

SECTION **SEC**

SECURITY CONTROL SYSTEM

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

CONTENTS

| | |
|---|---|
| <p>BASIC INSPECTION 3</p> <p>DIAGNOSIS AND REPAIR WORKFLOW 3</p> <p style="padding-left: 20px;">Work Flow3</p> <p>INSPECTION AND ADJUSTMENT 6</p> <p>ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT6</p> <p style="padding-left: 20px;">ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement6</p> <p>ECM RE-COMMUNICATING FUNCTION6</p> <p style="padding-left: 20px;">ECM RE-COMMUNICATING FUNCTION : Description6</p> <p style="padding-left: 20px;">ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement6</p> <p>FUNCTION DIAGNOSIS 7</p> <p>NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS) 7</p> <p style="padding-left: 20px;">System Diagram7</p> <p style="padding-left: 20px;">System Description7</p> <p style="padding-left: 20px;">Component Parts Location8</p> <p style="padding-left: 20px;">Component Description9</p> <p>VEHICLE SECURITY SYSTEM10</p> <p style="padding-left: 20px;">System Diagram10</p> <p style="padding-left: 20px;">System Description10</p> <p style="padding-left: 20px;">Component Parts Location11</p> <p style="padding-left: 20px;">Component Description11</p> <p>DIAGNOSIS SYSTEM (BCM)13</p> <p>COMMON ITEM13</p> <p style="padding-left: 20px;">COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)13</p> <p>IMMU13</p> <p style="padding-left: 20px;">IMMU : CONSULT-III Function (BCM - IMMU)13</p> <p>THEFT ALM14</p> | <p style="padding-left: 20px;">THEFT ALM : CONSULT-III Function (BCM - THEFT ALM)14</p> <p>COMPONENT DIAGNOSIS16</p> <p>U1000 CAN COMM CIRCUIT16</p> <p style="padding-left: 20px;">Description16</p> <p style="padding-left: 20px;">DTC Logic16</p> <p style="padding-left: 20px;">Diagnosis Procedure16</p> <p>U1010 CONTROL UNIT (CAN)17</p> <p style="padding-left: 20px;">Description17</p> <p style="padding-left: 20px;">DTC Logic17</p> <p style="padding-left: 20px;">Diagnosis Procedure17</p> <p style="padding-left: 20px;">Special Repair Requirement17</p> <p>B2190, P1614 NATS ANTENNA AMP.18</p> <p style="padding-left: 20px;">Description18</p> <p style="padding-left: 20px;">DTC Logic18</p> <p style="padding-left: 20px;">Diagnosis Procedure18</p> <p>B2191, P1615 DIFFERENCE OF KEY21</p> <p style="padding-left: 20px;">Description21</p> <p style="padding-left: 20px;">DTC Logic21</p> <p style="padding-left: 20px;">Diagnosis Procedure21</p> <p>B2192, P1611 ID DISCORD, IMMU-ECM22</p> <p style="padding-left: 20px;">Description22</p> <p style="padding-left: 20px;">DTC Logic22</p> <p style="padding-left: 20px;">Diagnosis Procedure22</p> <p>B2193, P1612 CHAIN OF ECM-IMMU24</p> <p style="padding-left: 20px;">Description24</p> <p style="padding-left: 20px;">DTC Logic24</p> <p style="padding-left: 20px;">Diagnosis Procedure24</p> <p>P1610 LOCK MODE25</p> <p style="padding-left: 20px;">Description25</p> <p style="padding-left: 20px;">DTC Logic25</p> <p style="padding-left: 20px;">Diagnosis Procedure25</p> <p>POWER SUPPLY AND GROUND CIRCUIT26</p> <p style="padding-left: 20px;">Diagnosis Procedure26</p> |
|---|---|

SEC

| | | | |
|--|----|--|----|
| KEY CYLINDER SWITCH | 27 | Physical Values | 62 |
| DRIVER SIDE | 27 | Wiring Diagram | 66 |
| DRIVER SIDE : Description | 27 | Fail Safe | 69 |
| DRIVER SIDE : Component Function Check | 27 | DTC Index | 71 |
| DRIVER SIDE : Diagnosis Procedure | 27 | SYMPTOM DIAGNOSIS | 72 |
| BACK DOOR | 29 | VEHICLE SECURITY SYSTEM SYMPTOMS ... | 72 |
| BACK DOOR : Description | 29 | Symptom Table | 72 |
| BACK DOOR : Component Function Check | 29 | NISSAN VEHICLE IMMOBILIZER SYSTEM- | |
| BACK DOOR : Diagnosis Procedure | 29 | NATS SYMPTOMS | 73 |
| HORN FUNCTION | 32 | Symptom Table | 73 |
| Symptom Table | 32 | ON-VEHICLE MAINTENANCE | 74 |
| VEHICLE SECURITY INDICATOR | 33 | PRE-INSPECTION FOR DIAGNOSTIC | 74 |
| Description | 33 | Basic Inspection | 74 |
| Component Function Check | 33 | PRECAUTION | 75 |
| Diagnosis Procedure | 33 | PRECAUTIONS | 75 |
| ECU DIAGNOSIS | 35 | Supplemental Restraint System (SRS) "AIR BAG" | |
| BCM (BODY CONTROL MODULE) | 35 | and "SEAT BELT PRE-TENSIONER" | 75 |
| Reference Value | 35 | Precaution for Power Generation Variable Voltage | |
| Terminal Layout | 38 | Control System | 75 |
| Physical Values | 39 | ON-VEHICLE REPAIR | 76 |
| Wiring Diagram - VEHICLE SECURITY SYSTEM.. | 44 | NATS ANTENNA AMP. | 76 |
| Wiring Diagram - NVIS - | 54 | Removal and Installation | 76 |
| DTC Inspection Priority Chart | 57 | REMOTE KEYLESS ENTRY RECEIVER | 77 |
| DTC Index | 58 | Removal and Installation | 77 |
| IPDM E/R (INTELLIGENT POWER DISTRI- | | | |
| BUTION MODULE ENGINE ROOM) | 60 | | |
| Reference Value | 60 | | |
| Terminal Layout | 62 | | |

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

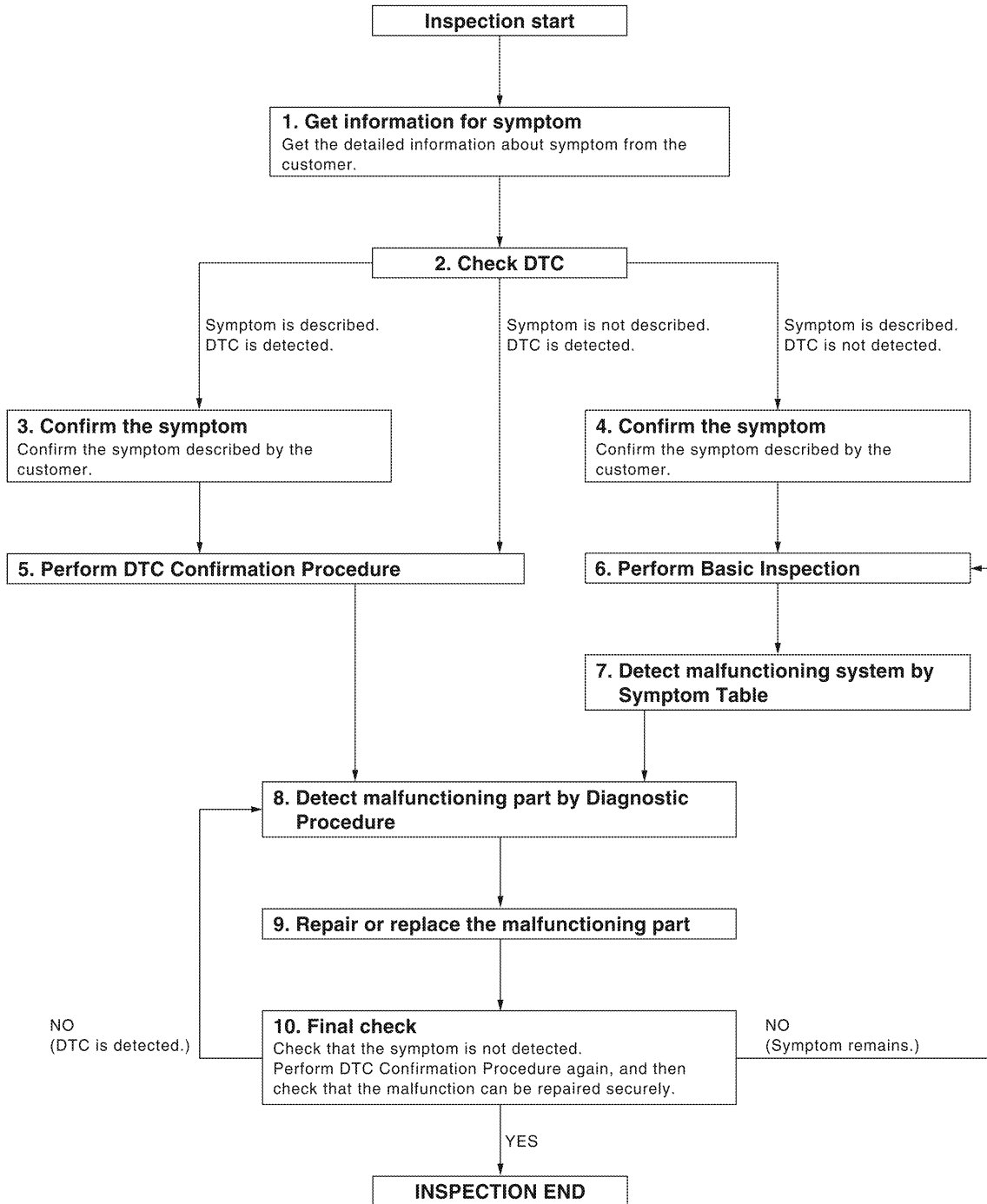
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000004065323

OVERALL SEQUENCE



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

SEC

@KJH 427FA

DETAILED FLOW

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

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 [SEC-57, "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-74, "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 >

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.

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

SEC

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:000000004065324

Refer to the CONSULT-III Operation Manual-NATS.

ECM RE-COMMUNICATING FUNCTION

ECM RE-COMMUNICATING FUNCTION : Description

INFOID:000000004065325

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:000000004065326

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.

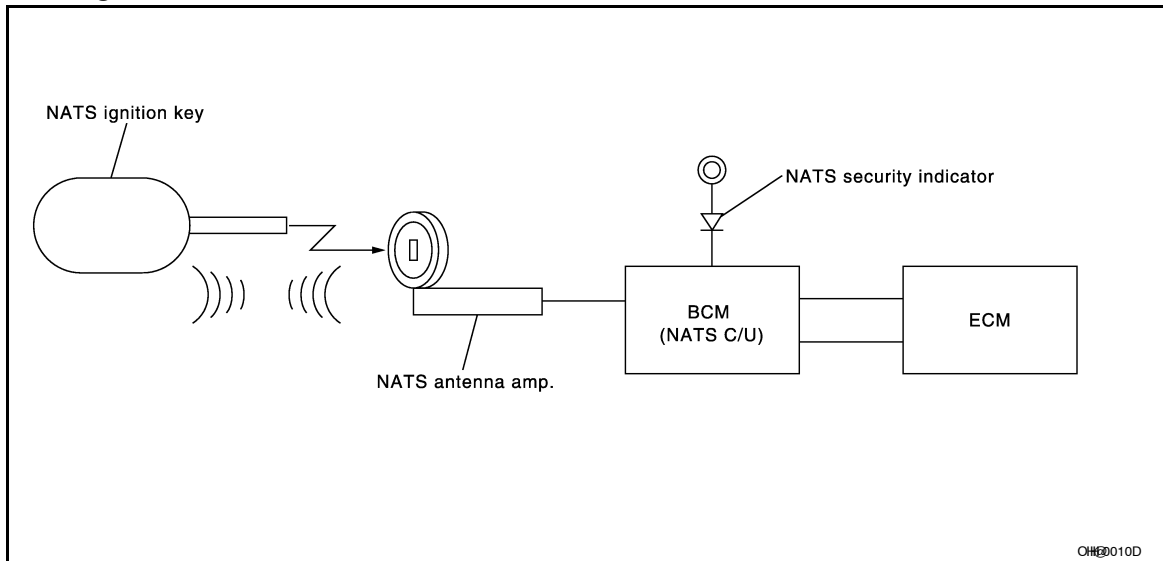
NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

System Diagram



System Description

INFOID:000000004065328

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-10, "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.

