SECTION SEC
SECURITY CONTROL SYSTEM

CONTENTS

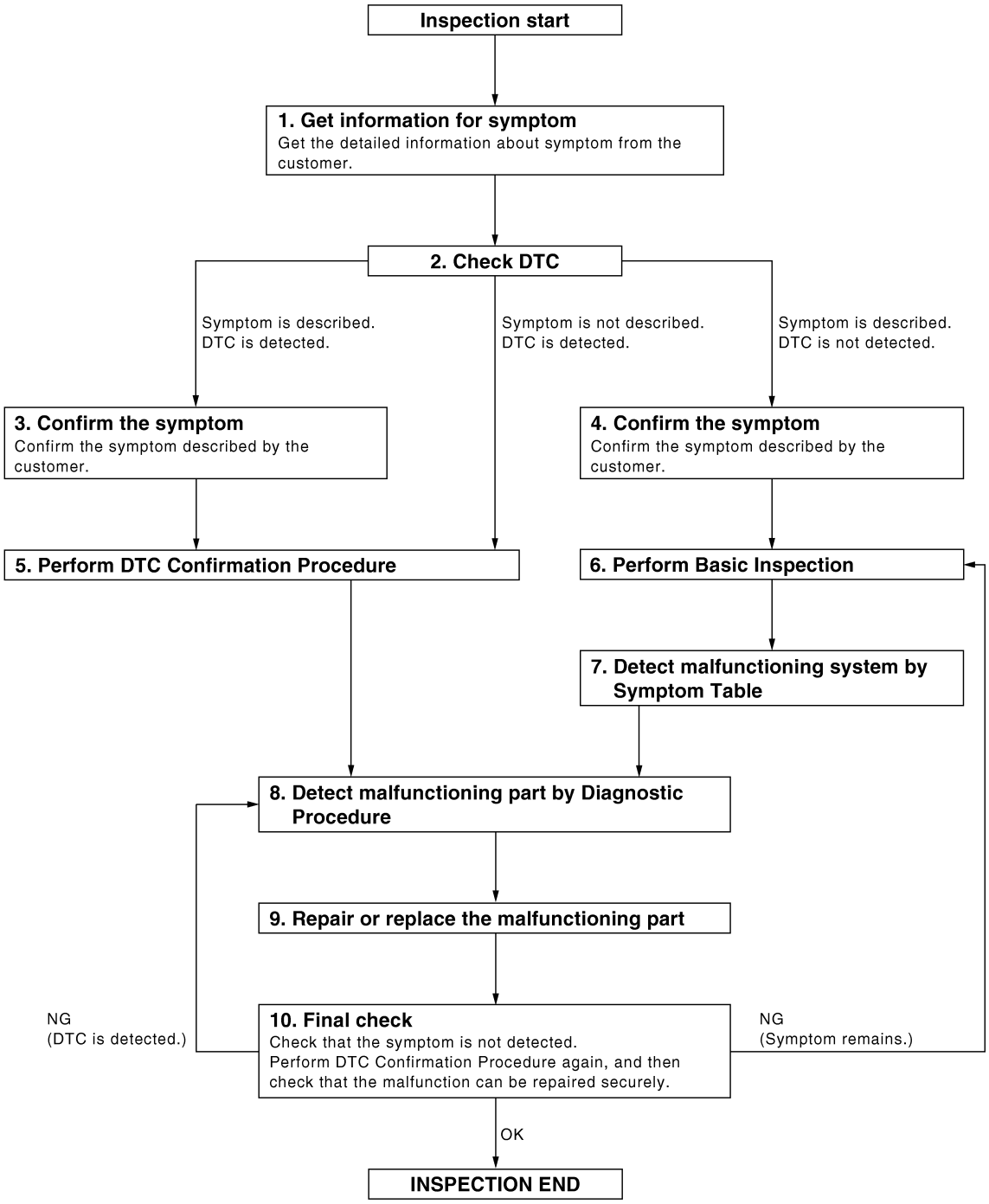
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000001184578

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

2.CHECK DTC

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

- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Is any symptom described and any DTC detected?

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

3.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT-III to the vehicle in “DATA MONITOR” mode and check real-time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT-III to the vehicle in “DATA MONITOR ” mode and check real-time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC Confirmation Procedure for the displayed DTC, and then check that DTC is detected again.
If two or more DTCs are detected, refer to SEC-130, "DTC Inspection Priority Chart" (Intelligent Key unit), SEC-105, "DTC Inspection Priority Chart" (BCM) and determine trouble diagnosis order.

Is DTC detected?

YES >> GO TO 8.
NO >> Refer to GI-39, "Intermittent Incident".

6.PERFORM BASIC INSPECTION

Perform Basic Inspection. Refer to SEC-160, "Basic Inspection".

>> GO TO 7.

7.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

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

>> GO TO 8.

8.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.
NOTE:
The Diagnostic Procedure is described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

>> GO TO 9.

9.REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 10.

10.FINAL CHECK

When DTC was detected in step 9, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunctions have been fully repaired.
When symptom was described by the customer, refer to the confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Are all malfunctions corrected?

NO (DTC is detected)>>GO TO 8.
NO (Symptom remains)>>GO TO 6.
YES >> **INSPECTION END**

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000001184579

Perform the system initialization when replacing BCM, replacing Intelligent Key unit or registering an additional Intelligent Key.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000001184580

Refer to the CONSULT-III Operation Manual-NATS.

ECM RE-COMMUNICATING FUNCTION

ECM RE-COMMUNICATING FUNCTION : Description

INFOID:0000000001184581

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-III is not necessary)

NOTE:

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

ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement

INFOID:0000000001184582

1. PERFORM ECM RE-COMMUNICATING FUNCTION

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

Can engine be started?

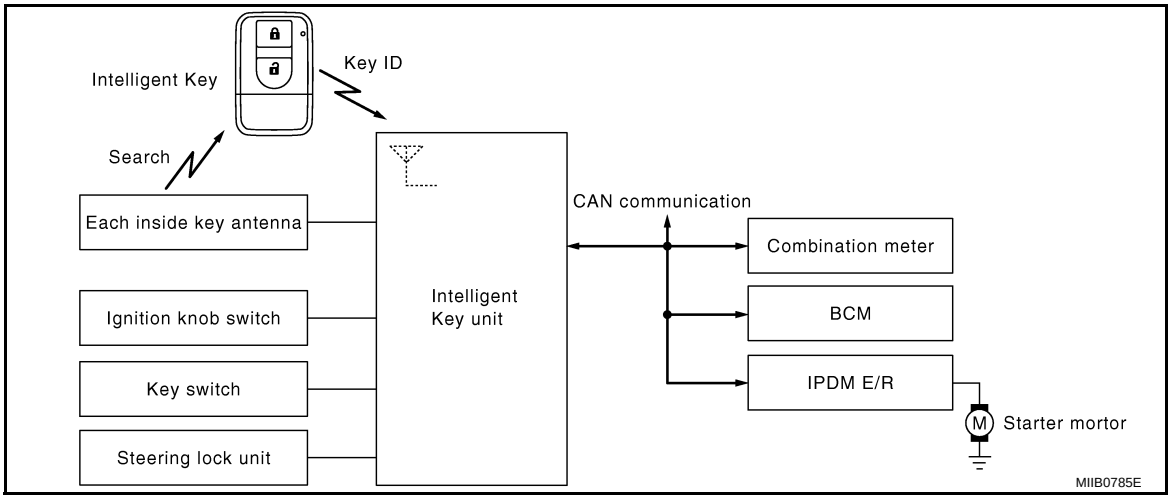
YES >> Procedure is completed.
NO >> Initialize control unit. Refer to CONSULT-III Operation Manual NATS.

FUNCTION DIAGNOSIS

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION

System Diagram

INFOID:0000000001184583



System Description

INFOID:0000000001184584

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 (Instrument center, console, rear seat) • Key interlock solenoid
Ignition knob switch	Ignition knob (push/release)		
Steering lock unit	Steering lock (lock/unlock)		
Inside key antenna (Instrument center, 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
Park/neutral position switch (only for CVT models)	P,N range	Engine start function	• Starter relay • Starter motor

BCM

Switch/Input signal	Input signal to BCM	BCM function	Actuator/Output signal
Stop lamp switch	Brake (press/release)	Engine start function	• Inside key antenna (Instrument center, console, rear seat)
Key switch	Mechanical key (insert/remove)		

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 NATS). It can perform the door lock/unlock operation and the engine start operation when the registered Intelligent Key is carried.
- When the Intelligent Key battery is discharged, it can be used as emergency back-up by inserting the mechanical key set in the Intelligent Key to the ignition key cylinder. At that time, perform the NATS ID verification. If it is used when the Intelligent Key is carried, perform the Intelligent Key ID verification.
- If the ID is successfully verified, and when the ignition knob switch is pressed and the brake pedal is pushed, 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 DLK-28, "INTELLIGENT KEY : 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 J10, the transponder [the chip for 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 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 and brake switch are 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-52, "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 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).

KEY INTERLOCK OPERATION (ONLY FOR MT MODELS)

In case of a MT vehicle is in motion and ignition is turned into LOCK position, steering lock unit causes a risk by activating the steering lock actuator. The key interlock operation is designed to override the steering lock system and prevent the situation mentioned above from occuring.

LOCK condition

When the following conditions are fulfilled, key interlock solenoid will be locked. (Steering lock inactive)

- 1 second passes after ignition switch is in ON position and engine revolution speed goes above 500 rpm.

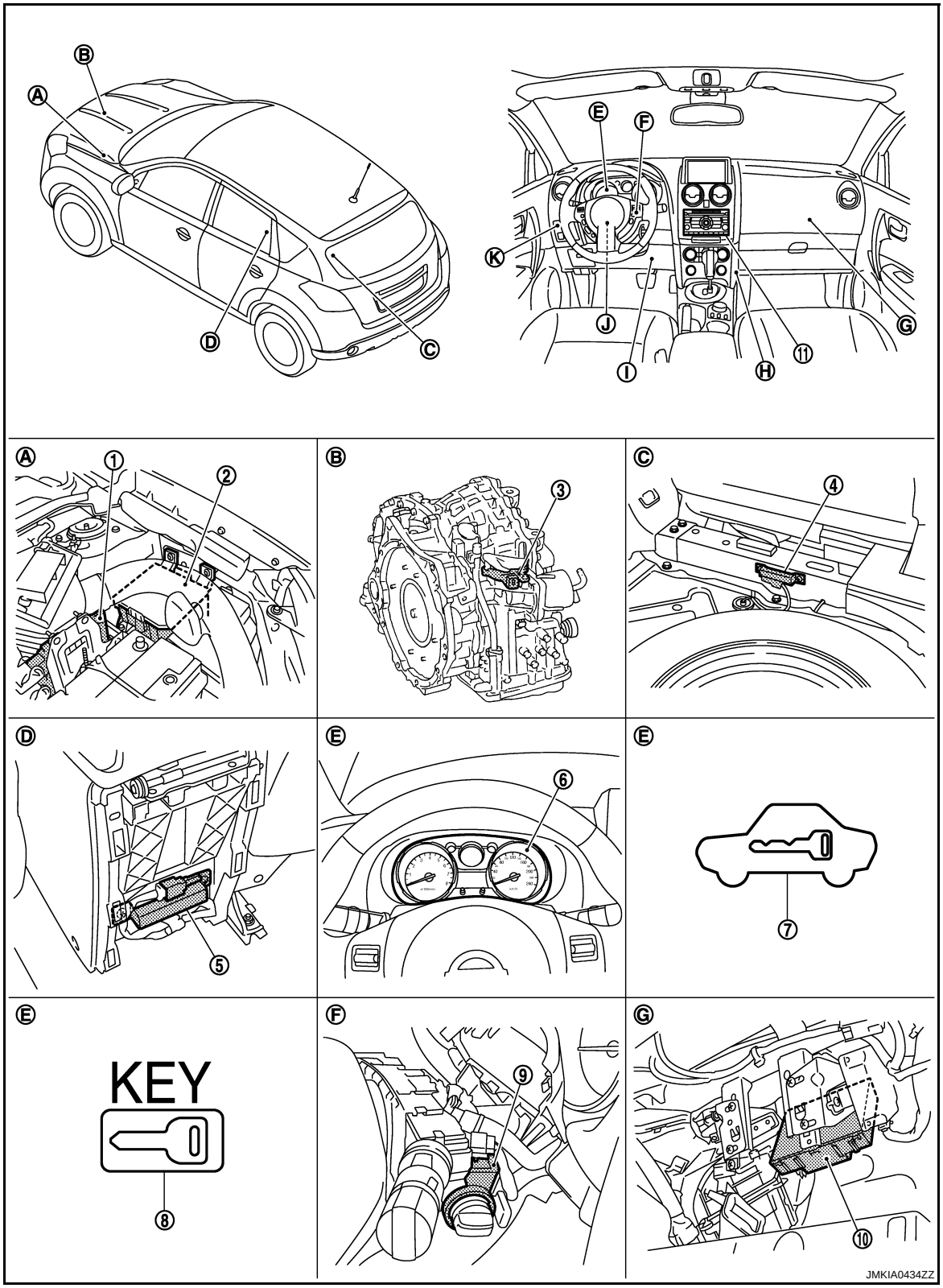
UNLOCK condition

When any of the following condition are fulfilled key interlock solenoid will be unlocked. (Steering lock active)

- When vehicle speed is below 4km/h and the ignition switch is turned from ON to OFF.
- When vehicle speed is over 4km/h but less than 10km/h, and 3 second passes after the ignition switch is turned from ON to OFF.

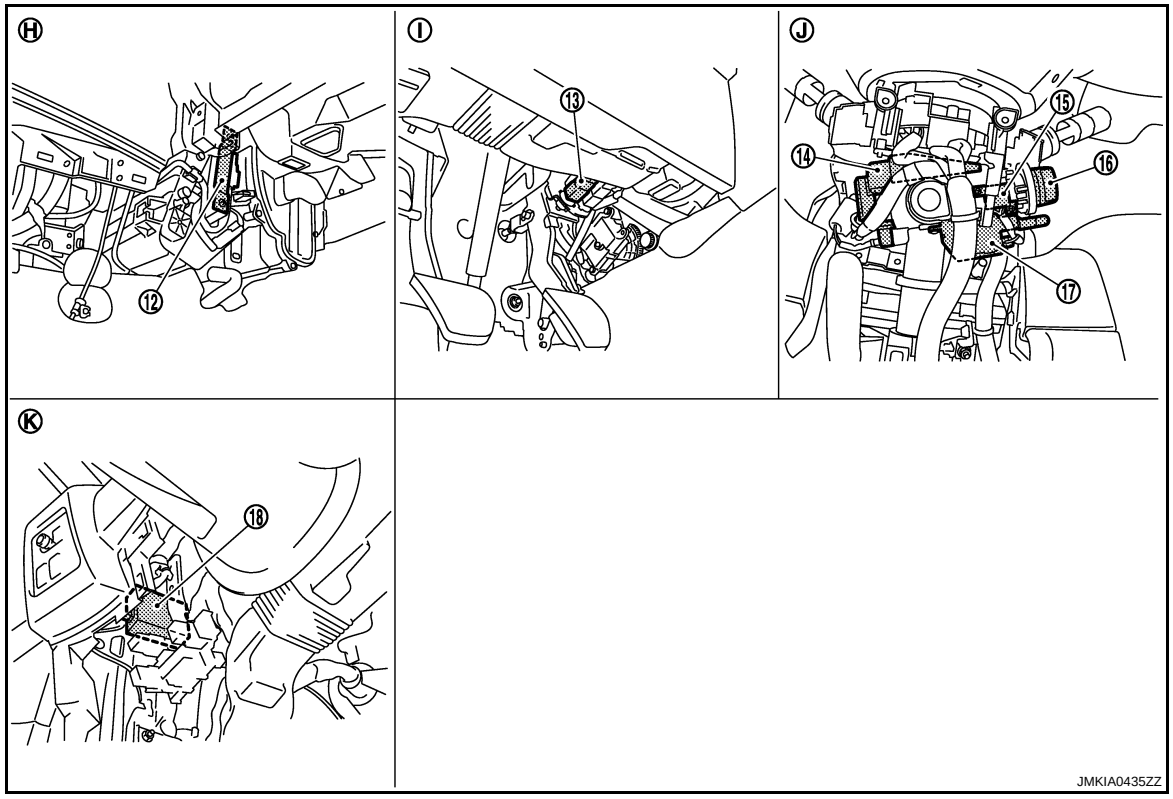
Component Parts Location

INFOID:0000000001184585



1. ECM
   Gasoline engine E16
   K9K engine E60
   M9R engine E121
2. IPDM E/R
   E10, E11, E12, E13, E14
3. Park/neutral position switch
   CVT F21
   A/T F22
4. Inside key antenna (rear seat)
   B45
5. Inside key antenna (console)
   M61
6. Combination meter
   M34
7. Security indicator lamp
   M34
8. Key warning lamp
   M34
9. NATS antenna amp.
   M26
10. BCM
    M65, M66, M67

A. Engine room (LH)
B. CVT unit
C. View with luggage floor spacer (LH) removed
D. View with console rear finisher removed
E. Built in combination meter
F. View with steering column cover removed
G. Over the glove box



12. Inside Key antenna (instrument center)
    M70
13. Stop lamp switch
    Gasoline engine M/T models: E114
    Except gasoline engine M/T models: E115
14. Steering lock unit
    M28
15. Ignition knob switch, key switch and key lock solenoid (key switch)
    M25
16. Ignition knob switch, key switch and key lock solenoid (ignition knob switch)
    M25
17. Ignition knob switch, key switch and key lock solenoid (key lock solenoid)
    M25
18. Intelligent Key unit
    M40

H. View with instrument lower cover RH removed
I. Remove lower instrument panel (driver side)
J. View with steering column cover removed
K. Remove lower instrument panel (driver side)

Component Description

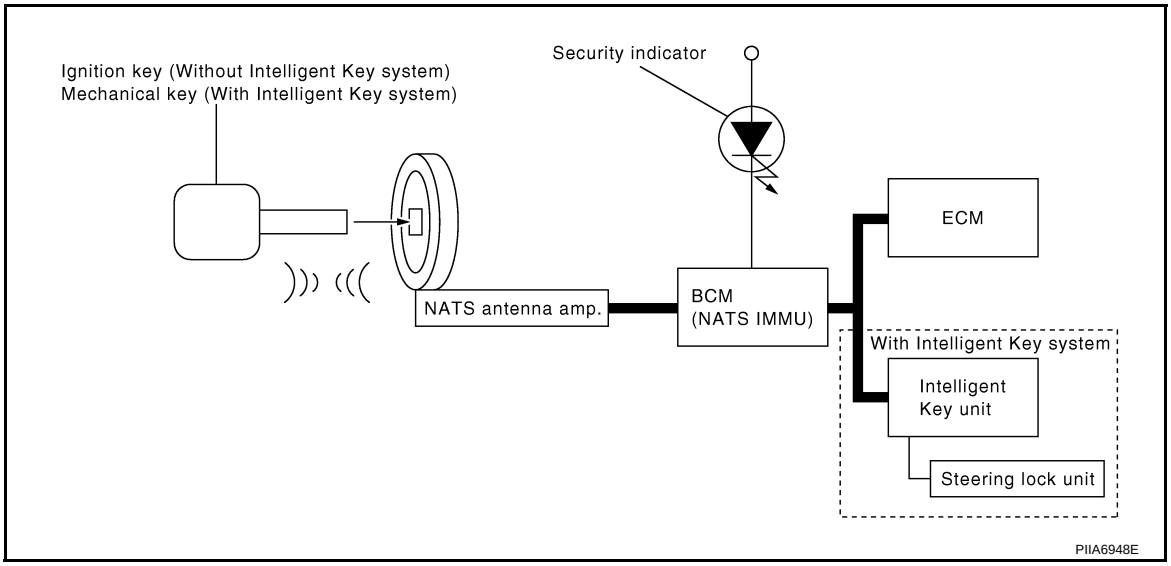
INFOID:0000000001184586

Component	Reference
Intelligent Key unit	SEC-54
BCM	BCS-8
ECM	HR16 (WITH EURO-OBD): ECH-23 HR16 (WITHOUT EURO-OBD): ECH-362 MR20 (WITH EURO-OBD): ECM-23 MR20 (WITHOUT EURO-OBD): ECM-366 K9K: ECK-25 M9R: ECR-20
Combination meter	MWI-7
Steering lock unit	SEC-43
Ignition knob switch, key switch and key lock solenoid	SEC-61
Inside key antenna	DLK-116
Stop lamp switch	SEC-63
Security indicator	SEC-67

NATS (NISSAN ANTI-THEFT SYSTEM)

System Diagram

INFOID:0000000001184587



System Description

INFOID:0000000001184588

INPUT/OUTPUT SIGNAL CHART

Intelligent Key Unit

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

BCM

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

SYSTEM DESCRIPTION

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

- Engine immobilizer shows high anti-theft performance to prevent engine from starting by other than the owner.
- Only a key with key ID registered in BCM and ECM can start engine, and shows high anti-theft performance to prevent key from being copied or stolen.
- Security indicator always flashes with mechanical key removed condition (key switch: OFF) and ignition knob released condition on LOCK position (ignition knob switch: OFF).
- Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system. Refer to SEC-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.

- During trouble diagnosis or when the following parts have been replaced, and if mechanical key is added, registration* is required.
  *1: All keys kept by the owner of the vehicle should be registered with mechanical key.
- ECM
- BCM
- Mechanical key
- EPS control unit
- IPDM E/R
- Combination meter

- NATS trouble diagnosis, system initialization and additional registration of other mechanical key IDs must be carried out using CONSULT-III hardware and SECURITY CARD.
  When NATS initialization has been completed, the ID of the inserted mechanical key or mechanical key IDs can be carried out.
- Possible symptom of NATS malfunction is “Engine cannot start”. In J10, the engine can be started with the Intelligent Key system and 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. For ECM replacement procedure, refer to SEC-9, "ECM RE-COMMUNICATING FUNCTION : Description".

PRECAUTIONS FOR KEY REGISTRATION

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

SECURITY INDICATOR

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

MAINTENANCE INFORMATION

CAUTION:

It is necessary to perform NATS ID registration when replacing any of the following part.

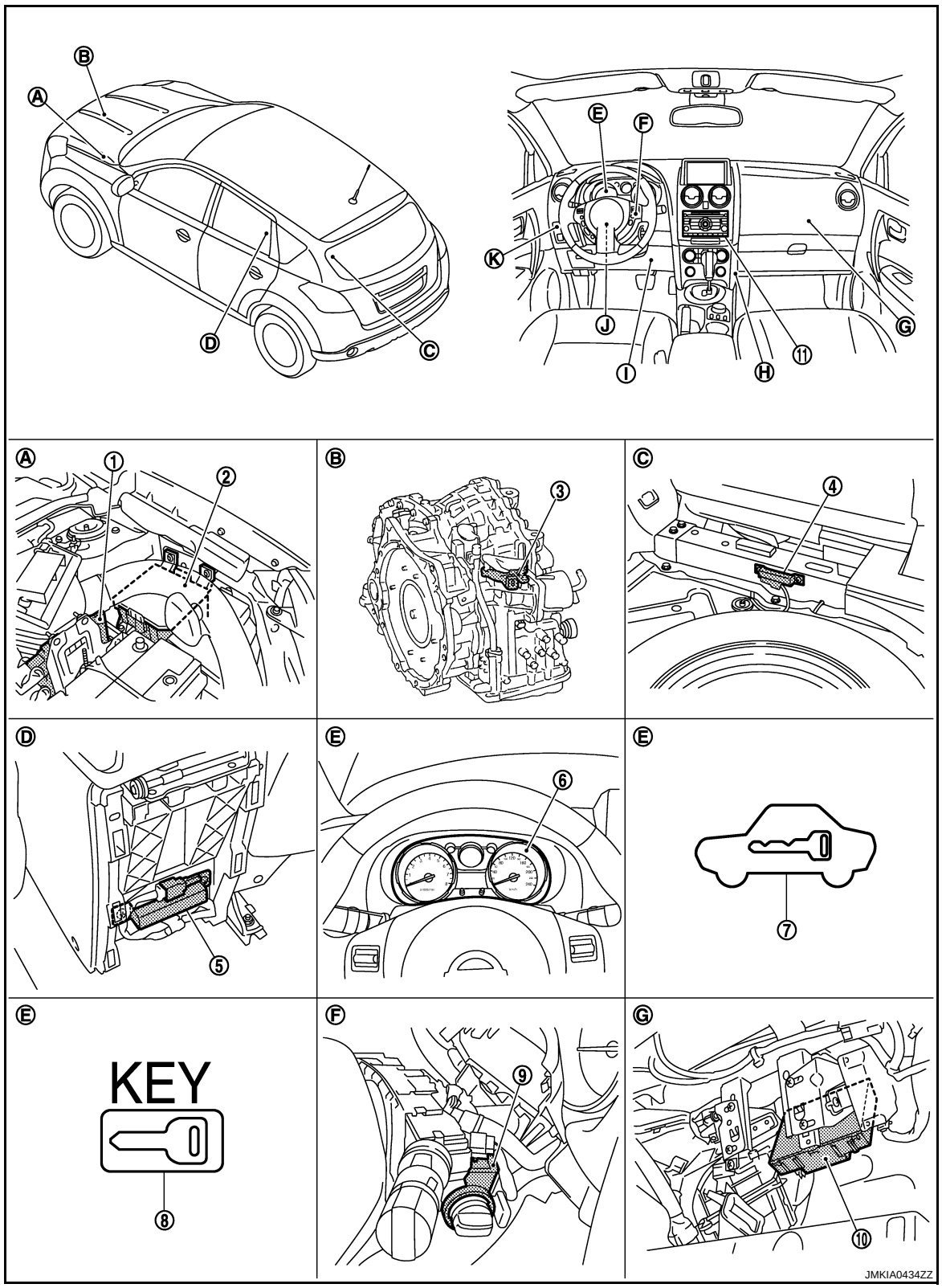
- **ECM**
  For RHD Vehicles, it is necessary to perform NATS ID registration when replacing any of the following parts with a used part.

If it's not (or fail to do so), the electrical system may not operate properly.
***: A new part should register automatically after the ignition switch is turned ON.**
***: New one means a virgin control unit that has never been energized on-board.**

- **EPS control unit**
- **IPDM E/R**
- **Combination meter**

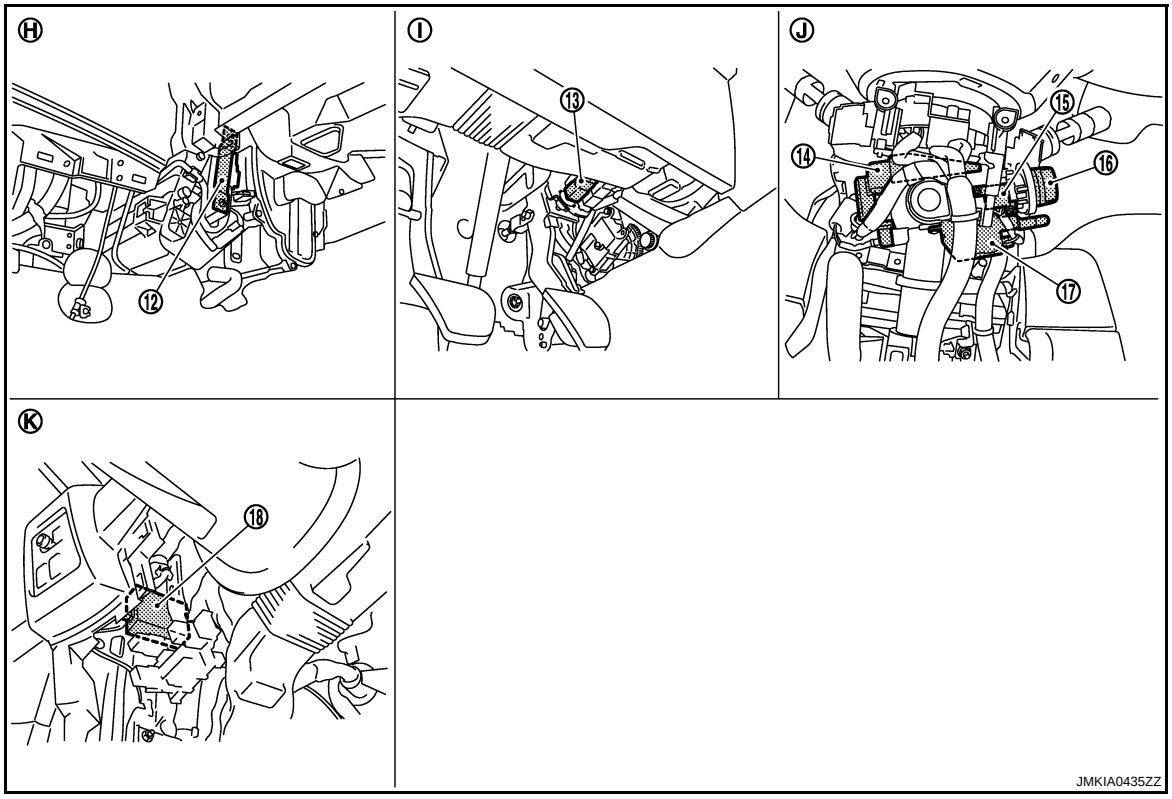
Component Parts Location

INFOID:0000000001184589



1. ECM
   Gasoline engine E16
   K9K engine E60
   M9R engine E121
2. IPDM E/R
   E10, E11, E12, E13, E14
3. Park/neutral position switch
   CVT F21
   A/T F22
4. Inside key antenna (rear seat)
   B45
5. Inside key antenna (center console)
   M61
6. Combination meter
   M34
7. Security indicator lamp
   M34
8. Key warning lamp
   M34
9. NATS antenna amp.
   M26
10. BCM
    M65, M66, M67

A. Engine room (LH)
B. CVT unit
C. View with luggage floor spacer (LH) removed
D. View with console rear finisher removed
E. Built in combination meter
F. View with steering column cover removed
G. Over the glove box



12. Inside Key antenna (instrument center)
    M70
13. Stop lamp switch
    Gasoline engine M/T models: E114
    Except gasoline engine M/T models: E115
14. Steering lock unit
    M28
15. Ignition knob switch, key switch and key lock solenoid (key switch)
    M25
16. Ignition knob switch, key switch and key lock solenoid (ignition knob switch)
    M25
17. Ignition knob switch, key switch and key lock solenoid (key lock solenoid)
    M25
18. Intelligent Key unit
    M40

H. View with instrument lower cover RH removed
I. Remove lower instrument panel (driver side)
J. View with steering column cover removed
K. Remove lower instrument panel (driver side)

Component Description

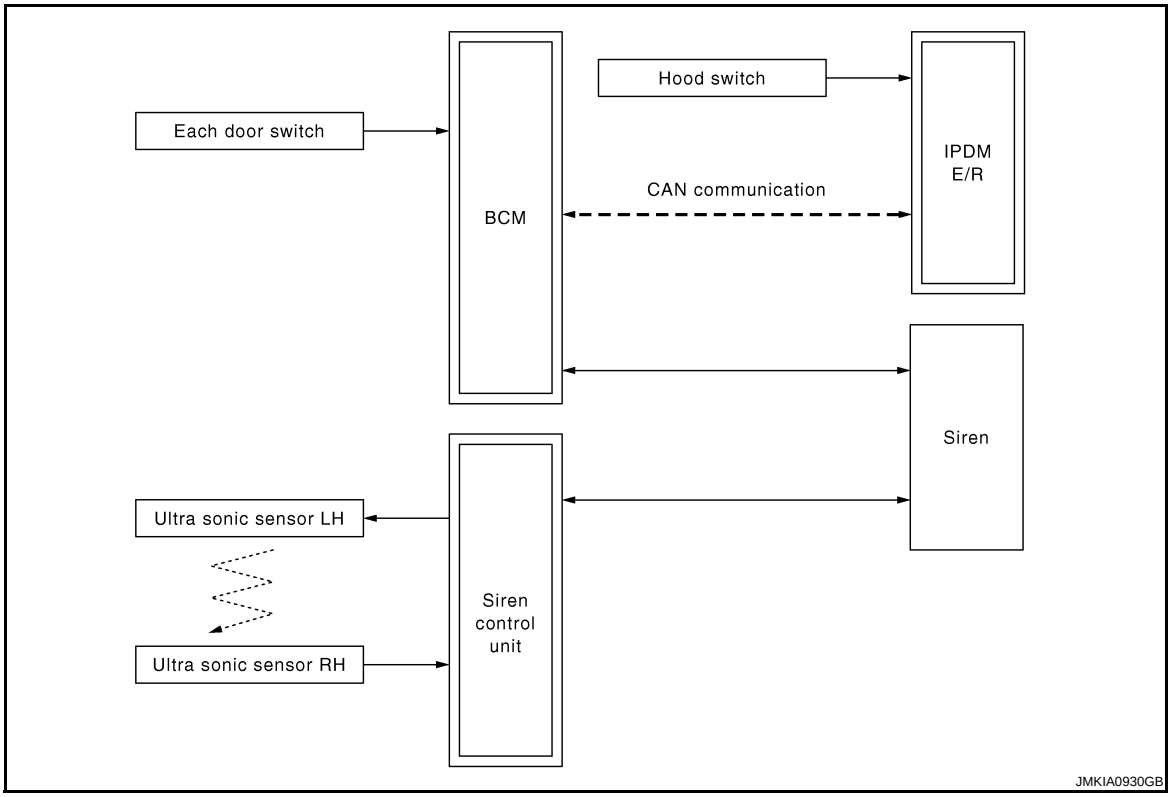
INFOID:0000000001184590

Component	Reference
BCM	BCS-8
Steering lock unit	SEC-43
Key switch	SEC-59
Ignition knob switch	SEC-61
NATS antenna amp.	SEC-45
Security indicator	SEC-67
IPDM E/R	PCS-7

VEHICLE SECURITY SYSTEM

System Diagram

INFOID:0000000001184591



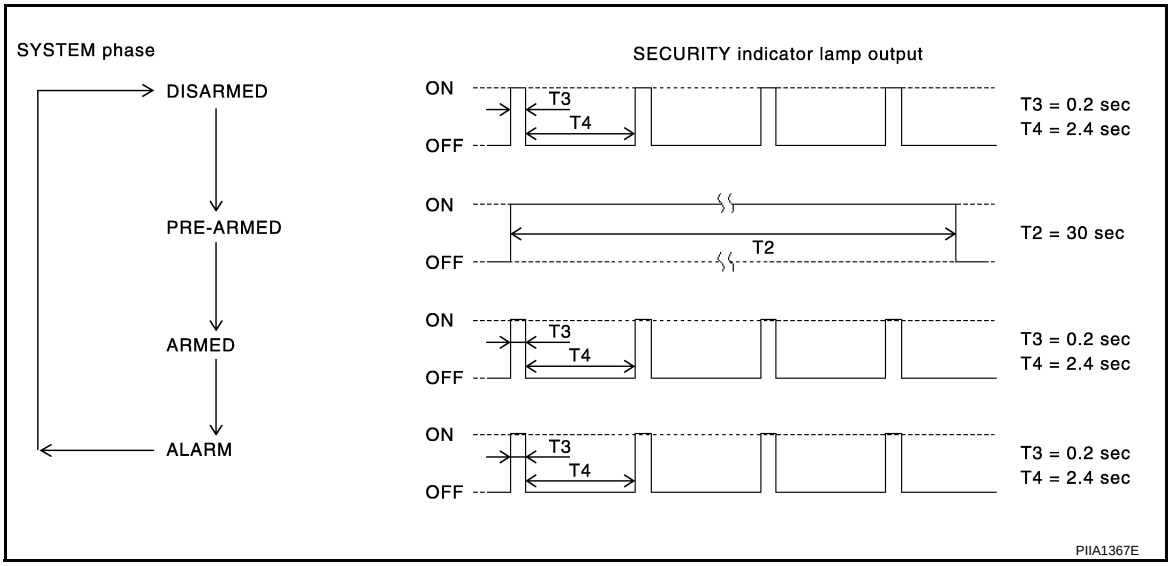
System Description

INFOID:0000000001184592

DESCRIPTION

The security system provides an audible and visual alarm when an unauthorized access to the vehicle is detected while the system is in armed phase.
The security system consist of two control units. The BCM relays door status, arming state, etc, to the siren control unit.
The siren control unit manages the alarm function and the audible alarm (siren).

OPERATION FLOW



BCM shifts the phase as follows and the phase information is sent to siren control unit via communication line.

Disarmed Phase

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

Pre-Armed Phase And Armed Phase

The vehicle security system turns into the pre-armed phase when ignition switch is in OFF position, all doors are closed and locked (using Intelligent Key, door request switch or auto relock function). 10 seconds after the lock operation, the system automatically shifts into the armed phase.

Condition of Activating The System

When the following condition is performed in armed phase, the system sounds the siren and flashes the head lamps for about 30 seconds.

- Hood or any door is opened.
- Ultra sonic sensor is triggered.
- Ignition switch goes ON with invalid transponder ID.

Condition of Deactivating The System

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

- Unlock the doors with Intelligent Key or door request switch.
- Ignition switch goes ON with transponder ID verified.

SIREN CONTROL UNIT

Siren control unit manages siren. The siren control unit does not shift to armed phase in the same way as BCM. The siren control unit goes to armed phase after about 10 seconds from lock command. If door is opened or closed within about 20 seconds, only the siren will be activated.

Siren control unit has battery inside. If disconnect or connect battery terminal before canceling armed phase, siren will be activated.

CAUTION:

When replace siren control unit (new one and used one), Perform “C/U INITALIZATION” with CONSULT-III.

Ultra Sonic Sensor Function

The ultra sonic sensor consist of two separate units, a transmitter on the left and receiver on the right mounted on room mirror. The LH transmitter sensor sends an ultra sonic pulse of sound, and RH receiver sensor receives the returning echo pulse.

It is possible to exclude the ultrasonic sensors.

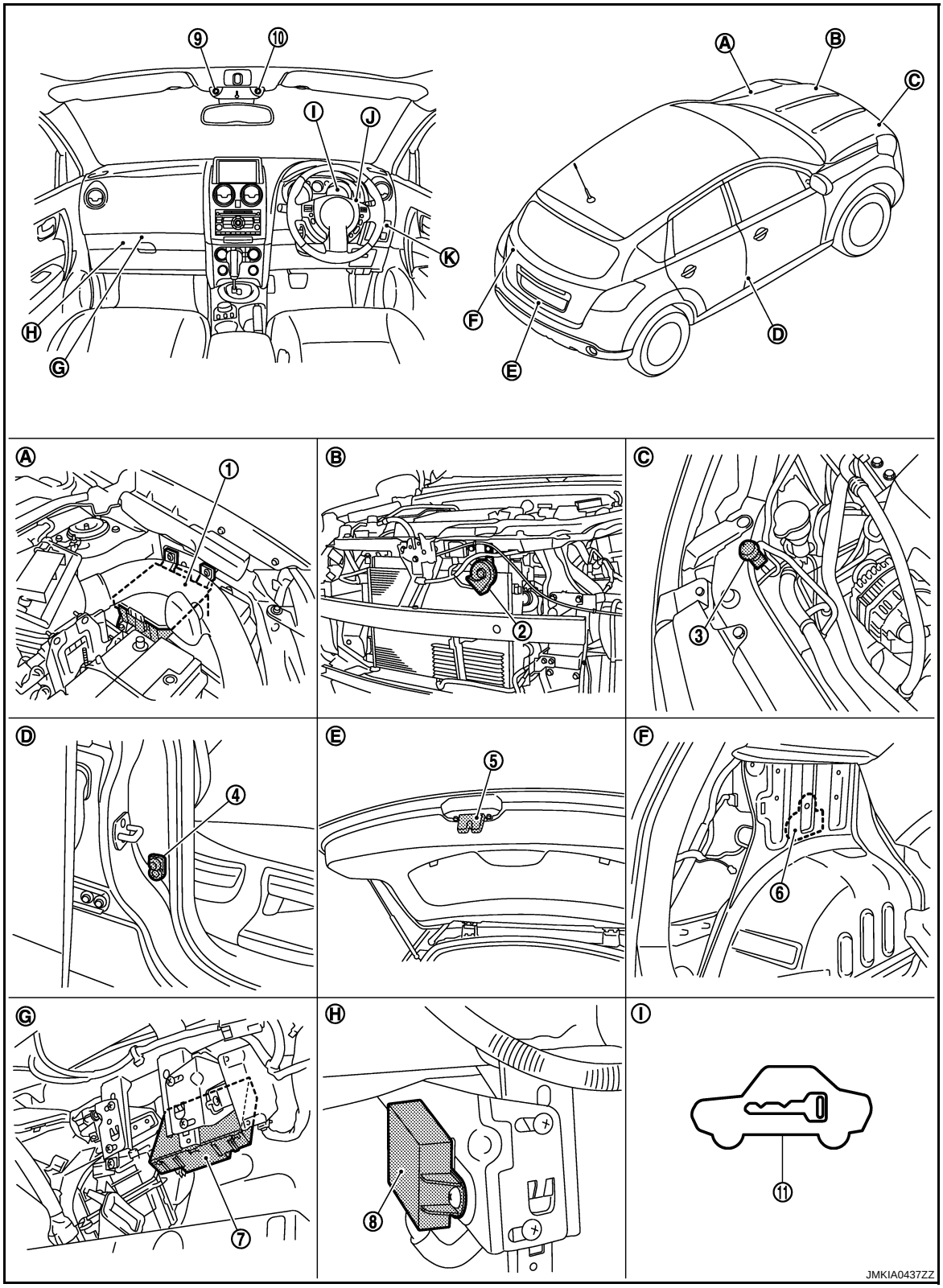
To exclude the ultra sonic sensors:

1. Turn the ignition switch from the OFF to the ON position.
2. Turn the ignition switch from OFF to ON 3 times within 7 seconds.
3. Close the doors, bonnet and press the lock button on the Intelligent Key to lock all doors.

The ultra sonic sensors are now excluded from the alarm system. All other functions of the system remain activated until the alarm system is disarmed again.

Component Parts Location

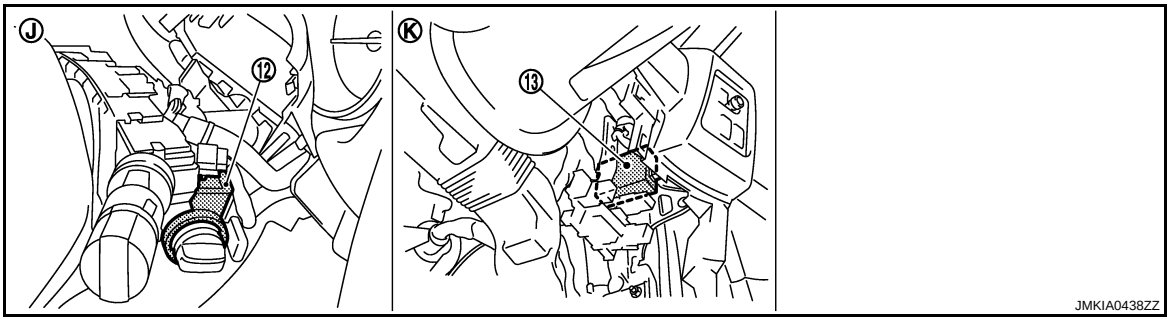
INFOID:0000000001184593



1. IPDM E/R
   E10,E12
2. Horn
   E51
3. Hood switch
   E113

4. Front door switch (driver side) B34
5. Back door lock assembly (back door switch) D152
6. Siren B68
7. BCM M65,M66,M67
8. Siren control unit M94
9. Security indicator lamp (built in combination meter) M34

A. Engine room (LH)
B. View with front bumper removed
C. Engine room (RH)
D. View with center pillar
E. View with back door opened
F. View with luggage side lower finisher (LH) removed
G. Over the glove box
H. Over the glove box
I. Built in combination meter



12. NATS antenna amp. M26
13. Intelligent Key unit M40

J. View with steering column cover removed
K. Remove instrument driver lower panel

Component Description

INFOID:0000000001184594

Component	Reference
BCM	BCS-8
Hood switch	SEC-65
Security indicator	SEC-67
Door switch	DLK-83
Siren control unit	SEC-69
Ultra sonic sensor	SEC-69

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:0000000001559443

APPLICATION ITEM

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

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM. Refer to BCS-62, "DTC Index".
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	• Enables to read and save the vehicle specification. • Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
—	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER	×	×	×
Warning chime	BUZZER		×	×
Interior room lamp	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
PTC heater system	PTC HEATER		×	×

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:0000000001184596

APPLICATION ITEM

CONSULT-III 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 Intelligent Key unit.

DATA MONITOR

Monitor item	Content
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
PUSH SW*1	Indicates [ON/OFF] condition of ignition knob switch.

*1: For the vehicle Intelligent key is equipped.

