SECTION SEC
SECURITY CONTROL SYSTEM

CONTENTS

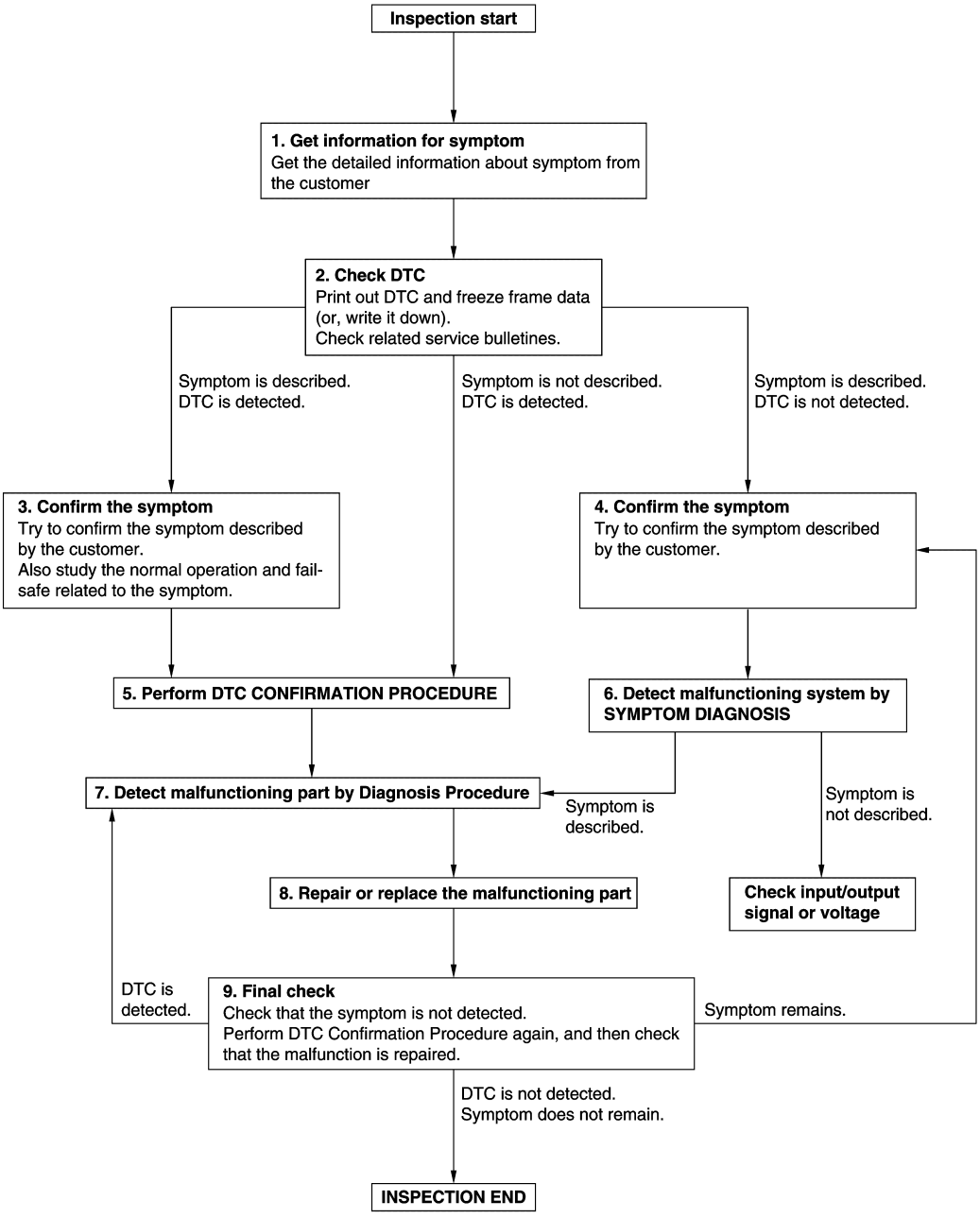
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000008279839

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.

- Record DTC and freeze frame data (Print them out using CONSULT.)
- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.
Symptom is described, DTC is not detected>>GO TO 4.
Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Also study the normal operation and fail-safe related to the symptom.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.
If two or more DTCs are detected, refer to BCS-61, "DTC Inspection Priority Chart" and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
  If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-46, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

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

Is the symptom described?

YES >> GO TO 7.
NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check according to GI-46, "Intermittent Incident".

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 9.

9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.
When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.
YES-2 >> Symptom remains: GO TO 4.
NO >> Before returning the vehicle to the customer, always erase DTC.

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000008279840

Perform the system initialization when replacing BCM, ECM, Intelligent Key unit or steering lock unit with a used parts or registering an additional Intelligent Key or mechanical key.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000008279841

Refer to CONSULT Operation Manual NATS-IVIS/NVIS.

ECM RE-COMMUNICATING FUNCTION

ECM RE-COMMUNICATING FUNCTION : Description

INFOID:0000000008279842

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 a virgin ECM which has never been energized on-board.
(In this step, initialization procedure by CONSULT is not necessary)
NOTE:
- **When registering new Key IDs or replacing the ECM that is not brand new, refer to CONSULT Operation Manual NATS-IVIS/NVIS.**
- **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:0000000008279843

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?

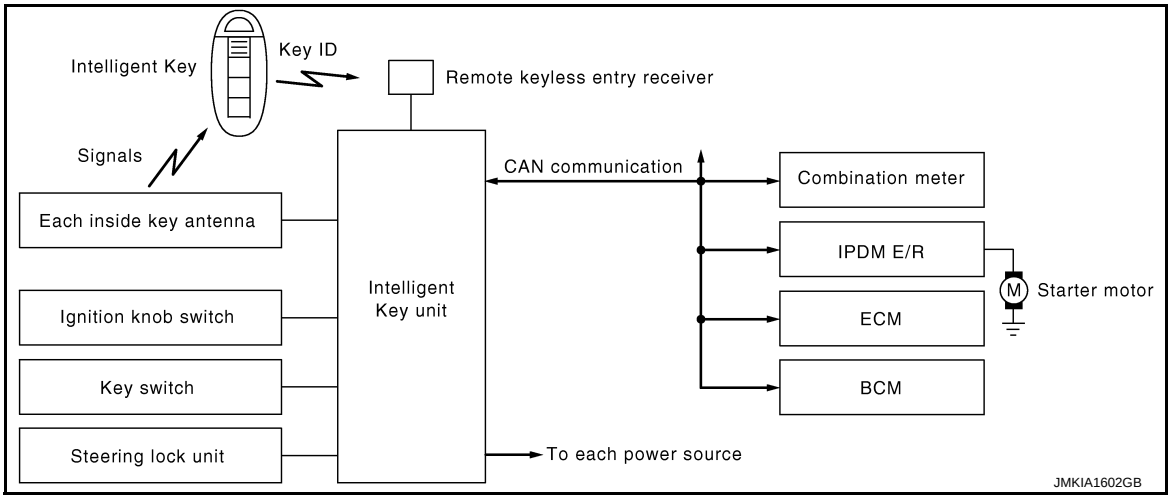
YES >> Procedure is completed.
NO >> Initialize control unit. Refer to CONSULT Operation Manual NATS-IVIS/NVIS.

SYSTEM DESCRIPTION

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

System Diagram

INFOID:0000000008279844



System Description

INFOID:0000000008279845

INPUT/OUTPUT SIGNAL CHART

Intelligent Key Unit

Switch/Input signal	Input signal to Intelligent Key unit	Intelligent Key unit function	Actuator/Output signal
Key switch	Mechanical key (insert/remove)	Engine start function	• KEY warning lamp/buzzer • Steering lock unit • Starter relay request (to IPDM E/R) • Inside key antenna (Console, rear seat)
Ignition knob switch	Ignition knob (press/release)		
Steering lock unit	Steering lock (lock/unlock)		
Inside key antenna (Console, rear seat)	Intelligent Key (inside antenna detection area or not.)		

IPDM E/R

Switch/Input signal	Input signal to IPDM E/R	IPDM E/R function	Actuator/Output signal
Transmission range switch	P, N range	Engine start function	• Starter relay • Starter motor

BCM

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
Key switch	Mechanical key (insert/remove)	Engine start function	• Inside key antenna (Cconsole, rear seat)

SYSTEM DESCRIPTION

- The engine start function of Intelligent Key system is a system that makes it possible to start and stop the engine without using the key. It verifies the electronic ID using two-way communications when pressing the ignition knob switch while carrying the Intelligent Key, which operates based on the results of electronic ID verification for Intelligent Key using two-way communications between the Intelligent Key and the vehicle.
  NOTE:
  The driver should carry the Intelligent Key at all times.
- Intelligent Key has 2 IDs (for Intelligent Key and for NVIS/NATS). It can perform the door lock/unlock operation and the engine start operation when the registered Intelligent Key is carried.

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

NOTE:

- Refer to SEC-15, "System Description" for any functions other than engine start function of Intelligent Key system.

PRECAUTIONS FOR INTELLIGENT KEY SYSTEM

- **In the Intelligent Key system of model S35, the transponder [the chip for NVIS/NATS ID verification] is integrated into the Intelligent Key. (For the conventional models, it is integrated into the mechanical key.) Therefore, the mechanical key cannot perform the ID verification, and thus it cannot start the engine. Instead, the NVIS/NATS ID verification can be performed by inserting the mechanical key into the key cylinder, and then it can start the engine.**

OPERATION WHEN INTELLIGENT KEY IS CARRIED

1. When the ignition knob switch is ON, and Intelligent Key unit is transmit the request signal to the Intelligent Key.
2. The Intelligent Key receives the request signal and transmits the Intelligent Key ID signal to the Intelligent Key unit.
3. The Intelligent Key unit receives the Intelligent Key ID signal and verifies it with the registered ID.
4. Intelligent Key unit transmits the steering lock/unlock signal to steering lock unit and turn on the key warning lamp (green) if the verification results are OK. (The detail of key warning lamp operation, refer to DLK-34, "WARNING FUNCTION : System Description")
5. Release of the steering lock.
6. BCM transmits the starter request signal via CAN communication to IPDM E/R and turns the starter relay in IPDM E/R ON if BCM judges that the engine start condition is satisfied.
7. IPDM E/R turns the starter control relay ON when receiving the starter request signal.
8. When shift position is in P or N position, battery power is supplied through the starter relay and operate the starter motor and to start the cranking.
   CAUTION:
   If a malfunction is detected in the Intelligent Key system, the red “KEY” warning lamp in the combination meter illuminates. At that time, the engine cannot be started.

OPERATION RANGE

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

OPERATION WHEN MECHANICAL KEY IS USED

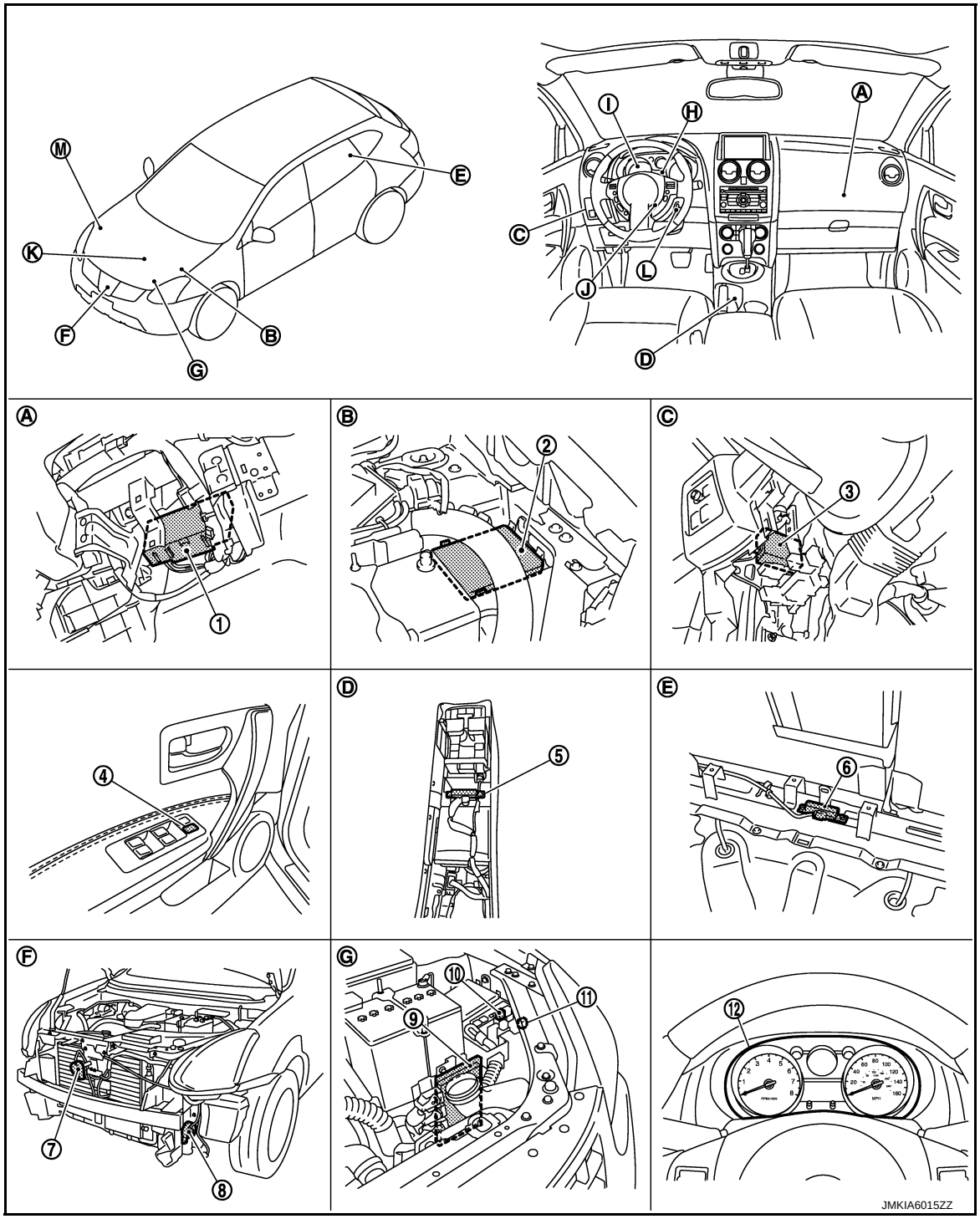
When the Intelligent Key battery is discharged, performs the NVIS/NATS ID verification between the integrated transponder and BCM by inserting the mechanical key into the key cylinder, and then the engine can be started.
For details relating to starting the engine using mechanical key, refer to SEC-15,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

STEERING LOCK OPERATION

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

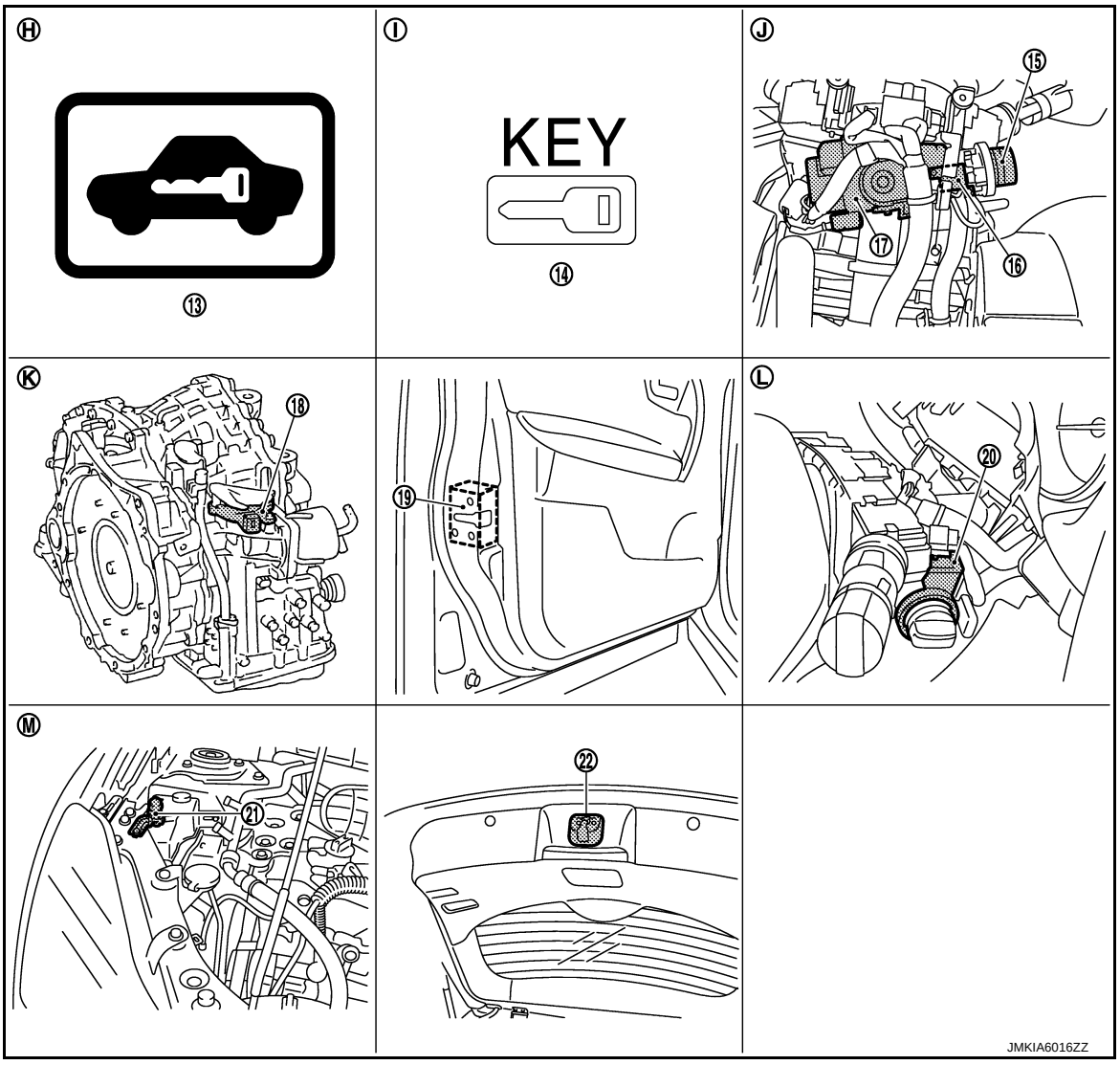
Component Parts Location

INFOID:0000000008279846



1. BCM
2. IPDM E/R
3. Intelligent Key unit
4. Door lock and unlock switch (power window main switch)
5. Inside key antenna (console)
6. Inside key antenna (rear seat)
7. Horn (low)
8. Horn (high)
9. ECM
10. Horn relay (except for Mexico)
11. Theft warning horn relay (for Mexico)
12. Combination meter

A. Over the glove box
B. Engine room (LH)
C. Over the instrument driver lower cover
D. Back side of center console
E. View with luggage floor trim center finisher removed
F. View with front bumper removed
G. Engine room (LH)
H. Built in combination meter



13. Security indicator lamp (combination meter)
14. Key warning lamp (combination meter)
15. Ignition knob switch (Ignition knob switch, key switch and key lock solenoid)
16. Key switch (Ignition knob switch, key switch and key lock solenoid)
17. Steering lock unit
18. Transmission range switch
19. Front door lock assembly (driver side)
20. NATS antenna amp.
21. Hood switch (for Mexico)
22. Hood switch (for Mexico)
23. Back door switch (back door lock assembly)
I. Built in combination meter
J. View with steering column cover removed
K. Transaxle assembly
L. View with steering column cover removed
M. Engine room (RH)

Component Description

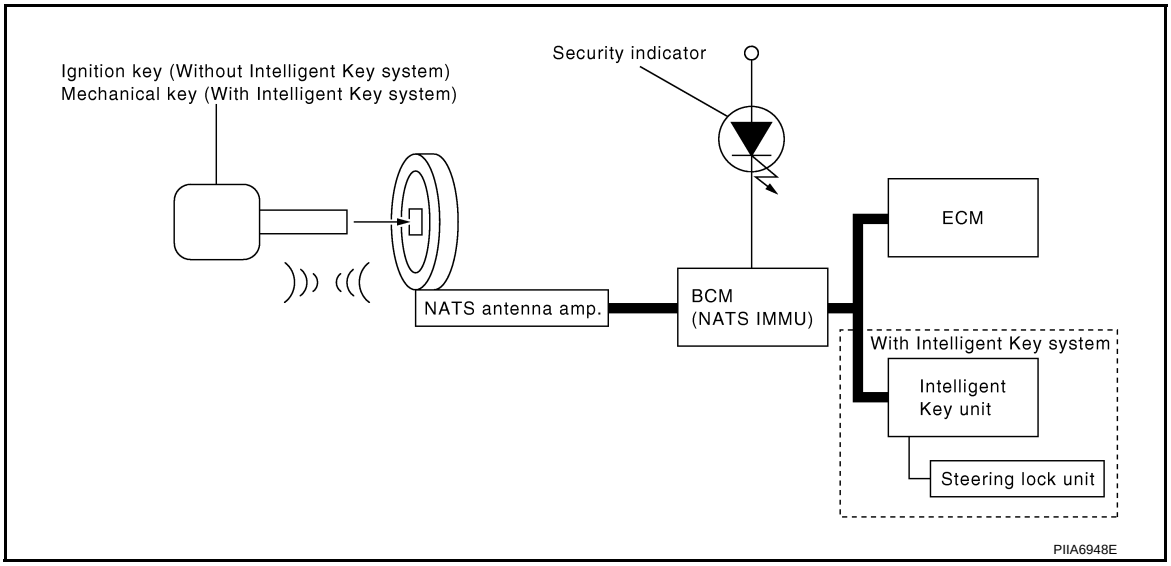
INFOID:0000000008279847

Component	Reference
Intelligent Key unit	SEC-43
BCM	BCS-7
ECM	Except for Mexico: EC-44 For Mexico: EC-488
Combination meter	MWI-8
Steering lock unit	SEC-41
Ignition knob switch	SEC-53
Key switch	SEC-51
Inside key antenna	DLK-92
Security indicator lamp	SEC-64

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

System Diagram

INFOID:0000000008279848



System Description

INFOID:0000000008279849

INPUT/OUTPUT SIGNAL CHART

Intelligent Key Unit

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

BCM

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

SYSTEM DESCRIPTION

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS) 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.
- Therefore, NVIS/NATS warns outsiders that the vehicle is equipped with the anti-theft system. Refer to SEC-20, "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.

PRECAUTIONS FOR KEY REGISTRATION

- The key registration is a procedure that erases the current NVIS/NATS ID once, and then re-registers a new ID. Therefore the registered Intelligent Key is necessary for this procedure. Before starting the registration operation collect all registered Intelligent Keys from the customer.

- The NVIS/NATS ID registration is the procedure that registers the ID stored into the transponder (integrated in mechanical key) to BCM.
  The Intelligent Key ID registration is the procedure that registers the ID to Intelligent Key unit.
- When performing the Intelligent Key system registration only, the engine cannot be started by inserting the key into the key cylinder. When performing the NVIS/NATS registration only, the engine cannot be started by using the mechanical key.

SECURITY INDICATOR

- Warns that the vehicle is equipped with NVIS/NATS.
- The security indicator lamp always blinks, when the ignition switch is in the except ON position.
- The security indicator lamp turns OFF, when the ignition switch is in ON position.
- When NVIS/NATS detects trouble, the security indicator lamp lights up while ignition key is in the “ON” position.

MAINTENANCE INFORMATION

CAUTION:

- **During trouble diagnosis or when the following parts have been replaced with a used parts, and if mechanical key is added, registration* is required. A new part (except Intelligent Key and mechanical key) should register automatically after the ignition switch is turned ON. New one means a virgin control unit that has never been energized on-board**

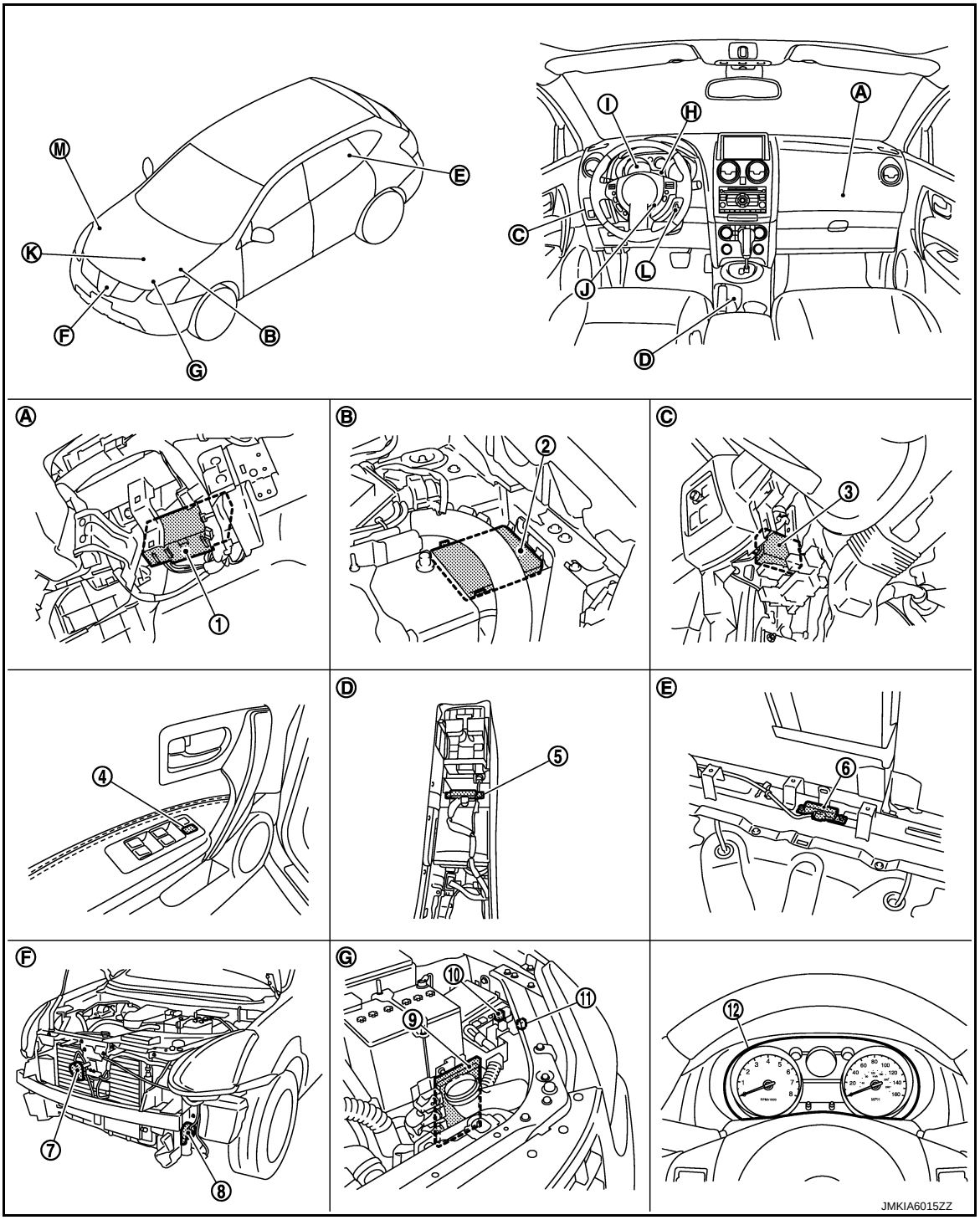
  ***: All keys kept by the owner of the vehicle should be registered with mechanical key.**

- **ECM**
- **BCM**
- **Mechanical key**
- **Intelligent Key unit**
- **Steering lock unit**

- **NVIS/NATS trouble diagnosis, system initialization and additional registration of other mechanical key IDs must be carried out using CONSULT hardware and SECURITY CARD.**
  When NVIS/NATS initialization has been completed, the ID of the inserted Intelligent Key or mechanical key IDs can be carried out.
- **Possible symptom of NVIS/NATS malfunction is “Engine cannot start”. The engine can be started with the Intelligent Key system and NVIS/NATS. Identify the possible causes according to “Work Flow”, Refer to SEC-6, "Work Flow".**
- **If ECM other than Genuine NISSAN is installed, the engine cannot be started.**

Component Parts Location

INFOID:0000000008279850



1. BCM
2. IPDM E/R
3. Intelligent Key unit
4. Door lock and unlock switch (power window main switch)
5. Inside key antenna (console)
6. Inside key antenna (rear seat)
7. Horn (low)
8. Horn (high)
9. ECM
10. Horn relay (except for Mexico)
11. Theft warning horn relay (for Mexico)
12. Combination meter

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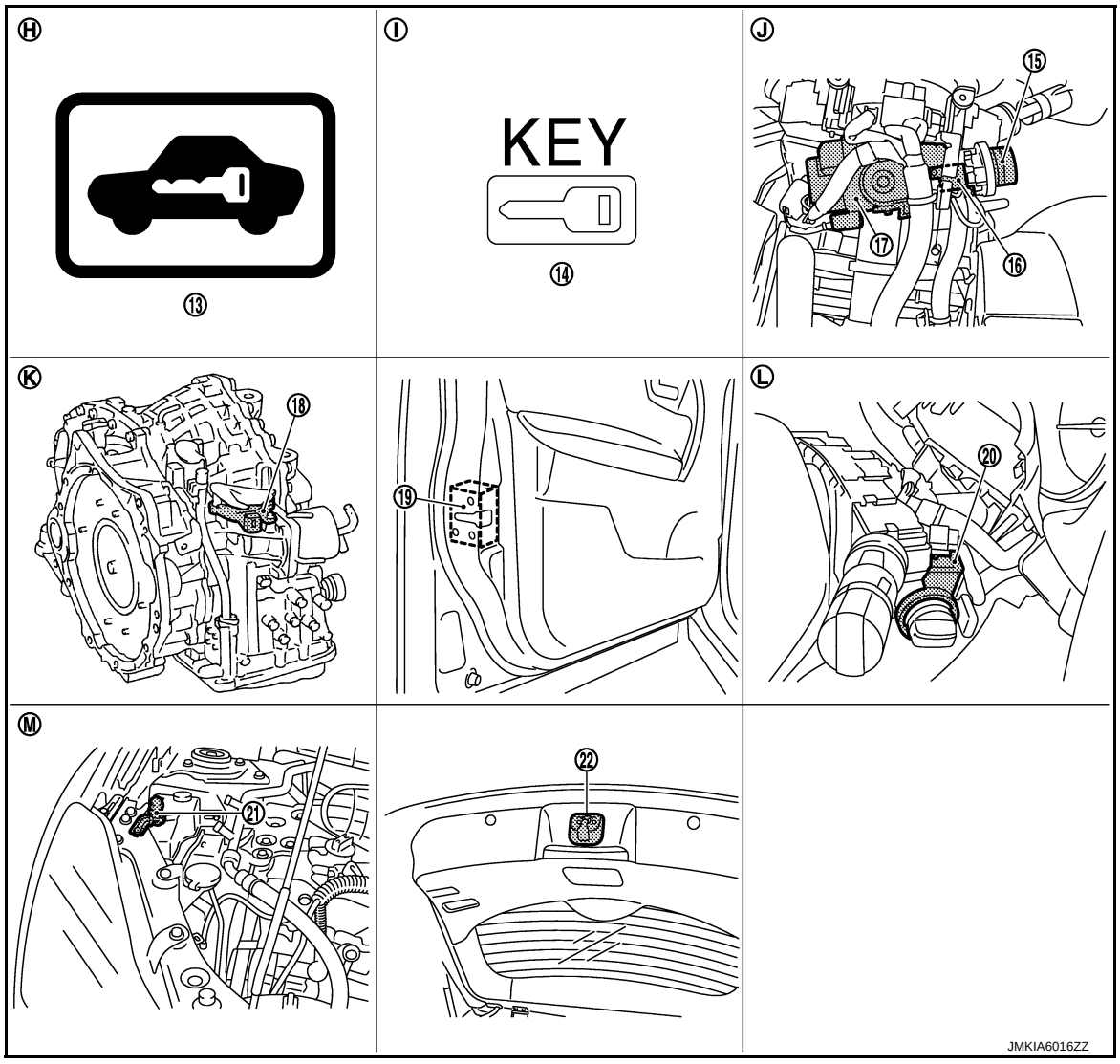
G. Engine room (LH)
H. Built in combination meter



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23. Back door switch (back door lock assembly)
I. Built in combination meter
J. View with steering column cover removed
K. Transaxle assembly
L. View with steering column cover removed
M. Engine room (RH)

Component Description

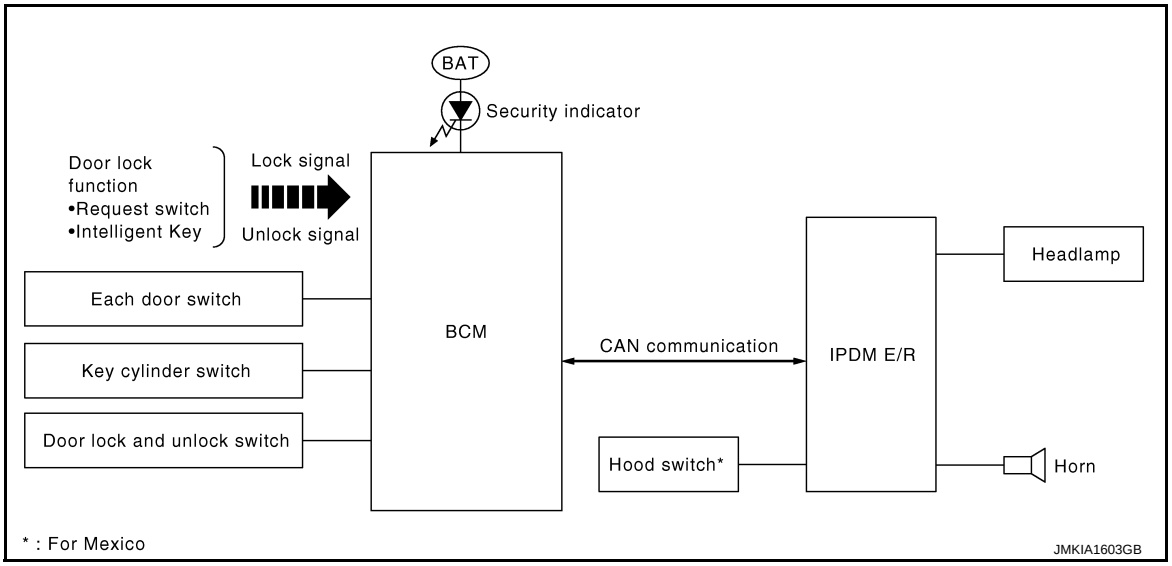
INFOID:0000000008279851

Component	Reference
BCM	BCS-7
IPDM E/R	PCS-2
Steering lock unit	SEC-41
Key switch	SEC-51
Ignition knob switch	SEC-53
NATS antenna amp.	SEC-38
Security indicator lamp	SEC-64
Door lock and unlock switch	DLK-61
Key cylinder switch	DLK-72

VEHICLE SECURITY SYSTEM

System Diagram

INFOID:0000000008279852



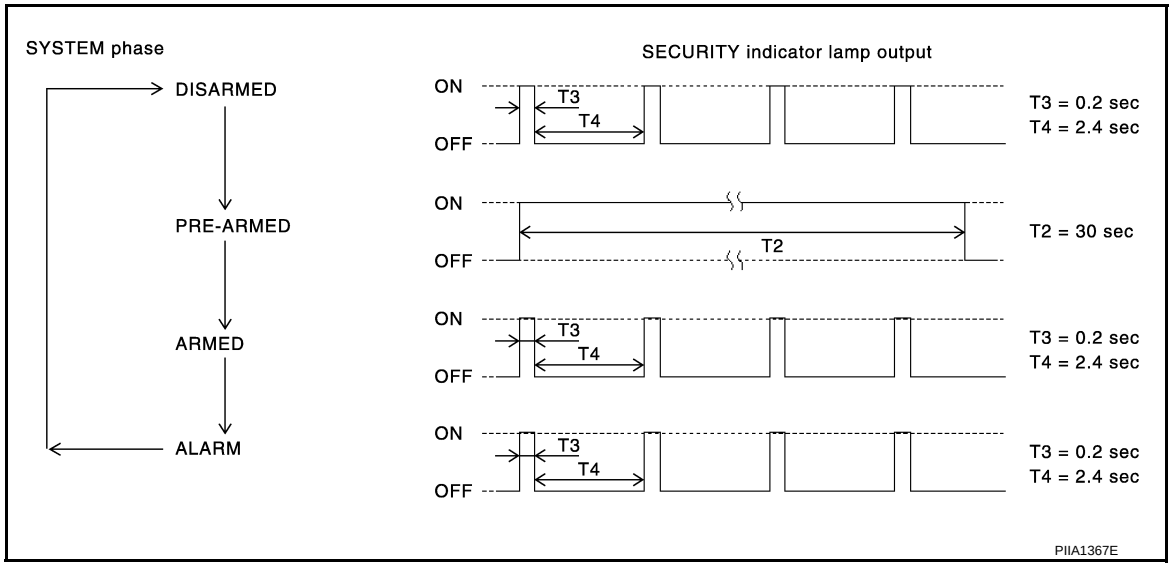
System Description

INFOID:0000000008279853

INPUT/OUTPUT SIGNAL CHART

Switch	Input signal to BCM	BCM system	Actuator
All door switch	Open or close	Vehicle security system	• IPDM E/R • Head lamp • Horn • Security indicator lamp
Hood switch			
Door key cylinder switch	Lock or unlock		
Door lock and unlock switch			
Door request switch			
Intelligent Key	Lock or unlock		
	Panic alarm		

OPERATION FLOW



SETTING THE VEHICLE SECURITY SYSTEM

Initial Condition

- Ignition switch is in OFF position.

Disarmed Phase

- When hood, doors or back door is open, the vehicle security system is set in the disarmed phase on the assumption that the owner is inside or near the vehicle.
- When the vehicle security system is in the disarmed phase, the security indicator lamp blinks every 2.4 seconds.

Pre-armed Phase and Armed Phase

When the following operation 1 or 2 is performed, the vehicle security system turns into the “pre-armed” phase. (The security indicator lamp illuminates for approx. 30 seconds. Then, the system automatically shifts into the “armed” phase.)

1. BCM receives LOCK signal from front door key cylinder switch or Intelligent Key, after hood, back door and all doors are closed.
2. Hood, back door and all doors are closed after front doors are locked by key or door lock and unlock switch.

CANCELING THE SET VEHICLE SECURITY SYSTEM

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

1. Unlock the doors with the key or Intelligent Key.
2. Turn ignition switch “ON” or “ACC” position.

CANCELING THE ALARM OPERATION OF THE VEHICLE SECURITY SYSTEM

When unlocking the door with the key or Intelligent Key the alarm operation is canceled.

ACTIVATING THE ALARM OPERATION OF THE VEHICLE SECURITY SYSTEM

Check that the system is in the armed phase. (The security indicator lamp blinks every 2.4 seconds.)
When the following operation 1 or 2 is performed, the system sounds the horns and flashes the headlamps for approx. 50 seconds.

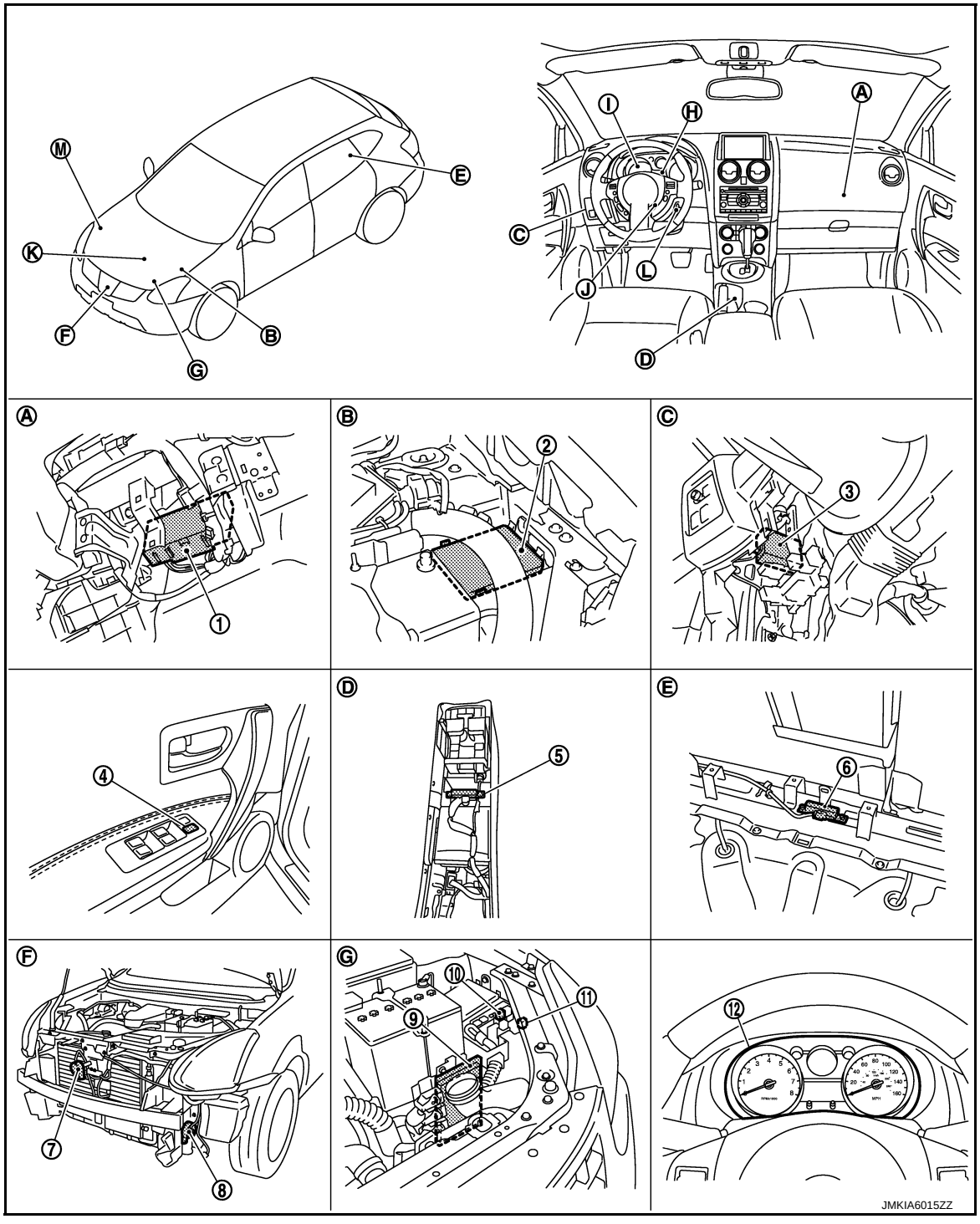
1. Hood or any door is opened during armed phase.
2. Disconnecting and connecting the battery connector before canceling armed phase.

PANIC ALARM OPERATION

Intelligent Key system may or may not operate vehicle security system (horn and headlamps) as required.
When the Intelligent Key system is triggered, ground is supplied intermittently to both headlamp relay and horn relay.
When headlamp relay and horn relay are energized, then power is supplied to headlamps (LH and RH) and horns (HIGH and LOW).
The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 50 seconds or when BCM receives any signal from Intelligent Key.