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

SEC

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< FUNCTION DIAGNOSIS >

- Possible symptom of NATS malfunction is "Engine cannot start". Identify the possible causes according to "Work Flow", Refer to [SEC-3, "Work Flow"](#).
- If ECM other than Genuine NISSAN is installed, the engine cannot be started. For ECM replacement procedure, refer to [SEC-6, "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

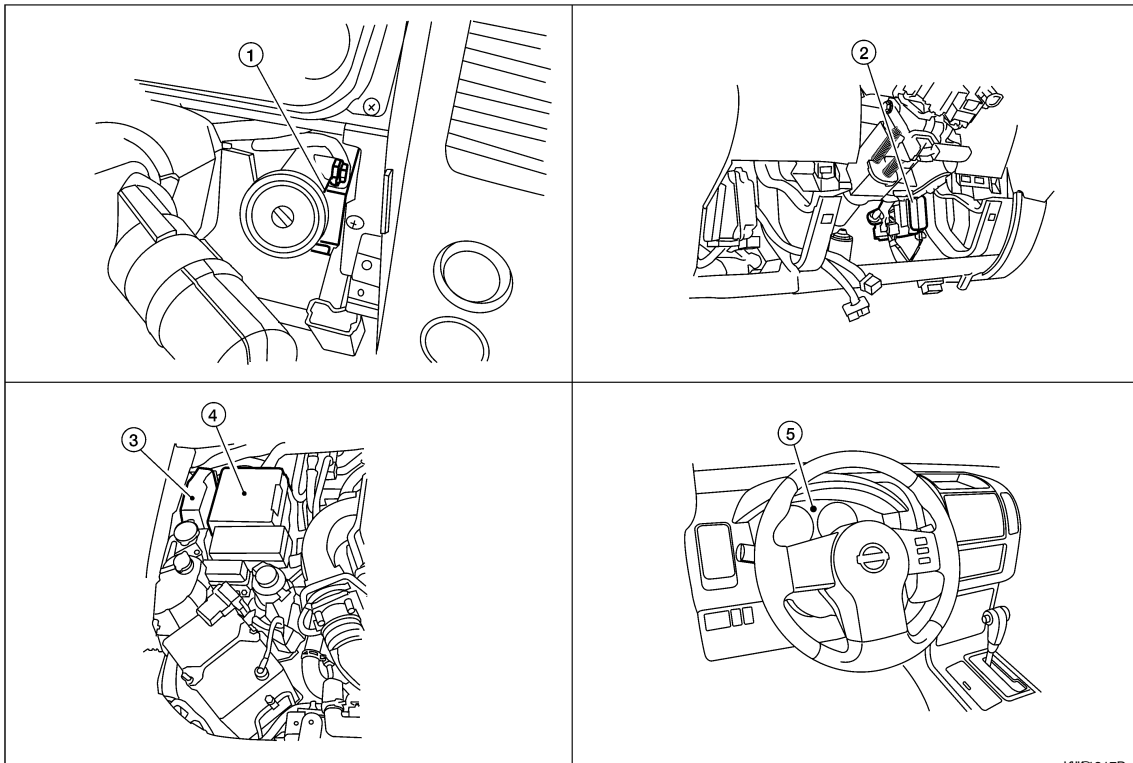
CAUTION:

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:000000004065329



14N0317D

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

< FUNCTION DIAGNOSIS >

- | | | |
|---|--|------------|
| 1. NATS antenna amp. M21 (view with cluster lid A removed) | 2. BCM M18, M20 (view with lower instrument panel LH removed) | 3. ECM E16 |
| 4. IPDM E/R E121 | 5. Combination meter M24 | |

A

B

Component Description

INFOID:000000004065330

| 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 device (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. |

C

D

E

F

G

H

I

J

SEC

L

M

N

O

P

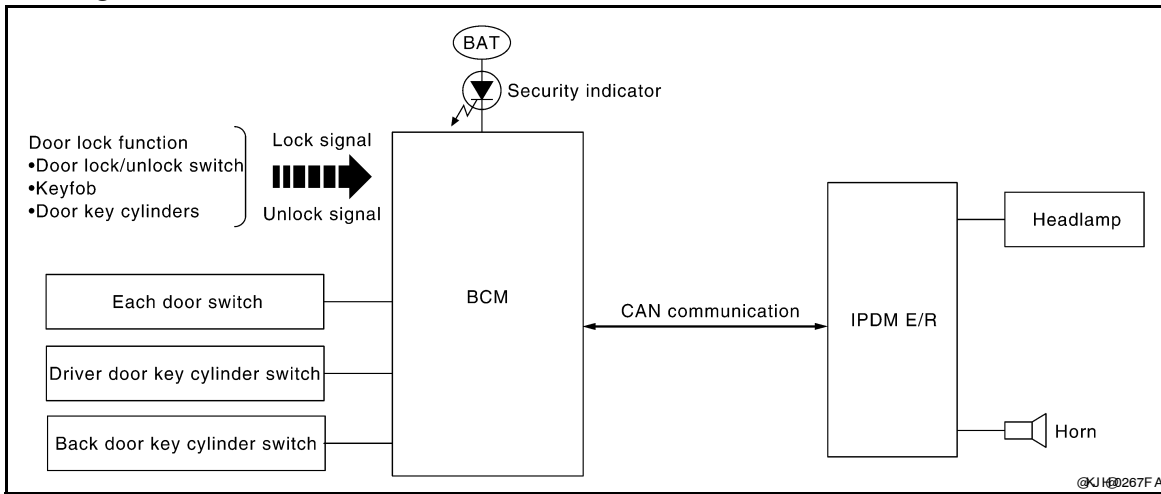
VEHICLE SECURITY SYSTEM

< FUNCTION DIAGNOSIS >

VEHICLE SECURITY SYSTEM

System Diagram

INFOID:000000004065331



System Description

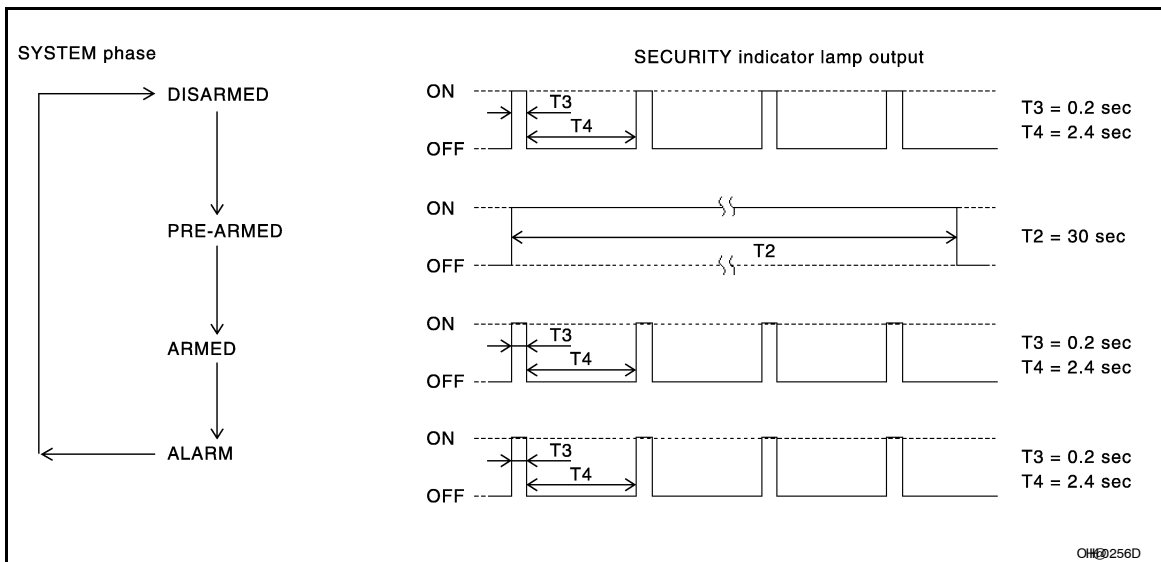
INFOID:000000004065332

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 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 30 seconds.

- Any door is opened.

VEHICLE SECURITY SYSTEM

< FUNCTION DIAGNOSIS >

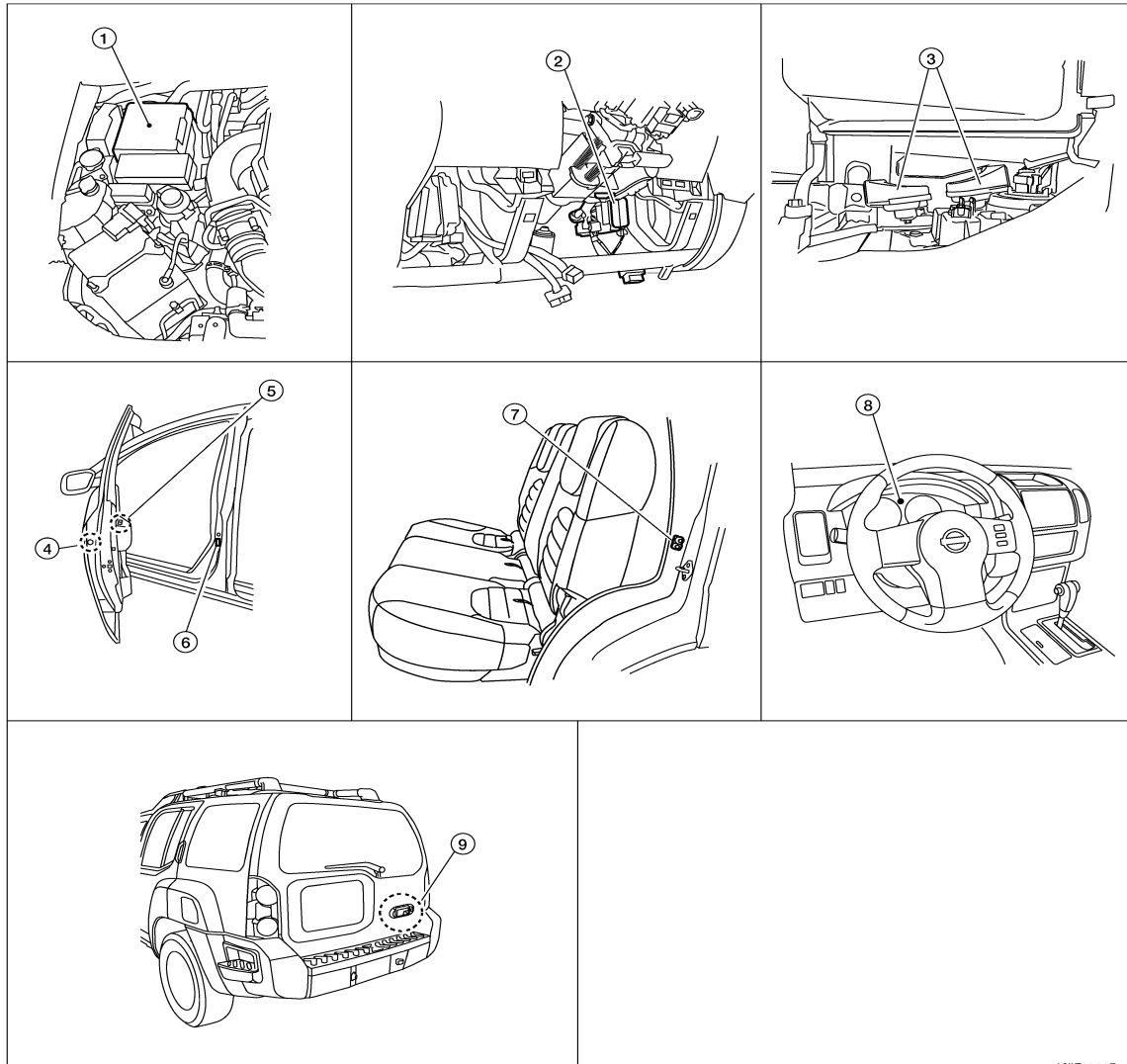
Condition of Deactivating The System

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:000000004065333



- | | | |
|--|---|---|
| 1. IPDM E/R E122, E123, E124 | 2. BCM M18, M19, M20 (view with lower instrument panel LH removed) | 3. Horns E3, E162 (with single note horn) E6 (with dual note horn) (behind front combination lamp LH) |
| 4. Front door lock assembly LH (key cylinder switch) D14 | 5. Main power window and door lock/unlock switch D7 Power window and door lock/unlock switch RH D105 | 6. Front door switch LH B8 RH B108 |
| 7. Rear door switch LH B18 RH B116 | 8. Combination meter M24 | 9. Back door switch D502 Back door key cylinder switch D505 |

Component Description

INFOID:000000004065334

| 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. |

VEHICLE SECURITY SYSTEM

< FUNCTION DIAGNOSIS >

| Item | Function |
|---------------------------------|--|
| 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. |
| Driver door key cylinder switch | Capable of locking all doors and setting the alarm, unlocking all doors and resetting the alarm. |
| Back door key cylinder switch | Capable of locking all doors and setting the alarm, unlocking all doors and resetting the alarm. |

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:000000004458391

APPLICATION ITEM

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

| Diagnosis mode | Function Description |
|-----------------------|---|
| WORK SUPPORT | Changes the setting for each system function. |
| SELF-DIAG RESULTS | Displays the diagnosis results judged by BCM. Refer to BCS-53, "DTC Index" . |
| CAN DIAG SUPPORT MNTR | Monitors the reception status of CAN communication viewed from BCM. |
| DATA MONITOR | The BCM input/output signals are displayed. |
| ACTIVE TEST | The signals used to activate each device are forcibly supplied from BCM. |
| ECU IDENTIFICATION | The BCM part number is displayed. |
| CONFIGURATION | <ul style="list-style-type: none"> Enables to read and save the vehicle specification. Enables to write the vehicle specification when replacing BCM. |

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

| System | Sub system selection item | Diagnosis mode | | |
|--|---------------------------|----------------|--------------|-------------|
| | | WORK SUPPORT | DATA MONITOR | ACTIVE TEST |
| BCM | BCM | × | | |
| Door lock | DOOR LOCK | × | × | × |
| Rear window defogger | REAR DEFOGGER | | × | |
| Warning chime | BUZZER | | × | × |
| Interior room lamp timer | INT LAMP | × | × | × |
| Remote keyless entry system | MULTI REMOTE ENT | × | × | × |
| Exterior lamp | HEAD LAMP | × | × | × |
| Wiper and washer | WIPER | × | × | × |
| Turn signal and hazard warning lamps | FLASHER | | × | × |
| Air conditioner | AIR CONDITONER | | × | |
| Combination switch | COMB SW | | × | |
| Immobilizer | IMMU | | × | × |
| Interior room lamp battery saver | BATTERY SAVER | × | × | × |
| Back door open | TRUNK | | × | × |
| Vehicle security system | THEFT ALM | × | × | × |
| RAP (retained accessory power) | RETAINED PWR | × | × | × |
| Signal buffer system | SIGNAL BUFFER | | × | × |
| TPMS (tire pressure monitoring system) | AIR PRESSURE MONITOR | × | × | × |
| Panic alarm system | PANIC ALARM | | | × |

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:000000004458392

DATA MONITOR

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

| Monitor Item [Unit] | Description |
|------------------------|--|
| IGN ON SW [ON/OFF] | Indicates condition of ignition switch in ON position. |

ACTIVE TEST

| Test Item | Description |
|-----------|---|
| THEFT IND | This test is able to check security indicator operation [ON/OFF]. |