ACTIVE TEST

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

THEFT ALM

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

INFOID:0000000001184597

APPLICATION ITEM

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

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
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.
PUSH SW*1	Indicates [ON/OFF] condition of ignition knob switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
KEYKESS 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.
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.
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].
FLASHER	This test is able to check flasher operation [LH/RH/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-III Function (INTELLIGENT KEY)

INFOID:0000000001559449

APPLICATION ITEM

CONSULT-III 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	Selection item	Condition
CONFIRM KEY FOB ID	It can check whether Intelligent Key ID code is registered or not.	—	—
TAKE OUT FROM WINDOW WARN	Take away warning chime (from window) mode can be changed.	ON	Active
		OFF*	Inactive
LOW BATT OF KEY FOB WARN	Intelligent Key low battery warning mode can be changed.	ON*	Active
		OFF	Inactive
KEYLESS FUNCTION	Door lock function with Intelligent Key when there is intelligent key in the passenger compartment can be changed.	ON*	Active
		OFF	Inactive
ANSWER BACK FUNCTION	Buzzer reminder operation can be changed.	ON	Active
		OFF*	Inactive
SELECTIVE UNLOCK FUNCTION	Anti-hijack mode can be changed.	ON	Active
		OFF*	Inactive
HAZARD ANSWER BACK	Hazard reminder operation mode can be changed.	Refer to DLK-58.	
ANSWER BACK WITH I-KEY LOCK	Buzzer reminder operation (lock operation) mode by each door request switch can be changed.	BUZZER	Active
		OFF*	Inactive
ANSWER BACK WITH I-KEY UNLOCK	Buzzer reminder operation (unlock operation) mode by each door request switch can be changed.	BUZZER	Active
		OFF*	Inactive
AUTO RELOCK TIMER	Auto door lock operation mode can be changed.	OFF	Inactive
		2 min*	Active
ENGINE START BY I-KEY	Engine start function (by Intelligent Key) mode can be changed.	ON*	Active
		OFF	Inactive
LOCK/UNLOCK BY I-KEY	Door lock function by door request switch can be changed.	ON*	Active
		OFF	Inactive

*: The factory setting

SELF-DIAG RESULT

Refer to DLK-163, "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).
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.
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.
DOOR SW DR	Indicates [OPEN/CLOSE] condition of front door switch (driver side) from BCM via CAN communication.
DOOR SW AS	Indicates [OPEN/CLOSE] condition of front door switch (passenger side) from BCM via CAN communication.
DOOR SW RR	Indicates [OPEN/CLOSE] condition of rear door switch (RH) from BCM via CAN communication.
DOOR SW RL	Indicates [OPEN/CLOSE] condition of rear door switch (LH) from BCM via CAN communication.
DOOR BK SW	Indicates [OPEN/CLOSE] condition of back door switch from BCM via CAN communication.
VEHICLE SPEED	Displays the vehicle speed signal received from combination meter by numerical value [km/h].

ACTIVE TEST

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, LED (on Intelligent Key) flashes. • ROOM ANT1: Inside key antenna (console) transmissions can be detected by Intelligent Key, when “ROOM ANT1” is selected. • ROOM ANT2: Inside key antenna (instrument center/rear seat) transmissions can be detected by Intelligent Key, when “ROOM ANT2”is selected. • DRIVER ANT: Outside key antenna (driver side) transmissions can be detected by Intelligent Key, when “DRIVER ANT” is selected. • ASSIST ANT: Outside key antenna (passenger side) transmissions can be detected by Intelligent Key, when “ASSIST ANT” is selected. • BK DOOR ANT: Outside key antenna (rear bumper) transmissions can be detected by Intelligent Key, when “BK DOOR ANT” is selected.
OUTSIDE BUZZER	This test is able to check Intelligent Key warning buzzer operation. • ON • OFF
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

Test item	Description
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
KEY LOCK SOLENOID*1	This test is able to check key interlock operation. • LOCK: Key interlock is active. • UNLOCK: Key interlock is inactive.

*1: The item is only for M/T model.

DIAGNOSIS SYSTEM (SIREN CONTROL UNIT)

Diagnosis Description

INFOID:0000000001600638

SELF-DIAGNOSIS MODE

The siren control unit possess the self-diagnosis function and can detect the theft warning system malfunction.
The self-diagnosis modes are the following:

- Siren control unit circuit diagnosis
- Alarm data display
- System diagnosis

The self-diagnosis results are display by the number of time the hazard blinks or by siren sounds.

- **NOTE:**
  The siren sounds in this order (alarm data display, system diagnosis). The siren sound interpretation is very complex, please refer to an example of self-diagnosis results and then perform the diagnosis several times.

OPERATION PROCEDURE

1. Connect the CONSULT-III.
2. Turn the key to ON position.
3. Perform the work support mode security alarm setting.
4. Turn the security alarm set to OFF.
5. The self-diagnosis will automatically start 2 seconds after turning again the security alarm set to ON.

NOTE:
Perform the siren control unit self-diagnosis if the self-diagnosis does not start automatically.

SELF-DIAGNOSIS RESULT

The self-diagnosis results are displayed in the order below.

1. **Siren control unit circuit diagnosis display**
   Perform the siren control unit wires connection status diagnosis and display the results.
   Normal: The hazard lamp blinks 3 times after 2 seconds and the alarm data display will start.
   Circuit is malfunctioning: The hazard lamp does not blink and the self-diagnosis will not start.
2. **Alarm data display**
   Siren control unit sounds the alarm, and display the cause of the alarm start-up.
   Refer to SELF-DIAGNOSIS RESULT TABLE (alarm data).
   No data displayed: The system diagnosis results will be displayed.
   Data displayed: The alarm indicates an item related to the number of time it sounds.
   NOTE:
   A maximum of 3 alarm latest data can be memorized.
   CAUTION:
   The alarm data will disappear as soon as the system is shifted to ARMED mode.
3. **System diagnosis results display**
   Perform the theft warning system diagnosis.
   Refer to SELF-DIAGNOSIS RESULT TABLE (malfunctioning part).
   Malfunction is not detected: Finish the self-diagnosis
   Malfunction is detected: The alarm indicates an item related to the number of time it sounds.

SELF-DIAGNOSIS RESULT TABLE

Alarm data

No. of time the alarm sounds	Alarm start-up condition
1st time	Battery removed.
2nd time	Hood or Door open/close
3rd time	Disconnection between the BCM and the siren control unit wires or malfunction.
4th time	Ultra sonic sensor has detected an intrusion.
5th time	Operate ignition switch with an unregistered key.
6th time	Disconnection between the siren control unit and ultra sonic senor wires.

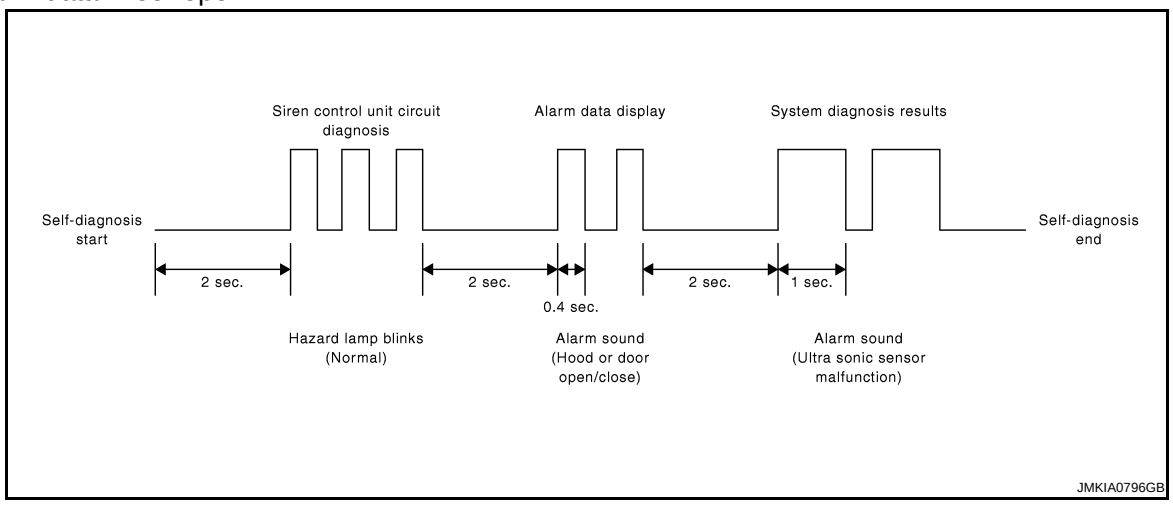
Malfunctioning part

No. of time the alarm sounds	Malfunctioning parts
1st time	Siren control unit
2nd time	Ultra sonic sensor

Self-diagnosis result examples

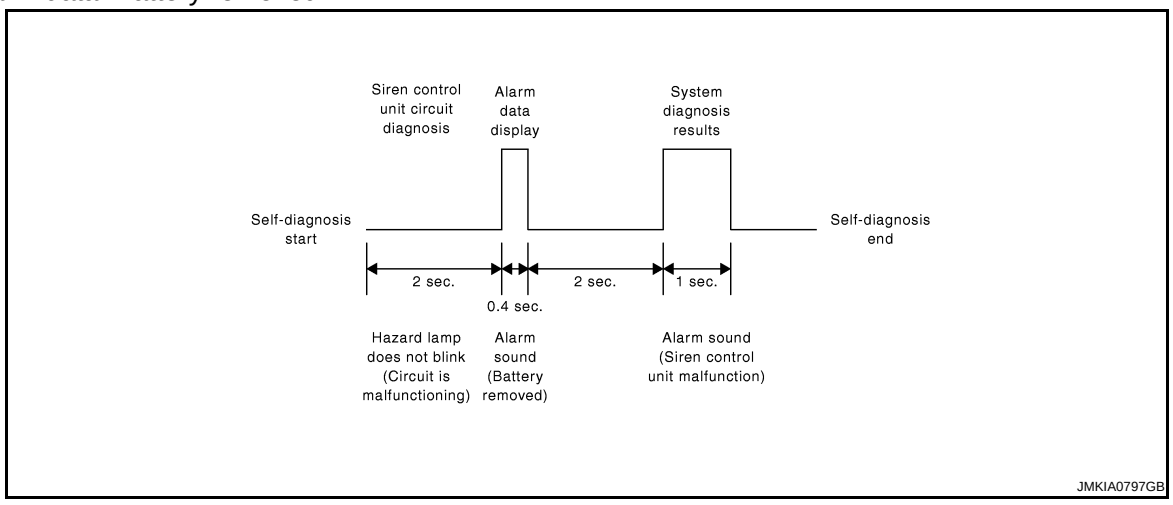
1.

- Siren control unit circuit diagnosis: Normal
- System diagnosis: Ultra sonic sensor malfunction
- Alarm data: Door open



2.

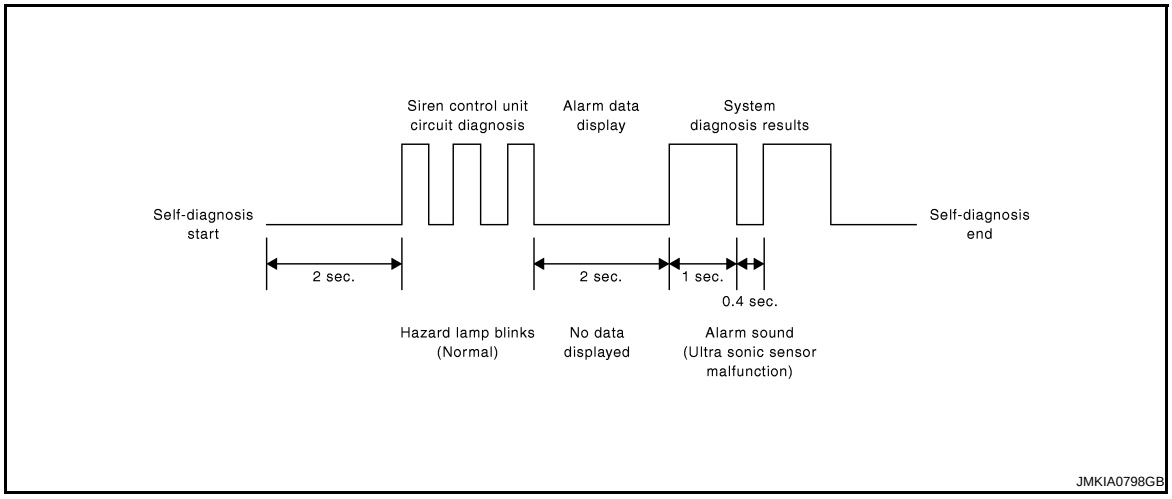
- Siren control unit circuit diagnosis: Circuit is malfunctioning
- System diagnosis: Siren control unit malfunction
- Alarm data: Battery removed



3.

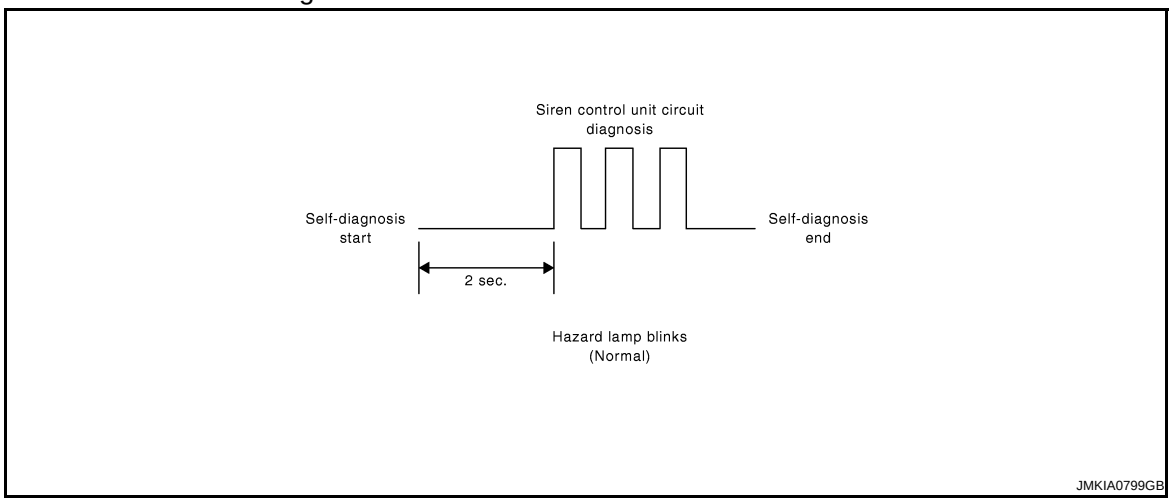
- Siren control unit circuit diagnosis: Normal
- System diagnosis: Ultra sonic sensor malfunction

- Alarm data: No data



4.

- Siren control unit circuit diagnosis: Normal



COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000001184599

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-28, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000001184600

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When Intelligent Key unit cannot communicate CAN communication signal continuously for 2 seconds or more.	In CAN communication system, any item (or items) of the following listed below is malfunctioning. • Transmission • Receiving (BCM) • Receiving (IPDM E/R) • Receiving (ECM) • Receiving (METER/M&A) • Receiving (MULTI AV)

Diagnosis Procedure

INFOID:0000000001184601

1.PERFORM SELF DIAGNOSTIC

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

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-13, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-39, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000001184602

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-28, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000001184603

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:0000000001184604

1.REPLACE INTELLIGENT KEY UNIT

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

>> Replace Intelligent Key unit.

Special Repair Requirement

INFOID:0000000001184605

1.REQUIRED WORK WHEN REPLACING INTELLIGENT KEY UNIT

Initialize control unit. Refer to CONSULT-III operation manual NATS-IVIS/NVIS.

>> Work end.

P1610 LOCK MODE

Description

INFOID:0000000001184637

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

DTC Logic

INFOID:0000000001184638

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When the starting operation is carried out five or more times consecutively under the following conditions. • Unregistered mechanical key • BCM or ECM's malfunctioning.	—

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

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

Diagnosis Procedure

INFOID:0000000001184639

1. CHECK ENGINE START FUNCTION

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

Does the engine start?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".

P1611 ID DISCORD, IMMU-ECM

Description

INFOID:0000000001600645

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:0000000001600646

DTC DETECTION LOGIC

NOTE:

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-33, "DTC Logic".
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-34, "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-III.

Is DTC detected?

YES >> Refer to SEC-36, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001600647

1.PERFORM INITIALIZATION

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

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

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

2.PEPLACE BCM

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

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

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

3.PEPLACE ECM

1. Replace ECM. Refer to the following page.

- HR16 (WITH EURO-OBD): ECH-17, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"
- HR16 (WITHOUT EURO-OBD): ECH-356, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"
- MR20 (WITH EUR-OBD): ECM-17, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"
- MR20 (WITHOUT EUR-OBD): ECM-360, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"

- K9K: ECK-21, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"
- M9R: ECR-17, "SERVICE REGENERATION : Special Repair Requirement".

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

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

YES >> ECM is malfunctioning.
NO >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".

P1612 CHAIN OF ECM-IMMU

Description

INFOID:0000000001600648

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:0000000001600649

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-33, "DTC Logic".
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-34, "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-III.

Is DTC detected?

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

Diagnosis Procedure

INFOID:0000000001600650

1.REPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT-III.
   For initialization, refer to “CONSULT-III Operation Manual NATS”.

Does the engine start?

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

P1614 CHANIN OF IMMU-KEY

Description

INFOID:0000000001600639

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

DTC Logic

INFOID:0000000001600640

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 shorted) • Mechanical key • NATS antenna amp. • BCM

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-39, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001600641

1.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to SEC-162, "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. Refer to “CONSULT-III Operation Manual NATS.
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.

NATS antenna amp.		Ground	Voltage [V] (approx.)
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.

Key slot		Ground	Continuity
Connector	Terminal		
M26	3	Ground	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.

NATS antenna amp.		Ground	Condition	Voltage [V] (approx.)
Connector	Terminal			
M26	2	Ground	Just after inserting mechanical key in key cylinder.	Pointer of tester should move.
	4		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-39, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace NATS antenna amp.
NO >> Repair or replace malfunctioning parts.

P1615 DIFFRENCE OF KEY

Description

INFOID:0000000001600642

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:0000000001600643

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 the key cylinder.
2. Press the ignition knob switch.
3. Check “Self diagnostic result” with CONSULT-III.

Is DTC detected?

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

Diagnosis Procedure

INFOID:0000000001600644

1.PERFORM INITIALIZATION

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

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

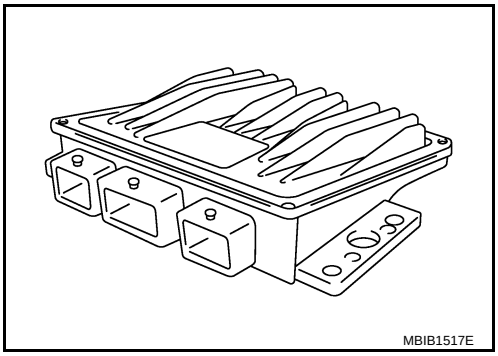
YES >> Mechanical key was unregistered.
NO >> BCM is malfunctioning.
- Replace BCM. Refer to BCS-65, "Removal and Installation".
- Perform initialization again

P1616 ECM

Description

INFOID:0000000001605588

The ECM consists of a microcomputer and connectors for signal input and output and for power supply. The ECM controls the engine.



DTC Logic

INFOID:0000000001605589

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1616	Engine control module	ECM is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 20 seconds before conducting the next test.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION

1. Turn ignition switch ON.
2. Check 1st trip DTC.

Is DTC detected?

YES >> Go to SEC-42, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000001605590

1.INSPECTION START

With CONSULT-III

1. Turn ignition switch ON.
2. Select “SELF-DIAG RESULTS” mode with CONSULT-III.
3. Touch “ERASE”.
4. **Perform DTC CONFIRMATION PROCEDURE.**
   See SEC-42, "DTC Logic".

Is the DTC P1616 displayed again?

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

2.REPLACE ECM

1. Replace ECM.
2. Go to ECR-11, "BASIC INSPECTION : Special Repair Requirement".

>> INSPECTION END

B2013 ID DISCORD I-KEY-STRG

Description

INFOID:0000000001184606

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:0000000001184607

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

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

Diagnosis Procedure

INFOID:0000000001184608

1.PERFORM INITIALIZATION

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

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

YES >> 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.

Terminals			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.

Terminals			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 connector	Terminal	Steering lock unit connector	Terminal	Continuity
M40	31	M28	4	Existed

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

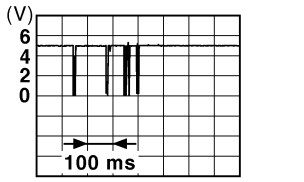
Intelligent Key unit connector	Terminal	Ground	Continuity
M40	31	Ground	Not existed

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 and steering lock unit connectors.
2. Check voltage between steering lock unit harness connector and ground.

Terminals			Condition		Voltage (V) (Approx.)
(+)		(–)			
Steering lock unit connector	Terminal				
M28	3	Ground	Steering lock	LOCK status	Battery voltage
				LOCK ⇔ UNLOCK	 JMKIA0433ZZ
				For 15 seconds after UNLOCK	Battery voltage
				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 SEC-60, "Component Inspection".

Is the inspection result normal?

YES >> Replace steering lock unit.
NO >> Repair or replace malfunctioning parts.

B2190 NATS ANTENNA AMP.

Description

INFOID:0000000001184609

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

DTC Logic

INFOID:0000000001184610

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-45, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184611

1.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to SEC-162, "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. Refer to “CONSULT-III Operation Manual NATS”.
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.

NATS antenna amp.		Ground	Voltage [V] (approx.)
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	Ground	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.

NATS antenna amp.		Ground	Condition	Voltage [V] (approx.)
Connector	Terminal			
M26	2	Ground	Just after inserting mechanical key in key cylinder.	Pointer of tester should move.
	4		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-39, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace NATS antenna amp.
NO >> Repair or replace malfunctioning parts.

B2191 DIFFERENCE OF KEY

Description

INFOID:0000000001184612

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:0000000001184613

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer toSEC-47, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184614

1.PERFORM INITIALIZATION

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

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

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

B2192 ID DISCORD, IMMU-ECM

Description

INFOID:0000000001184615

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:0000000001184616

DTC DETECTION LOGIC

NOTE:

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-33, "DTC Logic".
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-34, "DTC Logic".

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-48, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184617

1.PERFORM INITIALIZATION

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

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

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

2.PEPLACE BCM

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

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

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

3.PEPLACE ECM

1. Replace ECM. Refer to the following page.

- HR16 (WITH EURO-OBD): ECH-17, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"
- HR16 (WITHOUT EURO-OBD): ECH-356, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"
- MR20 (WITH EUR-OBD): ECM-17, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"
- MR20 (WITHOUT EUR-OBD): ECM-360, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"

- K9K: ECK-21, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement"
- M9R: ECR-17, "SERVICE REGENERATION : Special Repair Requirement".

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

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

YES >> ECM is malfunctioning.
NO >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".

B2193 CHAIN OF ECM-IMMU

Description

INFOID:0000000001184618

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:0000000001184619

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-33, "DTC Logic".
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-34, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2193	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-III.

Is DTC detected?

YES >> Refer to SEC-50, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000001184620

1.REPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT-III.
   For initialization, refer to “CONSULT-III Operation Manual NATS”.

Does the engine start?

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

B2194 ID DISCORD IMMU-I-KEY

Description

INFOID:0000000001184621

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

DTC Logic

INFOID:0000000001184622

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2194	DISCORD BCM-I-KEY	The ID verification results between BCM and Intelligent Key unit are NG. The registration is necessary.	• BCM • Intelligent Key unit

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-51, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184623

1.PERFORM INITIALIZATION

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

Is DTC detected?

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

2.REPLACE BCM

1. Turn ignition switch OFF.
2. Replace BCM. Refer to BCS-65, "Removal and Installation".
3. Perform initialization with CONSULT-III. Re-register all mechanical keys.
   For initialization and registration of mechanical key. Refer to “CONSULT-III Operation Manual NATS”.

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

YES >> BCM is malfunctioning.
NO >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".

B2195 ANTI-SCANNING

Description

INFOID:0000000001184624

When the ID of the remote control engine starter installed cannot be registered, anti-scanning operates and it may be possible that the engine can not start. In the case, obtain the customer approval to remove the remote control engine starter.

DTC Logic

INFOID:0000000001184625

DTC DETECTION LOGIC

NOTE:

- If DTC B2195 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-33, "DTC Logic".
- If DTC B2195 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-34, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2195	ANTI-SCANNING	The ID of the remote control engine starter installed cannot be registered.	Remote control engine starter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-52, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184626

1.REMOVAL OF REMOTE CONTROL ENGINE STARTER

Remove remote control engine starter with the customer approval.

>> GO TO 2.

2.CHECK SELF DIAGNOSTIC RESULT

1. Turn ignition switch ON.
2. Perform “Self diagnostic result” with CONSULT-III.
3. Erase DTC.
4. Start the engine.

Does the engine start?

YES >> INSPECTION END
NO >> BCM is malfunctioning.
- Replace BCM
- Perform initialization

B2196 DONGLE NG

Description

INFOID:0000000001184627

BCM performs the ID verification with the slave control units (EPS column assy, IPDM E/R, combination meter).
If either slave control unit is replaced by used part, perform initialization with CONSULT-III. But if the control unit is replaced by new part, the system does not need initialization.

DTC Logic

INFOID:0000000001184628

DTC DETECTION LOGIC

NOTE:

- If DTC B2196 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-33, "DTC Logic".
- If DTC B2196 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-34, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2196	DONGLE NG	The ID verification results between BCM and each slave control unit are NG.	• ECM • EPS column assy • Combination meter • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is the DTC detected?

YES >> Refer to SEC-53, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184629

1.PERFORM INITIALIZATION

1. Perform initialization with CONSULT-III. Re-register all mechanical keys. Refer to “CONSULT-III Operation Manual NATS”.
2. Start the engine.

Dose the engine start?

YES >> INSPECTION END
NO >> Perform “Self Diagnosis Result” for each control unit.

B2552 INTELLIGENT KEY

Description

INFOID:0000000001184630

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

DTC Logic

INFOID:0000000001184631

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-54, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184632

1.REPLACE INTELLIGENT KEY UNIT

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

Does the engine start?

YES >> INSPECTION END
NO >> Perform “DTC confirmation procedure”. Refer to SEC-54, "DTC Logic".

Special Repair Requirement

INFOID:0000000001184633

1.REQUIRED WORK WHEN REPLACING INTELLIGENT KEY UNIT

Initialize control unit. Refer to CONSULT-III operation manual NATS-IVIS/NVIS.

>> Work end.

B2590 ID DISCORD BCM-I-KEY

Description

INFOID:0000000001184634

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:0000000001184635

DTC DETECTION LOGIC

NOTE:

- If DTC B2590 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-33, "DTC Logic".
- If DTC B2590 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-34, "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-III.

Is DTC detected?

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

Diagnosis Procedure

INFOID:0000000001184636

1.PERFORM INITIALIZATION

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

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

YES >> ID was unregistered.
NO >> BCM is malfunctioning.
- Replace BCM
- Perform initialization again

POWER SUPPLY AND GROUND CIRCUIT
INTELLIGENT KEY UNIT

INTELLIGENT KEY UNIT : Diagnosis Procedure

INFOID:0000000001184640

1.CHECK FUSE

Check that the following fuse is not blown.

Terminal No.	Signal name	Fuse No.
11	Battery power supply	9 (10A)
6	Ignition power supply	5 (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.

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

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between Intelligent Key unit harness connector and ground.

Intelligent Key unit		Ground	Continuity
Connector	Terminal		
M40	12		Exists

Does continuity exist?

YES >> Intelligent Key unit power supply and ground circuit are OK.
NO >> Repair harness or connector.

INTELLIGENT KEY UNIT : Special Repair Requirement

INFOID:0000000001184641

1.REQUIRED WORK WHEN REPLACING INTELLIGENT KEY UNIT

Initialize control unit. Refer to CONSULT-III operation manual NATS.

>> Work end.

SIREN CONTROL UNIT

SIREN CONTROL UNIT : Diagnosis Procedure

INFOID:0000000001184642

1.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect siren control unit connector.
3. Check voltage between siren control unit harness connector and ground.

Terminals			Voltage (Approx.)
(+)		(–)	
Siren control unit			
Connector	Terminal	Ground	
M94	4	Ground	Battery voltage

Is the measurement value normal?

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

2.CHECK GROUND CIRCUIT

Check continuity between siren control unit harness connectors and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
M94	6	Ground	Existed

Does continuity exist?

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

SIREN

SIREN : Diagnosis Procedure

INFOID:0000000001184644

1.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(–)	
Siren			
Connector	Terminal	Ground	
B68	2		Battery voltage

Is the measurement value normal?

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

2.CHECK GROUND CIRCUIT

Check continuity between siren control unit harness connectors and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
B68	5		Existed

Does continuity exist?

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

BCM

BCM : Diagnosis Procedure

INFOID:0000000001605591

1.CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
41	Battery power supply	9
57		J
37	ACC power supply	5
38	Ignition power supply	4

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

Terminals			Ignition switch position		
(+)		(–)			
BCM			OFF	ACC	ON
Connector	Terminal				
M65	37	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M66	41		Battery voltage	Battery voltage	Battery voltage
M67	57				

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M67	55		Existed

Does continuity exist?

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

KEY SWITCH

Description

INFOID:0000000001184646

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

Component Function Check

INFOID:0000000001184647

1.CHECK KEY SWITCH INPUT SIGNAL

Check key switch (“KEY SW”) in “Data Monitor” mode with CONSULT-III.

Monitor item	Condition	
KEY 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-59, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001184648

1.CHECK KEY SWITCH INPUT SIGNAL

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

Terminals			Condition	Voltage (V) (Approx.)
(+)		(–)		
Intelligent Key unit connector	Terminal			
M40	7	Ground	Insert mechanical key into key cylinder	Battery voltage
			Remove mechanical key from key cylinder	0

4. Check voltage between BCM harness connector and ground.

Terminals			Condition	Voltage (V) (Approx.)
(+)		(–)		
BCM connector	Terminal			
M65	36	Ground	Insert mechanical key into key cylinder	Battery voltage
			Remove mechanical key from key cylinder	0

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".
NO >> GO TO 2.

2.CHECK KEY SWITCH POWER SUPPLY CIRCUIT

1. Remove mechanical key from key cylinder.
2. Disconnect key switch connector.
3. Check voltage between key switch harness connector and ground.

Terminals			Voltage (V) (Approx.)
(+)		(–)	
Key switch connector	Terminal		
M25	2	Ground	Battery voltage

Is the inspection result normal?

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

3.CHECK KEY SWITCH SIGNAL CIRCUIT

1. Check continuity between Intelligent Key unit harness connector and key switch harness connector.

Intelligent Key unit connector	Terminal	Key switch connector	Terminal	Continuity
M40	7	M25	1	Exists

2. Check continuity between BCM harness connector and key switch harness connector.

BCM connector	Terminal	Key switch connector	Terminal	Continuity
M65	36	M25	1	Exists

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

Key switch connector	Terminal	Ground	Continuity
M25	1	Ground	Does not exist

Is the inspection result normal?

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

4.CHECK KEY SWITCH

Check key switch function.
Refer to SEC-60, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".
NO >> Replace key switch.

Component Inspection

INFOID:0000000001184649

COMPONENT INSPECTION

1.CHECK KEY SWITCH

Check continuity between key switch terminals.

Terminal		Condition	Continuity
key switch connector			
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 key switch.

IGNITION KNOB SWITCH

Description

INFOID:0000000001184650

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

Component Function Check

INFOID:0000000001184651

1.CHECK IGNITION KNOB SWITCH INPUT SIGNAL

Check ignition knob switch (“PUSH SW”) in “DATA MONITOR” mode with CONSULT-III. Refer to DLK-62, "DOOR LOCK : CONSULT-III Function (BCM - DOOR LOCK)".

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-59, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001184652

1.CHECK IGNITION KNOB SWITCH INPUT SIGNAL

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

Terminals			Condition	Voltage (V) (Approx.)
(+)		(–)		
Intelligent Key unit connector	Terminal			
M40	27	Ground	Ignition knob switch is pressed	Battery voltage
			Ignition knob switch is released	0

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".
NO >> GO TO 2.

2.CHECK IGNITION KNOB SWITCH POWER SUPPLY CIRCUIT

1. Disconnect ignition knob switch connector.
2. Check voltage between ignition knob switch harness connector and ground.

Terminals			Voltage (V) (Approx.)
(+)		(–)	
Ignition knob switch connector	Terminal		
M25	4	Ground	Battery voltage

Is the inspection result normal?

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

3.CHECK IGNITION KNOB SWITCH SIGNAL CIRCUIT

1. Check continuity between Intelligent Key unit harness connector and ignition knob switch harness connector.

Intelligent Key unit connector	Terminal	Ignition knob switch connector	Terminal	Continuity
M40	27	M25	3	Exists

2. Check continuity between ignition knob switch harness connector and ground.

Ignition knob switch connector	Terminal	Ground	Continuity
M25	3		Does not exist

Is the inspection result normal?

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

4. CHECK IGNITION KNOB SWITCH

Check ignition knob switch function.
Refer to SEC-60, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".
NO >> Replace ignition knob switch.

Component Inspection

INFOID:0000000001184653

1. CHECK IGNITION KNOB SWITCH

1. Turn ignition switch OFF.
2. Disconnect ignition knob switch harness connector.
3. Check continuity between ignition knob switch terminals under the following conditions.

Ignition knob switch			Condition	Continuity
Connector	Terminal			
M25	3	4	Ignition knob switch is pressed	Exists
			Ignition knob switch is released	Does not exist

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Replace ignition knob switch.

STOP LAMP SWITCH

Description

INFOID:0000000001184654

Stop lamp switch detects that brake pedal is depressed, and then transmits the signal to BCM.

Component Function Check

INFOID:0000000001184655

1. CHECK STOP LAMP SWITCH INPUT SIGNAL

Check stop lamp function by depressing brake pedal.

Is the inspection result normal?

YES >> Stop lamp switch is OK.
NO >> Refer to SEC-59, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001184656

1. CHECK STOP LAMP SWITCH INPUT SIGNAL

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

Terminals			Condition	Voltage (V) (Approx.)
(+)		(–)		
BCM connector	Terminal			
M66	51	Ground	Brake pedal is depressed	Battery voltage
			Brake pedal is not depressed	0

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".
NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

Terminals			Voltage (V) (Approx.)
(+)		(–)	
Stop lamp switch connector	Terminal		
E114 (with gasoline engine and M/T models) E115 (except gasoline engine and M/T models) E118 (with diesel engine)	1	Ground	Battery voltage

Is the inspection result normal?

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

3. CHECK STOP LAMP SWITCH SIGNAL CIRCUIT

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

BCM connector	Terminal	Stop lamp switch connector	Terminal	Continuity
M66	51	E114 (with gasoline engine and M/T models) E115 (except gasoline engine and M/T models) E118 (with diesel engine)	2	Existed

2. Check continuity between stop lamp switch connector and ground.

Stop lamp switch connector	Terminal	Ground	Continuity
E114 (with gasoline engine and M/T models) E115 (except gasoline engine and M/T models) E118 (with diesel engine)	2	Ground	Not existed

Is the inspection result normal?

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

4. CHECK STOP LAMP SWITCH

Check stop lamp switch function.
Refer to SEC-60, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".
NO >> Replace stop lamp switch.

Component Inspection

INFOID:0000000001184657

1. CHECK STOP LAMP SWITCH

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch harness connector.
3. Check continuity between stop lamp switch terminals under the following conditions.

Stop lamp switch			Condition	Continuity
Connector	Terminal			
E114 (with gasoline engine and M/T models) E115 (except gasoline engine and M/T models) E118 (with diesel engine)	1	2	Brake pedal is depressed	Existed
			Brake pedal is released	Not existed

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Replace stop lamp switch.

HOOD SWITCH

Description

INFOID:0000000001184658

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

Component Function Check

INFOID:0000000001184659

1.CHECK FUNCTION

1. Select “HOOD SW” in “Data Monitor” mode with CONSULT-III.
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-65, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001184660

1.CHECK HOOD SWITCH SIGNAL

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

IPDM E/R		Ground	Condition		Voltage (V) (Approx.)
Connector	Terminal				
E12	21	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 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	
E12	21	E113	2	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E12	21	Ground	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	1	Ground	Existed

Is the inspection result normal?

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

4.CHECK IPDM E/R OUTPUT

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

IPDM E/R		Ground	Voltage (V) (Approx.)
Connector	Terminal		
E12	21	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R. Refer to PCS-33, "Removal and Installation".

5.CHECK HOOD SWITCH

Refer to SEC-66, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace hood switch.

6.CHECK INTERMITTENT INCIDENT

Refer to GI-39, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-33, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:0000000001184661

1.CHECK HOOD SWITCH

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

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

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace hood switch.

VEHICLE SECURITY INDICATOR

Description

INFOID:0000000001184665

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

Component Function Check

INFOID:0000000001184666

1.CHECK FUNCTION

1. Perform “THEFT IND” in the “ACTIVE TEST” mode with CONSULT-III.
2. Check vehicle security indicator operation.

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

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Refer to SEC-67, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001184667

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.

Terminals			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 connector	Terminal	Combination meter connector	Terminal	Continuity
M65	18	M34	28	Existed

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

Combination meter connector	Terminal	Ground	Continuity
M34	28	Ground	Not existed

Is the inspection result normal?

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

3.CHECK BCM FUNCTION

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

Terminals			Voltage (V) (Approx.)
(+)		(–)	
BCM connector	Terminal		
M65	18	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace combination meter. Refer to MWI-78, "Removal and Installation".

4. CHECK INTERMITTENT INCIDENT

Refer to GI-39, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-65, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

ULTRA SONIC SENSOR

Description

INFOID:0000000001184668

Siren control unit sounds the siren when it received a trigger signal from ultra sonic sensor.

Component Function Check

INFOID:0000000001184669

1.CHECK SIREN CONTROL UNIT FUNCTION

1. Turn ignition switch OFF.
2. Get in the vehicle and close all doors.
3. Lock doors with Intelligent Key.
4. Check that security indicator blinks when theft warning system is armed.
5. With hand, intercept the signal between left and right sensors.

Does the siren sound?

YES >> Siren control unit function is OK.
NO >> Refer to SEC-69, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001184670

1.CHECK SIREN FUNCTION

1. Turn ignition switch ON.
2. Perform “ACTIVE TEST” (“VEHICLE SECURITY HORN”) with CONSULT-III.

Does the siren sound?

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

2.CHECK SIREN SIGNAL CIRCUIT

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

BCM connector	Terminal	Siren connector	Terminal	Continuity
M65	8	B68	1	Existed
	16		3	Existed

4. Check continuity between siren harness connector and ground.

Siren connector	Terminal	Ground	Continuity
B68	1	Ground	Not existed
	3		Not existed

Is the inspection result normal?

YES >> Replace siren. Refer to SEC-163, "Removal and Installation".
NO >> Repair or replace harness.

3.CHECK SIREN CONTROL UNIT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect siren control unit and siren connector.
3. Check continuity between siren control unit harness connector and siren harness connector.

Siren control unit connector	Terminal	Siren connector	Terminal	Continuity
M94	3	B68	4	Existed

4. Check continuity between siren control unit harness connector and ground.

Siren control unit connector	Terminal	Ground	Continuity
M94	3	Ground	Not existed

Is the inspection result normal?

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

4. CHECK ULTRA SONIC SENSOR SIGNAL CIRCUIT

1. Disconnect ultra sonic sensor connectors.
2. Check continuity between siren control unit harness connector and ultra sonic sensor harness connector.

Siren control unit connector	Terminal	Ultra sonic sensor connector	Terminal	Continuity
M94	1	R11	1	Existed
	8	R12	1	Existed

3. Check continuity between siren control unit harness connector and ground.

Siren control unit connector	Terminal	Ground	Continuity
M94	1	Ground	Not existed
	8		Not existed

Is the inspection result normal?

YES >> Replace ultra sonic sensor.
NO >> Repair or replace harness.