Component Parts Location

INFOID:0000000008279854



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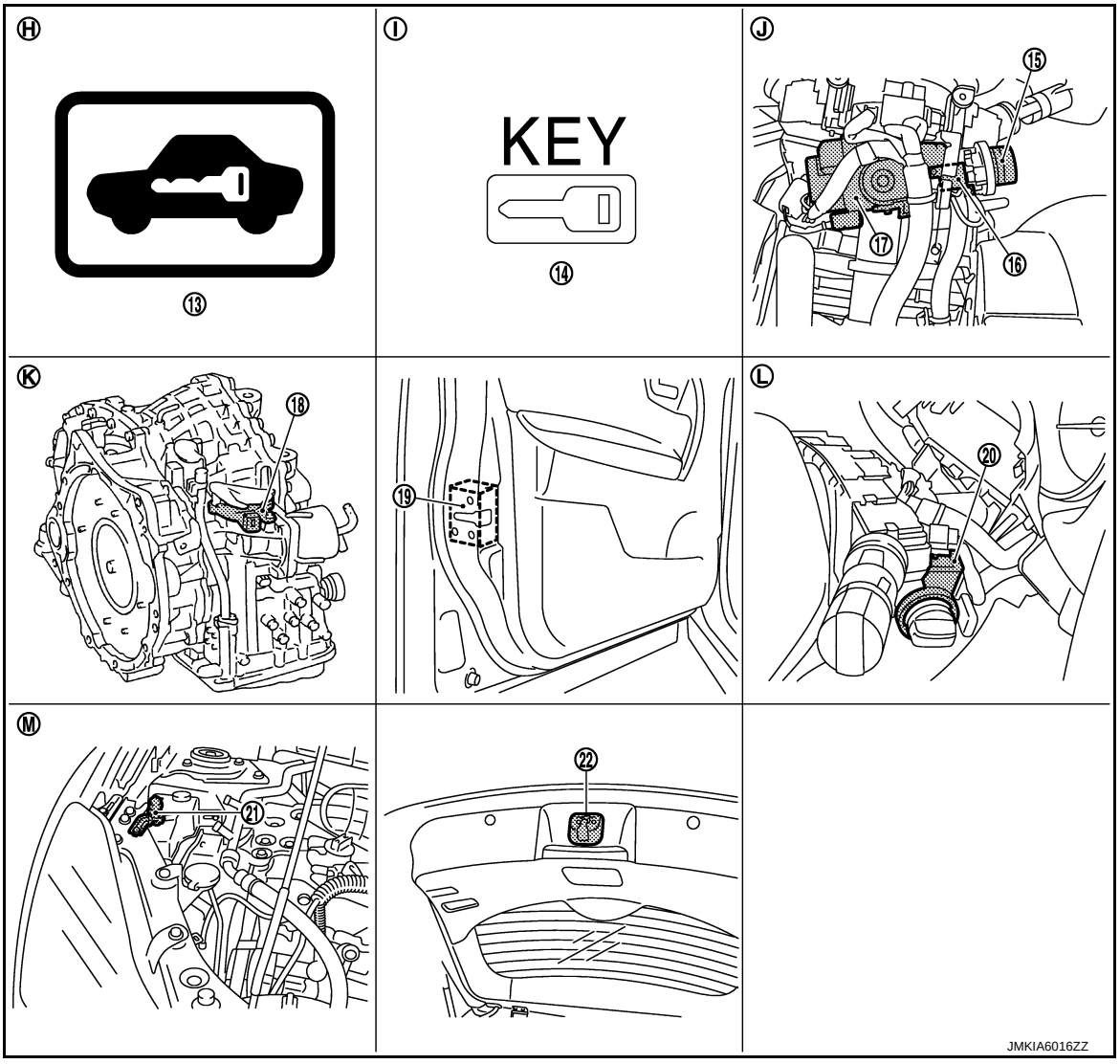

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23. Back door switch (back door lock assembly)
I. Built in combination meter
J. View with steering column cover removed
K. Transaxle assembly
L. View with steering column cover removed
M. Engine room (RH)

Component Description

INFOID:0000000008279855

Component	Reference
BCM	BCS-7
Horn	SEC-62
Hood switch	SEC-55
Security indicator	SEC-64
Door switch	DLK-276
IPDM E/R	PCS-2

DIAGNOSIS SYSTEM (BCM)
COMMON ITEM
COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000008279856

APPLICATION ITEM
CONSULT can display each diagnostic item using the diagnostic test modes shown following.

Diagnosis mode	Function description
ECU Identification	BCM part number is displayed.
Self-Diagnostic Result	Displays the diagnosis results judged by BCM. Refer to BCS-61, "DTC Index".
Data Monitor	BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Work Support	Changes the setting for each system function.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from 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.

×: Applicable item

System	CONSULT sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp control	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
• Auto air conditioning system • Manual air conditioning system	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Body control system	BCM	×		
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
—	FUEL LID*			
TPMS	AIR PRESSURE MONITOR	×	×	×
Panic alarm system	PANIC ALARM			×

*: This item is displayed, but is not function.

IMMU

IMMU : CONSULT Function (BCM - IMMU)

INFOID:0000000008279857

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.

DATA MONITOR

Monitor item	Content
IGN ON SW	Indicates [ON/OFF] 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 Function (BCM - THEFT ALM)

INFOID:0000000008279858

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.

DATA MONITOR

Monitor Item	Condition
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
KEYLESS LOCK*2	Indicates [ON/OFF] condition of lock signal from key fob.
KEYLESS UNLOCK*2	Indicates [ON/OFF] condition of unlock signal from key fob.
I-KEY LOCK*1	Indicates [ON/OFF] condition of lock signal from Intelligent Key.
I-KEY UNLOCK*1	Indicates [ON/OFF] condition of unlock signal from Intelligent Key.
TRUNK OPNR SW	Indicates [ON/OFF] condition of back door opener switch.
TRUNK CYL SW	**NOTE:** The item is indicated, but not monitored.
TRNK OPNR MNTR	**NOTE:** The item is indicated, but not monitored.
HOOD SW	Indicates [ON/OFF] condition of hood switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch (driver side).
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch (passenger side).
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch RH.
DOOR SW-RL	Indicates [ON/OFF] condition of rear door switch LH.
BACK DOOR SW	Indicates [ON/OFF] condition of back door switch.

Monitor Item	Condition
KEY CYL LK-SW	Indicates [ON/OFF] condition of key cylinder switch.
KEY CYL UN-SW	Indicates [ON/OFF] condition of key cylinder switch.
CDL LOCK SW	Indicates [ON/OFF] condition of door lock and unlock switch.
CDL UNLOCK SW	Indicates [ON/OFF] condition of door lock and unlock switch.

*1: For vehicle equipped with Intelligent Key.

*2: For the vehicle equipped with remote key less entry system.

ACTIVE TEST

Test item	Description
THEFT IND	This test is able to check security indicator operation [ON/OFF].
VEHICLE SECURITY HORN	This test is able to check horn operation [ON].
HEAD LAMP(HI)	This test is able to check head lamp (HI) operation [ON/OFF].

WORK SUPPORT

Test item	Description
SECURITY ALARM SET	Vehicle security function mode can be changed in this mode. • ON: Vehicle security function is ON. • OFF: Vehicle security function is OFF.
THEFT ALM TRG	The switch which triggered vehicle security system is recorded. This mode can be able to confirm and erase the record of vehicle security system.

DIAGNOSIS SYSTEM (INTELLIGENT KEY UNIT)

CONSULT Function (INTELLIGENT KEY)

INFOID:0000000008279859

APPLICATION ITEM

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

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

WORK SUPPORT

Support item	Description
CONFIRM KEY FOB ID	It can check whether Intelligent Key ID code is registered or not
TAKE OUT FROM WINDOW WARN	Take away warning chime (from window) mode can be changed
LOW BATT OF KEY FOB WARN	Intelligent Key low battery warning mode can be changed
ANSWER BACK FUNCTION	Buzzer reminder operation can be changed
SELECTIVE UNLOCK FUNCTION	Selective unlock mode can be changed
ANTI KEY LOCK IN FUNCTION	Key reminder function mode can be changed to operate (ON) or not operate (OFF) with this mode
HORN WITH KEYLESS LOCK	Horn reminder function mode by Intelligent Key button can be changed to operate (ON) or not operate (OFF) with this mode
HAZARD ANSWER BACK	Hazard reminder operation mode can be changed
ANSWER BACK WITH I-KEY LOCK	Buzzer reminder operation (lock operation) mode by each door request switch can be changed
ANSWER BACK WITH I-KEY UNLOCK	Buzzer reminder operation (unlock operation) mode by each door request switch can be changed
AUTO RELOCK TIMER	Auto door lock operation mode can be changed
PANIC ALARM DELAY	Panic alarm button pressing time on Intelligent Key remote control button can be changed
P/W DOWN DELAY	This item is indicated, but not possible to use it
ENGINE START BY I-KEY	Engine start function (by Intelligent Key) mode can be changed
LOCK/UNLOCK BY I-KEY	Door lock function by door request switch can be changed

SELF-DIAG RESULT

Refer to SEC-101, "DTC Index".

DATA MONITOR

Monitor Item	Condition
PUSH SW	Indicates [ON (pressed)/OFF (released)] condition of ignition knob switch
KEY SW	Indicates [ON (inserted)/OFF (removed)] condition of key switch
DR REQ SW	Indicates [ON (pressed)/OFF (released)] condition of door request switch (driver side)
AS REQ SW	Indicates [ON (pressed)/OFF (released)] condition of door request switch (passenger side)
BD/TR REQ SW	Indicates [ON (pressed)/OFF (released)] condition of door request switch (back door)

Monitor Item	Condition
IGN SW	Indicates [ON (ON or START position)/OFF (other than ON and START position)] condition of ignition switch ON position
ACC SW	Indicates [ON/OFF] condition of ignition switch ACC position
STOP LAMP SW	Indicates [ON/OFF] condition of stop lamp switch
P RANGE SW	Indicates [ON/OFF] condition shift lever park position
BD OPEN SW	This item is indicated, but not monitored
TR CANCEL SW	This item is indicated, but not monitored
DOOR LOCK SIG	Indicates [ON/OFF] condition of LOCK signal from Intelligent Key
DOOR UNLOCK SIG	Indicates [ON/OFF] condition of UNLOCK signal from Intelligent Key
KEYLESS TRUNK	This item is indicated, but not monitored
KEYLESS PANIC	Indicates [ON/OFF] condition PANIC button of Intelligent key
KEYLS PSD LH	This item is indicated, but not monitored
KEYLS PSD RH	This item is indicated, but not monitored
KEYLS PBD SIG	This item is indicated, but not monitored
DOOR SW DR	Indicates [OPEN/CLOSE] condition of front door switch (driver side) from BCM via CAN communication
DOOR SW AS	Indicates [OPEN/CLOSE] condition of front door switch (passenger side) from BCM via CAN communication
DOOR SW RR	Indicates [OPEN/CLOSE] condition of rear door switch (RH) from BCM via CAN communication
DOOR SW RL	Indicates [OPEN/CLOSE] condition of rear door switch (LH) from BCM via CAN communication
DOOR BK SW	Indicates [OPEN/CLOSE] condition of back door switch from BCM via CAN communication
TRUNK SW	This item is indicated, but not monitored
VEHICLE SPEED	Displays the vehicle speed signal received from combination meter by numerical value [km/h]

ACTIVE TEST

Test item	Description
DOOR LOCK/UNLOCK	This test is able to check door lock/unlock operation • ALL UNLK: All door lock actuators are unlocked • DR UNLK: Door lock actuator (driver side) is unlocked • AS UNLK: Door lock actuator (passenger side) is unlocked • BK UNLK: This item is indicated, but inactive • LOCK: All door lock actuator is locked
ANTENNA	This test is able to check Intelligent Key antenna operation. When the following condition are met, hazard warning lamp blinks • ROOM ANT1: Inside key antenna (console) transmissions can be detected by Intelligent Key, when “ROOM ANT1” is selected • ROOM ANT2: This item is displayed, but cannot be used • LUG ANT: Inside key antenna (rear seat) transmissions can be detected by Intelligent Key, when “LUG ANT” is selected • DR ANT: Outside key antenna (driver side) transmissions can be detected by Intelligent Key, when “DR ANT” is selected • AS ANT: Outside key antenna (passenger side) transmissions can be detected by Intelligent Key, when “AS ANT” is selected • BK ANT: Outside key antenna (rear bumper) transmissions can be detected by Intelligent Key, when “BK ANT” is selected
OUTSIDE BUZZER	This test is able to check Intelligent Key warning buzzer operation • ON • OFF

Test item	Description
INSIDE BUZZER	This test is able to check warning chime in combination meter operation • take out: Take away warning chime sounds • knob: Ignition knob switch warning chime sounds • key: Key warning chime sounds • off
INDICATOR	This test is able to check warning lamp operation • BLUE ON: Key warning lamp (green) illuminates • RED ON: Key warning lamp (red) illuminates • KNOB ON: Lock warning lamp illuminates • BLUE IND: Key warning lamp (green) flashes • RED IND: Key warning lamp (red) flashes • KNOB IND: Lock warning lamp flashes • OFF

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

BCM

BCM : Description

INFOID:0000000008279860

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-26, "CAN Communication Signal Chart".

BCM : DTC Logic

INFOID:0000000008279861

DTC DETECTION LOGIC

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

BCM : Diagnosis Procedure

INFOID:0000000008279862

1.PERFORM SELF DIAGNOSTIC

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

Is DTC “U1000” displayed?

YES >> Refer to LAN-16, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-46, "Intermittent Incident".

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

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

INFOID:0000000008279863

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, CAN-L) 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-26, "CAN Communication Signal Chart".

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

INFOID:0000000008279864

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When IPDM E/R cannot communicate CAN communication signal continuously for 2 seconds or more.	CAN communication system

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

agnosis Procedure

INFOID:0000000008279865

1.PERFORM SELF DIAGNOSTIC

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

Is DTC “U1000” displayed?

YES >> Refer to LAN-16, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-46, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:0000000008279866

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:0000000008279867

1.REPLACE INTELLIGENT KEY UNIT

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

>> Replace Intelligent Key unit.

Special Repair Requirement

INFOID:0000000008279868

1.REQUIRED WORK WHEN REPLACING INTELLIGENT KEY UNIT

Initialize control unit. Refer to CONSULT Operation Manual NATS-IVIS/NVIS.

>> WORK END

P1610 LOCK MODE

Description

INFOID:0000000008279869

When the starting operation is carried more than 10 times consecutively under the following conditions, NVIS/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:0000000008279870

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When the BCM detects wrong key ID, 10 or more times consecutively under the following conditions. • 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.

Is DTC detected?

YES >> Refer to SEC-34, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008279871

1.CHECK ENGINE START FUNCTION

1. Perform the check for DTC except DTC P1610.
2. Use CONSULT 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-46, "Intermittent Incident".

>> INSPECTION END

P1611 ID DISCORD, IMMU-ECM

Description

INFOID:0000000008279872

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:0000000008279873

DTC DETECTION LOGIC

NOTE:

- If DTC P1611 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-31, "BCM : DTC Logic".

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-35, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008279874

1.PERFORM INITIALIZATION

Perform initialization with CONSULT. Re-register all mechanical keys.
For initialization and registration of mechanical key.

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

YES >> INSPECTION END (ID was unregistered.)
NO >> GO TO 2.

2.REPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT. Re-register all mechanical keys.
   For initialization and registration of mechanical key.

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

YES >> INSPECTION END (BCM was malfunctioning.)
NO >> GO TO 3.

3.REPLACE ECM

1. Replace ECM. Refer to the following page.
- Except for Mexico: Refer to EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".
- For Mexico: Refer to EC-472, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".
2. Perform initialization with CONSULT. Re-register all mechanical keys.
   For initialization and registration of mechanical key.

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

YES >> INSPECTION END (ECM was malfunctioning.)
NO >> GO TO 4.

4.CHECK INTERMITENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

P1612 CHAIN OF ECM-IMMU

Description

INFOID:0000000008279875

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:0000000008279876

DTC DETECTION LOGIC

NOTE:

- If DTC P1612 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-31, "BCM : DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1612	CHAIN OF BCM-ECM	Inactive communication between ECM and BCM	• Harness or connectors (The CAN communication line is open or short) • BCM • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-37, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008279877

1.REPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT.

Does the engine start?

YES >> INSPECTION END (BCM was malfunctioning.)
NO >> ECM is malfunctioning.
- Replace ECM. Refer to following page.
  - Except for Mexico: Refer to EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".
  - For Mexico: Refer to EC-472, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

P1614 CHAIN OF IMMU-KEY

Description

INFOID:0000000008279878

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

DTC Logic

INFOID:0000000008279879

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Insert mechanical key into key cylinder.
2. Press ignition knob switch.
3. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-38, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008279880

1.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to SEC-124, "Removal and Installation".

Is the inspection result normal?

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

2.CHECK MECHANICAL KEY

Start engine with another registered mechanical key.

Does the engine start?

YES >> Replace mechanical key. Perform initialization and registration of mechanical key.
NO >> GO TO 3.

3.CHECK NATS ANTENNA AMP. POWER SUPPLY

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

(+)		(-)	Voltage (V) (Approx.)
NATS antenna amp.			
Connector	Terminal		
M26	1	Ground	Battery voltage

Is the inspection result normal?

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

4. CHECK NATS ANTENNA AMP. GROUND CIRCUIT

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

NATS antenna amp.		Ground	Continuity
Connector	Terminal		
M26	3		Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace circuit.

5. CHECK NATS ANTENNA AMP. SIGNAL CIRCUIT

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

(+)		(–)	Condition	Voltage (V) (Approx.)
NATS antenna amp.				
Connector	Terminal			
M26	2	Ground	Just after inserting mechanical key in key cylinder.	Pointer of tester should move.
			Other than above.	0
	4		Just after inserting mechanical key in key cylinder.	Pointer of tester should move.
			Other than above.	0

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace circuit.

6. CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

P1615 DIFFRENCE OF KEY

Description

INFOID:0000000008279881

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:0000000008279882

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
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 key cylinder.
2. Press ignition knob switch.
3. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-40, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008279883

1.PERFORM INITIALIZATION

Perform initialization with CONSULT. Re-register all mechanical keys.
For initialization and registration of mechanical key.

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

YES >> Mechanical key was unregistered.
NO >> INSPECTION END (BCM is malfunctioning.)
- Replace BCM. Refer to BCS-65, "Removal and Installation".
- Perform initialization again.

B2013 ID DISCORD I-KEY-STRG

Description

INFOID:0000000008279884

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

DTC Logic

INFOID:0000000008279885

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Press ignition knob switch.
2. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-41, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008279886

1.PERFORM INITIALIZATION

Perform initialization with CONSULT. Re-register all mechanical keys.
For initialization and registration of mechanical key.

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

YES >> INSPECTION END (Steering lock unit was unregistered.)
NO >> GO TO 2.

2.CHECK STEERING LOCK UNIT POWER SUPPLY-1

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

(+)		(–)	Voltage (V) (Approx.)
Steering lock unit			
Connector	Terminal		
M28	1	Ground	Battery voltage

Is the inspection result normal?

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

3.CHECK STEERING LOCK UNIT POWER SUPPLY-2

Check voltage between steering lock unit harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
Steering lock unit			
Connector	Terminal		
M28	2	Ground	5

Is the inspection result normal?

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

4. CHECK STEERING LOCK UNIT GROUND CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check continuity between Intelligent Key unit harness connector and steering lock unit harness connector.

Intelligent Key unit		Steering lock unit		Continuity
Connector	Terminal	Connector	Terminal	
M40	31	M28	4	Existed

3. Check continuity between Intelligent Key unit harness connector and ground.

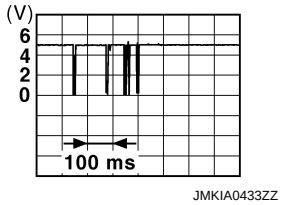
Intelligent Key unit		Ground	Continuity
Connector	Terminal		
M40	31		Not existed

Is the inspection result normal?

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

5. CHECK STEERING LOCK UNIT COMMUNICATION CIRCUIT

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

(+) Steering lock unit		(–)	Condition		Voltage (V) (Approx.)
Connector	Terminal				
M28	3	Ground	Steering lock	LOCK status	5
				LOCK ⇔ UNLOCK	 JMKIA0433ZZ
				For 15 seconds after UNLOCK	5
				15 seconds later UN-LOCK	0

Is the inspection result normal?

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

6. CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

B2552 INTELLIGENT KEY

Description

INFOID:0000000008279887

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

DTC Logic

INFOID:0000000008279888

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-43, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008279889

1.REPLACE INTELLIGENT KEY UNIT

1. Replace Intelligent Key unit.
2. Perform initialization with CONSULT. Re-register all mechanical keys.
3. Start the engine.

Does the engine start?

YES >> INSPECTION END (Intelligent Key unit was malfunctioning.)
NO >> Perform “DTC confirmation procedure”. Refer to SEC-43, "DTC Logic".

Special Repair Requirement

INFOID:0000000008279890

1.REQUIRED WORK WHEN REPLACING INTELLIGENT KEY UNIT

Initialize control unit.

>> WORK END

B2590 ID DISCORD BCM-I-KEY

Description

INFOID:0000000008279891

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

DTC Logic

INFOID:0000000008279892

DTC DETECTION LOGIC

NOTE:

- If DTC B2590 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-31, "BCM : DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2590	ID DISCORD BCM-I-KEY	The ID verification results between BCM and Intelligent Key unit are NG. The registration is necessary.	• BCM • Intelligent Key unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-44, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008279893

1.PERFORM INITIALIZATION

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

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

YES >> INSPECTION END (ID was unregistered.)
NO >> BCM is malfunctioning.
- Replace BCM
- Perform initialization again

POWER SUPPLY AND GROUND CIRCUIT
INTELLIGENT KEY UNIT

INTELLIGENT KEY UNIT : Diagnosis Procedure

INFOID:0000000008279894

1.CHECK FUSE AND FUSIBLE LINK

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown.

Terminal No.	Signal name	Fuse No.
11	Battery power supply	14 (10A)
6	Ignition power supply	1 (10A)

Is the fuse blown?

YES >> Replace the blown fuse after repairing the affected circuit if a fuse is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Turn ignition switch ON.
3. Check voltage between Intelligent Key unit harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
Intelligent Key unit			
Connector	Terminal		
M40	11	Ground	Battery voltage
	6		

Is the inspection result normal?

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

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between Intelligent Key unit harness connector and ground.

Intelligent Key unit		Ground	Continuity
Connector	Terminal		
M40	12		Exists

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness.

BCM

BCM : Diagnosis Procedure

INFOID:0000000008279895

1.CHECK FUSES AND FUSIBLE LINK

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

Signal name	Fuses and fusible link No.
Battery power supply	10
	J
ACC power supply	20
Ignition power supply	1

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Ignition switch position		
(+)		(–)			
BCM			OFF	ACC	ON
Connector	Terminal				
M67	70	Ground	Battery voltage	Battery voltage	Battery voltage
	57				
M65	11		Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and the ground.

BCM		Ground	Continuity
Connector	Terminal		
M67	67		Existed

Does continuity exist?

YES >> INSPECTION END
NO >> Repair the harness or connector.

DOOR SWITCH

Description

INFOID:0000000008279896

Detects door open/closed condition.

Component Function Check

INFOID:0000000008279897

1.CHECK FUNCTION

With CONSULT

Check door switches (“DOOR SW-DR”, “DOOR SW-AS”, “DOOR SW-RL”, “DOOR SW-RR”, “BACK DOOR SW”) in “Data Monitor” mode with CONSULT.

Monitor item	Door condition	Display
DOOR SW-DR	CLOSE → OPEN	OFF → ON
DOOR SW-AS		
DOOR SW-RL		
DOOR SW-RR		
BACK DOOR		

Is the inspection result normal?

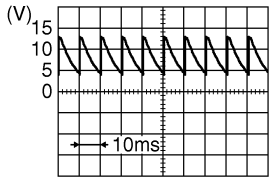
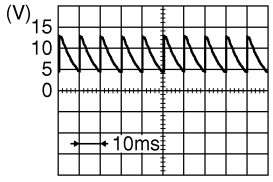
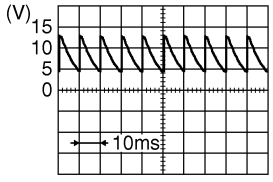
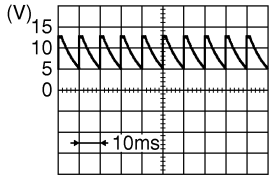
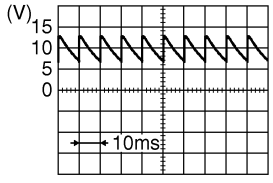
YES >> Door switch is OK.
NO >> Refer to SEC-47, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008279898

1.CHECK DOOR SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect door switch connectors.
3. Check signal between door switch harness connector and ground with oscilloscope.

Door switch				Voltage (V) (Approx.)
(+)			(–)	
Connector		Terminal		
Front door switch (passenger side)	B93	3	Ground	 JPMIA0586GB
Front door switch (driver side)	B92			 JPMIA0587GB
Rear door switch RH	B95			 JPMIA0587GB
Rear door switch LH	B94			 JPMIA0594GB
Back door lock assembly (back door switch)	D190			 JPMIA0593GB

Is the inspection result normal?

YES >> • Back door switch : GO TO 3.
• Door switch : GO TO 4.

NO >> GO TO 2.

2.CHECK DOOR SWITCH CIRCUIT

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

BCM		Door switch		Continuity
Connector	Terminal	Connector	Terminal	
M65	12	B93	3	Exists
	13	B95		
M66	43	D190		
	47	B92		
	48	B94		

3. Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M65	12	Ground	Does not exist
	13		
M66	43		
	47		
	48		

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-65, "Exploded View".
NO >> Repair or replace harness.

3.CHECK BACK DOOR GROUND CIRCUIT

Check continuity between back door lock assembly harness connector and ground.

Back door lock assembly		Ground	Continuity
Connector	Terminal		
D190	4		Exist

Is the inspection result normal?

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

4.CHECK DOOR SWITCH

Check door switch.
Refer to SEC-49, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace door switch. Refer to DLK-241, "Removal and Installation".

5.CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000008279899

1.CHECK DOOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect door switch connector.
3. Check door switch .

Terminal			Condition	Continuity
Each door	3	Ground	Door switch pressed	Exists
			Door switch released	Does not exist
Back door		4	Back door open	Exists
			Back door close	Does not exist

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace door switch . Refer to DLK-241, "Removal and Installation".

KEY SWITCH

Description

INFOID:0000000008279900

Key switch detects that mechanical key is inserted into the key cylinder, and then transmits the signal to BCM .

Component Function Check

INFOID:0000000008279901

1.CHECK KEY SWITCH INPUT SIGNAL

Check key switch (“KEY ON SW”) in “Data Monitor” mode with CONSULT. Refer to DLK-46, "DOOR LOCK : CONSULT Function (BCM - DOOR LOCK)".

Monitor item	Condition	
KEY ON SW	Insert mechanical key into key cylinder	: ON
	Remove mechanical key from key cylinder	: OFF

Is the inspection result normal?

YES >> Key switch is OK.
NO >> Refer to SEC-51, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008279902

1.CHECK KEY SWITCH POWER SUPPLY CIRCUIT

1. Remove mechanical key from key cylinder.
2. Disconnect key switch connector.
3. Check voltage between ignition knob switch, key switch and key lock solenoid harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
Ignition knob switch, key switch and key lock solenoid			
Connector	Terminal		
M25	2	Ground	Battery voltage

Is the inspection result normal?

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

2.CHECK KEY SWITCH SIGNAL CIRCUIT

1. Check continuity between BCM harness connector and ignition knob switch, key switch and key lock solenoid connector.

BCM		Ignition knob switch, key switch and key lock solenoid		Continuity
Connector	Terminal	Connector	Terminal	
M65	37	M25	1	Exists

2. Check continuity between key switch and ground.

Ignition knob switch, key switch and key lock solenoid		Ground	Continuity
Connector	Terminal		
M25	1		Does not exist

Is the inspection result normal?

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

3.CHECK KEY SWITCH

Check key switch function.
Refer to SEC-52, "Component Inspection".

Is the inspection result normal?

yes >> GO TO 4.
NO >> Replace ignition knob switch, key switch and key lock solenoid.

4.CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000008279903

1.CHECK KEY SWITCH

1. Turn ignition switch OFF.
2. Disconnect key switch connector.
3. Check continuity between ignition knob switch, key switch and key lock solenoid terminals.

Terminal		Condition	Continuity
Ignition knob switch, key switch and key lock solenoid			
1	2	Insert mechanical key into key cylinder	Exists
		Remove mechanical key from key cylinder	Does not exist

Is the inspection result normal?

YES >> Key switch is OK.
NO >> Replace ignition knob switch, key switch and key lock solenoid.

IGNITION KNOB SWITCH

Description

INFOID:0000000008279904

Ignition knob switch detects that ignition knob is pressed, and then transmits the signal to Intelligent Key unit.

Component Function Check

INFOID:0000000008279905

1. CHECK IGNITION KNOB SWITCH INPUT SIGNAL

Check ignition knob switch (“PUSH SW”) in “Data Monitor” mode with CONSULT.

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

Is the inspection result normal?

YES >> Ignition knob switch is OK.
NO >> Refer to SEC-53, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008279906

1. CHECK IGNITION KNOB SWITCH POWER SUPPLY CIRCUIT

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

(+)		(–)	Voltage (V) (Approx.)
Ignition knob switch, key switch and key lock solenoid			
Connector	Terminal		
M25	4	Ground	Battery voltage

Is the inspection result normal?

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

2. CHECK IGNITION KNOB SWITCH SIGNAL CIRCUIT

1. Check continuity between Intelligent Key unit harness connector and ignition knob switch, key switch and key lock solenoid harness connector.

Intelligent Key unit		Ignition knob switch, key switch and key lock solenoid		Continuity
Connector	Terminal	Connector	Terminal	
M40	27	M25	3	Exists

2. Check continuity between ignition knob switch, key switch and key lock solenoid harness connector and ground.

Ignition knob switch, key switch and key lock solenoid		Ground	Continuity
Connector	Terminal		
M25	3		Does not exist

Is the inspection result normal?

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

3. CHECK IGNITION KNOB SWITCH

Check ignition knob switch.

Refer to SEC-54, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace ignition knob switch, key switch and key lock solenoid.

4. CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000008279907

1. CHECK IGNITION KNOB SWITCH

1. Turn ignition switch OFF.
2. Disconnect ignition knob switch. Key switch and key lock solenoid connector.
3. Check continuity between ignition knob switch, key switch and key lock solenoid terminals under the following conditions.

Ignition knob switch, key switch and key lock solenoid		Condition	Continuity
Terminal			
3	4	Ignition knob switch is pressed	Exists
		Ignition knob switch is released	Does not exist

Is the inspection result normal?

YES >> Ignition knob switch is OK.
NO >> Replace ignition knob switch, key switch and key lock solenoid.

HOOD SWITCH

Description

INFOID:0000000008279908

Hood switch detects that hood is open/close condition, and then IPDM E/R detects the signal.

Component Function Check

INFOID:0000000008279909

1.CHECK FUNCTION

1. Select “HOOD SW” in “Data Monitor” mode with CONSULT.
2. Check the hood switch signal under the following condition.

Test item	Condition		Status
HOOD SW	Hood	Open	ON
		Close	OFF

Is the indication normal?

YES >> INSPECTION END
NO >> Refer to SEC-55, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008279910

1.CHECK HOOD SWITCH SIGNAL

1. Turn ignition switch OFF.
2. Check voltage between IPDM E/R harness connector and ground.

(+)		(–)	Condition		Voltage (V) (Approx.)
IPDM E/R					
Connector	Terminal				
E13	34	Ground	Hood	Open	0
				Close	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.
NO >> GO TO 2.

2.CHECK HOOD SWITCH SIGNAL CIRCUIT

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

IPDM E/R		Hood switch		Continuity
Connector	Terminal	Connector	Terminal	
E13	34	E113	1	Existed

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

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

Is the inspection result normal?

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

3.CHECK HOOD SWITCH GROUND CIRCUIT

Check continuity between hood switch harness connector and ground.

Hood switch		Ground	Continuity
Connector	Terminal		
E113	2		Existed

Is the inspection result normal?

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

4.CHECK IPDM E/R OUTPUT

1. Connect IPDM E/R connector.
2. Check voltage between IPDM E/R harness connector and ground.

IPDM E/R		Ground	Voltage (V) (Approx.)
Connector	Terminal		
E13	34		Battery voltage

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation".

5.CHECK HOOD SWITCH

Refer to SEC-56, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace hood switch. Refer to SEC-125, "Removal and Installation".

6.CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000008279911

1.CHECK HOOD SWITCH

Check continuity between hood switch terminals.

Hood switch		Condition		Continuity
Terminal				
1	2	Hood switch	Press	Not existed
			Release	Existed

Is the inspection result normal?

YES >> Hood switch is OK.
NO >> Replace hood switch. Refer to SEC-125, "Removal and Installation".

INSIDE KEY ANTENNA
INSTRUMENT CENTER

INSTRUMENT CENTER : Description

INFOID:0000000008279912

Detects whether Intelligent Key is inside the vehicle.

INSTRUMENT CENTER : Component Function Check

INFOID:0000000008279913

1. CHECK INSIDE KEY ANTENNA INPUT SIGNAL

With CONSULT

1. Check “ANTENNA” in “Active Test” mode with CONSULT.
2. Touch “ROOM ANT 2”.
3. When Intelligent Key is in inside key antenna (instrument center) detection area, hazard warning lamp blinks.

Test Item		Inside Antenna
ANTENNA	:ROOM ANT 2	Inside key antenna (instrument center)

Is the inspection result normal?

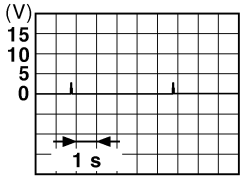
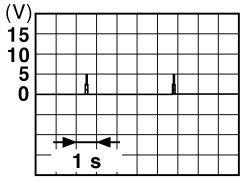
YES >> Inside key antenna (instrument center) is OK.
NO >> Refer to SEC-57, "INSTRUMENT CENTER : Diagnosis Procedure".

INSTRUMENT CENTER : Diagnosis Procedure

INFOID:0000000008279914

1. CHECK INSIDE KEY ANTENNA INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect inside key antenna (instrument center) connector.
3. Check signal between inside key antenna (instrument center) harness connector and ground with oscilloscope.

Terminals			Condition	Signal (Reference value)
(+)		(–)		
Inside key antenna (instrument center) connector	Terminal			
M56	1	Ground	Ignition knob switch is pressed	 JMKIA0393ZZ
	2			 JMKIA0392ZZ

Is the inspection result normal?

YES >> Replace inside key antenna (instrument center).
NO >> GO TO 2.

2.CHECK INSIDE KEY ANTENNA CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check continuity between Intelligent Key unit harness connector and inside key antenna (instrument center) harness connector.

Intelligent Key unit		Inside key antenna (instrument center)		Continuity
Connector	Terminal	Connector	Terminal	
M40	33	M56	1	Exists
	34		2	

3. Check continuity between Intelligent Key unit harness connector and ground.

Intelligent Key unit		Ground	Continuity
Connector	Terminal		
M40	33		Does not exist
	34		

Is the inspection result normal?

YES >> Replace Intelligent Key unit. Refer to DLK-249, "Removal and Installation".
NO >> Repair or replace harness between Intelligent Key unit and inside key antenna (instrument center).

CONSOLE

CONSOLE : Description

INFOID:0000000008279915

Detects whether Intelligent Key is inside the vehicle.

CONSOLE : Component Function Check

INFOID:0000000008279916

1.CHECK INSIDE KEY ANTENNA INPUT SIGNAL

With CONSULT

1. Check “ANTENNA” in “Active Test” mode with CONSULT.
2. Touch “ROOM ANT 1”.
3. When Intelligent Key is in inside key antenna (console) detection area, hazard warning lamp blinks.

Test Item		Inside Antenna
ANTENNA	:ROOM ANT 1	Inside key antenna (console)

Is the inspection result normal?

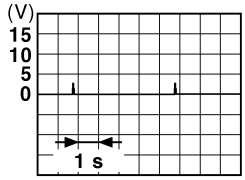
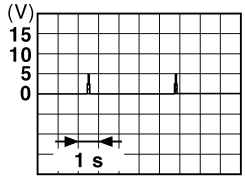
YES >> Inside key antenna (console) is OK.
NO >> Refer to SEC-58, "CONSOLE : Diagnosis Procedure".

CONSOLE : Diagnosis Procedure

INFOID:0000000008279917

1.CHECK INSIDE KEY ANTENNA INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect inside key antenna (console) connector.
3. Check signal between inside key antenna (console) harness connector and ground with oscilloscope.

Terminal			Condition	Signal (Reference value)
(+)		(–)		
Inside key antenna (console) connector	Terminal			
M252	1	Ground	Ignition knob switch is pressed	 JMKIA0393ZZ
	2			 JMKIA0392ZZ

Is the inspection result normal?

YES >> Replace inside key antenna (console).
NO >> GO TO 2.

2.CHECK INSIDE KEY ANTENNA CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check continuity between Intelligent Key unit harness connector and inside key antenna (console) harness connector.

Intelligent Key unit		Inside key antenna (console)		Continuity
Connector	Terminal	Connector	Terminal	
M40	15	M252	1	Exists
	16		2	

3. Check continuity between Intelligent Key unit harness connector and ground.

Intelligent Key unit		Ground	Continuity
Connector	Terminal		
M40	15		Does not exist
	16		

Is the inspection result normal?

YES >> Replace Intelligent Key unit. Refer to DLK-249, "Removal and Installation".
NO >> Repair or replace harness between Intelligent Key unit and inside key antenna (console).

REAR SEAT

REAR SEAT : Description

INFOID:0000000008279918

Detects whether Intelligent Key is inside the vehicle.

REAR SEAT : Component Function Check

INFOID:0000000008279919

1.CHECK INSIDE KEY ANTENNA INPUT SIGNAL

With CONSULT

1. Check “ANTENNA” in “Active Test” mode with CONSULT.

2. Touch “ROOM ANT 2”.
3. When Intelligent Key is in inside key antenna (rear seat) detection area, hazard warning lamp blinks.

Test Item		Inside Antenna
ANTENNA	:ROOM ANT 2	Inside key antenna (rear seat)

Is the inspection result normal?

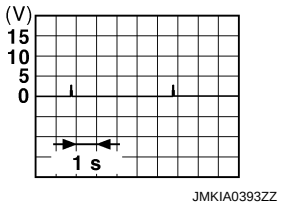
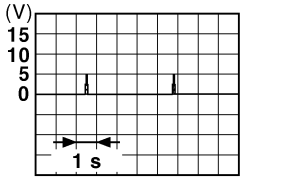
YES >> Inside key antenna (rear seat) is OK.
NO >> Refer to SEC-60, "REAR SEAT : Diagnosis Procedure".

REAR SEAT : Diagnosis Procedure

INFOID:0000000008279920

1.CHECK INSIDE KEY ANTENNA INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect inside key antenna (rear seat) connector.
3. Check signal between inside key antenna (rear seat) harness connector and ground with oscilloscope.

Terminal			Condition	Signal (Reference value)
(+)		(–)		
Inside key antenna (rear seat) connector	Terminal			
B45	1	Ground	Ignition knob switch is pressed	 JMKIA0393ZZ
	2			 JMKIA0392ZZ

Is the inspection result normal?

YES >> Replace inside key antenna (rear seat).
NO >> GO TO 2.

2.CHECK INSIDE KEY ANTENNA CIRCUIT

1. Disconnect Intelligent Key unit connector.
2. Check continuity between Intelligent Key unit harness connector and inside key antenna (rear seat) harness connector.

Intelligent Key unit		Inside key antenna (rear seat)		Continuity
Connector	Terminal	Connector	Terminal	
M40	13	B45	1	Exists
	14		2	

3. Check continuity between Intelligent Key unit harness connector and ground.

Intelligent Key unit		Ground	Continuity
Connector	Terminal		
M40	13		Does not exist
	14		

Is the inspection result normal?

YES >> Replace Intelligent Key unit. Refer to DLK-249, "Removal and Installation".
NO >> Repair or replace harness between Intelligent Key unit and inside key antenna (rear seat).

HORN

EXCEPT FOR MEXICO

EXCEPT FOR MEXICO : Description

INFOID:0000000008279921

Horn (high/low) is located inside of front bumper and operates when vehicle security system is in alarm phase.

EXCEPT FOR MEXICO : Component Function Check

INFOID:0000000008279922

1.CHECK FUNCTION

1. Select “HORN” in “Active Test” mode with CONSULT.
2. Check the horn (high/low) operation.

Test item		Description	
HORN	ON	Horn (high/low)	ON (for 20 ms)

Is the operation normal?

YES >> INSPECTION END
NO >> Refer to SEC-62, "EXCEPT FOR MEXICO : Diagnosis Procedure".

EXCEPT FOR MEXICO : Diagnosis Procedure

INFOID:0000000008279923

1.CHECK HORN FUNCTION

Check horn function with horn switch

Do the horns sound?

YES >> GO TO 2.
NO >> Refer to HRN-2, "EXCEPT FOR MEXICO : Wiring Diagram - HORN -".

2.CHECK HORN RELAY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and horn relay harness connector.

IPDM E/R		Horn relay		Continuity
Connector	Terminal	Connector	Terminal	
E15	57	E5	1	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E15	57		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation".
NO >> Repair or replace harness.

FOR MEXICO

FOR MEXICO : Description

INFOID:0000000008279924

Horn (high/low) is located inside of front bumper and operates when vehicle security system is in alarm phase.

FOR MEXICO : Component Function Check

INFOID:0000000008279925

1.CHECK FUNCTION

1. Select “HORN” in “Active Test” mode with CONSULT.
2. Check the horn (high/low) operation.

Test item		Description	
HORN	ON	Horn (high/low)	ON (for 20 ms)

Is the operation normal?

YES >> INSPECTION END
NO >> Refer to SEC-63, "FOR MEXICO : Diagnosis Procedure".

FOR MEXICO : Diagnosis Procedure

INFOID:0000000008279926

1.CHECK HORN FUNCTION

Check horn function with horn switch

Do the horns sound?

YES >> GO TO 2.
NO >> Refer to HRN-2, "EXCEPT FOR MEXICO : Wiring Diagram - HORN -".

2.CHECK HORN RELAY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector, horn relay connector and theft warning horn relay connector.
3. Check continuity between IPDM E/R harness connector and horn relay harness connector.

IPDM E/R		Horn relay		Continuity
Connector	Terminal	Connector	Terminal	
E15	57	E5	1	Existed

4. Check continuity between IPDM E/R harness connector and theft warning horn relay harness connector.

IPDM E/R		Theft warning horn relay		Continuity
Connector	Terminal	Connector	Terminal	
E15	57	E70	1	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E15	57		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation".
NO >> Repair or replace harness.

VEHICLE SECURITY INDICATOR

Description

INFOID:0000000008279927

- Vehicle security indicator is built in combination meter.
- NVIS/NATS and vehicle security system conditions are indicated by blink or illumination of vehicle security indicator.

Component Function Check

INFOID:0000000008279928

1.CHECK FUNCTION

1. Perform “THEFT IND” in the “Active Test” mode with CONSULT.
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-64, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008279929

1.CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT

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

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

Is the inspection result normal?

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

2.CHECK SECURITY INDICATOR LAMP SIGNAL CIRCUIT

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

BCM		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M65	23	M34	28	Existed

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

Combination meter		Ground	Continuity
Connector	Terminal		
M34	28		Not existed

Is the inspection result normal?