THEFT ALM

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

INFOID:000000004458393

WORK SUPPORT

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

DATA MONITOR

| Monitor Item [Unit] | Description |
|-------------------------|--|
| IGN ON SW [ON/OFF] | Indicates ignition switch (ON) status judged from IGN signal (ignition power supply) |
| ACC ON SW [ON/OFF] | Indicates ignition switch (ACC) status judged from ACC signal (accessory power supply) |
| KEYLESS LOCK [ON/OFF] | Indicates lock signal status recieved from remote keyless entry reciever (integrated in the BCM) |
| KEYLESS UNLOCK [ON/OFF] | Indicates unlock signal status recieved from remote keyless entry reciever (integrated in the BCM) |
| KEYLESS TRUNK [ON/OFF] | NOTE: This is displayed even when it is not equipped |
| KEYLESS PSD R [ON/OFF] | NOTE: This is displayed even when it is not equipped |
| KEYLESS PSD L [ON/OFF] | NOTE: This is displayed even when it is not equipped |
| KEYLESS PBD [ON/OFF] | NOTE: This is displayed even when it is not equipped |
| TRNK OPNR SW [ON/OFF] | NOTE: This is displayed even when it is not equipped |
| TRUNK CYL SW [ON/OFF] | NOTE: This is displayed even when it is not equipped |
| TRNK OPN MNTR [ON/OFF] | NOTE: This is displayed even when it is not equipped |
| DOOR SW-DR [ON/OFF] | Indicates switch status input from front door switch LH |
| DOOR SW-AS [ON/OFF] | Indicates switch status input from front door switch RH |
| DOOR SW-RR [ON/OFF] | Indicates switch status input from rear door switch RH |
| DOOR SW-RL [ON/OFF] | Indicates switch status input from rear door switch LH |
| BACK DOOR SW [ON/OFF] | Indicates switch status input from back door switch |
| KEY CYL LK-SW [ON/OFF] | Indicates lock switch status from door key cylinder switch |
| KEY CYL UN-SW [ON/OFF] | Indicates unlock switch status from door key cylinder switch |
| CDL LOCK SW [ON/OFF] | Indicates lock switch status from door lock and unlock switch |

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

| Monitor Item [Unit] | Description |
|------------------------|---|
| CDL UNLOCK SW [ON/OFF] | Indicates unlock switch status from door lock and unlock switch |
| HOOD SW [ON/OFF] | NOTE: This is displayed even when it is not equipped |

ACTIVE TEST

| Test Item | Description |
|-----------------------|--|
| THEFT IND | This test is able to check security indicator lamp operation. The lamp will be turned on when "ON" on CONSULT-III screen is touched. |
| VEHICLE SECURITY HORN | This test is able to check vehicle security horn operation. The horns will be activated for 0.5 seconds after "ON" on CONSULT-III screen is touched. |
| HEAD LAMP(HI) | This test is able to check vehicle security lamp operation. The headlamps will be activated for 0.5 seconds after "ON" on CONSULT-III screen is touched. |

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

SEC

U1000 CAN COMM CIRCUIT

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:000000004065338

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-46, "CAN Communication Signal Chart"](#)

DTC Logic

INFOID:000000004065339

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) |

Diagnosis Procedure

INFOID:000000004065340

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)

< COMPONENT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

Description

INFOID:000000004065341

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-46, "CAN Communication Signal Chart"](#).

DTC Logic

INFOID:000000004065342

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:000000004065343

1.REPLACE BCM

When DTC [U1010] is detected, replace BCM.

>> Replace BCM. Refer to [BCS-57, "Removal and Installation"](#).

Special Repair Requirement

INFOID:000000004065344

1.REQUIRED WORK WHEN REPLACING BCM

Initialize BCM. Refer to CONSULT-III Operation Manual.

>> Work End.

A
B
C
D
E
F
G
H
I
J

SEC

B2190, P1614 NATS ANTENNA AMP.

< COMPONENT DIAGNOSIS >

B2190, P1614 NATS ANTENNA AMP.

Description

INFOID:000000004065345

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:000000004065346

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-18, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000004065347

1. CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to [SEC-76, "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.

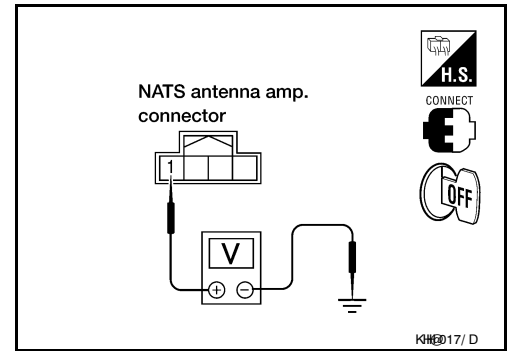
B2190, P1614 NATS ANTENNA AMP.

< COMPONENT DIAGNOSIS >

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

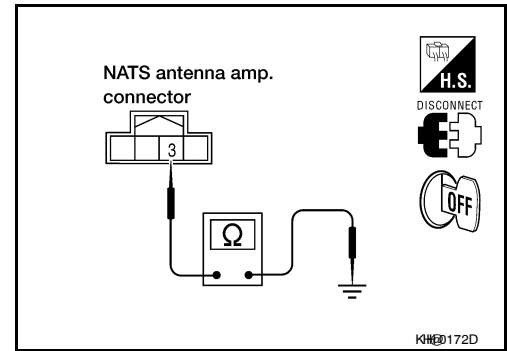
1. Turn ignition switch OFF.
2. Disconnect NATS antenna amp. connector.
3. Check continuity between NATS antenna amp. connector M21 terminal 3 and ground.

3 - Ground : Continuity should exist.

Is the inspection result normal?

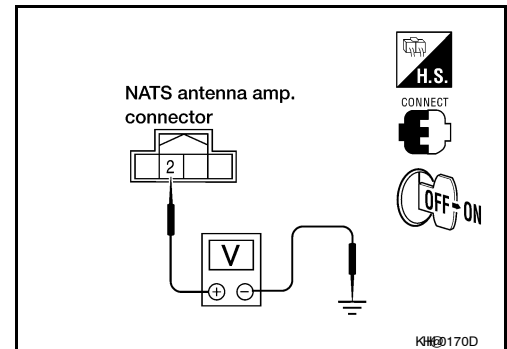
- YES >> GO TO 5
- NO >> • Repair or replace harness.

NOTE:
If harness is OK, replace BCM, refer to [BCS-57, "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-57, "Removal and Installation"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual".

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

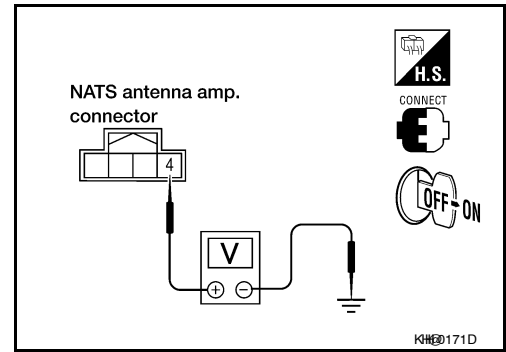
SEC

B2190, P1614 NATS ANTENNA AMP.

< COMPONENT DIAGNOSIS >

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-57. "Removal and Installation"](#). Perform initialization with CONSULT-III. For initialization, refer to "CONSULT-III Operation Manual".

B2191, P1615 DIFFERENCE OF KEY

< COMPONENT DIAGNOSIS >

B2191, P1615 DIFFERENCE OF KEY

Description

INFOID:000000004065348

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:000000004065349

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-21, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000004065350

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-57, "Removal and Installation"](#).
 - Perform initialization again.

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

SEC

B2192, P1611 ID DISCORD, IMMUECM

< COMPONENT DIAGNOSIS >

B2192, P1611 ID DISCORD, IMMUECM

Description

INFOID:000000004065351

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:000000004065352

DTC DETECTION LOGIC

NOTE:

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-16, "DTC Logic"](#).
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-17, "DTC Logic"](#).

| DTC No. | Trouble diagnosis name | DTC detecting condition | Possible cause |
|----------------|------------------------|--|---|
| B2192 P1611 | ID DISCORD BCM-ECM | The ID verification results between BCM and ECM are NG. The registration is necessary. | <ul style="list-style-type: none">• BCM• ECM |

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-22, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000004065353

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. PEPLACE BCM

1. Replace BCM. Refer to [BCS-57, "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. PEPLACE 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"](#).

B2192, P1611 ID DISCORD, IMMUECM

< COMPONENT DIAGNOSIS >

>> Inspection End.

A

B

C

D

E

F

G

H

I

J

SEC

L

M

N

O

P

B2193, P1612 CHAIN OF ECM-IMMU

< COMPONENT DIAGNOSIS >

B2193, P1612 CHAIN OF ECM-IMMU

Description

INFOID:000000004065354

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:000000004065355

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to [SEC-16, "DTC Logic"](#).
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to [SEC-17, "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-24, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000004065356

1. REPLACE BCM

1. Replace BCM. Refer to [BCS-57, "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.

P1610 LOCK MODE

< COMPONENT DIAGNOSIS >

P1610 LOCK MODE

Description

INFOID:000000004065357

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:000000004065358

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-25, "Diagnosis Procedure"](#).
NO >> Inspection End.

Diagnosis Procedure

INFOID:000000004065359

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.

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

SEC

POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:000000004458395

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 | 18 (10A) |
| 70 | | G (50A) |
| 11 | Ignition ACC or ON | 4 (10A) |
| 38 | Ignition ON or START | 1 (10A) |

Is the fuse blown?

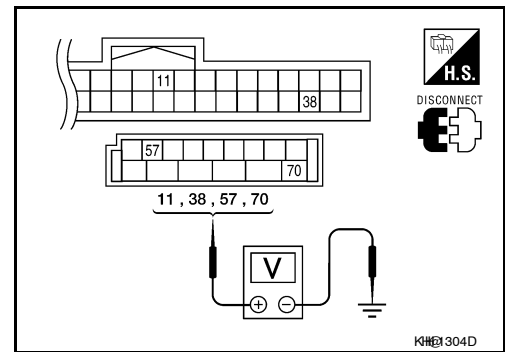
YES >> Replace the blown fuse or fusible link after repairing the affected circuit.

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

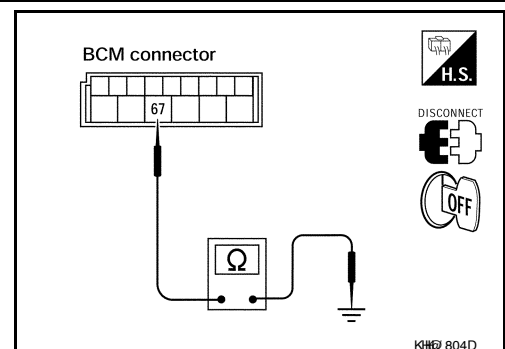
Check continuity between BCM harness connector and ground.

| BCM | | Ground | Continuity |
|-----------|----------|--------|------------|
| Connector | Terminal | | |
| M20 | 67 | | Yes |

Does continuity exist?

YES >> Inspection End.

NO >> Repair or replace harness.



KEY CYLINDER SWITCH

< COMPONENT DIAGNOSIS >

KEY CYLINDER SWITCH

DRIVER SIDE

DRIVER SIDE : Description

INFOID:000000004065361

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.

DRIVER SIDE : Component Function Check

INFOID:000000004065362

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-27. "DRIVER SIDE : Diagnosis Procedure"](#).

DRIVER SIDE : Diagnosis Procedure

INFOID:000000004065363

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 in CONSULT-III. Refer to [DLK-17. "DOOR LOCK : CONSULT-III Function \(BCM - DOOR LOCK\)"](#).

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

KEY CYL LK-SW : ON

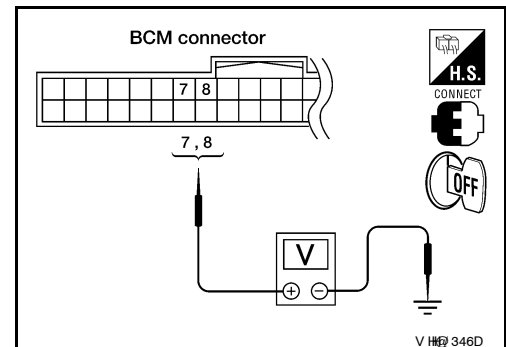
- When key inserted in front key cylinder is turned to UNLOCK:

KEY CYL UN-SW : ON

ⓧ Without CONSULT-III

Check voltage between BCM connector M18 terminals 7, 8 and ground.

| Connector | Terminals | | Condition | Voltage (V) (Approx.) |
|-----------|-----------|--------|----------------|--------------------------|
| | (+) | (-) | | |
| M18 | 7 | Ground | Neutral/Lock | 5 |
| | | | Unlock | 0 |
| | 8 | | Neutral/Unlock | 5 |
| | | | Lock | 0 |



Is the inspection result normal?

YES >> Front door lock assembly LH (key cylinder switch) signal is OK.

NO >> GO TO 2

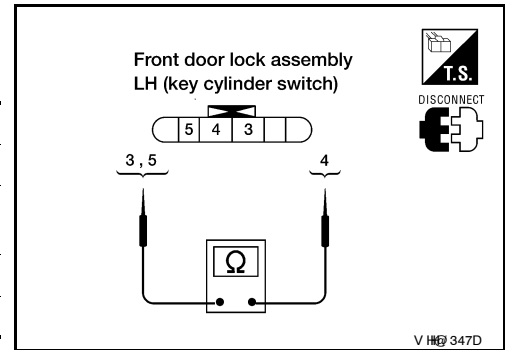
KEY CYLINDER SWITCH

< COMPONENT DIAGNOSIS >

2. CHECK FRONT DOOR LOCK ASSEMBLY LH (KEY CYLINDER SWITCH)

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 terminals 3, 4 and 5.

| Terminals | Condition | Continuity |
|-----------|--|------------|
| 4 - 5 | Key is turned to LOCK. | Yes |
| | Key is in N position or turned to UNLOCK | No |
| 3 - 4 | Key is turned to UNLOCK. | Yes |
| | Key is in N position or turned to LOCK | No |



Is the inspection result normal?

YES >> GO TO 3

NO >> Replace front door lock assembly LH (key cylinder switch). Refer to [DLK-110. "Removal and Installation"](#).