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000001559454

VALUES ON THE DIAGNOSIS TOOL

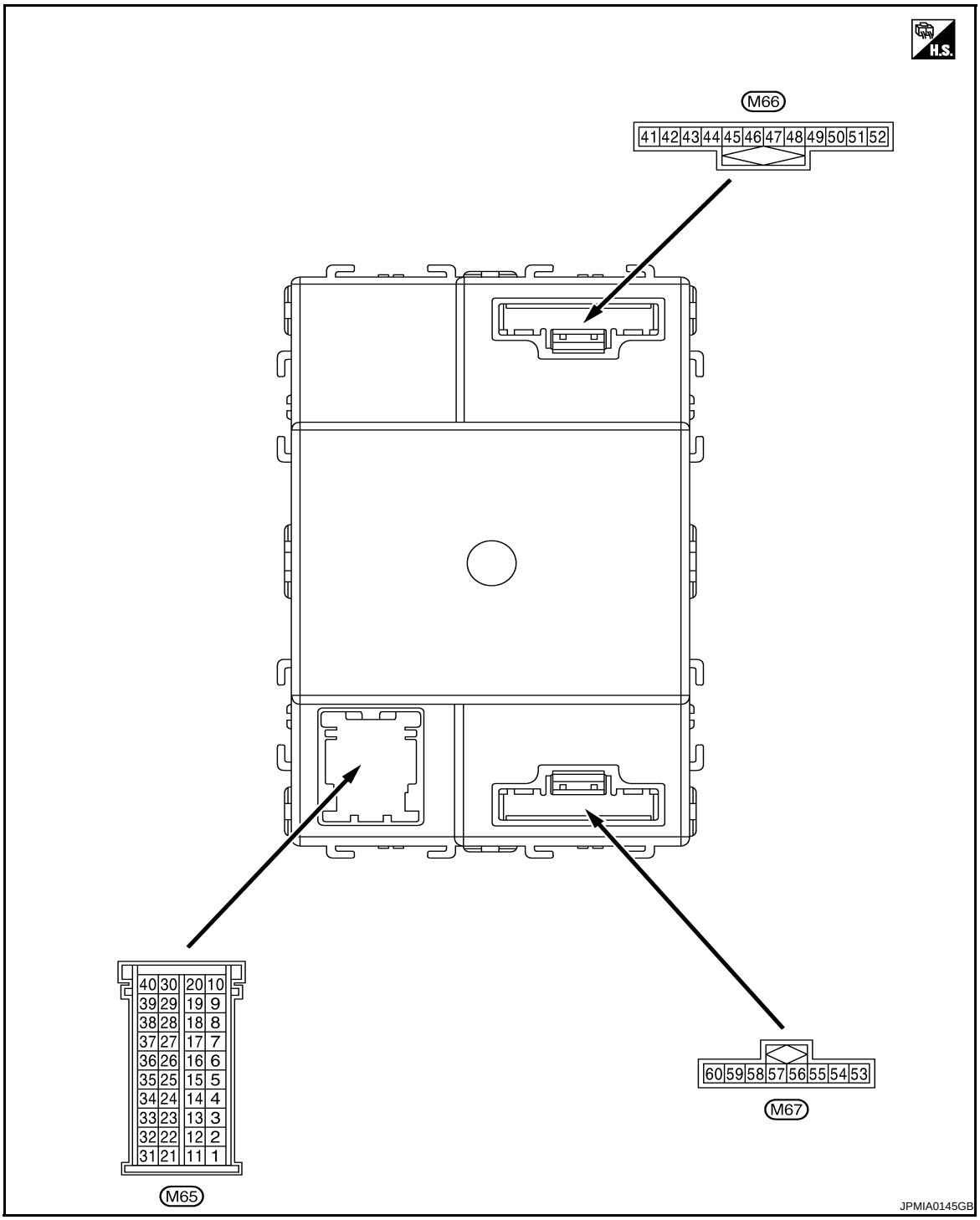
Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF	Off
	Ignition switch ACC or ON	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
AUT LIGHT SYS	Outside of the room is bright	Off
	Outside of the room is dark	On
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
AUTO RELOCK	Auto lock function does not operate	Off
	Auto lock function is operating	On
BACK DOOR SW	Back door closed	Off
	Back door opened	On
BATTERY VOLT **NOTE:** Diesel engine models only	Ignition switch ON	Approximately the same as power supply voltage
BRAKE SW	Brake pedal is not depressed	Off
	Brake pedal is depressed	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-DR	Driver door closed	Off
	Driver door opened	On
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door opened	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door opened	On

Monitor Item	Condition		Value/Status
ELEC PWR CUT **NOTE:** Diesel engine models only	Engine running	Fan switch ON (when engine coolant is cool) **NOTE:** Depending on the ambient temperature, battery voltage, etc.	Off
		The current status maintained with the signal from ECM received.	FREEZ
		• Fan switch OFF • Fan switch ON after engine warming UP **NOTE:** Depending on the engine coolant temperature, ambient temperature, battery voltage, etc.	INHBT
ENG COOLNT T **NOTE:** Diesel engine models only	Engine running		Approximately the same as water temperature gauge reading
ENGINE RPM **NOTE:** Diesel engine models only	Engine running		Approximately the same as tachometer reading
ENGINE RUN	Engine stopped		Off
	Engine running		On
ENGINE STATUS **NOTE:** Diesel engine models only	Engine stopped		STOP
	While the engine stalls		STALL
	Engine running		RUN
	At engine cranking		CRA
FAN ON SIG	Fan switch OFF		Off
	Fan switch ON		On
FR FOG SW	Front fog lamp switch OFF		Off
	Front fog lamp switch ON		On
FR WASHER SW	Front washer switch OFF		Off
	Front washer switch ON		On
FR WIPER LOW	Front wiper switch OFF		Off
	Front wiper switch LO		On
FR WIPER HI	Front wiper switch OFF		Off
	Front wiper switch HI		On
FR WIPER INT	Front wiper switch OFF		Off
	Front wiper switch INT		On
FR WIPER STOP	Any position other than front wiper stop position		Off
	Front wiper stop position		On
GLS BREAK SEN	The vehicle without glass break sensor		On
	The vehicle with glass break sensor		Off
HAZARD SW	When hazard switch is not pressed		Off
	When hazard switch is pressed		On
HD LIGHT TIME	—		Displays a setting time of the follow me home function set by the work support

Monitor Item	Condition	Value/Status
HEAD LAMP SW 1	Lighting switch OFF	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Lighting switch OFF	Off
	Lighting switch 2ND	On
HI BEAM SW	Lighting switch OFF	Off
	Lighting switch HI	On
HOOD SW	Close the hood **NOTE:** Vehicles without theft warning system are OFF-fixed	Off
	Open the hood	On
H/L WASH SW	**NOTE:** The item is indicated, but not monitored	Off
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
I-KEY LOCK	LOCK button of Intelligent Key is not pressed	Off
	LOCK button of Intelligent Key is pressed	On
I-KEY UNLOCK	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
KEYLESS LOCK	LOCK button of key fob is not pressed	Off
	LOCK button of key fob is pressed	On
KEY LESS PANIC	**NOTE:** The item is indicated, but not monitored	Off
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	Off
	UNLOCK button of key fob is pressed	On
LIT-SEN FAIL	Light & rain sensor is in normal condition	OK
	Light & rain sensor is with internal error	NOT OK
MEMORY 1	Key fob ID code is not registered in “Memory 1”	Off
	Key fob ID code is registered in “Memory 1”	On
MEMORY 2	Key fob ID code is not registered in “Memory 2”	Off
	Key fob ID code is registered in “Memory 2”	On
MEMORY 3	Key fob ID code is not registered in “Memory 3”	Off
	Key fob ID code is registered in “Memory 3”	On
MEMORY 4	Key fob ID code is not registered in “Memory 4”	Off
	Key fob ID code is registered in “Memory 4”	On
MEMORY 5	Key fob ID code is not registered in “Memory 5”	Off
	Key fob ID code is registered in “Memory 5”	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
OUT SIDE TEMP **NOTE:** Diesel engine models	Ignition switch ON	Approximately the same as outside air temperature

Monitor Item	Condition	Value/Status
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
REVERSE SW CAN	Except selector lever R position	Off
	Selector lever R position	On
PUSH SW	Return to ignition switch to LOCK position	Off
	Press ignition switch	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
RR FOG SW	Rear fog lamp switch OFF	Off
	Rear fog lamp switch ON	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
SHOCK SENSOR	Ignition switch ON	NOMAL
	After the reception of air bag deployment signal from air bag diagnosis sensor unit	Off
	During the reception of air bag deployment signal from air bag diagnosis sensor unit	On
TAIL LAMP SW	Lighting switch OFF	Off
	Lighting switch 1ST	On
TRNK OPNR SW	When back door opener switch is not pressed	Off
	When back door opener switch is pressed	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
UNLOCK SHOCK	Other than the following	Off
	During the unlock operation interlocked with air bag	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading

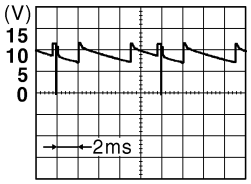
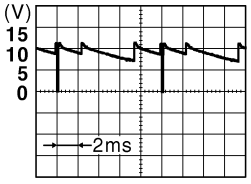
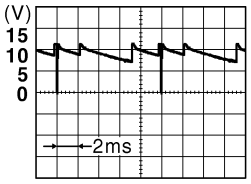
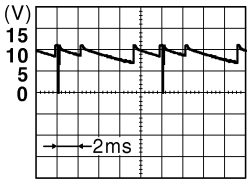
TERMINAL LAYOUT

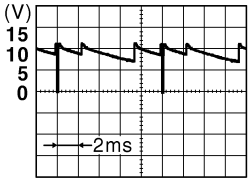
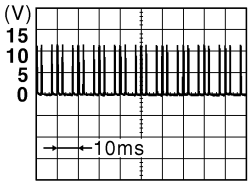
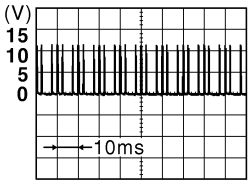
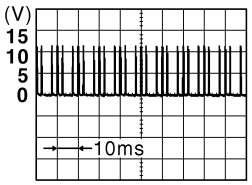
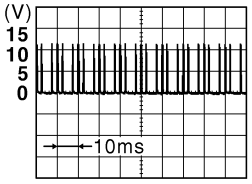


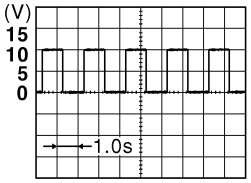
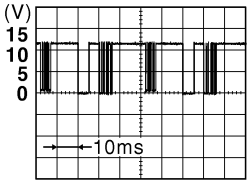
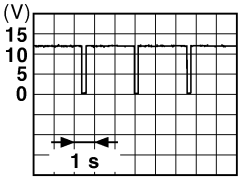
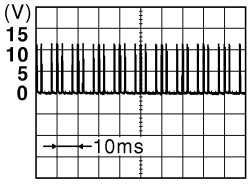
PHYSICAL VALUES

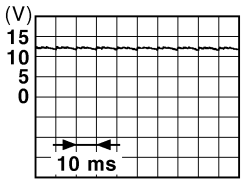
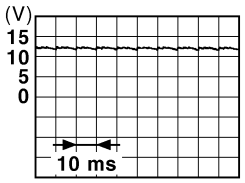
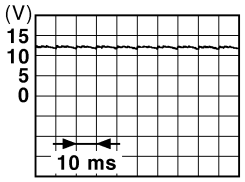
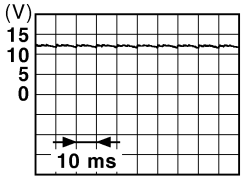
CAUTION:

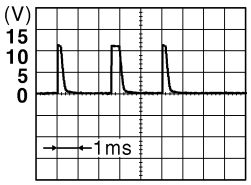
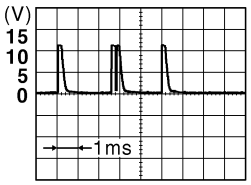
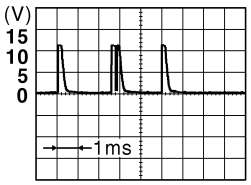
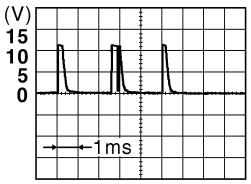
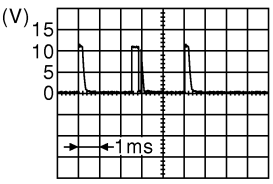
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-III. Refer to BCS-27, "COMB SW : CONSULT-III Function (BCM - COMB SW)".**
- **BCM reads the status of the combination switch at 10 ms internal normally. Refer to BCS-10, "System Description".**

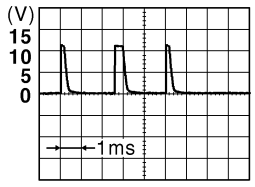
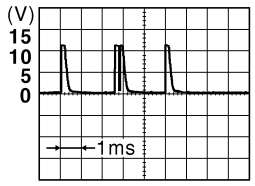
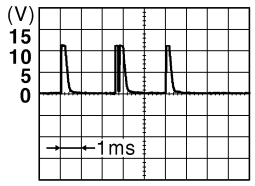
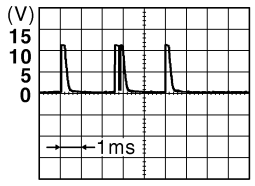
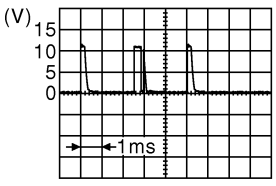
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
1 (P)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0160GB 9.1 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7	
2 (Y)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 2ND	 JPMIA0163GB 9.3 V
					Lighting switch PASS	
					Front fog lamp switch ON	
					Turn signal switch LH	
3 (LG)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch AUTO	 JPMIA0162GB 9.3 V
					Rear fog lamp switch OFF	
					Front wiper switch MIST	
					Front wiper switch INT	
					Front wiper switch LO	
4 (R)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	 JPMIA0161GB 9.1 V
					Rear wiper switch ON (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 5 • Wiper intermittent dial 6	

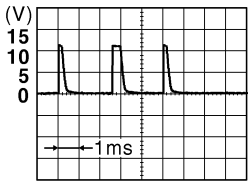
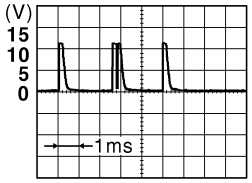
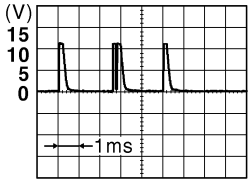
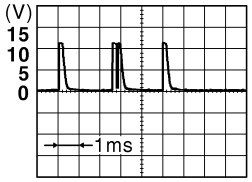
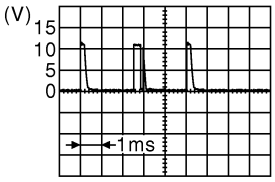
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (W)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 1ST	 JPMIA0164GB 9.1 V
					Lighting switch 2ND	
					Lighting switch HI	
					Turn signal switch RH	
7 (P)	Ground	Door lock/unlock switch (Lock)	Input	Door lock/unlock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the lock side	0 V
8 (LG)	Ground	Hazard switch	Input	Hazard switch	Not pressed	 JPMIA0154GB 1.3 V
					Pressed	0 V
9 (BR)	Ground	Door lock/unlock switch (Unlock)	Input	Door lock/unlock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the unlock side	0 V
12 (P)	Ground	Back door opener switch	Input	Back door opener switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed	0 V

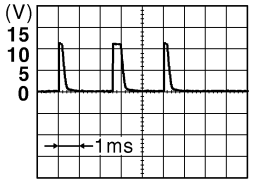
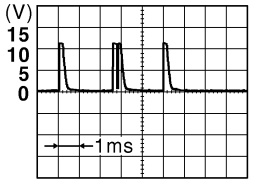
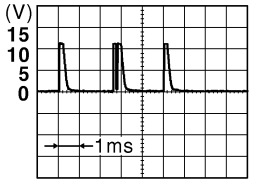
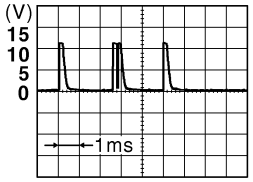
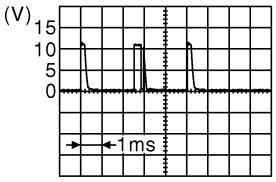
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
13 (R)	Ground	Shock detect sensor	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		 JPMIA0155GB 6.0 V
14 (L/R)	Ground	A/C switch	Input	A/C switch	Not pressed	Battery voltage
					Pressed	0 V
15 (LG/B)	Ground	Fan switch	Input	Fan switch	Not pressed	Battery voltage
					Pressed	0 V
16 (GR)	Ground	Alarm link	Output	—		—
17 (BR)	Ground	Light & rain sensor serial link	Input/ Output	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		 JPMIA0156GB 8.7 V
18 (SB)	Ground	Security indicator	Output	Security indicator	ON	0 V
					Blinking	 JPMIA0014GB 10.3 V
					OFF	Battery voltage
19 (L)	—	CAN-H	Input/ Output	—		—
20 (P)	—	CAN-L	Input/ Output	—		—
21 (SB)	Ground	Rear window defogger switch	Input	Rear window defogger switch	Not pressed	 JPMIA0154GB 1.1 V
					While pressing	0 V

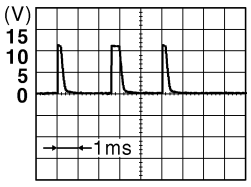
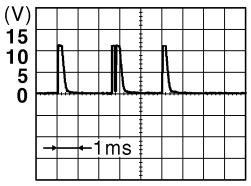
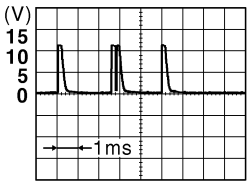
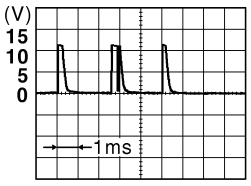
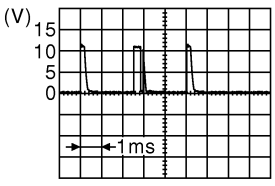
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
24 (GR)	Ground	Door lock status indicator	Output	Door lock status indicator	ON	Battery voltage
					OFF	0 V
25 (GR)	Ground	Rear door switch LH	Input	Rear door switch LH	OFF (When rear door LH closed)	 PKID0924E 11.2 V
					ON (When rear door LH opened)	0 V
26 (R)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 PKID0924E 11.2 V
					ON (When driver door opened)	0 V
27 (BR)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 PKID0924E 11.2 V
					ON (When passenger door opened)	0 V
28 (G)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	Battery voltage
					ON (When back door opened)	0 V
29 (LG)	Ground	Rear door switch RH	Input	Rear door switch RH	OFF (When rear door RH closed)	 PKID0924E 11.2 V
					ON (When rear door RH opened)	0 V
30 (SB)	Ground	Audio link	Input/ Output	—	—	—

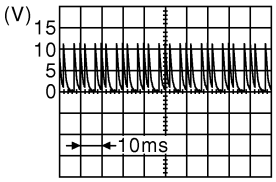
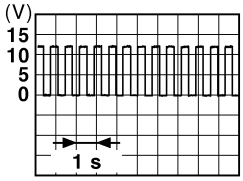
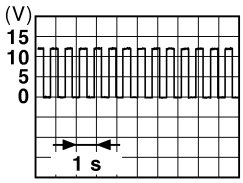
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
31 (BR)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.3 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0168GB 1.3 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 JPMIA0169GB 1.3 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	 JPMIA0196GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
32 (G)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Lighting switch PASS	 JPMIA0167GB 1.3 V
					Lighting switch 2ND	 JPMIA0166GB 1.3 V
					Front wiper switch INT	 JPMIA0168GB 1.3 V
					Front wiper switch HI	 JPMIA0196GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
33 (V)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Turn signal switch LH	 JPMIA0167GB 1.3 V
					Turn signal switch RH	 JPMIA0166GB 1.3 V
					Front wiper switch LO	 JPMIA0168GB 1.3 V
					Front washer switch ON	 JPMIA0196GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (GR)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Rear wiper INT (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 6	 JPMIA0196GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
35 (L)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch HI (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear wiper switch ON	 JPMIA0169GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 JPMIA0196GB 1.3 V
36 (V)	Ground	Key switch	Input	Insert mechanical key into ignition key cylinder		Battery voltage
				Remove mechanical key from ignition key cylinder		0 V
37 (R)	Ground	ACC power supply	Input	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
38 (W)	Ground	Ignition power supply	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
39 (P)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder		Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
40 (LG)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder		Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
41 (V)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
42 (V)	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
43 (L)	Ground	Rear wiper motor	Output	Rear wiper switch OFF		0 V
				Rear wiper switch ON		Battery voltage
44 (L/W)	Ground	Rear wiper auto stop	Input	Ignition switch ON	Rear wiper stop position	0 V
					Any position other than rear wiper stop position	 JPMIA0197GB
45 (GR)	Ground	Back door lock actuator	Output	Back door opener switch	Pressed	Battery voltage (300ms)
					Not pressed	0 V
47 (G/Y)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKID0926E 6.5 V
48 (G/B)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKID0926E 6.5 V
49 (Y)	Ground	Rear fog lamp	Output	Lighting switch 1ST and front fog lamp switch ON	Rear fog lamp switch OFF	0 V
					Rear fog lamp switch ON	Battery voltage
51 (R/W)*1 (R)*2	Ground	Stop lamp switch	Input	Depress the brake pedal		Battery voltage
				Release the brake pedal		0 V

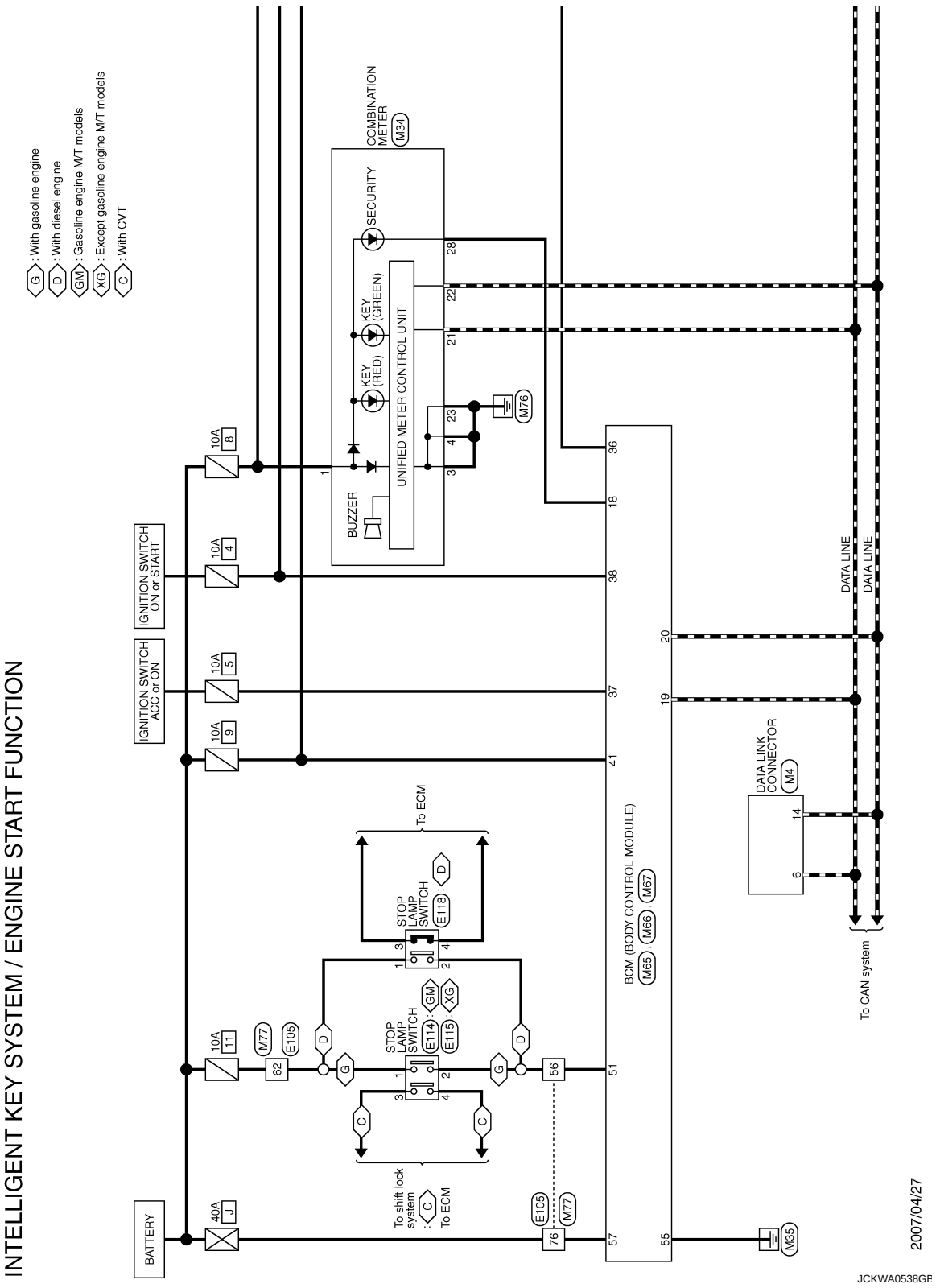
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
52 (R)	Ground	Room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
53 (L)	Ground	Power window power supply	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
54 (O)	Ground	Door unlock (All)	Output	Door lock/unlock switch	Pressed to the unlock side	Battery voltage
					Pressed to the lock side	0 V
55 (B)	Ground	Ground	—	Ignition switch ON		0 V
56 (Y)[*1] (SB)[*2]	Ground	Door lock (All)	Output	Door lock/unlock switch	Pressed to the unlock side	0 V
					Pressed to the lock side	Battery voltage
57 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
58 (P)	Ground	Power window power supply	Output	Ignition switch OFF		Battery voltage
59 (BR)	Ground	Super lock	Output	When lock button of key fob or Intelligent Key is not pressed		0 V
				When lock button of key fob or Intelligent Key is pressed		Battery voltage
60 (GR)	Ground	Driver door unlock	Output	Door lock/unlock switch	Pressed to the unlock side	Battery voltage
					Pressed to the lock side	0 V

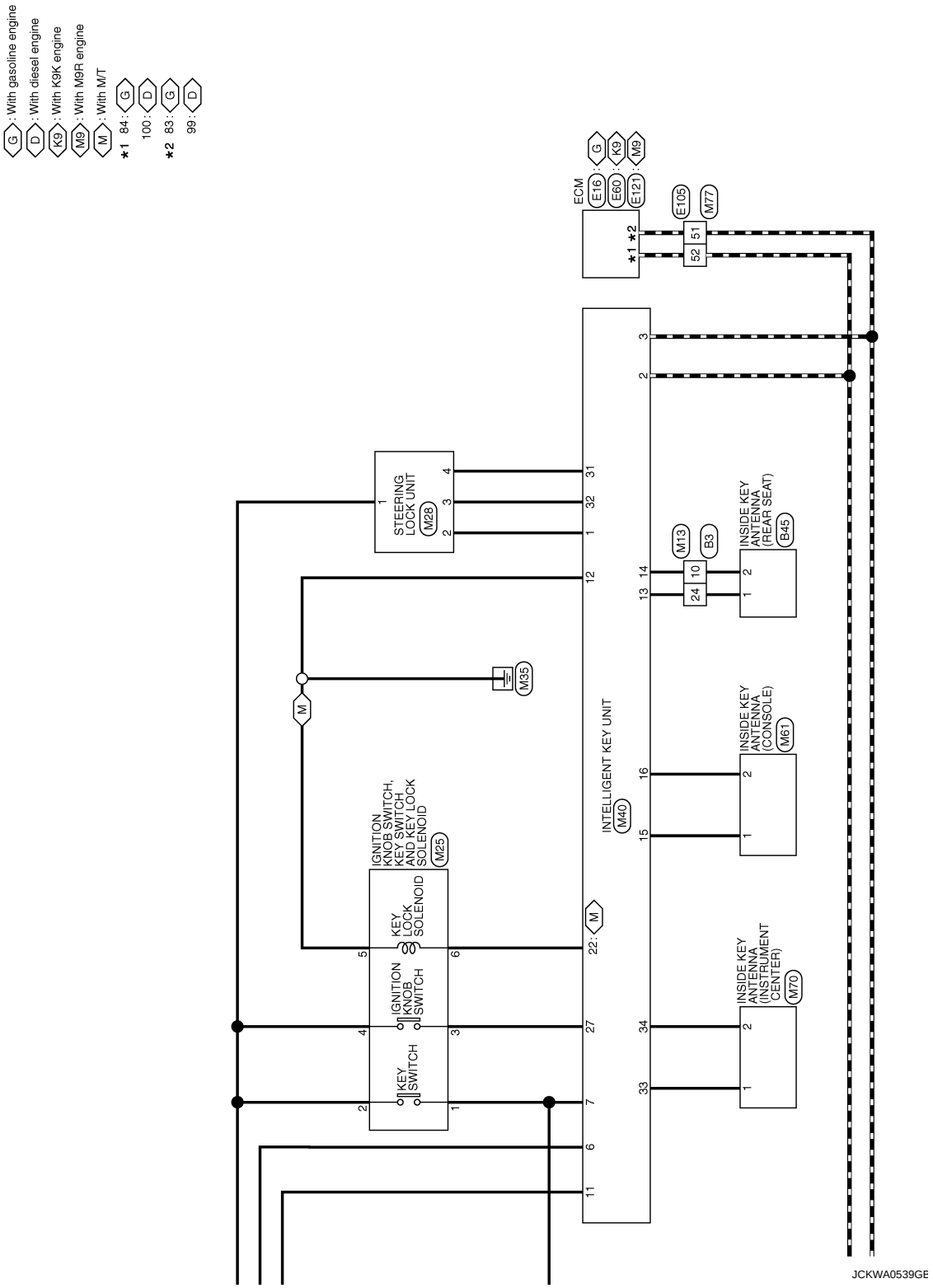
*1: With Intelligent Key system

*2: Without Intelligent Key system

Wiring Diagram - INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION -

INFOID:0000000001609221




G : With gasoline engine
D : With diesel engine
K9 : With K9K engine
M9 : With M9R engine
M : With M/T
*1 84 : G
100 : D
*2 83 : G
99 : D
ECM
E16 : G
E60 : K9
E121 : M9
E105
M77
51
52
*1 *2
STEERING LOCK UNIT
M28
INTELLIGENT KEY UNIT
M40
M13
B3
INSIDE KEY ANTENNA (REAR SEAT)
B45
M35
INSIDE KEY ANTENNA (CONSOLE)
M61
IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
M25
KEY LOCK SOLENOID
IGNITION KNOB SWITCH
KEY SWITCH
22 : M
INSIDE KEY ANTENNA (INSTRUMENT CENTER)
M70
JCKWA0539GE

INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION

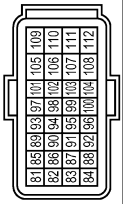
Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
10	W/R	–
24	Y	–

Connector No.	B45
Connector Name	INSIDE KEY ANTENNA (REAR SEAT)
Connector Type	RK02FGY

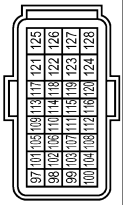
Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
2	W/R	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH



Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-L1
84	L	CAN-H1

Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH



Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
51	P	–
52	L	–
56	R/W	–
62	V	–
76	Y	–

Connector No.	E114
Connector Name	STOP LAMP SWITCH
Connector Type	M02FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	R/W	–

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	R/W	–
3	G	–
4	B	–

Connector No.	E118
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	R/W	–
3	O	–
4	W/L	–

JCKWA0540GB

INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION

Connector No.	E121
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L(BODY)
100	L	MAIN CAN-H(BODY)

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

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW

Terminal No.	Color of Wire	Signal Name [Specification]
10	W	–
24	Y	–

Connector No.	M25
Connector Name	IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
Connector Type	TK06MGY

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	Y	–
3	L	–
4	Y	–
5	B	–
6	W	–

Connector No.	M28
Connector Name	STEERING LOCK UNIT
Connector Type	TK04FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
2	LG	–
3	P	–
4	GR	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
3	B	GND
4	B	GND(ILLUM)
21	L	CAN-H
22	P	CAN-L
23	B	GND
28	SB	SECURITY

Connector No.	M40
Connector Name	INTELLIGENT KEY UNIT
Connector Type	TH40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	STRG C/U 5V
2	L	CAN-H
3	P	CAN-L
6	W	IGN SW
7	V	KEY SW
11	V	BATT+
12	B	GND
13	Y	REAR SEAT (+)
14	W	REAR SEAT (–)
15	SB	CONSOLE (+)
16	BR	CONSOLE (–)

22	W	KEY I/L SOL
27	L	KNOB SW
31	GR	STRG C/U GND
32	P	STRG C/U SIG
33	O	INSTRUMENT (+)
34	G	INSTRUMENT (–)

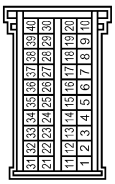
JCKWA0541GE

INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION

Connector No.	M61
Connector Name	INSIDE KEY ANTENNA (CONSOLE)
Connector Type	RK02FGY

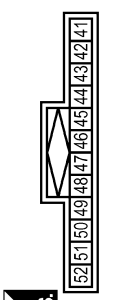
Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	–
2	BR	–

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



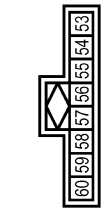
Terminal No.	Color of Wire	Signal Name [Specification]
18	SB	SECURITY INDICATOR
19	L	CAN-H
20	P	CAN-L
36	V	KEY SW
37	R	ACC SW
38	W	IGN SW

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
51	R/W	STOP LAMP SW [With Intelligent Key]

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

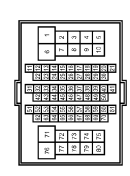


Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M70
Connector Name	INSIDE KEY ANTENNA (INSTRUMENT CENTER)
Connector Type	RK02FGY

Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	G	–

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
51	P	–
52	L	–
56	R/W	–[RHD models with Intelligent Key]
62	V	–
76	Y	–

JCKWA0542GB

Wiring Diagram - THEFT WARNING SYSTEM -

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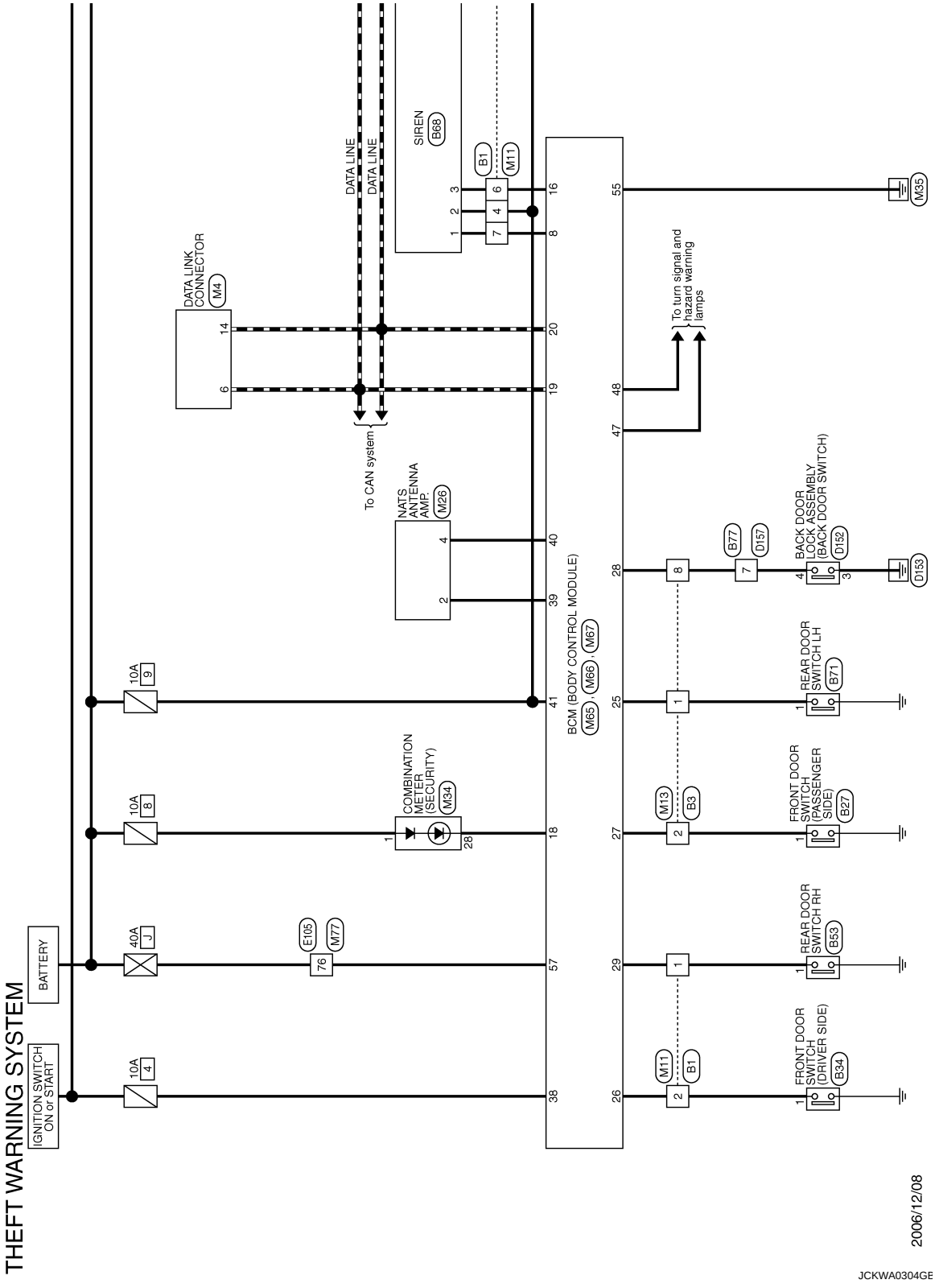
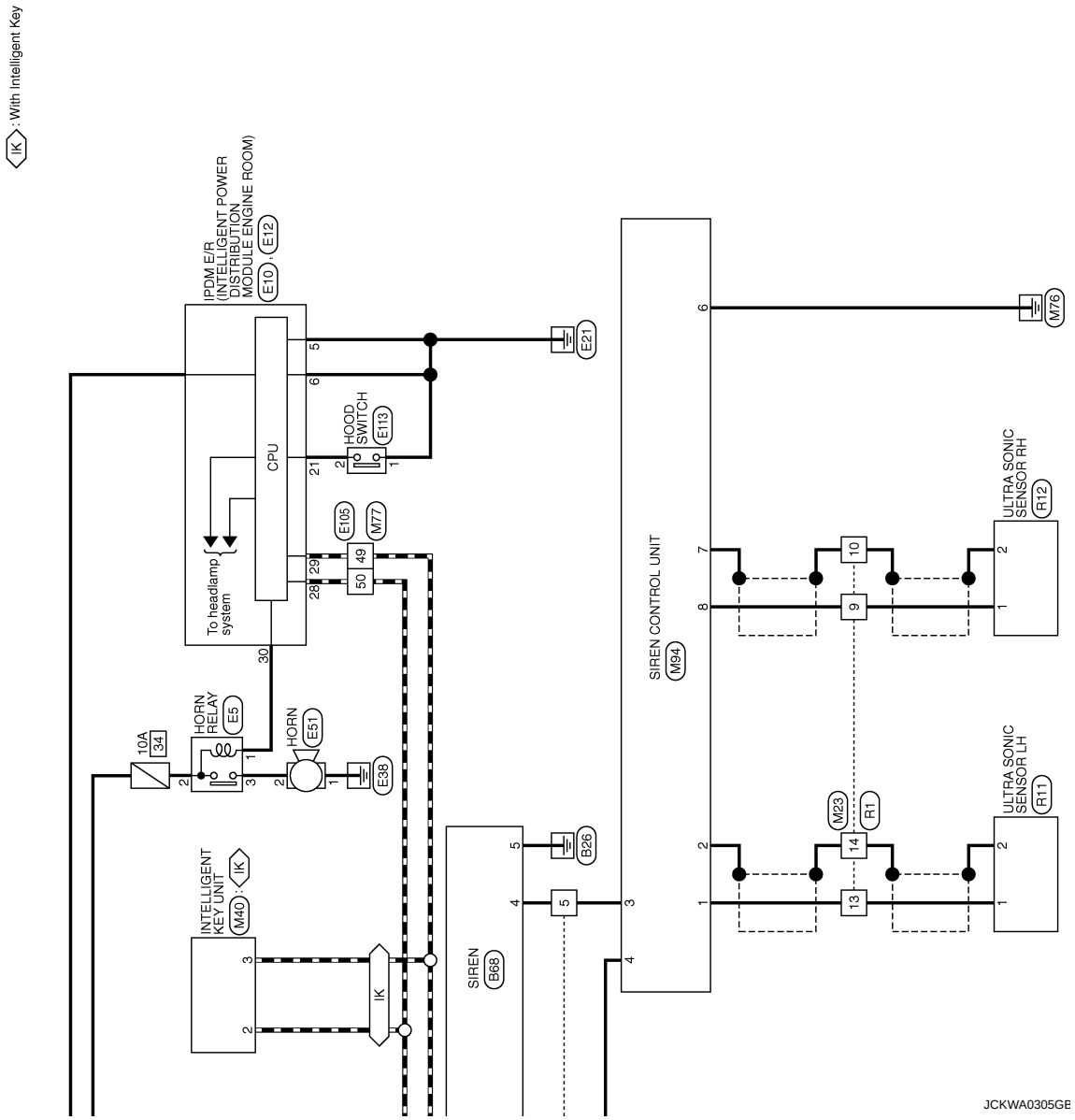



IK : With Intelligent Key
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 , E12
CPU
To headlamp system
HOOD SWITCH
E113
E21
E105
M77
49
50
29
28
30
10A
34
HORN RELAY
E5
HORN
E51
E38
INTELLIGENT KEY UNIT
M40 : IK
IK
SIREN
B68
B26
SIREN CONTROL UNIT
M94
M76
ULTRA SONIC SENSOR RH
R12
ULTRA SONIC SENSOR LH
R11
M23
R1
JCKWA0305GE

THEFT WARNING SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R/W	–[RHD models]
4	V	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

Connector No.	B27
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–

Connector No.	B68
Connector Name	SIREN
Connector Type	RH06FB

H.S.

1	2	3	4	5	6

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	HAZARD REQ
2	V	B+
3	GR	COMMON LINK
4	Y	U/S LINK
5	B	GND

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

JCKWA0543GE

THEFT WARNING SYSTEM

Connector No.	D152
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	CINCH 49309 EV 4M9

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–
4	G	–

Connector No.	D157
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

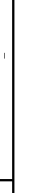
Connector No.	E5
Connector Name	HORN RELAY
Connector Type	–

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	GR/L	–
3	G	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

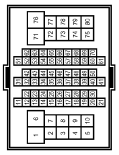


Terminal No.	Color of Wire	Signal Name [Specification]
21	GR	–
28	L	–
29	P	–
30	L	–

Connector No.	E51
Connector Name	HORN
Connector Type	DELPHI 15419715

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	G	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

Connector No.	E113
Connector Name	HOOD SWITCH
Connector Type	W02FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	GR	–

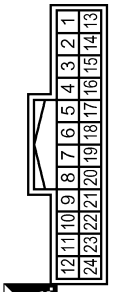
JCKWA0544GE

THEFT WARNING SYSTEM

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

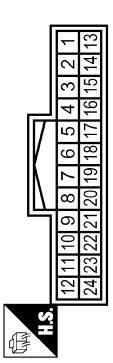
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



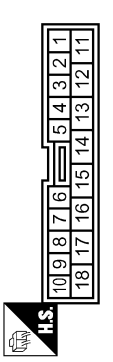
Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R	–[RHD models]
4	R	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	P	–
4	LG	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
28	SB	SECURITY

Connector No.	M40
Connector Name	INTELLIGENT KEY UNIT
Connector Type	TH40FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	CAN-H
3	P	CAN-L

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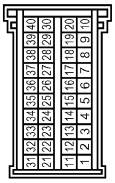
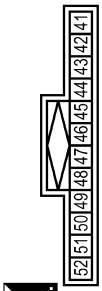
THEFT WARNING SYSTEM

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



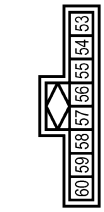
Terminal No.	Color of Wire	Signal Name [Specification]
8	LG	HAZARD SW
16	GR	ALARM LINK
18	SB	SECURITY INDICATOR
19	L	CAN-H
20	P	CAN-L
25	GR	DOOR SW (RL)
26	R	DOOR SW (DR)
27	BR	DOOR SW (AS)
28	G	DOOR SW (BACK)
29	LG	DOOR SW (RR)
38	W	IGN SW
39	P	NATS ANTENNA AMP
40	LG	NATS ANTENNA AMP

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
47	G/Y	FLASHER OUTPUT (LEFT)
48	G/B	FLASHER OUTPUT (RIGHT)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

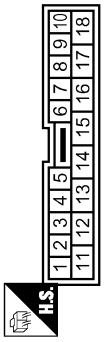
Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

Connector No.	M94
Connector Name	SIREN CONTROL UNIT
Connector Type	A08FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	U/S LEFT (TX)
2	SHIELD	SHIELD
3	Y	U/S LINK
4	R	B+
6	B	GND
7	SHIELD	SHIELD
8	W	U/S RIGHT (RX)

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

Connector No.	R11
Connector Name	ULTRA SONIC SENSOR LH
Connector Type	A02MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	SIG
2	SHIELD	SHIELD

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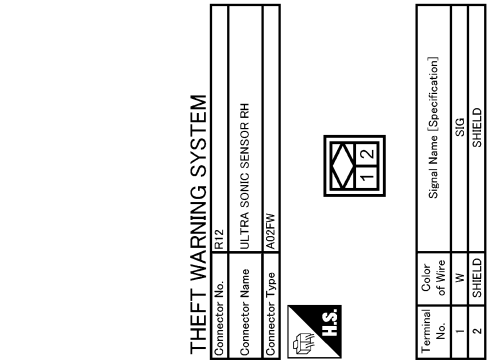
THEFT WARNING SYSTEM

Connector No.	R12
Connector Name	ULTRA SONIC SENSOR RH
Connector Type	A02FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	SIG
2	SHIELD	SHIELD

JCKWA0547GE

Wiring Diagram - NATS -

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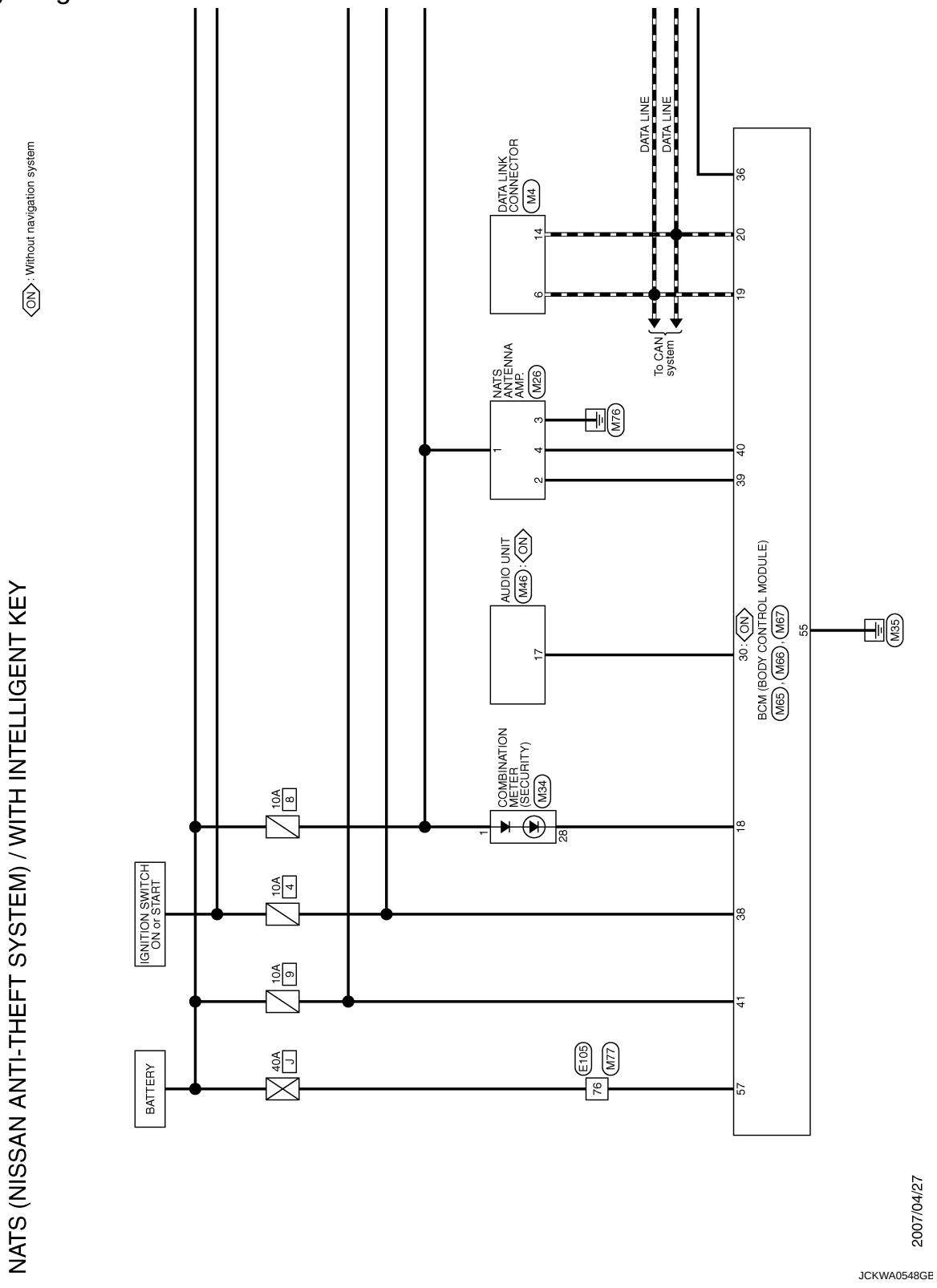
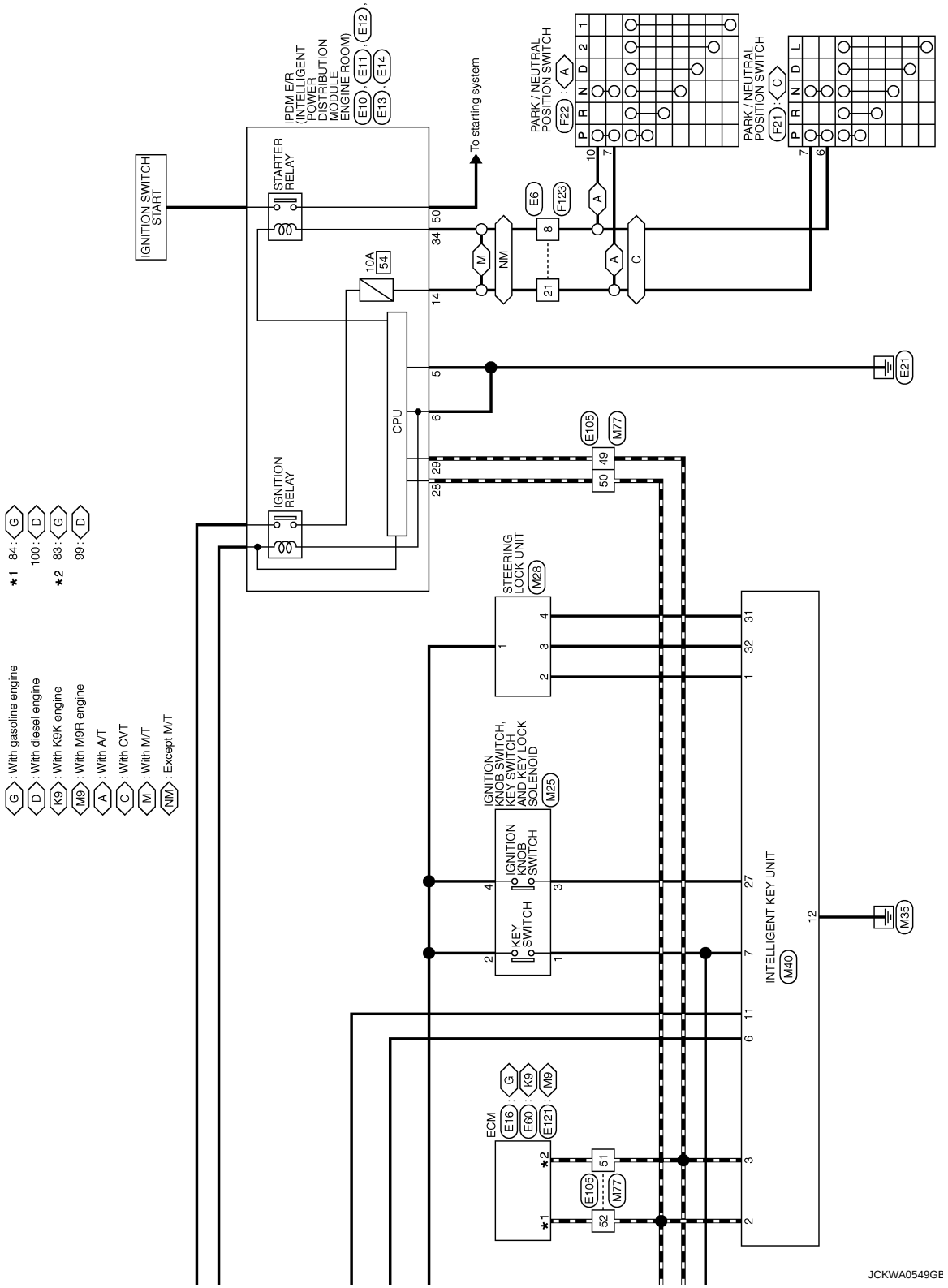