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

3.CHECK BCM OUTPUT SIGNAL

1. Connect combination meter connector.

2. Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M65	23	Ground	Battery voltage

Is the inspection result normal?

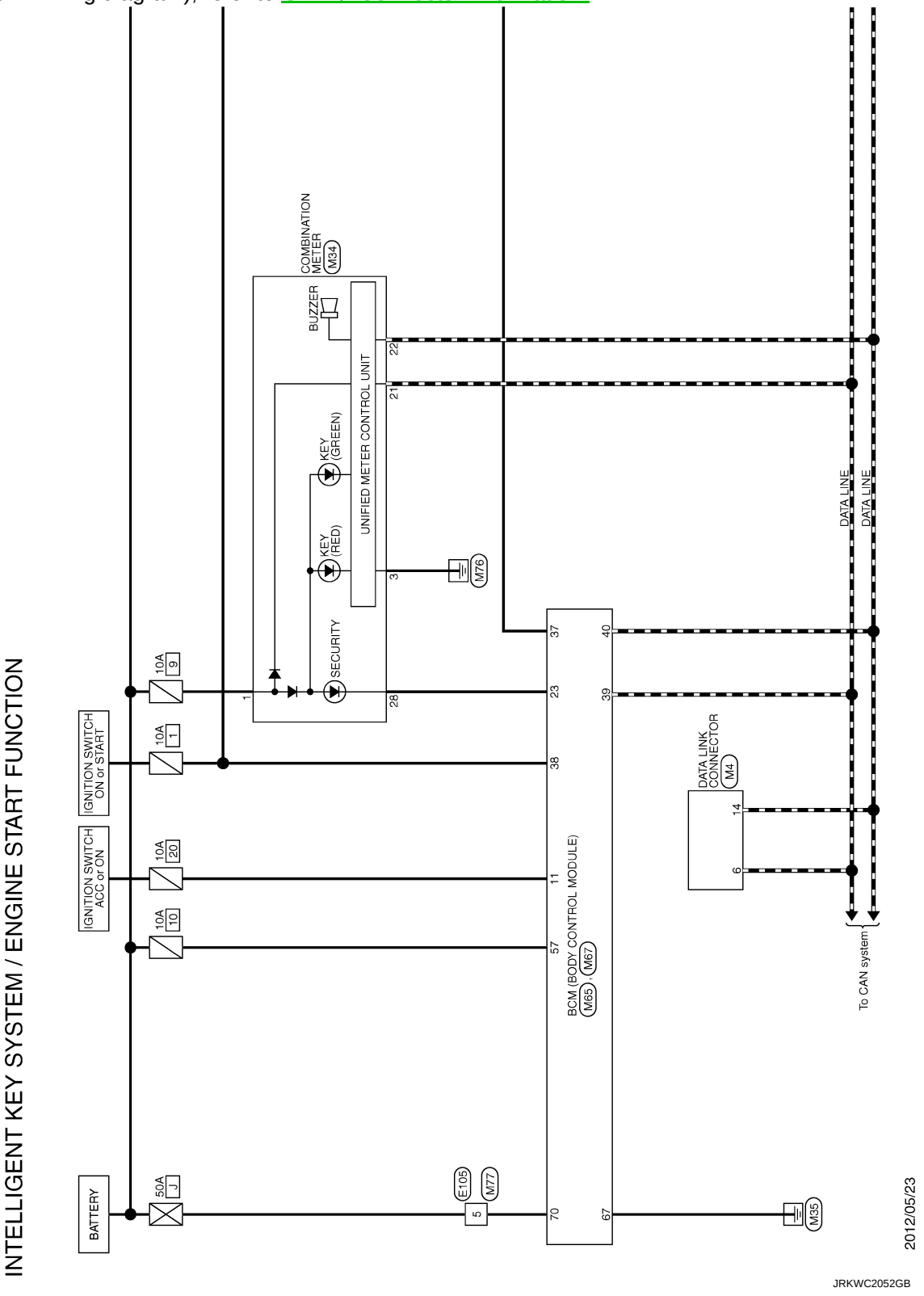
YES >> Replace BCM. Refer to BCS-65, "Removal and Installation".
NO >> Replace combination meter. Refer to MWI-69, "Removal and Installation".

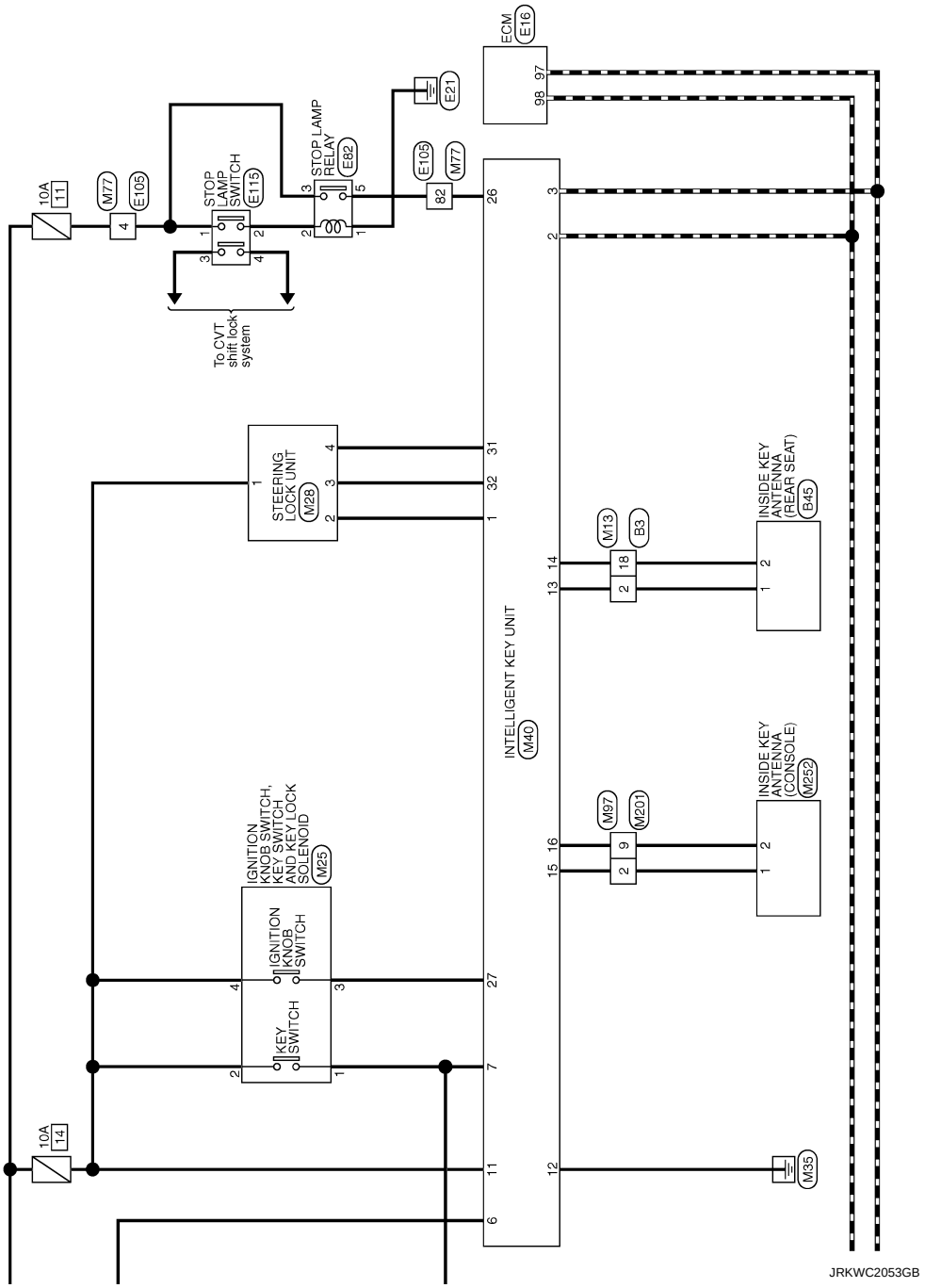
INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

Wiring Diagram - INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION -

INFOID:0000000008279930

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".



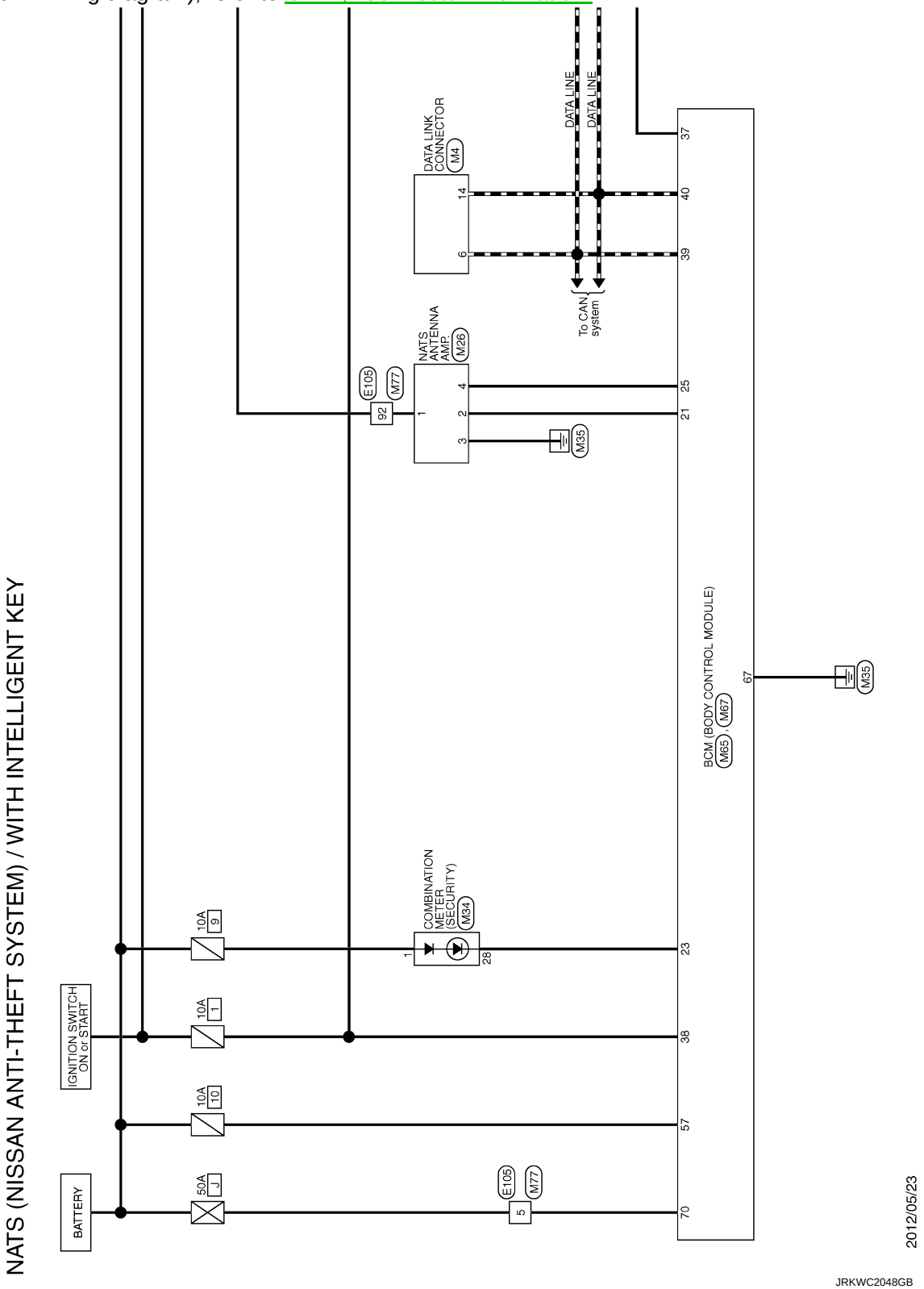

ECM
E16
97
98
E21
STOP LAMP RELAY
E82
E105
M77
82
26
10A
11
M77
E105
4
STOP LAMP SWITCH
E115
3
1
2
4
To CVT shift lock system
3
2
STEERING LOCK UNIT
M28
31
32
1
INTELLIGENT KEY UNIT
M40
M13
B3
18
14
13
INSIDE KEY ANTENNA (REAR SEAT)
B45
M97
M201
9
16
15
INSIDE KEY ANTENNA (CONSOLE)
M252
IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
M25
IGNITION KNOB SWITCH
KEY SWITCH
4
3
2
1
27
7
10A
14
11
6
12
M35
JRKWC2053GB

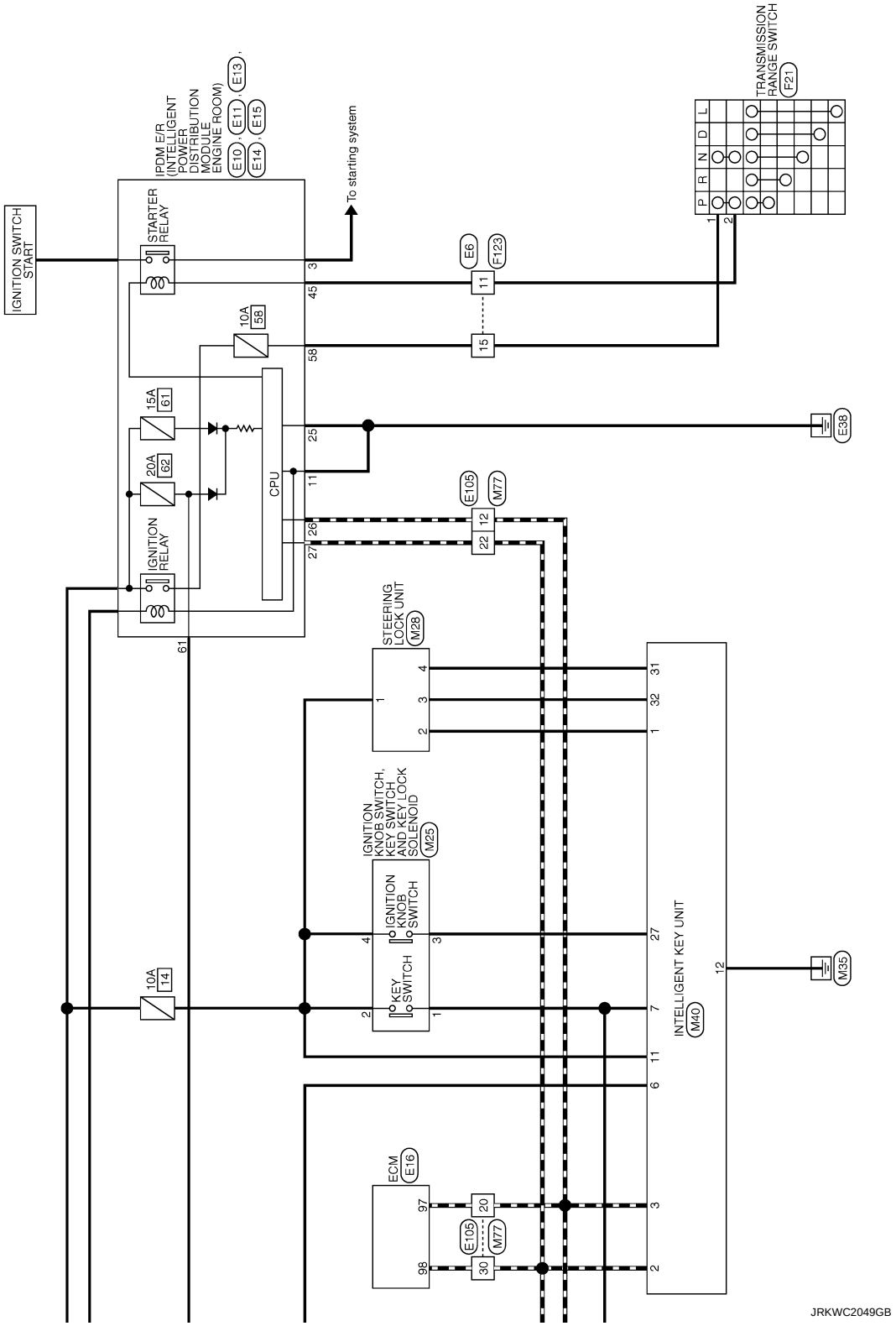
NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS

Wiring Diagram - NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS -

INFOID:0000000008279931

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".



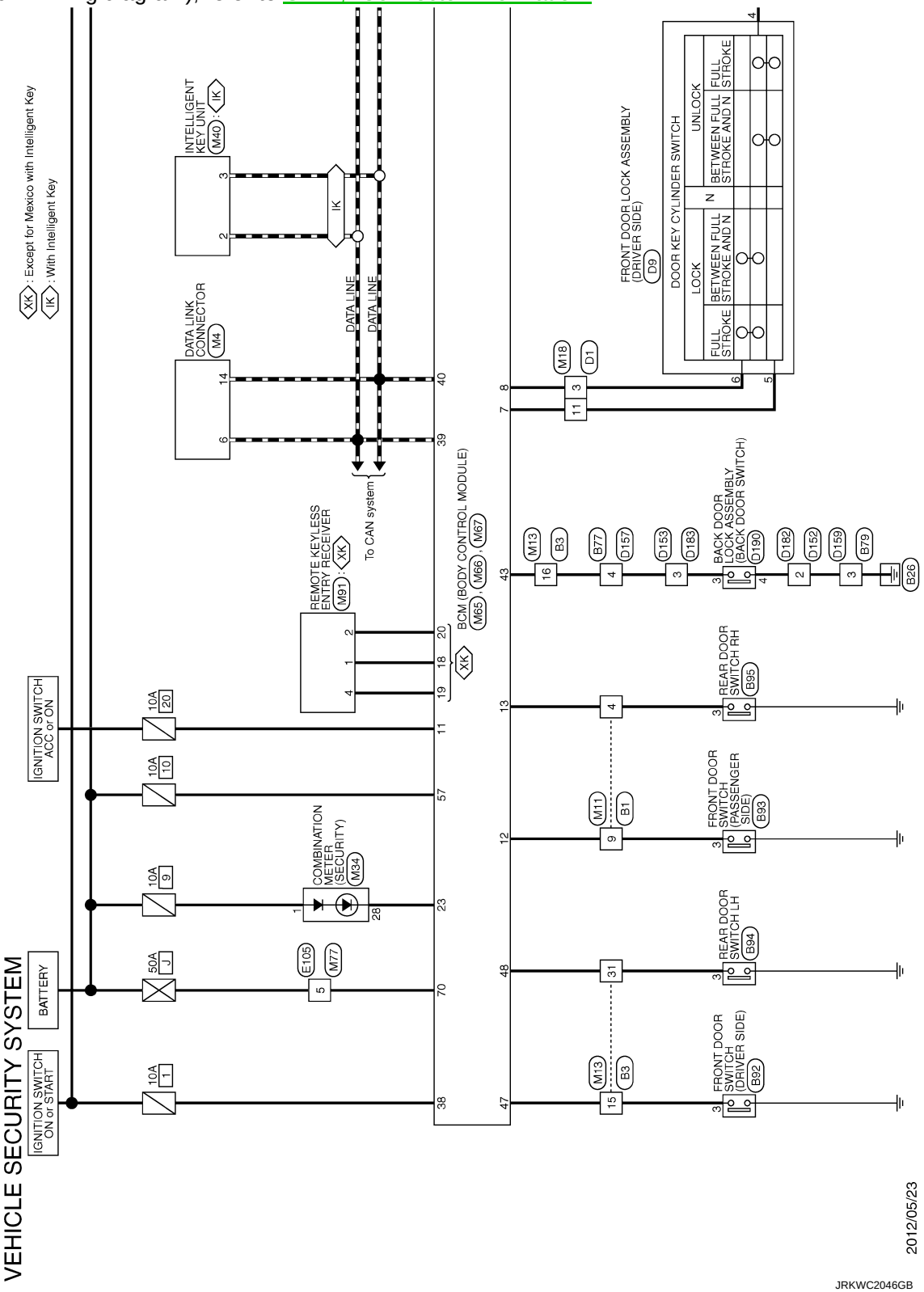

IGNITION SWITCH START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E10, E11, E13, E14, E15
STARTER RELAY
To starting system
TRANSMISSION RANGE SWITCH F21
P R N D L
E6 F123
10A 58
15A 61
20A 62
IGNITION RELAY
CPU
E38
E105 M77
STEERING LOCK UNIT M28
IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID M25
IGNITION KNOB SWITCH
KEY SWITCH
10A 14
INTELLIGENT KEY UNIT M40
M35
ECM E16
JRKWC2049GB

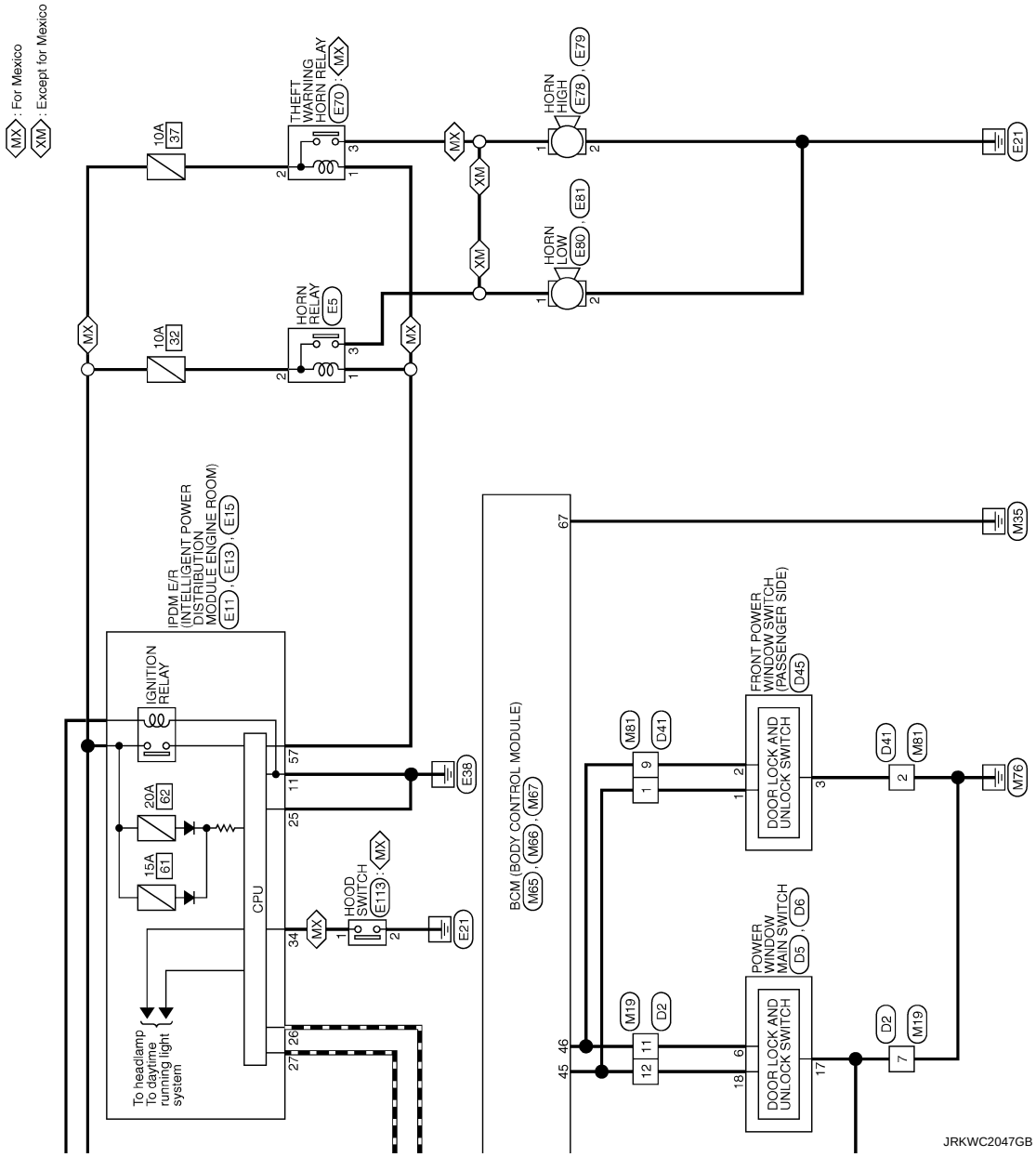
VEHICLE SECURITY SYSTEM

Wiring Diagram - VEHICLE SECURITY SYSTEM -

INFOID:0000000008279932

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




MX : For Mexico
XM : Except for Mexico
10A 37
10A 32
THEFT WARNING HORN RELAY E70 : MX
HORN RELAY E5
HORN HIGH E78 : E79
HORN LOW E80 : E81
E21
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E11 : E13 : E15
IGNITION RELAY
20A 62
15A 61
CPU
HOOD SWITCH E113 : MX
E38
To headlamp
To daytime running light system
BCM (BODY CONTROL MODULE) M65 : M66 : M67
M35
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) D45
DOOR LOCK AND UNLOCK SWITCH
POWER WINDOW MAIN SWITCH D5 : D6
M76
JRKWC2047GB

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000008729056

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

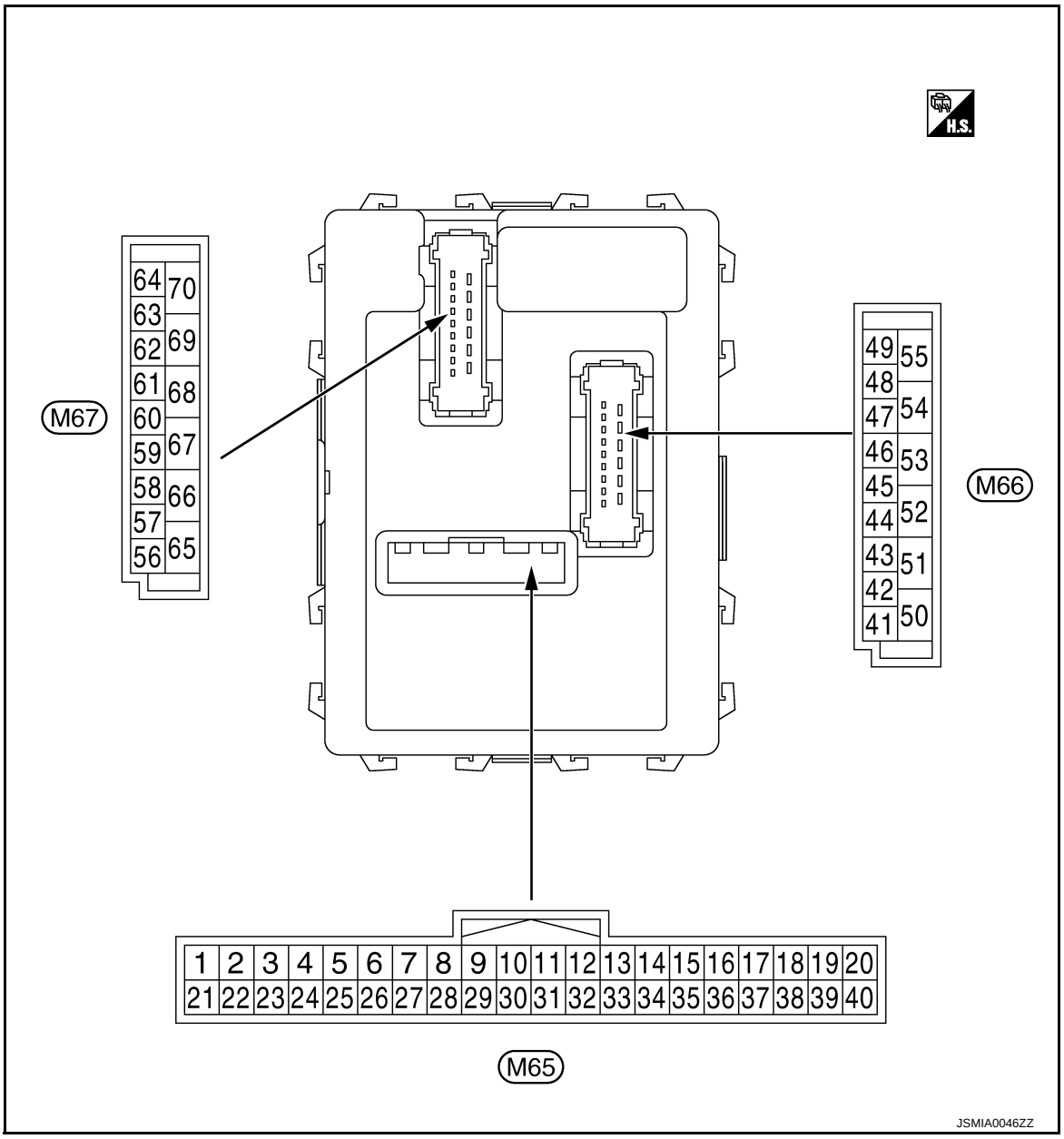
Monitor Item	Condition	Value/Status
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the lock 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
I-KEY LOCK	“LOCK” button of Intelligent Key or door request switch are not pressed	Off
	“LOCK” button of Intelligent Key or door request switch are pressed	On
I-KEY UNLOCK	“UNLOCK” button of Intelligent Key or door request switch are not pressed	Off
	“UNLOCK” button of Intelligent Key or door request switch are 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

Monitor Item	Condition	Value/Status
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
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	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On
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
ENGINE RUN	Engine stopped	Off
	Engine running	On
PKB SW	Parking brake switch is OFF	Off
	Parking brake switch is ON	On
CARGO LAMP SW	**NOTE:** The item is indicated, but not monitored.	Off
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5 V
	Dark outside of the vehicle	Close to 0 V
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On

Monitor Item	Condition	Value/Status
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
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
RR WIPER STP2	**NOTE:** The item is indicated, but not monitored.	Off
H/L WASH SW	**NOTE:** The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch OFF	Off
	Hazard switch ON	On
BRAKE SW	Brake pedal is not depressed	Off
	Brake pedal is depressed	On
FAN ON SIG	Blower fan motor switch OFF	Off
	Blower fan motor switch ON (other than OFF)	On
AIR COND SW	• A/C conditioner OFF (A/C switch indicator OFF) (Automatic air conditioner) • A/C switch OFF (Manual air conditioner)	Off
	• A/C conditioner ON (A/C switch indicator ON) (Automatic air conditioner) • A/C switch ON (Manual air conditioner)	On
I-KEY TRUNK	**NOTE:** The item is indicated, but not monitored.	Off
I-KEY PW DWN	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed and held	On
I-KEY PANIC	PANIC button of Intelligent Key is not pressed	Off
	PANIC button of Intelligent Key is pressed	On
PUSH SW	Return to ignition switch to “LOCK” position	Off
	Press ignition switch	On
TRNK OPNR SW	When back door opener switch is not pressed	Off
	When back door opener switch is pressed	On

Monitor Item	Condition	Value/Status
TRUNK CYL SW	**NOTE:** The item is indicated, but not monitored.	Off
HOOD SW	Close the hood **NOTE:** Vehicles of except for Mexico are OFF-fixed	Off
	Open the hood	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
AIR PRESS FL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front LH tire
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
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
	ID of front LH tire transmitter is not registered	Yet
ID REGST FR1	ID of front RH tire transmitter is registered	Done
	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
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
BUZZER	Tire pressure warning alarm is not sounding	Off
	Tire pressure warning alarm is sounding	On

TERMINAL LAYOUT

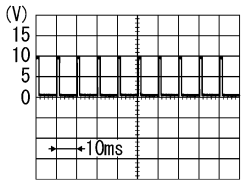
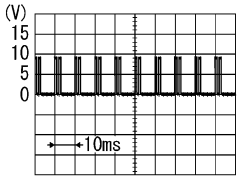
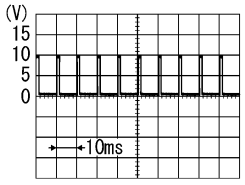
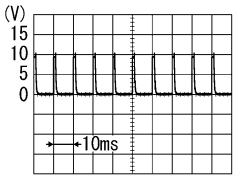
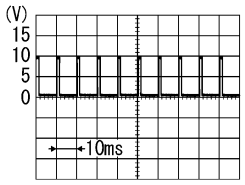


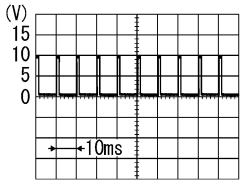
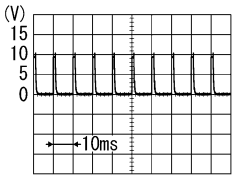
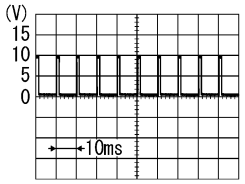
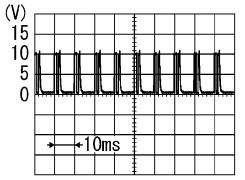
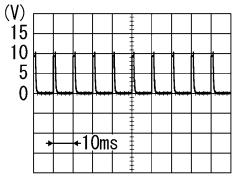
PHYSICAL VALUES

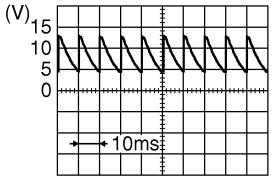
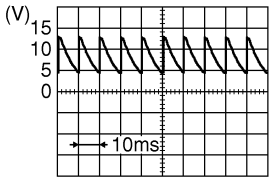
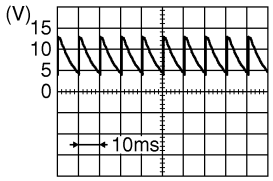
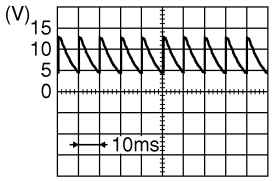
CAUTION:

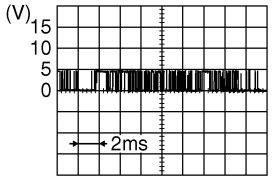
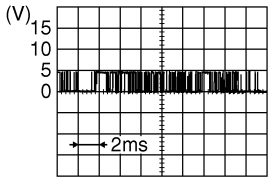
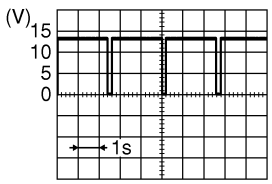
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT. Refer to BCS-26, "COMB SW : CONSULT Function (BCM - COMB SW)".**
- **BCM reads the status of the combination switch at 10 ms internal normally. Refer to BCS-9, "System Diagram".**

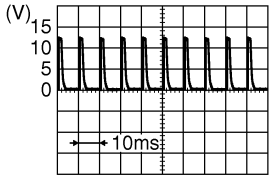
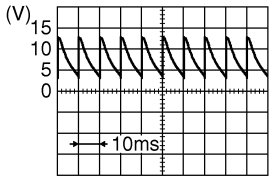
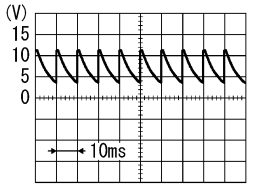
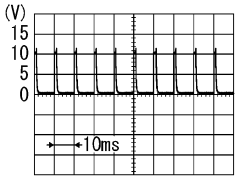
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
1 (V)	Ground	Ignition key hole illumination control	Output	Ignition key hole illumination	OFF	Battery voltage
					ON	0 V

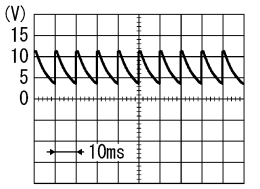
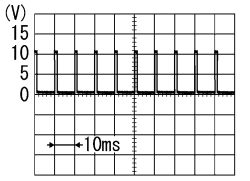
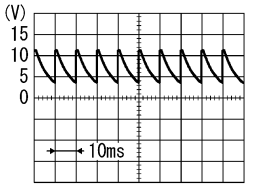
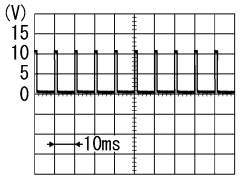
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
2 (G)	Ground	Combination switch INPUT 5	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch RH Lighting switch HI Lighting switch 1ST	 PKIB4959J 1.0 V
					Lighting switch 2ND	 PKIB4953J 2.0 V
3 (Y)	Ground	Combination switch INPUT 4	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch LH Lighting switch PASS Lighting switch 2ND	 PKIB4959J 1.0 V
					Front fog lamp switch ON	 PKIB4955J 0.8 V
4 (W)	Ground	Combination switch INPUT 3	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch AUTO Front wiper switch LO Front wiper switch MIST Front wiper switch INT	 PKIB4959J 1.0 V

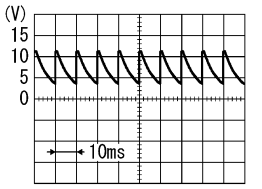
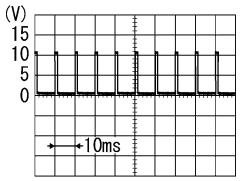
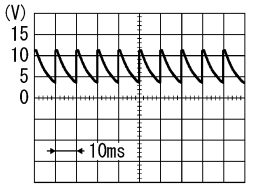
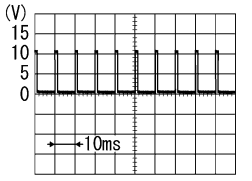
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (R)	Ground	Combination switch INPUT 2	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch (Wiper intermittent dial 4)	 PKIB4959J 1.0 V
					Rear washer ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4955J 0.8 V
6 (BG)	Ground	Combination switch INPUT 1	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 PKIB4959J 1.0 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Wiper intermittent dial 3 (All switch OFF)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2	 PKIB4952J 1.7 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 6 • Wiper intermittent dial 7	 PKIB4955J 0.8 V

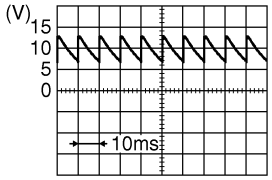
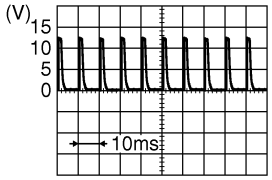
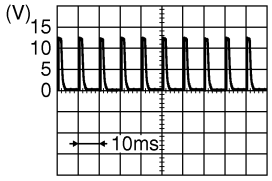
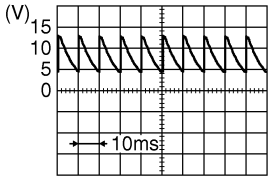
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
7 (V)	Ground	Door key cylinder switch UNLOCK signal	Input	Door key cylinder switch	NEUTRAL position	 JPMIA0587GB 8.0 - 8.5 V
					UNLOCK position	0 V
8 (R)	Ground	Door key cylinder switch LOCK signal	Input	Door key cylinder switch	NEUTRAL position	 JPMIA0587GB 8.0 - 8.5 V
					LOCK position	0 V
9 (R)	Ground	Stop lamp switch	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
10 (SB)	Ground	Rear window defogger switch	Input	Rear window defogger switch	Not pressed	Battery voltage
					Pressed	0 V
11 (SB)	Ground	Ignition switch ACC	Input	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
12 (BG)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 JPMIA0586GB 7.5 - 8.0 V
					ON (When passenger door opened)	0 V
13 (LG)	Ground	Rear door switch RH	Input	Rear door switch RH	OFF (When rear door RH closed)	 JPMIA0587GB 8.0 - 8.5 V
					ON (When rear door RH opened)	0 V

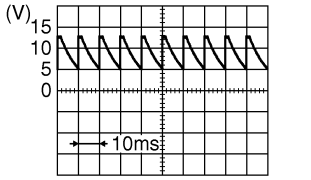
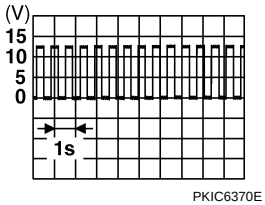
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
14 (G)	Ground	Optical sensor	Input	Ignition switch ON	When bright outside of the vehicle	Close to 5 V
					When dark outside of the vehicle	Close to 0 V
17 (W)	Ground	Optical sensor power supply	Output	Ignition switch	OFF, ACC	0 V
					ON	5 V
18* (R)	Ground	Receiver and sensor ground	Input	Ignition switch ON		0 V
19* (V)	Ground	Remote keyless entry receiver power supply	Input	Without Intelligent Key system	At any condition	5 V
				With Intelligent Key system	• Ignition switch OFF • For 3 seconds after ignition switch OFF to ON	0 V
					3 seconds or later after ignition switch OFF to ON	5 V
20* (GR)	Ground	Remote keyless entry receiver signal	Input	Without Intelligent Key system	At any condition	 JPMIA0589GB **NOTE:** The wave form changes according to signal-receiving condition.
				With Intelligent Key system	• Ignition switch OFF • For 3 seconds after ignition switch OFF to ON	0 V
					3 seconds or later after ignition switch OFF to ON	 JPMIA0589GB **NOTE:** The wave form changes according to signal-receiving condition.
21 (G)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
23 (B)	Ground	Security indicator signal	Input	Security indicator	ON	0 V
					Blinking (Ignition switch OFF)	 JPMIA0590GB 12.0 V
					OFF	Battery voltage

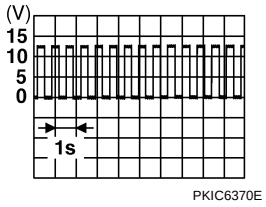
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
25 (BR)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
27 (Y)	Ground	A/C switch	Input	Ignition switch OFF		 JPMIA0591GB 1.6 V
				Ignition switch ON	A/C switch OFF	
					A/C switch ON	0 V
28 (LG)	Ground	Blower fan switch	Input	Ignition switch OFF		 JPMIA0592GB 7.0 - 7.5 V
				Ignition switch ON	Blower fan switch OFF	
					Blower fan switch ON	0 V
29 (W)	Ground	Hazard switch	Input	Hazard switch	OFF	Battery voltage
					ON	0 V
30 (G)	Ground	Back door opener switch	Input	Back door opener switch	Not pressed	Battery voltage
					Pressed	0 V
32 (BR)	Ground	Combination switch OUTPUT 5	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.2 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4956J 1.0 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
33 (GR)	Ground	Combination switch OUTPUT 4	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.2 V
					Lighting switch 1ST (Wiper intermittent dial 4)	
					Lighting switch AUTO (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
34 (SB)	Ground	Combination switch OUTPUT 3	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.2 V
					Lighting switch 2ND (Wiper intermittent dial 4)	
					Lighting switch HI (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Rear washer switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
35 (B)	Ground	Combination switch OUTPUT 2	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.2 V
					Lighting switch 2ND Lighting switch PASS Front wiper switch INT	
					Front wiper switch HI	PKIB4958J 1.2 V
36 (V)	Ground	Combination switch OUTPUT 1	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.2 V
					Turn signal switch RH Turn signal switch LH Front wiper switch LO (Front wiper switch MIST)	
					Front washer switch ON	PKIB4958J 1.2 V
37 (LG)	Ground	Key switch	Input	Insert mechanical key into ignition key cylinder		Battery voltage
				Remove mechanical key from ignition key cylinder		0 V
38 (G)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON or START		Battery voltage
39 (L)	Ground	CAN-H	Input/ Output	—		—
40 (P)	Ground	CAN-L	Input/ Output	—		—

