminal No.	17	Color of Wire	B	Signal Name	GND
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Connector No.	D14
Connector Name	FRONT DOOR LOCK ASSEMBLY LH
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	R/W	-
4	B	-
5	SB	-

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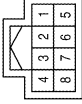
SEC

VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

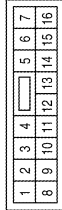
< WIRING DIAGRAM >

Connector No.	D401
Connector Name	WIRE TO WIRE
Connector Color	WHITE



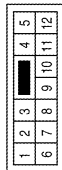
Terminal No.	Color of Wire	Signal Name
4	P	--
6	LG	--

Connector No.	D105
Connector Name	POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH RH
Connector Color	WHITE



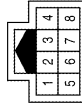
Terminal No.	Color of Wire	Signal Name
11	B	GND
16	V	POWER WINDOW SERIAL LINK

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



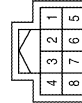
Terminal No.	Color of Wire	Signal Name
5	V	--
12	B	--

Connector No.	D501
Connector Name	WIRE TO WIRE
Connector Color	WHITE



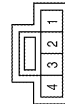
Terminal No.	Color of Wire	Signal Name
4	P	--
6	LG	--

Connector No.	D405
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	P	--
6	LG	--

Connector No.	D404
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	B	--

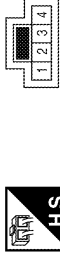
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VEHICLE SECURITY SYSTEM

[WITHOUT INTELLIGENT KEY SYSTEM]

< WIRING DIAGRAM >

Connector No.	D505
Connector Name	WIRE TO WIRE
Connector Color	WHITE



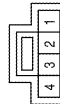
Terminal No.	Color of Wire	Signal Name
1	B	--

Connector No.	D503
Connector Name	GLASS HATCH AJAR SWITCH
Connector Color	BLACK



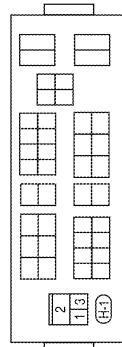
Terminal No.	Color of Wire	Signal Name
1	LG	--

Connector No.	D502
Connector Name	BACK DOOR LATCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	P	--
4	BR	--

Connector No.	H-1
Connector Name	FUSE AND FUSIBLE LINK BOX (HORN RELAY)
Connector Color	--