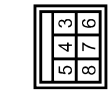

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E12, E13, E14
To starting system
PARK / NEUTRAL POSITION SWITCH
F22 : A
P R N D 2 1
PARK / NEUTRAL POSITION SWITCH
F21 : C
P R N D L
IGNITION SWITCH START
STARTER RELAY
10A 54
IGNITION RELAY
CPU
NM
M
A
C
E6
F123
E21
E105
M77
STEERING LOCK UNIT
M28
IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
M25
IGNITION KNOB SWITCH
KEY SWITCH
INTELLIGENT KEY UNIT
M40
M35
ECM
E16 : G
E60 : K9
E121 : M9
*1 84 : G
100 : D
*2 83 : G
99 : D
G : With gasoline engine
D : With diesel engine
K9 : With K9K engine
M9 : With M9R engine
A : With A/T
C : With CVT
M : With M/T
NM : Except M/T
JCKWA0549GE

NATS (NISSAN ANTI-THEFT SYSTEM) / WITH INTELLIGENT KEY

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK24MW-1Y

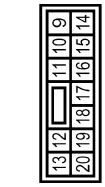
Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC



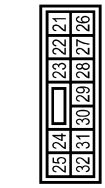
Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS



Terminal No.	Color of Wire	Signal Name [Specification]
14	R/B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
28	L	–
29	P	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
34	W/B	–[With A/T]
34	R/B	–[Except A/T]

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	YZK 7283-5691-40-F

Terminal No.	Color of Wire	Signal Name [Specification]
50	B/R	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-L
84	L	CAN-H

Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

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NATS (NISSAN ANTI-THEFT SYSTEM) / WITH INTELLIGENT KEY

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
51	P	–
52	L	–
76	Y	–

Connector No.	E121
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
98	P	MAIN CAN-L(BODY)
100	L	MAIN CAN-H(BODY)

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK24FW-1Y

Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

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

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	F21
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	RK08FG

Terminal No.	Color of Wire	Signal Name [Specification]
6	W/B	–
7	R/B	–

Connector No.	F22
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	YDX06FB-HS4

Terminal No.	Color of Wire	Signal Name [Specification]
7	R/B	–
10	W/B	–

Connector No.	M25
Connector Name	IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
Connector Type	TK06MGY

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	Y	–
3	L	–
4	Y	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	P	–
3	B	–
4	LG	–

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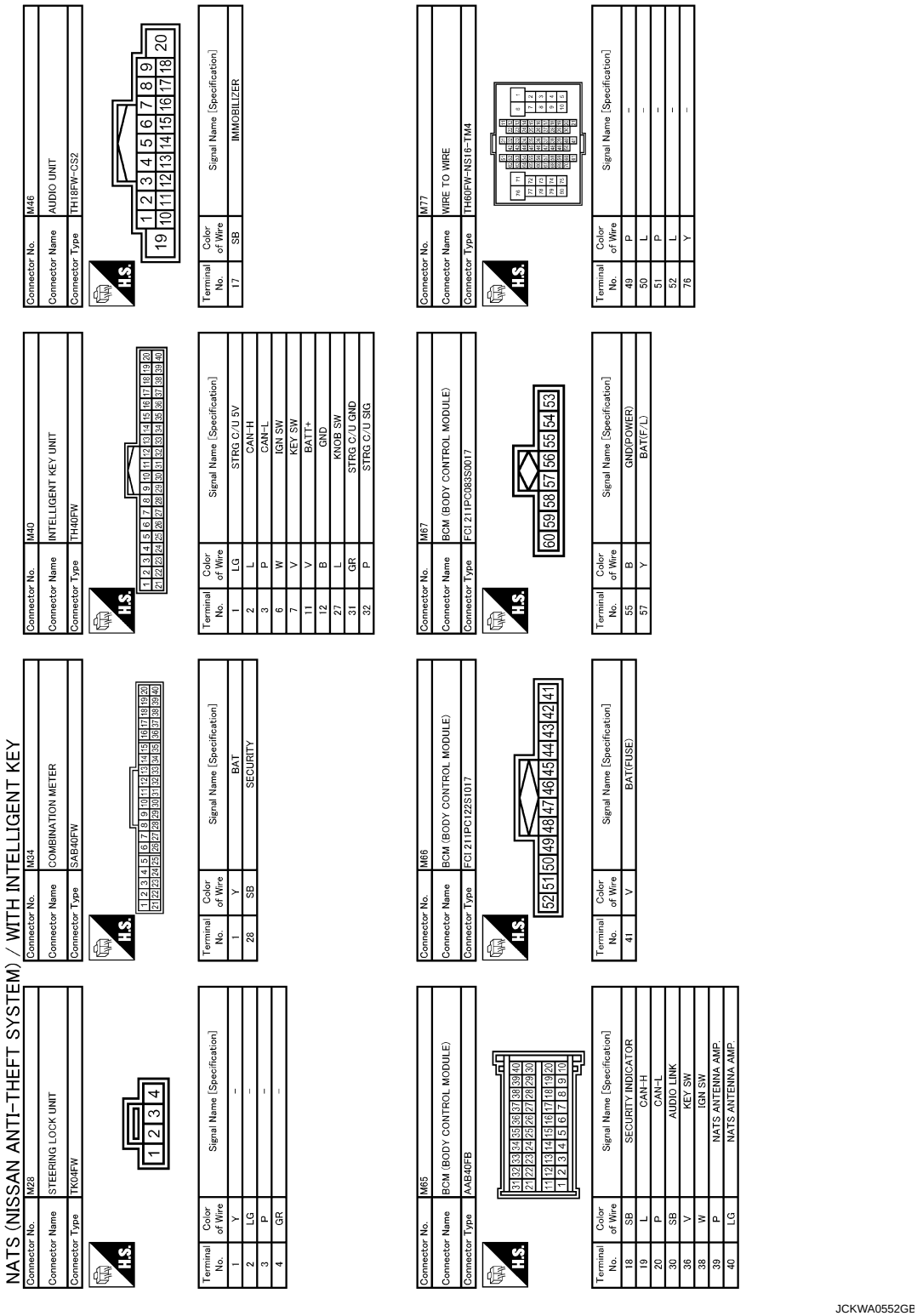

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Fail Safe

INFOID:0000000001559455

Fail-safe index

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

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2191: DIFFERENCE OF KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2192: ID DISCORD BCM-ECM	Fuel cut (ECM)	Erase DTC
B2193: CHAIN OF BCM-ECM	Fuel cut (ECM)	Erase DTC
B2194: DISCORD BCM-I-KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2195: ANTI SCANNING	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2196: DONGLE NG	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC

REAR WIPER CONTROL

BCM detects a rear wiper stopping position according to a rear wiper auto stop signal.
When a rear wiper auto stop signal is in the condition listed below, BCM stops power supply to rear wiper after rear wiper is activated for five seconds.

Ignition switch	Rear wiper switch	Rear wiper auto stop signal
ON	OFF	The rear wiper auto stop signal (stop position) cannot be input for 5 seconds.
	ON	The rear wiper auto stop signal does not change for 5 seconds.

NOTE:
The above operation is repeated when operating the rear wiper switch one minute after the stop of the rear wiper caused by Fail-safe.

TURN SIGNAL LAMP CONTROL

BCM detects the turn signal lamp circuit status from the terminal voltage.
BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:
The blinking speed is normal while activating the hazard warning lamp.

LIGHT & RAIN SENSOR MALFUNCTION DETECTION FUNCTION

BCM controls the following items when LIGHT & RAIN sensor has a malfunction.

Auto Light Control
Headlamp is turned ON.

Front Wiper Control
The condition just before the activation of Fail-safe is maintained until the front wiper switch is turned OFF.

DTC Inspection Priority Chart

INFOID:0000000001559456

Priority	DTC
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERNCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2194: DISCORD BCM-I-KEY • B2195: ANTI SCANNING • B2196: DONGLE NG

DTC Index

INFOID:0000000001559457

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.
- PAST: Displays when there is a malfunction that is detected in the past and stored.
- 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	TIME		Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	0	1 - 39	—	BCS-33
U1010: CONTROL UNIT (CAN)	0	1 - 39	—	BCS-34
B2190: NATS ANTENNA AMP	CRNT	PAST	×	• With Intelligent Key system SEC-45 • Without Intelligent Key system SEC-194
B2191: DIFFERENCE OF KEY	CRNT	PAST	×	• With Intelligent Key system SEC-47 • Without Intelligent Key system SEC-196
B2192: ID DISCORD BCM-ECM	CRNT	PAST	×	• With Intelligent Key system SEC-48 • Without Intelligent Key system SEC-197
B2193: CHAIN OF BCM-ECM	CRNT	PAST	×	• With Intelligent Key system SEC-50 • Without Intelligent Key system SEC-199
B2194: DISCORD BCM-I-KEY	CRNT	PAST	×	SEC-51
B2195: ANTI SCANNING	CRNT	PAST	×	• With Intelligent Key system SEC-52 • Without Intelligent Key system SEC-200
B2196: DONGLE NG	CRNT	PAST	×	• With Intelligent Key system SEC-53 • Without Intelligent Key system SEC-201

INTELLIGENT KEY UNIT

Reference Value

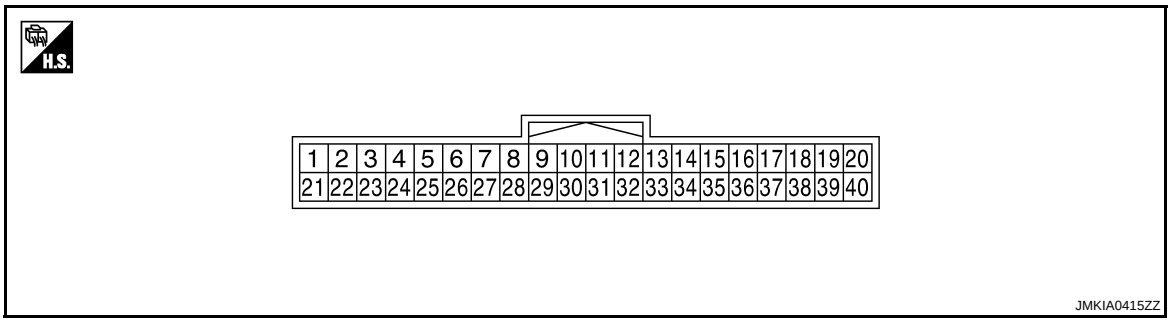
INFOID:0000000001184678

VALUES ON THE DIAGNOSIS TOOL

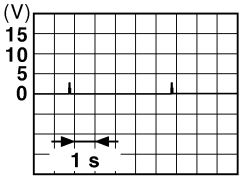
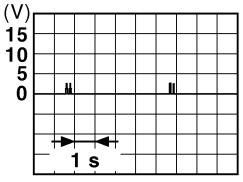
CONSULT-III MONITOR ITEM

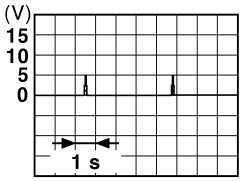
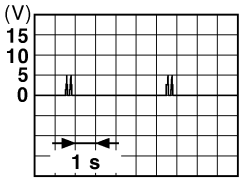
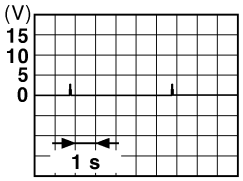
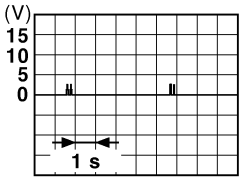
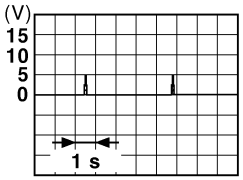
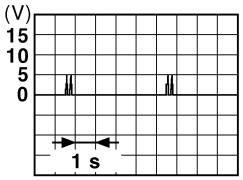
Monitor Item	Condition		Value/Status
PUSH SW	Ignition knob	Release	OFF
		Press	ON
KEY SW	Mechanical key	Removed	OFF
		Inserted	ON
DR REQ SW	Door request switch (driver)	Release	OFF
		Press	ON
AS REQ SW	Door request switch (passenger)	Release	OFF
		Press	ON
BD/TR REQ SW	Door request switch (back door)	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
DOOR LOCK SIG	Lock button of Intelligent Key	Release	OFF
		Press	ON
DOOR UNLOCK SIG	Unlock button of Intelligent Key	Release	OFF
		Press	ON
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
DOOR BK SW	Back door	Close	OFF
		Open	ON
VEHICLE SPEED	While driving		Equivalent to speedometer reading

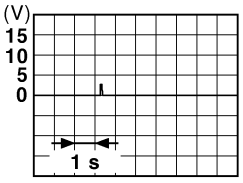
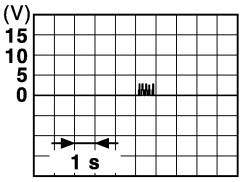
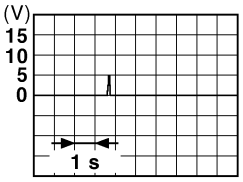
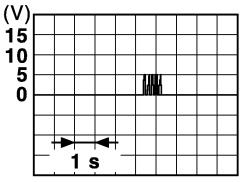
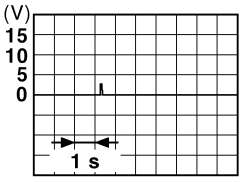
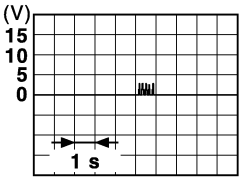
TERMINAL LAYOUT

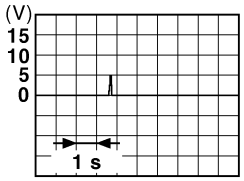
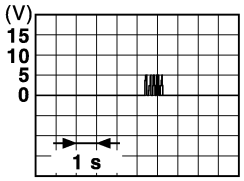
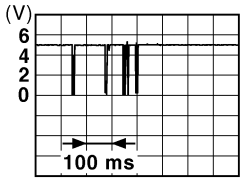


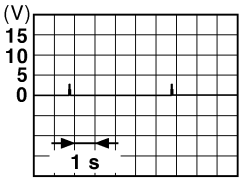
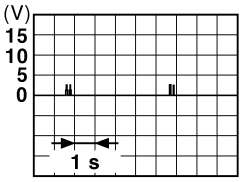
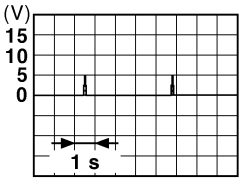
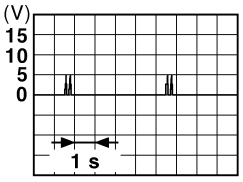
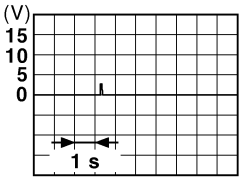
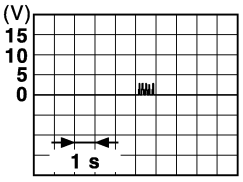
PHYSICAL VALUES

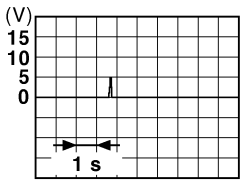
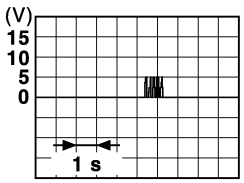
Terminal No. +	Terminal No. –	Wire color	Description: Signal name	Description: Input/ Output	Condition		Value [V] (Approx.)
1	Ground	LG	Steering lock unit power supply	Output	Ignition switch	OFF or ACC	5
						ON	0
2	Ground	L	CAN-H	Input/ Output	—		—
3	Ground	P	CAN-L	Input/ Output	—		—
4	Ground	LG	Intelligent Key warning buzzer	Output	Intelligent Key warning buzzer	Sounding	0
						Not sounding	Battery voltage
5	Ground	P	Front door request switch (driver side)	Input	Front door request switch (driver side)	ON (Pressed)	0
						OFF (Released)	5
6	Ground	W	Ignition switch power supply	Input	Ignition switch	OFF or ACC	0
						ON or START	Battery voltage
7	Ground	V	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
11	Ground	V	Battery power supply	Input	Ignition switch OFF		Battery voltage
12	Ground	B	Ground	—	Ignition switch ON		0
13	Ground	Y	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

Terminal No.		Wire color	Description		Condition		Value [V] (Approx.)
+	–		Signal name	Input/ Output			
14	Ground	W	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	Ground	SB	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
16	Ground	BR	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

Terminal No. +	Terminal No. –	Wire color	Description Signal name	Description Input/ Output	Condition		Value [V] (Approx.)
17	Ground	SB	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	Ground	V	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
19	Ground	L	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

Terminal No.		Wire color	Description		Condition		Value [V] (Approx.)
+	–		Signal name	Input/ Output			
20	Ground	BR	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
22[*1]	Ground	W	Key lock solenoid	Output	Key lock solenoid	LOCK[*2]	Battery voltage
						UNLOCK[*2]	0
25	Ground	BR	Front door request switch (passenger side)	Input	Front door request switch (passenger side)	ON (Pressed)	0
						OFF (Released)	5
27	Ground	L	Ignition knob switch	Input	Ignition switch OFF	When ignition knob switch is pressed	Battery voltage
						When ignition knob switch is released	0
29	Ground	GR	Back door request switch	Input	Back door request switch	ON (Pressed)	0
						OFF (Released)	5
31	Ground	GR	Steering lock unit ground	—	—	—	0
32	Ground	P	Steering lock unit communication	Input/ Output	Steering lock	LOCK status	5
						LOCK or UNLOCK	 JMKIA0433ZZ

Terminal No. +	Terminal No. –	Wire color	Description Signal name	Description Input/ Output	Condition		Value [V] (Approx.)
33	Ground	O	Inside key antenna (+) (instrument center)	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
34	Ground	G	Inside key antenna (-) (instrument center)	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
37	Ground	L	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

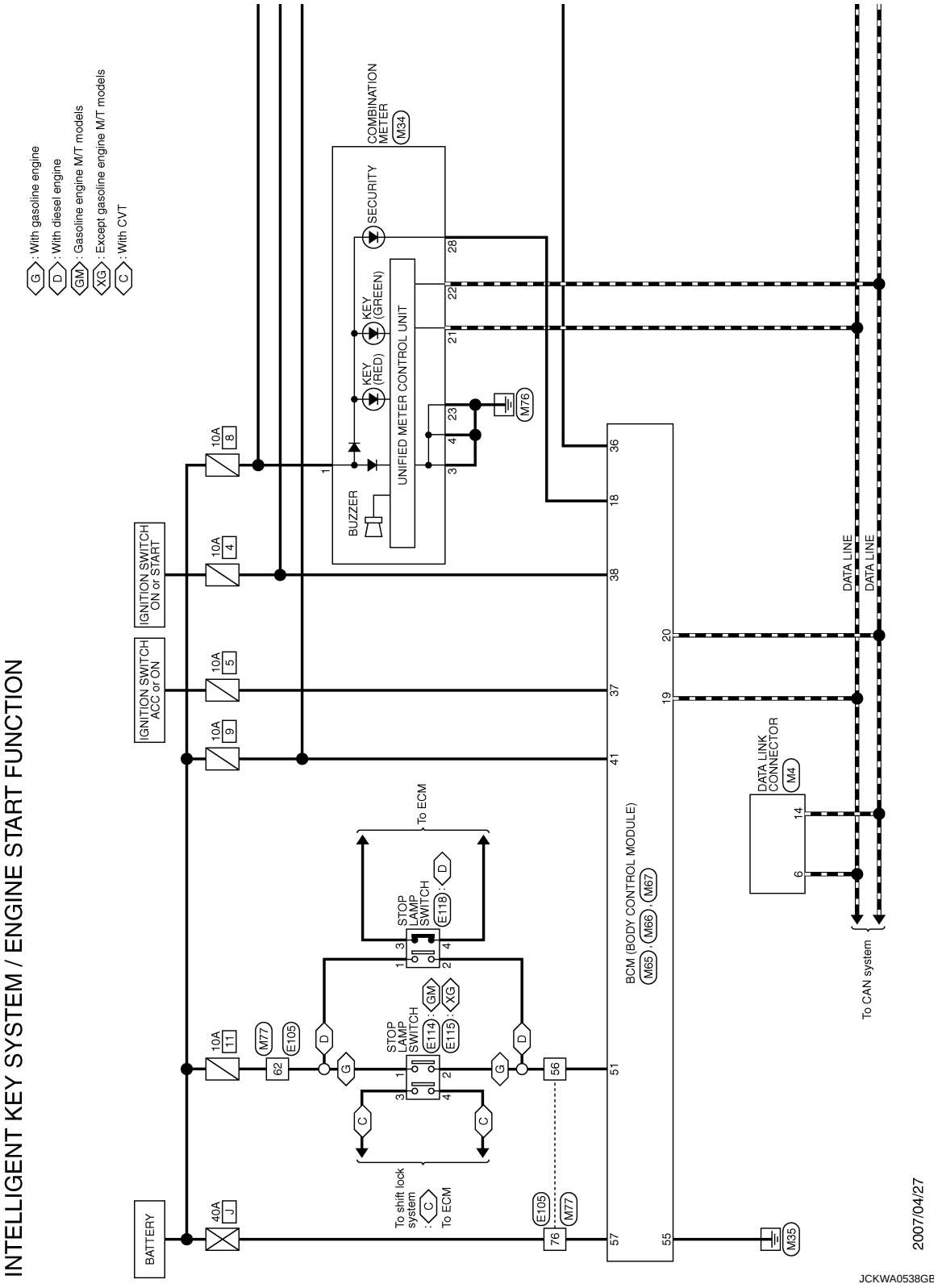
Terminal No.		Wire color	Description		Condition		Value [V] (Approx.)
+	–		Signal name	Input/ Output			
38	Ground	O	Outside key antenna (-) (passenger side)	Output	When the front door request switch (passenger side) is operated with ignition switch OFF	When Intelligent Key is in the antenna detection area	 JMKIA0395ZZ
						When Intelligent Key is not in the antenna detection area	 JMKIA0515ZZ
40	Ground	Y	Passenger side anti-hijack relay	Input	Press front door request switch (passenger side)	Anti-hijack operation	Battery voltage → 0 → Battery voltage
						Other than above	Battery voltage

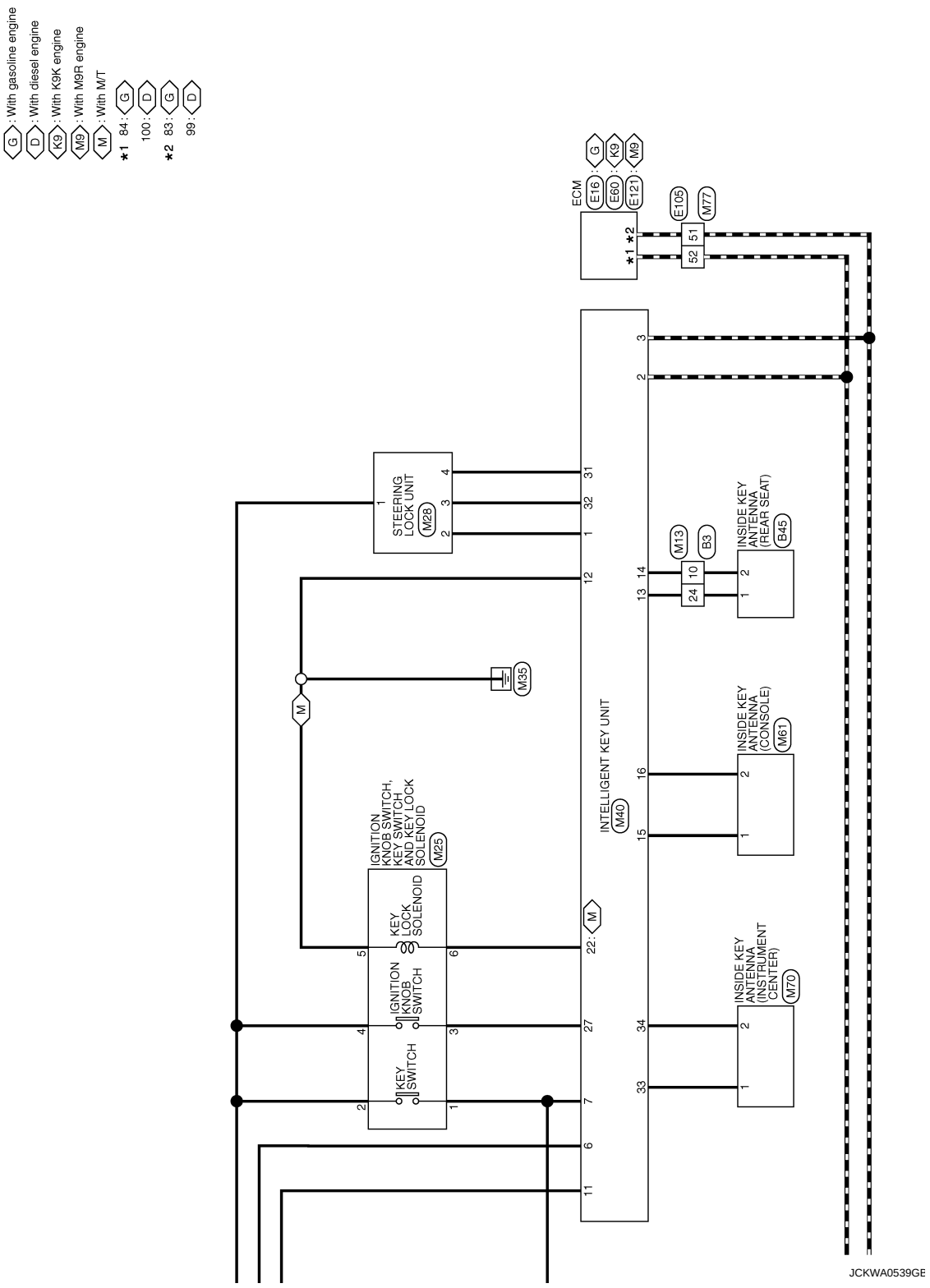
*1: Only for M/T model.

*2: Key interlock operation is only for M/T model for operation condition, refer to SEC-10, "System Description".

Wiring Diagram - INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION -

INFOID:0000000001184679




G : With gasoline engine
D : With diesel engine
K9 : With K9K engine
M9 : With M9R engine
M : With M/T
*1 84 : G
100 : D
*2 83 : G
99 : D
ECM
E16 : G
E60 : K9
E121 : M9
E105
M77
*1 *2
51
52
STEERING LOCK UNIT
M28
INTELLIGENT KEY UNIT
M40
M13
B3
INSIDE KEY ANTENNA (REAR SEAT)
B45
M35
INSIDE KEY ANTENNA (CONSOLE)
M61
IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
M25
KEY LOCK SOLENOID
IGNITION KNOB SWITCH
KEY SWITCH
22 : M
INSIDE KEY ANTENNA (INSTRUMENT CENTER)
M70
JCKWA0539GE

INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION

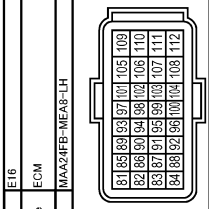
Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
10	W/R	–
24	Y	–

Connector No.	B45
Connector Name	INSIDE KEY ANTENNA (REAR SEAT)
Connector Type	RK02FGY

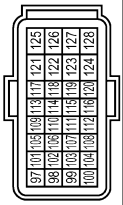
Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
2	W/R	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH



Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-LI
84	L	CAN-HI

Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH



Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
51	P	–
52	L	–
56	R/W	–
62	V	–
76	Y	–

Connector No.	E114
Connector Name	STOP LAMP SWITCH
Connector Type	M02FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	R/W	–

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	R/W	–
3	G	–
4	B	–

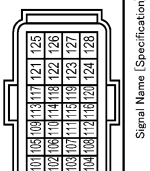
Connector No.	E118
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	R/W	–
3	O	–
4	W/L	–

JCKWA0540GB

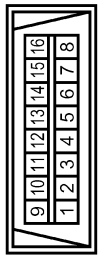
INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION

Connector No.	E121
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH



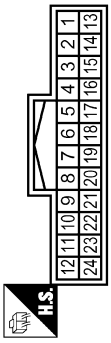
Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L(BODY)
100	L	MAIN CAN-H(BODY)

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



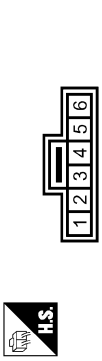
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
10	W	–
24	Y	–

Connector No.	M25
Connector Name	IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
Connector Type	TK06MGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	Y	–
3	L	–
4	Y	–
5	B	–
6	W	–

Connector No.	M40
Connector Name	INTELLIGENT KEY UNIT
Connector Type	TH40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	STRG C/U 5V
2	L	CAN-H
3	P	CAN-L
6	W	IGN SW
7	V	KEY SW
11	V	BATT+
12	B	GND
13	Y	REAR SEAT (+)
14	W	REAR SEAT (–)
15	SB	CONSOLE (+)
16	BR	CONSOLE (–)

22	W	KEY I/L SOL
27	L	KNOB SW
31	GR	STRG C/U GND
32	P	STRG C/U SIG
33	O	INSTRUMENT (+)
34	G	INSTRUMENT (–)

Connector No.	M28
Connector Name	STEERING LOCK UNIT
Connector Type	TK04FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
2	LG	–
3	P	–
4	GR	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
3	B	GND
4	B	GND(ILLUM)
21	L	CAN-H
22	P	CAN-L
23	B	GND
28	SB	SECURITY

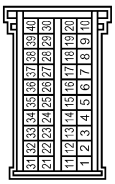
JCKWA0541GE

INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION

Connector No.	M61
Connector Name	INSIDE KEY ANTENNA (CONSOLE)
Connector Type	RK02FGY

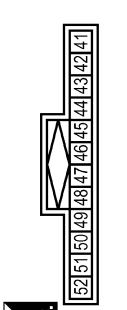
Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	–
2	BR	–

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



Terminal No.	Color of Wire	Signal Name [Specification]
18	SB	SECURITY INDICATOR
19	L	CAN-H
20	P	CAN-L
36	V	KEY SW
37	R	ACC SW
38	W	IGN SW

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
51	R/W	STOP LAMP SW [With Intelligent Key]

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M70
Connector Name	INSIDE KEY ANTENNA (INSTRUMENT CENTER)
Connector Type	RK02FGY

Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	G	–

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
51	P	–
52	L	–
56	R/W	–[RHD models with Intelligent Key]
62	V	–
76	Y	–

JCKWA0542GB

Wiring Diagram - THEFT WARNING SYSTEM -

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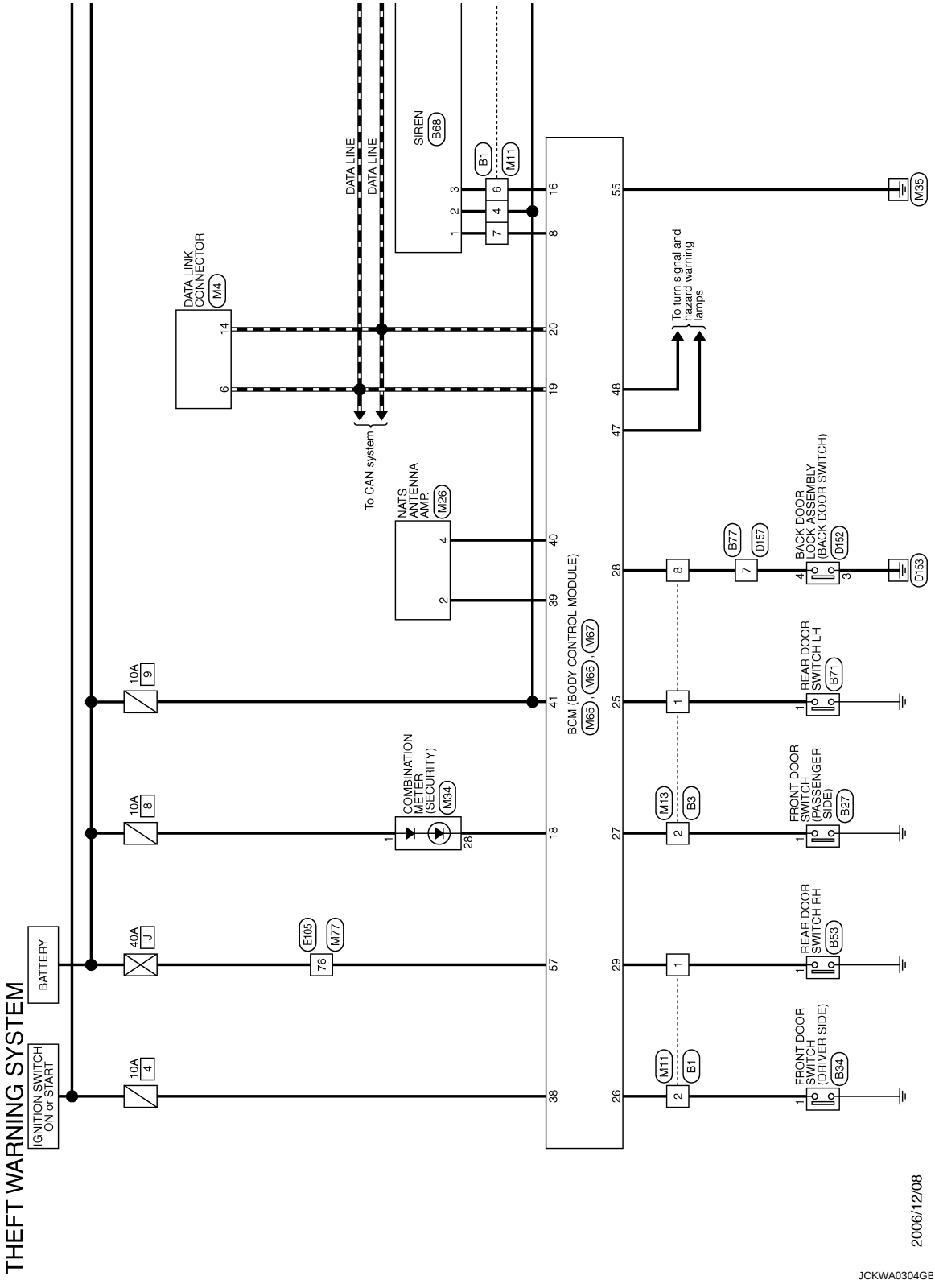

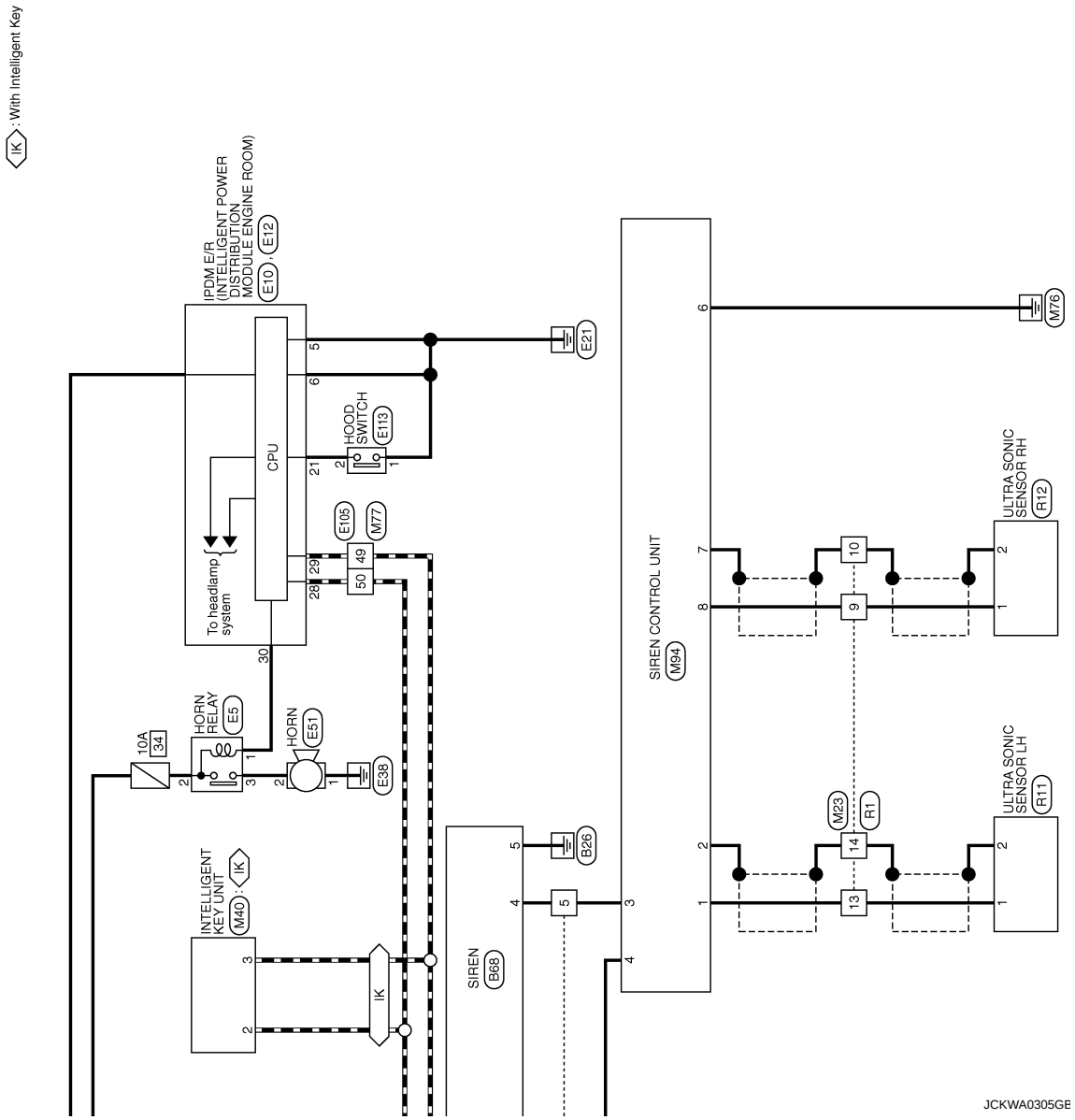
IK : With Intelligent Key
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 , E12
CPU
To headlamp system
HOOD SWITCH
E113
E21
E105
M77
49
50
29
28
30
10A
34
HORN RELAY
E5
HORN
E51
E38
INTELLIGENT KEY UNIT
M40 : IK
IK
SIREN
B68
B26
SIREN CONTROL UNIT
M94
M76
ULTRA SONIC SENSOR RH
R12
ULTRA SONIC SENSOR LH
R11
M23
R1
JCKWA0305GE

THEFT WARNING SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R/W	–[RHD models]
4	V	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

Connector No.	B27
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–

Connector No.	B68
Connector Name	SIREN
Connector Type	RH06FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	HAZARD REQ
2	V	B+
3	GR	COMMON LINK
4	Y	U/S LINK
5	B	GND

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

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THEFT WARNING SYSTEM

Connector No.	D152
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	CINCH 49309 EV 4M9

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–
4	G	–

Connector No.	D157
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

Connector No.	E5
Connector Name	HORN RELAY
Connector Type	–

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	GR/L	–
3	G	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

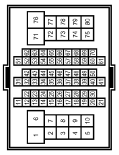
Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
21	GR	–
28	L	–
29	P	–
30	L	–

Connector No.	E51
Connector Name	HORN
Connector Type	DELPHI 15419715

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	G	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

Connector No.	E113
Connector Name	HOOD SWITCH
Connector Type	W02FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	GR	–

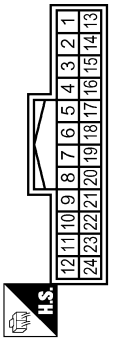
JCKWA0544GE

THEFT WARNING SYSTEM

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

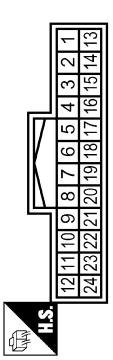
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



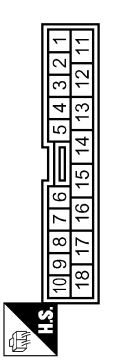
Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R	–[RHD models]
4	R	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	P	–
4	LG	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
28	SB	SECURITY

Connector No.	M40
Connector Name	INTELLIGENT KEY UNIT
Connector Type	TH40FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	CAN-H
3	P	CAN-L

JCKWA0545GE

THEFT WARNING SYSTEM

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

Terminal No.	Color of Wire	Signal Name [Specification]
8	LG	HAZARD SW
16	GR	ALARM LINK
18	SB	SECURITY INDICATOR
19	L	CAN-H
20	P	CAN-L
25	GR	DOOR SW (RL)
26	R	DOOR SW (DR)
27	BR	DOOR SW (AS)
28	G	DOOR SW (BACK)
29	LG	DOOR SW (RR)
38	W	IGN SW

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

39	P	NATS ANTENNA AMP
40	LG	NATS ANTENNA AMP

Connector No.	M94
Connector Name	SIREN CONTROL UNIT
Connector Type	A08FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	U/S LEFT (TX)
2	SHIELD	SHIELD
3	Y	U/S LINK
4	R	B+
6	B	GND
7	SHIELD	SHIELD
8	W	U/S RIGHT (RX)

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017

Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
47	G/Y	FLASHER OUTPUT (LEFT)
48	G/B	FLASHER OUTPUT (RIGHT)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

Connector No.	R11
Connector Name	ULTRA SONIC SENSOR LH
Connector Type	A02MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	SIG
2	SHIELD	SHIELD

JCKWA0546GB

THEFT WARNING SYSTEM

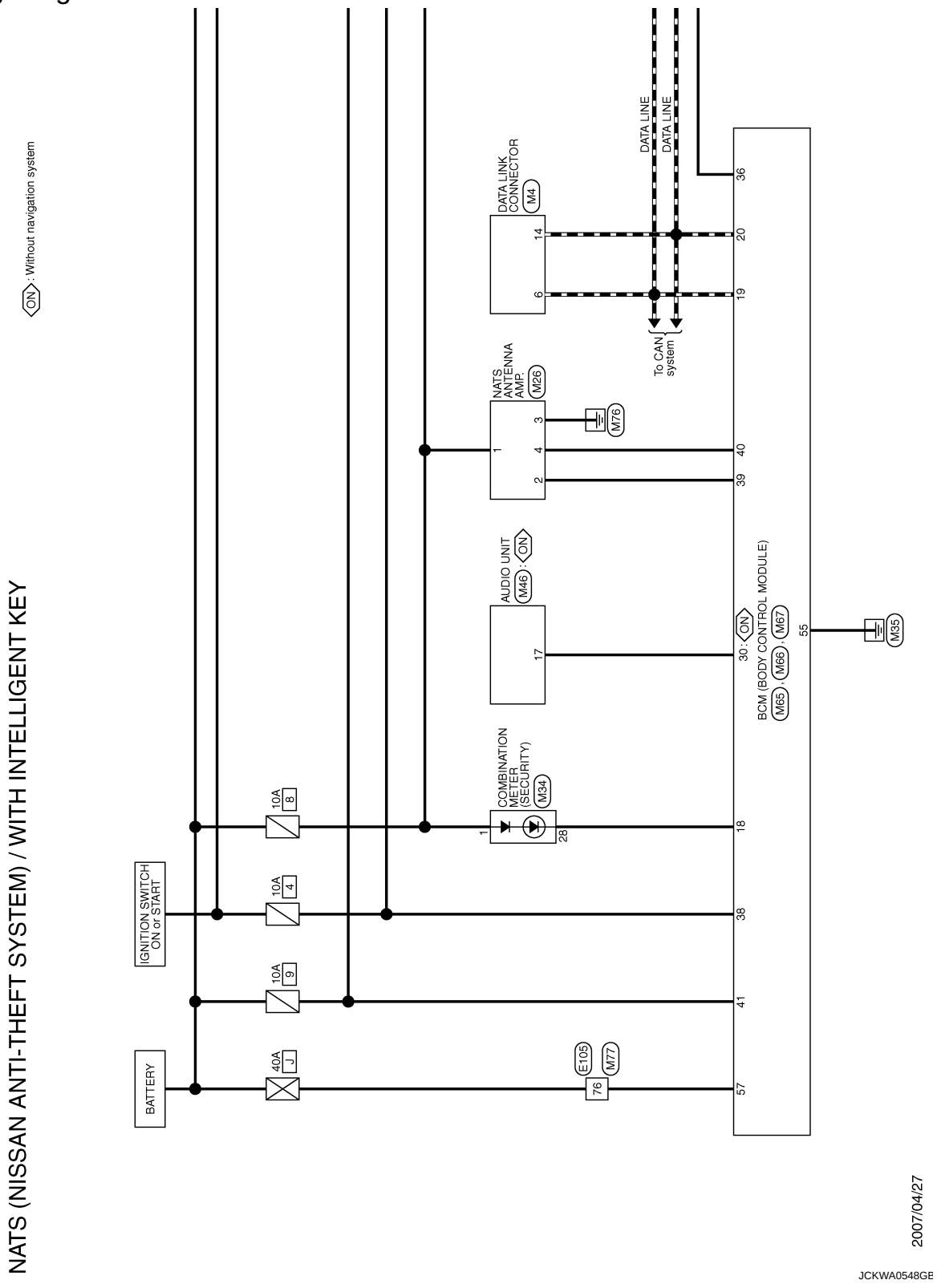
Connector No.	R12
Connector Name	ULTRA SONIC SENSOR RH
Connector Type	A02FW