3. CHECK FRONT DOOR LOCK ASSEMBLY LH HARNESS

1. Disconnect BCM.
2. Check continuity between BCM connector M18 terminals 7, 8 and front door lock assembly LH connector D14 terminals 3, 5.

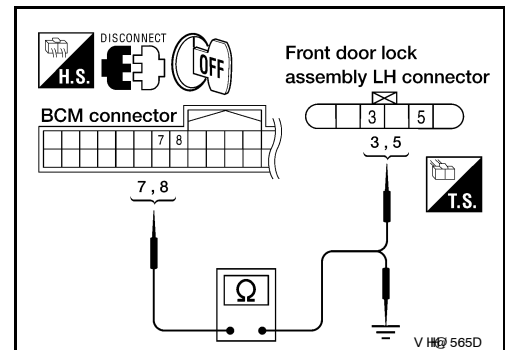
7 - 3 : Continuity should exist.

8 - 5 : Continuity should exist.

3. Check continuity between BCM connector M18 terminals 7, 8 and ground.

7 - Ground : Continuity should not exist.

8 - Ground : Continuity should not exist.



Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

4. CHECK FRONT DOOR LOCK ASSEMBLY LH GROUND

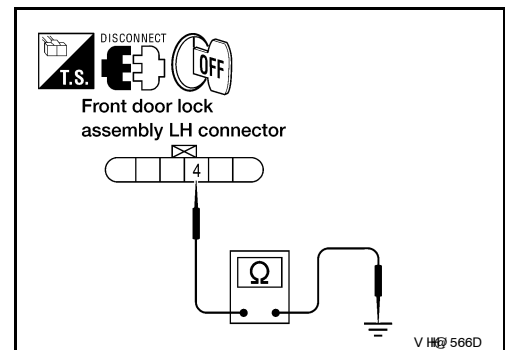
Check continuity between front door lock assembly LH connector D14 terminal 4 and ground.

4 - Ground : Continuity should exist.

Is the inspection result normal?

YES >> GO TO 5

NO >> Repair or replace harness.



5. CHECK BCM OUTPUT VOLTAGE

1. Connect BCM.

KEY CYLINDER SWITCH

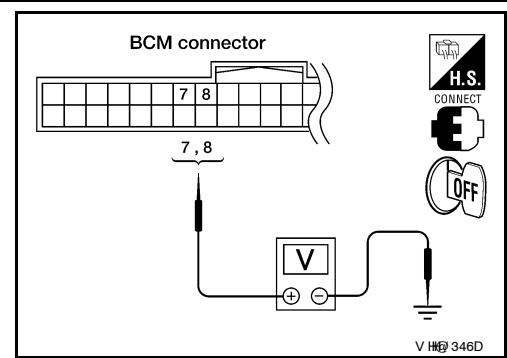
< COMPONENT DIAGNOSIS >

- Check voltage between BCM connector M18 terminals 7, 8 and ground.

7 - Ground : Approx. 5V
8 - Ground : Approx. 5V

Is the inspection result normal?

- YES >> Check condition of the harness and connector.
 NO >> Replace BCM. Refer to [BCS-57, "Removal and Installation"](#).



BACK DOOR

BACK DOOR : Description

INFOID:000000004065364

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.

BACK DOOR : Component Function Check

INFOID:000000004065365

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-29, "BACK DOOR : Diagnosis Procedure"](#).

BACK DOOR : Diagnosis Procedure

INFOID:000000004065366

1. CHECK BACK DOOR KEY CYLINDER SWITCH

Ⓜ With CONSULT-III

Check back door key cylinder switch ("KEY CYL LK-SW") and ("KEY CYL UN-SW) in DATA MONITOR mode in CONSULT-III. Refer to [DLK-17, "DOOR LOCK : CONSULT-III Function \(BCM - DOOR LOCK\)"](#).

- When key inserted in back door key cylinder is turned to LOCK:

KEY CYL LK-SW : ON

- When key inserted in back door key cylinder is turned to UNLOCK:

KEY CYL UN-SW : ON

ⓧ Without CONSULT-III

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

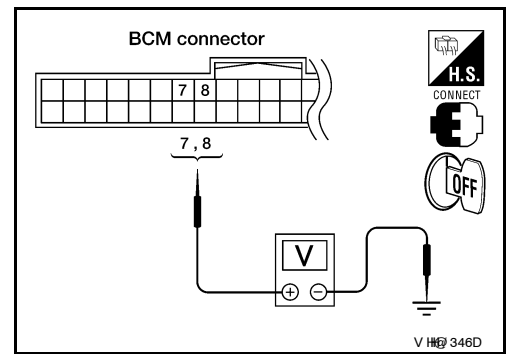
SEC

KEY CYLINDER SWITCH

< COMPONENT DIAGNOSIS >

Check voltage between BCM connector M18 terminals 7, 8 and ground.

| Connector | Terminals | | Condition | Voltage (V) (Approx.) |
|-----------|-----------|--------|----------------|--------------------------|
| | (+) | (-) | | |
| M18 | 7 | Ground | Neutral/Lock | 5 |
| | | | Unlock | 0 |
| | 8 | | Neutral/Unlock | 5 |
| | | | Lock | 0 |



Is the inspection result normal?

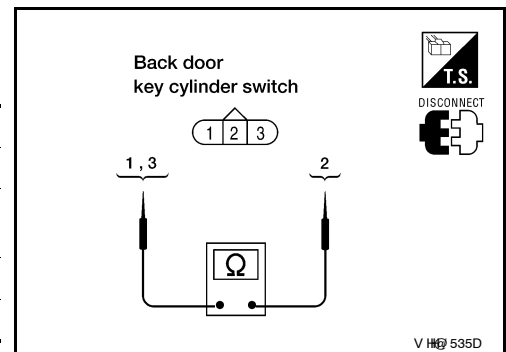
YES >> Back door key cylinder switch signal is OK.

NO >> GO TO 2

2. CHECK BACK DOOR KEY CYLINDER SWITCH

1. Turn ignition switch OFF.
2. Disconnect back door key cylinder switch.
3. Check continuity between back door key cylinder switch terminals 1, 2 and 3.

| Terminals | Condition | Continuity |
|-----------|--|------------|
| 1 - 2 | Key is turned to LOCK. | Yes |
| | Key is in N position or turned to UNLOCK | No |
| 3 - 2 | Key is turned to UNLOCK. | Yes |
| | Key is in N position or turned to LOCK | No |



Is the inspection result normal?

YES >> GO TO 3

NO >> Replace back door key cylinder switch.

3. CHECK BACK DOOR KEY CYLINDER SWITCH HARNESS

1. Disconnect BCM.
2. Check continuity between BCM connector M18 terminals 7, 8 and back door key cylinder switch connector D505 terminals 3, 1.

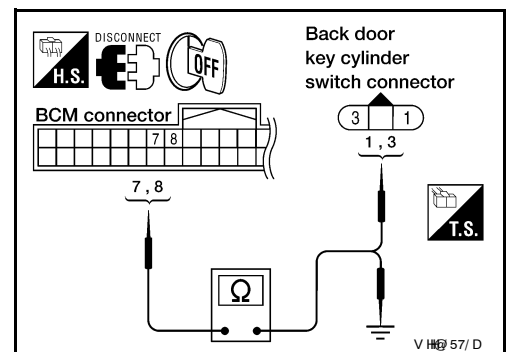
7 - 3 : Continuity should exist.

8 - 1 : Continuity should exist.

3. Check continuity between BCM connector M18 terminals 7, 8 and ground.

7 - Ground : Continuity should not exist.

8 - Ground : Continuity should not exist.



Is the inspection result normal?

YES >> GO TO 4

NO >> Repair or replace harness.

4. CHECK BACK DOOR KEY CYLINDER SWITCH GROUND

KEY CYLINDER SWITCH

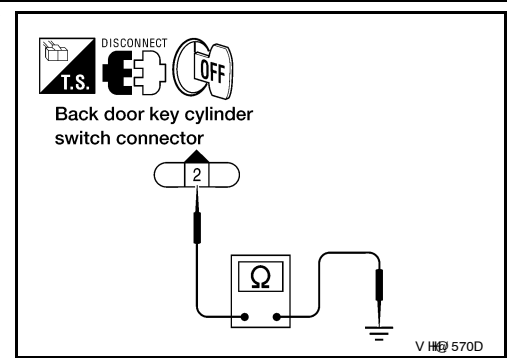
< COMPONENT DIAGNOSIS >

Check continuity between back door key cylinder switch connector D505 terminal 2 and ground.

2 - Ground : Continuity should exist.

Is the inspection result normal?

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



5. CHECK BCM OUTPUT VOLTAGE

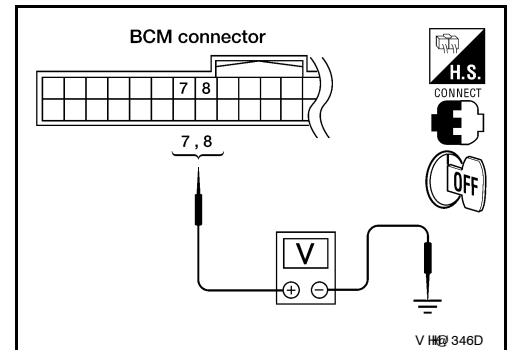
1. Connect BCM.
2. Check voltage between BCM connector M18 terminals 7, 8 and ground.

7 - Ground : Approx. 5V

8 - Ground : Approx. 5V

Is the inspection result normal?

- YES >> Check condition of the harness and connector.
- NO >> Replace BCM. Refer to [BCS-57, "Removal and Installation"](#).



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

SEC

HORN FUNCTION

< COMPONENT DIAGNOSIS >

HORN FUNCTION

Symptom Table

INFOID:000000004065367

HAZARD AND HORN REMINDER FUNCTION MALFUNCTION

NOTE:

- Before performing the diagnosis in the following table, check “Work flow”. Refer to [SEC-3, "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”. | DLK-18 |
| | 2. Check hazard function. | EXL-4 |
| | 3. Check key fob battery inspection. | DLK-45 |
| Horn reminder does not operate by key fob. (Hazard reminder operate.) | 1. Check “HORN WITH KEYLESS LOCK” setting in “WORK SUPPORT”. | DLK-18 |
| | 2. Check horn function. | HRN-3 |
| | 3. Check Intermittent Incident. | GI-37 |

VEHICLE SECURITY INDICATOR

< COMPONENT DIAGNOSIS >

VEHICLE SECURITY INDICATOR

Description

INFOID:000000004065368

- 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:000000004065369

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-33, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000004065370

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. 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

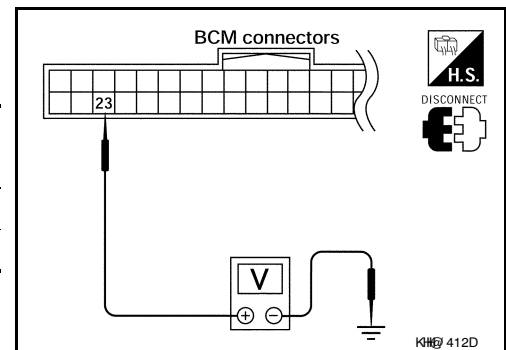
Check security indicator lamp condition.

Is the inspection result normal?

- YES >> GO TO 3
NO >> Replace security indicator lamp.

3. CHECK HARNESS CONTINUITY

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



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

SEC

VEHICLE SECURITY INDICATOR

< COMPONENT DIAGNOSIS >

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

23 - 39 : Continuity should exist.

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

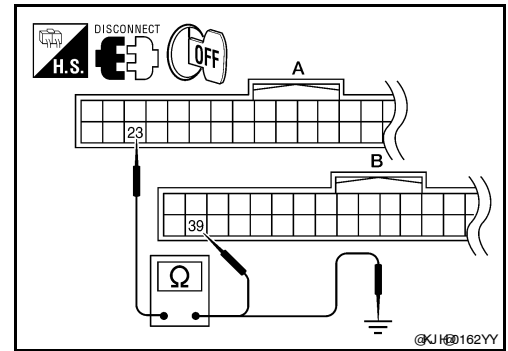
23 - Ground : Continuity should not exist.