Terminal No.	Color of Wire	Signal Name
1	BR	--
2	O	--
3	G	--

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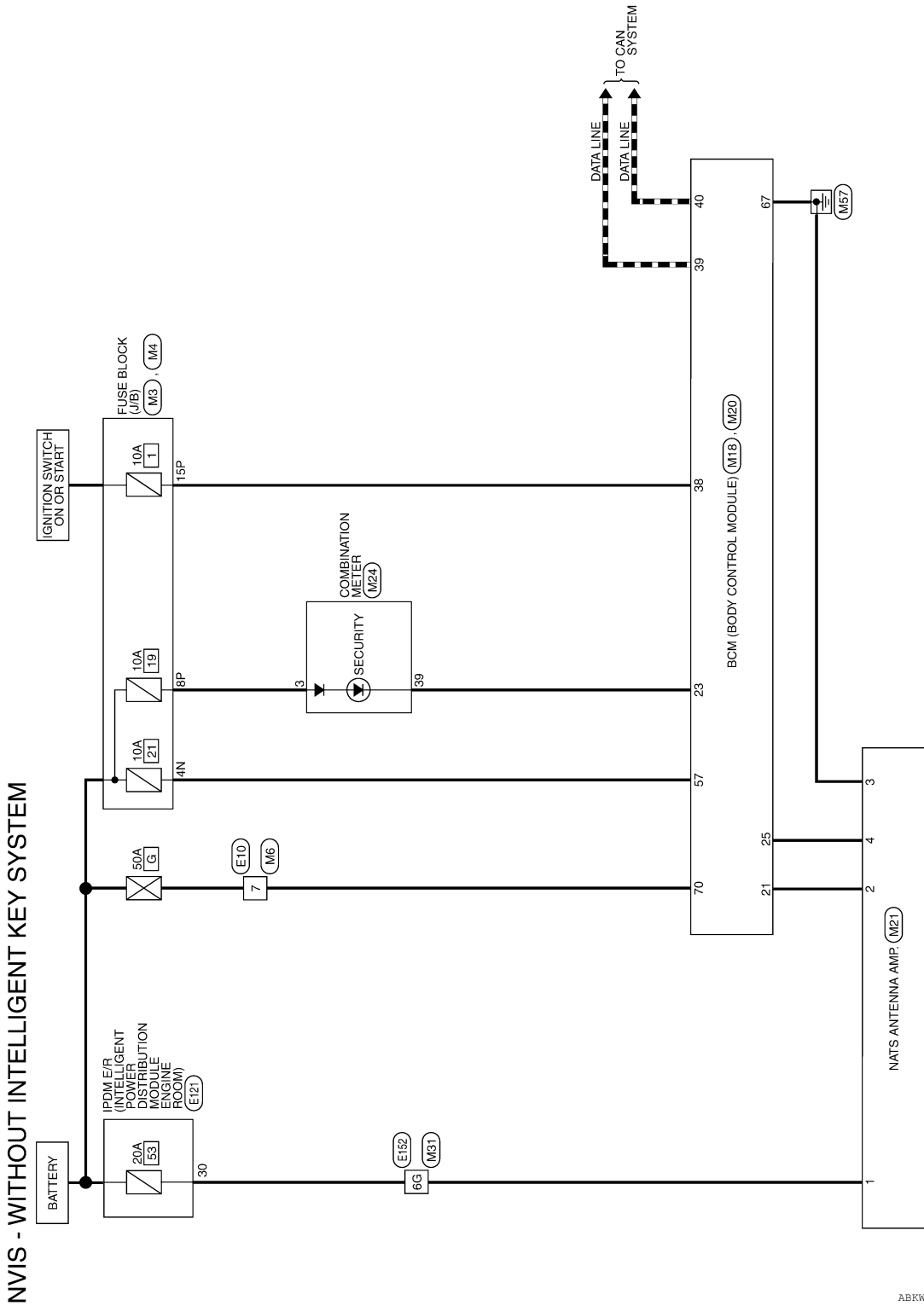
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NVIS

Wiring Diagram - Without Intelligent Key System

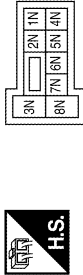
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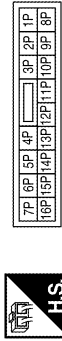
NVIS CONNECTORS - WITHOUT INTELLIGENT KEY SYSTEM

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



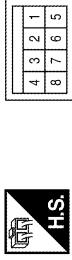
Terminal No.	4N	Color of Wire	R/Y	Signal Name	--
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Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



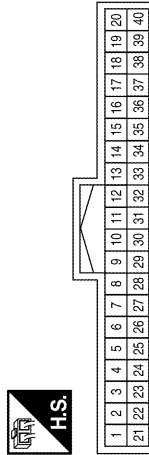
Terminal No.	8P	Color of Wire	R/Y	Signal Name	--
Terminal No.	15P	Color of Wire	W/R	Signal Name	--

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



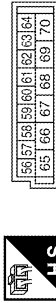
Terminal No.	7	Color of Wire	W	Signal Name	--
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Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



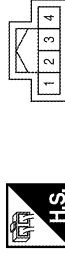
Terminal No.	Color of Wire	Signal Name
21	GR	IMMOBILIZER ANTENNA SIG (CLOCK)
23	G	SECURITY INDICATOR OUTPUT
25	BR	IMMOBILIZER ANTENNA SIG (TX,RX)
38	W/R	IIGN SW
39	L	CAN-H
40	P	CAN-L

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



Terminal No.	57	Color of Wire	R/Y	Signal Name	BAT (FUSE)
Terminal No.	67	Color of Wire	B	Signal Name	GND (POWER)
Terminal No.	70	Color of Wire	W	Signal Name	BAT (F/L)