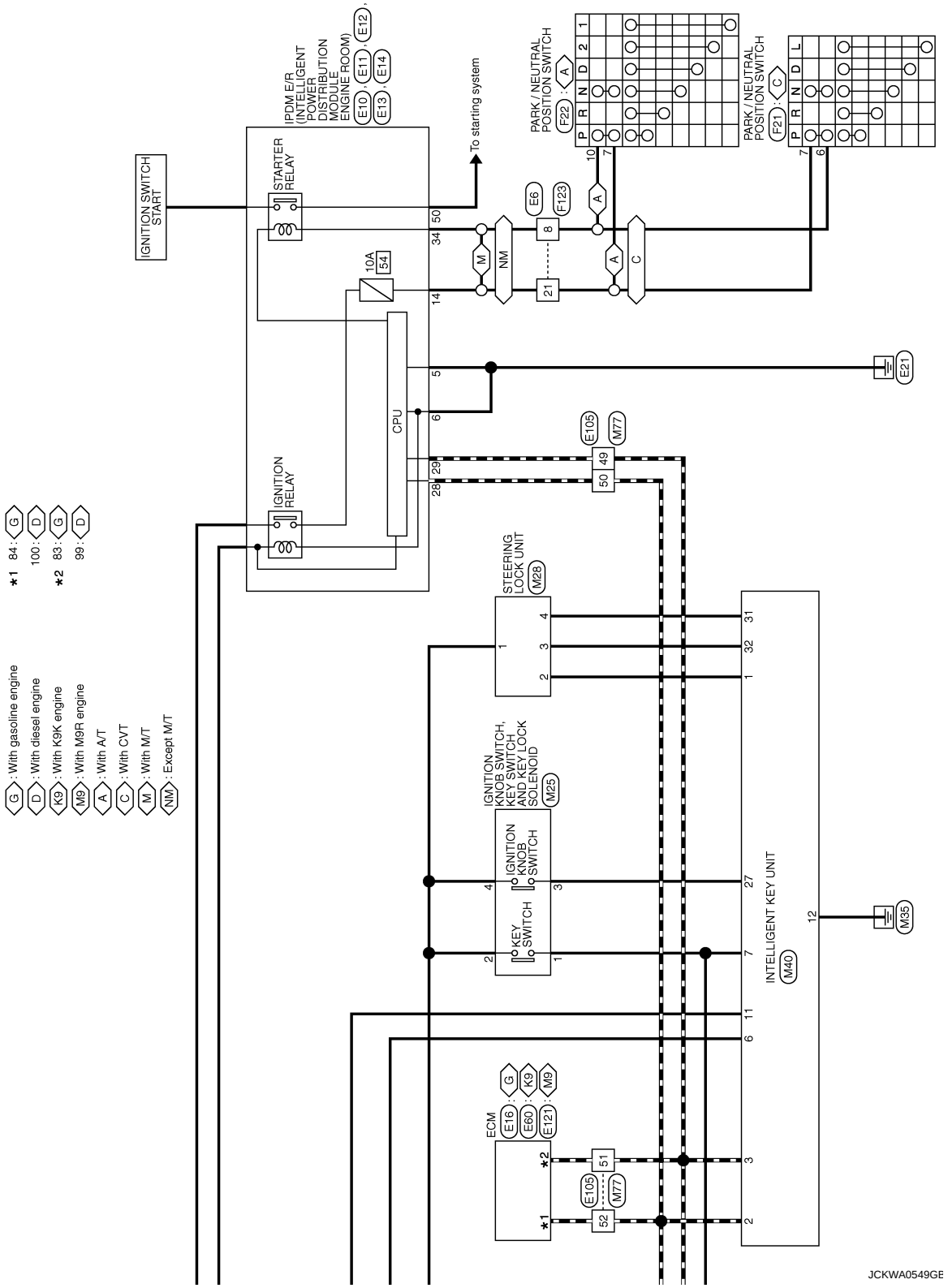
Terminal No.	Color of Wire	Signal Name [Specification]
1	W	SIG
2	SHIELD	SHIELD

JCKWA0547GE

Wiring Diagram - NATS -

INFOID:0000000001184681



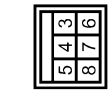

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E12, E13, E14
To starting system
PARK / NEUTRAL POSITION SWITCH
F22 : A
PARK / NEUTRAL POSITION SWITCH
F21 : C
IGNITION SWITCH START
STARTER RELAY
10A 54
IGNITION RELAY
CPU
NM
E6
F123
E21
E105
M77
STEERING LOCK UNIT
M28
IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
M25
IGNITION KNOB SWITCH
KEY SWITCH
INTELLIGENT KEY UNIT
M40
M35
ECM
E16 : G
E60 : K9
E121 : M9
E105
M77
*1 84 : G
100 : D
*2 83 : G
99 : D
G : With gasoline engine
D : With diesel engine
K9 : With K9K engine
M9 : With M9R engine
A : With A/T
C : With CVT
M : With M/T
NM : Except M/T
JCKWA0549GE

NATS (NISSAN ANTI-THEFT SYSTEM) / WITH INTELLIGENT KEY

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK24MW-1Y

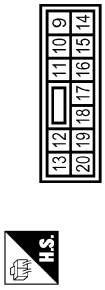
Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC



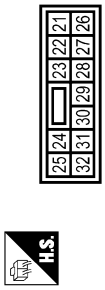
Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS



Terminal No.	Color of Wire	Signal Name [Specification]
14	R/B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
28	L	–
29	P	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
34	W/B	–[With A/T]
34	R/B	–[Except A/T]

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	YZK 7283-5691-40-F

Terminal No.	Color of Wire	Signal Name [Specification]
50	B/R	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-L
84	L	CAN-H

Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

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NATS (NISSAN ANTI-THEFT SYSTEM) / WITH INTELLIGENT KEY

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
51	P	–
52	L	–
76	Y	–

Connector No.	E121
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L(BODY)
100	L	MAIN CAN-H(BODY)

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK24FW-1Y

Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

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

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	F21
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	RK08FG

Terminal No.	Color of Wire	Signal Name [Specification]
6	W/B	–
7	R/B	–

Connector No.	F22
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	YDX06FB-HS4

Terminal No.	Color of Wire	Signal Name [Specification]
7	R/B	–
10	W/B	–

Connector No.	M25
Connector Name	IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
Connector Type	TK06MGY

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	Y	–
3	L	–
4	Y	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	P	–
3	B	–
4	LG	–

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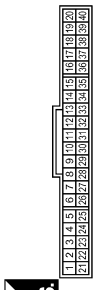
NATS (NISSAN ANTI-THEFT SYSTEM) / WITH INTELLIGENT KEY

Connector No.	M28
Connector Name	STEERING LOCK UNIT
Connector Type	TK04FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
2	LG	–
3	P	–
4	GR	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

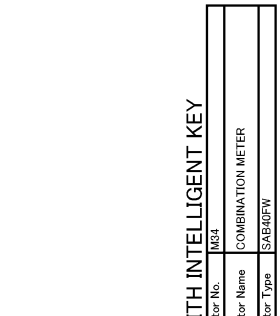


Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
28	SB	SECURITY

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

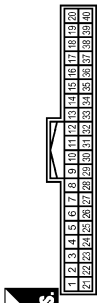
Terminal No.	Color of Wire	Signal Name [Specification]
18	SB	SECURITY INDICATOR
19	L	CAN-H
20	P	CAN-L
30	SB	AUDIO LINK
36	V	KEY SW
38	W	IGN SW
39	P	NATS ANTENNA AMP.
40	LG	NATS ANTENNA AMP.

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)

Connector No.	M40
Connector Name	INTELLIGENT KEY UNIT
Connector Type	TH40FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	STRG C/U 5V
2	L	CAN-H
3	P	CAN-L
6	W	IGN SW
7	V	KEY SW
11	V	BATT+
12	B	GND
27	L	KNOB SW
31	GR	STRG C/U GND
32	P	STRG C/U SIG

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M46
Connector Name	AUDIO UNIT
Connector Type	TH18FW-CS2

Terminal No.	Color of Wire	Signal Name [Specification]
17	SB	IMMOBILIZER

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
51	P	–
52	L	–
76	Y	–

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Fail Safe

INFOID:0000000001184682

Display contents of CONSULT-III	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:0000000001184683

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:0000000001184684

NOTE:

Details of time display

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

CONSULT display	Detection condition	Fail-safe	Diagnosis
No DTC is detected. further testing may be required.	—	—	—
U1000: CAN COMM CIRCUIT	Intelligent Key unit cannot receive CAN communication signal continuously for 2 seconds or more.	—	Check CAN communication system. Refer to SEC-33
U1010: CONTROL UNIT (CAN)	Intelligent Key unit detects internal CAN communication circuit malfunction.	—	Replace Intelligent Key unit.
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-III
B2552: INTELLIGENT KEY	Intelligent Key unit internal malfunction.	×	Replace Intelligent Key unit.
B2590: NATS MALFUNCTION	The ID verification result between Intelligent key unit and BCM are NG. Or Intelligent Key unit cannot communicate with BCM.	×	Check NATS Refer to SEC-55

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

Reference Value

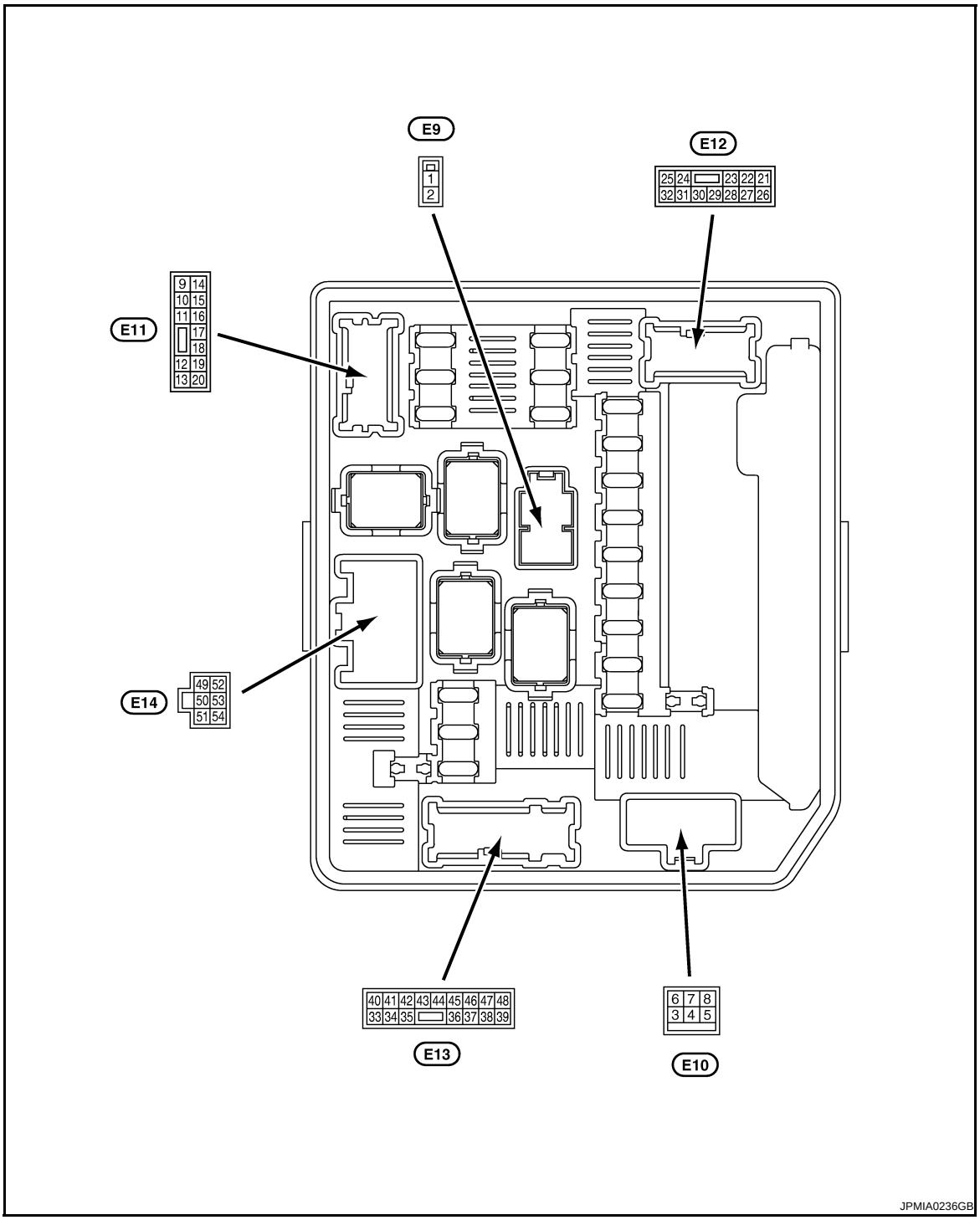
INFOID:0000000001559462

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 - 3
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, 2ND or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI (Light is illuminated)		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
HL WASHER REQ	Ignition switch ON, and low beam headlamp is ON	Front washer switch OFF	Off
		Front washer switch ON (When headlamp washer is operating)	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 due to fail-safe operation (cut-out 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

Monitor Item	Condition	Value/Status
REV SW	Except selector lever R position	Off
	Selector lever R position	On
HOOD SW **NOTE:** This item is monitored only on the vehicle with the Vehicle Security (Theft Warning) system.	Close the hood	Off
	Open the hood	On
THFT HRN REQ **NOTE:** This item is monitored only on the vehicle with the Vehicle Security (Theft Warning) system.	Not operation	Off
	Horn is activated with Vehicle Security (Theft Warning) system.	On
HORN CHIRP	**NOTE:** This item is indicated, but not monitored.	Off
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
		Signal name	Input/ Output		
+	–				
1 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
5 (B)	Ground	Ground	—	Ignition switch ON	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
6 (B)	Ground	Ground	—	Ignition switch ON		0 V
7 (Y)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
8 (Y/R)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
9 (G)	Ground	ECM relay power supply	Output	Ignition switch ON		Battery voltage
10*1 (L/R)	Ground	ECM relay power supply	Output	Ignition switch ON		Battery voltage
11*2 (O)	Ground	PTC heater 1 relay control	Output	PTC heater OFF		Battery voltage
				PTC heater ON		0 V
12*2 (G/Y)	Ground	PTC heater 2 relay control	Output	PTC heater OFF		Battery voltage
				PTC heater ON		0 V
14 (R/B)	Ground	Ignition power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
15 (Y/L)*1 (B/R)*2	Ground	ECM relay control	Input	• Engine running • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 - 1.0 V*1
						0.6 V*2
				Ignition switch OFF or ACC (More than a few seconds after turning ignition switch OFF)		Battery voltage
16*3 (Y/R)	Ground	Ignition relay power supply	Output	Ignition switch ON		Battery voltage
				Ignition switch OFF or ACC		0 V
19*1 (R/O)	Ground	Ignition relay power supply	Output	Ignition switch ON		Battery voltage
				Ignition switch OFF or ACC		0 V
21*4 (GR)	Ground	Hood switch	Input	Close the hood		0 V → Battery voltage → 0 V
				Open the hood		0 V
22 (Y/G)	Ground	Reverse switch	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON	• Selector lever “R” (Except M/T models) • M/T control lever “R” (M/T models)	Battery voltage
					• Selector lever in any position other than “R” (Except M/T models) • M/T control lever in any position other than “R” (M/T models)	0 V
23 (Y/B)	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
24 (R/Y)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
25*1 (G/L)	Ground	ETC relay control	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 - 1.0 V
26 (O)	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
27 (W)	Ground	Oil pressure switch	Input	Engine stopped		0 V
				Engine running		Battery voltage
28 (L)	—	CAN-H	Input/ Output	—		—
29 (P)	—	CAN-L	Input/ Output	—		—
30*4 (L)	Ground	Horn relay control	Output	The horn is not activated		Battery voltage
				The horn is activated		0 V
31 (R)	Ground	Headlamp LO (sensor)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
32*1 (R/Y)	Ground	ETC relay power supply	Output	Ignition switch ON		Battery voltage
33*1 (B/O)	Ground	Fuel pump relay control	Input	• Engine running • Ignition switch ON (For 1 second after turning ignition switch ON)		0 - 1.0 V
				Ignition switch ON (More than 1 second after turning ignition switch ON)		Battery voltage
34 (R/B)	Ground	Starter relay power supply	Input	Ignition switch ON (Except M/T models)	Selector lever “P” or “N”	Battery voltage
					Selector lever in any position other than “P” or “N”	0 V
				Ignition switch ON (M/T models)		Battery voltage
35 (W/L)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
36 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 1ST	Front fog lamp switch ON	Battery voltage
					Front fog lamp switch OFF	0 V
37 (R/W)	Ground	Parking lamp (RH)	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
38 (R/L)	Ground	Tail, license plate lamps and illuminations	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
39 (GR)	Ground	Headlamp washer relay control	Output	Ignition switch ON	When headlamp washer is operating	0 V
					When headlamp washer is not operating	Battery voltage
40*1 (BR/Y)*5 (SB)*6	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
41 (P)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
42*1 (B/Y)	Ground	Fuel pump relay power supply	Output	• Ignition switch OFF or ACC • Approximately 1 second or more after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
43 (W/B)	Ground	Front fog lamp (LH)	Output	Lighting switch 1ST	Front fog lamp switch ON	Battery voltage
					Front fog lamp switch OFF	0 V
44 (L)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
45 (L/W)	Ground	Headlamp HI (RH)	Output	• Lighting switch 2ND and HI • lighting switch PASS		Battery voltage
				Lighting switch OFF		0 V
46 (G)	Ground	Headlamp HI (LH)	Output	• Lighting switch 2ND and HI • Lighting switch PASS		Battery voltage
				Lighting switch OFF		0 V
47 (R/L)	Ground	Parking lamp (LH)	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
48*7 (Y)	Ground	Cooling fan relay-3 control	Output	When cooling fan does HI operation		0 V
				When cooling fan does OFF or LO operation		Battery voltage
49 (B)	Ground	Rear window defogger relay power supply	Output	Ignition switch ON	Rear window defogger switch ON	Battery voltage
					Rear window defogger switch OFF	0 V
50 (B/R)	Ground	Starter relay power supply	Output	When engine is cranking		Battery voltage
				When engine is not cranking		0 V
51 (P)	Ground	Ignition switch START	Input	Ignition switch START		Battery voltage
				Ignition switch OFF, ACC or ON		0 V
52 (W)	Ground	Cooling fan relay-1 power supply	Output	When cooling fan does LO or HI operation		Battery voltage
				When cooling fan does OFF operation		0 V
53 (W/B)	Ground	Battery power supply (Cooling fan relay)	Input	Ignition switch OFF		Battery voltage
54*5 (R)	Ground	Cooling fan relay-2 power supply	Input	When cooling fan does HI operation		Battery voltage
				When cooling fan does OFF or LO operation		0 V

*1: HR engine and MR engine models

*2: K9K engine and M9R engine models

*3: Except M/T models only

*4: With vehicle security (theft warning) system

*5: HR engine models

*6: MR engine models

*7: MR engine, K9K engine and M9R engine models

Wiring Diagram - INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION -

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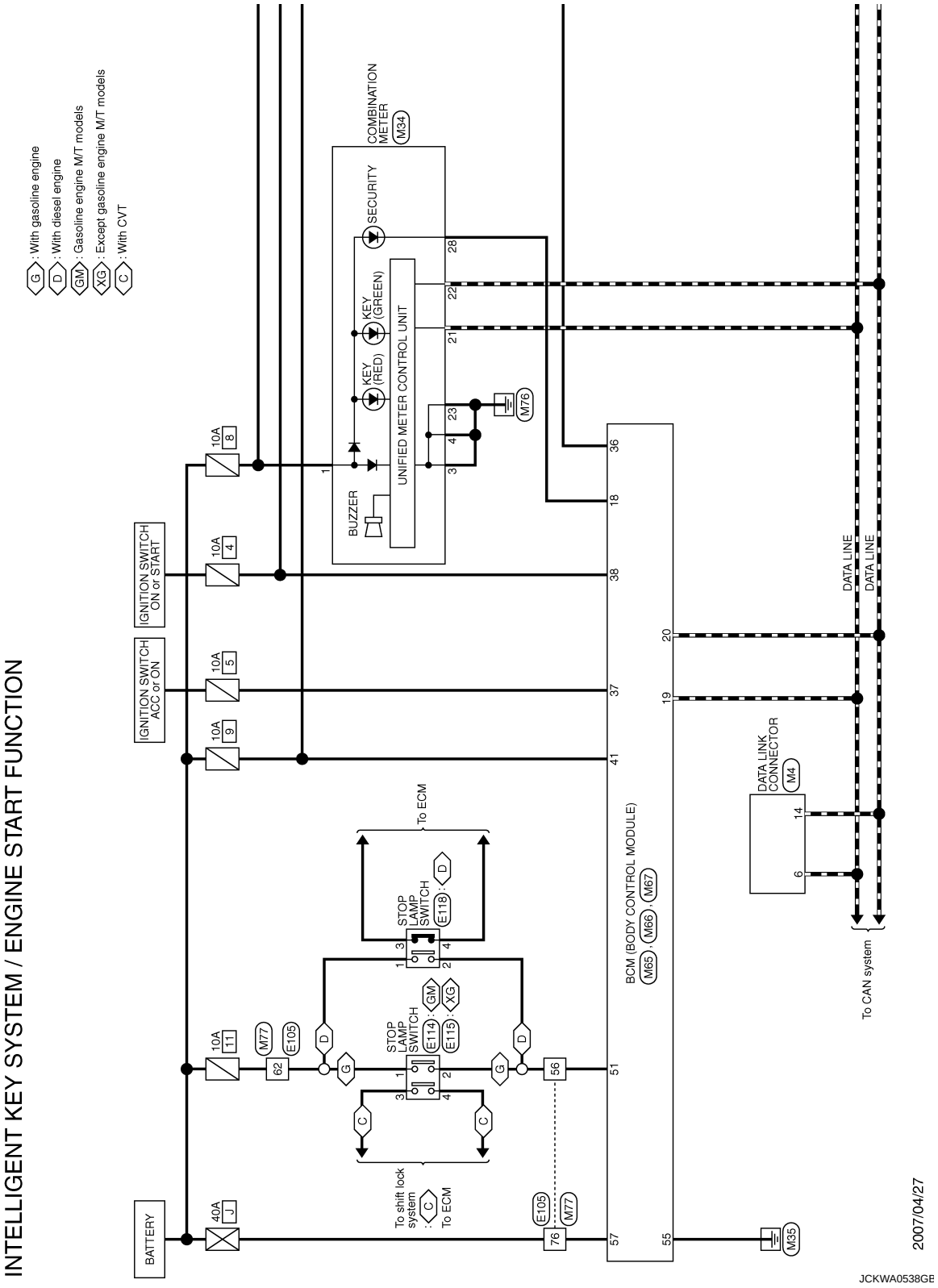
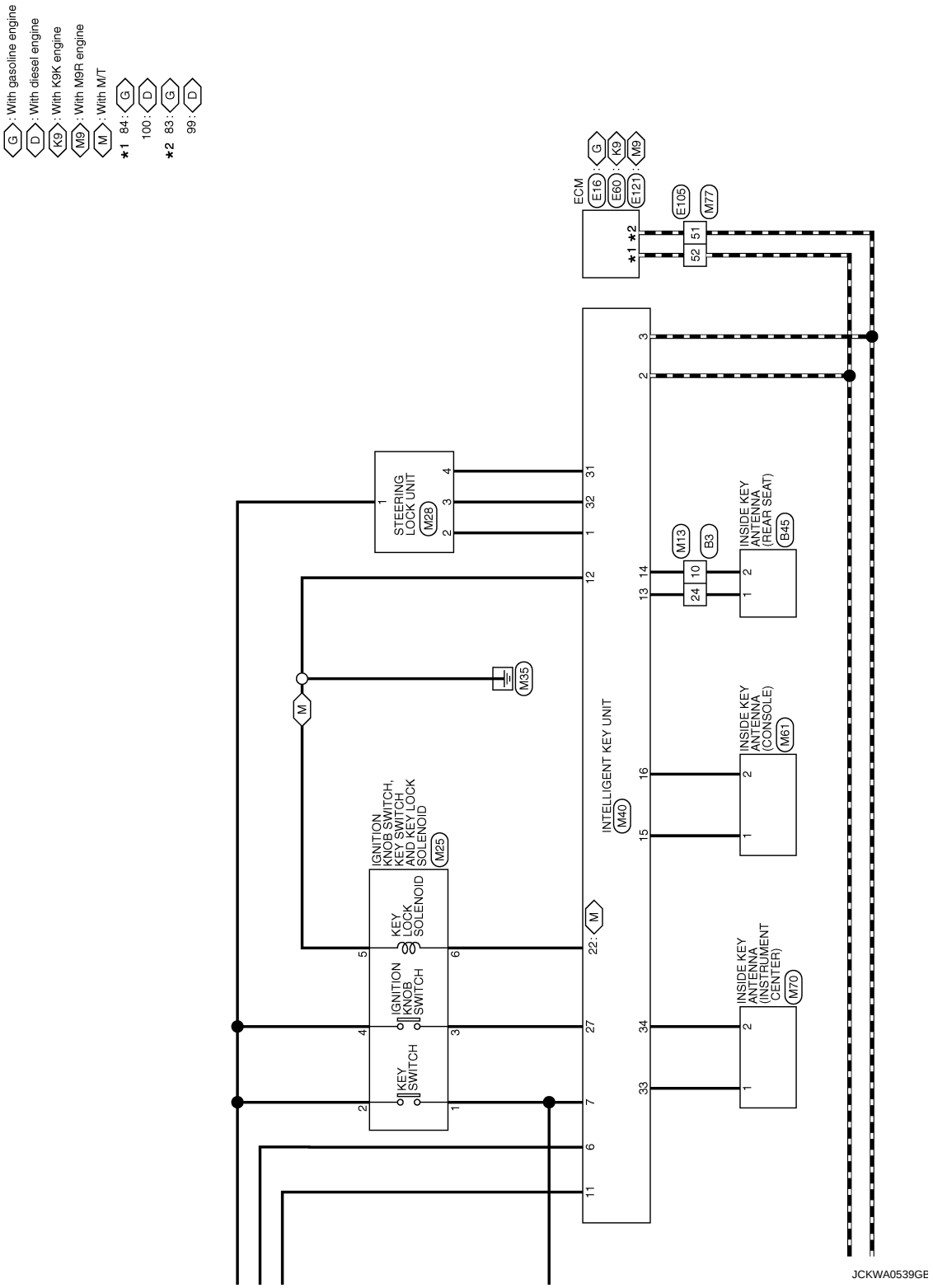



G : With gasoline engine
D : With diesel engine
K9 : With K9K engine
M9 : With M9R engine
M : With M/T
*1 84 : G
100 : D
*2 83 : G
99 : D
ECM
E16 : G
E60 : K9
E121 : M9
E105
M77
*1 *2
51
52
STEERING LOCK UNIT
M28
INTELLIGENT KEY UNIT
M40
M13
B3
INSIDE KEY ANTENNA (REAR SEAT)
B45
M35
INSIDE KEY ANTENNA (CONSOLE)
M61
IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
M25
KEY LOCK SOLENOID
IGNITION KNOB SWITCH
KEY SWITCH
22 : M
INSIDE KEY ANTENNA (INSTRUMENT CENTER)
M70
JCKWA0539GE

INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION

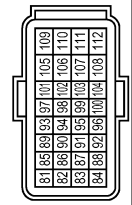
Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
10	W/R	–
24	Y	–

Connector No.	B45
Connector Name	INSIDE KEY ANTENNA (REAR SEAT)
Connector Type	RK02FGY

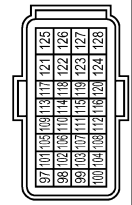
Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
2	W/R	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH



Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-LI
84	L	CAN-HI

Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH



Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
51	P	–
52	L	–
56	R/W	–
62	V	–
76	Y	–

Connector No.	E114
Connector Name	STOP LAMP SWITCH
Connector Type	M02FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	R/W	–

Connector No.	E115
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	R/W	–
3	G	–
4	B	–

Connector No.	E118
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	R/W	–
3	O	–
4	W/L	–

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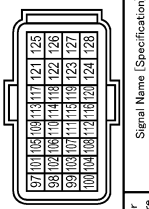
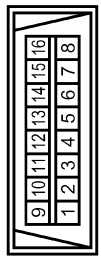
INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION

Connector No.	E121
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH



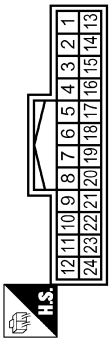
Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L(BODY)
100	L	MAIN CAN-H(BODY)

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



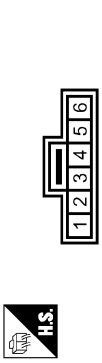
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
10	W	–
24	Y	–

Connector No.	M25
Connector Name	IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
Connector Type	TK06MGY



Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	Y	–
3	L	–
4	Y	–
5	B	–
6	W	–

Connector No.	M28
Connector Name	STEERING LOCK UNIT
Connector Type	TK04FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	–
2	LG	–
3	P	–
4	GR	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
3	B	GND
4	B	GND(ILLUM)
21	L	CAN-H
22	P	CAN-L
23	B	GND
28	SB	SECURITY

Connector No.	M40
Connector Name	INTELLIGENT KEY UNIT
Connector Type	TH40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	STRG C/U 5V
2	L	CAN-H
3	P	CAN-L
6	W	IGN SW
7	V	KEY SW
11	V	BATT+
12	B	GND
13	Y	REAR SEAT (+)
14	W	REAR SEAT (–)
15	SB	CONSOLE (+)
16	BR	CONSOLE (–)

22	W	KEY I/L SOL
27	L	KNOB SW
31	GR	STRG C/U GND
32	P	STRG C/U SIG
33	O	INSTRUMENT (+)
34	G	INSTRUMENT (–)

JCKWA0541GE

INTELLIGENT KEY SYSTEM / ENGINE START FUNCTION

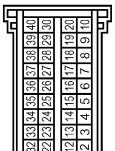
Connector No.	M61
Connector Name	INSIDE KEY ANTENNA (CONSOLE)
Connector Type	RK02FGY

Terminal No.	Color of Wire	Signal Name [Specification]
1	SB	–
2	BR	–

Connector No.	M70
Connector Name	INSIDE KEY ANTENNA (INSTRUMENT CENTER)
Connector Type	RK02FGY

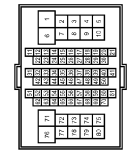
Terminal No.	Color of Wire	Signal Name [Specification]
1	O	–
2	G	–

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



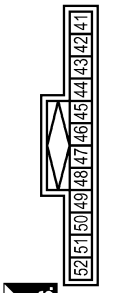
Terminal No.	Color of Wire	Signal Name [Specification]
18	SB	SECURITY INDICATOR
19	L	CAN-H
20	P	CAN-L
36	V	KEY SW
37	R	ACC SW
38	W	IGN SW

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-NS16-TM4



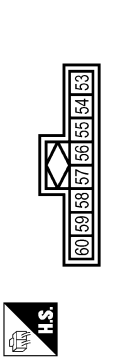
Terminal No.	Color of Wire	Signal Name [Specification]
51	P	–
52	L	–
56	R/W	–[RHD models with Intelligent Key]
62	V	–
76	Y	–

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017



Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
51	R/W	STOP LAMP SW [With Intelligent Key]

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

JCKWA0542GE

Wiring Diagram - THEFT WARNING SYSTEM -

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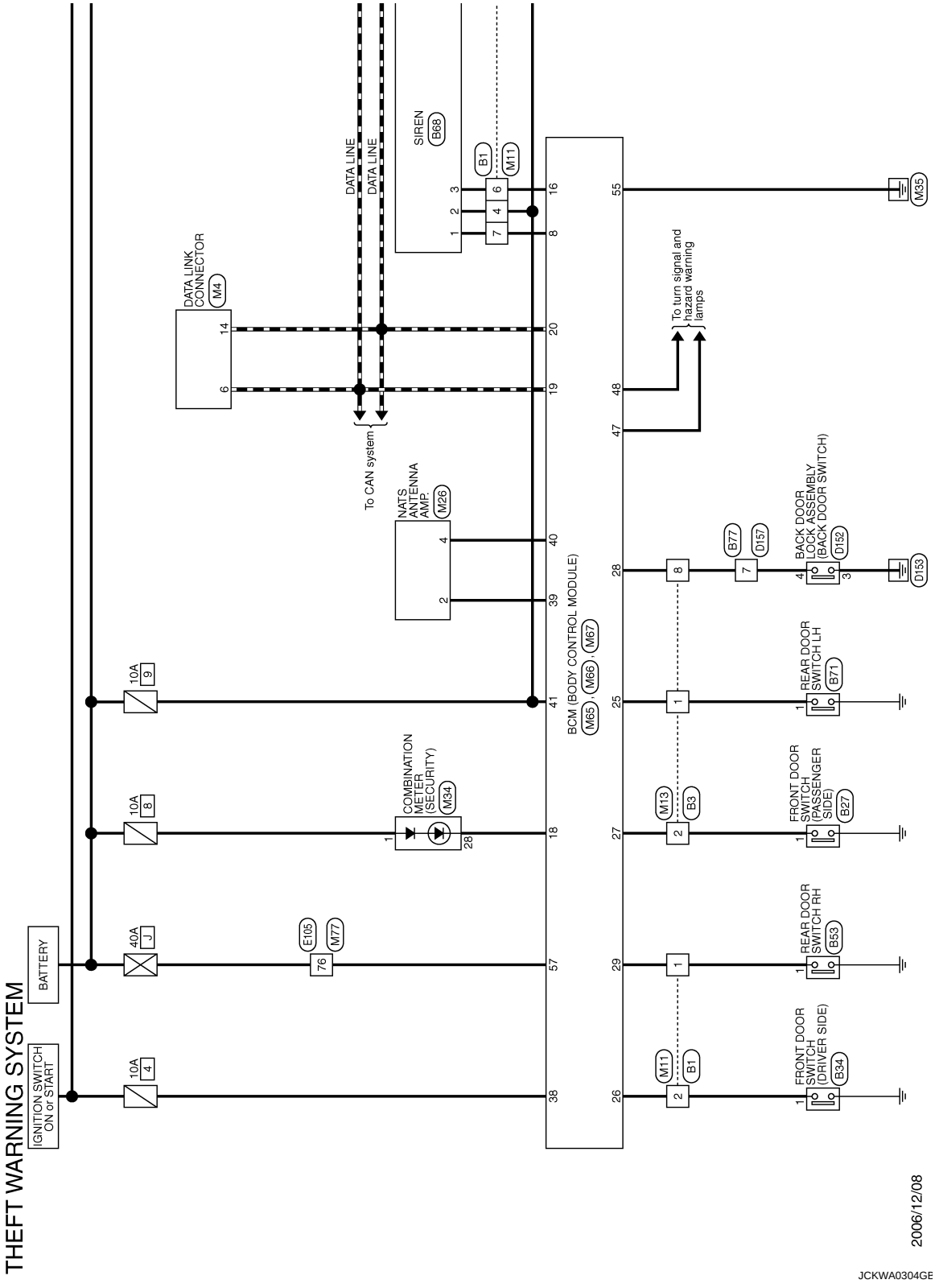
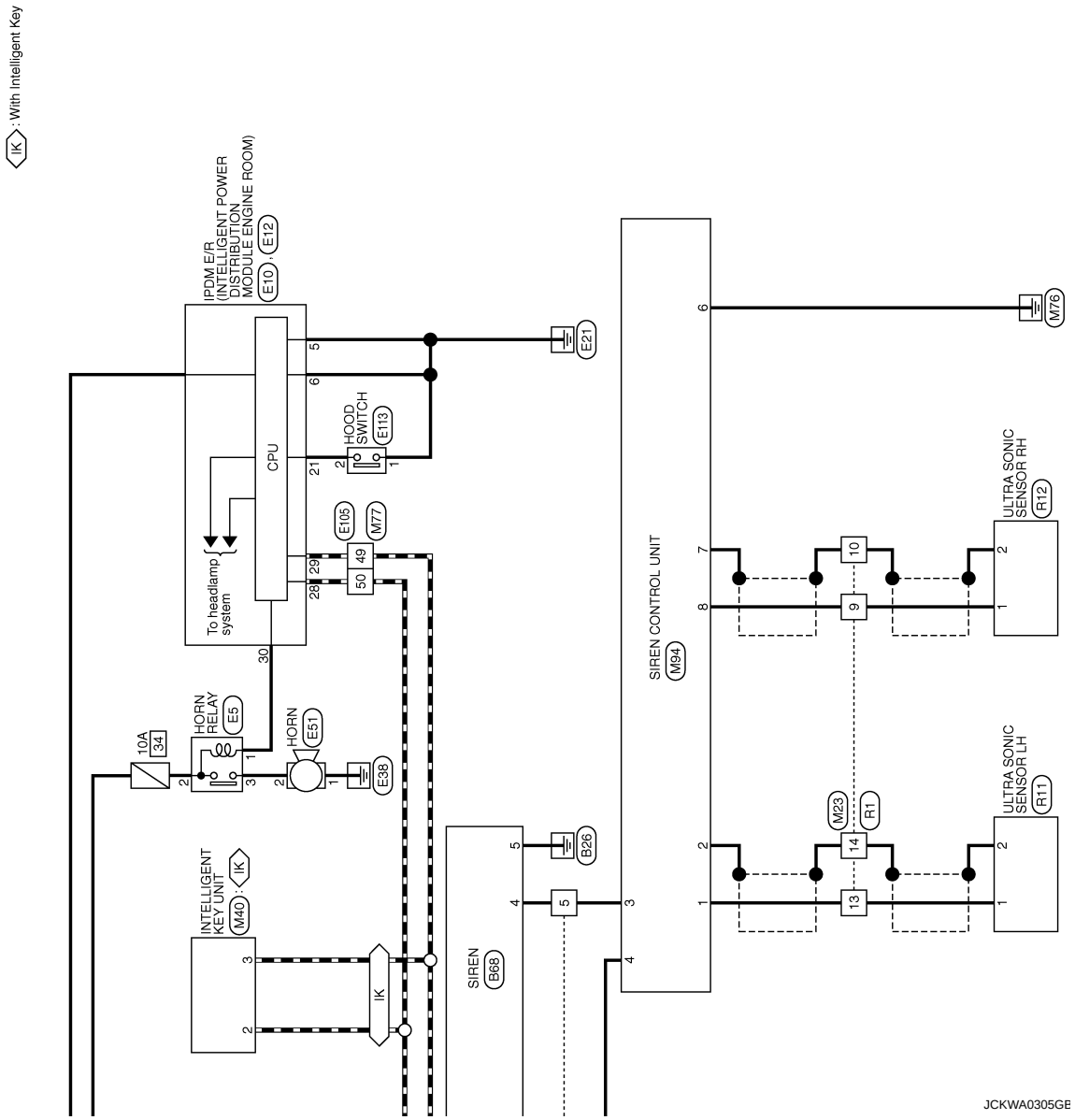


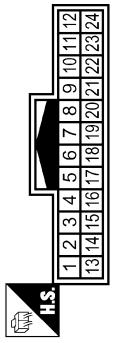

IK : With Intelligent Key
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 , E12
CPU
To headlamp system
HOOD SWITCH
E113
E105
M77
HORN RELAY
E5
HORN
E51
10A
34
E38
INTELLIGENT KEY UNIT
M40 : IK
IK
SIREN
B68
B26
E21
SIREN CONTROL UNIT
M94
M76
ULTRA SONIC SENSOR RH
R12
ULTRA SONIC SENSOR LH
R11
M23
R1
JCKWA0305GE

THEFT WARNING SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R/W	–[RHD models]
4	V	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

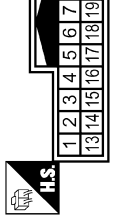
Connector No.	B27
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–

Connector No.	B68
Connector Name	SIREN
Connector Type	RH06FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	HAZARD REQ
2	V	B+
3	GR	COMMON LINK
4	Y	U/S LINK
5	B	GND

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

JCKWA0543GE

THEFT WARNING SYSTEM

Connector No.	D152
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	CINCH 49309 EV 4M9

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–
4	G	–

Connector No.	D157
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

Connector No.	E5
Connector Name	HORN RELAY
Connector Type	–

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	GR/L	–
3	G	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
21	GR	–
28	L	–
29	P	–
30	L	–

Connector No.	E51
Connector Name	HORN
Connector Type	DELPHI 15419715

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	G	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

Connector No.	E113
Connector Name	HOOD SWITCH
Connector Type	W02FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	GR	–

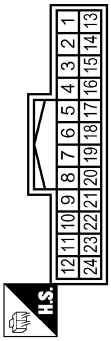
JCKWA0544GE

THEFT WARNING SYSTEM

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

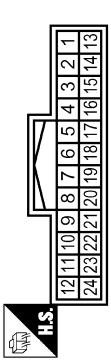
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



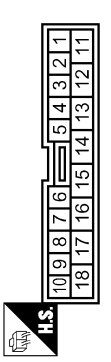
Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R	–[RHD models]
4	R	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	P	–
4	LG	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
28	SB	SECURITY

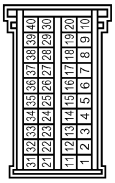
Connector No.	M40
Connector Name	INTELLIGENT KEY UNIT
Connector Type	TH40FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	CAN-H
3	P	CAN-L

JCKWA0545GE

THEFT WARNING SYSTEM

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB



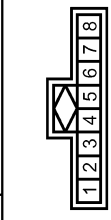
Terminal No.	Color of Wire	Signal Name [Specification]
8	LG	HAZARD SW
16	GR	ALARM LINK
18	SB	SECURITY INDICATOR
19	L	CAN-H
20	P	CAN-L
25	GR	DOOR SW (RL)
26	R	DOOR SW (DR)
27	BR	DOOR SW (AS)
28	G	DOOR SW (BACK)
29	LG	DOOR SW (RR)
38	W	IGN SW

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

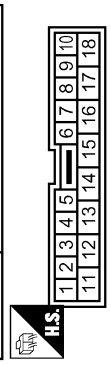
39	P	NATS ANTENNA AMP
40	LG	NATS ANTENNA AMP

Connector No.	M94
Connector Name	SIREN CONTROL UNIT
Connector Type	A08FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	G	U/S LEFT (TX)
2	SHIELD	SHIELD
3	Y	U/S LINK
4	R	B+
6	B	GND
7	SHIELD	SHIELD
8	W	U/S RIGHT (RX)

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017

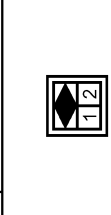


Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
47	G/Y	FLASHER OUTPUT (LEFT)
48	G/B	FLASHER OUTPUT (RIGHT)

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017



Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

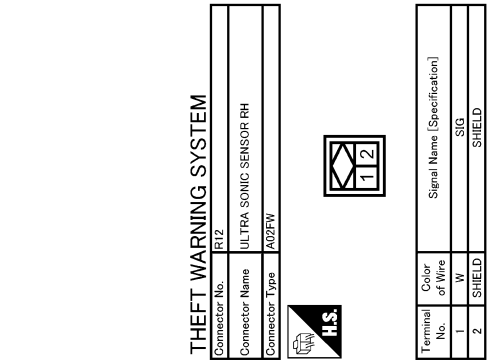
Connector No.	R11
Connector Name	ULTRA SONIC SENSOR LH
Connector Type	A02MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	SIG
2	SHIELD	SHIELD

JCKWA0546GB

THEFT WARNING SYSTEM

Connector No.	R12
Connector Name	ULTRA SONIC SENSOR RH
Connector Type	A02FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	SIG
2	SHIELD	SHIELD