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
43 (V)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	 JPMIA0593GB 9.5 - 10.0 V
					ON (When back door opened)	0 V
44 (B)	Ground	Rear wiper auto stop position	Input	Ignition switch ON	Rear wiper stop position	0 V
					Any position other than rear wiper stop position	Battery voltage
45 (P)	Ground	Door lock and unlock switch LOCK signal	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0591GB 1.6 V
					LOCK position	0 V
46 (BR)	Ground	Door lock and unlock switch UNLOCK signal	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0591GB 1.6 V
					UNLOCK position	0 V
47 (W)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 JPMIA0587GB 8.0 - 8.5 V
					ON (When driver door opened)	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
48 (GR)	Ground	Rear door switch LH	Input	Rear door switch LH	OFF (When rear door LH closed)	 JPMIA0594GB 8.5 - 9.0 V
					ON (When rear door LH opened)	0 V
49 (L)	Ground	Luggage room lamp control	Output	Luggage room lamp switch DOOR position	Back door is closed (Luggage room lamp turns OFF)	Battery voltage
					Back door is opened (Luggage room lamp turns ON)	0 V
53 (V)	Ground	Back door open	Output	Back door opener switch	Not pressed (Back door actuator is activated)	0 V
					Pressed (Back door actuator is activated)	Battery voltage
55 (SB)	Ground	Rear wiper motor	Output	Ignition switch ON	Rear wiper switch OFF	0 V
					Rear wiper switch ON	Battery voltage
56 (Y)	Ground	Interior room lamp power supply	Output	After passing the interior room lamp battery saver operation time		0 V
				Any other time after passing the interior room lamp battery saver operation time		Battery voltage
57 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
59 (L)	Ground	Driver door UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	Battery voltage
					Other then UNLOCK (Actuator is not activated)	0 V
60 (BR)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKIC6370E 6.0 V

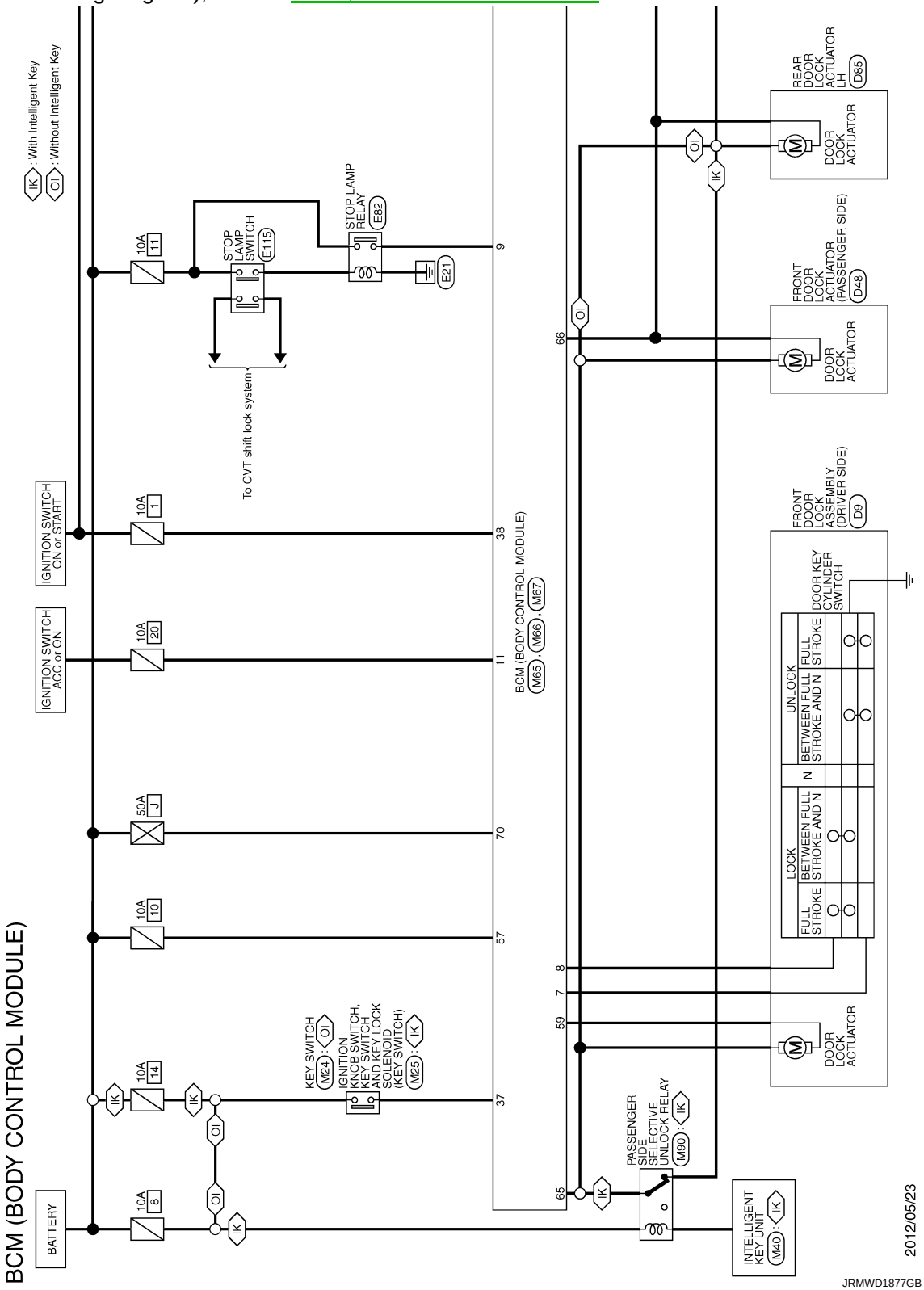
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
61 (GR)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 6.0 V
63 (R)	Ground	Interior room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
65 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	Battery voltage
					Other then LOCK (Actuator is not activated)	0 V
66 (G)	Ground	Passenger door and rear door UNLOCK	Output	Passenger door and rear door	UNLOCK (Actuator is activated)	Battery voltage
					Other then UNLOCK (Actuator is not activated)	0 V
67 (B)	Ground	Ground	Output	Ignition switch ON		0 V
68 (L)	Ground	P/W power supply (RAP)	Output	Ignition switch ON		Battery voltage
69 (P)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		Battery voltage
70 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage

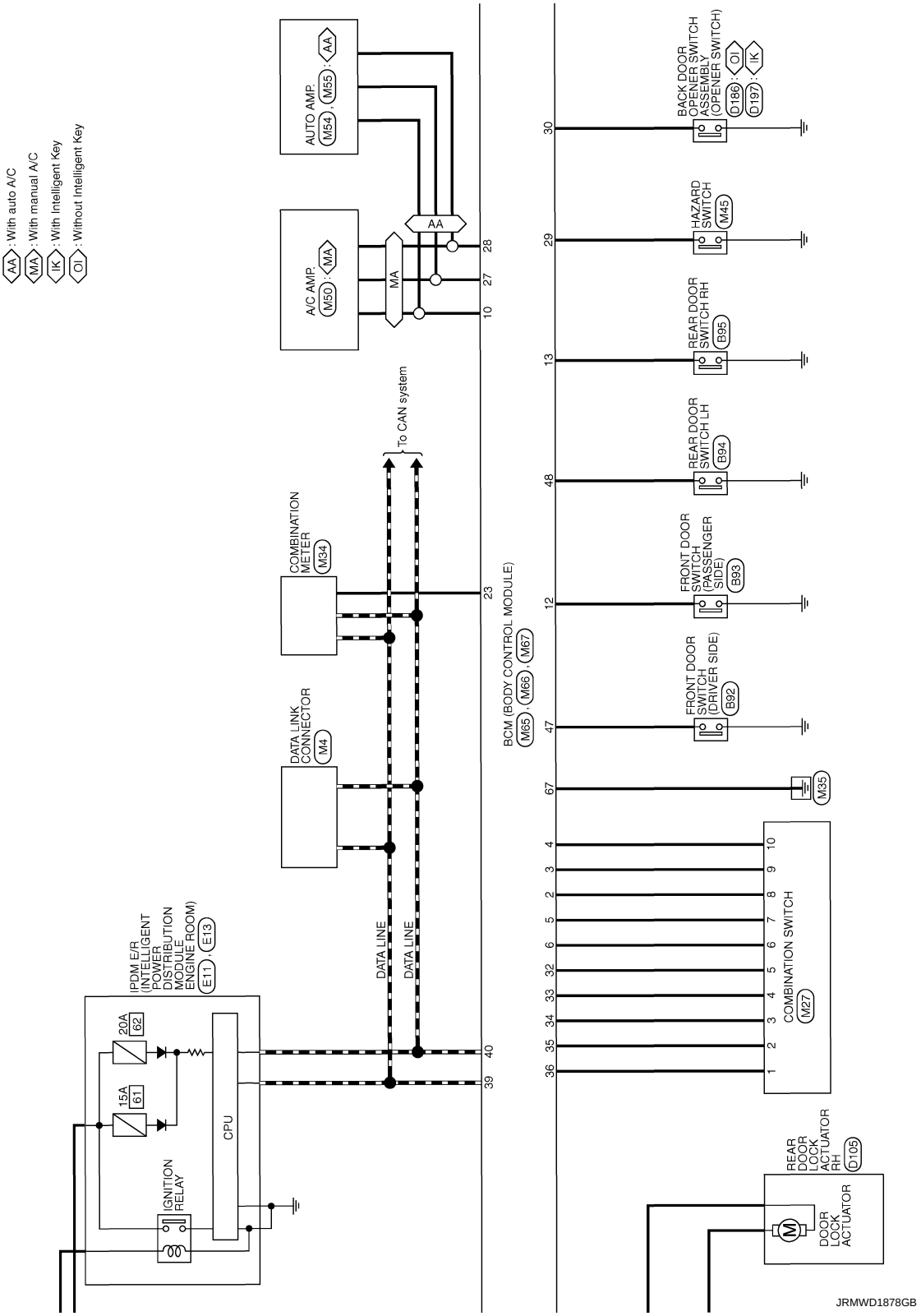
*: Except for Mexico with Intelligent Key

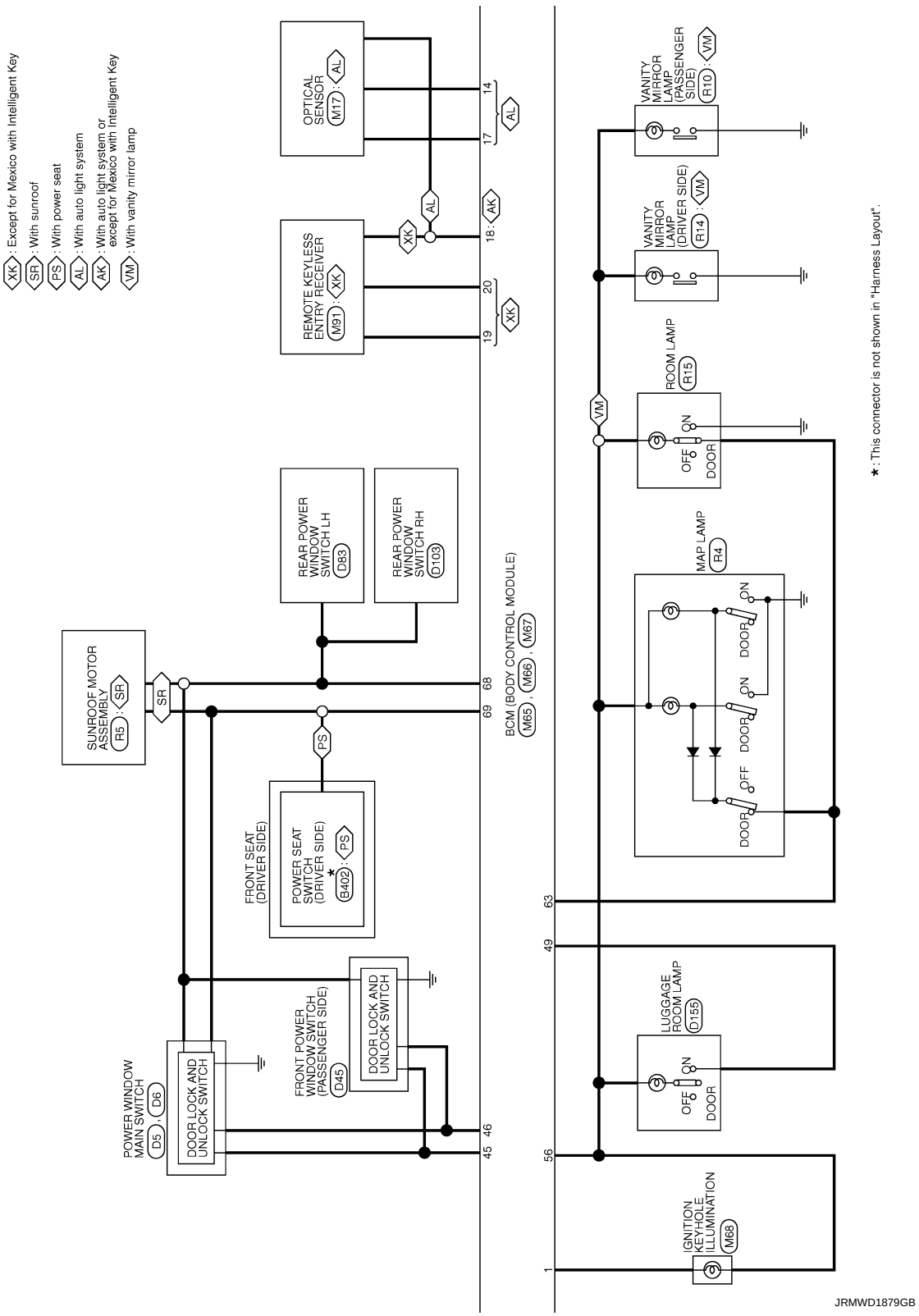
Wiring Diagram - BCM -

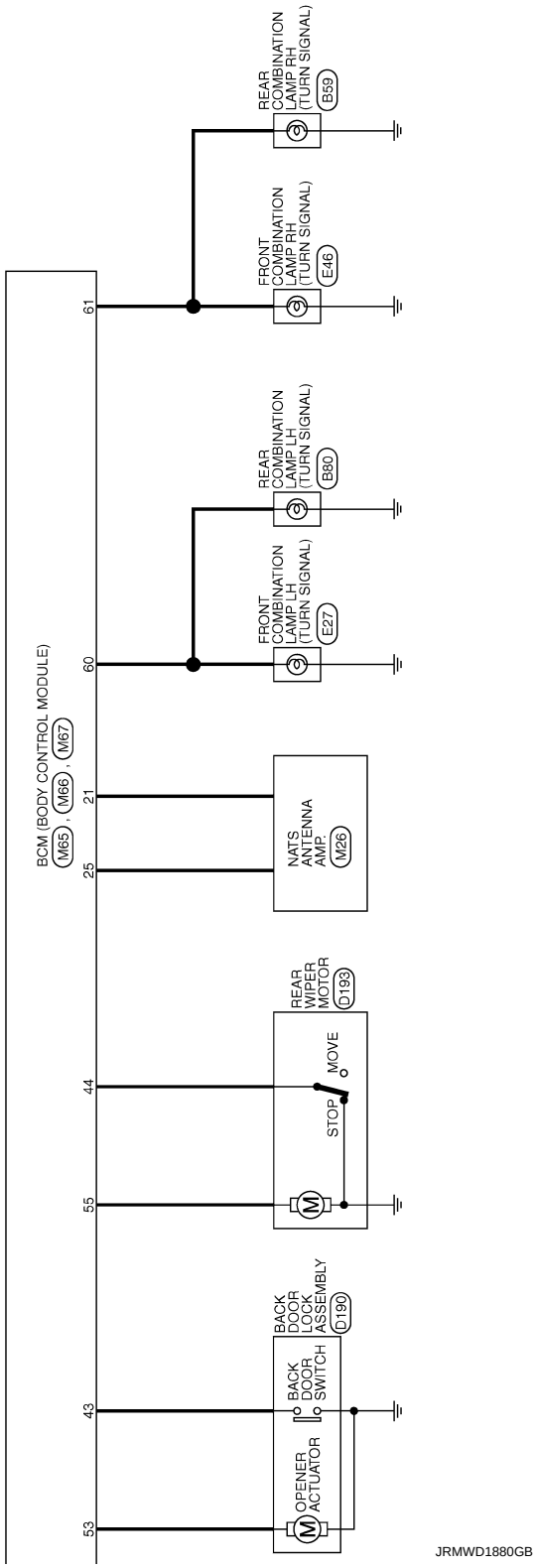
INFOID:0000000008729057

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




AA : With auto A/C
MA : With manual A/C
IK : With Intelligent Key
OI : Without Intelligent Key
AUTO AMP. (M54) (M55) : AA
A/C AMP. (M50) : MA
AA
MA
28
27
10
To CAN system
COMBINATION METER (M34)
23
DATA LINK CONNECTOR (M4)
DATA LINE
DATA LINE
40
39
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E11) : (E13)
20A 62
15A 61
IGNITION RELAY
CPU
BCM (BODY CONTROL MODULE) (M65) (M66) : (M67)
30
BACK DOOR OPENER SWITCH ASSEMBLY (OPENER SWITCH) (D186) : OI (D197) : IK
29
HAZARD SWITCH (M45)
13
REAR DOOR SWITCH RH (B95)
48
REAR DOOR SWITCH LH (B94)
12
FRONT DOOR SWITCH (PASSENGER SIDE) (B93)
47
FRONT DOOR SWITCH (DRIVER SIDE) (B92)
67
(M35)
4 3 2 5 6 32 33 34 35 36
10 9 8 7 6 5 4 3 2 1
COMBINATION SWITCH (M27)
REAR DOOR LOCK ACTUATOR RH (D105)
DOOR LOCK ACTUATOR
JRMWD1878GB


XK : Except for Mexico with Intelligent Key
SR : With sunroof
PS : With power seat
AL : With auto light system
AK : With auto light system or except for Mexico with Intelligent Key
VM : With vanity mirror lamp
OPTICAL SENSOR (M17) : AL
REMOTE KEYLESS ENTRY RECEIVER (M91) : XK
REAR POWER WINDOW SWITCH LH (D83)
REAR POWER WINDOW SWITCH RH (D103)
SUNROOF MOTOR ASSEMBLY (R5) : SR
FRONT SEAT (DRIVER SIDE)
POWER SEAT SWITCH (DRIVER SIDE) (B402) : PS
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) (D45)
DOOR LOCK AND UNLOCK SWITCH
POWER WINDOW MAIN SWITCH (D5) (D6)
BCM (BODY CONTROL MODULE) (M65), (M66), (M67)
VANITY MIRROR LAMP (PASSENGER SIDE) (R10) : VM
VANITY MIRROR LAMP (DRIVER SIDE) (R14) : VM
ROOM LAMP (R15)
MAP LAMP (R4)
LUGGAGE ROOM LAMP (D155)
IGNITION KEYHOLE ILLUMINATION (M68)
*: This connector is not shown in "Harness Layout".
JRMWD1879GB



Fail-safe

INFOID:0000000008729058

REAR WIPER MOTOR PROTECTION

BCM detects the rear wiper stopping position according to the rear wiper stop position signal.
When the rear wiper stop position signal does not change more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

Condition of cancellation

1. Pass more than 1 minute after the rear wiper stop.
2. Turn the rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

DTC Inspection Priority Chart

INFOID:0000000008729059

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

Priority	DTC
1	U1000: CAN COMM CIRCUIT
2	C1735: IGN CIRCUIT OPEN
3	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1716: [PRESS DATA ERR] FL • C1717: [PRESS DATA ERR] FR • C1718: [PRESS DATA ERR] RR • C1719: [PRESS DATA ERR] RL • C1729: VHCL SPEED SIG ERR

DTC Index

INFOID:0000000008729060

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	Tire pressure monitor warning lamp ON	Reference
U1000: CAN COMM CIRCUIT	—	BCS-34
C1704: LOW PRESSURE FL	×	WT-14
C1705: LOW PRESSURE FR	×	
C1706: LOW PRESSURE RR	×	
C1707: LOW PRESSURE RL	×	
C1708: [NO DATA] FL	×	WT-16
C1709: [NO DATA] FR	×	
C1710: [NO DATA] RR	×	
C1711: [NO DATA] RL	×	
C1716: [PRESS DATA ERR] FL	×	WT-19
C1717: [PRESS DATA ERR] FR	×	
C1718: [PRESS DATA ERR] RR	×	
C1719: [PRESS DATA ERR] RL	×	
C1729: VHCL SPEED SIG ERR	×	WT-21
C1735: IGN CIRCUIT OPEN	—	BCS-35

INTELLIGENT KEY UNIT

Reference Value

INFOID:0000000008279938

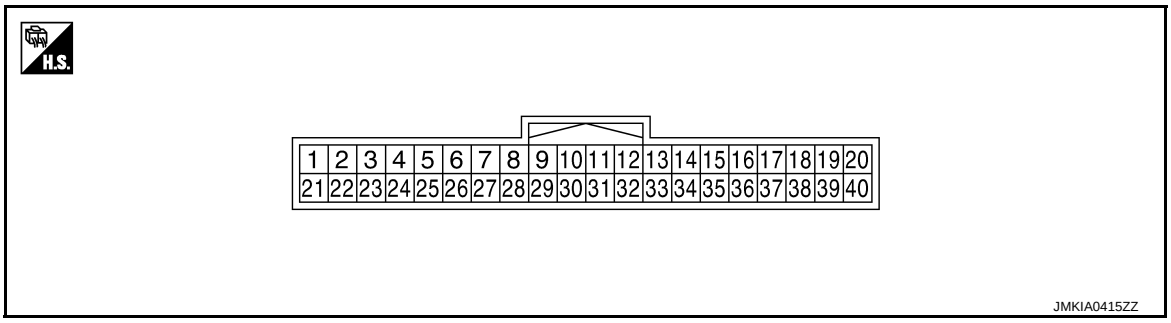
VALUES ON THE DIAGNOSIS TOOL

CONSULT MONITOR ITEM

Monitor Item	Condition		Value/Status
PUSH SW	Ignition knob	Release	OFF
		Press	ON
KEY SW	Mechanical key	Removed	OFF
		Inserted	ON
DR REQ SW	Door request switch (driver)	Release	OFF
		Press	ON
AS REQ SW	Door request switch (passenger)	Release	OFF
		Press	ON
BD/TR REQ SW	Door request switch (back door)	Release	OFF
		Press	ON
IGN SW	Ignition switch	Other than ON position	OFF
		ON position	ON
ACC SW	Ignition switch	Other than ACC or ON position	OFF
		ACC or ON position	ON
STOP LAMP SW	Brake pedal	Press	OFF
		Release	ON
P RANGE SW	Shift position	P position	ON
		Other than P position	OFF
BD OPEN SW	The item is indicated, but not monitored.		
TR CANCEL SW	The item is indicated, but not monitored.		
DOOR LOCK SIG	Lock button of Intelligent Key	Release	OFF
		Press	ON
DOOR UNLOCK SIG	Unlock button of Intelligent Key	Release	OFF
		Press	ON
KEYLESS TRUNK	The item is indicated, but not monitored.		
KEYLESS PANIC	PANIC button of key fob	Release	OFF
		Press	ON
KEYLESS PSD LH	The item is indicated, but not monitored.		
KEYLESS PSD RH	The item is indicated, but not monitored.		
KEYLESS PBD SIG	The item is indicated, but not monitored.		
DOOR SW DR	Door (driver side)	Close	OFF
		Open	ON
DOOR SW AS	Door (passenger side)	Close	OFF
		Open	ON
DOOR SW RR	Door (rear RH)	Close	OFF
		Open	ON
DOOR SW RL	Door (rear LH)	Close	OFF
		Open	ON

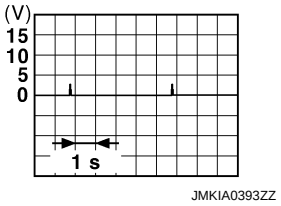
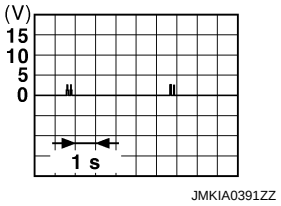
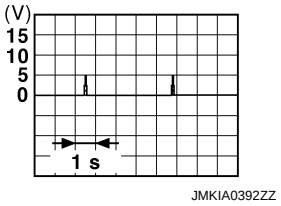
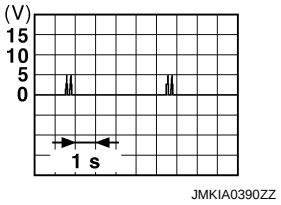
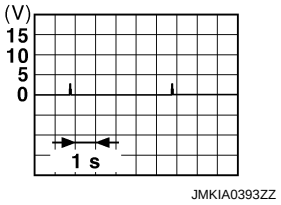
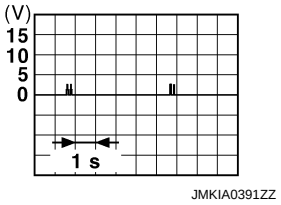
Monitor Item	Condition		Value/Status
DOOR BK SW	Back door	Close	OFF
		Open	ON
TRUNK SW	The item is indicated, but not monitored.		
VEHICLE SPEED	While driving		Equivalent to speedometer reading

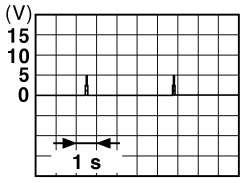
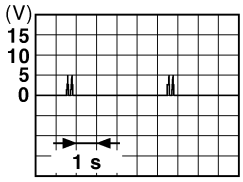
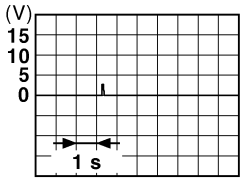
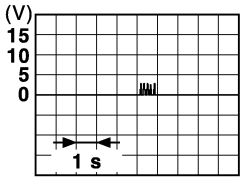
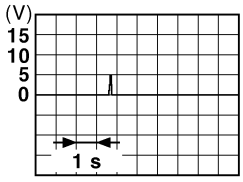
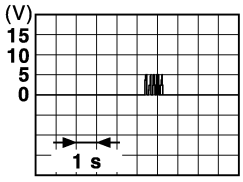
TERMINAL LAYOUT

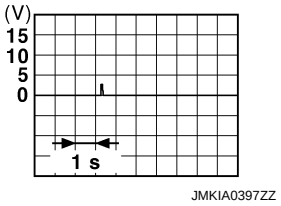
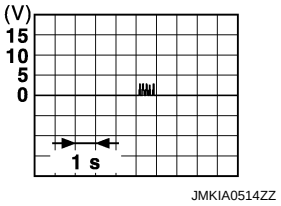
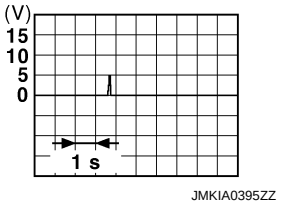
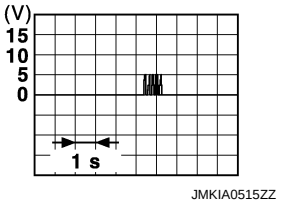


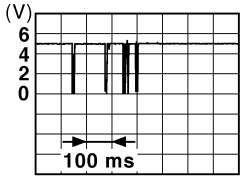
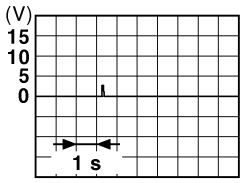
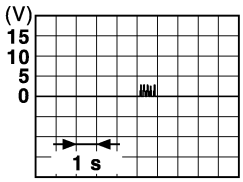
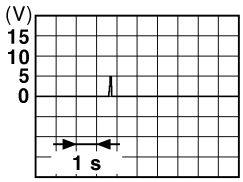
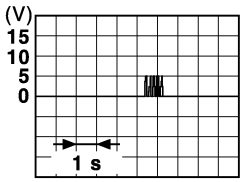
PHYSICAL VALUES

Terminal No. (wire color)		Description		Condition		Value [V] (Approx.)
+	–	Signal name	Input/ Output			
1 (GR)	Ground	Steering lock unit power supply	Output	—		5
2 (L)	Ground	CAN - H	Input/ Output	—		—
3 (P)	Ground	CAN - L	Input/ Output	—		—
4 (V)	Ground	Intelligent Key warning buzzer	Output	Intelligent Key warning buzzer	Sounding	0
					Not sounding	Battery voltage
5 (Y)	Ground	Front door request switch (driver side)	Input	Front door request switch (driver side)	ON (Pressed)	0
					OFF (Released)	5
6 (W)	Ground	Ignition switch power supply	Input	Ignition switch	OFF	0
					ON	Battery voltage
7 (LG)	Ground	Key switch	Input	When ignition key is inserted into ignition key cylinder		Battery voltage
				When ignition key is not inserted into ignition key cylinder		0
10 (SB)	Ground	Park position switch	Input	Shift lever in park position		0
				Other than above		Battery voltage
11 (R)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
12 (B)	Ground	Ground	—	—		0

Terminal No. (wire color)		Description		Condition		Value [V] (Approx.)
+	–	Signal name	Input/ Output			
13 (Y)	Ground	Inside key antenna (+) (rear seat)	Output	Ignition knob is pressed.	When Intelligent Key is in the antenna detection area	 JMKIA0393ZZ
					When Intelligent Key is not in the antenna detection area	 JMKIA0391ZZ
14 (BR)	Ground	Inside key antenna (-) (rear seat)	Output	Ignition knob is pressed.	When Intelligent Key is in the antenna detection area	 JMKIA0392ZZ
					When Intelligent Key is not in the antenna detection area	 JMKIA0390ZZ
15 (R)	Ground	Inside key antenna (+) (console)	Output	Ignition knob is pressed.	When Intelligent Key is in the antenna detection area	 JMKIA0393ZZ
					When Intelligent Key is not in the antenna detection area	 JMKIA0391ZZ

Terminal No. (wire color)		Description		Condition		Value [V] (Approx.)
+	–	Signal name	Input/ Output			
16 (G)	Ground	Inside key antenna (-) (console)	Output	Ignition knob is pressed.	When Intelligent Key is in the antenna detection area	 JMKIA0392ZZ
					When Intelligent Key is not in the antenna detection area	 JMKIA0390ZZ
17 (W)	Ground	Outside key antenna (+) (rear bumper)	Output	When the back door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0397ZZ
					When Intelligent Key is not in the antenna detection area	 JMKIA0514ZZ
18 (R)	Ground	Outside key antenna (-) (rear bumper)	Output	When the back door request switch is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0395ZZ
					When Intelligent Key is not in the antenna detection area	 JMKIA0515ZZ

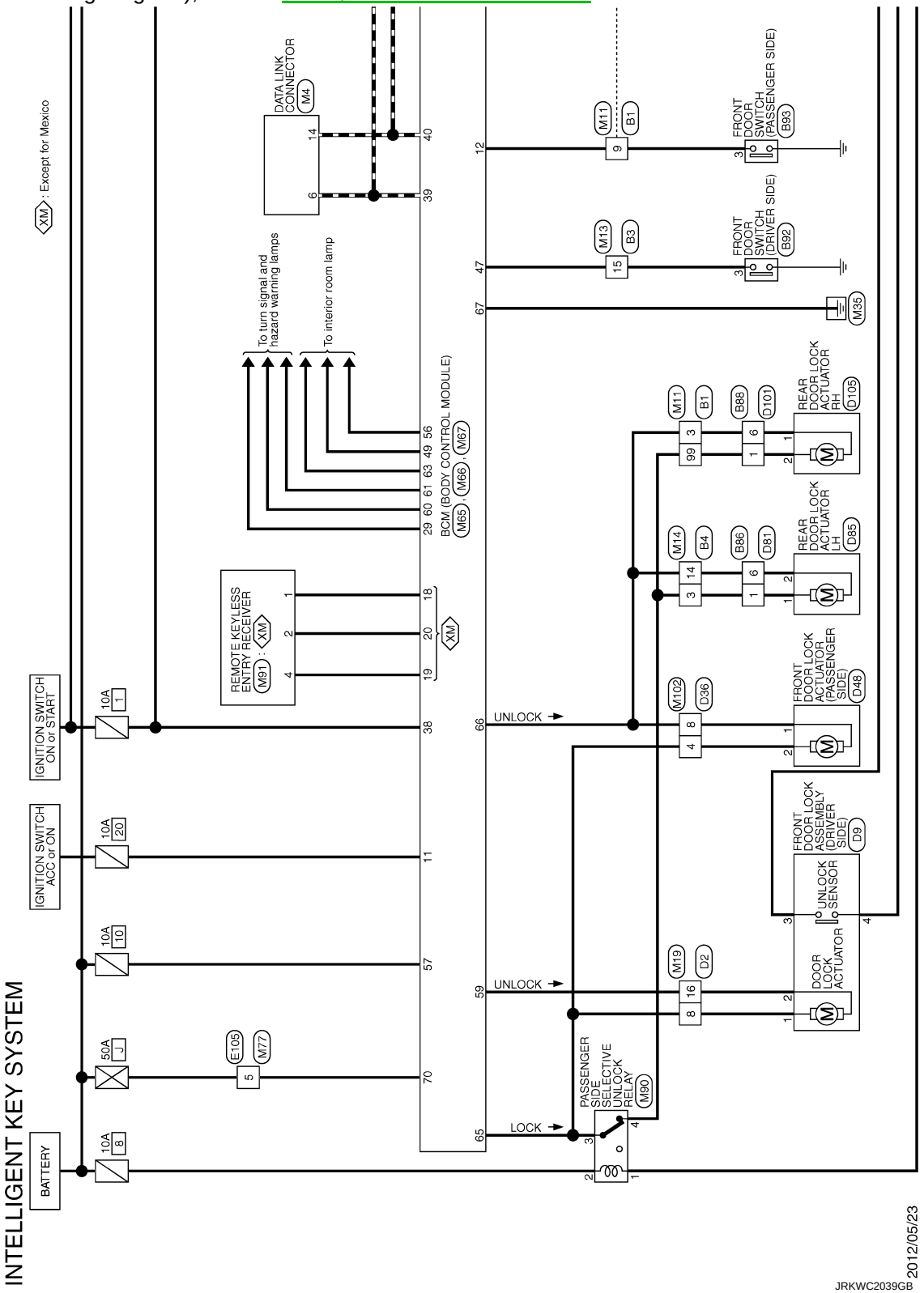
Terminal No. (wire color)		Description		Condition		Value [V] (Approx.)
+	–	Signal name	Input/ Output			
19 (BR)	Ground	Outside key antenna (+) (driver side)	Output	When the front door request switch (driver side) is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0397ZZ
					When Intelligent Key is not in the antenna detection area	 JMKIA0514ZZ
20 (B)	Ground	Outside key antenna (-) (driver side)	Output	When the front door request switch (driver side) is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0395ZZ
					When Intelligent Key is not in the antenna detection area	 JMKIA0515ZZ
25 (BR)	Ground	Front door request switch (passenger side)	Input	Front door request switch (passenger side)	ON (Pressed)	0
					OFF (Released)	5
26 (B)	Ground	Stop lamp switch	Input	Depress the brake pedal		Battery voltage
				Release the brake pedal		0
27 (G)	Ground	Ignition knob switch	Input	Ignition switch OFF	When ignition knob switch is pressed	Battery voltage
					When ignition knob switch is released	0
28 (W)	Ground	Unlock sensor	Input	Lock (ON)		5
				Unlock (OFF)		0
29 (SB)	Ground	Back door request switch	Input	Back door request switch	ON (Pressed)	0
					OFF (Released)	5
31 (L)	Ground	Steering lock unit ground	—	—	—	0

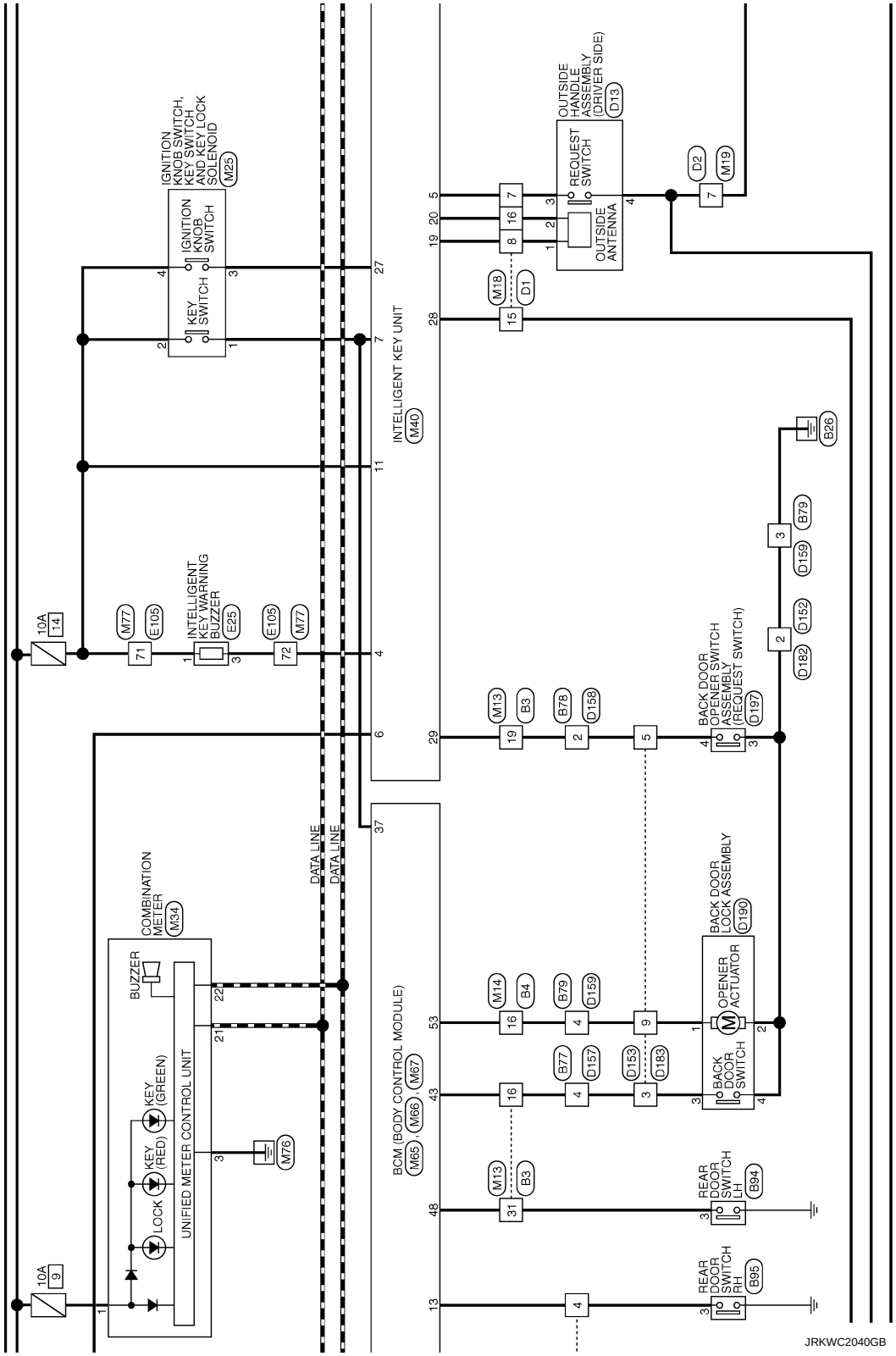
Terminal No. (wire color)		Description		Condition		Value [V] (Approx.)
+	–	Signal name	Input/ Output			
32 (P)	Ground	Steering lock unit communication	Input/ Output	Steering lock	LOCK status	5
					LOCK or UNLOCK	 JMKIA0433ZZ
37 (V)	Ground	Outside key antenna (+) (passenger side)	Output	When the front door request switch (passenger side) is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0397ZZ
					When Intelligent Key is in the antenna detection area	 JMKIA0514ZZ
38 (P)	Ground	Outside key antenna (-) (passenger side)	Output	When the front door request switch (passenger side) is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0395ZZ
					When Intelligent Key is not in the antenna detection area	 JMKIA0515ZZ
40 (V)	Ground	Passenger side selective unlock relay	Input	Press front door request switch (passenger side)	Anti-hijack operation	Battery voltage → 0 → Battery voltage
					Other than above	Battery voltage

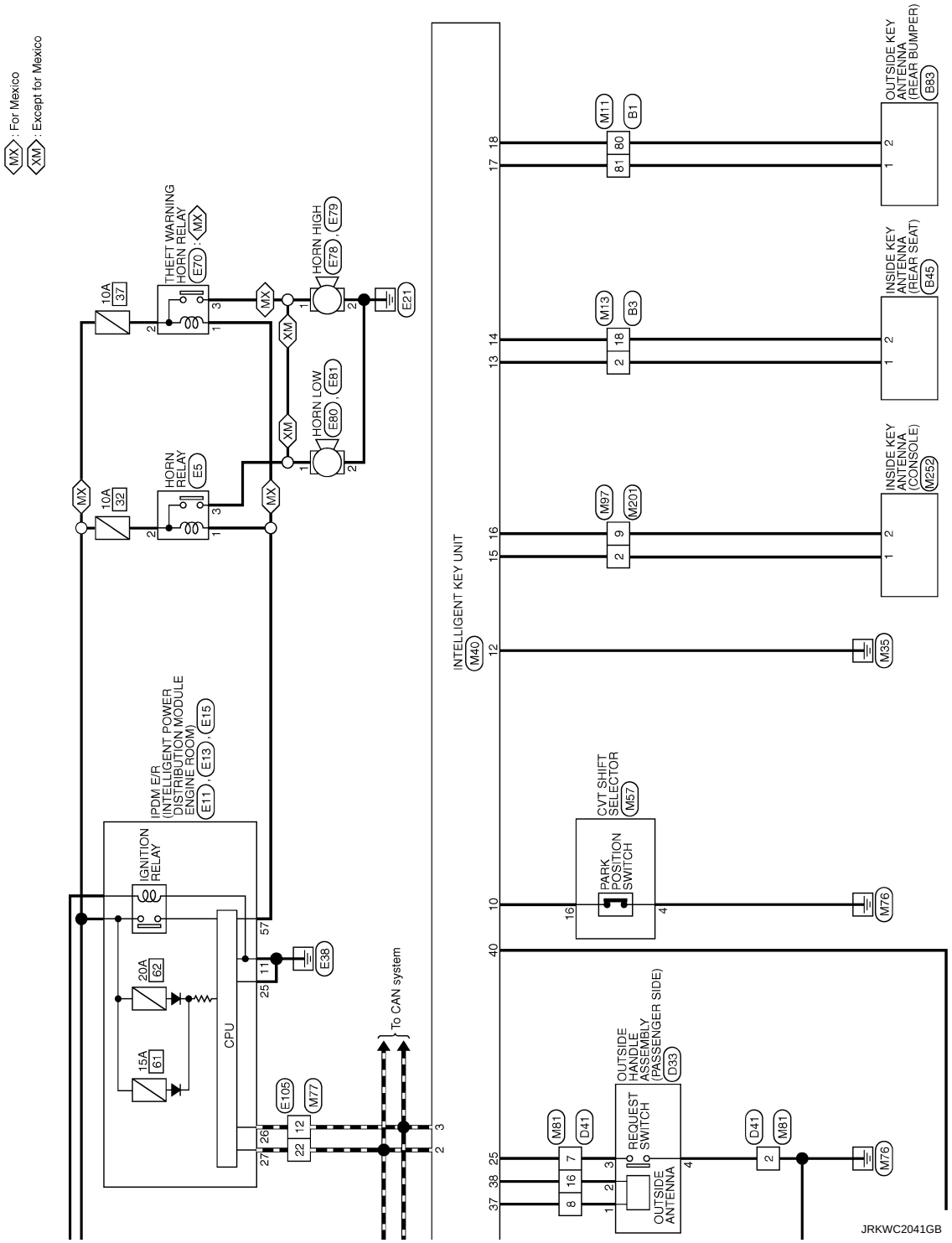
Wiring Diagram - INTELLIGENT KEY SYSTEM -

INFOID:0000000008750380

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
M25
IGNITION KNOB SWITCH
KEY SWITCH
OUTSIDE HANDLE ASSEMBLY (DRIVER SIDE)
D13
REQUEST SWITCH
OUTSIDE ANTENNA
D2
M19
M18
D1
INTELLIGENT KEY UNIT
M40
B26
10A 14
M77
E105
INTELLIGENT KEY WARNING BUZZER
E25
E105
M77
71
72
B79
D159
D152
D182
BACK DOOR OPENER SWITCH ASSEMBLY (REQUEST SWITCH)
D197
M13
B3
B78
D158
DATA LINE
DATA LINE
COMBINATION METER
M34
BUZZER
UNIFIED METER CONTROL UNIT
KEY (GREEN)
KEY (RED)
LOCK
M76
BCM (BODY CONTROL MODULE)
M65
M66
M67
M14
B4
B79
D159
B77
D157
D153
D183
BACK DOOR LOCK ASSEMBLY
D190
OPENER ACTUATOR
BACK DOOR SWITCH
REAR DOOR SWITCH LH
B94
REAR DOOR SWITCH RH
B95
10A 9
JRKWC2040GB


MX : For Mexico
XM : Except for Mexico
THEFT WARNING HORN RELAY E70
HORN HIGH E78, E79
HORN LOW E80, E81
HORN RELAY E5
10A 37
10A 32
E21
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E11, E13, E15
IGNITION RELAY
20A 62
15A 61
CPU
E38
E105
M77
To CAN system
INTELLIGENT KEY UNIT M40
CVT SHIFT SELECTOR M57
PARK POSITION SWITCH
M76
OUTSIDE HANDLE ASSEMBLY (PASSENGER SIDE) D33
REQUEST SWITCH
OUTSIDE ANTENNA
M81
D41
OUTSIDE KEY ANTENNA (REAR BUMPER) B83
INSIDE KEY ANTENNA (REAR SEAT) B45
INSIDE KEY ANTENNA (CONSOLE) M252
M11
B1
M13
B3
M97
M201
M35
JRKWC2041GB

Fail Safe

INFOID:0000000008279940

Display contents of CONSULT	Fail-safe	Cancellation
B2013: STRG COMM 1	• Inhibits steering look unlocking	Erase DTC
B2552: INTELLIGENT KEY	• Inhibits steering look unlocking • Inhibits engine cranking (BCM) • Fuel cut (ECM)	Erase DTC
B2590: NATS MALFUNCTION	• Inhibits steering look unlocking • Inhibits engine cranking (BCM) • Fuel cut (ECM)	Erase DTC

DTC Inspection Priority Chart

INFOID:0000000008279941

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

Priority	DTC
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN) • B2552: INTELIGENT KEY
2	• B2013: STRG COMM 1 • B2590: NATS MALFUNCTION

DTC Index

INFOID:0000000008279942

NOTE:

Details of time display

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

CONSULT display	Detection condition	Fail-safe	Diagnosis
No DTC is detected. further testing may be required.	—	—	—
U1000: CAN COMM CIRCUIT	Intelligent Key unit cannot receive CAN communication signal continuously for 2 seconds or more	—	Check CAN communication system. Refer to LAN-30
U1010: CONTROL UNIT (CAN)	Intelligent Key unit detects internal CAN communication circuit malfunction	—	Replace Intelligent Key unit. Refer to DLK-54.
B2013: STRG COMM 1	The ID verification result between Intelligent key unit and steering lock unit are NG. Or Intelligent Key unit cannot communicate with steering lock unit	×	Perform steering lock unit ID registration with CONSULT. Refer to SEC-41.
B2552: INTELLIGENT KEY	Intelligent Key unit internal malfunction	×	Replace Intelligent Key unit. Refer to SEC-43.
B2590: ID DISCORD BCM-I-KEY	The ID verification result between Intelligent key unit and BCM are NG. Or Intelligent Key unit cannot communicate with BCM	×	Check NATS. Refer to SEC-44.