Connector No.	M21
Connector Name	NATS ANTENNA AMP.
Connector Color	WHITE



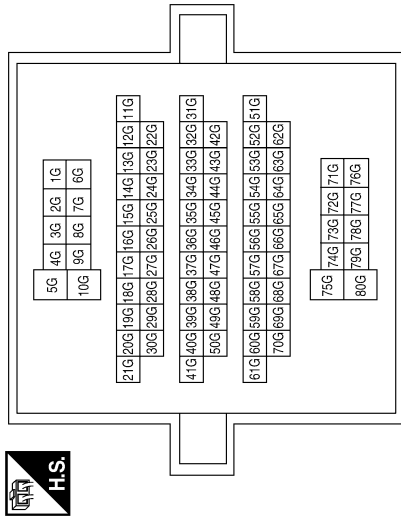
Terminal No.	1	Color of Wire	R/B	Signal Name	VB (12V)
Terminal No.	2	Color of Wire	GR	Signal Name	CLOCK
Terminal No.	3	Color of Wire	B	Signal Name	GND
Terminal No.	4	Color of Wire	BR	Signal Name	RX, TX

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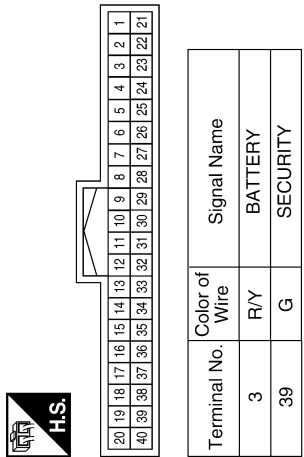
SEC

Terminal No.	Color of Wire	Signal Name
6G	R/B	-

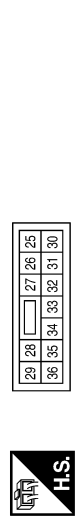
Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE

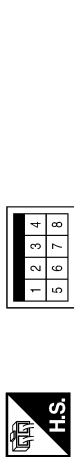


Connector No.	E121
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
30	R/B	ECM BAT

Connector No.	E10
Connector Name	WIRE TO WIRE
Connector Color	WHITE

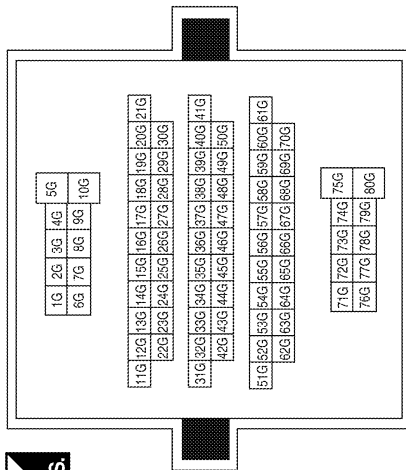


Terminal No.	Color of Wire	Signal Name
7	W	-

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Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6G	R/B	-

SEC

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VEHICLE SECURITY SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

SYMPTOM DIAGNOSIS

VEHICLE SECURITY SYSTEM SYMPTOMS

Symptom Table

INFOID:000000006246350

Procedure		Diagnostic procedure	Refer to page	
Symptom				
1	Vehicle security system cannot be set by	Door switch	Check door switch (LF, RF, LR, RR, back)	DLK-228
		Glass ajar switch	Check glass hatch ajar switch	DLK-231
		Key cylinder switch	Check key cylinder switch	DLK-240
		—	Check Intermittent Incident	GI-37
	Security indicator does not turn ON.		Check vehicle security indicator	SEC-146
		Check Intermittent Incident	GI-37	
2	* Vehicle security system does not sound alarm when	Any door is opened.	Check door switch (LF, RF, LR, RR, back)	DLK-228
		Glass ajar switch	Check glass hatch ajar switch	DLK-231
		—	Check Intermittent Incident	GI-37
3	Vehicle security alarm does not activate.	Horn alarm	Check horn switch	SEC-166
			Check Intermittent Incident	GI-37
4	Vehicle security system cannot be canceled by	Key cylinder switch	Check key cylinder switch	DLK-240
			Check Intermittent Incident	GI-37

*: Check the system is in the armed phase.

NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITHOUT INTELLIGENT KEY SYSTEM]

NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS SYMPTOMS

Symptom Table

INFOID:000000006246351

NOTE:

- Before performing the diagnosis in the following table, check "[SEC-115. "Work Flow"](#)".
- Check that vehicle is under the condition shown in "Conditions of vehicle" before starting diagnosis, and check each symptom.
- If the following symptoms are detected, check systems shown in the "Diagnosis/service procedure" column in this order.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

- Mechanical key is not inserted into key cylinder.
- Ignition knob switch is not depressed.

Symptom	Diagnosis/service procedure	Reference page
Security indicator does not turn ON or flash.	1. Check vehicle security indicator	SEC-146
	2. Check Intermittent Incident	GI-37

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SEC

PRECAUTION

PRECAUTIONS

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

INFOID:000000006246352

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

WARNING:

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

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

NATS ANTENNA AMP.

< REMOVAL AND INSTALLATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

REMOVAL AND INSTALLATION

NATS ANTENNA AMP.

Removal and Installation

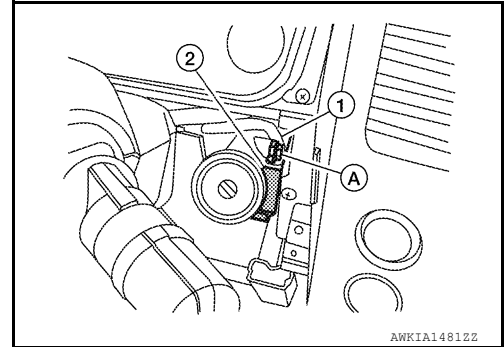
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NOTE:

- If NATS antenna amp. is not installed correctly, NVIS (NATS) system will not operate properly and "SELF-DIAG RESULTS" on CONSULT-III screen will show "LOCK MODE" or "CHAIN OF IMMU-KEY".
- Initialization is not necessary when only the NATS antenna amp. is replaced with a new one.

REMOVAL

1. Disconnect the battery negative terminal. Refer to [PG-76. "Removal and Installation"](#).
2. Remove cluster lid A. Refer to [IP-11. "Exploded View"](#).
3. Remove the bolt (A), disconnect the electrical connector (1) and remove the NATS antenna amp (2).



INSTALLATION

Installation is in the reverse order of removal.

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

SEC

REMOTE KEYLESS ENTRY RECEIVER

< REMOVAL AND INSTALLATION >

[WITHOUT INTELLIGENT KEY SYSTEM]

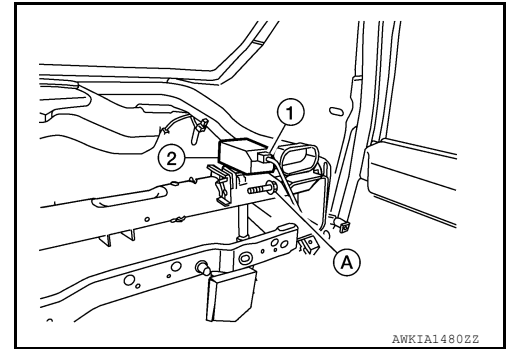
REMOTE KEYLESS ENTRY RECEIVER

Removal and Installation

INFOID:000000006246355

REMOVAL

1. Remove the front pillar upper finisher (RH). Refer to [INT-18. "Component"](#).
2. Remove the side ventilator grille (RH). Refer to [VTL-33. "Removal and Installation"](#).
3. Remove the lower dash side finisher. Refer to [INT-19. "Removal and Installation"](#).
4. Remove the upper glove box. Refer to [IP-11. "Exploded View"](#).
5. Remove the bolt (A), disconnect the harness connector (1) and remove the remote keyless entry receiver (2).



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

- When replacing the remote keyless entry receiver, perform ID registration procedure of low tire pressure warning system. Refer to [WT-6. "ID Registration Procedure"](#).