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 >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000004458396

VALUES ON THE DIAGNOSIS TOOL

| Monitor Item | Condition | Value/Status |
|----------------|---|--------------|
| IGN ON SW | Ignition switch OFF or ACC | OFF |
| | Ignition switch ON | ON |
| KEY ON SW | Mechanical key is removed from key cylinder | OFF |
| | Mechanical key is inserted to key cylinder | 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-DR | Driver's door closed | OFF |
| | Driver's door opened | ON |
| DOOR SW-AS | Passenger door closed | OFF |
| | Passenger door opened | ON |
| DOOR SW-RR | Rear RH door closed | OFF |
| | Rear RH door opened | ON |
| DOOR SW-RL | Rear LH door closed | OFF |
| | Rear LH door opened | ON |
| BACK DOOR SW | Back door closed | OFF |
| | Back door opened | ON |
| KEY CYL LK-SW | Other than driver door key cylinder LOCK position | OFF |
| | Driver door key cylinder LOCK position | ON |
| KEY CYL UN-SW | Other than driver door key cylinder UNLOCK position | OFF |
| | Driver door key cylinder UNLOCK position | ON |
| KEYLESS LOCK | "LOCK" button of key fob is not pressed | OFF |
| | "LOCK" button of key fob is pressed | ON |
| KEYLESS UNLOCK | "UNLOCK" button of key fob is not pressed | OFF |
| | "UNLOCK" button of key fob is pressed | ON |
| ACC ON SW | Ignition switch OFF | OFF |
| | Ignition switch ACC or ON | ON |
| REAR DEF SW | Rear window defogger switch OFF | OFF |
| | Rear window defogger switch ON | ON |
| LIGHT SW 1ST | Lighting switch OFF | OFF |
| | Lighting switch 1ST | ON |
| BUCKLE SW | The seat belt (driver side) is unfastened. [Seat belt switch (driver side) OFF] | OFF |
| | The seat belt (driver side) is fastened. [Seat belt switch (driver side) ON] | ON |
| KEYLESS PANIC | PANIC button of key fob is not pressed | OFF |
| | PANIC button of key fob is pressed | ON |

A

B

C

D

E

F

G

H

I

J

SEC

L

M

N

O

P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Monitor Item | Condition | Value/Status |
|----------------|--|-----------------------------------|
| KEYLESS TRUNK | NOTE: The item is indicated, but not monitored. | OFF |
| TRNK OPN MNTR | NOTE: The item is indicated, but not monitored. | OFF |
| RKE LCK-UNLCK | LOCK/UNLOCK button of key fob is not pressed and held simultaneously | OFF |
| | LOCK/UNLOCK button of key fob is pressed and held simultaneously | ON |
| RKE KEEP UNLK | UNLOCK button of key fob is not pressed | OFF |
| | UNLOCK button of key fob is pressed and held | ON |
| HI BEAM SW | Lighting switch OFF | OFF |
| | Lighting switch HI | ON |
| HEAD LAMP SW 1 | Lighting switch OFF | OFF |
| | Lighting switch 2ND | ON |
| HEAD LAMP SW 2 | Lighting switch OFF | OFF |
| | Lighting switch 2ND | ON |
| AUTO LIGHT SW | NOTE: The item is indicated, but not monitored. | OFF |
| PASSING SW | Other than lighting switch PASS | OFF |
| | Lighting switch PASS | ON |
| FR FOG SW | Front fog lamp switch OFF | OFF |
| | Front fog lamp switch ON | ON |
| RR FOG SW | NOTE: The item is indicated, but not monitored. | OFF |
| TURN SIGNAL R | Turn signal switch OFF | OFF |
| | Turn signal switch RH | ON |
| TURN SIGNAL L | Turn signal switch OFF | OFF |
| | Turn signal switch LH | ON |
| CARGO LAMP SW | Cargo lamp switch OFF | OFF |
| | Cargo lamp switch ON | ON |
| OPTICAL SENSOR | NOTE: The item is indicated, but not monitored. | OFF |
| IGN SW CAN | Ignition switch OFF or ACC | OFF |
| | Ignition switch ON | ON |
| FR WIPER HI | Front wiper switch OFF | OFF |
| | Front wiper switch HI | ON |
| FR WIPER LOW | Front wiper switch OFF | OFF |
| | Front wiper switch LO | ON |
| FR WIPER INT | Front wiper switch OFF | OFF |
| | Front wiper switch INT | ON |
| FR WASHER SW | Front washer switch OFF | OFF |
| | Front washer switch ON | ON |
| INT VOLUME | Wiper intermittent dial is in a dial position 1 - 7 | 1 - 7 |
| FR WIPER STOP | Any position other than front wiper stop position | OFF |
| | Front wiper stop position | ON |
| VEHICLE SPEED | While driving | Equivalent to speedometer reading |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Monitor Item | Condition | Value/Status | |
|---------------|---|-------------------------------|-----|
| RR WIPER ON | Rear wiper switch OFF | OFF | A |
| | Rear wiper switch ON | ON | |
| RR WIPER INT | Rear wiper switch OFF | OFF | B |
| | Rear wiper switch INT | ON | |
| RR WASHER SW | Rear washer switch OFF | OFF | C |
| | Rear washer switch ON | ON | |
| RR WIPER STOP | Any position other than rear wiper stop position | OFF | |
| | Rear wiper stop position | ON | D |
| H/L WASH SW | NOTE: The item is indicated, but not monitored. | OFF | |
| HAZARD SW | Hazard switch OFF | OFF | E |
| | Hazard switch ON | ON | |
| BRAKE SW | Brake pedal is not depressed | OFF | |
| | Brake pedal is depressed | ON | F |
| FAN ON SIG | Blower fan motor switch OFF | OFF | |
| | Blower fan motor switch ON (other than OFF) | ON | G |
| AIR COND SW | Compressor ON is not requested from auto amp. (A/C indicator OFF, blower fan motor switch OFF or etc.) | OFF | |
| | Compressor ON is requested from auto amp. (A/C indicator ON and blower fan motor switch ON). | ON | H |
| TRNK OPNR SW | NOTE: The item is indicated, but not monitored. | OFF | |
| TRUNK CYL SW | NOTE: The item is indicated, but not monitored. | OFF | I |
| HOOD SW | NOTE: The item is indicated, but not monitored. | OFF | J |
| OIL PRESS SW | • Ignition switch OFF or ACC • Engine running | OFF | |
| | Ignition switch ON | ON | SEC |
| AIR PRESS FL | Ignition switch ON (Only when the signal from the transmitter is received) | Air pressure of front LH tire | L |
| AIR PRESS FR | Ignition switch ON (Only when the signal from the transmitter is received) | Air pressure of front RH tire | |
| AIR PRESS RR | Ignition switch ON (Only when the signal from the transmitter is received) | Air pressure of rear RH tire | M |
| AIR PRESS RL | Ignition switch ON (Only when the signal from the transmitter is received) | Air pressure of rear LH tire | |
| ID REGST FL1 | ID of front LH tire transmitter is registered | DONE | N |
| | ID of front LH tire transmitter is not registered | YET | |
| ID REGST FR1 | ID of front RH tire transmitter is registered | DONE | O |
| | ID of front RH tire transmitter is not registered | YET | |
| ID REGST RR1 | ID of rear RH tire transmitter is registered | DONE | |
| | ID of rear RH tire transmitter is not registered | YET | P |
| ID REGST RL1 | ID of rear LH tire transmitter is registered | DONE | |
| | ID of rear LH tire transmitter is not registered | YET | |
| WARNING LAMP | Tire pressure indicator OFF | OFF | |
| | Tire pressure indicator ON | ON | |

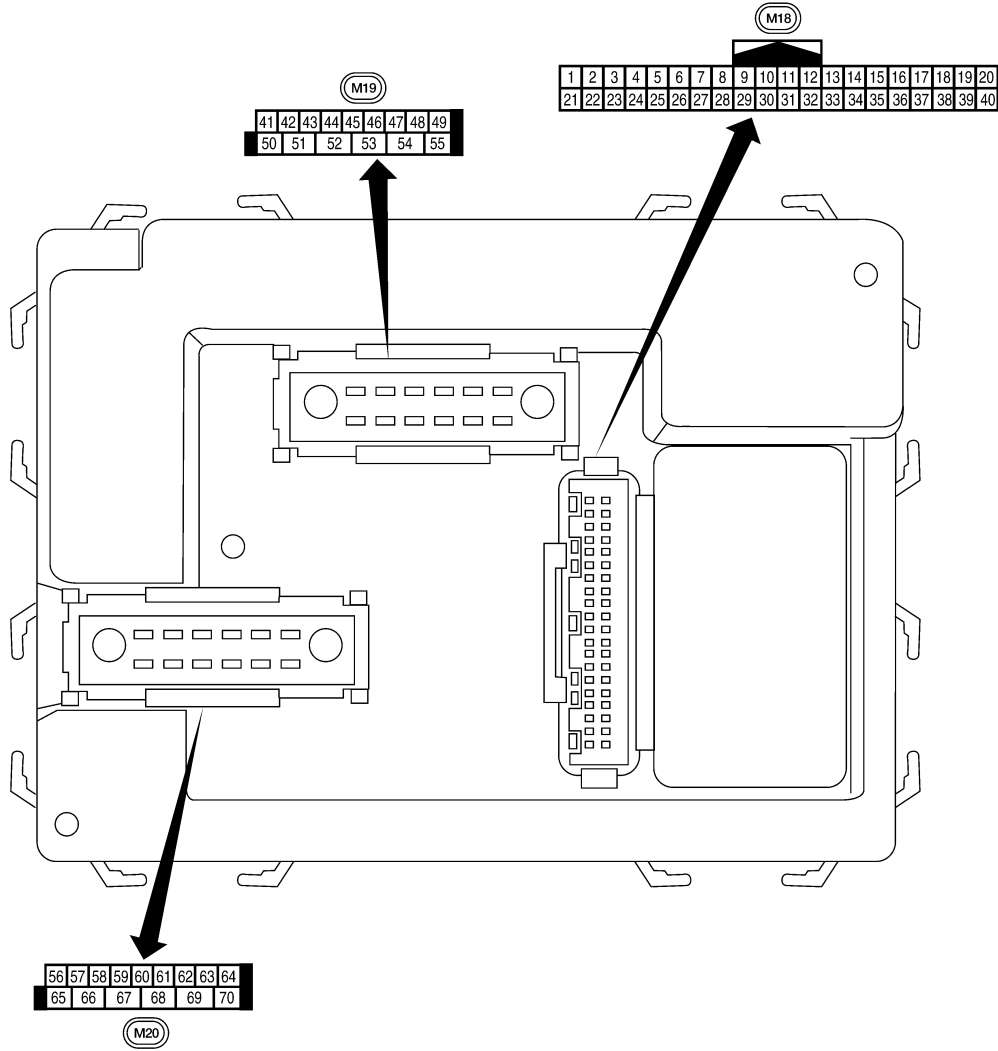
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Monitor Item | Condition | Value/Status |
|--------------|---|--------------|
| BUZZER | Tire pressure warning alarm is not sounding | OFF |
| | Tire pressure warning alarm is sounding | ON |

Terminal Layout

INFOID:000000004458397

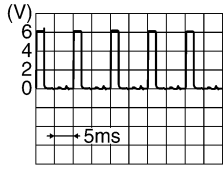
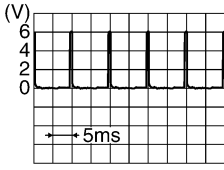
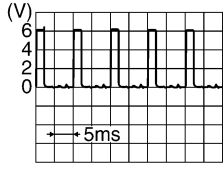
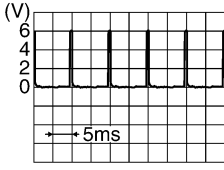


BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Physical Values

INFOID:000000004458398

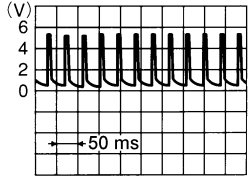
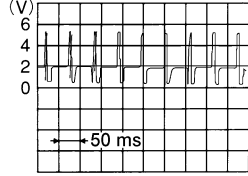
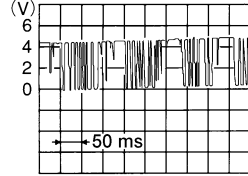
| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|--|---------------------|---------------------|--|--|
| | | | | Ignition switch | Operation or condition | |
| 1 | BR | Ignition keyhole illumination | 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;">RJIH180D</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;">RJIH181D</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;">RJIH180D</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;">RJIH181D</p> |
| 6 | R | Combination switch input 1 | | | | |
| 7 | GR | Front door lock assembly LH (key cylinder switch) and back door key cylinder switch (unlock) | Input | OFF | ON (open, 2nd turn) | Momentary 1.5V |
| | | | | | OFF (closed) | 0V |
| 8 | SB | Front door lock assembly LH (key cylinder switch) and back door key cylinder switch (lock) | Input | OFF | ON (open) | Momentary 1.5V |
| | | | | | OFF (closed) | 0V |
| 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 |

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

SEC

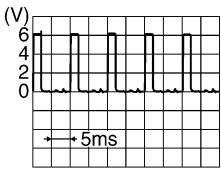
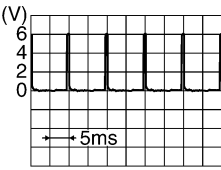
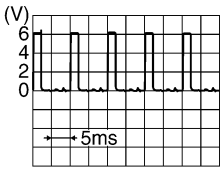
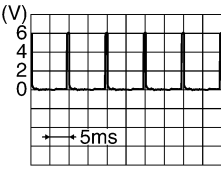
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|---|---------------------|---------------------|---|--|
| | | | | Ignition switch | Operation or condition | |
| 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 |
| 19 | V | Remote keyless entry receiver (power supply) | Output | OFF | Ignition switch OFF |  KHE0782D |
| 20 | G | Remote keyless entry receiver (signal) | Input | OFF | Stand-by (keyfob buttons released) |  KHE0783D |
| | | | | | When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed) |  KHE0784D |
| 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. |
| 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 |
| 31 | R | Off-road lamps switch | Input | ON | ON | 0V |
| | | | | | OFF | 5V |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

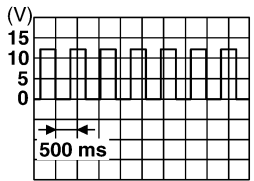
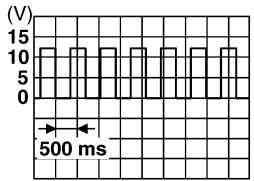
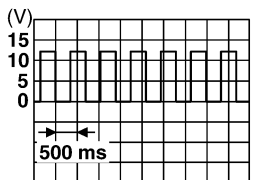
| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|----------------------------------|---------------------|---------------------|--|---|
| | | | | Ignition switch | Operation or condition | |
| 32 | O | Combination switch output 5 | Output | ON | Lighting, turn, wiper OFF Wiper dial position 4 |  <p style="text-align: right; font-size: small;">RJ101180D</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;">RJ101181D</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;">RJ101180D</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;">RJ101181D</p> |
| 36 | LG | Combination switch output 1 | | | | |
| 37 | B | Key switch and key lock solenoid | Input | OFF | Key inserted | Battery voltage |
| | | | | | Key inserted | 0V |
| 38 | W/R | Ignition switch (ON) | Input | ON | — | Battery voltage |
| 39 | L | CAN-H | — | — | — | — |
| 40 | P | CAN-L | — | — | — | — |
| 42 | L | Off-road lamps | Output | ON | Off-road lamps switch | ON: 0V OFF: Battery voltage |
| 43 | Y | Back door switch | Input | OFF | ON (open) | 0V |
| | | | | | OFF (closed) | Battery voltage |
| 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 |