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

Reference Value

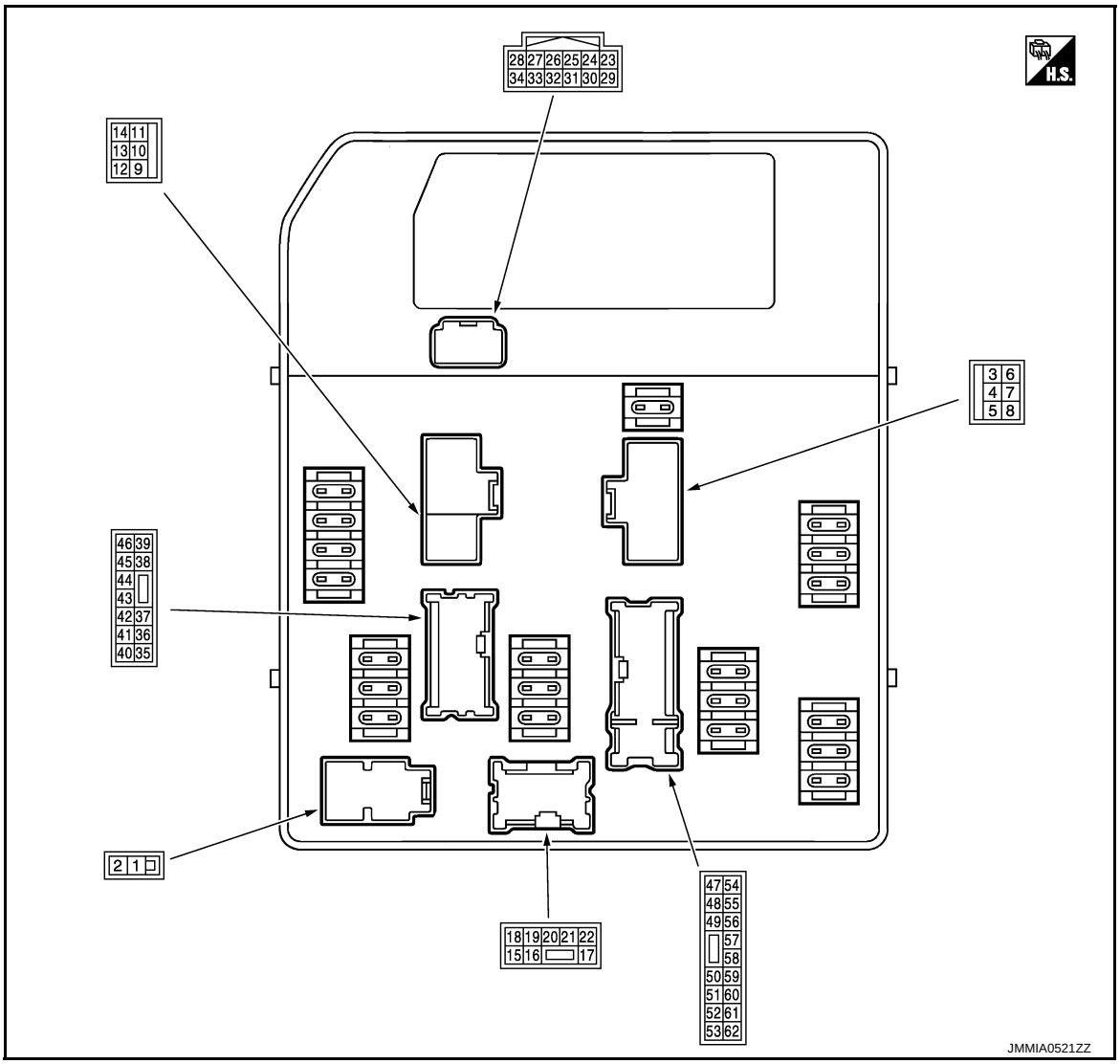
INFOID:0000000008729063

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1 - 4
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST or 2ND		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI (Light is illuminated)		On
FR FOG REQ **NOTE:** This item is monitored only on the vehicle with front fog lamp.	Lighting switch 2ND	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
ST RLY REQ **NOTE:** Vehicle without Intelligent Key system indicates only “ON”, and it does not change.	When Intelligent Key is outside the vehicle, and the push switch is pushed		Off
	When Intelligent Key is inside the vehicle, and the push switch is pushed		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
RR DEF REQ	Ignition switch ON	Rear window defogger switch OFF	Off
		Rear window defogger switch ON (Rear window defogger is operating)	On
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
DTRL REQ **NOTE:** This item is monitored only on the vehicle with the daytime running light system.	Daytime running light system is not operated.		Off
	Daytime running light system is operated.		On

Monitor Item	Condition	Value/Status
HOOD SW **NOTE:** This item is monitored only the vehicle for Mexico.	Close the hood	Off
	Open the hood	On
THFT HRN REQ	Not operation	Off
	Horn is activated with vehicle security system or panic alarm system.	On
HORN CHIRP	Not operation	Off
	Horn is activated with key fob LOCK operation.	On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	–	Signal name	Input/ Output		
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
3 (L)	Ground	Starter relay power supply	Output	When engine is clanking		Battery voltage
				When engine is not clanking		0 V
4 (W)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan operation	OFF	0 V
					MID or HI	Battery voltage
5 (R)	Ground	Ignition switch START	Input	Ignition switch OFF, ACC or ON		0 V
				Ignition switch START		Battery voltage
6 (BR)	Ground	Battery power supply (Cooling fan relay)	Input	Ignition switch OFF		Battery voltage
7 (P)	Ground	Cooling fan motor-2 (HI) ground	—	Cooling fan operation	OFF	Battery voltage
					HI	0 V
8 (G)	Ground	Cooling fan relay-2 power supply	Output	Cooling fan operation	OFF	0 V
					HI	Battery voltage
11 (B)	Ground	Ground	—	Ignition switch ON		0 V
12 (G)	Ground	Rear window defogger relay power supply	Output	Ignition switch ON	Rear window defogger switch OFF	0 V
					Rear window defogger switch ON	Battery voltage
15[*1] (SB)	Ground	Daytime running light relay control	Output	Daytime running light system	Not operated	Battery voltage
					Operated	0 V
16[*2] (Y)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
17[*2] (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
18 (L)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
20 (SB)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
21 (G)	Ground	Headlamp HI (LH)	Output	Lighting switch OFF		0 V
				• Lighting switch 2ND and HI • Lighting switch PASS		Battery voltage
				Daytime running light system Operated[*1]		7.0 V
22 (LG)	Ground	Headlamp HI (RH)	Output	Lighting switch OFF		0 V
				• Lighting switch 2ND and HI • Lighting switch PASS		Battery voltage
				Daytime running light system Operated[*1]		7.0 V
23 (W)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
24 (Y)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
25 (B)	Ground	Ground	—	Ignition switch ON		0 V
26 (P)	—	CAN-L	Input/ Output	—		—

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
27 (L)	—	CAN-H	Input/ Output	—		—
31 (LG)	Ground	Cooling fan relay-4 control	Output	Cooling fan operation	OFF	Battery voltage
					LO	0 - 1.0 V
32 (V)	Ground	Throttle control motor relay control	Input	After passing approximately 2 seconds or more after turning the ignition switch from ON to OFF		Battery voltage
				• Ignition switch ON • For approximately 2 seconds after turning ignition switch from ON to OFF		0 - 1.0 V
33 (GR)	Ground	Fuel pump relay control	Input	Ignition switch OFF		0 V
				Ignition switch ON	Engine stopped	Battery voltage
					Engine running	0.8 V
34*3 (W)	Ground	Hood switch	Input	Close the hood		Battery voltage
				Open the hood		0 V
37 (R)	Ground	Tail, license plate lamps and illuminations	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
38 (R)	Ground	Parking lamp (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
39 (GR)	Ground	Parking lamp (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
40 (BR)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
41 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
42 (L)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
43 (G)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
45 (Y)	Ground	Starter relay power supply	Input	Ignition switch ON	Selector lever “P” or “N”	Battery voltage
					Selector lever in any position other than “P” or “N”	0 V
46 (W)	Ground	Fuel pump relay power supply	Output	• Ignition switch OFF or ACC • After passing approximately 1 second or more after turning the ignition switch ON		0 V
				• For approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
47 (BR)	Ground	ECM relay power supply	Output	After passing approximately 4 seconds or more after turning the ignition switch from ON to OFF		0 V
				• Ignition switch ON • For approximately 4 seconds after turning ignition switch from ON to OFF		Battery voltage
48 (R)	Ground	ECM relay power supply	Output	After passing approximately 4 seconds or more after turning the ignition switch from ON to OFF		0 V
				• Ignition switch ON • For approximately 4 seconds after turning ignition switch from ON to OFF		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
50 (G)	Ground	Cooling fan relay-5 control	Output	Cooling fan operation	OFF	Battery voltage
					MID or HI	0 - 1.0 V
51 (L)	Ground	ECM relay control	Output	After passing approximately 4 seconds or more after turning the ignition switch from ON to OFF		Battery voltage
				• Ignition switch ON • For approximately 4 seconds after turning ignition switch from ON to OFF		0 - 1.0 V
52 (P)	Ground	Throttle control motor relay power supply	Output	After passing approximately 2 seconds or more after turning the ignition switch from ON to OFF		0 V
				• Ignition switch ON • For approximately 2 seconds after turning ignition switch from ON to OFF		Battery voltage
55 (BG)	Ground	A/C relay power supply	Output	Engine stopped		0 V
				Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage
56 (SB)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
57 (V)	Ground	Horn relay control	Output	The horn is not activated		Battery voltage
				The horn is activated		0 V
58 (LG)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
59 (BR)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
60 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
61 (R)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage

*1: With daytime running light system

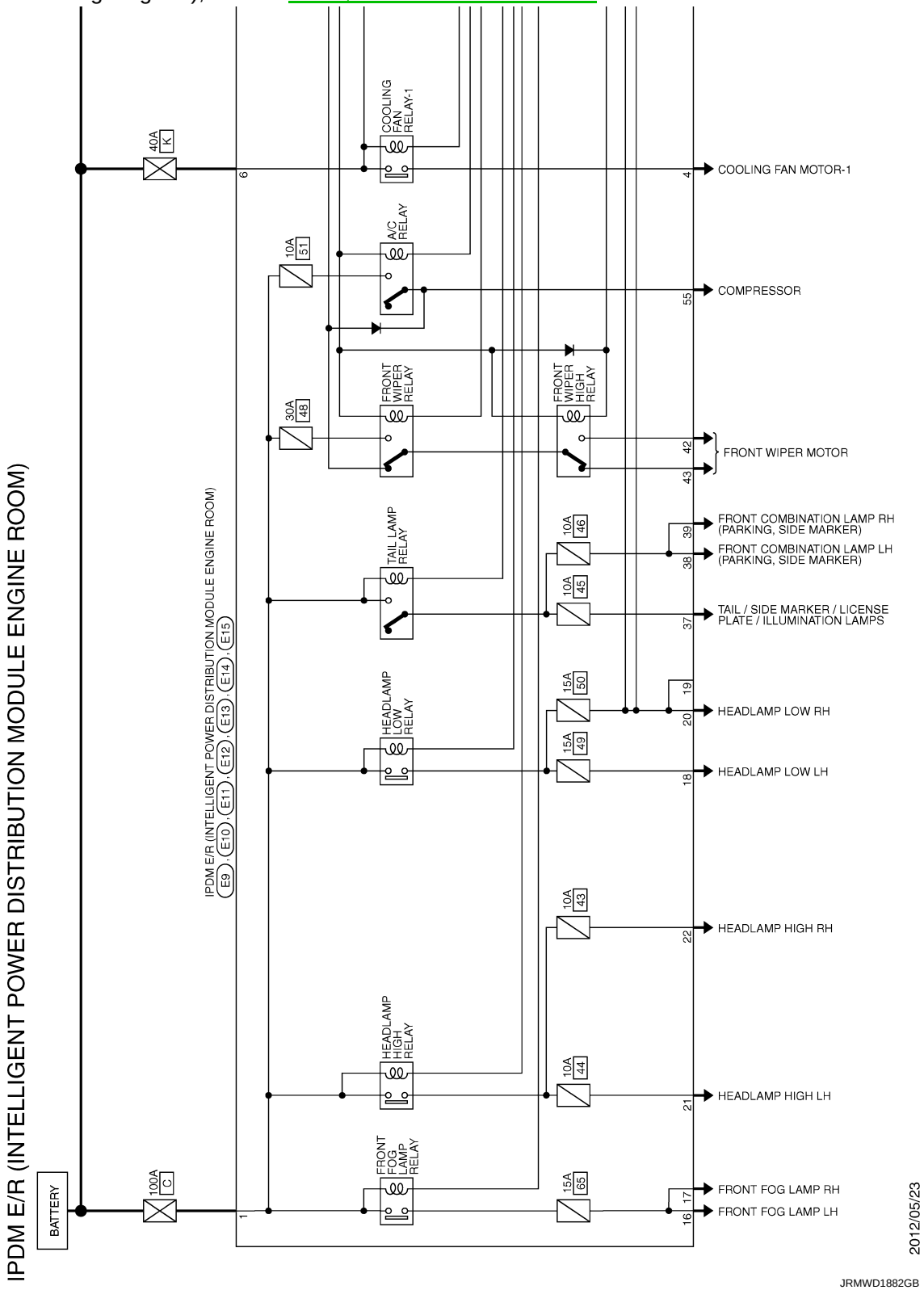
*2: With front fog lamp system

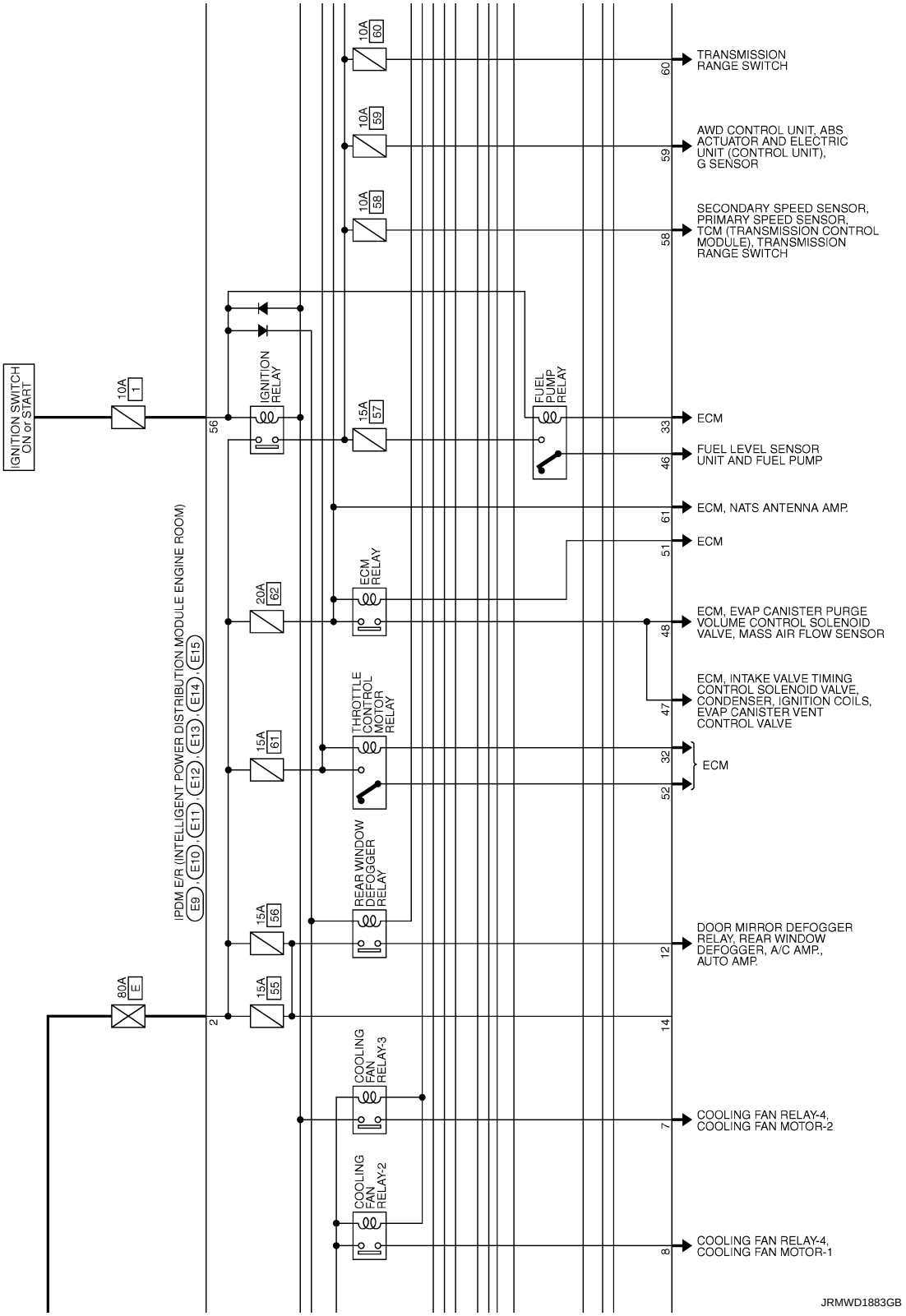
*3: For Mexico

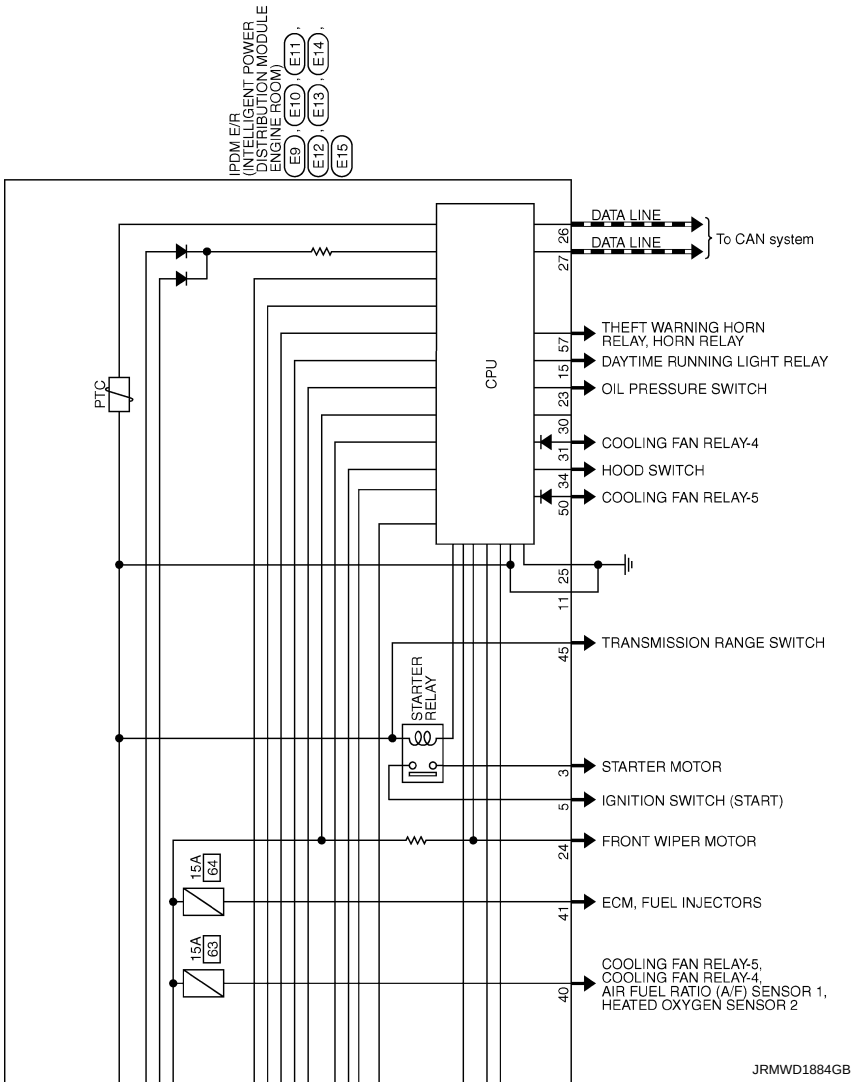
Wiring Diagram - IPDM E/R -

INFOID:0000000008729064

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




IGNITION SWITCH ON or START
10A 1
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15
80A E
2
56
IGNITION RELAY
10A 60
10A 59
10A 58
15A 57
20A 62
15A 61
15A 56
15A 55
FUEL PUMP RELAY
ECM RELAY
THROTTLE CONTROL MOTOR RELAY
REAR WINDOW DEFOGGER RELAY
COOLING FAN RELAY-3
COOLING FAN RELAY-2
60 TRANSMISSION RANGE SWITCH
59 AWD CONTROL UNIT, ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), G SENSOR
58 SECONDARY SPEED SENSOR, PRIMARY SPEED SENSOR, TCM (TRANSMISSION CONTROL MODULE), TRANSMISSION RANGE SWITCH
33 ECM
46 FUEL LEVEL SENSOR UNIT AND FUEL PUMP
61 ECM, NATS ANTENNA AMP.
51 ECM
48 ECM, EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE, MASS AIR FLOW SENSOR
47 ECM, INTAKE VALVE TIMING CONTROL SOLENOID VALVE, CONDENSER, IGNITION COILS, EVAP CANISTER VENT CONTROL VALVE
32, 52 ECM
12 DOOR MIRROR DEFOGGER RELAY, REAR WINDOW DEFOGGER, A/C AMP., AUTO AMP.
14
7 COOLING FAN RELAY-4, COOLING FAN MOTOR-2
8 COOLING FAN RELAY-4, COOLING FAN MOTOR-1
JRMWD1883GB



Fail-safe

INFOID:0000000008729065

CAN COMMUNICATION CONTROL

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

If no CAN communication is available with ECM

Control part	Fail-safe in operation
Cooling fan	• The cooling fan relay-1, the cooling fan relay-2, the cooling fan relay-3 and the cooling fan relay-5 turn ON when the ignition switch is turned ON • The cooling fan relay-1, the cooling fan relay-2, the cooling fan relay-3 and the cooling fan relay-5 turn OFF when the ignition switch is turned OFF • Cooling fan relay-4 OFF
A/C compressor	A/C relay OFF

If no CAN communication is available with BCM

Control part	Fail-safe in operation
Headlamp	• The headlamp low relay turns ON when the ignition switch is turned ON • The headlamp low relay turns OFF when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • License plate lamps • Tail lamps • Illuminations	• The tail lamp relay and the daytime running light relay* turn ON when the ignition switch is turned ON • The tail lamp relay and the daytime running light relay* turn OFF when the ignition switch is turned OFF
Front wiper	• 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 front 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.
Front fog lamps	Front fog lamp relay OFF
Starter motor	Starter relay OFF
Rear window defogger	Rear window defogger relay OFF
Horn	Horn relay OFF

NOTE:

*: With daytime running light system

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors status of ignition relay by the voltage at ignition relay contact circuit inside it.
- IPDM E/R judges that the ignition relay is error, if status of the ignition relay and ignition switch ON signal (CAN).
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay and daytime running light relay* for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Detection		IPDM E/R judgment	Operation
Ignition switch ON signal	Ignition relay		
ON	ON	Ignition relay normal	—
OFF	OFF	Ignition relay normal	—
OFF	ON	Ignition relay ON stuck	Turn on the tail lamp relay and daytime running light relay* for 10 minutes
ON	OFF	Ignition relay OFF stuck	Detect DTC "B2099: IGN RELAY OFF"

NOTE:

*: With daytime running light system

FRONT WIPER CONTROL

IPDM E/R detects the front wiper stop position with the front wiper stop position signal.
When the front wiper stop position signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Front wiper stop position signal
ON	OFF	The front wiper stop position signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper stop position 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.

DTC Index

INFOID:0000000008729066

CONSULT display	Fail-safe	Timing[NOTE]		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	PCS-13
B2099: IGN RELAY OFF	—	CRNT	PAST	PCS-14

NOTE:
The details of time display are as follows.

- CRNT: The malfunctions that are detected now.
- PAST: The number is indicated when it is normal at present and a malfunction was detected in the past.

SYMPTOM DIAGNOSIS

SECURITY CONTROL SYSTEM

Symptom Table

INFOID:0000000008279947

Use the chart below to help you find the cause of the symptom. The numbers indicate the order of the inspection.

No.	Function	Operation condition	Symptom	Diagnosis Item	Reference page
1	INTELLIGENT KEY SYSTEM/ ENGINE START FUNCTION	Ignition switch turn ON	Ignition switch does not turn ON	KEY warning lamp (GREEN) illuminates	SEC-113
				KEY warning lamp does not illuminate	SEC-113
				KEY warning lamp (RED) illuminates	SEC-114
		Engine start	Engine can not start	—	SEC-115
2	VEHICLE SECURITY SYSTEM	Lock all doors with Intelligent Key or door request switch	Vehicle security system can not be set	—	SEC-117
		Lock all doors with Intelligent Key or request switch.	Security indicator does not turn ON or flash	—	SEC-116
		In the armed phase, open the door	Vehicle security system does not active	—	SEC-118
		When alarm sound, press Intelligent Key button	Vehicle security system can not be canceled	—	SEC-119
		When alarm sound, press door request switch		—	SEC-120

IGNITION KNOB SWITCH DOES NOT TURN ON KEY WARNING LAMP (GREEN) ILLUMINATES

KEY WARNING LAMP (GREEN) ILLUMINATES : Description

INFOID:0000000008279948

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-6, "Work Flow".

KEY WARNING LAMP (GREEN) ILLUMINATES : Diagnosis Procedure

INFOID:0000000008279949

1.CHECK STEERING LOCK UNIT

Check steering lock unit.
Refer to SEC-91, "DTC Index".

Is the inspection result normal?

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

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

KEY WARNING LAMP DOES NOT ILLUMINATE

KEY WARNING LAMP DOES NOT ILLUMINATE : Description

INFOID:0000000008279950

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-6, "Work Flow".

KEY WARNING LAMP DOES NOT ILLUMINATE : Diagnosis Procedure

INFOID:0000000008279951

1.CHECK INTELLIGENT KEY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check Intelligent Key unit power supply and ground circuit.
Refer to SEC-45, "INTELLIGENT KEY UNIT : Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK IGNITION KNOB SWITCH

Check ignition knob switch.
Refer to SEC-53, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3.CHECK KEY SWITCH

Check key switch.
Refer to SEC-51, "Component Function Check".

Is the inspection result normal?

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

4.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

KEY WARNING LAMP (RED) ILLUMINATES

KEY WARNING LAMP (RED) ILLUMINATES : Description

INFOID:0000000008279952

NOTE:

- Before performing the diagnosis, check “Work Flow”. Refer to SEC-6, "Work Flow".

KEY WARNING LAMP (RED) ILLUMINATES : Diagnosis Procedure

INFOID:0000000008279953

1.CHECK INSIDE KEY ANTENNA

Check inside key antenna.
Refer to SEC-57, "INSTRUMENT CENTER : Component_Function_Check".

Is the inspection result normal?

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

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

ENGINE CAN NOT START WITH INTELLIGENT KEY

Description

INFOID:0000000008279954

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-6, "Work Flow".

Diagnosis Procedure

INFOID:0000000008279955

1.CHECK KEY SWITCH

Check key switch.
Refer to SEC-51, "Component Function Check".

Is the inspection result normal?

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

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

SECURITY INDICATOR LAMP DOES NOT TURN ON OR FLASH

Description

INFOID:0000000008279956

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-6, "Work Flow".

Diagnosis Procedure

INFOID:0000000008279957

1.CHECK VEHICLE SECURITY INDICATOR LAMP

Check vehicle security indicator lamp.
Refer to SEC-64, "Component Function Check".

Is the inspection result normal?

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

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

VEHICLE SECURITY SYSTEM CAN NOT BE SET

Description

INFOID:0000000008279958

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-6, "Work Flow".

Diagnosis Procedure

INFOID:0000000008279959

1.CHECK DOOR LOCK FUNCTION

Check door lock function.
Refer to DLK-23, "DOOR LOCK FUNCTION : System Description".

s the inspection result normal?

YES >> GO TO 2.
NO >> Refer to SEC-6, "Work Flow".

2.CHECK HOOD SWITCH

Check hood switch.
Refer to SEC-55, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace the malfunctioning parts.

3.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

VEHICLE SECURITY ALARM DOES NOT ACTIVATE

Description

INFOID:0000000008279960

NOTE:
- Before performing the diagnosis, check “Work Flow”. Refer to SEC-6, "Work Flow".

Diagnosis Procedure

INFOID:0000000008279961

1.CHECK DOOR SWITCH

Check door switch.
Refer to SEC-47, "Component Function Check".

Is the inspection results normal?

YES >> GO TO 2.
NO >> Repair or replace malfunction part.

2.CHECK HORN

Check horn.
Refer to SEC-62, "EXCEPT FOR MEXICO : Component Function Check". (Except for Mexico)
Refer to SEC-62, "FOR MEXICO : Component Function Check". (For Mexico)

Is the inspection results normal?

YES >> GO TO 3.
NO >> Repair or replace malfunction part.

3.CHECK HEADLAMP OPERATION

Check headlamp operation by lighting switch.

Does headlamp come on when turning switch ON?

YES >> GO TO 4.
NO >> Check headlamp system. Refer to EXL-6, "Work Flow". (XENON type), Refer to EXL-122, "Work Flow". (HALOGEN type)

4.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

VEHICLE SECURITY SYSTEM CAN NOT BE CANCELED WITH INTELLIGENT KEY

Description

INFOID:0000000008279962

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-6, "Work Flow".

Diagnosis Procedure

INFOID:0000000008279963

1.CHECK INTELLIGENT KEY SYSTEM

Check Intelligent Key system.
Refer to DLK-20, "INTELLIGENT KEY SYSTEM : System Description".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Refer to SEC-6, "Work Flow".

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

VEHICLE SECURITY SYSTEM CAN NOT BE CANCELED WITH DOOR REQUEST SWITCH

Description

INFOID:0000000008279964

NOTE:
- Before performing the diagnosis, check “Work Flow”. Refer to SEC-6, "Work Flow".

Diagnosis Procedure

INFOID:0000000008279965

1.CHECK INTELLIGENT KEY SYSTEM

Check Intelligent Key system.
Refer to DLK-20, "INTELLIGENT KEY SYSTEM : System Description".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Refer to SEC-6, "Work Flow".

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

PRECAUTION

PRECAUTIONS

FOR USA AND CANADA

FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000008279966

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

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

FOR MEXICO

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

INFOID:0000000008279967

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

Always observe the following items for preventing accidental activation.

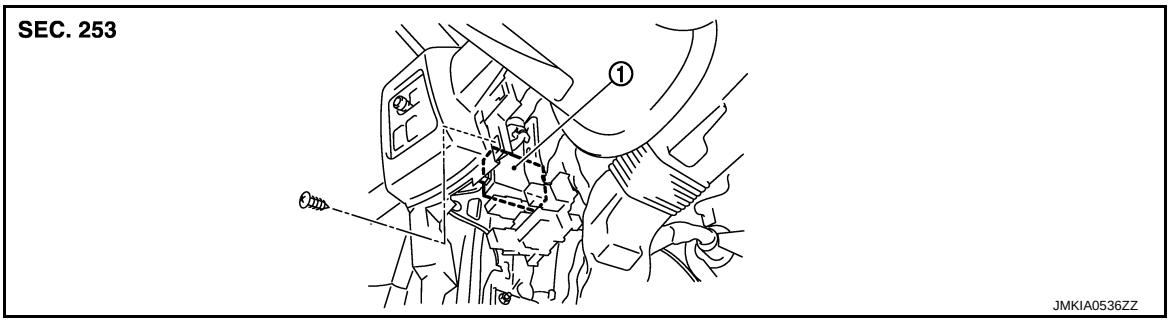
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

REMOVAL AND INSTALLATION

INTELLIGENT KEY UNIT

Exploded View

INFOID:0000000008279968



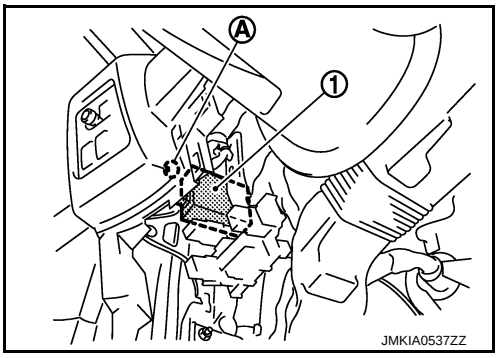
1. Intelligent Key unit M40

Removal and Installation

INFOID:0000000008279969

REMOVAL

1. Remove lower instrument panel (driver side) and mirror switch finisher. Refer to IP-13, "Exploded View" and IP-14, "Removal And Installation".
2. Remove the Intelligent Key unit mounting screw (A), and then remove Intelligent Key unit (1).



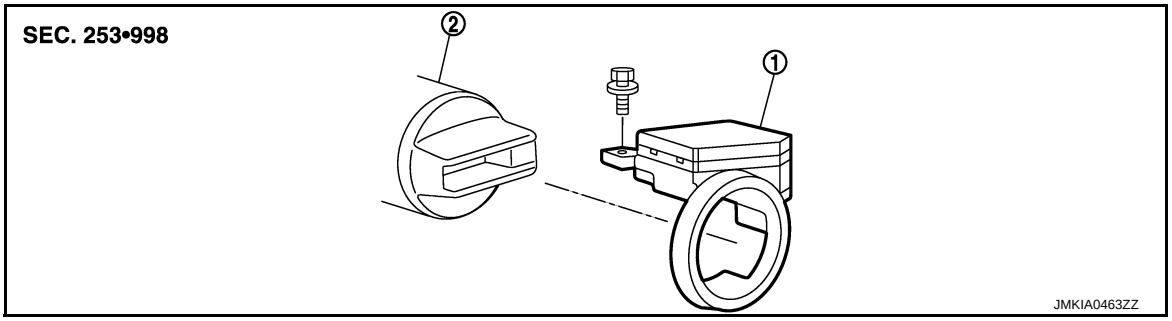
INSTALLATION

Install in the reverse order of removal.

NATS ANTENNA AMP.

Exploded View

INFOID:0000000008279970



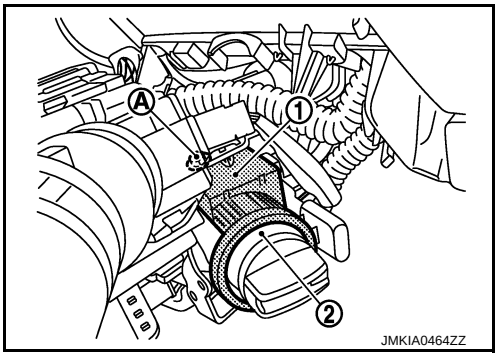
1. NATS antenna amp.
2. Steering lock assembly

Removal and Installation

INFOID:0000000008279971

REMOVAL

1. Remove the steering column cover.
   Refer to IP-14, "Removal And Installation".
2. Remove the NATS antenna amp. mounting screw (A), and then remove NATS antenna amp. (1) from steering lock assembly (2).



INSTALLATION

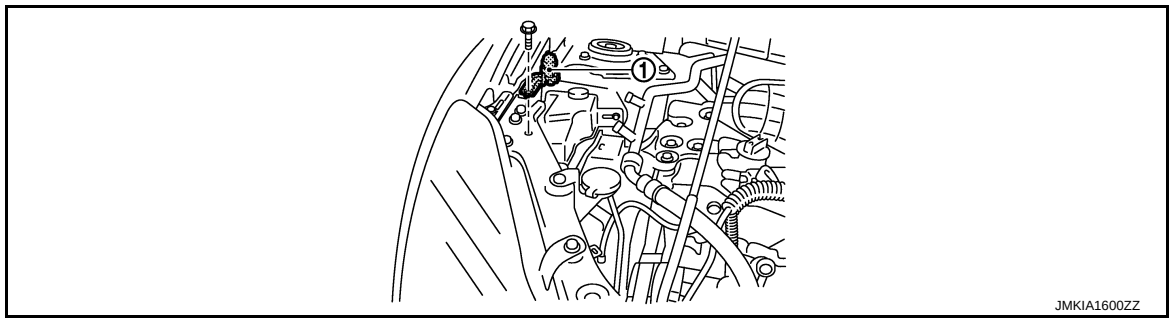
Install in the reverse order of removal.

HOOD SWITCH

Exploded View

INFOID:0000000008279972

HOOD SWITCH



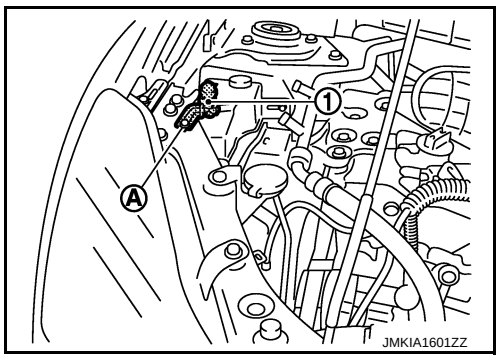
1. Hood switch

Removal and Installation

INFOID:0000000008279973

REMOVAL

1. Remove the hood switch mounting bolt (A), and then remove hood switch (1).



INSTALLATION

Install in the reverse order of removal.

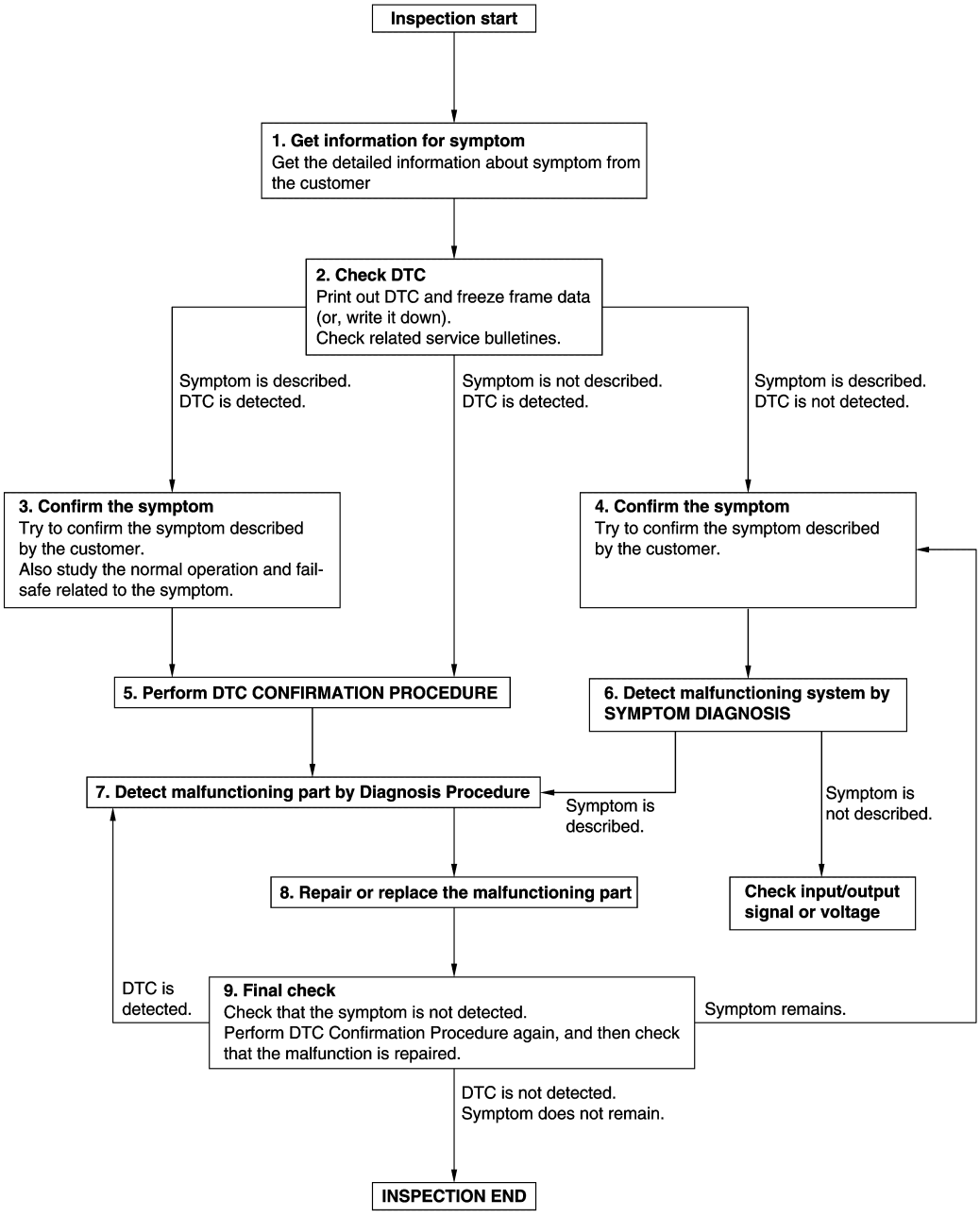
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000008279974

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

1. Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurs).
2. Check operation condition of the function that is malfunctioning.