JCKWA0547GE

Wiring Diagram - NATS -

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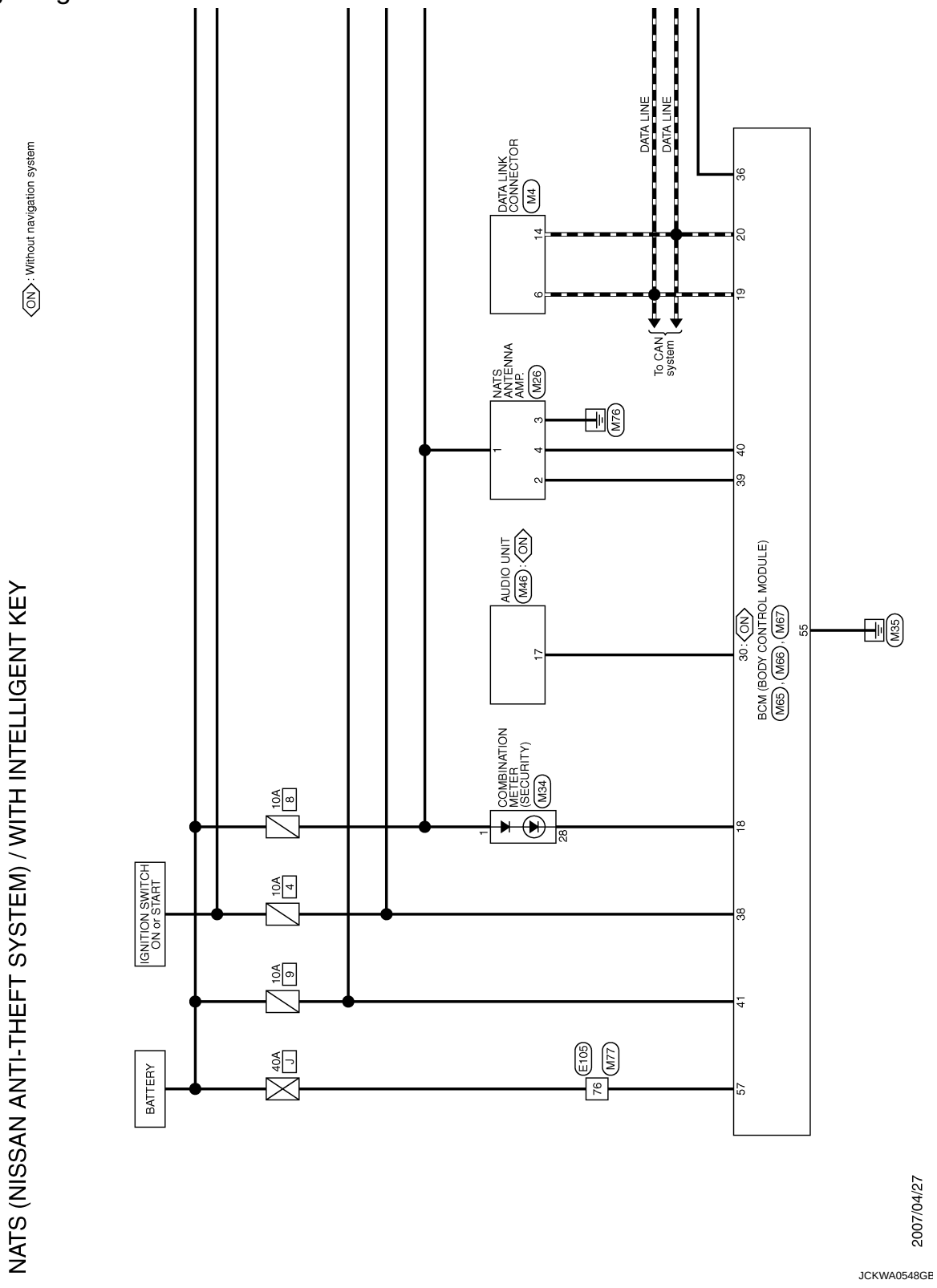
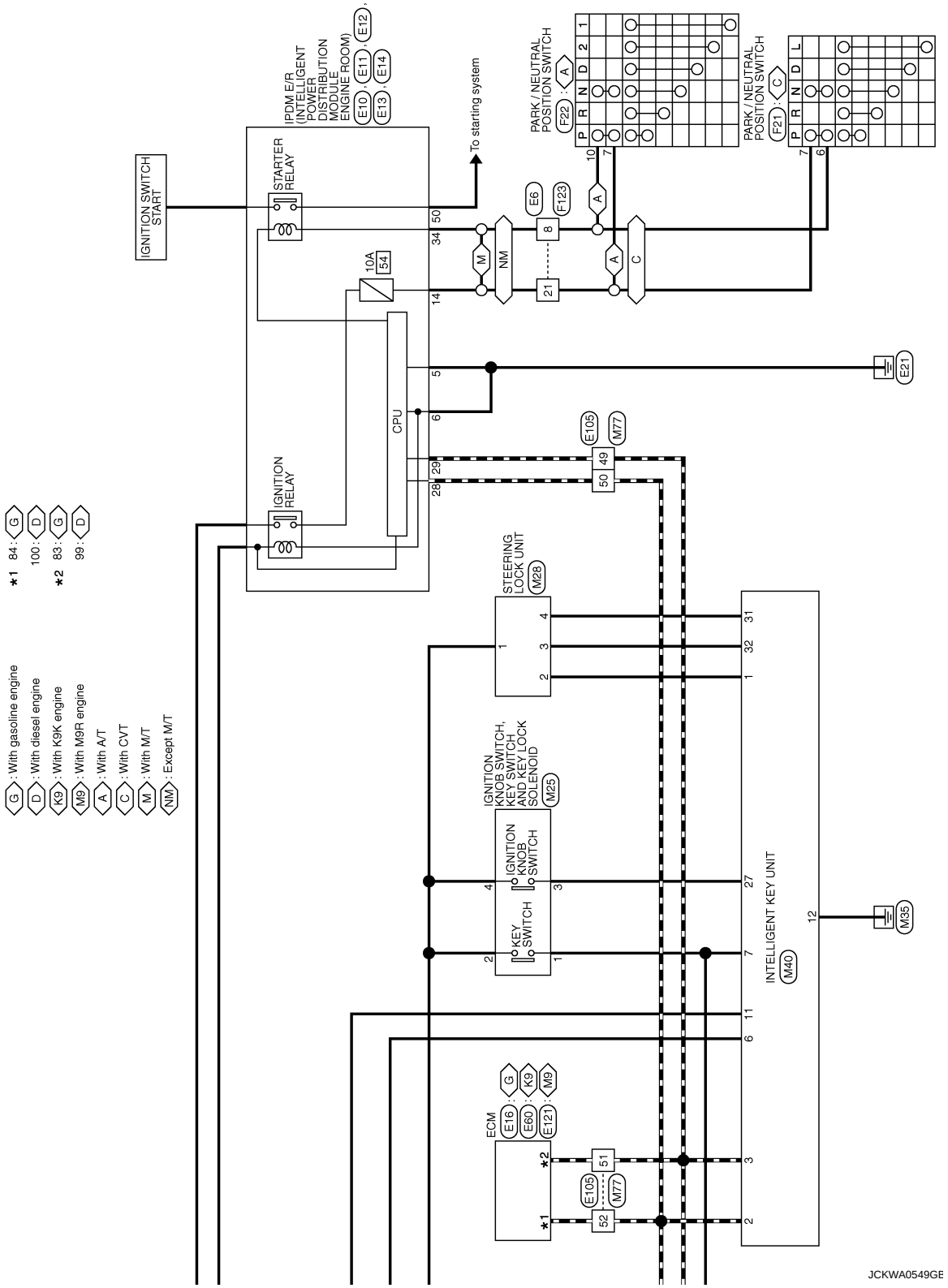
NATS (NISSAN ANTI-THEFT SYSTEM) / WITH INTELLIGENT KEY



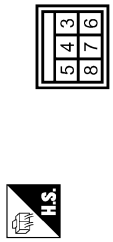

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10, E11, E12, E13, E14
To starting system
PARK / NEUTRAL POSITION SWITCH
F22 : A
P R N D 2 1
PARK / NEUTRAL POSITION SWITCH
F21 : C
P R N D L
IGNITION SWITCH START
STARTER RELAY
10A 54
E6 F123
NM
M
A
C
CPU
E21
IGNITION RELAY
E105 M77
STEERING LOCK UNIT M28
IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID M25
IGNITION KNOB SWITCH
KEY SWITCH
INTELLIGENT KEY UNIT M40
M35
ECM
E16 : G
E60 : K9
E121 : M9
E105 M77
*1 84 : G
100 : D
*2 83 : G
99 : D
G : With gasoline engine
D : With diesel engine
K9 : With K9K engine
M9 : With M9R engine
A : With A/T
C : With CVT
M : With M/T
NM : Except M/T
JCKWA0549GE

NATS (NISSAN ANTI-THEFT SYSTEM) / WITH INTELLIGENT KEY

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK24MW-1Y

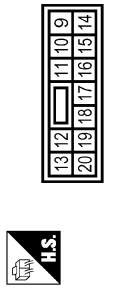
Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC



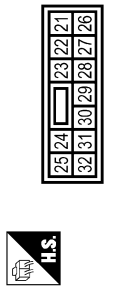
Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS



Terminal No.	Color of Wire	Signal Name [Specification]
14	R/B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
28	L	–
29	P	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
34	W/B	–[With A/T]
34	R/B	–[Except A/T]

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	YZK 7283-5691-40-F

Terminal No.	Color of Wire	Signal Name [Specification]
50	B/R	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-L
84	L	CAN-H

Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

JCKWA0550GB

NATS (NISSAN ANTI-THEFT SYSTEM) / WITH INTELLIGENT KEY

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
51	P	–
52	L	–
76	Y	–

Connector No.	E121
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L(BODY)
100	L	MAIN CAN-H(BODY)

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK24FW-1Y

Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

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

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	F21
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	RK08FG

Terminal No.	Color of Wire	Signal Name [Specification]
6	W/B	–
7	R/B	–

Connector No.	M25
Connector Name	IGNITION KNOB SWITCH, KEY SWITCH AND KEY LOCK SOLENOID
Connector Type	TK06MGY

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	Y	–
3	L	–
4	Y	–

Connector No.	F22
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	YDX06FB-HS4

Terminal No.	Color of Wire	Signal Name [Specification]
7	R/B	–
10	W/B	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	P	–
3	B	–
4	LG	–

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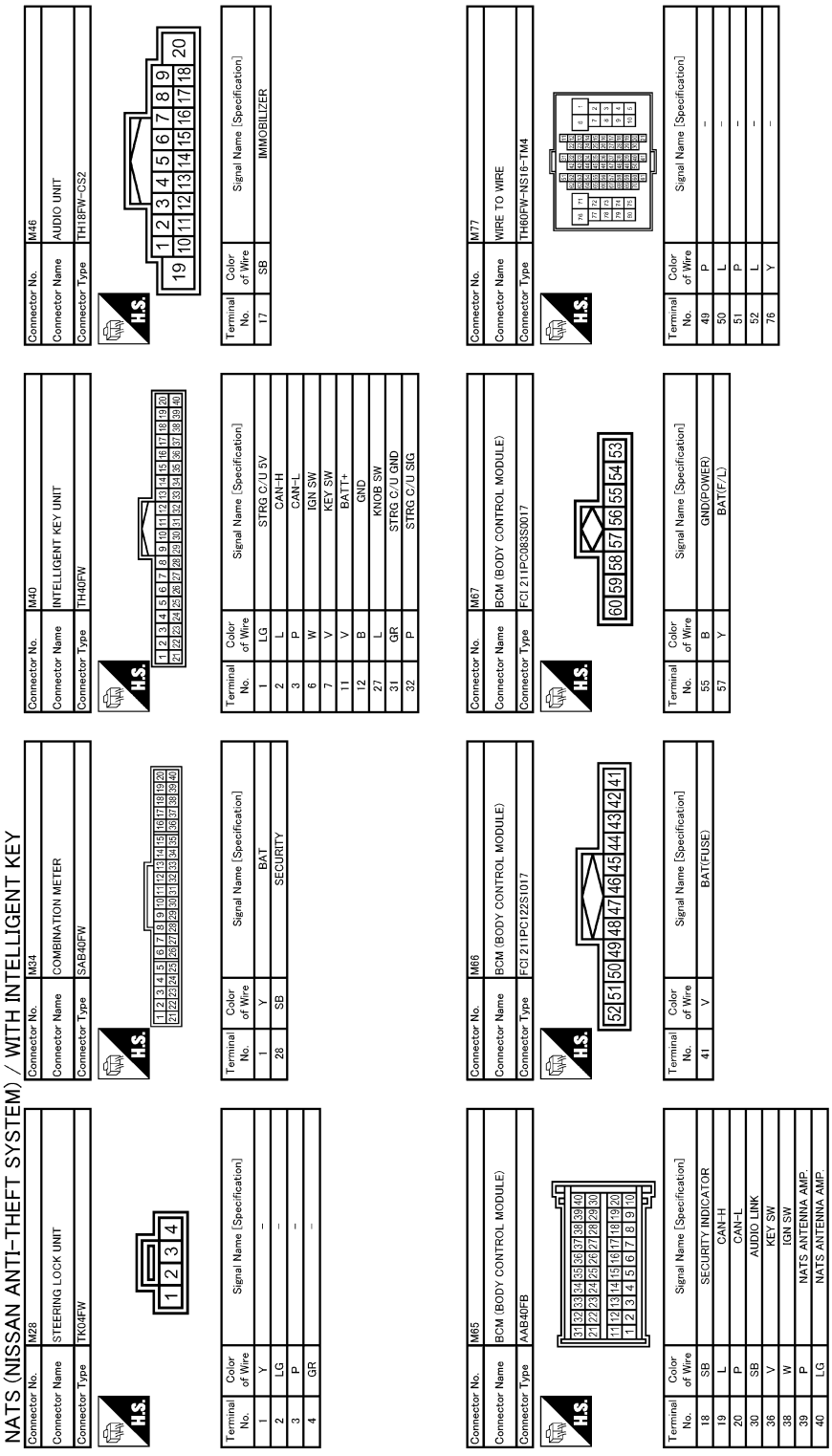

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Fail Safe

INFOID:0000000001559463

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-2*1 or the cooling fan relay-3*2 turns ON when the ignition switch is turned ON • Turns off the fan motor low relay when the ignition switch is turned OFF
A/C compressor	A/C relay OFF

*1: HR engine models

*2: MR engine, K9K engine and M9R engine models

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 turns ON when the ignition switch is turned ON • The tail lamp relay turns 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
Headlamp washer	Headlamp washer relay OFF
PTC heater	PTC heater relay OFF

Ignition relay malfunction detection function

- The CPU integrated IPDM E/R monitors the voltage at the contact circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the ignition relay condition is different from the ignition switch ON signal.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

DTC	Ignition switch	Ignition relay	Tail lamp relay
—	ON	ON	—
—	OFF	OFF	—
—	OFF	ON	ON (10 minutes)
B2099: IGN RLY OFF	ON	OFF	—

NOTE:

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

Front wiper control

IPDM E/R detects the front wiper stop position with the front wiper auto stop signal.
When the front wiper auto stop signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop until ignition switch is turned OFF.

Ignition switch	Front wiper switch	Front wiper auto stop signal
ON	OFF	The front wiper auto stop signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper auto stop 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:0000000001559464

CONSULT display	Fail-safe	Timing[NOTE]		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	PCS-14
B2099: IGN RELAY OFF	—	CRNT	PAST	PCS-15
B209A: RAM ERROR	—	CRNT	PAST	PCS-16
B209B: ROM ERROR	—	CRNT	PAST	PCS-17
B2100: EEPROM	—	CRNT	PAST	PCS-18

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

INTELLIGENT KEY SYSTEM/ENGINE START FUNCTION SYMPTOMS

Symptom Table

INFOID:0000000001184691

NOTE:
- Before performing the diagnosis in the following table, check “DLK-20, "Work Flow"”.
- Check that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- If the following symptoms are detected, check systems shown in the “Diagnosis/service procedure” column in this order.

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

Symptom	Diagnosis/service procedure	Reference page
Ignition switch does not turn on with Intelligent Key. [KEY warning lamp (green) illuminates.]	1. Check steering lock unit.	SEC-43
	2. Replace Intelligent Key unit.	DLK-280
Ignition switch does not turn on with Intelligent Key. [KEY warning lamp does not illuminate.]	1. Check Intelligent Key unit power supply and ground circuit.	DLK-71
	2. Check ignition knob switch.	SEC-61
	3. Check key switch.	SEC-59
	4. Replace Intelligent Key unit.	DLK-280
Ignition switch does not turn on with Intelligent Key. [KEY warning lamp (red) illuminates.]	1. Check inside key antenna.	DLK-116
	2. Replace Intelligent Key unit.	DLK-280
Ignition switch does not turn on with mechanical key	Check key switch.	SEC-59
Engine can not start	1. CHeck key switch.	SEC-59
	2. CHeck stop lamp switch.	SEC-63

VEHICLE SECURITY SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000001184692

Procedure			Diagnostic procedure	Refer to page
Symptom				
1	Vehicle security system cannot be set by ····	Door switch	Check door switch	DLK-83
		Hood switch	Check hood switch	SEC-65
		Back door switch	Check back door switch	SEC-65
		Intelligent Key	Check Intelligent Key system	DLK-134
		—	Check Intermittent Incident	GI-39
	Security indicator does not turn ON.		Check vehicle security indicator	SEC-67
			Check Intermittent Incident	GI-39
2	* Vehicle security system does not sound alarm when ····	Any door is opened.	Check door switch	DLK-83
			Check Intermittent Incident	GI-39
3	Vehicle security alarm does not activate.	Horn alarm	Check horn switch	—
			Check Intermittent Incident	GI-39
		Siren control unit alarm	Check siren control unit power supply and ground circuit	SEC-56
			Check siren power supply and ground circuit	SEC-57
			Check ultra sonic sensor	SEC-69
			Check Intermittent Incident	GI-39
4	Vehicle security system cannot be canceled by ····	Intelligent Key	Check Intelligent Key system	DLK-28
			Check Intermittent Incident	GI-39

*: Check the system is in the armed phase.

NATS (NISSAN ANTI-THEFT SYSTEM) SYMPTOMS

Symptom Table

INFOID:0000000001184693

NOTE:

- Before performing the diagnosis in the following table, check “SEC-6, "Work Flow"”.
- Check that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- If the following symptoms are detected, check systems shown in the “Diagnosis/service procedure” column in this order.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

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

Symptom	Diagnosis/service procedure	Reference page
Engine can not start.	1. Check stop lamp switch	SEC-63
	2. Check Intermittent Incident	GI-39
Security indicator does not turn ON or flash.	1. Check vehicle security indicator	SEC-67
	2. Check Intermittent Incident	GI-39

PRECAUTION

PRECAUTIONS

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

INFOID:0000000001583049

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 AIRBAG” and “SEAT BELT” of this Service Manual.

WARNING:

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

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000001583053

NOTE:

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

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

ON-VEHICLE MAINTENANCE

PRE-INSPECTION FOR DIAGNOSTIC

Basic Inspection

INFOID:0000000001184694

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

1.CHECK DOOR LOCK OPERATION

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

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

YES >> GO TO 2.
NO >> Refer to DLK-203, "INTELLIGENT KEY : Symptom Table".

2.CHECK IGNITION KNOB SWITCH OPERATION-1

With all registered Intelligent Keys, check if ignition knob can rotate when carrying Intelligent Key inside the vehicle.

Does ignition knob rotate?

YES >> GO TO 3.
NO >> Refer to SEC-158, "Symptom Table".

3.CHECK IGNITION KNOB SWITCH OPERATION-2

Insert registered mechanical key into key cylinder, and check if ignition knob can rotate. Check for all registered mechanical keys.

Does ignition knob rotate?

YES >> GO TO 4.
NO (Does not rotate with some of mechanical keys)>>Perform mechanical key registration.
NO (Does not rotate with all mechanical keys)>>Refer to SEC-158, "Symptom Table".

4.CHECK VEHICLE SECURITY SYSTEM

Check the vehicle security system for normal operation.
The vehicle security function can operate only when the door lock function is operating normally.
Therefore, it is easy to identify any factor unique to the vehicle security by performing the vehicle security operation check after this basic inspection.

>> Go to SEC-160, "Vehicle Security Operation Check".

Vehicle Security Operation Check

INFOID:0000000001184695

1.INSPECTION START

Turn ignition switch “OFF” and pull out mechanical key from key cylinder.
NOTE:
Before starting operation check, open front windows.

>> GO TO 2.

2.CHECK SECURITY INDICATOR LAMP

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

Security indicator lamp should illuminate.

OK >> GO TO 3.

NG >> Perform diagnosis and repair. Refer to SEC-157, "Symptom Table".

3. CHECK ALARM FUNCTION

1. After 30 seconds, security indicator lamp will start to blink.
2. Open any door or hood before unlocking with Intelligent Key or open back door without Intelligent Key.

Does alarm function properly.

OK >> GO TO 4.
NG >> Check the following.
- The vehicle security system does not phase in alarm mode. Refer to SEC-157, "Symptom Table".
- Alarm does not operate. Refer to SEC-157, "Symptom Table".

4. CHECK ALARM CANCEL OPERATION

Unlock any door or open back door using Intelligent Key.

Alarm (horn and headlamp) should stop.

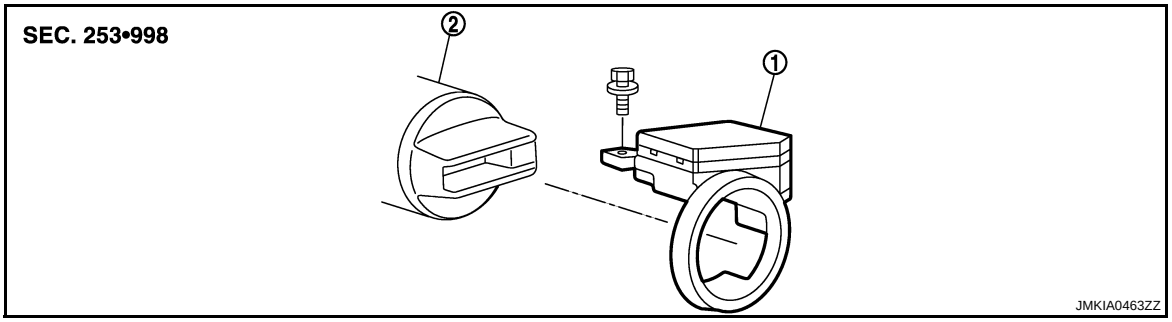
OK >> INSPECTION END.
NG >> Check door lock function. Refer to DLK-20, "Work Flow".

ON-VEHICLE REPAIR

NATS ANTENNA AMP.

Exploded View

INFOID:0000000001184696



1. NATS antenna amp.
2. Steering lock assembly

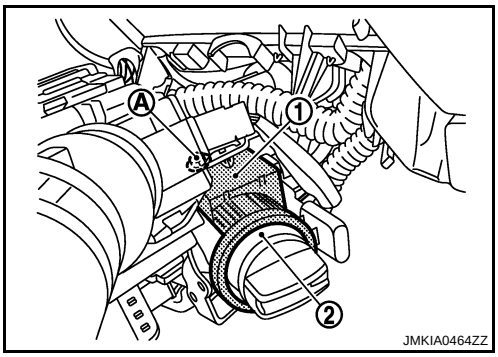
Refer to SEC-162, "Removal and Installation".

Removal and Installation

INFOID:0000000001184697

REMOVAL

1. Remove the steering column cover.
   Refer to IP-11, "Exploded View" and IP-12, "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

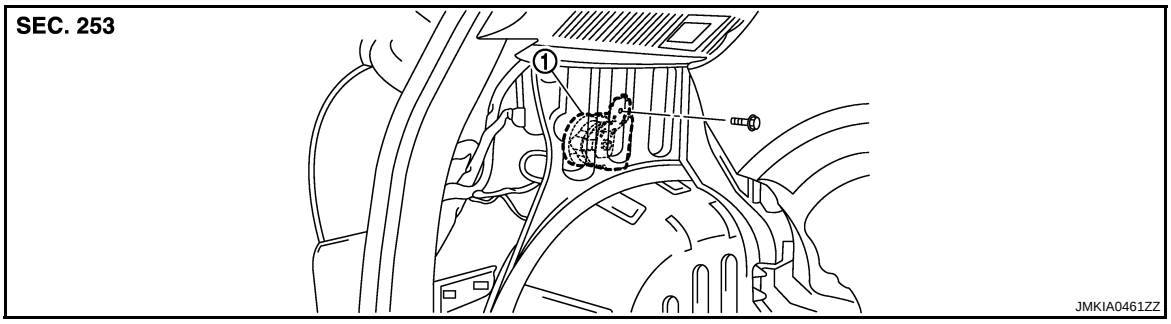
Install in the reverse order of removal.

SIREN

Exploded View

INFOID:0000000001184698

SIREN



1. Siren

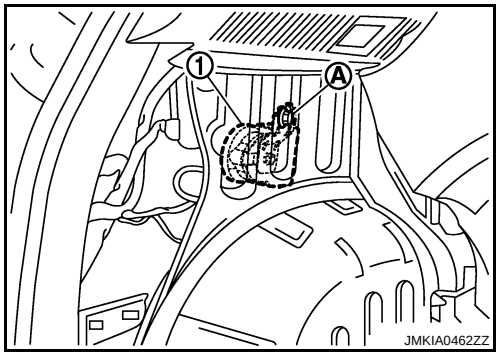
Refer to SEC-163, "Removal and Installation".

Removal and Installation

INFOID:0000000001184699

REMOVAL

1. Remove the luggage side lower finisher (LH).
   Refer to INT-24, "Exploded View" and INT-24, "Removal and Installation".
2. Remove the siren mounting bolt (A), and then remove siren (1).



INSTALLATION

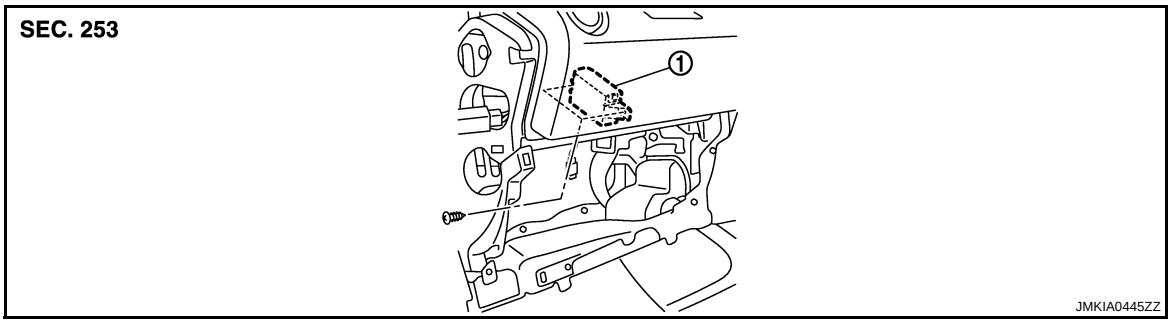
Install in the reverse order of removal.

SIREN CONTROL UNIT

Exploded View

INFOID:0000000001184700

SIREN CONTROL UNIT



1. Siren control unit

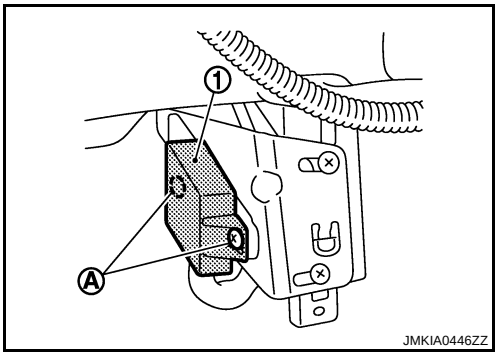
Refer to SEC-164, "Removal and Installation".

Removal and Installation

INFOID:0000000001184701

REMOVAL

1. Remove the glove box.
   Refer to IP-11, "Exploded View" and IP-12, "Removal and Installation".
2. Remove the siren control unit mounting screw (A), and then remove siren control unit (1).



INSTALLATION

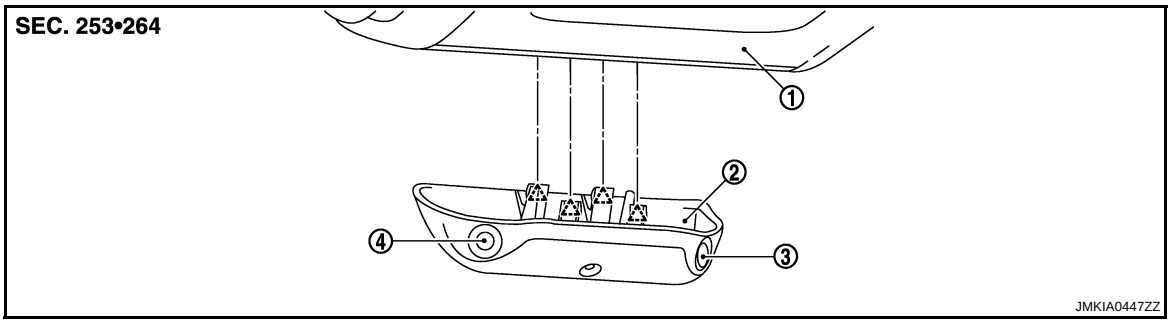
Install in the reverse order of removal.

ULTRA SONIC SENSOR

Exploded View

INFOID:0000000001184702

ULTRA SONIC SENSOR



1. Headlining
2. Ultra sonic sensor finisher
3. Ultra sonic sensor RH
4. Ultra sonic sensor LH
- Pawl

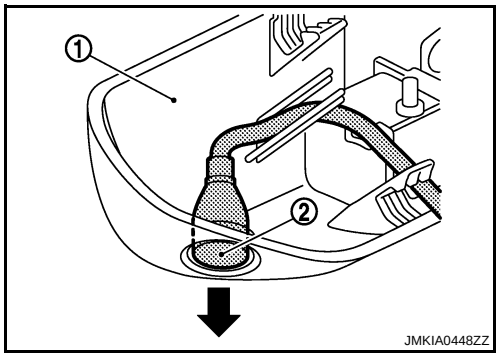
Refer to SEC-165, "Removal and Installation".

Removal and Installation

INFOID:0000000001184703

REMOVAL

1. Remove the ultra sonic sensor finisher.
   Refer to SEC-165, "Exploded View".
2. Remove the ultra sonic sensor (2) from ultra sonic sensor finisher (1).



INSTALLATION

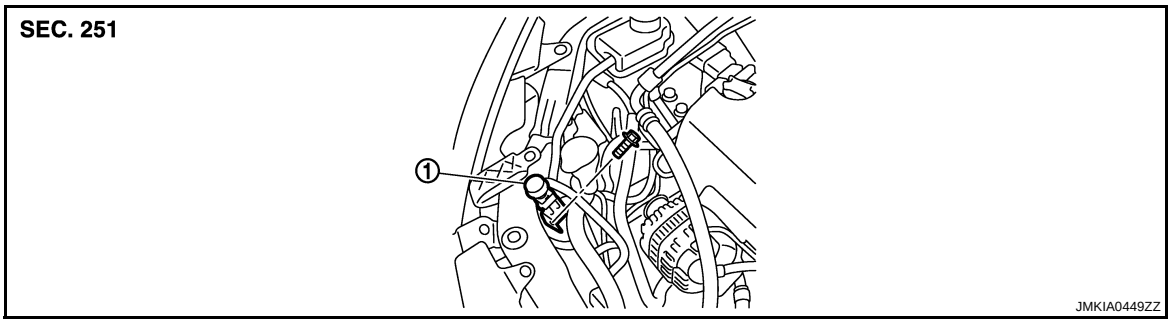
Install in the reverse order of removal.

HOOD SWITCH

Exploded View

INFOID:0000000001184704

HOOD SWITCH



1. Hood switch

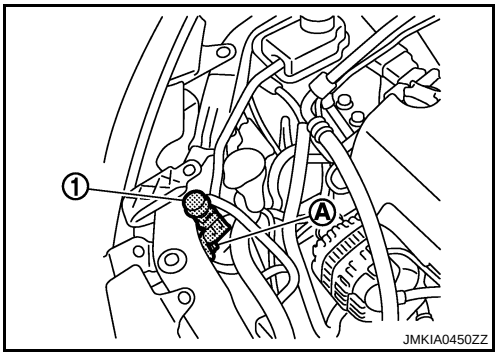
Refer to SEC-166, "Removal and Installation".

Removal and Installation

INFOID:0000000001184705

REMOVAL

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



INSTALLATION

Install in the reverse order of removal.

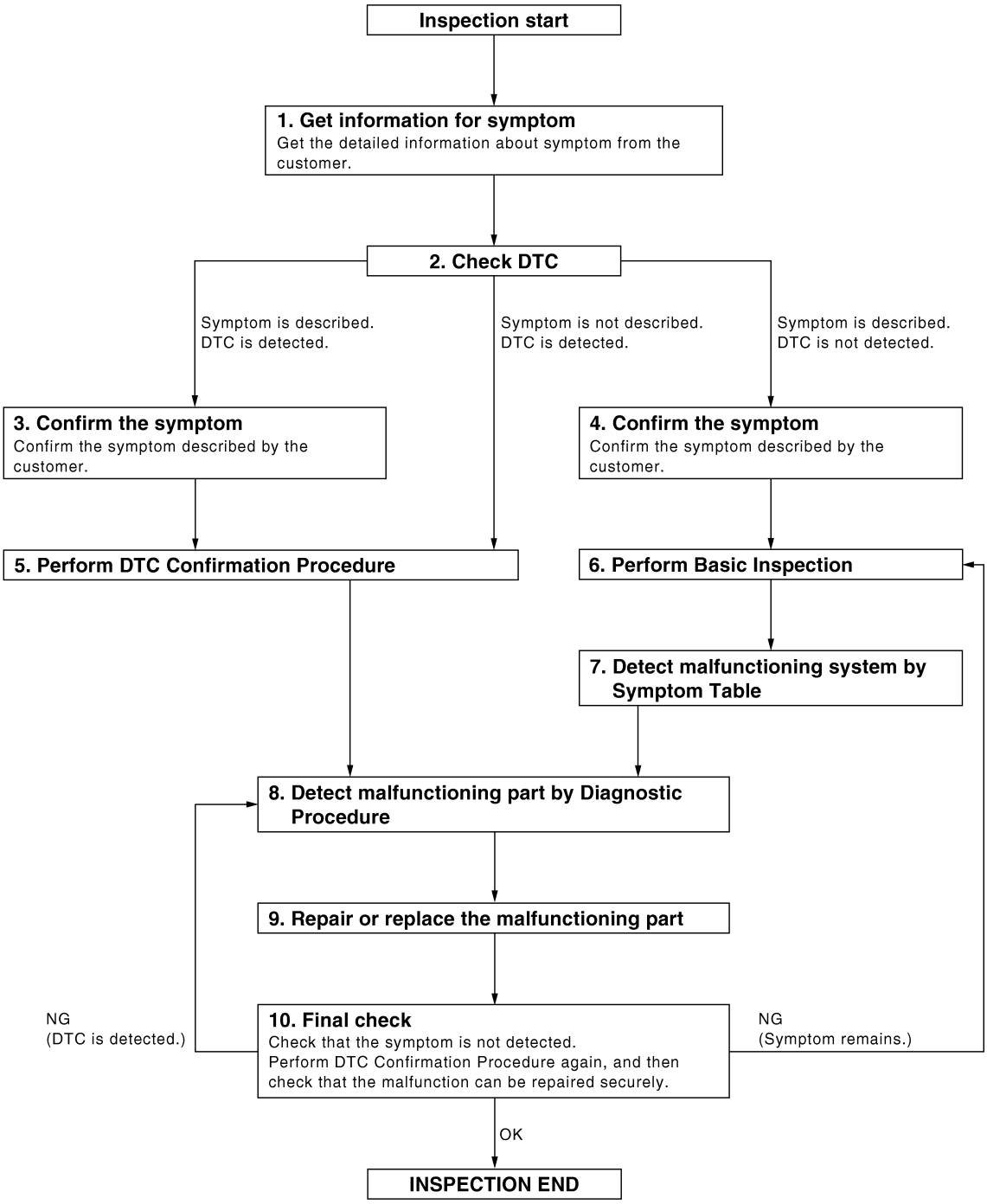
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000001184706

OVERALL SEQUENCE



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DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

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

>> GO TO 2.

2.CHECK DTC

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

- Erase DTC.
- Study the relationship between the cause detected by DTC and the symptom described by the customer.

3. Check related service bulletins for information.

Is any symptom described and any DTC detected?

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

3.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT-III to the vehicle in “DATA MONITOR” mode and check real time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4.CONFIRM THE SYMPTOM

Confirm the symptom described by the customer.
Connect CONSULT-III to the vehicle in “DATA MONITOR ” mode and check real time diagnosis results.
Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC Confirmation Procedure for the displayed DTC, and then check that DTC is detected again.
If two or more DTCs are detected, refer to SEC-241, "DTC Inspection Priority Chart" and determine trouble diagnosis order.

Is DTC detected?

YES >> GO TO 8.
NO >> Refer to GI-39, "Intermittent Incident".

6.PERFORM BASIC INSPECTION

Perform Basic Inspection, refer to SEC-265, "Basic Inspection".

Inspection End>>GO TO 7.

7.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

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

>> GO TO 8.

8.DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.
NOTE:
The Diagnostic Procedure described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnostic Procedure.

>> GO TO 9.

9.REPAIR OR REPLACE THE MALFUNCTIONING PART

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

>> GO TO 10.

10.FINAL CHECK

When DTC was detected in step 2, perform DTC Confirmation Procedure or Component Function Check again, and then check that the malfunction have been repaired securely.
When symptom was described from the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Does the symptom reappear?

YES (DTC is detected)>>GO TO 8.
YES (Symptom remains)>>GO TO 6.
NO >> **INSPECTION END**

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000001184707

Perform the system initialization when replacing BCM.

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000001184708

Refer to the CONSULT-III Operation Manual-NATS.

ECM RE-COMMUNICATING FUNCTION

ECM RE-COMMUNICATING FUNCTION : Description

INFOID:0000000001184709

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

ECM RE-COMMUNICATING FUNCTION : Special Repair Requirement

INFOID:0000000001184710

1. PERFORM ECM RE-COMMUNICATING FUNCTION

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

Can engine be started?

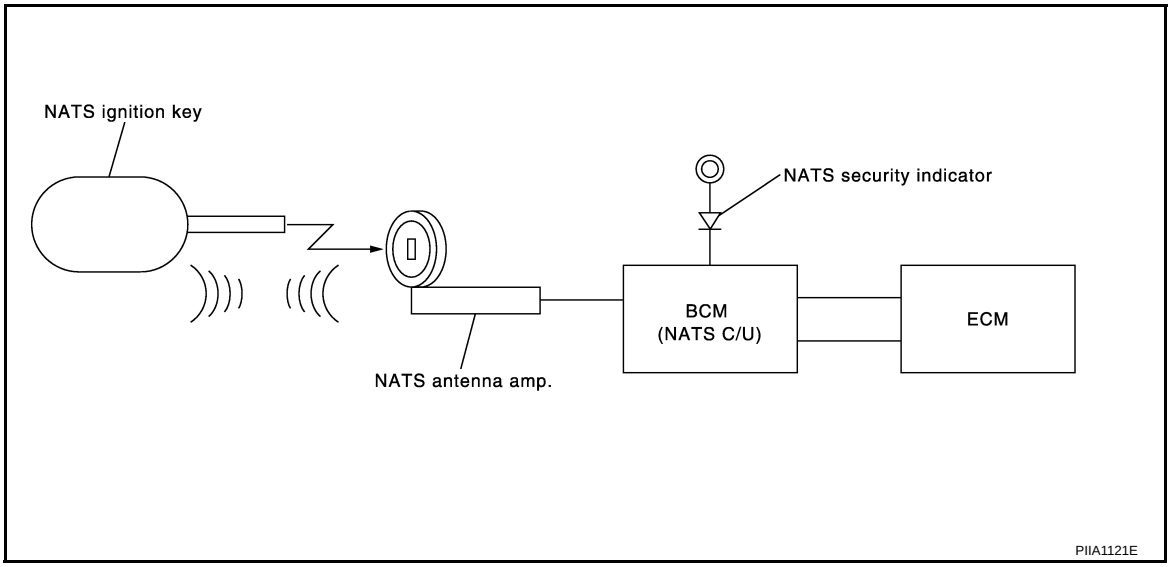
YES >> Procedure is completed.
NO >> Initialize control unit. Refer to CONSULT-III Operation Manual NATS.

FUNCTION DIAGNOSIS

NATS (NISSAN ANTI-THEFT SYSTEM)

System Diagram

INFOID:0000000001184711



System Description

INFOID:0000000001184712

INPUT/OUTPUT SIGNAL CHART

BCM

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

SYSTEM DESCRIPTION

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

- Engine immobilizer shows high anti-theft performance to prevent engine 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.
- Security indicator always flashes with mechanical key removed condition (key switch: OFF).
- Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system. Refer to SEC-175, "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 sontrol unit
- IPDM E/R
- Combination meter

- NATS trouble diagnosis, system initialization and additional registration of other Ignition key IDs must be carried out using CONSULT-III hardware and SECURITY CARD.
  When NATS initialization has been completed, the ID of the inserted ignition key or ignition key IDs can be carried out.

- Possible symptom of NATS malfunction is “Engine cannot start” In J10, the engine can be started with the NATS. Identify the possible causes according to “Work Flow”. Refer to SEC-167, "Work Flow".
- If ECM other than Genuine NISSAN is installed, the engine cannot be started. For ECM replacement procedure, refer to SEC-170, "ECM RE-COMMUNICATING FUNCTION : Description".

PRECAUTIONS FOR KEY REGISTRATION

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

SECURITY INDICATOR

- Security indicator blinks when the ignition switch is in “OFF” or “ACC” position.
- When NATS detects trouble, the security indicator lamp lights up while ignition key is in the “ON” position.

MAINTENANCE INFORMATION

CAUTION:

It is necessary to perform NATS ID registration when replacing any of the following part.

- **ECM**
  For RHD Vehicles, it is necessary to perform NATS ID registration when replacing any of the following parts with a used part.

If it's not (or fail to do so), the electrical system may not operate properly.