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

SEC

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|---|---------------------|---------------------|--|--|
| | | | | Ignition switch | Operation or condition | |
| 45 | V | Lock switch | Input | OFF | ON (lock) | 0V |
| | | | | | OFF | Battery voltage |
| 46 | LG | Unlock switch | Input | OFF | ON (unlock) | 0V |
| | | | | | OFF | Battery voltage |
| 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 |
| 50 | W | Off-road lamps relay | Output | ON | Off-road lamps switch | ON |
| | | | | | OFF | Battery voltage |
| 51 | G | Trailer turn signal (right) | Output | ON | Turn right ON |  <p style="text-align: right; font-size: small;">RJ H2 / 81</p> |
| 52 | V | Trailer turn signal (left) | Output | ON | Turn left ON |  <p style="text-align: right; font-size: small;">RJ H2 / 81</p> |
| 55 | W | Rear wiper output circuit 1 | Output | ON | OFF | 0 |
| | | | | | ON | Battery voltage |
| 56 | V | Battery saver output | Output | OFF | 30 minutes after ignition switch is turned OFF | 0V |
| | | | | ON | — | Battery voltage |
| 57 | R/Y | Battery power supply | Input | OFF | — | Battery voltage |
| 59 | GR | Front door lock assembly LH actuator (unlock) | Output | OFF | OFF (neutral) | 0V |
| | | | | | ON (unlock) | Battery voltage |
| 60 | LG | Turn signal (left) | Output | ON | Turn left ON |  <p style="text-align: right; font-size: small;">RJ H2 / 81</p> |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value or waveform (Approx.) |
|----------|------------|--|---------------------|---------------------|---|---------------------------------------|
| | | | | Ignition switch | Operation or condition | |
| 61 | G | Turn signal (right) | Output | ON | Turn right ON | |
| 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 back door 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 |
| 70 | W | Battery power supply | Input | OFF | — | Battery voltage |

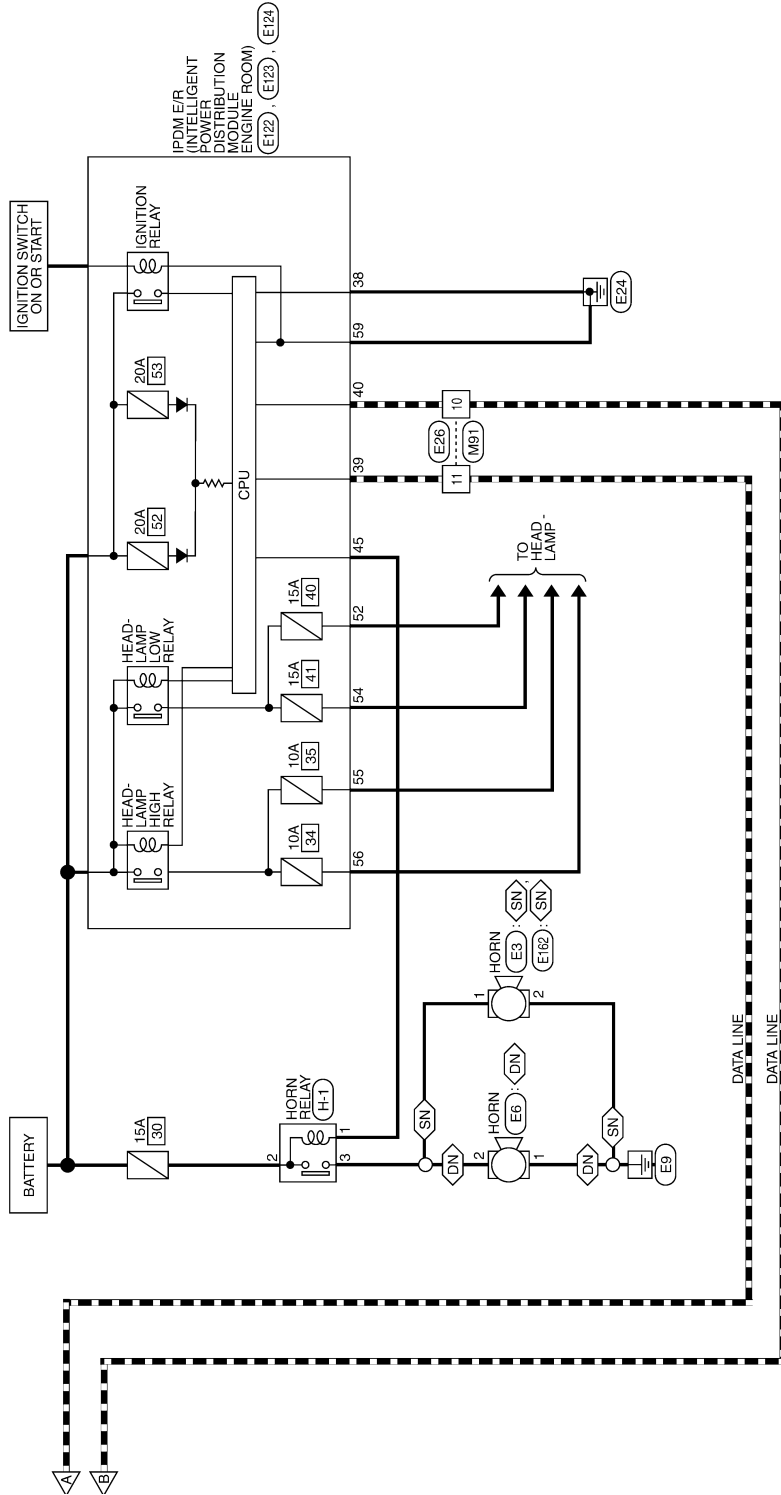
A
B
C
D
E
F
G
H
I
J
L
M
N
O
P

SEC

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

- : DATA LINE
- ◇ : WITH DUAL NOTE
- ◇ : WITH SINGLE NOTE



@JV @ 06/ F /

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

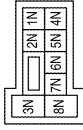
SEC

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

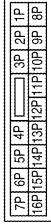
VEHICLE SECURITY SYSTEM CONNECTORS

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



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

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



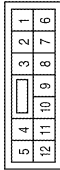
| | | | | | |
|--------------|----|---------------|-----|-------------|----|
| Terminal No. | 4P | Color of Wire | G/B | Signal Name | -- |
| Terminal No. | 8P | Color of Wire | R/Y | Signal Name | -- |

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



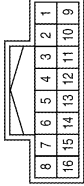
| | | | | | |
|--------------|---|---------------|---|-------------|----|
| Terminal No. | 6 | Color of Wire | W | Signal Name | -- |
|--------------|---|---------------|---|-------------|----|

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



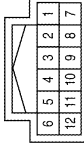
| | | | | | |
|--------------|---|---------------|---|-------------|----|
| Terminal No. | 9 | Color of Wire | B | Signal Name | -- |
|--------------|---|---------------|---|-------------|----|

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



| | | | | | |
|--------------|----|---------------|----|-------------|----|
| Terminal No. | 9 | Color of Wire | GR | Signal Name | -- |
| Terminal No. | 10 | Color of Wire | SB | Signal Name | -- |
| Terminal No. | 11 | Color of Wire | LG | Signal Name | -- |
| Terminal No. | 12 | Color of Wire | V | Signal Name | -- |

| | |
|-----------------|--------------|
| Connector No. | M16 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| | | | | | |
|--------------|---|---------------|----|-------------|----|
| Terminal No. | 7 | Color of Wire | LG | Signal Name | -- |
| Terminal No. | 8 | Color of Wire | L | Signal Name | -- |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| | |
|-----------------|---------------------------|
| Connector No. | M18 |
| Connector Name | BCM (BODY CONTROL MODULE) |
| 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 |
|--------------|---------------|---------------------------|
| 7 | GR | KEY CYLINDER UNLOCK SW |
| 8 | SB | KEY CYLINDER LOCK SW |
| 11 | G/B | ACC SW |
| 12 | LG | DOOR SW (AS) |
| 13 | L | DOOR SW (RR) |
| 23 | G | SECURITY INDICATOR OUTPUT |
| 39 | L | CAN-H |
| 40 | P | CAN-L |

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



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

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|---------------|
| 43 | Y | BACK DOOR SW |
| 45 | V | CDL LOCK SW |
| 46 | LG | CDL UNLOCK SW |
| 47 | GR | DOOR SW (DR) |
| 48 | P | DOOR SW (RL) |

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



| | | | | | | | | |
|----|----|----|----|----|----|----|----|----|
| 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
| 65 | 66 | 67 | 68 | 69 | 70 | | | |

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

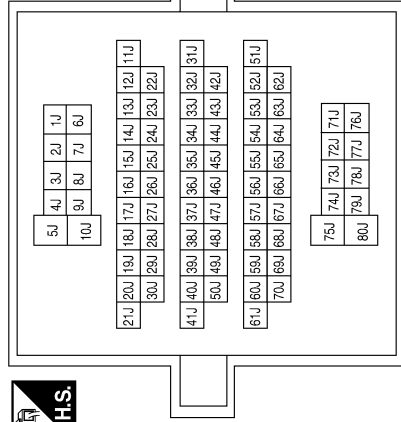
| | |
|-----------------|-------------------|
| Connector No. | M24 |
| Connector Name | COMBINATION METER |
| Connector Color | WHITE |



| | | | | | | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 |

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

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 52J | GR | - |
| 53J | SB | - |
| 57J | Y | - |
| 60J | P | - |
| 61J | GR | - |

@AJ H 450F A

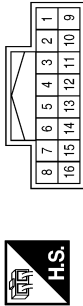
A B C D E F G H I J L M N O P

SEC

BCM (BODY CONTROL MODULE)

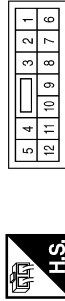
< ECU DIAGNOSIS >

| | |
|-----------------|--------------|
| Connector No. | M74 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



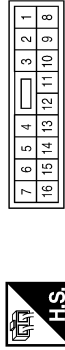
| | | |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 4 | LG | - |
| 5 | P | - |

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



| | | |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 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 (WITH SINGLE NOTE HORN) |
| Connector Color | BLACK |



| | | |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 1 | G | - |

| | |
|-----------------|----------------------------|
| Connector No. | E6 |
| Connector Name | HORN (WITH DUAL NOTE 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 |



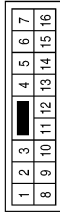
| | | |
|--------------|---------------|-------------|
| Terminal No. | Color of Wire | Signal Name |
| 6 | W | - |

@JH 451FA

BCM (BODY CONTROL MODULE)

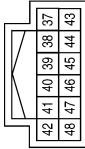
< ECU DIAGNOSIS >

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



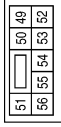
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10 | P | - |
| 11 | L | - |

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



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

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



| 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 |



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

| | |
|-----------------|------------------------------|
| Connector No. | E162 |
| Connector Name | HORN (WITH SINGLE NOTE HORN) |
| Connector Color | BLACK |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | B | - |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | GR | - |

@AJ H 452F A

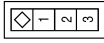
A B C D E F G H I J L M N O P

SEC

BCM (BODY CONTROL MODULE)

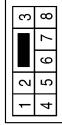
< ECU DIAGNOSIS >

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



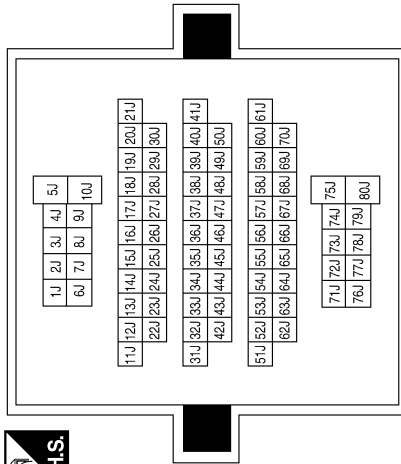
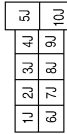
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | P | - |

| | |
|-----------------|--------------|
| Connector No. | B48 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



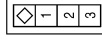
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | Y | - |
| 2 | SB | - |
| 7 | GR | - |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 52J | GR | - |
| 53J | SB | - |
| 57J | Y | - |
| 60J | P | - |
| 61J | GR | - |

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

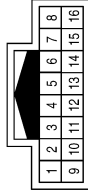


| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | LG | - |

BCM (BODY CONTROL MODULE)

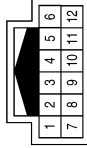
< ECU DIAGNOSIS >

| | |
|-----------------|--------------|
| Connector No. | D1 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



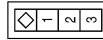
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 9 | R/W | - |
| 10 | SB | - |
| 11 | W | - |
| 12 | LG | - |

| | |
|-----------------|--------------|
| Connector No. | B162 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



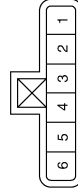
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 7 | LG | - |
| 8 | L | - |

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



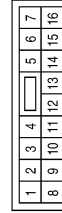
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | L | - |

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



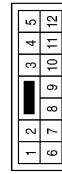
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3 | R/W | - |
| 4 | B | - |
| 5 | SB | - |

| | |
|-----------------|---|
| Connector No. | D7 |
| Connector Name | MAIN POWER WINDOW AND DOOR LOCK/UNLOCK SWITCH |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 10 | LG | - |
| 11 | W | - |
| 14 | B | - |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 9 | B | - |

@AJ H 454FA



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

SEC

BCM (BODY CONTROL MODULE)


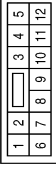
< ECU DIAGNOSIS >

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


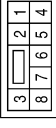
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 12 | B | - |

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


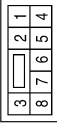
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | LG | - |
| 2 | W | - |
| 3 | B | - |

| | |
|-----------------|--------------|
| Connector No. | D402 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | Y | - |
| 2 | SB | - |
| 7 | GR | - |

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


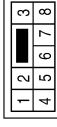
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | Y | - |
| 2 | SB | - |
| 6 | B | - |
| 7 | GR | - |

| | |
|-----------------|--------------|
| Connector No. | D409 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | B | - |

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

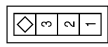
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | Y | - |
| 2 | SB | - |
| 6 | B | - |
| 7 | GR | - |

@JH 455FA

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| | |
|-----------------|------------------|
| Connector No. | D502 |
| Connector Name | BACK DOOR SWITCH |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | B | - |
| 3 | Y | - |

| | |
|-----------------|-------------------------------|
| Connector No. | D505 |
| Connector Name | BACK DOOR KEY CYLINDER SWITCH |
| Connector Color | BROWN |