>> GO TO 2.

2.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.

- Record DTC and freeze frame data (Print them out using CONSULT.)
- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Are any symptoms described and any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.
Symptom is described, DTC is not detected>>GO TO 4.
Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Also study the normal operation and fail-safe related to the symptom.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the detected DTC, and then check that DTC is detected again. At this time, always connect CONSULT to the vehicle, and check self diagnostic results in real time.
If two or more DTCs are detected, refer to SEC-180, "DTC Inspection Priority Chart" and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.
  If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIRMATION PROCEDURE.

Is DTC detected?

YES >> GO TO 7.
NO >> Check according to GI-46, "Intermittent Incident".

6.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM DIAGNOSIS

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

Is the symptom described?

YES >> GO TO 7.
NO >> Monitor input data from related sensors or check voltage of related module terminals using CONSULT.

7.DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

Is malfunctioning part detected?

YES >> GO TO 8.
NO >> Check according to GI-46, "Intermittent Incident".

8. REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 9.

9. FINAL CHECK

When DTC is detected in step 2, perform DTC CONFIRMATION PROCEDURE again, and then check that the malfunction is repaired securely.
When symptom is described by the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 7.
YES-2 >> Symptom remains: GO TO 4.
NO >> Before returning the vehicle to the customer, always erase DTC.

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000008279975

Perform the system initialization when replacing BCM or ECM with a used parts or registering an additional ignition key.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000008279976

Refer to the CONSULT Operation Manual-NATS.

ECM RE-COMMUNICATING FUNCTION

ECM RE-COMMUNICATING FUNCTION : Description

INFOID:0000000008279977

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 a virgin ECM which has never been energized on-board.
(In this step, initialization procedure by CONSULT is not necessary)
NOTE:
- **When registering new Key IDs or replacing the ECM that is not brand new, refer to CONSULT Operation Manual NATS-IVIS/NVIS.**
- **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:0000000008279978

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?

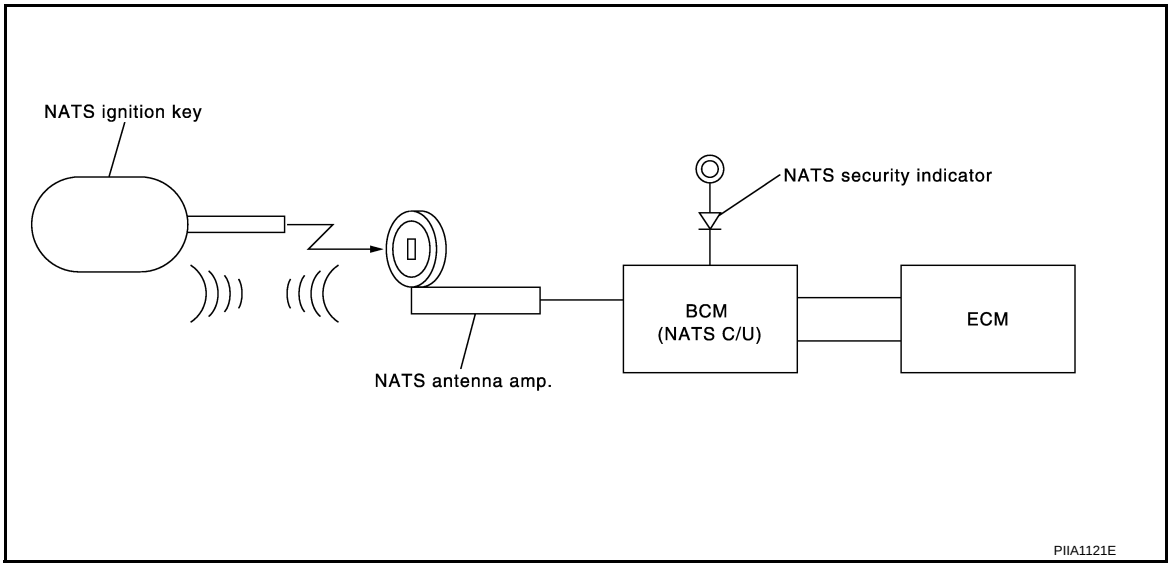
YES >> Procedure is completed.
NO >> Initialize control unit. Refer to CONSULT Operation Manual NATS-IVIS/NVIS.

SYSTEM DESCRIPTION

NVIS (NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS)

System Diagram

INFOID:0000000008279979



System Description

INFOID:0000000008279980

INPUT/OUTPUT SIGNAL CHART

BCM

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

SYSTEM DESCRIPTION

NVIS (Nissan Vehicle Immobilizer System-NATS) has the following immobilizer functions:

- Engine immobilizer shows high anti-theft performance to prevent engine start 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.
- Therefore, NVIS/NATS warns outsiders that the vehicle is equipped with the anti-theft system. Refer to SEC-134, "System Description".
- If system detects malfunction, security indicator illuminate when ignition switch is turned to ON position.
- If the owner requires, ignition 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 ignition key.

- ECM
- BCM
- Ignition key
- EPS control unit
- IPDM E/R
- Combination meter

- NVIS/NATS trouble diagnosis, system initialization and additional registration of other Ignition key IDs must be carried out using CONSULT hardware and SECURITY CARD.
  When NVIS/NATS initialization has been completed, the ID of the inserted ignition key or ignition key IDs can be carried out.
- Possible symptom of NVIS/NATS malfunction is “Engine cannot start”. The engine can be started with the NVIS/NATS. Identify the possible causes according to “Work Flow”. Refer to SEC-126, "Work Flow".

- If ECM other than Genuine NISSAN is installed, the engine cannot be started. For ECM replacement procedure, refer to SEC-129, "ECM RE-COMMUNICATING FUNCTION : Description".

PRECAUTIONS FOR KEY REGISTRATION

- The key registration is a procedure that erases the current NVIS/NATS ID once, and then re-registers a new ID. Therefore the registered ignition key is necessary for this procedure. Before starting the registration operation collect all registered ignition keys from the customer
- The NVIS/NATS ID registration is the procedure that registers the ID stored into the transponder (integrated in ignition key) to BCM.

SECURITY INDICATOR LAMP

- Warns that the vehicle is equipped with NVIS/NATS.
- The security indicator lamp always blinks, when the ignition switch is in the except ON position.
- The security indicator turns OFF, when the ignition switch is in ON position.
- When NVIS/NATS detects trouble, the security indicator lamp lights up while ignition key is in the “ON” position.

MAINTENANCE INFORMATION

CAUTION:

- **During trouble diagnosis or when the following parts have been replaced with a used parts, and if ignition key is added, registration* is required. A new part (except ignition key) should register automatically after the ignition switch is turned ON. New one means a virgin control unit that has never been energized on-board**

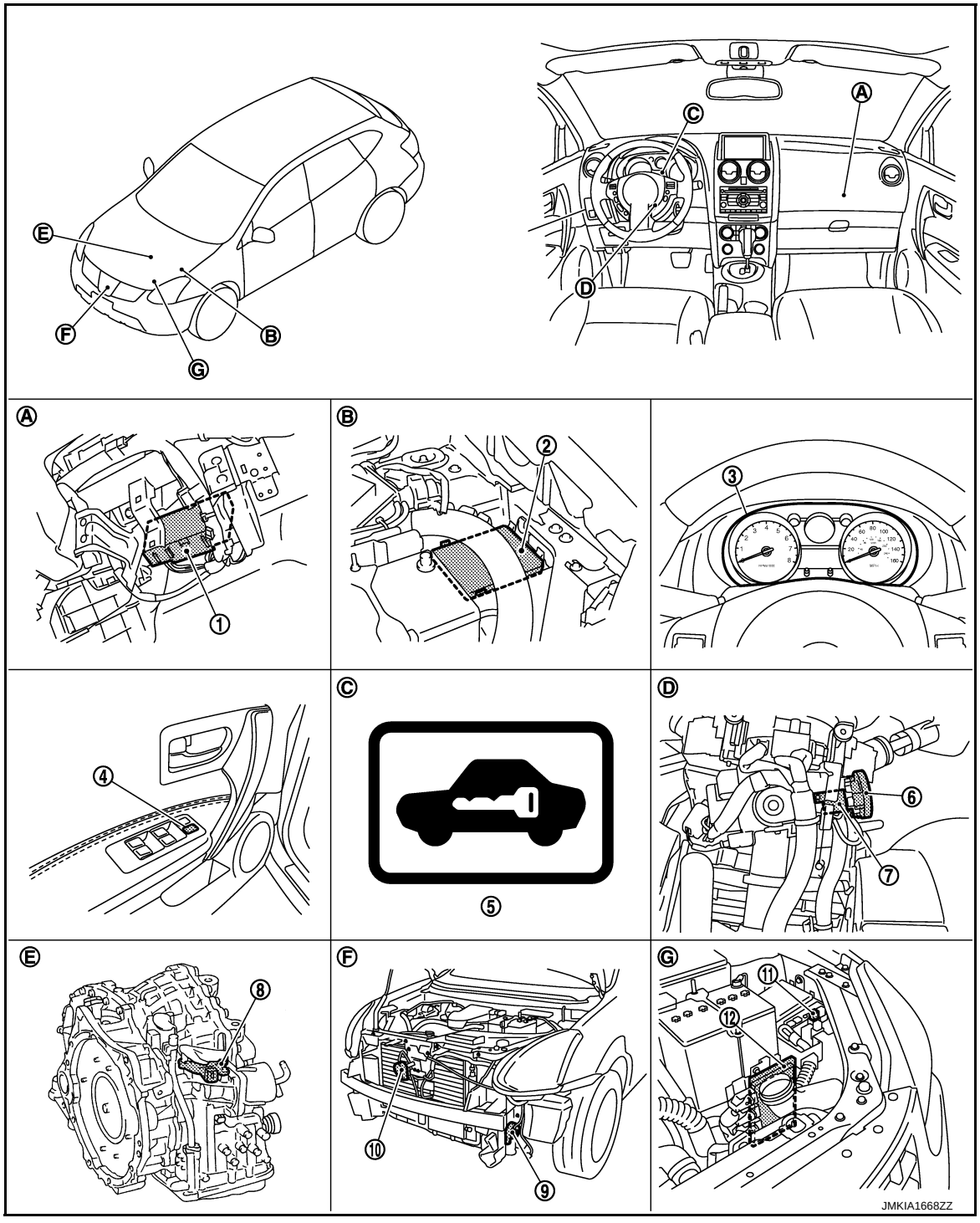
  ***: All keys kept by the owner of the vehicle should be registered with ignition key.**

- **ECM**
- **BCM**
- **Ignition key**

- **NVIS/NATS trouble diagnosis, system initialization and additional registration of other ignition key IDs must be carried out using CONSULT hardware and SECURITY CARD.**
  When NVIS/NATS initialization has been completed, the ID of the inserted ignition key IDs can be carried out.
- **If ECM other than Genuine NISSAN is installed, the engine cannot be started.**

Component Parts Location

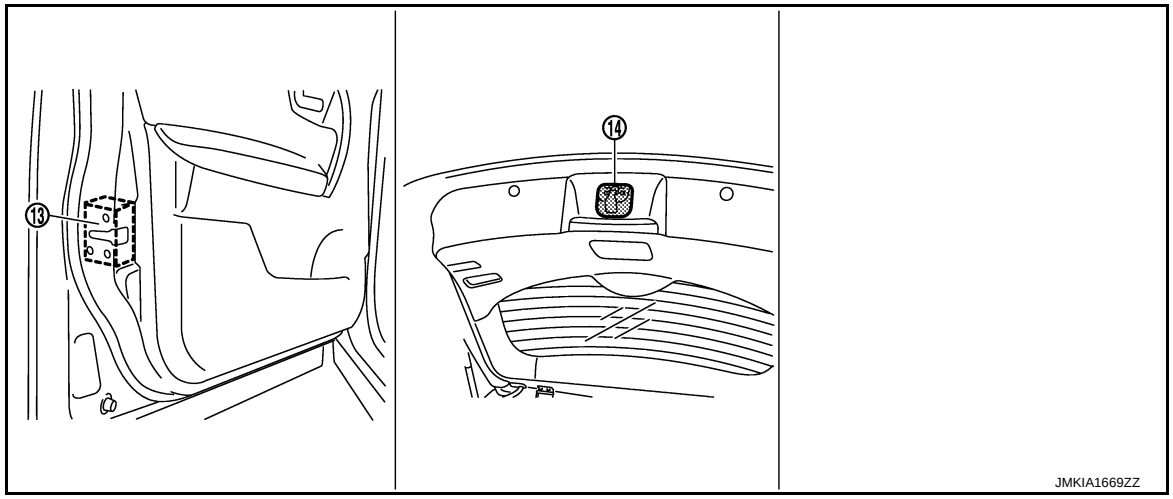
INFOID:0000000008279981



1. BCM M65, M66, M67
2. IPDM E/R E10, E11, E13, E14, E15
3. Combination meter (security indicator lamp) M34
4. Door lock and unlock switch D5, D6
5. Security indicator lamp (combination meter M34)
6. NATS antenna amp. M26
7. Key switch M24
8. Transmission range switch F21
9. Horn (high) E78, E79
10. Horn (low) E80, E81
11. Horn relay E5
12. ECM E16

A. Over the glove box
B. Engine room (LH)
C. Built in combination meter

D. View with steering column cover removed
E. Transaxle assembly
F. View with front bumper removed
G. Engine room (LH)



13. Front door lock assembly (driver side) D9
14. Back door switch (back door lock assembly D190)

Component Description

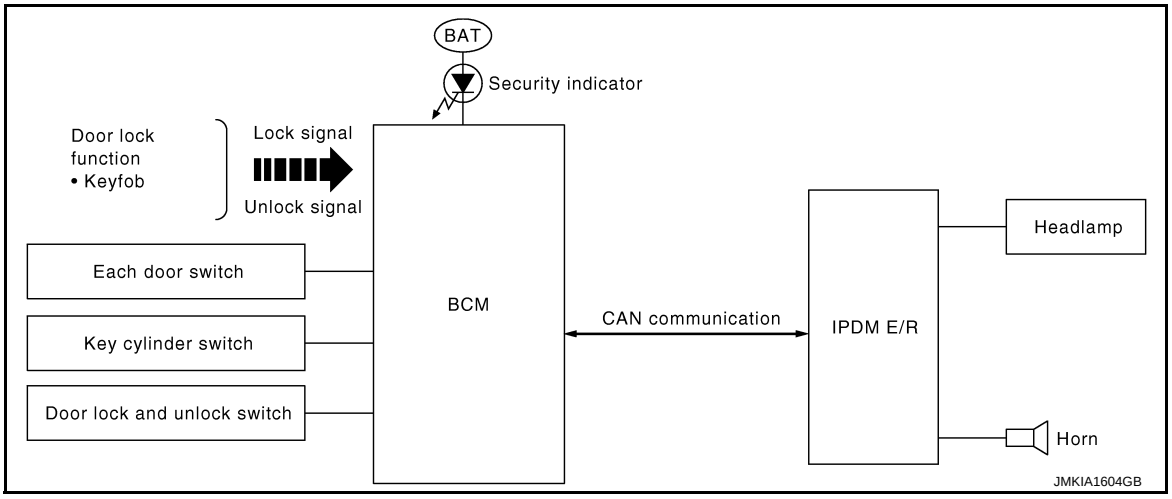
INFOID:0000000008279982

Component	Reference
BCM	BCS-7
NATS antenna amp.	SEC-146
Security indicator	SEC-155
IPDM E/R	PCS-2

VEHICLE SECURITY SYSTEM

System Diagram

INFOID:0000000008279983



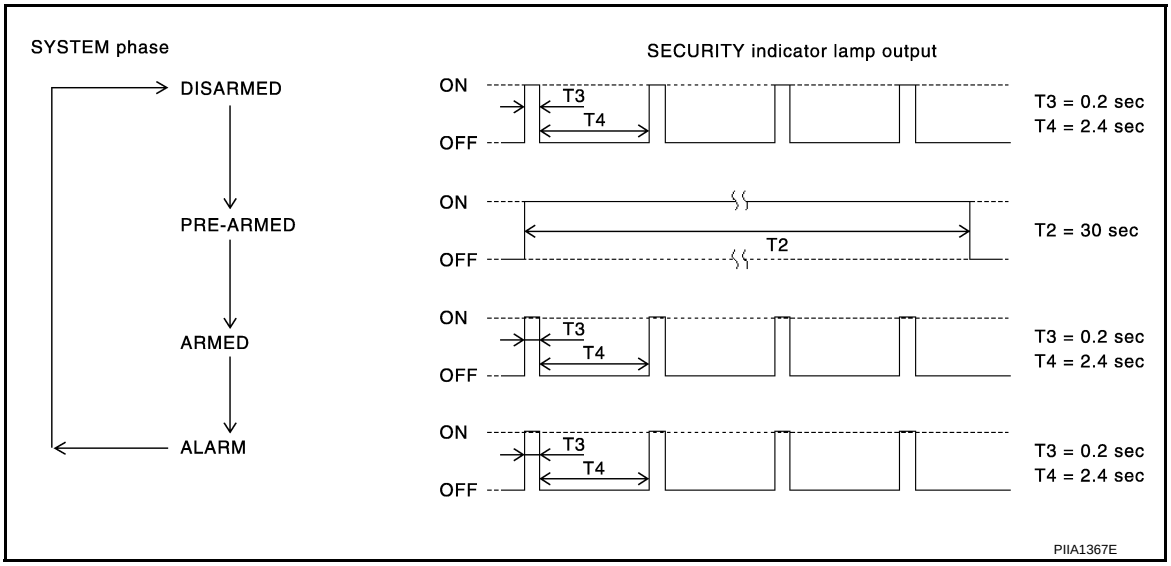
System Description

INFOID:0000000008279984

INPUT/OUTPUT SIGNAL CHART

Switch	Input signal to BCM	BCM system	Actuator
All door switch	Open or close	Vehicle security system	• IPDM E/R • Head lamp • Horn • Security indicator lamp
Door key cylinder switch	Lock or unlock		
Door lock and unlock switch			
Keyfob	Lock or unlock		
	Panic alarm		

OPERATION FLOW



SETTING THE VEHICLE SECURITY SYSTEM

Initial Condition

- Ignition switch is in OFF position.

Disarmed Phase

- When doors or back door is open, the vehicle security system is set in the disarmed phase on the assumption that the owner is inside or near the vehicle.

- When the vehicle security system is in the disarmed phase, the security indicator lamp blinks every 2.4 seconds.

Pre-armed Phase and Armed Phase

When the following operation 1 or 2 is performed, the vehicle security system turns into the “pre-armed” phase. (The security indicator lamp illuminates for approx. 30 seconds. Then, the system automatically shifts into the “armed” phase.)

1. BCM receives LOCK signal from front door key cylinder switch or keyfob, after back door and all doors are closed.
2. Back door and all doors are closed after front doors are locked by key or door lock and unlock switch.

CANCELING THE SET VEHICLE SECURITY SYSTEM

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

1. Unlock the doors with the key or keyfob.
2. Turn ignition switch “ON” or “ACC” position.

CANCELING THE ALARM OPERATION OF THE VEHICLE SECURITY SYSTEM

When unlocking the door with the key or keyfob the alarm operation is canceled.

ACTIVATING THE ALARM OPERATION OF THE VEHICLE SECURITY SYSTEM

Check that the system is in the armed phase. (The security indicator lamp blinks every 2.4 seconds.)
When the following operation 1 or 2 is performed, the system sounds the horns and flashes the headlamps for approx. 50 seconds.

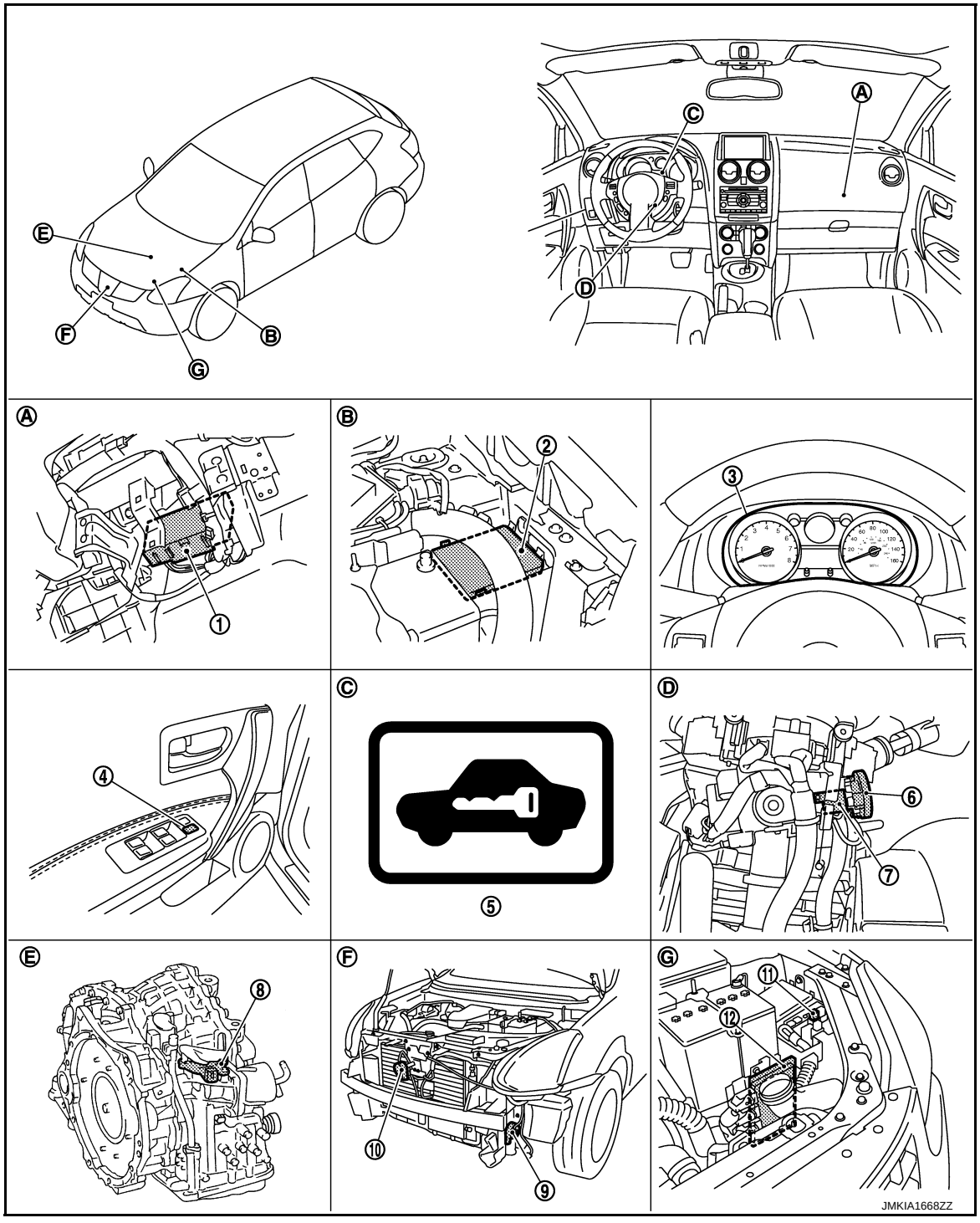
1. Any door is opened during armed phase.
2. Disconnecting and connecting the battery connector before canceling armed phase.

PANIC ALARM OPERATION

Remote keyless entry system may or may not operate vehicle security system (horn and headlamps) as required.
When the remote keyless entry system is triggered, ground is supplied intermittently to both headlamp relay and horn relay.
When headlamp relay and horn relay are energized, then power is supplied to headlamps (LH and RH) and horns (HIGH and LOW).
The headlamp flashes and the horn sounds intermittently.
The alarm automatically turns off after 50 seconds or when BCM receives any signal from keyfob.

Component Parts Location

INFOID:0000000008279985



1. BCM M65, M66, M67
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8. Transmission range switch F21
9. Horn (high) E78, E79
10. Horn (low) E80, E81
11. Horn relay E5
12. ECM E16

A. Over the glove box
B. Engine room (LH)
C. Built in combination meter

D. View with steering column cover removed
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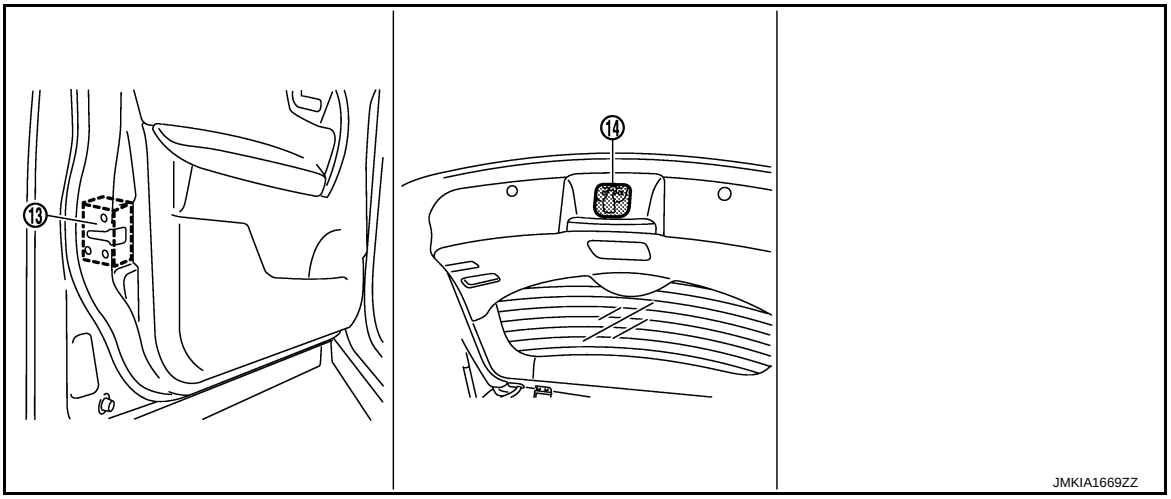
F. View with front bumper removed
G. Engine room (LH)



13. Front door lock assembly (driver side) D9
14. Back door switch (back door lock assembly D190)

Component Description

INFOID:0000000008279986

Component	Reference
BCM	BCS-7
Horn	SEC-154
Security indicator	SEC-155
Door switch	DLK-276
NATS antenna amp.	SEC-146

DIAGNOSIS SYSTEM (BCM)
COMMON ITEM
COMMON ITEM : CONSULT Function (BCM - COMMON ITEM)

INFOID:0000000008279987

APPLICATION ITEM
CONSULT can display each diagnostic item using the diagnostic test modes shown following.

Diagnosis mode	Function description
ECU Identification	BCM part number is displayed.
Self-Diagnostic Result	Displays the diagnosis results judged by BCM. Refer to SEC-180, "DTC Index".
Data Monitor	BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Work Support	Changes the setting for each system function.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing BCM.
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from 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.

×: Applicable item

System	CONSULT sub system selection item	Diagnosis mode		
		Work Support	Data Monitor	Active Test
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	×
Warning chime	BUZZER		×	×
Interior room lamp control	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
• Auto air conditioning system • Manual air conditioning system	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Body control system	BCM	×		
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
RAP system	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
—	FUEL LID*			
TPMS	AIR PRESSURE MONITOR	×	×	×
Panic alarm system	PANIC ALARM			×

*: This item is displayed, but is not function.

IMMU

IMMU : CONSULT Function (BCM - IMMU)

INFOID:0000000008279988

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.

DATA MONITOR

Monitor item	Content
IGN ON SW	Indicates [ON/OFF] 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 Function (BCM - THEFT ALM)

INFOID:0000000008279989

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.

DATA MONITOR

Monitor Item	Condition
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
ACC ON SW	Indicates [ON/OFF] condition of ignition switch in ACC position.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
KEYLESS LOCK*2	Indicates [ON/OFF] condition of lock signal from key fob.
KEYLESS UNLOCK*2	Indicates [ON/OFF] condition of unlock signal from key fob.
I-KEY LOCK*1	Indicates [ON/OFF] condition of lock signal from Intelligent Key.
I-KEY UNLOCK*1	Indicates [ON/OFF] condition of unlock signal from Intelligent Key.
TRUNK OPNR SW	Indicates [ON/OFF] condition of back door opener switch.
TRUNK CYL SW	**NOTE:** The item is indicated, but not monitored.
TRNK OPNR MNTR	**NOTE:** The item is indicated, but not monitored.
HOOD SW	Indicates [ON/OFF] condition of hood switch.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch (driver side).
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch (passenger side).
DOOR SW-RR	Indicates [ON/OFF] condition of rear door switch RH.
DOOR SW-RL	Indicates [ON/OFF] condition of rear door switch LH.
BACK DOOR SW	Indicates [ON/OFF] condition of back door switch.

Monitor Item	Condition
KEY CYL LK-SW	Indicates [ON/OFF] condition of key cylinder switch.
KEY CYL UN-SW	Indicates [ON/OFF] condition of key cylinder switch.
CDL LOCK SW	Indicates [ON/OFF] condition of door lock and unlock switch.
CDL UNLOCK SW	Indicates [ON/OFF] condition of door lock and unlock switch.

*1: For vehicle equipped with Intelligent Key.

*2: For the vehicle equipped with remote key less entry system.

ACTIVE TEST

Test item	Description
THEFT IND	This test is able to check security indicator operation [ON/OFF].
VEHICLE SECURITY HORN	This test is able to check horn operation [ON].
HEAD LAMP(HI)	This test is able to check head lamp (HI) operation [ON/OFF].

WORK SUPPORT

Test item	Description
SECURITY ALARM SET	Vehicle security function mode can be changed in this mode. • ON: Vehicle security function is ON. • OFF: Vehicle security function is OFF.
THEFT ALM TRG	The switch which triggered vehicle security system is recorded. This mode can be able to confirm and erase the record of vehicle security system.

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

BCM

BCM : Description

INFOID:0000000008279990

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-26, "CAN Communication Signal Chart".

BCM : DTC Logic

INFOID:0000000008279991

DTC DETECTION LOGIC

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

BCM : Diagnosis Procedure

INFOID:0000000008279992

1.PERFORM SELF DIAGNOSTIC

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

Is DTC “U1000” displayed?

YES >> Refer to LAN-16, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-46, "Intermittent Incident".

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

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

INFOID:0000000008279993

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, CAN-L) 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-26, "CAN Communication Signal Chart".

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

INFOID:0000000008279994

DTC DETECTION LOGIC

DTC	CONSULT display description	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When IPDM E/R cannot communicate CAN communication signal continuously for 2 seconds or more.	CAN communication system

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

agnosis Procedure

INFOID:0000000008279995

1.PERFORM SELF DIAGNOSTIC

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

Is DTC “U1000” displayed?

YES >> Refer to LAN-16, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-46, "Intermittent Incident".

P1610 LOCK MODE

Description

INFOID:0000000008279996

When the starting operation is carried more than 10 times consecutively under the following conditions, NVIS/NATS will shift to the mode which prevents the engine from being started.
- Unregistered ignition key is used.
- BCM or ECM's malfunctioning.

DTC Logic

INFOID:0000000008279997

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When the starting operation is carried out 10 or more times consecutively under the following conditions. • Unregistered ignition 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.

Is DTC detected?

YES >> Refer to SEC-143, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008279998

1.CHECK ENGINE START FUNCTION

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

Does the engine start?

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

2.CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

P1611 ID DISCORD, IMMU-ECM

Description

INFOID:0000000008279999

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:0000000008280000

DTC DETECTION LOGIC

NOTE:

- If DTC P1611 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-143, "DTC Logic".

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-144, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008280001

1.PERFORM INITIALIZATION

Perform initialization with CONSULT. Re-register all ignition keys.

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

YES >> INSPECTION END (ID was unregistered.)
NO >> GO TO 2.

2.REPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT. Re-register all ignition keys.

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

YES >> INSPECTION END (BCM was malfunctioning.)
NO >> GO TO 3.

3.REPLACE ECM

1. Replace ECM. Refer to the following page.

- Refer to EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

2. Perform initialization with CONSULT. Re-register all ignition keys.

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

YES >> INSPECTION END (ECM was malfunctioning.)
NO >> GO TO 4.

4.CHECK INTERMITENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

P1612 CHAIN OF ECM-IMMU

Description

INFOID:0000000008280002

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:0000000008280003

DTC DETECTION LOGIC

NOTE:

- If DTC P1612 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-141, "BCM : DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1612	CHAIN OF BCM-ECM	Inactive communication between ECM and BCM	• Harness or connectors (The CAN communication line is open or short) • BCM • ECM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-145, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008280004

1.REPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT.

Does the engine start?

YES >> INSPECTION END (BCM was malfunctioning.)
NO >> ECM is malfunctioning.
- Replace ECM. Refer to the following page.
  - Except for Mexico: Refer to EC-20, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".
  - For Mexico: Refer to EC-472, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

P1614 CHAIN OF IMMU-KEY

Description

INFOID:0000000008280005

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

DTC Logic

INFOID:0000000008280006

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1614	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 short) • Ignition key • NATS antenna amp. • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Insert ignition key into key cylinder.
2. Turn ignition knob switch.
3. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-146, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008280007

1.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to SEC-198, "Removal and Installation".

Is the inspection result normal?

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

2.CHECK IGNITION KEY

Start engine with another registered ignition key.

Does the engine start?

YES >> Replace ignition key. Perform initialization and registration of ignition key.
NO >> GO TO 3.

3.CHECK NATS ANTENNA AMP. POWER SUPPLY

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

(+)		(-)	Voltage (V) (Approx.)
NATS antenna amp.			
Connector	Terminal		
M26	1	Ground	Battery voltage

Is the inspection result normal?

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

4. CHECK NATS ANTENNA AMP. GROUND CIRCUIT

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

NATS antenna amp.		Ground	Continuity
Connector	Terminal		
M26	3		Existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace circuit.

5. CHECK NATS ANTENNA AMP. SIGNAL CIRCUIT

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

(+)		(–)	Condition	Voltage (V) (Approx.)
NATS antenna amp.				
Connector	Terminal			
M26	2	Ground	Just after inserting ignition key in key cylinder.	Pointer of tester should move.
			Other than above.	0
	4		Just after inserting ignition key in key cylinder.	Pointer of tester should move.
			Other than above.	0

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace circuit.

6. CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

P1615 DIFFRENCE OF KEY

Description

INFOID:0000000008280008

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 ignition key is used.

DTC Logic

INFOID:0000000008280009

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

1. Insert ignition key into key cylinder.
2. Turn ignition knob switch.
3. Check “Self Diagnostic Result” with CONSULT.

Is DTC detected?

YES >> Refer to SEC-148, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008280010

1.PERFORM INITIALIZATION

Perform initialization with CONSULT. Re-register all ignition keys.

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

YES >> INSPECTION END (Ignition key was unregistered.)
NO >> BCM is malfunctioning.
- Replace BCM. Refer to BCS-65, "Removal and Installation".
- Perform initialization again.

POWER SUPPLY AND GROUND CIRCUIT
BCM
BCM : Diagnosis Procedure

INFOID:0000000008280011

1.CHECK FUSES AND FUSIBLE LINK

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

Signal name	Fuses and fusible link No.
Battery power supply	10
	J
ACC power supply	20
Ignition power supply	1

Is the fuse fusing?

YES >> Replace the blown fuse or fusible link after repairing the affected circuit if a fuse or fusible link is blown.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Ignition switch position		
(+)		(–)			
BCM			OFF	ACC	ON
Connector	Terminal				
M67	70	Ground	Battery voltage	Battery voltage	Battery voltage
	57				
M65	11		Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and the ground.

BCM		Ground	Continuity
Connector	Terminal		
M67	67		Existed

Does continuity exist?

YES >> INSPECTION END
NO >> Repair the harness or connector.

DOOR SWITCH

Description

INFOID:0000000008280012

Detects door open/closed condition.

Component Function Check

INFOID:0000000008280013

1.CHECK FUNCTION

With CONSULT

Check door switches (“DOOR SW-DR”, “DOOR SW-AS”, “DOOR SW-RL”, “DOOR SW-RR”, “BACK DOOR SW”) in “Data Monitor” mode with CONSULT.

Monitor item	Door condition	Display
DOOR SW-DR	CLOSE → OPEN	OFF → ON
DOOR SW-AS		
DOOR SW-RL		
DOOR SW-RR		
BACK DOOR		

Is the inspection result normal?

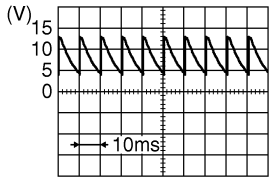
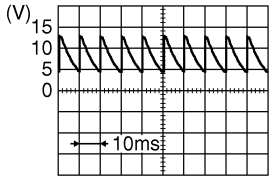
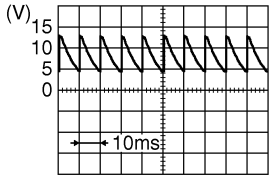
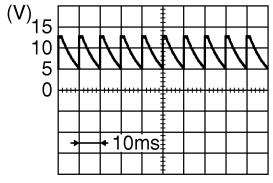
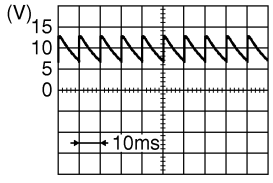
YES >> Door switch is OK.
NO >> Refer to SEC-150, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008280014

1.CHECK DOOR SWITCH INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect door switch connectors.
3. Check signal between door switch harness connector and ground with oscilloscope.

Door switch				Voltage (V) (Approx.)
(+)			(–)	
connector		Terminal		
Front door switch (passenger side)	B93	3	Ground	 JPMIA0586GB
Front door switch (driver side)	B92			 JPMIA0587GB
Rear door switch RH	B95			 JPMIA0587GB
Rear door switch LH	B94			 JPMIA0594GB
Back door lock assembly (back door switch)	D190			 JPMIA0593GB

Is the inspection result normal?

YES >> • Back door switch : GO TO 3.
• Door switch : GO TO 4.

NO >> GO TO 2.

2.CHECK DOOR SWITCH CIRCUIT

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

BCM		Door switch		Continuity
connector	Terminal	connector	Terminal	
M65	12	B93	2	Exists
	13	B95		
M66	43	D190	3	
	47	B92	2	
	48	B94		

3. Check continuity between BCM harness connector and ground.

BCM connector	Terminal		Continuity
M65	12	Ground	Does not exist
	13		
M66	43		
	47		
	48		

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-65, "Exploded View".
NO >> Repair or replace harness.

3.CHECK BACK DOOR GROUND CIRCUIT

Check continuity between back door lock assembly harness connector and ground.

Back door lock assembly		Ground	Continuity
connector	Terminal		
D190	4		Exist

Is the inspection result normal?

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

4.CHECK DOOR SWITCH

Check door switch.
Refer to SEC-152, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace door switch. Refer to DLK-241, "Removal and Installation".

5.CHECK INTERMITTENT INCIDENT

Refer to GI-46, "Intermittent Incident".

>> INSPECTION END

Component Inspection

INFOID:0000000008280015

1.CHECK DOOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect door switch connector.
3. Check door switch .

Terminal			Condition	Continuity
Each door	3	Ground	Door switch pressed	Exists
			Door switch released	Does not exist
Back door		4	Back door open	Exists
			Back door close	Does not exist

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace door switch . Refer to DLK-241, "Removal and Installation".

HORN

Description

INFOID:0000000008280016

Horn (high/low) is located inside of front bumper and operates when vehicle security system is in alarm phase.

Component Function Check

INFOID:0000000008280017

1.CHECK FUNCTION

1. Select “HORN” in “Active Test” mode with CONSULT.
2. Check the horn (high/low) operation.

Test item		Description	
HORN	ON	Horn (high/low)	ON (for 20 ms)

Is the operation normal?

YES >> INSPECTION END
NO >> Refer to SEC-154, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008280018

1.CHECK HORN FUNCTION

Check horn function with horn switch

Do the horns sound?

YES >> GO TO 2.
NO >> Refer to HRN-2, "EXCEPT FOR MEXICO : Wiring Diagram - HORN -".

2.CHECK HORN RELAY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and horn relay harness connector.

IPDM E/R		Horn relay		Continuity
Connector	Terminal	Connector	Terminal	
E15	57	E5	1	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E15	57		Not existed

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-28, "Removal and Installation".
NO >> Repair or replace harness.

VEHICLE SECURITY INDICATOR

Description

INFOID:0000000008280019

- Vehicle security indicator is built in combination meter.
- NVIS/NATS and vehicle security system conditions are indicated by blink or illumination of vehicle security indicator.

Component Function Check

INFOID:0000000008280020

1.CHECK FUNCTION

1. Perform “THEFT IND” in the “Active Test” mode with CONSULT.
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-155, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000008280021

1.CHECK SECURITY INDICATOR LAMP POWER SUPPLY CIRCUIT

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

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

Is the inspection result normal?

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

2.CHECK SECURITY INDICATOR LAMP SIGNAL CIRCUIT

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

BCM		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M65	23	M34	28	Existed

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

Combination meter		Ground	Continuity
Connector	Terminal		
M34	28		Not existed

Is the inspection result normal?

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

3.CHECK BCM OUTPUT SIGNAL

1. Connect combination meter connector.

2. Check voltage between BCM harness connector and ground.

(+)		(–)	Voltage (V) (Approx.)
BCM			
Connector	Terminal		
M65	23	Ground	Battery voltage

Is the inspection result normal?