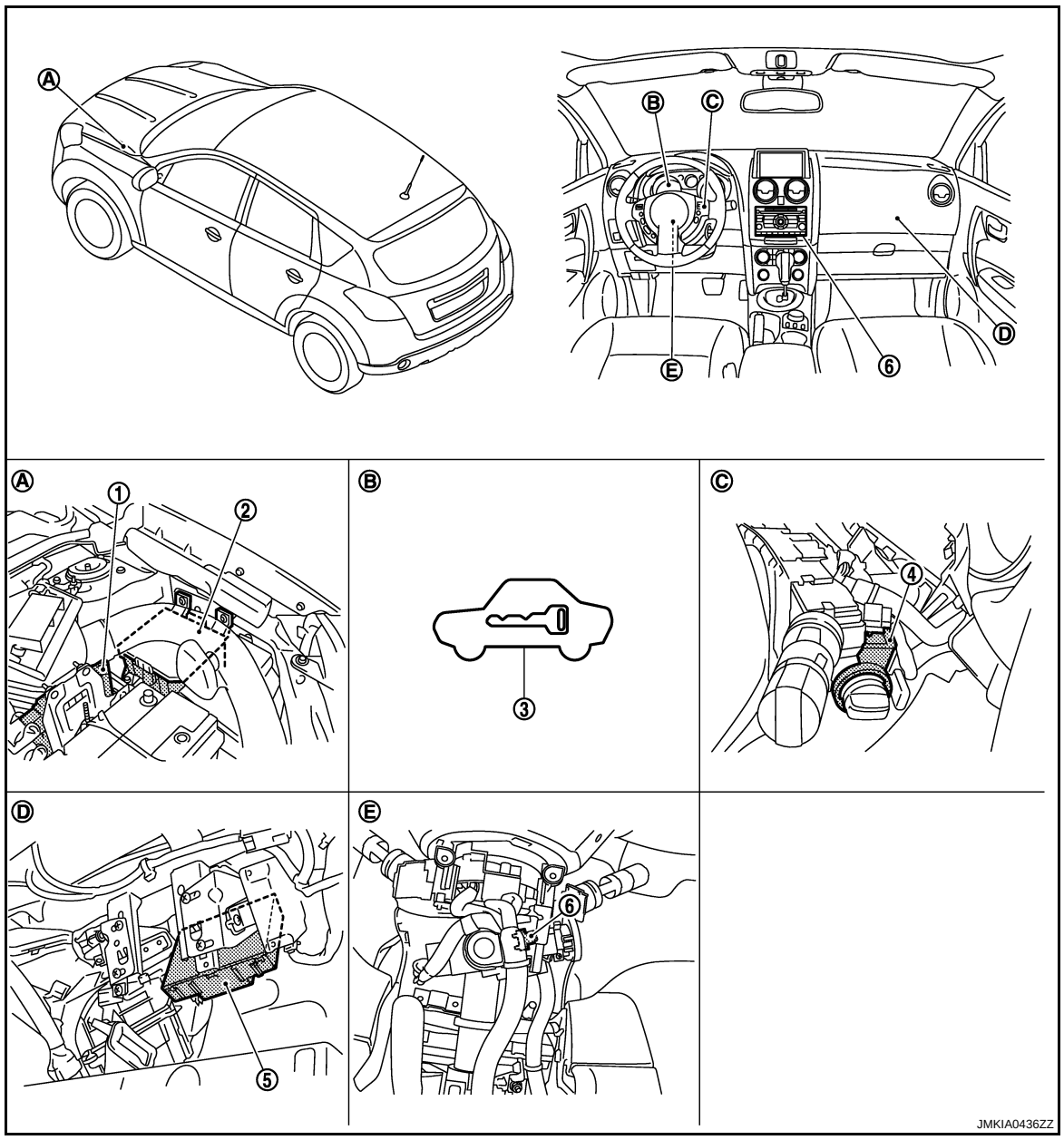
***: A new part should register automatically after the ignition switch is turned ON.**

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

- **EPS control unit**
- **IPDM E/R**
- **Combination meter**

Component Parts Location

INFOID:0000000001184713



1. ECM
   Gasoline engine E16
   K9K engine E60
   M9R engine E121
2. IPDM E/R
   E10, E11, E12, E13, E14
3. Security indicator lamp
   M34
4. NATS antenna amp.
   M26
5. BCM
   M65, M66, M67
6. Key switch
   M24

A. Engine room (LH)
B. Built in combination meter
C. View with steering column cover removed
D. Over the glove box
E. View with steering column cover removed

Component Description

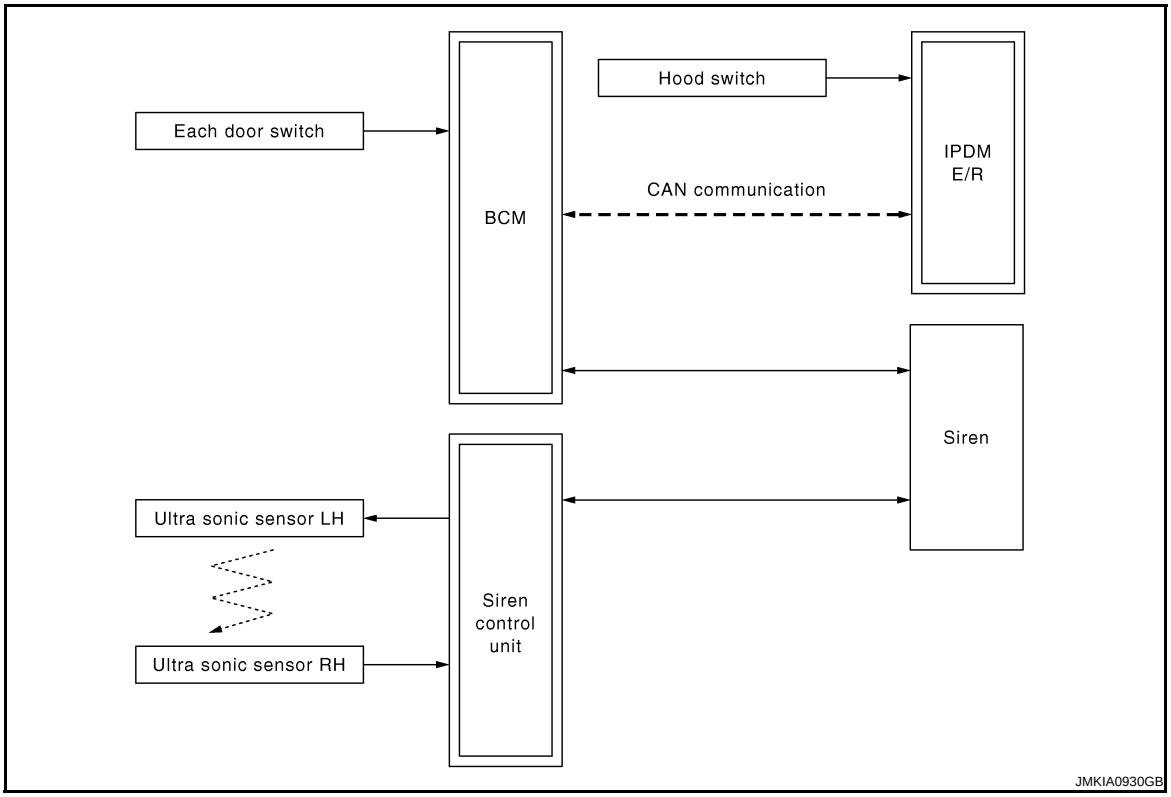
INFOID:0000000001184714

Component	Reference
BCM	BCS-8
Key switch	SEC-204
NATS antenna amp.	SEC-194
Security indicator	SEC-208
IPDM E/R	PCS-7

VEHICLE SECURITY SYSTEM

System Diagram

INFOID:0000000001184715



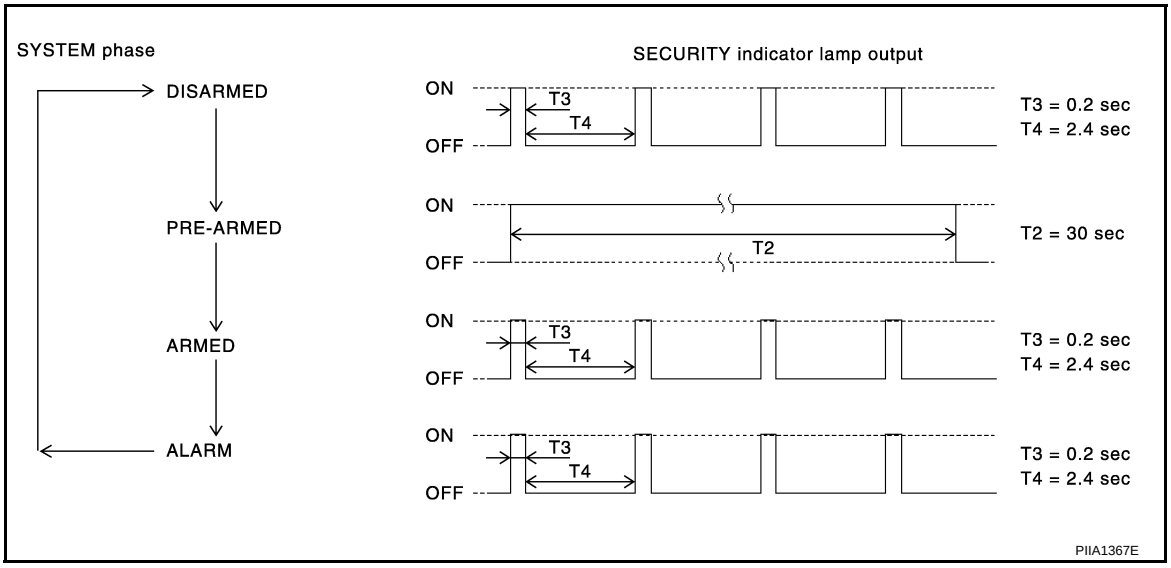
System Description

INFOID:0000000001184716

DESCRIPTION

The security system provides an audible and visual alarm when an unauthorized access to the vehicle is detected while the system is in armed phase.
The security system consist of two control units. The BCM relays door status, arming state, etc, to the siren control unit.

OPERATION FLOW



BCM shifts the phase as follows and the phase information is sent to siren control unit via communication line.

Disarmed Phase

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

Pre-Armed Phase And Armed Phase

The vehicle security system turns into the pre-armed phase when ignition switch is in OFF position, all doors are closed and locked (using Intelligent Key, door request switch or auto relock function). After 10 seconds from the lock operation, the system automatically shifts into the armed phase.

Condition of Activating The System

When the following condition are performed in armed phase, the system sounds the siren and flashes the head lamps for about 30 seconds.

- Hood or any door is opened.
- Ultra sonic sensor is triggered.
- Ignition switch goes ON with invalid transponder ID.

Condition of Deactivating The System

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

- Unlock the doors with Intelligent Key or door request switch.
- Ignition switch goes ON with transponder ID verified.

SIREN CONTROL UNIT

Siren control unit manages siren. the siren control unit does not shift to armed phase in the same way as BCM. the siren control unit goes to armed phase after about 10 seconds from lock command. If door is opened or closed within about 20 seconds, only the siren will be activated.

Siren control unit has battery inside. If disconnect or connect battery terminal before canceling armed phase, siren will be activated.

CAUTION:

When replace siren control unit (new one and used one), Perform “C/U INITALIZATION” with CONSULT-III.

Ultra Sonic Sensor Function

The ultra sonic sensor consist of two separate units, a transmitter on the left and receiver on the right mounted on room mirror. The LH transmitter sensor sends an ultra sonic pulse of sound, and RH receiver sensor receives the returning echo pulse.

It is possible to exclude the ultrasonic sensors.

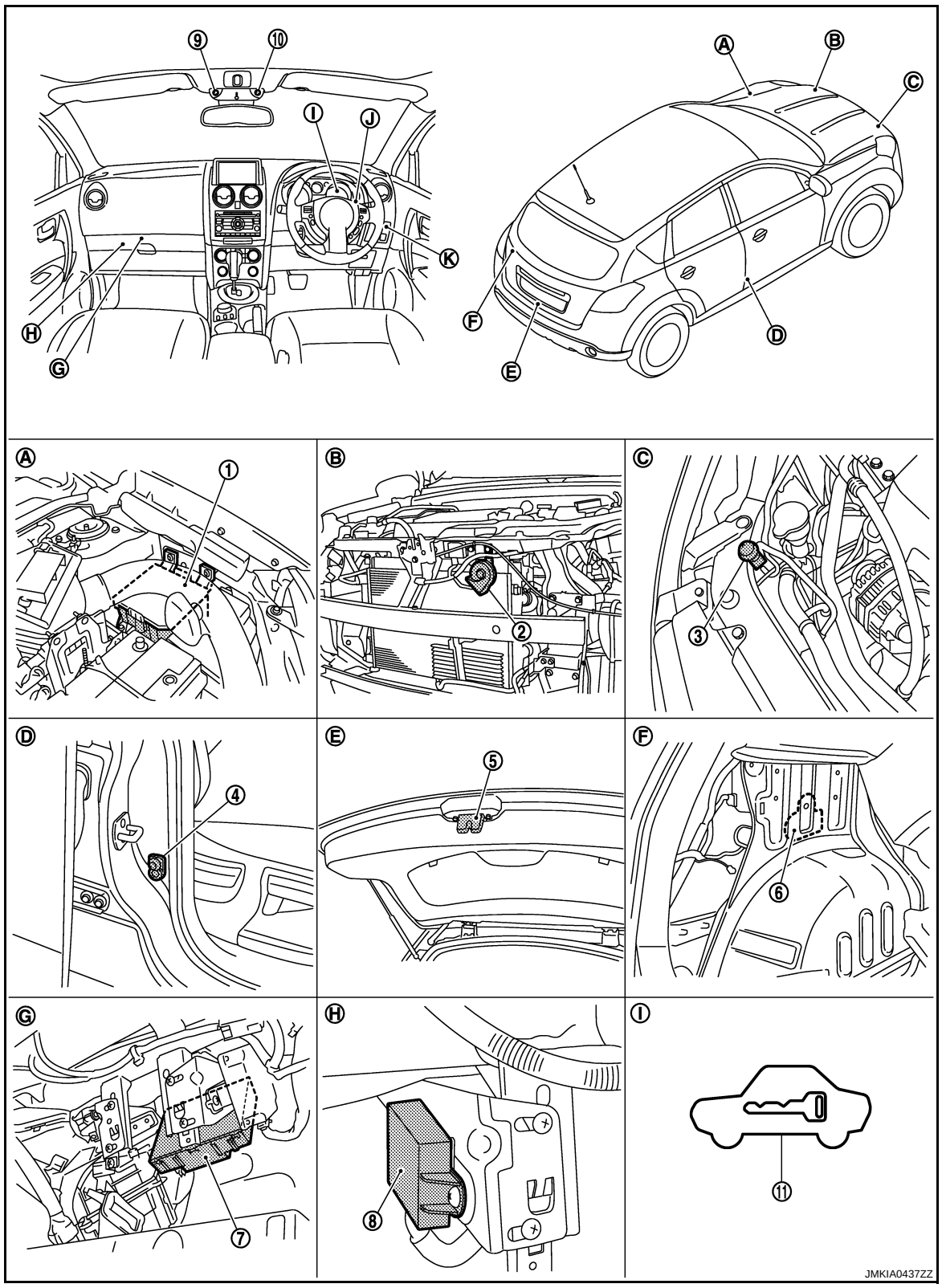
To exclude the ultra sonic sensors:

1. Turn the ignition switch from the OFF to the ON position.
2. Turn the ignition switch from OFF to ON 3 times within 7 seconds.
3. Close the doors, bonnet and press the lock button on the keyfob to lock all doors.

The ultra sonic sensors are now excluded from the alarm system. All other functions of the system remain activated until the alarm system is disarmed again.

Component Parts Location

INFOID:0000000001184717



1. IPDM E/R
   E10, E12
2. Horn
   E51
3. Hood switch
   E113

4. Front door switch (driver side) B34
5. Back door lock assembly (back door switch) D152
6. Siren B68
7. BCM M65, M66, M67
8. Siren control unit M94
9. Security indicator lamp (built in combination meter) M34

A. Engine room (LH)
B. View with front bumper removed
C. Engine room (RH)
D. View with center pillar
E. View with back door opened
F. View with luggage side lower finisher (LH) removed
G. Over the glove box
H. Over the glove box
I. Built in combination meter

Component Description

INFOID:0000000001184718

Component	Reference
BCM	BCS-8
Hood switch	SEC-206
Security indicator	SEC-208
Door switch	DLK-586
Siren control unit	SEC-210
Ultra sonic sensor	SEC-210
NATS antenna amp.	SEC-194

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

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

INFOID:0000000001559465

APPLICATION ITEM

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

Diagnosis mode	Function Description
Work Support	Changes the setting for each system function.
Self Diagnostic Result	Displays the diagnosis results judged by BCM. Refer to BCS-62, "DTC Index".
CAN Diag Support Monitor	Monitors the reception status of CAN communication viewed from BCM.
Data Monitor	The BCM input/output signals are displayed.
Active Test	The signals used to activate each device are forcibly supplied from BCM.
Ecu Identification	The BCM part number is displayed.
Configuration	• Enables to read and save the vehicle specification. • Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

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

×: Applicable item

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
—	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER	×	×	×
Warning chime	BUZZER		×	×
Interior room lamp	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	×
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
Vehicle security system	THEFT ALM	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
PTC heater system	PTC HEATER		×	×

IMMU

IMMU : CONSULT-III Function (BCM - IMMU)

INFOID:0000000001559466

APPLICATION ITEM

CONSULT-III 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 Intelligent Key unit.

DATA MONITOR

Monitor item	Content
IGN ON SW	Indicates [ON/OFF] condition of ignition switch in ON position.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
PUSH SW*1	Indicates [ON/OFF] condition of ignition knob switch.

*1: For the vehicle Intelligent key is equipped.

ACTIVE TEST

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

THEFT ALM

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

INFOID:0000000001559467

APPLICATION ITEM

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

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
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.
PUSH SW*1	Indicates [ON/OFF] condition of ignition knob switch.
KEY ON SW	Indicates [ON/OFF] condition of key switch.
KEYKESS 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.
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.
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].
FLASHER	This test is able to check flasher operation [LH/RH/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 (SIREN CONTROL UNIT)

Diagnosis Description

INFOID:0000000001600654

SELF-DIAGNOSIS MODE

The siren control unit possess the self-diagnosis function and can detect the theft warning system malfunction.
The self-diagnosis modes are the following:

- Siren control unit circuit diagnosis
- Alarm data display
- System diagnosis

The self-diagnosis results are display by the number of time the hazard blinks or by siren sounds.

- **NOTE:**
  The siren sounds in this order (alarm data display, system diagnosis). The siren sound interpretation is very complex, please refer to an example of self-diagnosis results and then perform the diagnosis several times.

OPERATION PROCEDURE

1. Connect the CONSULT-III.
2. Turn the key to ON position.
3. Perform the work support mode security alarm setting.
4. Turn the security alarm set to OFF.
5. The self-diagnosis will automatically start 2 seconds after turning again the security alarm set to ON.

NOTE:
Perform the siren control unit self-diagnosis if the self-diagnosis does not start automatically.

SELF-DIAGNOSIS RESULT

The self-diagnosis results are displayed in the order below.

1. **Siren control unit circuit diagnosis display**
   Perform the siren control unit wires connection status diagnosis and display the results.
   Normal: The hazard lamp blinks 3 times after 2 seconds and the alarm data display will start.
   Circuit is malfunctioning: The hazard lamp does not blink and the self-diagnosis will not start.
2. **Alarm data display**
   Siren control unit sounds the alarm, and display the cause of the alarm start-up.
   Refer to SELF-DIAGNOSIS RESULT TABLE (alarm data).
   No data displayed: The system diagnosis results will be displayed.
   Data displayed: The alarm indicates an item related to the number of time it sounds.
   NOTE:
   A maximum of 3 alarm latest data can be memorized.
   CAUTION:
   The alarm data will disappear as soon as the system is shifted to ARMED mode.
3. **System diagnosis results display**
   Perform the theft warning system diagnosis.
   Refer to SELF-DIAGNOSIS RESULT TABLE (malfunctioning part).
   Malfunction is not detected: Finish the self-diagnosis
   Malfunction is detected: The alarm indicates an item related to the number of time it sounds.

SELF-DIAGNOSIS RESULT TABLE

Alarm data

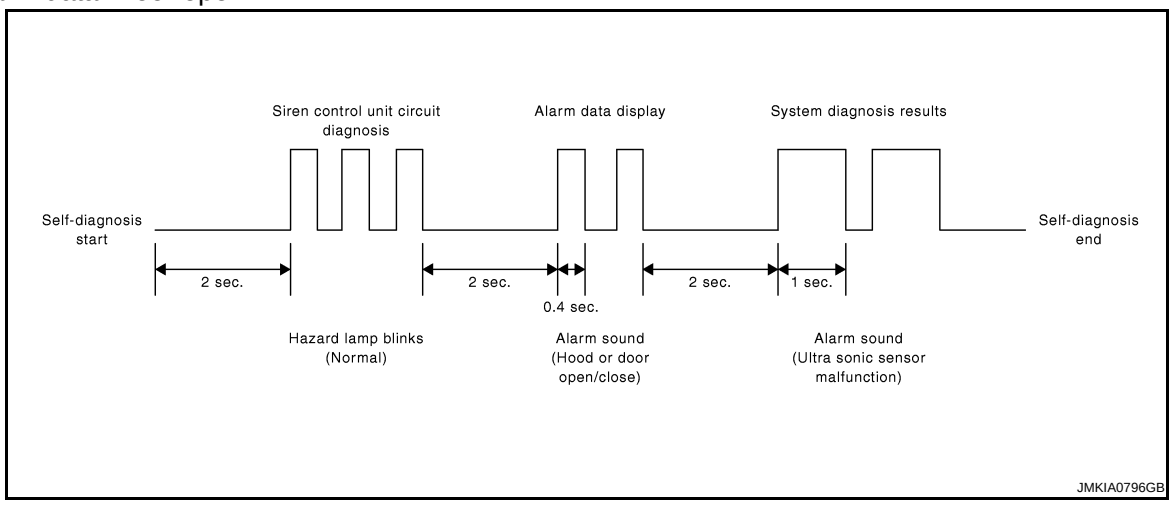
No. of time the alarm sounds	Alarm start-up condition
1st time	Battery removed.
2nd time	Hood or Door open/close
3rd time	Disconnection between the BCM and the siren control unit wires or malfunction.
4th time	Ultra sonic sensor has detected an intrusion.
5th time	Operate ignition switch with an unregistered key.
6th time	Disconnection between the siren control unit and ultra sonic senor wires.

Malfunctioning part

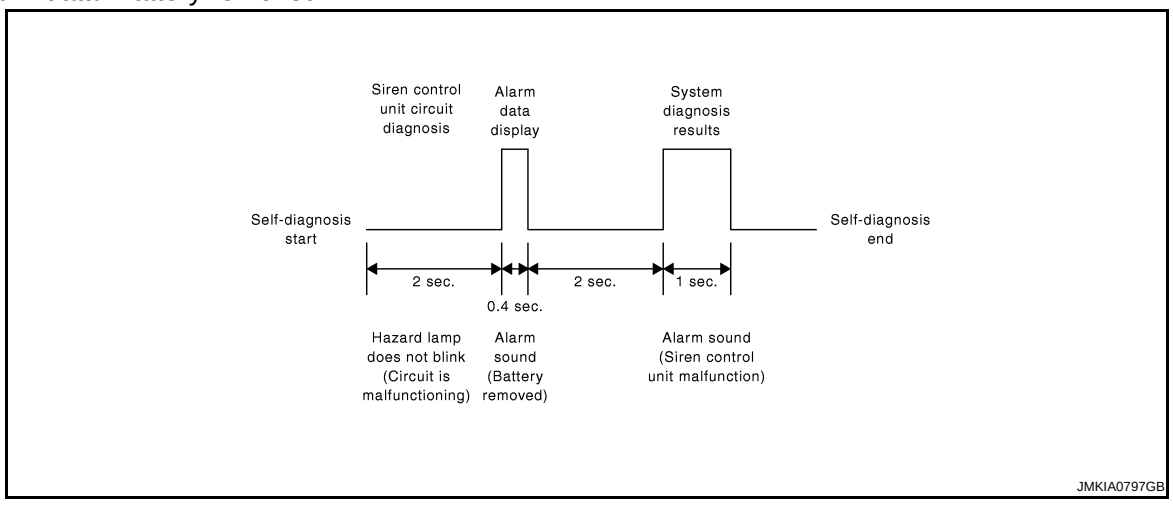
No. of time the alarm sounds	Malfunctioning parts
1st time	Siren control unit
2nd time	Ultra sonic sensor

Self-diagnosis result examples

1.
- Siren control unit circuit diagnosis: Normal
- System diagnosis: Ultra sonic sensor malfunction
- Alarm data: Door open

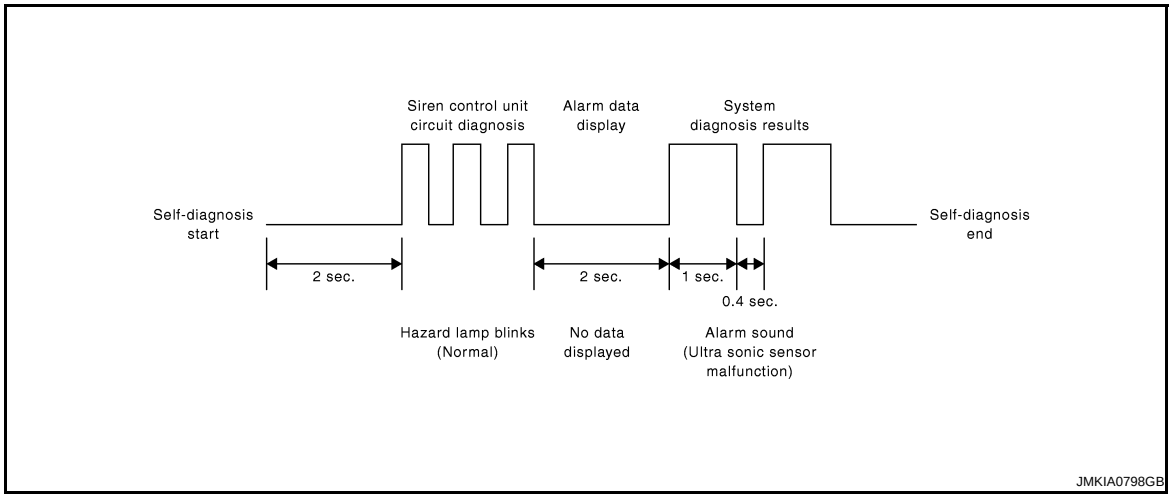


2.
- Siren control unit circuit diagnosis: Circuit is malfunctioning
- System diagnosis: Siren control unit malfunction
- Alarm data: Battery removed



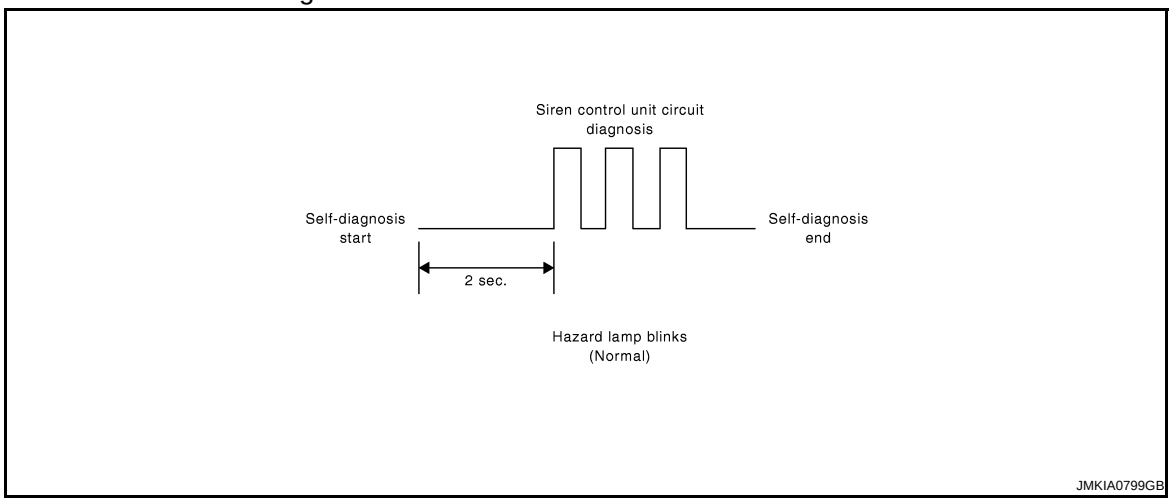
3.
- Siren control unit circuit diagnosis: Normal
- System diagnosis: Ultra sonic sensor malfunction

- Alarm data: No data



4.

- Siren control unit circuit diagnosis: Normal



COMPONENT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000001184722

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-28, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000001184723

DTC DETECTION LOGIC

DTC	CONSULT-III display description	DTC Detection Condition	Possible cause
U1000	CAN COMM CIRCUIT	When BCM cannot communicate CAN communication signal continuously for 2 seconds or more.	Any item (or items) of the following listed below is malfunctioning in CAN communication system. • Transmission • Receiving (ECM) • Receiving (METER/M&A) • Receiving (TCM) • Receiving (MULTI AV) • Receiving (IPDM E/R) • Receiving (I-KEY)

Diagnosis Procedure

INFOID:0000000001184724

1.PERFORM SELF DIAGNOSTIC

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

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-13, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-39, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:0000000001184725

DTC DETECTION LOGIC

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

Diagnosis Procedure

INFOID:0000000001184726

1.REPLACE BCM

When “DTC:U1010” is detected, replace BCM.

>> Replace BCM. Refer to BCS-65, "Exploded View".

Special Repair Requirement

INFOID:0000000001184727

1.ADDITIONAL SERVICE WHEN REPLACING BCM

>> Refer to BCS-3, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

P1610 LOCK MODE

Description

INFOID:0000000001184746

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

DTC Logic

INFOID:0000000001184747

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1610	LOCK MODE	When the starting operation is carried out five or more times consecutively under the following conditions. • Unregistered mechanical key • BCM or ECM's malfunctioning.	—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-187, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000001184748

1.CHECK ENGINE START FUNCTION

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

Does the engine start?

YES >> INSPECTION END
NO >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".

P1611 ID DISCORD, IMMU-ECM

Description

INFOID:0000000001600667

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 starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:0000000001600668

DTC DETECTION LOGIC

NOTE:

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-185, "DTC Logic".
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-186, "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-III.

Is DTC detected?

YES >> Refer to SEC-188, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001600669

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all ignition keys.
For initialization and registration of ignition key. Refer to “CONSULT-III Operation Manual NATS”.

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

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

2.PEPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT-III. Re-register all ignition keys.
   For initialization and registration of ignition key. Refer to “CONSULT-III Operation Manual NATS”.

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

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

3.PEPLACE ECM

1. Replace ECM.
2. Perform initialization with CONSULT-III. Re-register all ignition keys.
   For initialization and registration of ignition key. Refer to “CONSULT-III Operation Manual NATS”.

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

YES >> ECM is malfunctioning.
NO >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".

P1612 CHAIN OF ECM-IMMU

Description

INFOID:0000000001600670

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:0000000001600671

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-33, "DTC Logic".
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-34, "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-III.

Is DTC detected?

YES >> Refer to SEC-189, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000001600672

1.REPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT-III.
   For initialization, refer to “CONSULT-III Operation Manual NATS”.

Does the engine start?

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

P1614 CHANIN OF IMMU-KEY

Description

INFOID:0000000001600661

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

DTC Logic

INFOID:0000000001600662

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 the key cylinder.
2. Turn ignition switch ON.
3. Check “Self diagnostic result” with CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-190, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000001600663

1.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to SEC-266, "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. Refer to “CONSULT-III Operation Manual NATS”
NO >> GO TO 3.

3.CHECK NATS ANTENNA AMP. POWER SUPPLY

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

NATS antenna amp.		Ground	Voltage [V] (approx.)
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.

Key slot		Ground	Continuity
Connector	Terminal		
M26	3	Ground	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.

NATS antenna amp.		Ground	Condition	Voltage [V] (approx.)
Connector	Terminal			
M26	2	Ground	Just after inserting ignition key in key cylinder.	Pointer of tester should move.
	4		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-39, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace NATS antenna amp.
NO >> Repair or replace malfunctioning parts.

P1615 DIFFRENCE OF KEY

Description

INFOID:0000000001600664

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

DTC Logic

INFOID:0000000001600665

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 the key cylinder.
2. Press the ignition knob switch.
3. Check “Self diagnostic result” with CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-192, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001600666

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all ignition keys.
For initialization and registration of ignition key. Refer to “CONSULT-III Operation Manual NATS”.

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

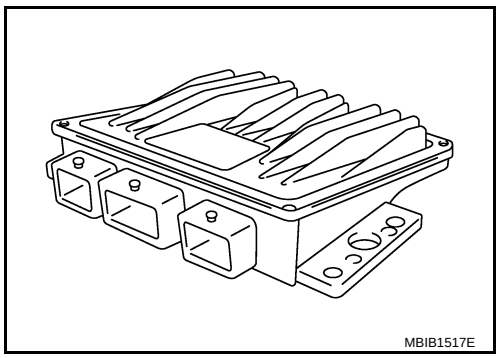
YES >> Ignition key was unregistered.
NO >> BCM is malfunctioning.
- Replace BCM. Refer to BCS-65, "Removal and Installation".
- Perform initialization again

P1616 ECM

Description

INFOID:0000000001605936

The ECM consists of a microcomputer and connectors for signal input and output and for power supply. The ECM controls the engine.



DTC Logic

INFOID:0000000001605937

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P1616	Engine control module	ECM is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 20 seconds before conducting the next test.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION

1. Turn ignition switch ON.
2. Check 1st trip DTC.

Is DTC detected?

YES >> Go to SEC-193, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000001605938

1.INSPECTION START

With CONSULT-III

1. Turn ignition switch ON.
2. Select “SELF-DIAG RESULTS” mode with CONSULT-III.
3. Touch “ERASE”.
4. **Perform DTC CONFIRMATION PROCEDURE.**
   See SEC-193, "DTC Logic".

Is the DTC P1616 displayed again?

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

2.REPLACE ECM

1. Replace ECM.
2. Go to ECR-11, "BASIC INSPECTION : Special Repair Requirement".

>> INSPECTION END

B2190 NATS ANTENNA AMP.

Description

INFOID:0000000001184728

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

DTC Logic

INFOID:0000000001184729

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-194, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000001184730

1.CHECK NATS ANTENNA AMP. INSTALLATION

Check NATS antenna amp. installation. Refer to SEC-266, "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. Refer to “CONSULT-III Operation Manual NATS”
NO >> GO TO 3.

3.CHECK NATS ANTENNA AMP. POWER SUPPLY

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

NATS antenna amp.		Ground	Voltage [V] (approx.)
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.

Key slot		Ground	Continuity
Connector	Terminal		
M26	3	Ground	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.

NATS antenna amp.		Ground	Condition	Voltage [V] (approx.)
Connector	Terminal			
M26	2	Ground	Just after inserting ignition key in key cylinder.	Pointer of tester should move.
	4		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-39, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace NATS antenna amp.
NO >> Repair or replace malfunctioning parts.

B2191 DIFFERENCE OF KEY

Description

INFOID:0000000001184731

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

DTC Logic

INFOID:0000000001184732

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2191	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 the key cylinder.
2. Press the ignition knob switch.
3. Check “Self diagnostic result” with CONSULT-III.

Is DTC detected?

YES >> Refer to SEC-196, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184733

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all ignition keys.
For initialization and registration of ignition key. Refer to “CONSULT-III Operation Manual NATS”.

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

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

B2192 ID DISCORD, IMMU-ECM

Description

INFOID:0000000001184734

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 starts the engine if the ID is OK. ECM prevents the engine from starting if the ID is not registered.

DTC Logic

INFOID:0000000001184735

DTC DETECTION LOGIC

NOTE:

- If DTC B2192 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-185, "DTC Logic".
- If DTC B2192 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-186, "DTC Logic".

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

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-197, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184736

1.PERFORM INITIALIZATION

Perform initialization with CONSULT-III. Re-register all ignition keys.
For initialization and registration of ignition key. Refer to “CONSULT-III Operation Manual NATS”.

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

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

2.PEPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT-III. Re-register all ignition keys.
   For initialization and registration of ignition key. Refer to “CONSULT-III Operation Manual NATS”.

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

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

3.PEPLACE ECM

1. Replace ECM.

- HR16 (WITH EURO-OBD): ECH-17, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".
- HR16 (WITHOUT EURO-OBD): ECH-356, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".
- MR20 (WITH EURO-OBD): ECM-17, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".
- MR20 (WITHOUT EURO-OBD): ECM-360, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

- K9K: ECK-21, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".
- M9R: ECR-12, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement".

2. Perform initialization with CONSULT-III. Re-register all ignition keys.
   For initialization and registration of ignition key. Refer to “CONSULT-III Operation Manual NATS”.

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

YES >> ECM is malfunctioning.
NO >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".

B2193 CHAIN OF ECM-IMMU

Description

INFOID:0000000001184737

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:0000000001184738

DTC DETECTION LOGIC

NOTE:

- If DTC B2193 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-33, "DTC Logic".
- If DTC B2193 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-34, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2193	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-III.

Is DTC detected?

YES >> Refer to SEC-199, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000001184739

1. REPLACE BCM

1. Replace BCM. Refer to BCS-65, "Removal and Installation".
2. Perform initialization with CONSULT-III.
   For initialization, refer to “CONSULT-III Operation Manual NATS”.

Does the engine start?

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

B2195 ANTI-SCANNING

Description

INFOID:0000000001184740

When the ID of the remote control engine starter installed cannot be registered, anti-scanning operates and it may be possible that the engine can not start. In the case, obtain the customer approval to remove the remote control engine starter.

DTC Logic

INFOID:0000000001184741

DTC DETECTION LOGIC

NOTE:

- If DTC B2195 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-185, "DTC Logic".
- If DTC B2195 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-186, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2195	ANTI-SCANNING	The ID of the remote control engine starter installed cannot be registered.	Remote control engine starter

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is DTC detected?

YES >> Refer to SEC-200, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184742

1.REMOVAL OF REMOTE CONTROL ENGINE STARTER

Remove remote control engine starter with the customer approval.

>> GO TO 2.

2.CHECK SELF DIAGNOSTIC RESULT

1. Turn ignition switch ON.
2. Perform “Self diagnostic result” with CONSULT-III.
3. Erase DTC.
4. Start the engine.

Does the engine start?

YES >> INSPECTION END
NO >> BCM is malfunctioning.
- Replace BCM
- Perform initialization

B2196 DONGLE NG

Description

INFOID:0000000001184743

BCM performs the ID verification with the slave control units (EPS column assy, IPDM E/R, combination meter).
If either slave control unit is replaced by used part, perform initialization with CONSULT-III. But if the control unit is replaced by new part, the system does not need initialization.

DTC Logic

INFOID:0000000001184744

DTC DETECTION LOGIC

NOTE:

- If DTC B2196 is displayed with DTC U1000, first perform the trouble diagnosis for DTC U1000. Refer to SEC-185, "DTC Logic".
- If DTC B2196 is displayed with DTC U1010, first perform the trouble diagnosis for DTC U1010. Refer to SEC-186, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
B2196	DONGLE NG	The ID verification results between BCM and each slave control unit are NG.	• ECM • EPS column assy • Combination meter • IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

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

Is the DTC detected?

YES >> Refer to SEC-201, "Diagnosis Procedure".
NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000001184745

1.PERFORM INITIALIZATION

1. Perform initialization with CONSULT-III. Re-register all ignition keys. Refer to “”.
2. Start the engine.

Dose the engine start?

YES >> INSPECTION END
NO >> Perform “Self Diagnosis Result” for each control unit.

POWER SUPPLY AND GROUND CIRCUIT
SIREN CONTROL UNIT

SIREN CONTROL UNIT : Diagnosis Procedure

INFOID:0000000001184749

1.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(–)	
Siren control unit			
Connector	Terminal	Ground	
M94	4	Ground	Battery voltage

Is the measurement value normal?

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

2.CHECK GROUND CIRCUIT

Check continuity between siren control unit harness connectors and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
M94	6	Ground	Existed

Does continuity exist?

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

SIREN

SIREN : Diagnosis Procedure

INFOID:0000000001184751

1.CHECK POWER SUPPLY CIRCUIT

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

Terminals			Voltage (Approx.)
(+)		(–)	
Siren			
Connector	Terminal	Ground	
B68	2		Battery voltage

Is the measurement value normal?

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

2.CHECK GROUND CIRCUIT

Check continuity between siren control unit harness connectors and ground.

IPDM E/R		Ground	Continuity
Connector	Terminal		
B68	5		Existed

Does continuity exist?

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

BCM

BCM : Diagnosis Procedure

INFOID:0000000001605592

1.CHECK FUSES AND FUSIBLE LINK

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

Terminal No.	Signal name	Fuses and fusible link No.
41	Battery power supply	9
57		J
37	ACC power supply	5
38	Ignition power supply	4

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

Terminals			Ignition switch position		
(+)		(–)			
BCM			OFF	ACC	ON
Connector	Terminal				
M65	37	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M66	41		Battery voltage	Battery voltage	Battery voltage
M67	57				

Is the measurement value normal?

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

3.CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM		Ground	Continuity
Connector	Terminal		
M67	55		Existed

Does continuity exist?

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

KEY SWITCH

Description

INFOID:0000000001184753

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

Component Function Check

INFOID:0000000001184754

1.CHECK KEY SWITCH INPUT SIGNAL

Check key switch (“KEY ON SW”) in “Data Monitor” mode with CONSULT-III.

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-204, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001184755

1.CHECK KEY SWITCH INPUT SIGNAL

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

Terminals			Condition	Voltage (V) (Approx.)
(+)		(–)		
BCM connector	Terminal			
M65	36	Ground	Insert ignition key into key cylinder	Battery voltage
			Remove ignition key from key cylinder	0

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".
NO >> GO TO 2.

2.CHECK KEY SWITCH POWER SUPPLY CIRCUIT

1. Remove ignition key from key cylinder.
2. Disconnect key switch connector.
3. Check voltage between key switch harness connector and ground.

Terminals			Voltage (V) (Approx.)
(+)		(–)	
Key switch connector	Terminal		
M24	2	Ground	Battery voltage

Is the inspection result normal?

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

3.CHECK KEY SWITCH SIGNAL CIRCUIT

1. Check continuity between BCM harness connector and key switch harness connector.

BCM connector	Terminal	Key switch connector	Terminal	Continuity
M65	36	M25	1	Existed

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

Key switch connector	Terminal	Ground	Continuity
M25	1	Ground	Not existed

Is the inspection result normal?

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

4.CHECK KEY SWITCH

Check key switch function.
Refer to SEC-205, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-39, "Intermittent Incident".
NO >> Replace key switch.

Component Inspection

INFOID:0000000001184756

COMPONENT INSPECTION

1.CHECK KEY SWITCH

Check continuity between key switch terminals.

Terminal		Condition	Continuity
key switch connector			
1	2	Insert ignition key into key cylinder	Existed
		Remove ignition key from key cylinder	Not existed

Is the inspection result normal?

YES >> Key switch is OK.
NO >> Replace key switch.

HOOD SWITCH

Description

INFOID:0000000001184761

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

Component Function Check

INFOID:0000000001184762

1.CHECK FUNCTION

1. Select “HOOD SW” in “Data Monitor” mode with CONSULT-III.
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-206, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001184763

1.CHECK HOOD SWITCH SIGNAL

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

IPDM E/R		Ground	Condition		Voltage (V) (Approx.)
Connector	Terminal				
E12	21	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 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	
E12	21	E113	2	Existed

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

IPDM E/R		Ground	Continuity
Connector	Terminal		
E12	21	Ground	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	1	Ground	Existed

Is the inspection result normal?

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

4.CHECK IPDM E/R OUTPUT

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

IPDM E/R		Ground	Voltage (V) (Approx.)
Connector	Terminal		
E12	21	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace IPDM E/R. Refer to PCS-33, "Removal and Installation".

5.CHECK HOOD SWITCH

Refer to SEC-207, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace hood switch.

6.CHECK INTERMITTENT INCIDENT

Refer to GI-39, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-33, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:0000000001184764

1.CHECK HOOD SWITCH

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

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

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace hood switch.

VEHICLE SECURITY INDICATOR

Description

INFOID:0000000001184768

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

Component Function Check

INFOID:0000000001184769

1.CHECK FUNCTION

1. Perform “THEFT IND” in the “ACTIVE TEST” mode with CONSULT-III.
2. Check vehicle security indicator operation.

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

Is the inspection result normal?

YES >> INSPECTION END.
NO >> Refer to SEC-208, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001605597

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.

Terminals			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 connector	Terminal	Combination meter connector	Terminal	Continuity
M65	18	M34	28	Existed

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

Combination meter connector	Terminal	Ground	Continuity
M34	28	Ground	Not existed

Is the inspection result normal?

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

3.CHECK BCM FUNCTION

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

Terminals			Voltage (V) (Approx.)
(+)		(–)	
BCM connector	Terminal		
M65	18	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace combination meter. Refer to MWI-78, "Removal and Installation".

4. CHECK INTERMITTENT INCIDENT

Refer to GI-39, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace BCM. Refer to BCS-65, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

ULTRA SONIC SENSOR

Description

INFOID:0000000001184771

Siren control unit sounds the siren when it received a trigger signal from ultra sonic sensor.

Component Function Check

INFOID:0000000001184772

1.CHECK SIREN CONTROL UNIT FUNCTION

1. Turn ignition switch OFF.
2. Get in the vehicle and close all doors.
3. Lock doors with keyfob.
4. Check that security indicator blinks when theft warning system is armed.
5. With hand, intercept the signal between left and right sensors.

Does the siren sound?

YES >> Siren control unit function is OK.
NO >> Refer to SEC-210, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000001184773

1.CHECK SIREN FUNCTION

1. Turn ignition switch ON.
2. Perform “ACTIVE TEST” (“VEHICLE SECURITY HORN”) with CONSULT-Ill.

Does the siren sound?

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

2.CHECK SIREN SIGNAL CIRCUIT

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

BCM connector	Terminal	Siren connector	Terminal	Continuity
M65	8	B68	1	Existed
	16		3	Existed

4. Check continuity between siren connector and ground.

Siren connector	Terminal	Ground	Continuity
B68	1	Ground	Not existed
	3		Not existed

Is the inspection result normal?

YES >> Replace siren. Refer to SEC-267, "Removal and Installation".
NO >> Repair or replace harness.

3.CHECK SIREN CONTROL UNIT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect siren control unit and siren connector.
3. Check continuity between siren control unit harness connector and siren connector.

Siren control unit connector	Terminal	Siren connector	Terminal	Continuity
M94	3	B68	4	Existed

4. Check continuity between siren control unit harness connector and ground.

Siren control unit connector	Terminal	Ground	Continuity
M94	3	Ground	Not existed

Is the inspection result normal?

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

4. CHECK ULTRA SONIC SENSOR SIGNAL CIRCUIT

1. Disconnect ultra sonic sensor connectors.
2. Check continuity between siren control unit harness connector and ultra sonic sensor connector.

Siren control unit connector	Terminal	Ultra sonic sensor connector	Terminal	Continuity
M94	1	R11	1	Existed
	8	R12	1	Existed

3. Check continuity between siren control unit connector and ground.

Siren control unit connector	Terminal	Ground	Continuity
M94	1	Ground	Not existed
	8		Not existed

Is the inspection result normal?

YES >> Replace ultra sonic sensor.
NO >> Repair or replace harness.