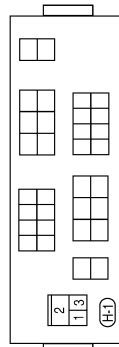
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | SB | - |
| 2 | B | - |
| 3 | GR | - |

| | |
|-----------------|--------------|
| Connector No. | D650 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | B | - |

| | |
|-----------------|------------|
| Connector No. | H-1 |
| Connector Name | HORN RELAY |
| Connector Color | - |



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

@AJ H 456F A

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

SEC

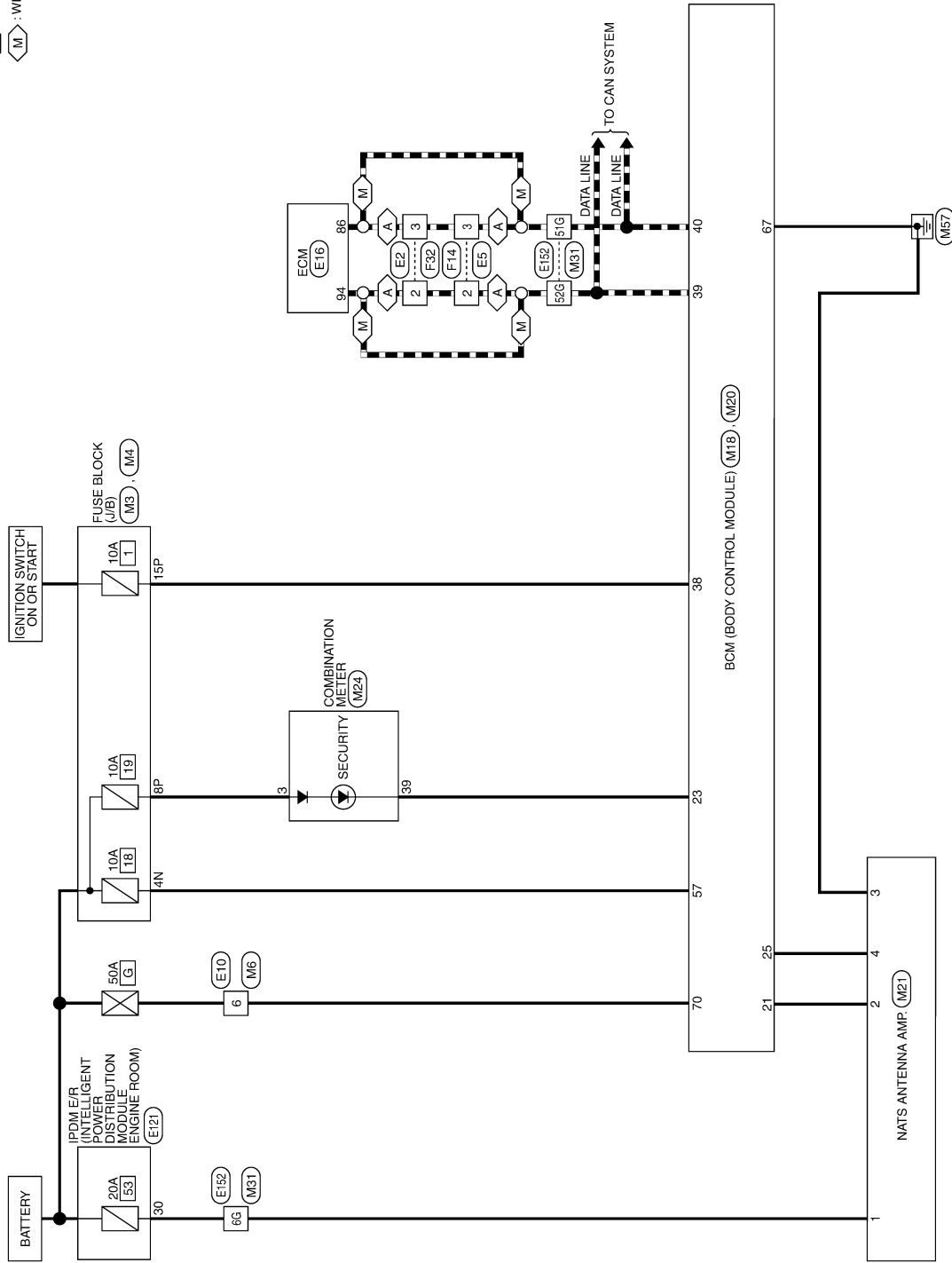
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Wiring Diagram - NVIS -

INFOID:000000004065375

: DATA LINE
A : WITH A/T
M : WITH M/T



NVIS

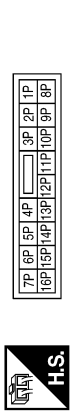
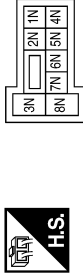
@JV @ 060F /

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

NVIS CONNECTORS

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



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

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

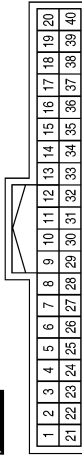


| | | | | | |
|--------------|----|---------------|-----|-------------|---|
| Terminal No. | 4N | Color of Wire | R/Y | Signal Name | - |
|--------------|----|---------------|-----|-------------|---|

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

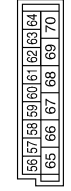
| | | | | | |
|--------------|---|---------------|---|-------------|---|
| Terminal No. | 6 | Color of Wire | W | Signal Name | - |
|--------------|---|---------------|---|-------------|---|

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



| | | | | | |
|--------------|-----|------------------------------------|----|-------------|---------------------------------|
| Terminal No. | 21 | Color of Wire | GR | Signal Name | IMMOBILIZER ANTENNA SIG (CLOCK) |
| 23 | G | SECURITY INDICATOR OUTPUT | | | |
| 25 | BR | IMMOBILIZER ANTENNA SIGNAL (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. | 57 | Color of Wire | R/Y | Signal Name | BAT (FUSE) |
| 67 | B | GND (POWER) | | | |
| 70 | W | BAT (F/L) | | | |

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

SEC

BCM (BODY CONTROL MODULE)

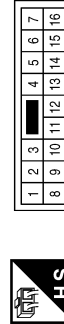
< ECU DIAGNOSIS >

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



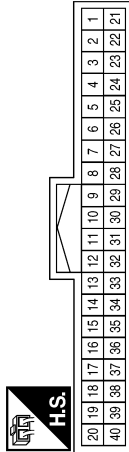
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | R/B | VB (12V) |
| 2 | GR | CLOCK |
| 3 | B | GND |
| 4 | BR | RX, TX |

| | |
|-----------------|--------------|
| Connector No. | E2 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |



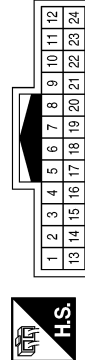
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 2 | L | - |
| 3 | P | - |

| | |
|-----------------|-------------------|
| Connector No. | M24 |
| Connector Name | COMBINATION METER |
| Connector Color | WHITE |



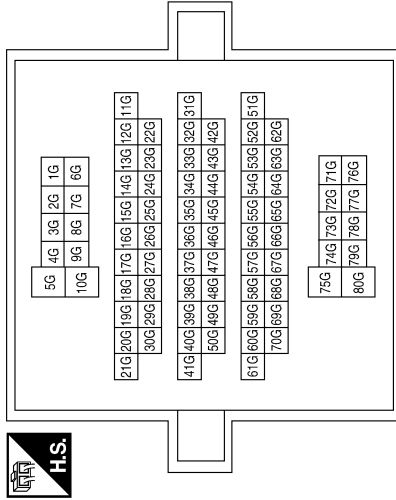
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3 | R/Y | BATTERY |
| 39 | G | SECURITY |

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



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

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6G | R/B | - |
| 51G | P | - |
| 52G | L | - |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6 | W | - |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| | |
|-----------------|--------------|
| Connector No. | E152 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 6G | R/B | - |
| 51G | P | - |
| 52G | L | - |

| | |
|-----------------|--|
| 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. | E16 |
| Connector Name | ECM |
| Connector Color | BLACK |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 86 | P | CAN-L |
| 94 | L | CAN-H |

| | |
|-----------------|--------------|
| Connector No. | F32 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

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

| | |
|-----------------|--------------|
| Connector No. | F14 |
| Connector Name | WIRE TO WIRE |
| Connector Color | WHITE |

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

DTC Inspection Priority Chart

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

@AJ H 46/ FA

INFOID:000000004458399

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

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| Priority | DTC |
|----------|--|
| 1 | <ul style="list-style-type: none"> • U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN) |
| 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 |
| 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:000000004458400

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 | Tire pressure monitor warning lamp ON | Reference page |
|--|-----------|---------------------------------------|------------------------|
| No DTC is detected. further testing may be required. | — | — | — |
| U1000: CAN COMM CIRCUIT | — | — | BCS-31 |
| U1010: CONTROL UNIT (CAN) | — | — | BCS-32 |
| B2190: NATS ANTENNA AMP | — | — | SEC-18 |
| B2191: DIFFERENCE OF KEY | — | — | SEC-21 |
| B2192: ID DISCORD BCM-ECM | — | — | SEC-22 |
| B2193: CHAIN OF BCM-ECM | — | — | SEC-24 |
| C1708: [NO DATA] FL | — | — | WT-14 |

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

| CONSULT display | Fail-safe | Tire pressure monitor warning lamp ON | Reference page |
|---------------------------|-----------|---------------------------------------|-----------------------|
| 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-19 |
| C1735: IGNITION SIGNAL | — | — | — |

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

SEC

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

< ECU DIAGNOSIS >

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

Reference Value

INFOID:000000004458401

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. | 0 - 100 % |
| A/C 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 | Front fog lamp switch OFF | OFF |
| | | Front fog lamp switch ON | ON |
| HL WASHER REQ | NOTE: This item is displayed, but cannot be monitored. | | OFF |
| 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 | NOTE: This item is displayed, but cannot be monitored. | | OFF |
| HOOD SW | NOTE: This item is displayed, but cannot be monitored. | | OFF |

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

< ECU DIAGNOSIS >

| Monitor Item | Condition | Value/Status |
|--------------|---|--------------|
| 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 |
| HORN CHIRP | Not operated | OFF |
| | Door locking with keyfob (horn chirp mode) | ON |

A

B

C

D

E

F

G

H

I

J

SEC

L

M

N

O

P

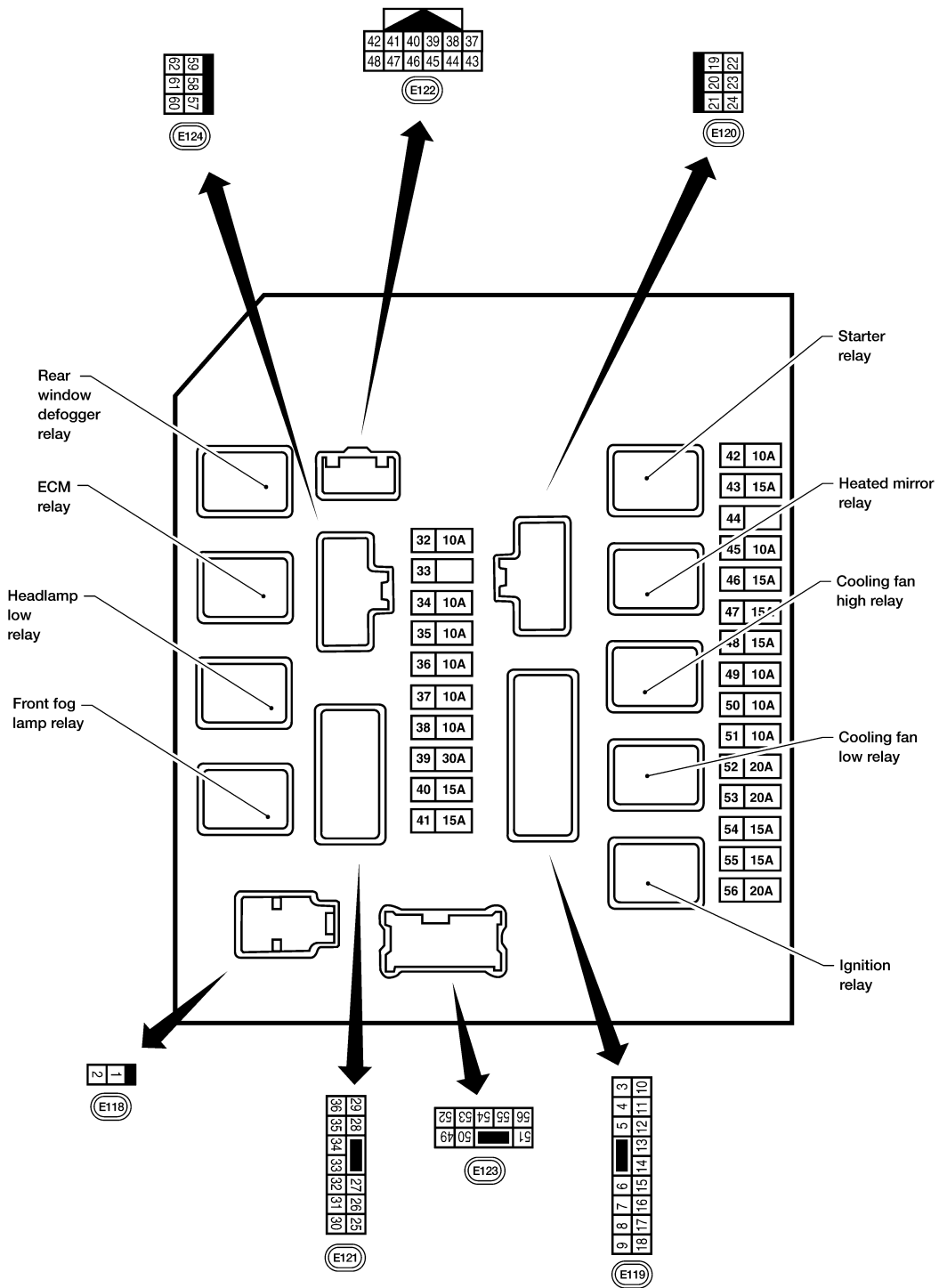
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