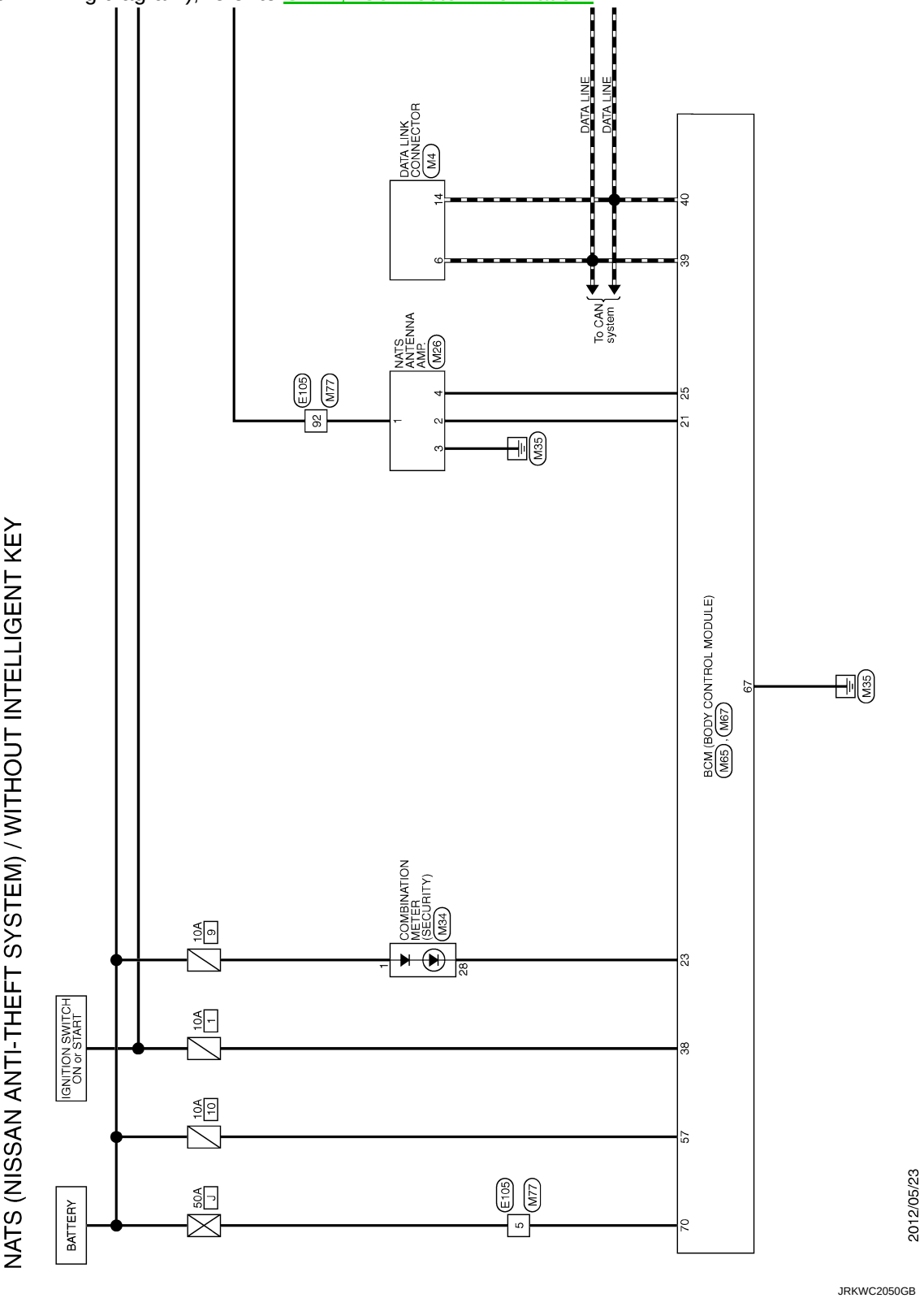
YES >> Replace BCM. Refer to BCS-65, "Removal and Installation".
NO >> Replace combination meter. Refer to MWI-69, "Removal and Installation".

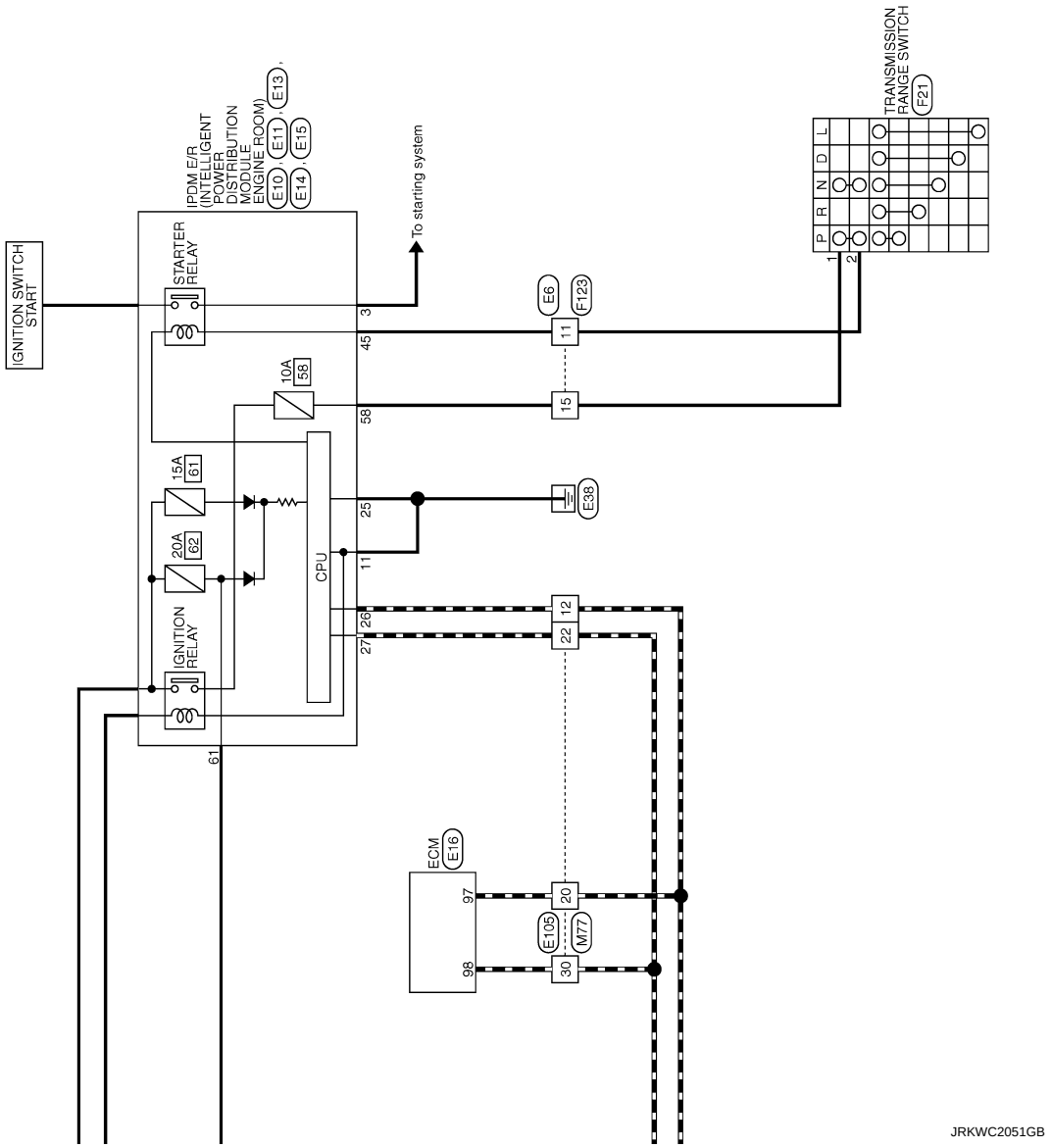
NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS

Wiring Diagram - NISSAN VEHICLE IMMOBILIZER SYSTEM-NATS -

INFOID:0000000008280022

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".



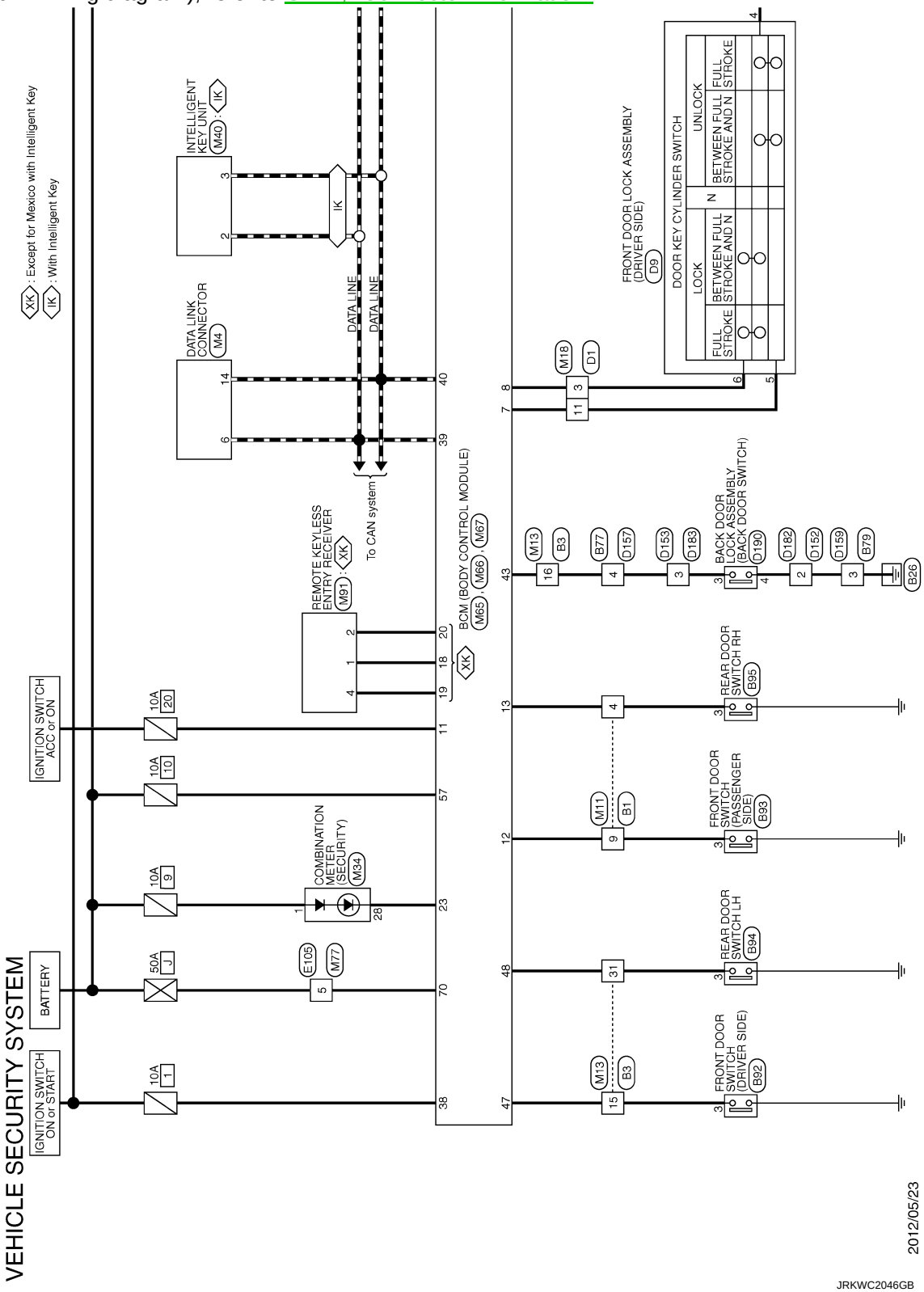

IGNITION SWITCH START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E13, E14, E15
STARTER RELAY
IGNITION RELAY
10A 58
15A 61
20A 62
CPU
To starting system
TRANSMISSION RANGE SWITCH
F21
P R N D L
E6
F123
E38
ECM
E16
E105
M77
JRKWC2051GB

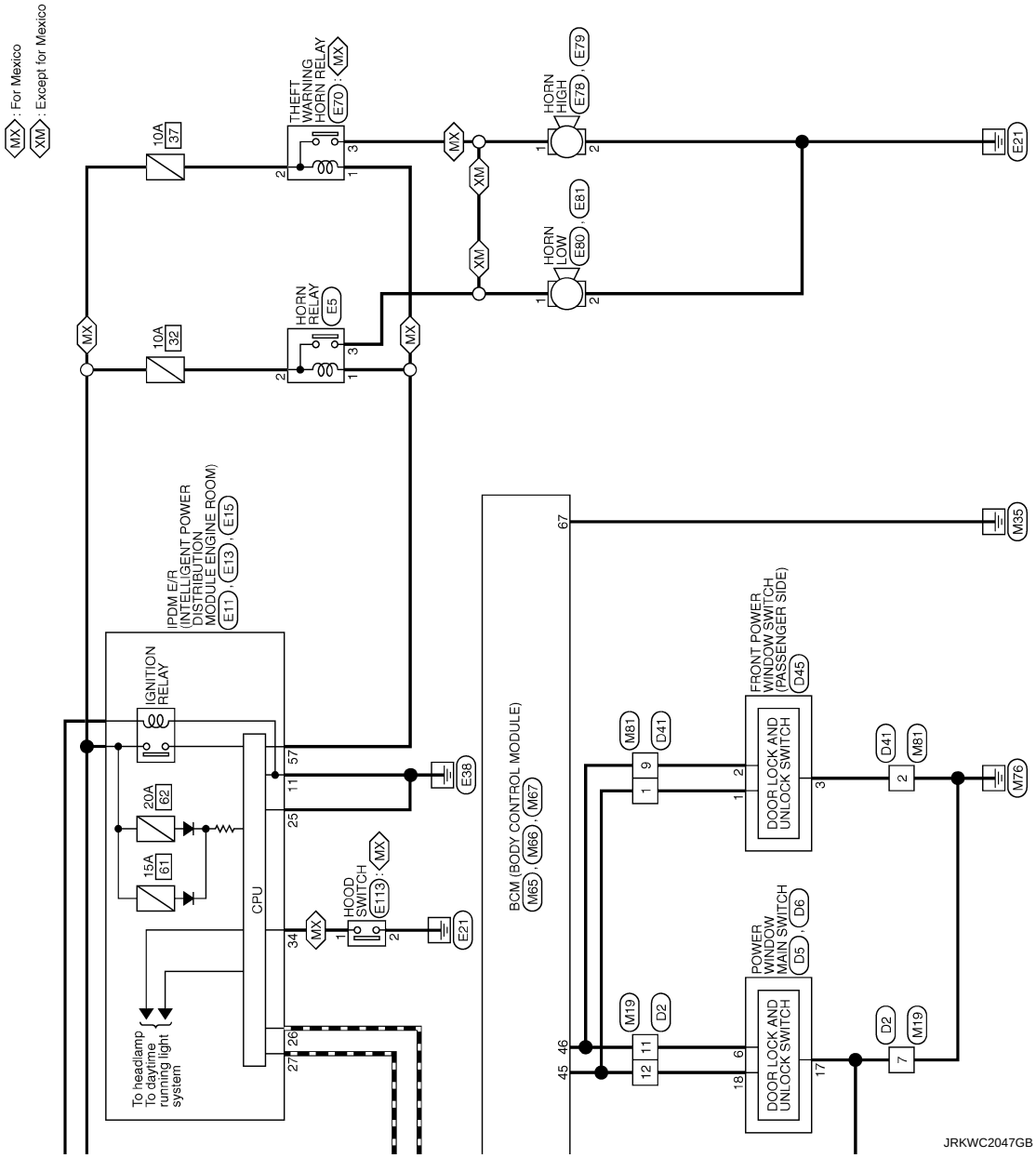
VEHICLE SECURITY SYSTEM

Wiring Diagram - VEHICLE SECURITY SYSTEM -

INFOID:0000000008280023

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




MX : For Mexico
XM : Except for Mexico
10A 37
10A 32
THEFT WARNING HORN RELAY E70 : MX
HORN RELAY E5
HORN HIGH E78 : E79
HORN LOW E80 : E81
E21
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E11 : E13 : E15
IGNITION RELAY
20A 62
15A 61
CPU
HOOD SWITCH E113 : MX
E38
To headlamp
To daytime running light system
BCM (BODY CONTROL MODULE) M65 : M66 : M67
M35
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) D45
DOOR LOCK AND UNLOCK SWITCH
M81
D41
M76
POWER WINDOW MAIN SWITCH D5 : D6
M19
D2
JRKWC2047GB

ECU DIAGNOSIS INFORMATION

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000008729072

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

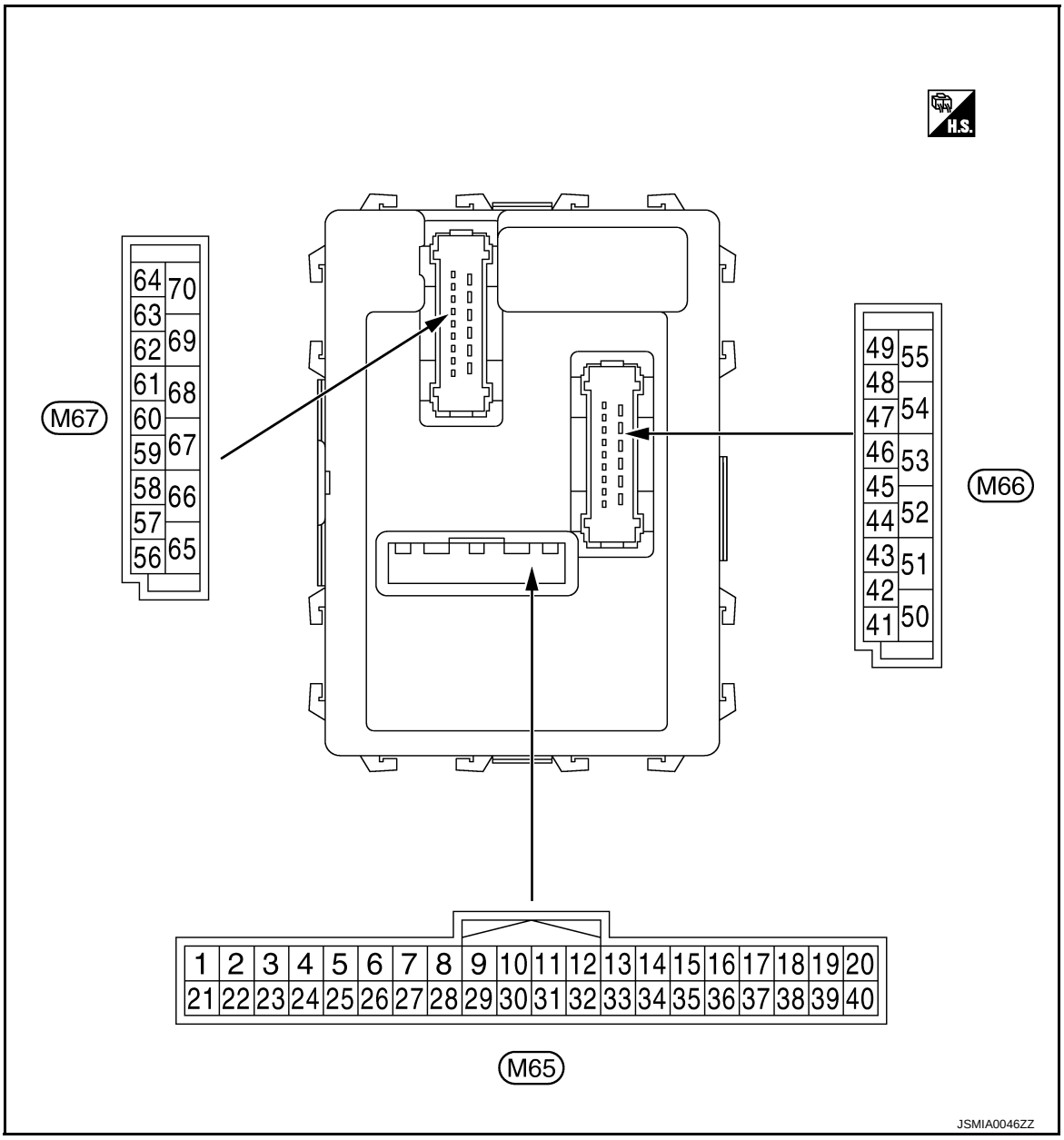
Monitor Item	Condition	Value/Status
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the lock 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
I-KEY LOCK	“LOCK” button of Intelligent Key or door request switch are not pressed	Off
	“LOCK” button of Intelligent Key or door request switch are pressed	On
I-KEY UNLOCK	“UNLOCK” button of Intelligent Key or door request switch are not pressed	Off
	“UNLOCK” button of Intelligent Key or door request switch are 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

Monitor Item	Condition	Value/Status
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
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	Other than lighting switch AUTO	Off
	Lighting switch AUTO	On
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
ENGINE RUN	Engine stopped	Off
	Engine running	On
PKB SW	Parking brake switch is OFF	Off
	Parking brake switch is ON	On
CARGO LAMP SW	**NOTE:** The item is indicated, but not monitored.	Off
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5 V
	Dark outside of the vehicle	Close to 0 V
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On

Monitor Item	Condition	Value/Status
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
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
RR WIPER STP2	**NOTE:** The item is indicated, but not monitored.	Off
H/L WASH SW	**NOTE:** The item is indicated, but not monitored.	Off
HAZARD SW	Hazard switch OFF	Off
	Hazard switch ON	On
BRAKE SW	Brake pedal is not depressed	Off
	Brake pedal is depressed	On
FAN ON SIG	Blower fan motor switch OFF	Off
	Blower fan motor switch ON (other than OFF)	On
AIR COND SW	• A/C conditioner OFF (A/C switch indicator OFF) (Automatic air conditioner) • A/C switch OFF (Manual air conditioner)	Off
	• A/C conditioner ON (A/C switch indicator ON) (Automatic air conditioner) • A/C switch ON (Manual air conditioner)	On
I-KEY TRUNK	**NOTE:** The item is indicated, but not monitored.	Off
I-KEY PW DWN	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed and held	On
I-KEY PANIC	PANIC button of Intelligent Key is not pressed	Off
	PANIC button of Intelligent Key is pressed	On
PUSH SW	Return to ignition switch to “LOCK” position	Off
	Press ignition switch	On
TRNK OPNR SW	When back door opener switch is not pressed	Off
	When back door opener switch is pressed	On

Monitor Item	Condition	Value/Status
TRUNK CYL SW	**NOTE:** The item is indicated, but not monitored.	Off
HOOD SW	Close the hood **NOTE:** Vehicles of except for Mexico are OFF-fixed	Off
	Open the hood	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
AIR PRESS FL	Ignition switch ON (Only when the signal from the transmitter is received)	Air pressure of front LH tire
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
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
	ID of front LH tire transmitter is not registered	Yet
ID REGST FR1	ID of front RH tire transmitter is registered	Done
	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
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
BUZZER	Tire pressure warning alarm is not sounding	Off
	Tire pressure warning alarm is sounding	On

TERMINAL LAYOUT

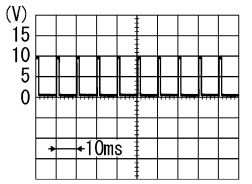
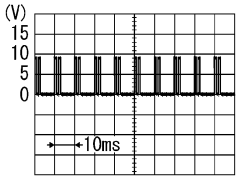
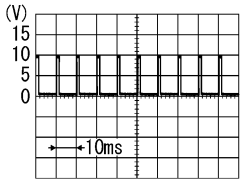
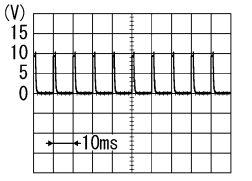
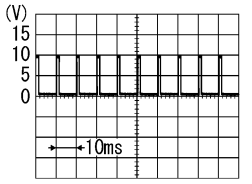


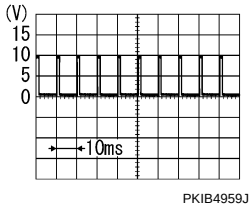
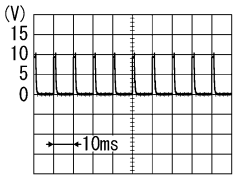
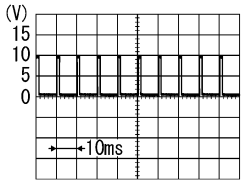
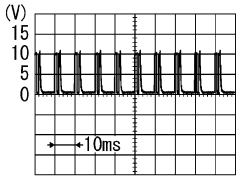
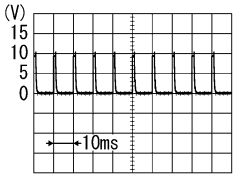
PHYSICAL VALUES

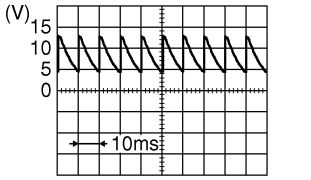
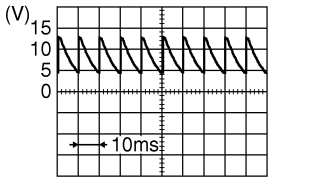
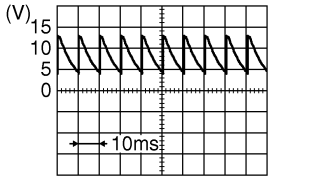
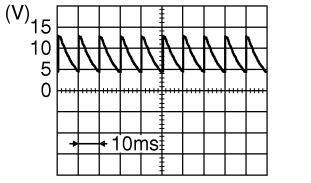
CAUTION:

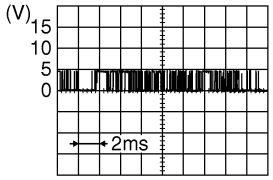
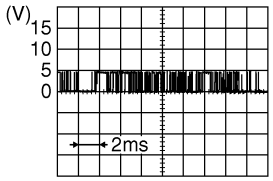
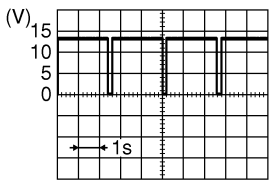
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT. Refer to BCS-26, "COMB SW : CONSULT Function (BCM - COMB SW)".**
- **BCM reads the status of the combination switch at 10 ms internal normally. Refer to BCS-9, "System Diagram".**

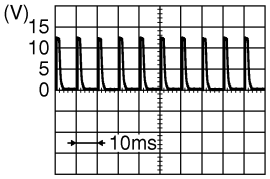
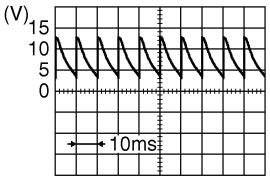
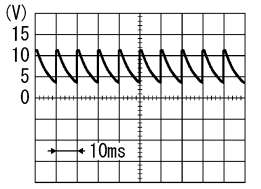
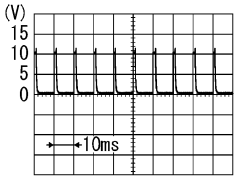
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
1 (V)	Ground	Ignition key hole illumination control	Output	Ignition key hole illumination	OFF	Battery voltage
					ON	0 V

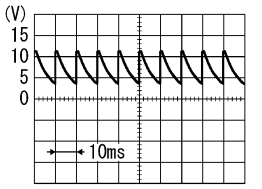
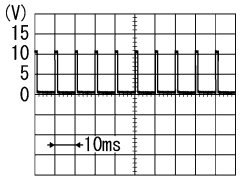
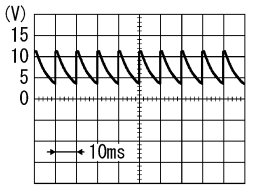
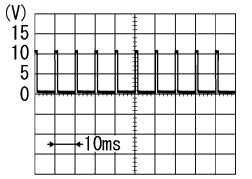
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
2 (G)	Ground	Combination switch INPUT 5	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch RH Lighting switch HI Lighting switch 1ST	 PKIB4959J 1.0 V
					Lighting switch 2ND	 PKIB4953J 2.0 V
3 (Y)	Ground	Combination switch INPUT 4	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Turn signal switch LH Lighting switch PASS Lighting switch 2ND	 PKIB4959J 1.0 V
					Front fog lamp switch ON	 PKIB4955J 0.8 V
4 (W)	Ground	Combination switch INPUT 3	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch AUTO Front wiper switch LO Front wiper switch MIST Front wiper switch INT	 PKIB4959J 1.0 V

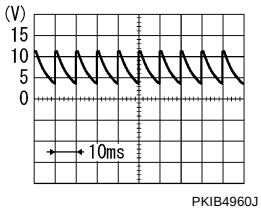
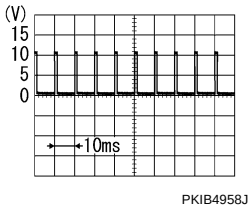
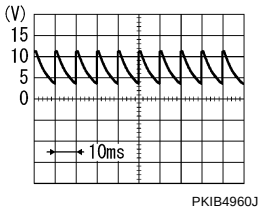
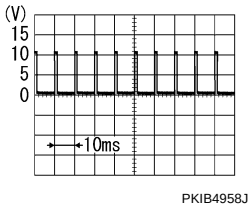
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (R)	Ground	Combination switch INPUT 2	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch (Wiper intermittent dial 4)	 PKIB4959J 1.0 V
					Rear washer ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4955J 0.8 V
6 (BG)	Ground	Combination switch INPUT 1	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 PKIB4959J 1.0 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Wiper intermittent dial 3 (All switch OFF)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2	 PKIB4952J 1.7 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 6 • Wiper intermittent dial 7	 PKIB4955J 0.8 V

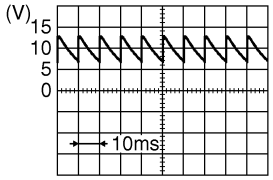
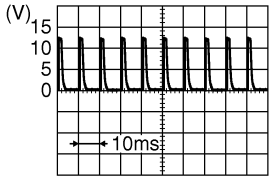
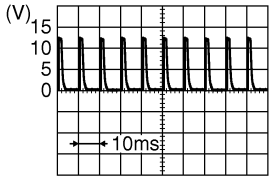
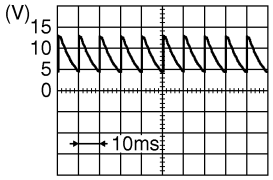
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
7 (V)	Ground	Door key cylinder switch UNLOCK signal	Input	Door key cylinder switch	NEUTRAL position	 JPMIA0587GB 8.0 - 8.5 V
					UNLOCK position	0 V
8 (R)	Ground	Door key cylinder switch LOCK signal	Input	Door key cylinder switch	NEUTRAL position	 JPMIA0587GB 8.0 - 8.5 V
					LOCK position	0 V
9 (R)	Ground	Stop lamp switch	Input	Stop lamp switch	OFF (Brake pedal is not depressed)	0 V
					ON (Brake pedal is depressed)	Battery voltage
10 (SB)	Ground	Rear window defogger switch	Input	Rear window defogger switch	Not pressed	Battery voltage
					Pressed	0 V
11 (SB)	Ground	Ignition switch ACC	Input	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
12 (BG)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 JPMIA0586GB 7.5 - 8.0 V
					ON (When passenger door opened)	0 V
13 (LG)	Ground	Rear door switch RH	Input	Rear door switch RH	OFF (When rear door RH closed)	 JPMIA0587GB 8.0 - 8.5 V
					ON (When rear door RH opened)	0 V

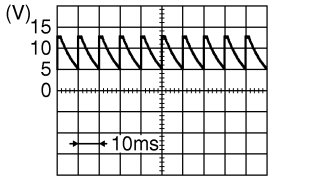
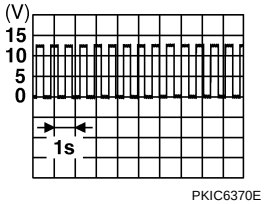
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
14 (G)	Ground	Optical sensor	Input	Ignition switch ON	When bright outside of the vehicle	Close to 5 V
					When dark outside of the vehicle	Close to 0 V
17 (W)	Ground	Optical sensor power supply	Output	Ignition switch	OFF, ACC	0 V
					ON	5 V
18* (R)	Ground	Receiver and sensor ground	Input	Ignition switch ON		0 V
19* (V)	Ground	Remote keyless entry receiver power supply	Input	Without Intelligent Key system	At any condition	5 V
				With Intelligent Key system	• Ignition switch OFF • For 3 seconds after ignition switch OFF to ON	0 V
					3 seconds or later after ignition switch OFF to ON	5 V
20* (GR)	Ground	Remote keyless entry receiver signal	Input	Without Intelligent Key system	At any condition	 JPMIA0589GB **NOTE:** The wave form changes according to signal-receiving condition.
				With Intelligent Key system	• Ignition switch OFF • For 3 seconds after ignition switch OFF to ON	0 V
					3 seconds or later after ignition switch OFF to ON	 JPMIA0589GB **NOTE:** The wave form changes according to signal-receiving condition.
21 (G)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
23 (B)	Ground	Security indicator signal	Input	Security indicator	ON	0 V
					Blinking (Ignition switch OFF)	 JPMIA0590GB 12.0 V
					OFF	Battery voltage

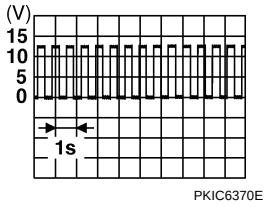
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
25 (BR)	Ground	NATS antenna amp.	Input/ Output	Just after inserting ignition key in key cylinder		Pointer of tester should move
27 (Y)	Ground	A/C switch	Input	Ignition switch OFF		
				Ignition switch ON	A/C switch OFF	 JPMIA0591GB 1.6 V
					A/C switch ON	0 V
28 (LG)	Ground	Blower fan switch	Input	Ignition switch OFF		
				Ignition switch ON	Blower fan switch OFF	 JPMIA0592GB 7.0 - 7.5 V
					Blower fan switch ON	0 V
29 (W)	Ground	Hazard switch	Input	Hazard switch	OFF	Battery voltage
					ON	0 V
30 (G)	Ground	Back door opener switch	Input	Back door opener switch	Not pressed	Battery voltage
					Pressed	0 V
32 (BR)	Ground	Combination switch OUTPUT 5	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.2 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	
					Rear wiper switch ON (Wiper intermittent dial 4)	 PKIB4956J 1.0 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 6 • Wiper intermittent dial 7	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
33 (GR)	Ground	Combination switch OUTPUT 4	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.2 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Lighting switch AUTO (Wiper intermittent dial 4)	
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 5 • Wiper intermittent dial 6	
34 (SB)	Ground	Combination switch OUTPUT 3	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	 PKIB4960J 7.2 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 PKIB4958J 1.2 V
					Lighting switch HI (Wiper intermittent dial 4)	
					Rear washer switch ON (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
35 (B)	Ground	Combination switch OUTPUT 2	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.2 V
					Lighting switch 2ND Lighting switch PASS Front wiper switch INT Front wiper switch HI	 PKIB4958J 1.2 V
36 (V)	Ground	Combination switch OUTPUT 1	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	 PKIB4960J 7.2 V
					Turn signal switch RH Turn signal switch LH Front wiper switch LO (Front wiper switch MIST) Front washer switch ON	 PKIB4958J 1.2 V
37 (LG)	Ground	Key switch	Input	Insert mechanical key into ignition key cylinder		Battery voltage
				Remove mechanical key from ignition key cylinder		0 V
38 (G)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON or START		Battery voltage
39 (L)	Ground	CAN-H	Input/ Output	—		—
40 (P)	Ground	CAN-L	Input/ Output	—		—

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
43 (V)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	 JPMIA0593GB 9.5 - 10.0 V
					ON (When back door opened)	0 V
44 (B)	Ground	Rear wiper auto stop position	Input	Ignition switch ON	Rear wiper stop position	0 V
					Any position other than rear wiper stop position	Battery voltage
45 (P)	Ground	Door lock and unlock switch LOCK signal	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0591GB 1.6 V
					LOCK position	0 V
46 (BR)	Ground	Door lock and unlock switch UNLOCK signal	Input	Door lock and unlock switch	NEUTRAL position	 JPMIA0591GB 1.6 V
					UNLOCK position	0 V
47 (W)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 JPMIA0587GB 8.0 - 8.5 V
					ON (When driver door opened)	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
48 (GR)	Ground	Rear door switch LH	Input	Rear door switch LH	OFF (When rear door LH closed)	 JPMIA0594GB 8.5 - 9.0 V
					ON (When rear door LH opened)	0 V
49 (L)	Ground	Luggage room lamp control	Output	Luggage room lamp switch DOOR position	Back door is closed (Luggage room lamp turns OFF)	Battery voltage
					Back door is opened (Luggage room lamp turns ON)	0 V
53 (V)	Ground	Back door open	Output	Back door opener switch	Not pressed (Back door actuator is activated)	0 V
					Pressed (Back door actuator is activated)	Battery voltage
55 (SB)	Ground	Rear wiper motor	Output	Ignition switch ON	Rear wiper switch OFF	0 V
					Rear wiper switch ON	Battery voltage
56 (Y)	Ground	Interior room lamp power supply	Output	After passing the interior room lamp battery saver operation time		0 V
				Any other time after passing the interior room lamp battery saver operation time		Battery voltage
57 (G)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
59 (L)	Ground	Driver door UNLOCK	Output	Driver door	UNLOCK (Actuator is activated)	Battery voltage
					Other then UNLOCK (Actuator is not activated)	0 V
60 (BR)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKIC6370E 6.0 V

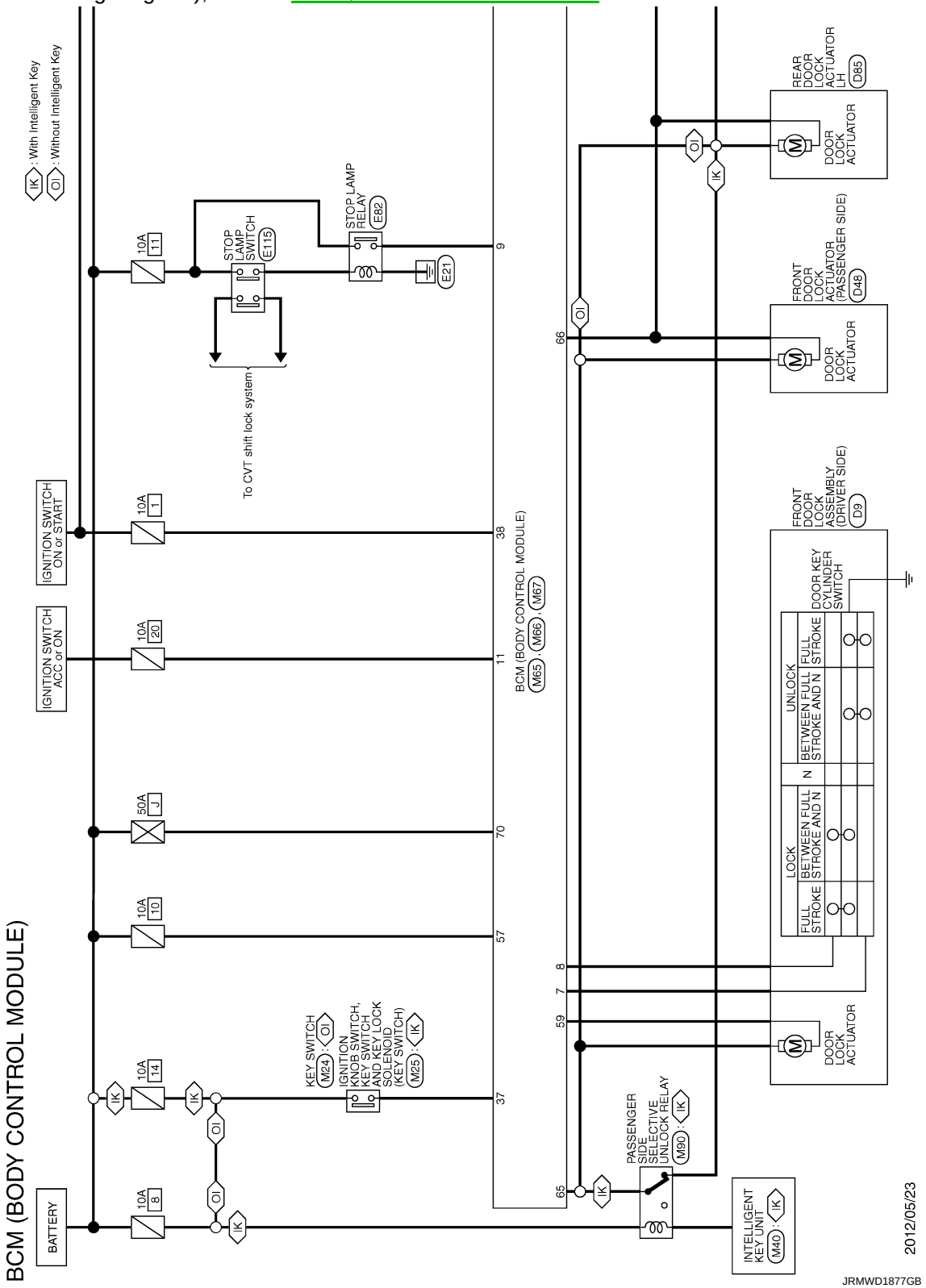
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
61 (GR)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKIC6370E 6.0 V
63 (R)	Ground	Interior room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
65 (V)	Ground	All doors LOCK	Output	All doors	LOCK (Actuator is activated)	Battery voltage
					Other then LOCK (Actuator is not activated)	0 V
66 (G)	Ground	Passenger door and rear door UNLOCK	Output	Passenger door and rear door	UNLOCK (Actuator is activated)	Battery voltage
					Other then UNLOCK (Actuator is not activated)	0 V
67 (B)	Ground	Ground	Output	Ignition switch ON		0 V
68 (L)	Ground	P/W power supply (RAP)	Output	Ignition switch ON		Battery voltage
69 (P)	Ground	P/W power supply (BAT)	Output	Ignition switch OFF		Battery voltage
70 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage

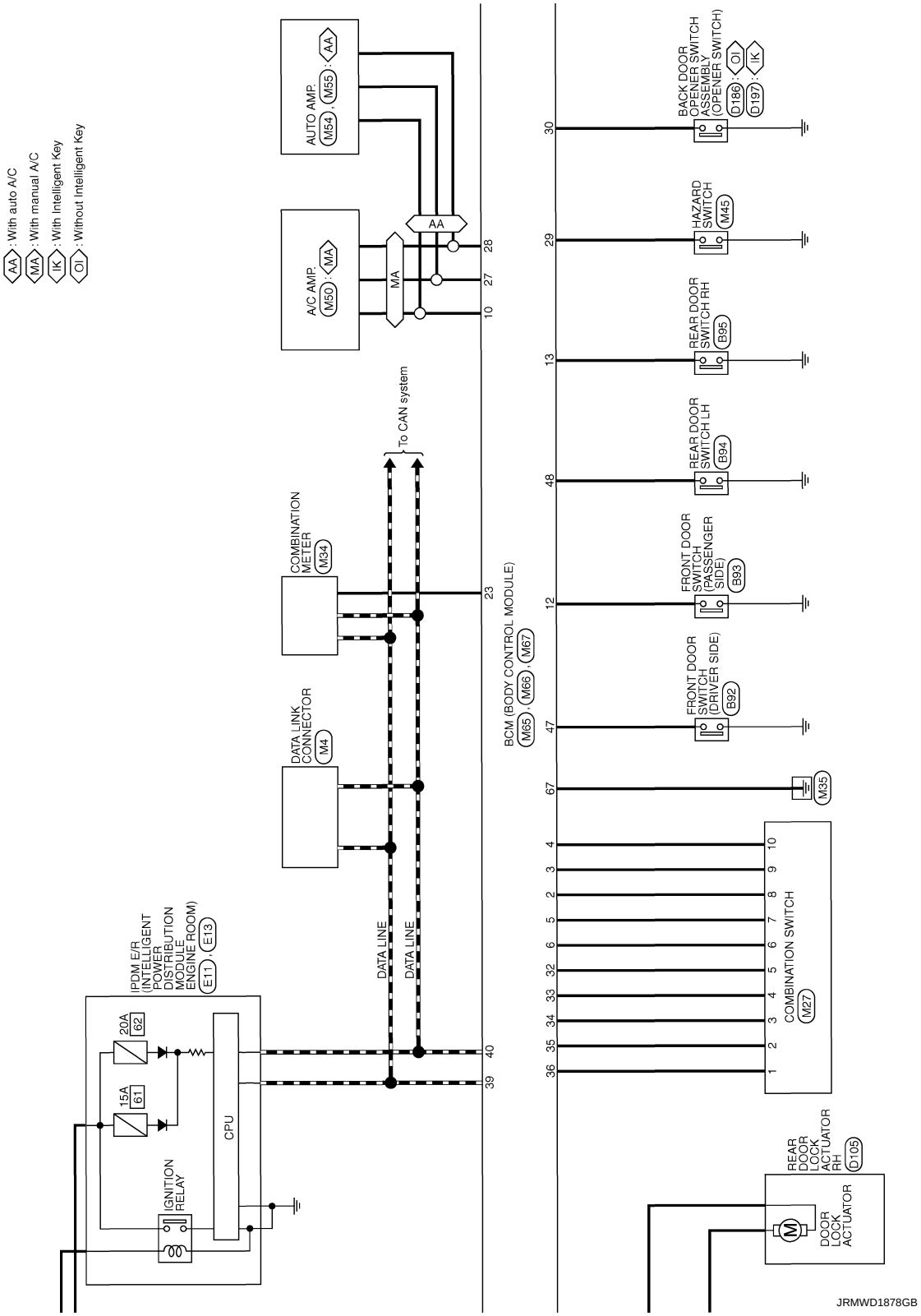
*: Except for Mexico with Intelligent Key