< ECU DIAGNOSIS >

Terminal Layout

INFOID:000000004458402

TERMINAL LAYOUT



V J164772D

Physical Values

PHYSICAL VALUES

INFOID:000000004458403

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

< ECU DIAGNOSIS >

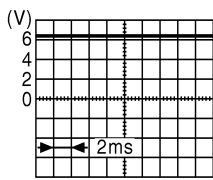
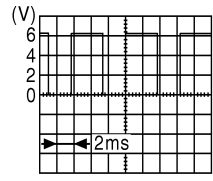
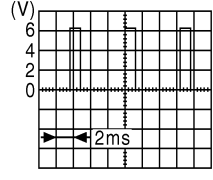
| Terminal | Wire color | Signal name | Signal input/output | Measuring condition | | Reference value (Approx.) |
|----------|------------|------------------------------------|---------------------|---------------------|--------------------------------------|---------------------------|
| | | | | Ignition 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 |

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

SEC

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

< ECU DIAGNOSIS >

| 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;">1 ΩL H@ // 0F A</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;">1 ΩL H@ // 1F A</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;">1 ΩL H@ // 2F A</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)

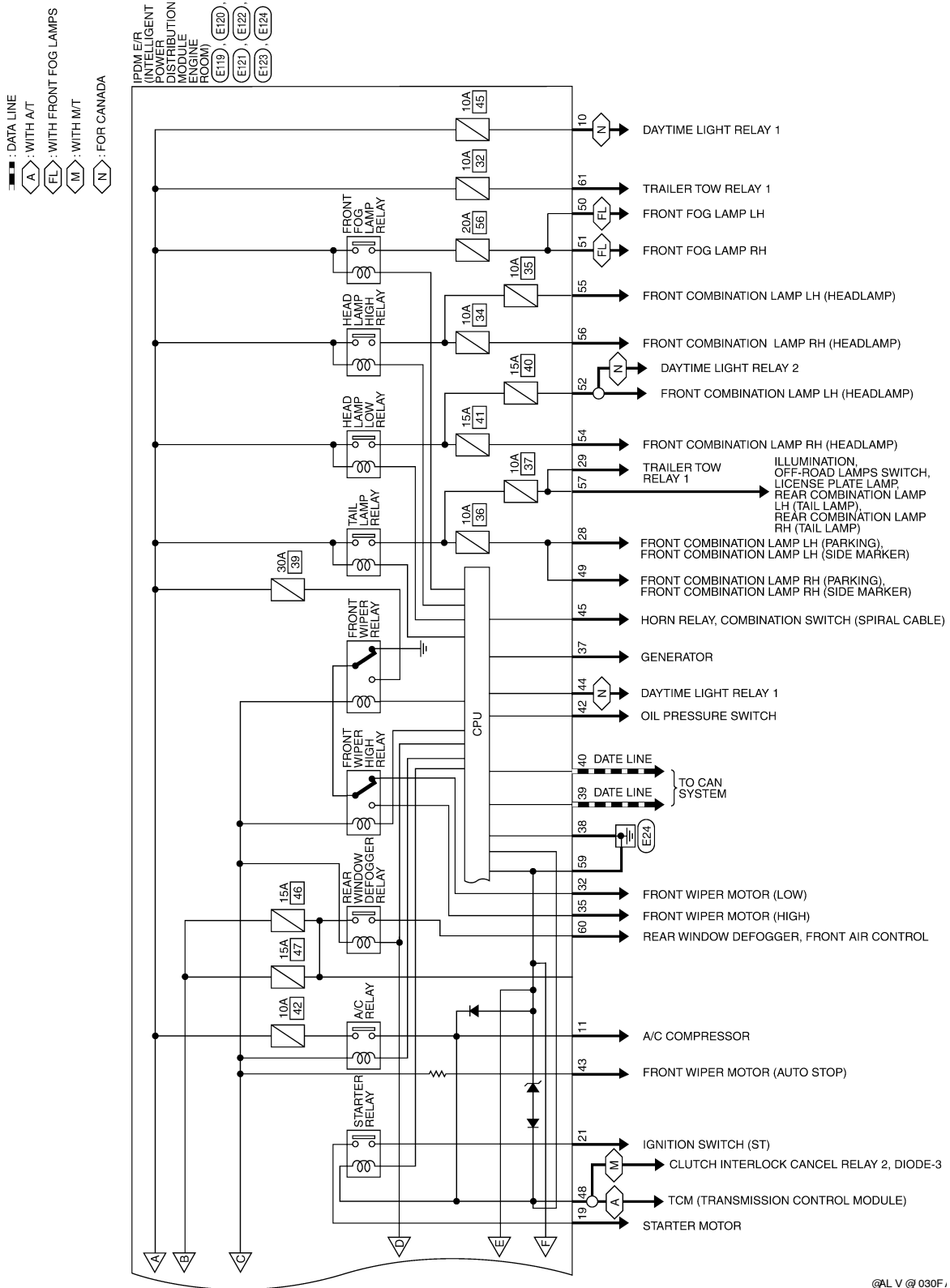
< ECU DIAGNOSIS >

| 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 (Canada only) | 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 (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 (inhibit 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 head-lamp | Output | — | Lighting switch in 2nd position | Battery voltage |
| 54 | R | RH low beam head-lamp | Output | — | Lighting switch in 2nd position | Battery voltage |
| 55 | G | LH high beam head-lamp | Output | — | Lighting switch in 2nd position and placed in HIGH or PASS position | Battery voltage |
| 56 | L | RH high beam head-lamp | Output | — | Lighting switch in 2nd position and placed in HIGH or PASS position | Battery voltage |
| 57 | GR | Parking, license and tail lamps and off-road lamp switch | 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 |

*: When horn reminder is ON

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

< ECU DIAGNOSIS >



@AL V @ 030F

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

SEC

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

< ECU DIAGNOSIS >

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

| | |
|-----------------|----------------------------|
| Connector No. | E30 |
| Connector Name | FUSIBLE LINK BOX (BATTERY) |
| Connector Color | - |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3 | R | - |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 1 | W | F/L USM |
| 2 | R | F/L MAIN |

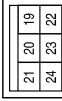
| | |
|-----------------|--|
| Connector No. | E119 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | WHITE |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|-------------|
| 3 | G | IGN COIL |
| 4 | P | ECM |
| 5 | - | - |
| 6 | V | ETC |

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|--------------------|
| 7 | BR | ECM RLY CONT |
| 8 | W/R | O2 SENSOR |
| 9 | - | - |
| 10 | R/B | DTRL RLY SUPPLY |
| 11 | Y | A/C COMPRESSOR |
| 12 | W/G | IGN SW (IG1) |
| 13 | R | FUEL PUMP |
| 14 | W/G | A/T ECU IGN SUPPLY |
| 15 | W/R | ABS IGN SUPPLY |
| 16 | W/G | REVERSE LAMP |
| 17 | W/G | INJECTOR |
| 18 | - | - |

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



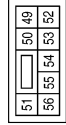
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|---------------|
| 19 | W | STARTER MTR |
| 20 | BR | MOTOR FAN 1 |
| 21 | GR | IGN SW (ST) |
| 22 | G | F/L M/FAN |
| 23 | LG | HEATED MIRROR |
| 24 | P | MOTOR FAN 2 |

©AL 18 282F A

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

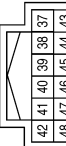
< ECU DIAGNOSIS >

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



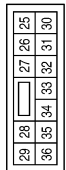
| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|----------------|
| 49 | GR | ILLUMINATION |
| 50 | W | FR FOG LAMP LH |
| 51 | V | FR FOG LAMP RH |
| 52 | P | H/LAMP LO LH |
| 53 | - | - |
| 54 | R | H/LAMP LO RH |
| 55 | G | H/LAMP HI LH |
| 56 | L | H/LAMP HI RH |

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



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|--------------------|
| 37 | Y | ALT-C CONT |
| 38 | B | GND (SIGNAL) |
| 39 | L | CAN-H |
| 40 | P | CAN-L |
| 41 | - | - |
| 42 | GR | OIL PRESSURE SW |
| 43 | G | AUTO STOP SW |
| 44 | R | DTRL RLY CONT |
| 45 | LG | ANT THEFT HORN |
| 46 | V | FUEL PUMP RLY CONT |
| 47 | O | ETC RLY CONT |
| 48 | R | INHIBIT SW |

| | |
|-----------------|--|
| Connector No. | E121 |
| Connector Name | IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) |
| Connector Color | BROWN |



| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|------------------|
| 25 | - | - |
| 26 | - | - |
| 27 | W | T TOW REV LAMP |
| 28 | R | ILLUMINATION |
| 29 | G | TRAILER RLY CONT |
| 30 | R/B | ECM BATT |
| 31 | - | - |
| 32 | GR | FR WIPER LO |
| 33 | - | - |
| 34 | - | - |
| 35 | L | FR WIPER HI |
| 36 | - | - |

| | |
|-----------------|----------------------------|
| Connector No. | E129 |
| Connector Name | FUSIBLE LINK BOX (BATTERY) |
| Connector Color | BROWN |



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

| Terminal No. | Color of Wire | Signal Name |
|--------------|---------------|------------------|
| 57 | GR | TAIL LAMP |
| 58 | - | - |
| 59 | B | GND (POWER) |
| 60 | GR | RR DEF |
| 61 | R/B | TRAIL_RLY SUPPLY |
| 62 | - | - |

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



@AL H# 283F A

INFOID:000000004458405

Fail Safe

CAN COMMUNICATION CONTROL

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

If No CAN Communication Is Available With ECM

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

SEC

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

< ECU DIAGNOSIS >

| 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.

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.

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

< ECU DIAGNOSIS >

DTC Index

INFOID:000000004458406

| 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-18 |

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.

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

SEC

VEHICLE SECURITY SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

VEHICLE SECURITY SYSTEM SYMPTOMS

Symptom Table

INFOID:000000004065384

| 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-24 |
| | | Key cylinder switch | Check key cylinder switch (driver) | DLK-31 |
| | | | Check key cylinder switch (back) | DLK-33 |
| | — | Check Intermittent Incident | GI-37 | |
| | Security indicator does not turn ON. | Check vehicle security indicator | SEC-33 | |
| 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-24 |
| | | — | Check Intermittent Incident | GI-37 |
| 3 | Vehicle security alarm does not activate. | Horn alarm | Check horn switch | HRN-3 |
| | | — | Check Intermittent Incident | GI-37 |
| 4. | Vehicle security system cannot be canceled by | Key cylinder switch | Check key cylinder switch (driver) | DLK-31 |
| | | | Check key cylinder switch (back) | DLK-33 |
| | | | Check Intermittent Incident | GI-37 |

*: Check the system is in the armed phase.

NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS SYMPTOMS

< SYMPTOM DIAGNOSIS >

NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS SYMPTOMS

Symptom Table

INFOID:000000004065385

NOTE:

- Before performing the diagnosis in the following table, check "[SEC-3. "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-33 |
| | 2. Check Intermittent Incident | GI-37 |

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

SEC

PRE-INSPECTION FOR DIAGNOSTIC

< ON-VEHICLE MAINTENANCE >

ON-VEHICLE MAINTENANCE

PRE-INSPECTION FOR DIAGNOSTIC

Basic Inspection

INFOID:000000004065386

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-10, "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-72, "Symptom Table"](#).
- Alarm (horn and headlamps) does not operate. Refer to [SEC-72, "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-12, "DOOR LOCK AND UNLOCK SWITCH : System Description"](#).

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000004460423

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.

Precaution for Power Generation Variable Voltage Control System

INFOID:000000004460424

CAUTION:

For this model, the battery current sensor that is installed to the negative battery cable measures the charging/discharging current of the battery and performs various engine controls. If an electrical component is connected directly to the negative battery terminal, the current flowing through that component will not be measured by the battery current sensor. This condition may cause a malfunction of the engine control system and battery discharge may occur. Do not connect an electrical component or ground wire directly to the battery terminal.

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

SEC

NATS ANTENNA AMP.

< ON-VEHICLE REPAIR >

ON-VEHICLE REPAIR

NATS ANTENNA AMP.

Removal and Installation

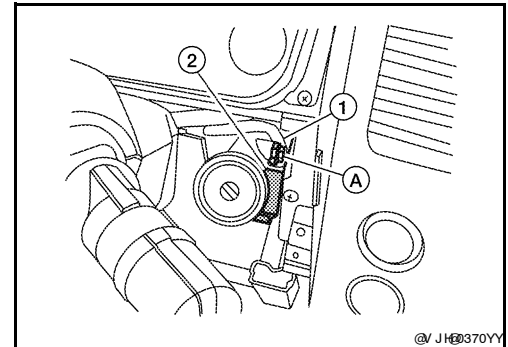
INFOID:000000004460433

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-68. "Removal and Installation"](#).
2. Remove cluster lid A. Refer to [IP-10. "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.

REMOTE KEYLESS ENTRY RECEIVER

< ON-VEHICLE REPAIR >

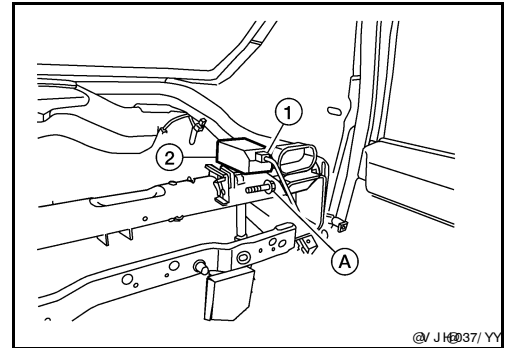
REMOTE KEYLESS ENTRY RECEIVER

Removal and Installation

INFOID:000000004460436

REMOVAL

1. Disconnect the battery negative terminal. Refer to [PG-68. "Removal and Installation"](#).
2. Remove the front pillar upper finisher (RH). Refer to [INT-16. "Component"](#).
3. Remove the side ventilator grille (RH). Refer to [IP-10. "Exploded View"](#).
4. Remove the instrument side finisher. Refer to [IP-10. "Exploded View"](#).
5. Remove the upper glove box. Refer to [IP-10. "Exploded View"](#).
6. 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.

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

SEC