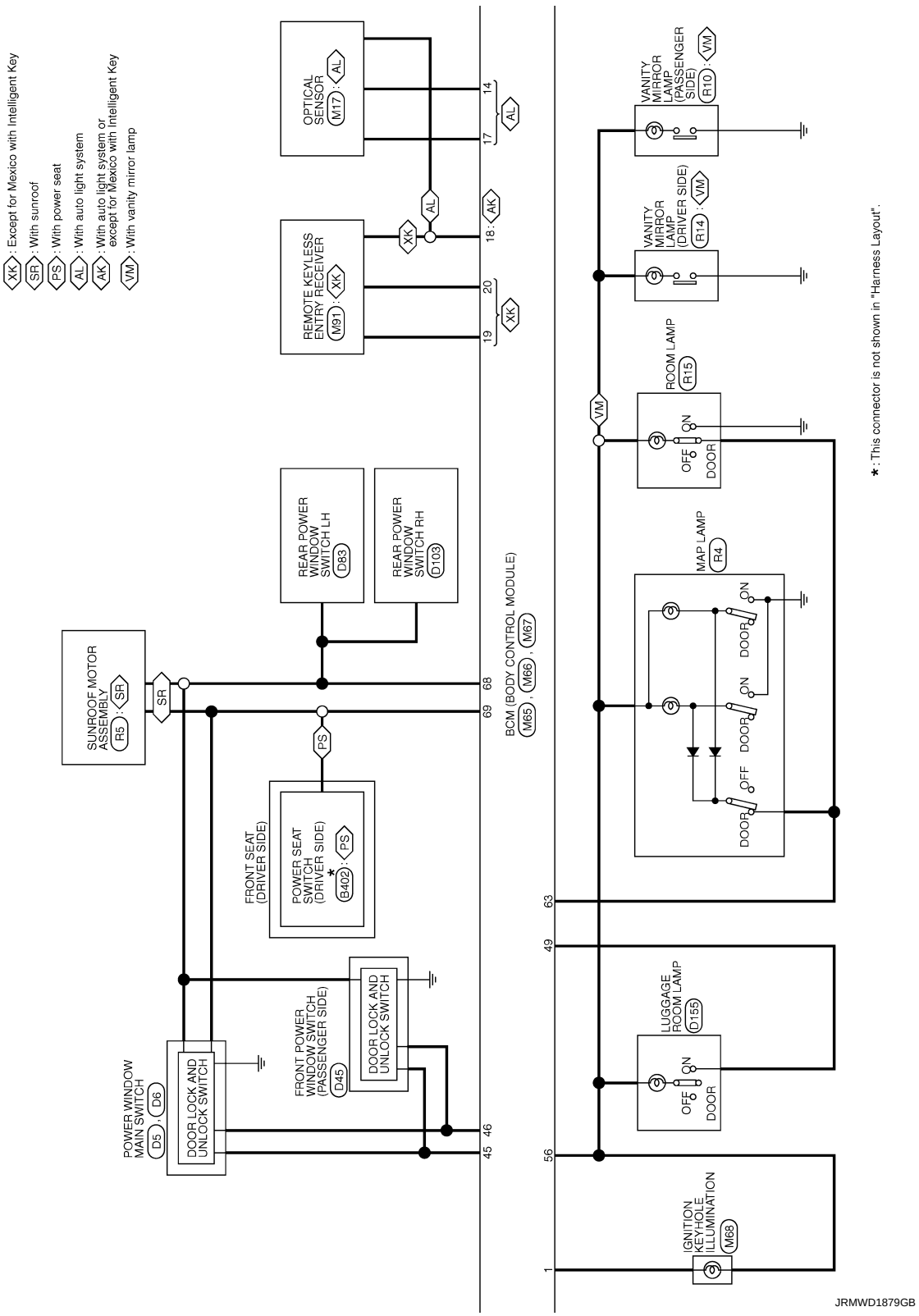
Wiring Diagram - BCM -

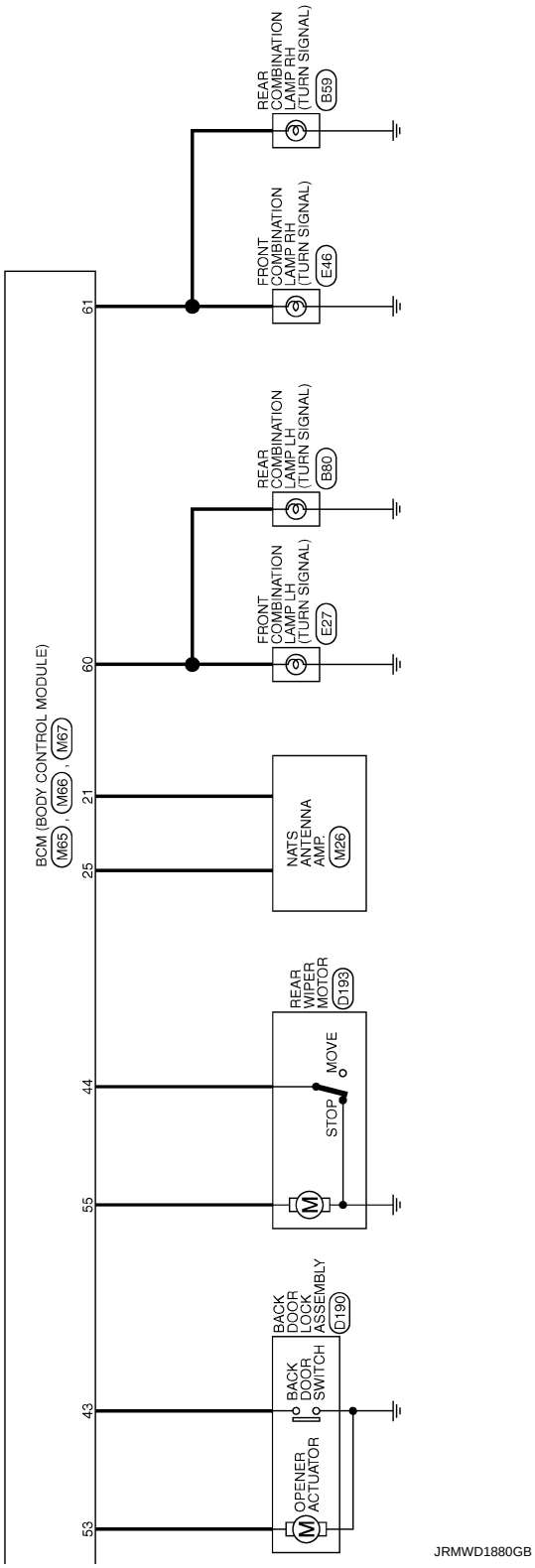
INFOID:0000000008729073

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




AA : With auto A/C
MA : With manual A/C
IK : With Intelligent Key
OI : Without Intelligent Key
AUTO AMP. (M54), (M55) : AA
A/C AMP. (M50) : MA
AA
MA
28
27
10
To CAN system
COMBINATION METER (M34)
23
DATA LINK CONNECTOR (M4)
DATA LINE
DATA LINE
40
39
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E11), (E13)
20A 62
15A 61
IGNITION RELAY
CPU
BCM (BODY CONTROL MODULE) (M65), (M66), (M67)
30
BACK DOOR OPENER SWITCH ASSEMBLY (OPENER SWITCH) (D186) : OI (D197) : IK
29
HAZARD SWITCH (M45)
13
REAR DOOR SWITCH RH (B95)
48
REAR DOOR SWITCH LH (B94)
12
FRONT DOOR SWITCH (PASSENGER SIDE) (B93)
47
FRONT DOOR SWITCH (DRIVER SIDE) (B92)
67
(M35)
4 3 2 5 6 32 33 34 35 36
10 9 8 7 6 5 4 3 2 1
COMBINATION SWITCH (M27)
REAR DOOR LOCK ACTUATOR RH (D105)
DOOR LOCK ACTUATOR
JRMWD1878GB


XK : Except for Mexico with Intelligent Key
SR : With sunroof
PS : With power seat
AL : With auto light system
AK : With auto light system or except for Mexico with Intelligent Key
VM : With vanity mirror lamp
OPTICAL SENSOR M17 : AL
REMOTE KEYLESS ENTRY RECEIVER M91 : XK
REAR POWER WINDOW SWITCH LH D83
REAR POWER WINDOW SWITCH RH D103
SUNROOF MOTOR ASSEMBLY R5 : SR
POWER SEAT SWITCH (DRIVER SIDE) B402 : PS
FRONT SEAT (DRIVER SIDE)
POWER WINDOW MAIN SWITCH D5 D6
DOOR LOCK AND UNLOCK SWITCH
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) D45
BCM (BODY CONTROL MODULE) M65 , M66 , M67
VANITY MIRROR LAMP (PASSENGER SIDE) R10 : VM
VANITY MIRROR LAMP (DRIVER SIDE) R14 : VM
ROOM LAMP R15
MAP LAMP R4
LUGGAGE ROOM LAMP D155
IGNITION KEYHOLE ILLUMINATION M68
ON
OFF
DOOR
*: This connector is not shown in "Harness Layout".
JRMWD1879GB



Fail-safe

INFOID:0000000008729074

REAR WIPER MOTOR PROTECTION

BCM detects the rear wiper stopping position according to the rear wiper stop position signal.
When the rear wiper stop position signal does not change more than 5 seconds while driving the rear wiper, BCM stops power supply to protect the rear wiper motor.

Condition of cancellation

1. Pass more than 1 minute after the rear wiper stop.
2. Turn the rear wiper switch OFF.
3. Operate the rear wiper switch or rear washer switch.

DTC Inspection Priority Chart

INFOID:0000000008729075

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

Priority	DTC
1	U1000: CAN COMM CIRCUIT
2	C1735: IGN CIRCUIT OPEN
3	• C1704: LOW PRESSURE FL • C1705: LOW PRESSURE FR • C1706: LOW PRESSURE RR • C1707: LOW PRESSURE RL • C1708: [NO DATA] FL • C1709: [NO DATA] FR • C1710: [NO DATA] RR • C1711: [NO DATA] RL • C1716: [PRESS DATA ERR] FL • C1717: [PRESS DATA ERR] FR • C1718: [PRESS DATA ERR] RR • C1719: [PRESS DATA ERR] RL • C1729: VHCL SPEED SIG ERR

DTC Index

INFOID:0000000008729076

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	Tire pressure monitor warning lamp ON	Reference
U1000: CAN COMM CIRCUIT	—	BCS-34
C1704: LOW PRESSURE FL	×	WT-14
C1705: LOW PRESSURE FR	×	
C1706: LOW PRESSURE RR	×	
C1707: LOW PRESSURE RL	×	
C1708: [NO DATA] FL	×	WT-16
C1709: [NO DATA] FR	×	
C1710: [NO DATA] RR	×	
C1711: [NO DATA] RL	×	
C1716: [PRESS DATA ERR] FL	×	WT-19
C1717: [PRESS DATA ERR] FR	×	
C1718: [PRESS DATA ERR] RR	×	
C1719: [PRESS DATA ERR] RL	×	
C1729: VHCL SPEED SIG ERR	×	WT-21
C1735: IGN CIRCUIT OPEN	—	BCS-35

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

Reference Value

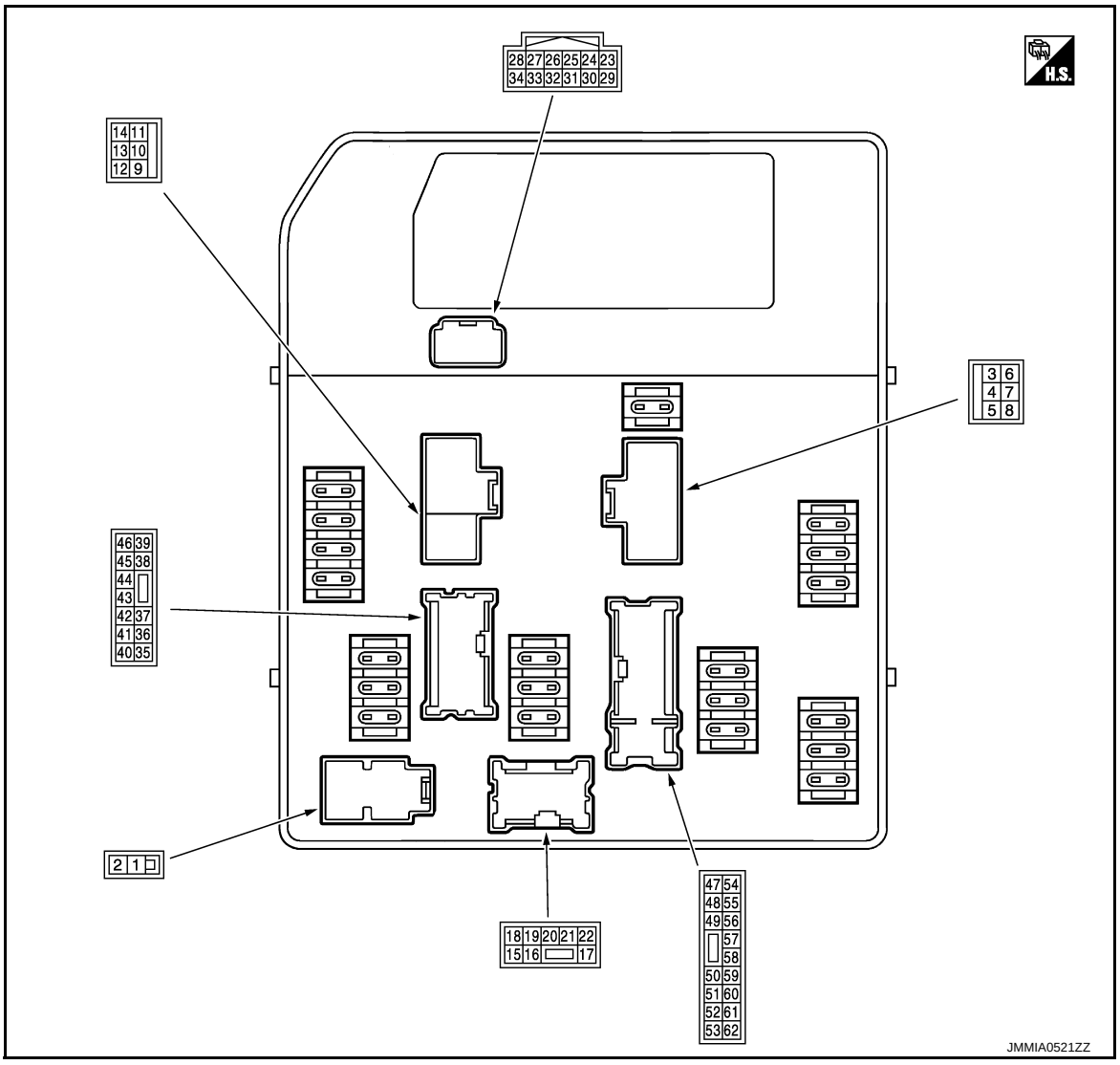
INFOID:0000000008729068

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition		Value/Status
MOTOR FAN REQ	Engine idle speed	Changes depending on engine coolant temperature, air conditioner operation status, vehicle speed, etc.	1 - 4
AC COMP REQ	Engine running	A/C switch OFF	Off
		A/C switch ON (Compressor is operating)	On
TAIL&CLR REQ	Lighting switch OFF		Off
	Lighting switch 1ST or 2ND		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI (Light is illuminated)		On
FR FOG REQ **NOTE:** This item is monitored only on the vehicle with front fog lamp.	Lighting switch 2ND	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
FR WIP REQ	Ignition switch ON	Front wiper switch OFF	Stop
		Front wiper switch INT	1LOW
		Front wiper switch LO	Low
		Front wiper switch HI	Hi
WIP AUTO STOP	Ignition switch ON	Front wiper stop position	STOP P
		Any position other than front wiper stop position	ACT P
WIP PROT	Ignition switch ON	Front wiper operates normally	Off
		Front wiper stops at fail-safe operation	BLOCK
ST RLY REQ **NOTE:** Vehicle without Intelligent Key system indicates only “ON”, and it does not change.	When Intelligent Key is outside the vehicle, and the push switch is pushed		Off
	When Intelligent Key is inside the vehicle, and the push switch is pushed		On
IGN RLY	Ignition switch OFF or ACC		Off
	Ignition switch ON		On
RR DEF REQ	Ignition switch ON	Rear window defogger switch OFF	Off
		Rear window defogger switch ON (Rear window defogger is operating)	On
OIL P SW	Ignition switch OFF, ACC or engine running		Open
	Ignition switch ON		Close
DTRL REQ **NOTE:** This item is monitored only on the vehicle with the daytime running light system.	Daytime running light system is not operated.		Off
	Daytime running light system is operated.		On

Monitor Item	Condition	Value/Status
HOOD SW **NOTE:** This item is monitored only the vehicle for Mexico.	Close the hood	Off
	Open the hood	On
THFT HRN REQ	Not operation	Off
	Horn is activated with vehicle security system or panic alarm system.	On
HORN CHIRP	Not operation	Off
	Horn is activated with key fob LOCK operation.	On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	–	Signal name	Input/ Output		
1 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
3 (L)	Ground	Starter relay power supply	Output	When engine is clanking		Battery voltage
				When engine is not clanking		0 V
4 (W)	Ground	Cooling fan relay-1 power supply	Output	Cooling fan operation	OFF	0 V
					MID or HI	Battery voltage
5 (R)	Ground	Ignition switch START	Input	Ignition switch OFF, ACC or ON		0 V
				Ignition switch START		Battery voltage
6 (BR)	Ground	Battery power supply (Cooling fan relay)	Input	Ignition switch OFF		Battery voltage
7 (P)	Ground	Cooling fan motor-2 (HI) ground	—	Cooling fan operation	OFF	Battery voltage
					HI	0 V
8 (G)	Ground	Cooling fan relay-2 power supply	Output	Cooling fan operation	OFF	0 V
					HI	Battery voltage
11 (B)	Ground	Ground	—	Ignition switch ON		0 V
12 (G)	Ground	Rear window defogger relay power supply	Output	Ignition switch ON	Rear window defogger switch OFF	0 V
					Rear window defogger switch ON	Battery voltage
15*1 (SB)	Ground	Daytime running light relay control	Output	Daytime running light system	Not operated	Battery voltage
					Operated	0 V
16*2 (Y)	Ground	Front fog lamp (LH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
17*2 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 2ND	Front fog lamp switch OFF	0 V
					Front fog lamp switch ON	Battery voltage
18 (L)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
20 (SB)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
21 (G)	Ground	Headlamp HI (LH)	Output	Lighting switch OFF		0 V
				• Lighting switch 2ND and HI • Lighting switch PASS		Battery voltage
				Daytime running light system Operated*1		7.0 V
22 (LG)	Ground	Headlamp HI (RH)	Output	Lighting switch OFF		0 V
				• Lighting switch 2ND and HI • Lighting switch PASS		Battery voltage
				Daytime running light system Operated*1		7.0 V
23 (W)	Ground	Oil pressure switch	Input	Ignition switch ON	Engine stopped	0 V
					Engine running	Battery voltage
24 (Y)	Ground	Front wiper auto stop	Input	Ignition switch ON	Front wiper stop position	0 V
					Any position other than front wiper stop position	Battery voltage
25 (B)	Ground	Ground	—	Ignition switch ON		0 V
26 (P)	—	CAN-L	Input/ Output	—		—

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
27 (L)	—	CAN-H	Input/ Output	—		—
31 (LG)	Ground	Cooling fan relay-4 control	Output	Cooling fan operation	OFF	Battery voltage
					LO	0 - 1.0 V
32 (V)	Ground	Throttle control motor relay control	Input	After passing approximately 2 seconds or more after turning the ignition switch from ON to OFF		Battery voltage
				• Ignition switch ON • For approximately 2 seconds after turning ignition switch from ON to OFF		0 - 1.0 V
33 (GR)	Ground	Fuel pump relay control	Input	Ignition switch OFF		0 V
				Ignition switch ON	Engine stopped	Battery voltage
					Engine running	0.8 V
34*3 (W)	Ground	Hood switch	Input	Close the hood		Battery voltage
				Open the hood		0 V
37 (R)	Ground	Tail, license plate lamps and illuminations	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
38 (R)	Ground	Parking lamp (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
39 (GR)	Ground	Parking lamp (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 1ST		Battery voltage
40 (BR)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
41 (W)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
42 (L)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
43 (G)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
45 (Y)	Ground	Starter relay power supply	Input	Ignition switch ON	Selector lever “P” or “N”	Battery voltage
					Selector lever in any position other than “P” or “N”	0 V
46 (W)	Ground	Fuel pump relay power supply	Output	• Ignition switch OFF or ACC • After passing approximately 1 second or more after turning the ignition switch ON		0 V
				• For approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
47 (BR)	Ground	ECM relay power supply	Output	After passing approximately 4 seconds or more after turning the ignition switch from ON to OFF		0 V
				• Ignition switch ON • For approximately 4 seconds after turning ignition switch from ON to OFF		Battery voltage
48 (R)	Ground	ECM relay power supply	Output	After passing approximately 4 seconds or more after turning the ignition switch from ON to OFF		0 V
				• Ignition switch ON • For approximately 4 seconds after turning ignition switch from ON to OFF		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
50 (G)	Ground	Cooling fan relay-5 control	Output	Cooling fan operation	OFF	Battery voltage
					MID or HI	0 - 1.0 V
51 (L)	Ground	ECM relay control	Output	After passing approximately 4 seconds or more after turning the ignition switch from ON to OFF		Battery voltage
				• Ignition switch ON • For approximately 4 seconds after turning ignition switch from ON to OFF		0 - 1.0 V
52 (P)	Ground	Throttle control motor relay power supply	Output	After passing approximately 2 seconds or more after turning the ignition switch from ON to OFF		0 V
				• Ignition switch ON • For approximately 2 seconds after turning ignition switch from ON to OFF		Battery voltage
55 (BG)	Ground	A/C relay power supply	Output	Engine stopped		0 V
				Engine running	A/C switch OFF	0 V
					A/C switch ON (A/C compressor is operating)	Battery voltage
56 (SB)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
57 (V)	Ground	Horn relay control	Output	The horn is not activated		Battery voltage
				The horn is activated		0 V
58 (LG)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
59 (BR)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
60 (SB)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
61 (R)	Ground	ECM power supply	Output	Ignition switch OFF		Battery voltage

*1: With daytime running light system

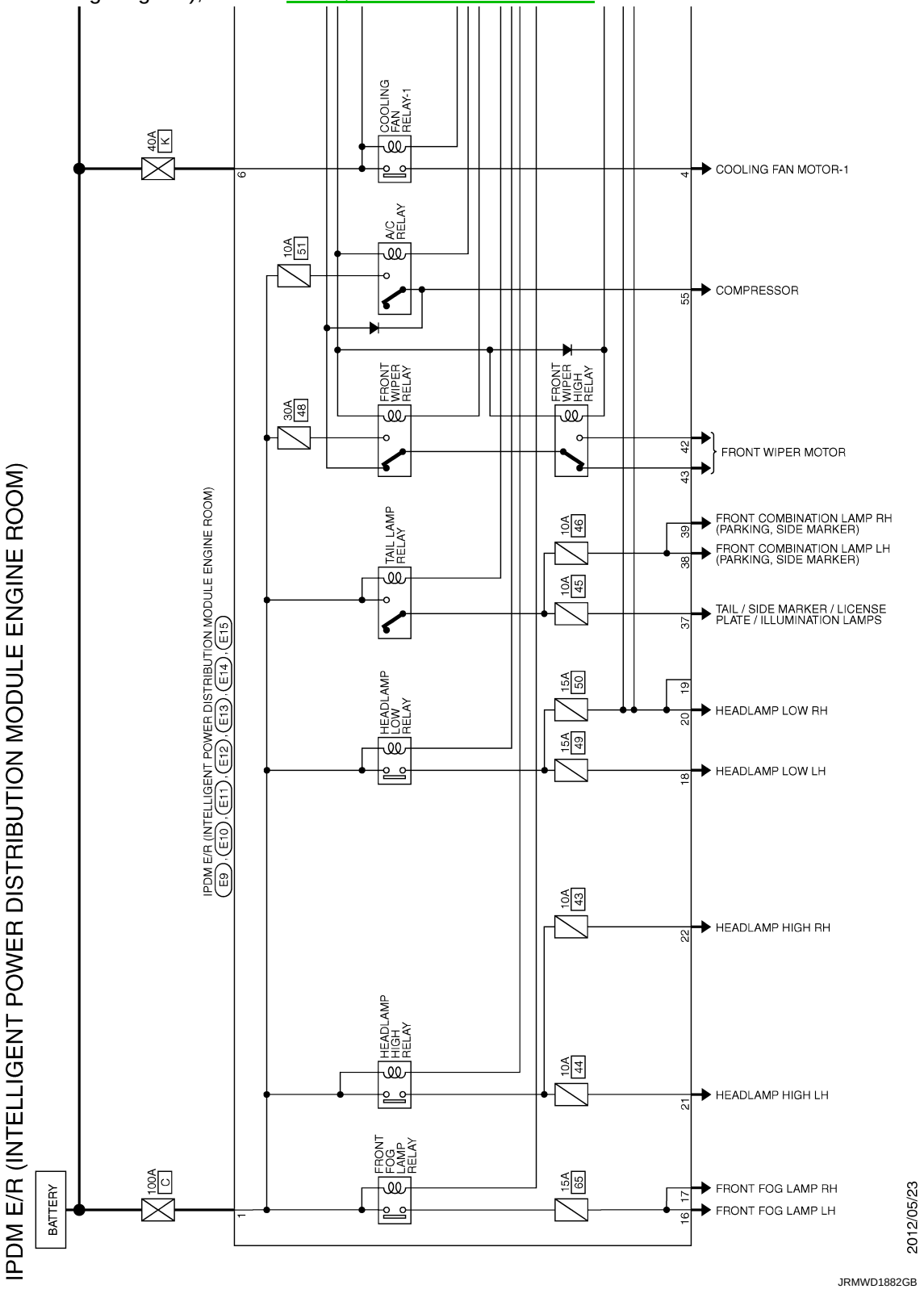
*2: With front fog lamp system

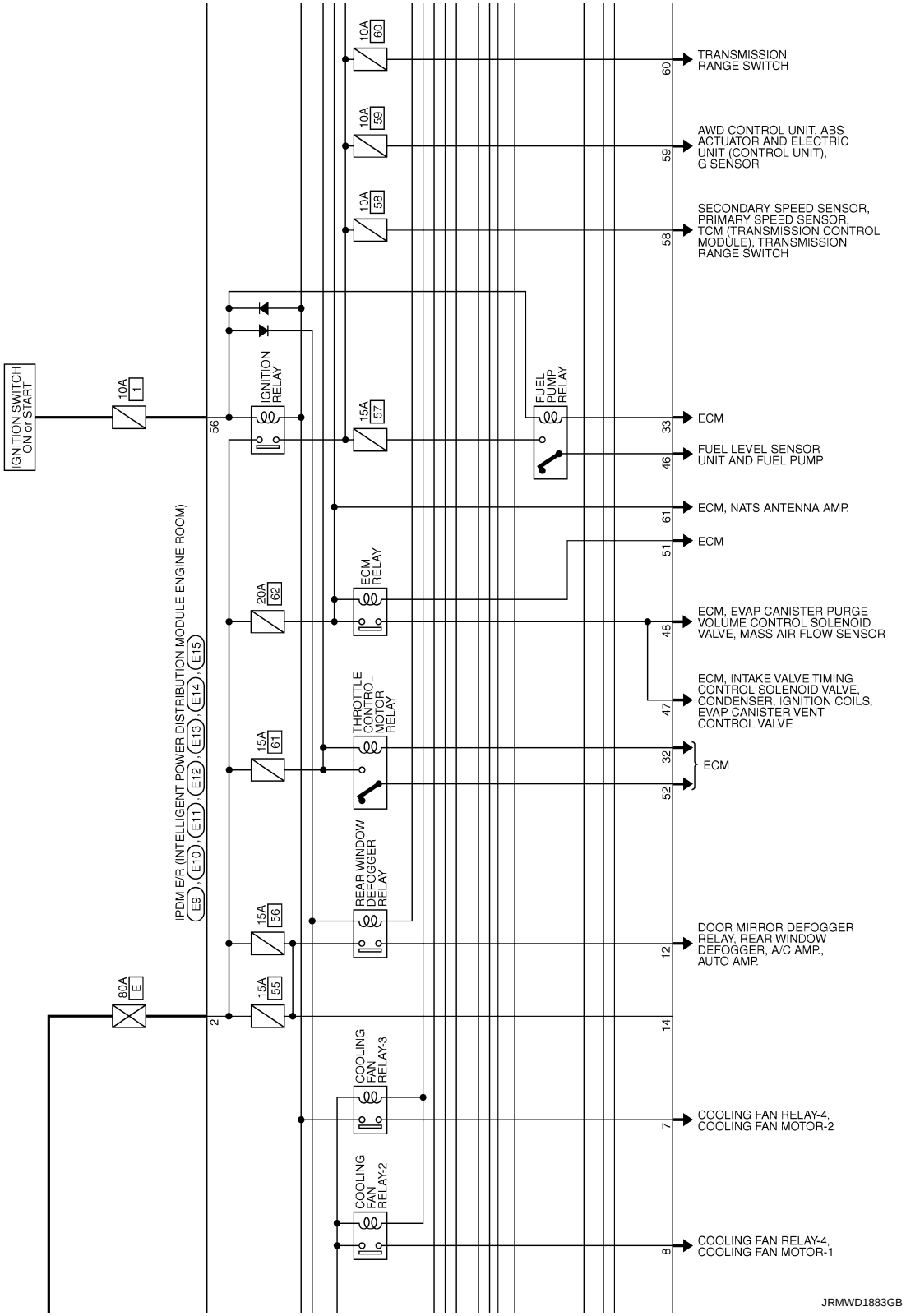
*3: For Mexico

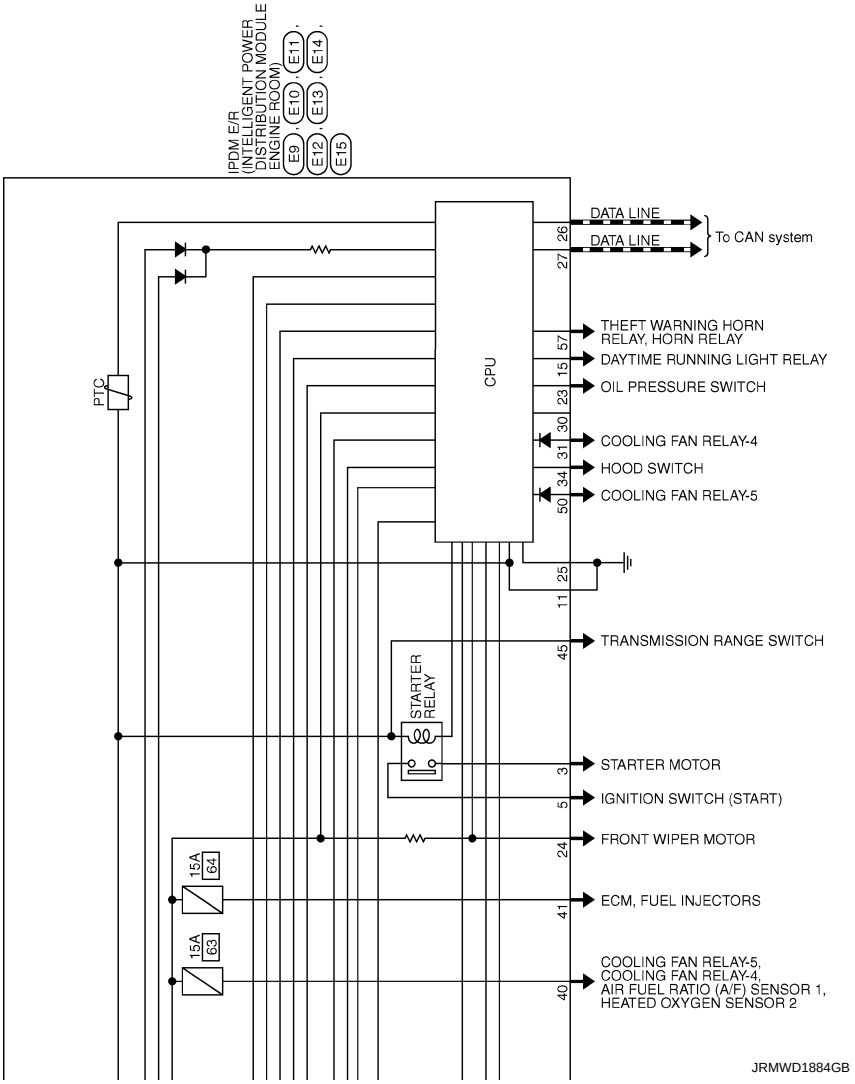
Wiring Diagram - IPDM E/R -

INFOID:0000000008729069

For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".




IGNITION SWITCH ON or START
10A 1
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E9, E10, E11, E12, E13, E14, E15
56
2
IGNITION RELAY
ECM RELAY
THROTTLE CONTROL MOTOR RELAY
REAR WINDOW DEFOGGER RELAY
COOLING FAN RELAY-3
COOLING FAN RELAY-2
FUEL PUMP RELAY
10A 60
10A 59
10A 58
15A 57
20A 62
15A 61
15A 56
15A 55
80A E
60 TRANSMISSION RANGE SWITCH
59 AWD CONTROL UNIT, ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT), G SENSOR
58 SECONDARY SPEED SENSOR, PRIMARY SPEED SENSOR, TCM (TRANSMISSION CONTROL MODULE), TRANSMISSION RANGE SWITCH
33 ECM
46 FUEL LEVEL SENSOR UNIT AND FUEL PUMP
61 ECM, NATS ANTENNA AMP.
51 ECM
48 ECM, EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE, MASS AIR FLOW SENSOR
47 ECM, INTAKE VALVE TIMING CONTROL SOLENOID VALVE, CONDENSER, IGNITION COILS, EVAP CANISTER VENT CONTROL VALVE
32, 52 ECM
12 DOOR MIRROR DEFOGGER RELAY, REAR WINDOW DEFOGGER, A/C AMP., AUTO AMP.
14
7 COOLING FAN RELAY-4, COOLING FAN MOTOR-2
8 COOLING FAN RELAY-4, COOLING FAN MOTOR-1
JRMWD1883GB



Fail-safe

INFOID:0000000008729070

CAN COMMUNICATION CONTROL

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

If no CAN communication is available with ECM

Control part	Fail-safe in operation
Cooling fan	• The cooling fan relay-1, the cooling fan relay-2, the cooling fan relay-3 and the cooling fan relay-5 turn ON when the ignition switch is turned ON • The cooling fan relay-1, the cooling fan relay-2, the cooling fan relay-3 and the cooling fan relay-5 turn OFF when the ignition switch is turned OFF • Cooling fan relay-4 OFF
A/C compressor	A/C relay OFF

If no CAN communication is available with BCM

Control part	Fail-safe in operation
Headlamp	• The headlamp low relay turns ON when the ignition switch is turned ON • The headlamp low relay turns OFF when the ignition switch is turned OFF • Headlamp high relay OFF
• Parking lamps • License plate lamps • Tail lamps • Illuminations	• The tail lamp relay and the daytime running light relay* turn ON when the ignition switch is turned ON • The tail lamp relay and the daytime running light relay* turn OFF when the ignition switch is turned OFF
Front wiper	• 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 front 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.
Front fog lamps	Front fog lamp relay OFF
Starter motor	Starter relay OFF
Rear window defogger	Rear window defogger relay OFF
Horn	Horn relay OFF

NOTE:

*: With daytime running light system

IGNITION RELAY MALFUNCTION DETECTION FUNCTION

- IPDM E/R monitors status of ignition relay by the voltage at ignition relay contact circuit inside it.
- IPDM E/R judges that the ignition relay is error, if status of the ignition relay and ignition switch ON signal (CAN).
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay and daytime running light relay* for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

Detection		IPDM E/R judgment	Operation
Ignition switch ON signal	Ignition relay		
ON	ON	Ignition relay normal	—
OFF	OFF	Ignition relay normal	—
OFF	ON	Ignition relay ON stuck	Turn on the tail lamp relay and daytime running light relay* for 10 minutes
ON	OFF	Ignition relay OFF stuck	Detect DTC "B2099: IGN RELAY OFF"

NOTE:

*: With daytime running light system

FRONT WIPER CONTROL

IPDM E/R detects the front wiper stop position with the front wiper stop position signal.
When the front wiper stop position signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop five times.

Ignition switch	Front wiper switch	Front wiper stop position signal
ON	OFF	The front wiper stop position signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper stop position 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.

DTC Index

INFOID:0000000008729071

CONSULT display	Fail-safe	Timing[NOTE]		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	PCS-13
B2099: IGN RELAY OFF	—	CRNT	PAST	PCS-14

NOTE:
The details of time display are as follows.

- CRNT: The malfunctions that are detected now.
- PAST: The number is indicated when it is normal at present and a malfunction was detected in the past.

SYMPTOM DIAGNOSIS

SECURITY CONTROL SYSTEM

Symptom Table

INFOID:0000000008280033

Function	Operation condition	Symptom	Reference page
VEHICLE SECURITY SYSTEM	Lock all doors with key fob	Vehicle security system can not be set	SEC-193
	Ignition switch turn OFF	Security indicator does not turn ON or flash	SEC-192
	In the armed phase, open the door	Vehicle security alarm does not activate	SEC-194
	When alarm sound, press key fob button	Vehicle security system can not be canceled	SEC-195

SECURITY INDICATOR DOES NOT TURN ON OR FLASH

Description

INFOID:0000000008280034

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-126, "Work Flow".

Diagnosis Procedure

INFOID:0000000008280035

1.CHECK VEHICLE SECURITY INDICATOR

Check vehicle security indicator.
Refer to SEC-155, "Component Function Check".

Is the inspection result normal?

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

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

VEHICLE SECURITY SYSTEM CAN NOT BE SET

Description

INFOID:0000000008280036

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-126, "Work Flow".

Diagnosis Procedure

INFOID:0000000008280037

1.CHECK DOOR LOCK FUNCTION

Check door lock function.
Refer to DLK-254, "System Description".

s the inspection result normal?

YES >> GO TO 2.
NO >> Refer to DLK-250, "Work Flow".

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

VEHICLE SECURITY ALARM DOES NOT ACTIVATE

Description

INFOID:0000000008280038

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-126, "Work Flow".

Diagnosis Procedure

INFOID:0000000008280039

1.CHECK DOOR SWITCH

Check door switch.
Refer to SEC-150, "Component Function Check".

Is the inspection results normal?

YES >> GO TO 2.
NO >> Repair or replace malfunction part.

2.CHECK HORN

Check horn.
Refer to SEC-154, "Component Function Check".

Is the inspection results normal?

YES >> GO TO 3.
NO >> Repair or replace malfunction part.

3.CHECK HEADLAMP OPERATION

Check headlamp operation by lighting switch.

Does headlamp come on when turning switch ON?

YES >> GO TO 4.
NO >> Check headlamp system. Refer to EXL-6, "Work Flow". (XENON type), Refer to EXL-122, "Work Flow". (HALOGEN type)

4.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

VEHICLE SECURITY SYSTEM CAN NOT CANCELED

Description

INFOID:0000000008280040

NOTE:
• Before performing the diagnosis, check “Work Flow”. Refer to SEC-126, "Work Flow".

Diagnosis Procedure

INFOID:0000000008280041

1.CHECK MULTI REMOTE CONTROL SYSTEM

Check multi remote control system.
Refer to DLK-259, "System Description".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Check Work Flow. Refer to SEC-126, "Work Flow".

2.CONFIRM THE OPERATION

Confirm the operation again.

Is the result normal?

YES >> Check intermittent incident. Refer to GI-46, "Intermittent Incident".
NO >> GO TO 1.

PRECAUTION

PRECAUTIONS

FOR USA AND CANADA

FOR USA AND CANADA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000008280042

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

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

FOR MEXICO

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

INFOID:0000000008280043

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see “SRS AIR BAG”.**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

WARNING:

Always observe the following items for preventing accidental activation.

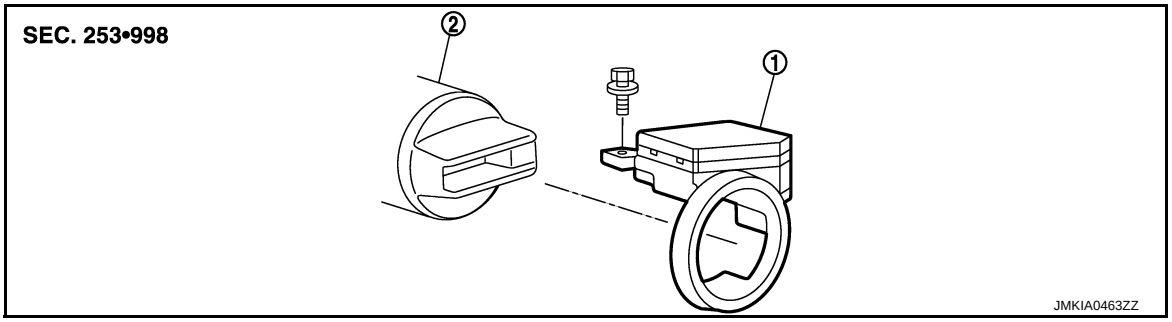
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

REMOVAL AND INSTALLATION

NATS ANTENNA AMP.

Exploded View

INFOID:0000000008280044



1. NATS antenna amp.
2. Steering lock assembly

Removal and Installation

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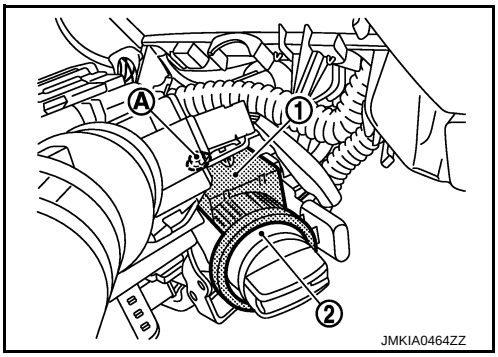
REMOVAL

1. Remove the steering column cover.
   Refer to IP-14, "Removal And Installation".
2. Remove the NATS antenna amp. mounting screw (A), and then remove NATS antenna amp. (1) from steering lock assembly (2).



INSTALLATION

Install in the reverse order of removal.