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:0000000001609211

VALUES ON THE DIAGNOSIS TOOL

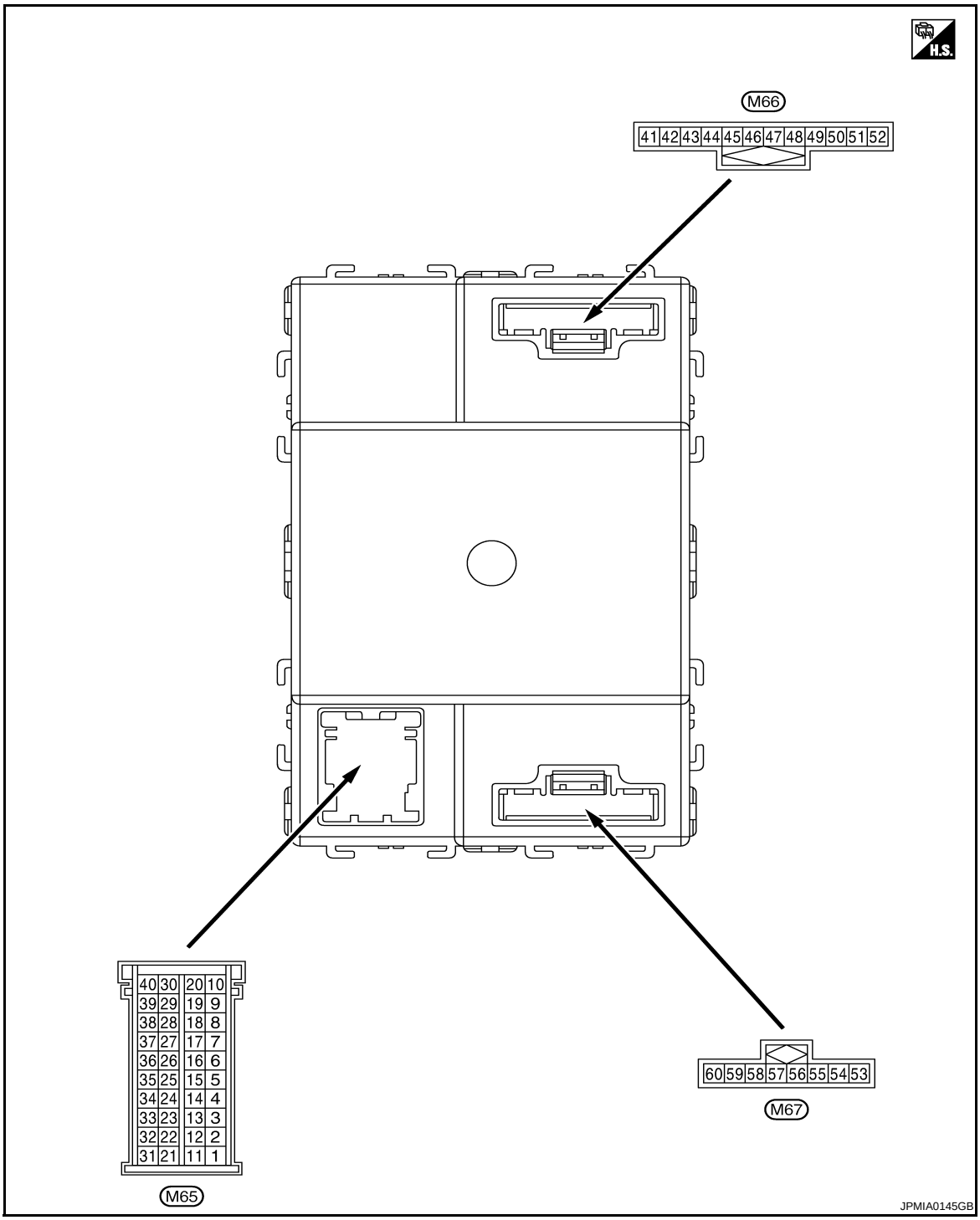
Monitor Item	Condition	Value/Status
ACC ON SW	Ignition switch OFF	Off
	Ignition switch ACC or ON	On
AIR COND SW	A/C switch OFF	Off
	A/C switch ON	On
AUT LIGHT SYS	Outside of the room is bright	Off
	Outside of the room is dark	On
AUTO LIGHT SW	Lighting switch OFF	Off
	Lighting switch AUTO	On
AUTO RELOCK	Auto lock function does not operate	Off
	Auto lock function is operating	On
BACK DOOR SW	Back door closed	Off
	Back door opened	On
BATTERY VOLT **NOTE:** Diesel engine models only	Ignition switch ON	Approximately the same as power supply voltage
BRAKE SW	Brake pedal is not depressed	Off
	Brake pedal is depressed	On
CDL LOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the LOCK side	On
CDL UNLOCK SW	Door lock/unlock switch does not operate	Off
	Press door lock/unlock switch to the UNLOCK side	On
DOOR SW-AS	Passenger door closed	Off
	Passenger door opened	On
DOOR SW-DR	Driver door closed	Off
	Driver door opened	On
DOOR SW-RL	Rear LH door closed	Off
	Rear LH door opened	On
DOOR SW-RR	Rear RH door closed	Off
	Rear RH door opened	On

Monitor Item	Condition		Value/Status
ELEC PWR CUT **NOTE:** Diesel engine models only	Engine running	Fan switch ON (when engine coolant is cool) **NOTE:** Depending on the ambient temperature, battery voltage, etc.	Off
		The current status maintained with the signal from ECM received.	FREEZ
		• Fan switch OFF • Fan switch ON after engine warming UP **NOTE:** Depending on the engine coolant temperature, ambient temperature, battery voltage, etc.	INHBT
ENG COOLNT T **NOTE:** Diesel engine models only	Engine running		Approximately the same as water temperature gauge reading
ENGINE RPM **NOTE:** Diesel engine models only	Engine running		Approximately the same as tachometer reading
ENGINE RUN	Engine stopped		Off
	Engine running		On
ENGINE STATUS **NOTE:** Diesel engine models only	Engine stopped		STOP
	While the engine stalls		STALL
	Engine running		RUN
	At engine cranking		CRA
FAN ON SIG	Fan switch OFF		Off
	Fan switch ON		On
FR FOG SW	Front fog lamp switch OFF		Off
	Front fog lamp switch ON		On
FR WASHER SW	Front washer switch OFF		Off
	Front washer switch ON		On
FR WIPER LOW	Front wiper switch OFF		Off
	Front wiper switch LO		On
FR WIPER HI	Front wiper switch OFF		Off
	Front wiper switch HI		On
FR WIPER INT	Front wiper switch OFF		Off
	Front wiper switch INT		On
FR WIPER STOP	Any position other than front wiper stop position		Off
	Front wiper stop position		On
GLS BREAK SEN	The vehicle without glass break sensor		On
	The vehicle with glass break sensor		Off
HAZARD SW	When hazard switch is not pressed		Off
	When hazard switch is pressed		On
HD LIGHT TIME	—		Displays a setting time of the follow me home function set by the work support

Monitor Item	Condition	Value/Status
HEAD LAMP SW 1	Lighting switch OFF	Off
	Lighting switch 2ND	On
HEAD LAMP SW 2	Lighting switch OFF	Off
	Lighting switch 2ND	On
HI BEAM SW	Lighting switch OFF	Off
	Lighting switch HI	On
HOOD SW	Close the hood **NOTE:** Vehicles without theft warning system are OFF-fixed	Off
	Open the hood	On
H/L WASH SW	**NOTE:** The item is indicated, but not monitored	Off
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
IGN SW CAN	Ignition switch OFF or ACC	Off
	Ignition switch ON	On
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7
I-KEY LOCK	LOCK button of Intelligent Key is not pressed	Off
	LOCK button of Intelligent Key is pressed	On
I-KEY UNLOCK	UNLOCK button of Intelligent Key is not pressed	Off
	UNLOCK button of Intelligent Key is pressed	On
KEY ON SW	Mechanical key is removed from key cylinder	Off
	Mechanical key is inserted to key cylinder	On
KEYLESS LOCK	LOCK button of key fob is not pressed	Off
	LOCK button of key fob is pressed	On
KEY LESS PANIC	**NOTE:** The item is indicated, but not monitored	Off
KEYLESS UNLOCK	UNLOCK button of key fob is not pressed	Off
	UNLOCK button of key fob is pressed	On
LIT-SEN FAIL	Light & rain sensor is in normal condition	OK
	Light & rain sensor is with internal error	NOT OK
MEMORY 1	Key fob ID code is not registered in “Memory 1”	Off
	Key fob ID code is registered in “Memory 1”	On
MEMORY 2	Key fob ID code is not registered in “Memory 2”	Off
	Key fob ID code is registered in “Memory 2”	On
MEMORY 3	Key fob ID code is not registered in “Memory 3”	Off
	Key fob ID code is registered in “Memory 3”	On
MEMORY 4	Key fob ID code is not registered in “Memory 4”	Off
	Key fob ID code is registered in “Memory 4”	On
MEMORY 5	Key fob ID code is not registered in “Memory 5”	Off
	Key fob ID code is registered in “Memory 5”	On
OIL PRESS SW	• Ignition switch OFF or ACC • Engine running	Off
	Ignition switch ON	On
OUT SIDE TEMP **NOTE:** Diesel engine models	Ignition switch ON	Approximately the same as outside air temperature

Monitor Item	Condition	Value/Status
PASSING SW	Other than lighting switch PASS	Off
	Lighting switch PASS	On
REVERSE SW CAN	Except selector lever R position	Off
	Selector lever R position	On
PUSH SW	Return to ignition switch to LOCK position	Off
	Press ignition switch	On
REAR DEF SW	Rear window defogger switch OFF	Off
	Rear window defogger switch ON	On
RR FOG SW	Rear fog lamp switch OFF	Off
	Rear fog lamp switch ON	On
RR WASHER SW	Rear washer switch OFF	Off
	Rear washer switch ON	On
RR WIPER INT	Rear wiper switch OFF	Off
	Rear wiper switch INT	On
RR WIPER ON	Rear wiper switch OFF	Off
	Rear wiper switch ON	On
RR WIPER STOP	Rear wiper stop position	Off
	Other than rear wiper stop position	On
SHOCK SENSOR	Ignition switch ON	NOMAL
	After the reception of air bag deployment signal from air bag diagnosis sensor unit	Off
	During the reception of air bag deployment signal from air bag diagnosis sensor unit	On
TAIL LAMP SW	Lighting switch OFF	Off
	Lighting switch 1ST	On
TRNK OPNR SW	When back door opener switch is not pressed	Off
	When back door opener switch is pressed	On
TURN SIGNAL L	Turn signal switch OFF	Off
	Turn signal switch LH	On
TURN SIGNAL R	Turn signal switch OFF	Off
	Turn signal switch RH	On
UNLOCK SHOCK	Other than the following	Off
	During the unlock operation interlocked with air bag	On
VEHICLE SPEED	While driving	Equivalent to speedometer reading

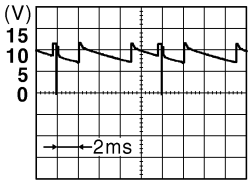
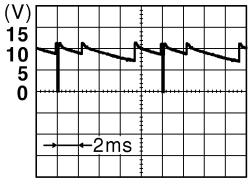
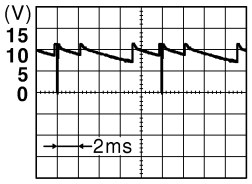
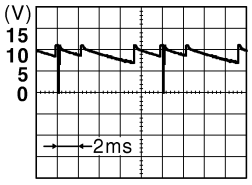
TERMINAL LAYOUT

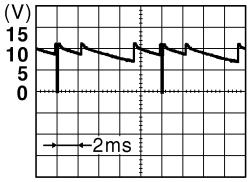
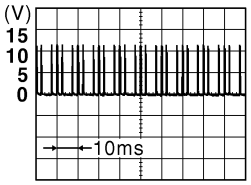
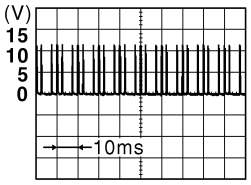
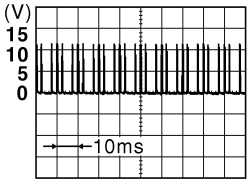
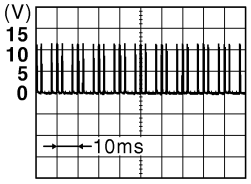


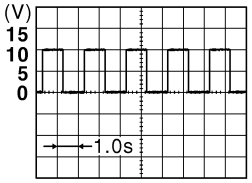
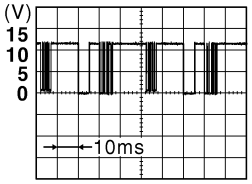
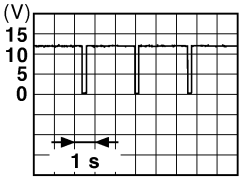
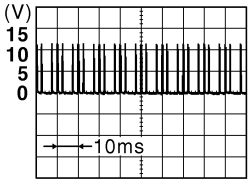
PHYSICAL VALUES

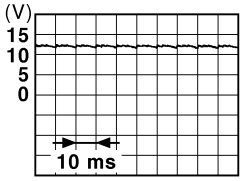
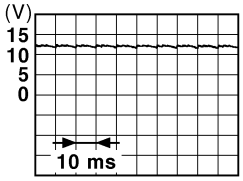
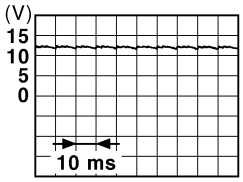
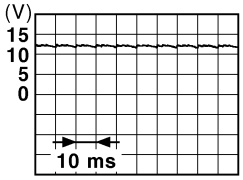
CAUTION:

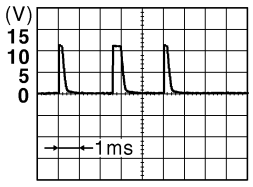
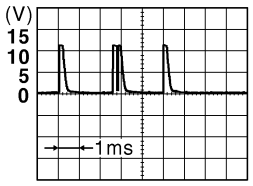
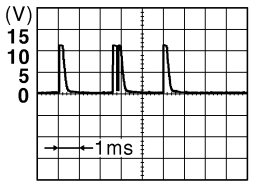
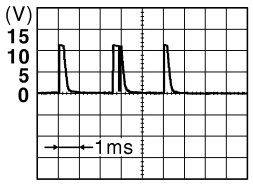
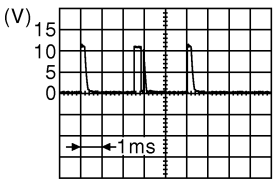
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF is not to be fluctuated by being overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-III. Refer to BCS-27, "COMB SW : CONSULT-III Function (BCM - COMB SW)".**
- **BCM reads the status of the combination switch at 10 ms internal normally. Refer to BCS-10, "System Description".**

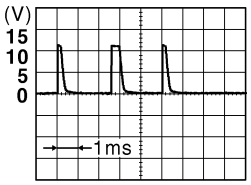
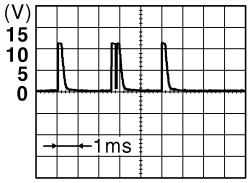
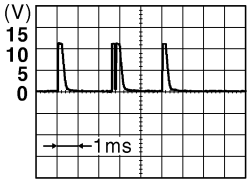
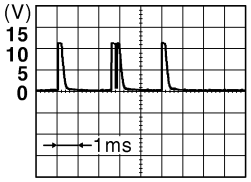
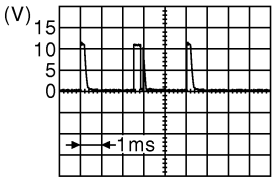
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
1 (P)	Ground	Combination switch OUTPUT 1	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front wiper switch HI (Wiper intermittent dial 4)	 JPMIA0160GB 9.1 V
					Rear wiper switch INT (Wiper intermittent dial 4)	
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3 • Wiper intermittent dial 6 • Wiper intermittent dial 7	
2 (Y)	Ground	Combination switch OUTPUT 4	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 2ND	 JPMIA0163GB 9.3 V
					Lighting switch PASS	
					Front fog lamp switch ON	
					Turn signal switch LH	
3 (LG)	Ground	Combination switch OUTPUT 3	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch AUTO	 JPMIA0162GB 9.3 V
					Rear fog lamp switch OFF	
					Front wiper switch MIST	
					Front wiper switch INT	
					Front wiper switch LO	
4 (R)	Ground	Combination switch OUTPUT 2	Output	Combination switch	All switch OFF (Wiper intermittent dial 4)	0 V
					Front washer switch ON (Wiper intermittent dial 4)	 JPMIA0161GB 9.1 V
					Rear wiper switch ON (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 5 • Wiper intermittent dial 6	

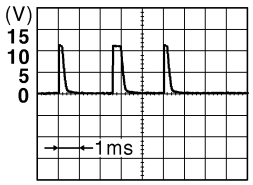
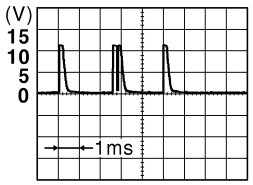
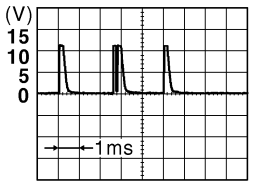
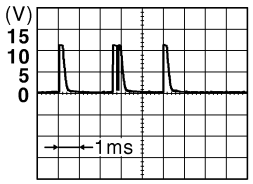
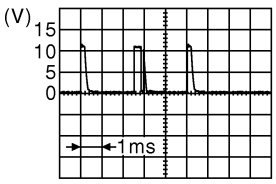
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
5 (W)	Ground	Combination switch OUTPUT 5	Output	Combination switch (Wiper intermittent dial 4)	All switch OFF	0 V
					Lighting switch 1ST	 JPMIA0164GB 9.1 V
					Lighting switch 2ND	
					Lighting switch HI	
					Turn signal switch RH	
7 (P)	Ground	Door lock/unlock switch (Lock)	Input	Door lock/unlock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the lock side	0 V
8 (LG)	Ground	Hazard switch	Input	Hazard switch	Not pressed	 JPMIA0154GB 1.3 V
					Pressed	0 V
9 (BR)	Ground	Door lock/unlock switch (Unlock)	Input	Door lock/unlock switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed to the unlock side	0 V
12 (P)	Ground	Back door opener switch	Input	Back door opener switch	Not pressed	 JPMIA0154GB 1.2 V
					Pressed	0 V

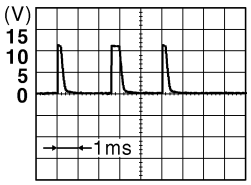
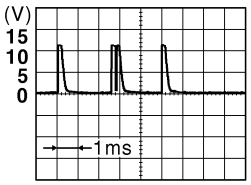
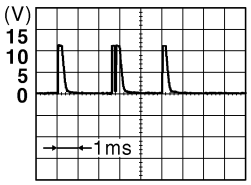
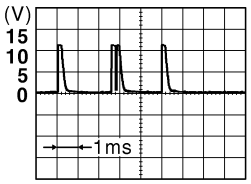
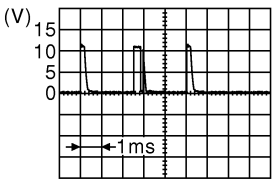
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
13 (R)	Ground	Shock detect sensor	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		 JPMIA0155GB 6.0 V
14 (L/R)	Ground	A/C switch	Input	A/C switch	Not pressed	Battery voltage
					Pressed	0 V
15 (LG/B)	Ground	Fan switch	Input	Fan switch	Not pressed	Battery voltage
					Pressed	0 V
16 (GR)	Ground	Alarm link	Output	—		—
17 (BR)	Ground	Light & rain sensor serial link	Input/ Output	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		 JPMIA0156GB 8.7 V
18 (SB)	Ground	Security indicator	Output	Security indicator	ON	0 V
					Blinking	 JPMIA0014GB 10.3 V
					OFF	Battery voltage
19 (L)	—	CAN-H	Input/ Output	—		—
20 (P)	—	CAN-L	Input/ Output	—		—
21 (SB)	Ground	Rear window defogger switch	Input	Rear window defogger switch	Not pressed	 JPMIA0154GB 1.1 V
					While pressing	0 V

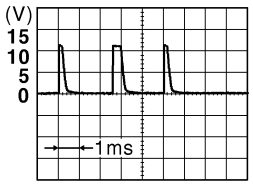
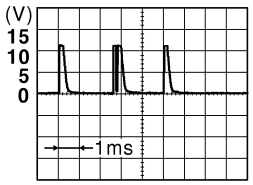
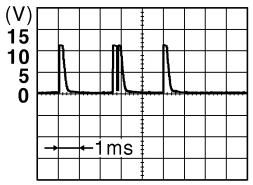
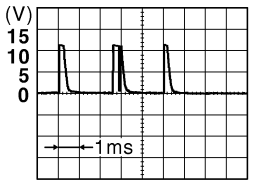
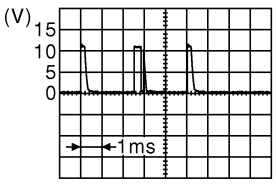
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
24 (GR)	Ground	Door lock status indicator	Output	Door lock status indicator	ON	Battery voltage
					OFF	0 V
25 (GR)	Ground	Rear door switch LH	Input	Rear door switch LH	OFF (When rear door LH closed)	 PKID0924E 11.2 V
					ON (When rear door LH opened)	0 V
26 (R)	Ground	Driver door switch	Input	Driver door switch	OFF (When driver door closed)	 PKID0924E 11.2 V
					ON (When driver door opened)	0 V
27 (BR)	Ground	Passenger door switch	Input	Passenger door switch	OFF (When passenger door closed)	 PKID0924E 11.2 V
					ON (When passenger door opened)	0 V
28 (G)	Ground	Back door switch	Input	Back door switch	OFF (When back door closed)	Battery voltage
					ON (When back door opened)	0 V
29 (LG)	Ground	Rear door switch RH	Input	Rear door switch RH	OFF (When rear door RH closed)	 PKID0924E 11.2 V
					ON (When rear door RH opened)	0 V
30 (SB)	Ground	Audio link	Input/ Output	—	—	—

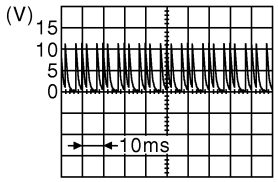
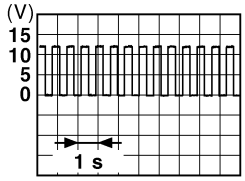
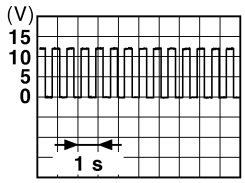
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
31 (BR)	Ground	Combination switch INPUT 5	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.3 V
					Front fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear fog lamp switch ON (Wiper intermittent dial 4)	 JPMIA0168GB 1.3 V
					Rear wiper switch ON (Wiper intermittent dial 4)	 JPMIA0169GB 1.3 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	 JPMIA0196GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
		Signal name	Input/ Output			
+	–					
32 (G)	Ground	Combination switch INPUT 2	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Lighting switch PASS	 JPMIA0167GB 1.3 V
					Lighting switch 2ND	 JPMIA0166GB 1.3 V
					Front wiper switch INT	 JPMIA0168GB 1.3 V
					Front wiper switch HI	 JPMIA0196GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
33 (V)	Ground	Combination switch INPUT 1	Input	Combination switch (Wiper intermittent dial 4)	All switch OFF	 JPMIA0165GB 1.4 V
					Turn signal switch LH	 JPMIA0167GB 1.3 V
					Turn signal switch RH	 JPMIA0166GB 1.3 V
					Front wiper switch LO	 JPMIA0168GB 1.3 V
					Front washer switch ON	 JPMIA0196GB 1.3 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
34 (GR)	Ground	Combination switch INPUT 4	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch AUTO (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Lighting switch 1ST (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Rear wiper INT (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 6	 JPMIA0196GB 1.3 V

Terminal No. (Wire color) +	Terminal No. (Wire color) –	Description Signal name	Description Input/ Output	Condition		Value (Approx.)
35 (L)	Ground	Combination switch INPUT 3	Input	Combination switch	All switch OFF (Wiper intermittent dial 4)	 JPMIA0165GB 1.4 V
					Lighting switch HI (Wiper intermittent dial 4)	 JPMIA0166GB 1.3 V
					Lighting switch 2ND (Wiper intermittent dial 4)	 JPMIA0167GB 1.3 V
					Rear wiper switch ON	 JPMIA0169GB 1.3 V
					Any of the condition below with all switch OFF • Wiper intermittent dial 1 • Wiper intermittent dial 2 • Wiper intermittent dial 3	 JPMIA0196GB 1.3 V
36 (V)	Ground	Key switch	Input	Insert mechanical key into ignition key cylinder		Battery voltage
				Remove mechanical key from ignition key cylinder		0 V
37 (R)	Ground	ACC power supply	Input	Ignition switch OFF		0 V
				Ignition switch ACC or ON		Battery voltage
38 (W)	Ground	Ignition power supply	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
39 (P)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder		Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
40 (LG)	Ground	NATS antenna amp.	Input/ Output	Insert mechanical key into ignition key cylinder		Just after Insert mechanical key into ignition key cylinder. Pointer of tester should move
41 (V)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
42 (V)	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
43 (L)	Ground	Rear wiper motor	Output	Rear wiper switch OFF		0 V
				Rear wiper switch ON		Battery voltage
44 (L/W)	Ground	Rear wiper auto stop	Input	Ignition switch ON	Rear wiper stop position	0 V
					Any position other than rear wiper stop position	 JPMIA0197GB
45 (GR)	Ground	Back door lock actuator	Output	Back door opener switch	Pressed	Battery voltage (300ms)
					Not pressed	0 V
47 (G/Y)	Ground	Turn signal LH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch LH	 PKID0926E 6.5 V
48 (G/B)	Ground	Turn signal RH	Output	Ignition switch ON	Turn signal switch OFF	0 V
					Turn signal switch RH	 PKID0926E 6.5 V
49 (Y)	Ground	Rear fog lamp	Output	Lighting switch 1ST and front fog lamp switch ON	Rear fog lamp switch OFF	0 V
					Rear fog lamp switch ON	Battery voltage
51 (R/W)*1 (R)*2	Ground	Stop lamp switch	Input	Depress the brake pedal		Battery voltage
				Release the brake pedal		0 V

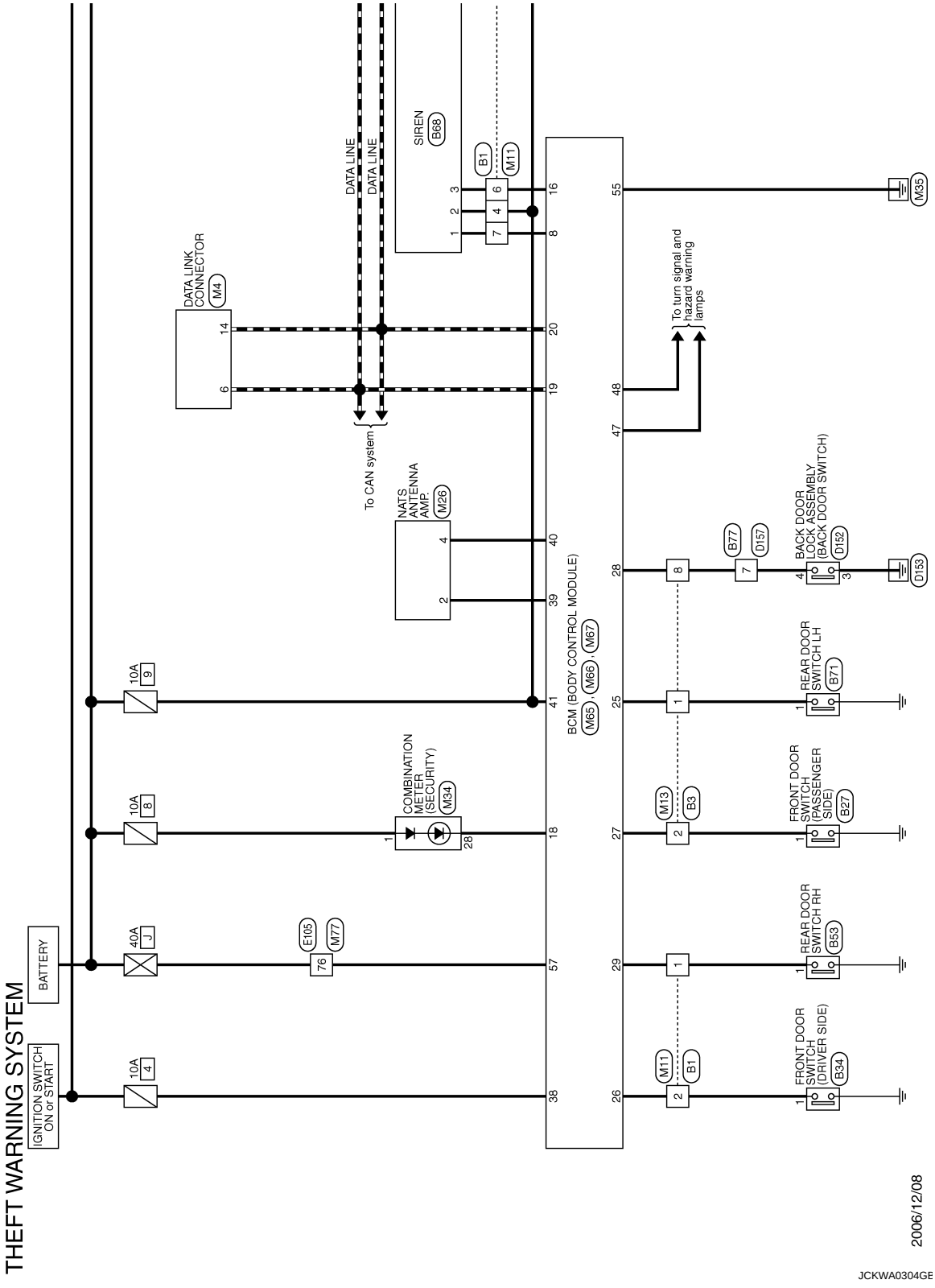
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
52 (R)	Ground	Room lamp timer control	Output	Interior room lamp	OFF	Battery voltage
					ON	0 V
53 (L)	Ground	Power window power supply	Output	Ignition switch	OFF or ACC	0 V
					ON	Battery voltage
54 (O)	Ground	Door unlock (All)	Output	Door lock/unlock switch	Pressed to the unlock side	Battery voltage
					Pressed to the lock side	0 V
55 (B)	Ground	Ground	—	Ignition switch ON		0 V
56 (Y)*1 (SB)*2	Ground	Door lock (All)	Output	Door lock/unlock switch	Pressed to the unlock side	0 V
					Pressed to the lock side	Battery voltage
57 (Y)	Ground	Battery power supply	Input	Ignition switch OFF		Battery voltage
58 (P)	Ground	Power window power supply	Output	Ignition switch OFF		Battery voltage
59 (BR)	Ground	Super lock	Output	When lock button of key fob or Intelligent Key is not pressed		0 V
				When lock button of key fob or Intelligent Key is pressed		Battery voltage
60 (GR)	Ground	Driver door unlock	Output	Door lock/unlock switch	Pressed to the unlock side	Battery voltage
					Pressed to the lock side	0 V

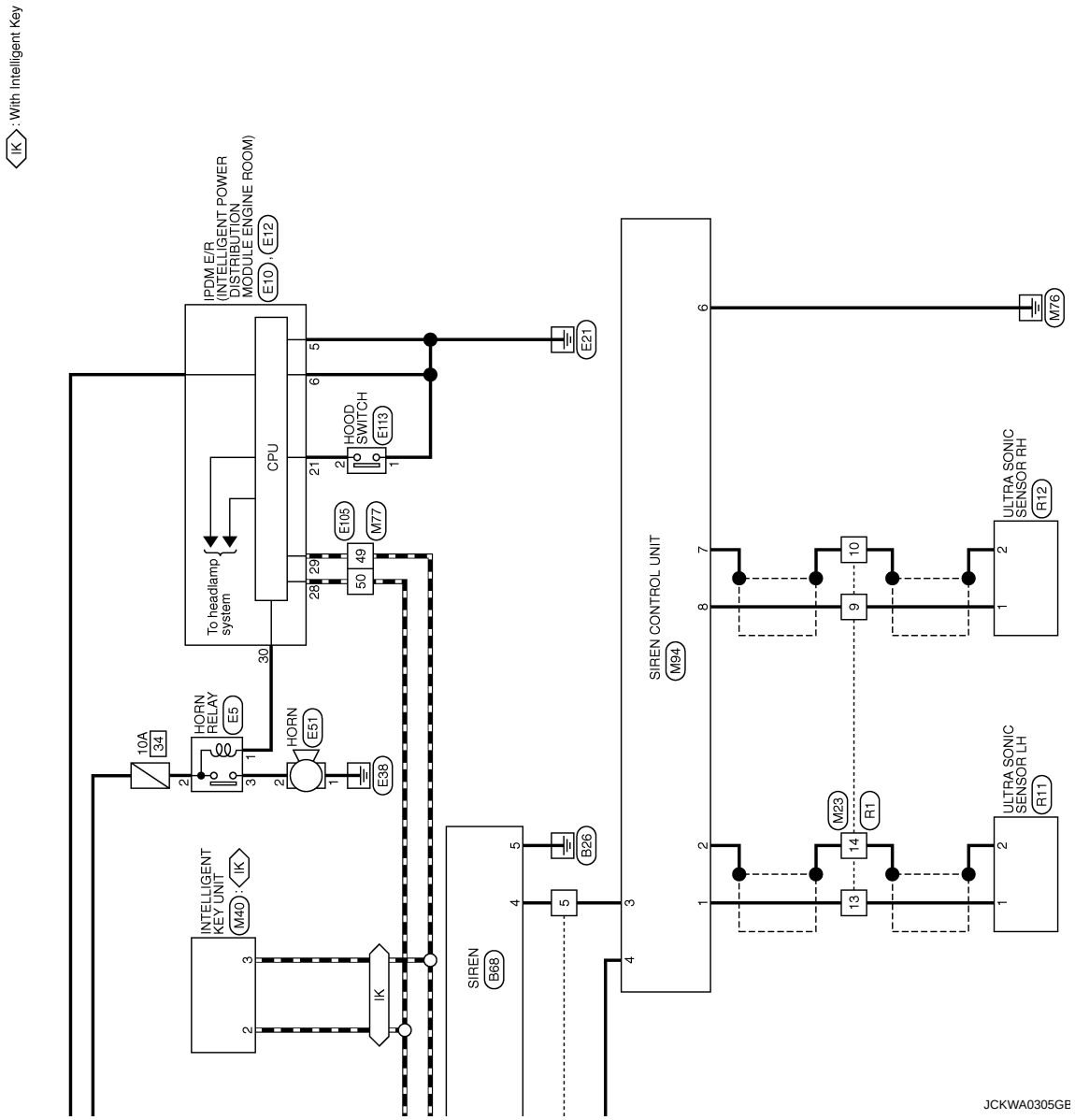
*1: With Intelligent Key system

*2: Without Intelligent Key system

Wiring Diagram - THEFT WARNING SYSTEM -

INFOID:0000000001184775




IK : With Intelligent Key
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 , E12
CPU
To headlamp system
HOOD SWITCH
E113
E21
M76
SIREN CONTROL UNIT
M94
ULTRA SONIC SENSOR RH
R12
ULTRA SONIC SENSOR LH
R11
M23
R1
E105
M77
10A
34
HORN RELAY
E5
HORN
E51
E38
INTELLIGENT KEY UNIT
M40 , IK
IK
SIREN
B68
B26
JCKWA0305GE

THEFT WARNING SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R/W	–[RHD models]
4	V	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

Connector No.	B27
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–

Connector No.	B68
Connector Name	SIREN
Connector Type	RH06FB

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	HAZARD REQ
2	V	B+
3	GR	COMMON LINK
4	Y	U/S LINK
5	B	GND

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

JCKWA0543GE

THEFT WARNING SYSTEM

Connector No.	D152
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	CINCH 49309 EV 4M9

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–
4	G	–

Connector No.	D157
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

Connector No.	E5
Connector Name	HORN RELAY
Connector Type	–

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	GR/L	–
3	G	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

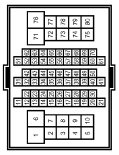
Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
21	GR	–
28	L	–
29	P	–
30	L	–

Connector No.	E51
Connector Name	HORN
Connector Type	DELPHI 15419715

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	G	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

Connector No.	E113
Connector Name	HOOD SWITCH
Connector Type	W02FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	GR	–

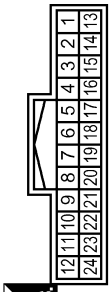
JCKWA0544GE

THEFT WARNING SYSTEM

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

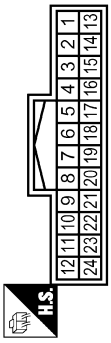
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



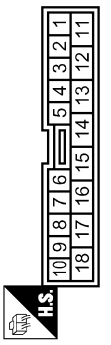
Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R	–[RHD models]
4	R	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	P	–
4	LG	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
28	SB	SECURITY

Connector No.	M40
Connector Name	INTELLIGENT KEY UNIT
Connector Type	TH40FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	CAN-H
3	P	CAN-L

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THEFT WARNING SYSTEM

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

Terminal No.	Color of Wire	Signal Name [Specification]
8	LG	HAZARD SW
16	GR	ALARM LINK
18	SB	SECURITY INDICATOR
19	L	CAN-H
20	P	CAN-L
25	GR	DOOR SW (RL)
26	R	DOOR SW (DR)
27	BR	DOOR SW (AS)
28	G	DOOR SW (BACK)
29	LG	DOOR SW (RR)
38	W	IGN SW
39	P	NATS ANTENNA AMP
40	LG	NATS ANTENNA AMP

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017

Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
47	G/Y	FLASHER OUTPUT (LEFT)
48	G/B	FLASHER OUTPUT (RIGHT)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

Connector No.	M94
Connector Name	SIREN CONTROL UNIT
Connector Type	A08FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	U/S LEFT (TX)
2	SHIELD	SHIELD
3	Y	U/S LINK
4	R	B+
6	B	GND
7	SHIELD	SHIELD
8	W	U/S RIGHT (RX)

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

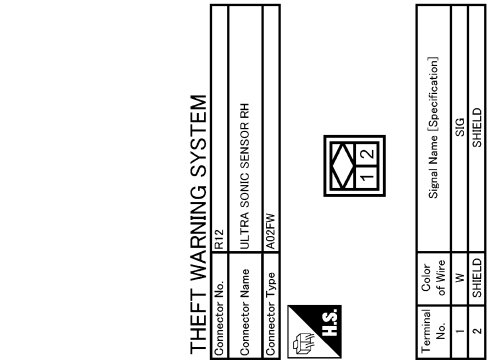
Connector No.	R11
Connector Name	ULTRA SONIC SENSOR LH
Connector Type	A02MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	SIG
2	SHIELD	SHIELD

JCKWA0546GB

THEFT WARNING SYSTEM

Connector No.	R12
Connector Name	ULTRA SONIC SENSOR RH
Connector Type	A02FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	W	SIG
2	SHIELD	SHIELD

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Wiring Diagram - NATS -

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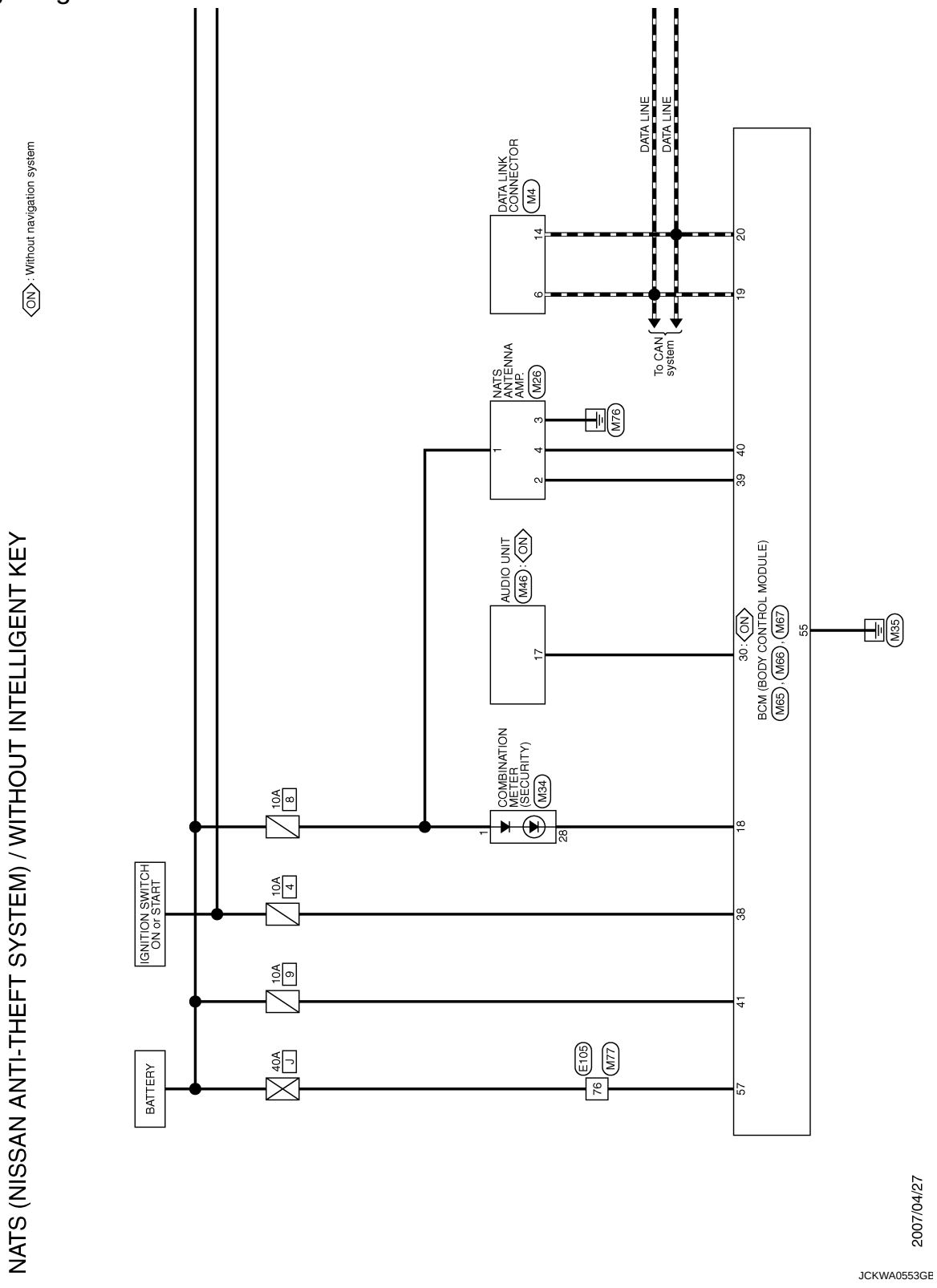
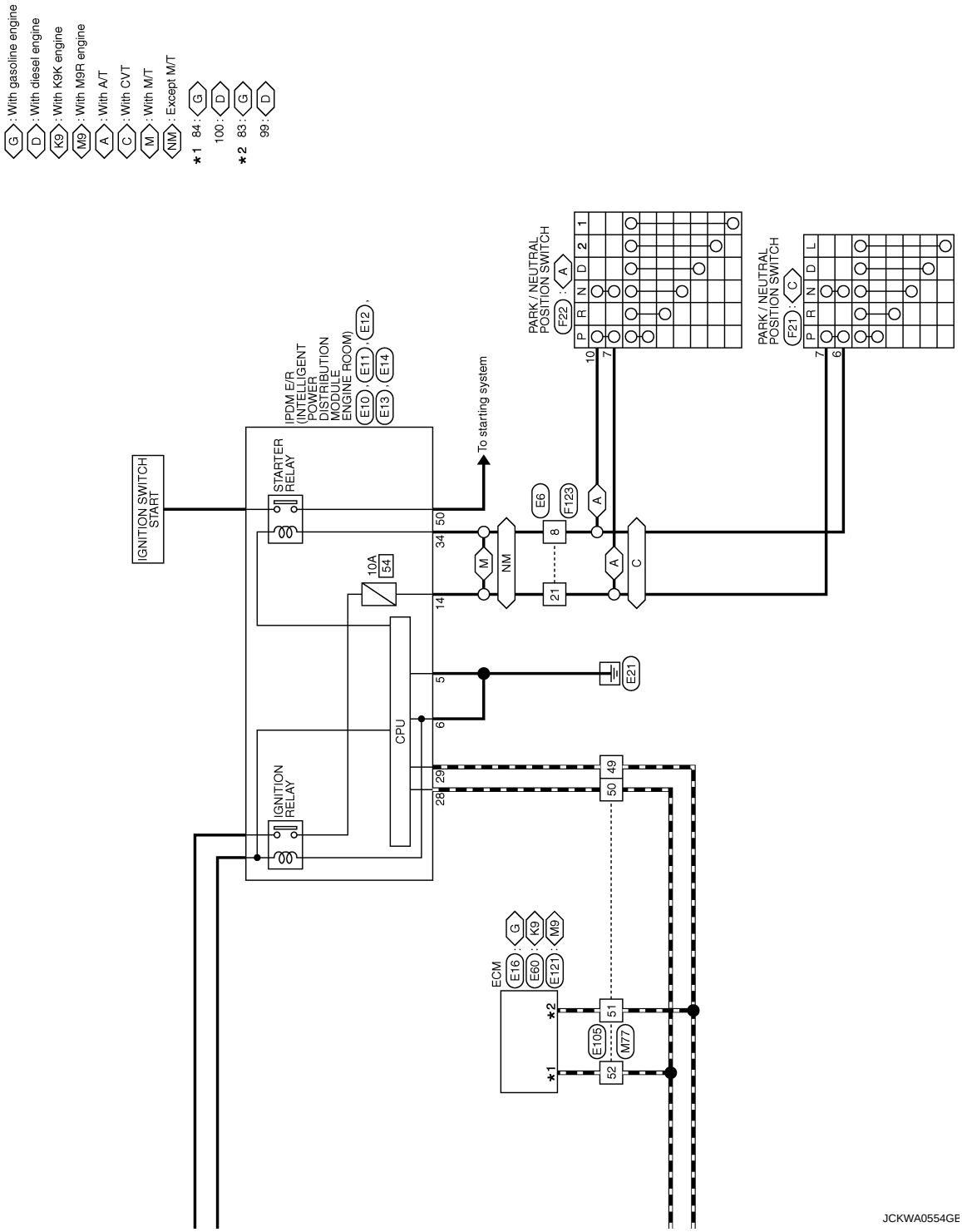



G : With gasoline engine
D : With diesel engine
K9 : With K9K engine
M9 : With M9R engine
A : With A/T
C : With CVT
M : With M/T
NM : Except M/T
*1 84 : G
100 : D
*2 83 : G
99 : D
PARK / NEUTRAL POSITION SWITCH
A
F22
P R N D 2 1
10 7
PARK / NEUTRAL POSITION SWITCH
C
F21
P R N D L
7 6
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 E11 E12
E13 E14
To starting system
IGNITION SWITCH START
STARTER RELAY
10A 54
E6
F123
8
21
M
NM
A
C
34 50
14
CPU
5
6
E21
IGNITION RELAY
29
28
49
50
ECM
G
K9
M9
E16
E60
E121
*2
*1
51
52
E105
M77
JCKWA0554GE

NATS (NISSAN ANTI-THEFT SYSTEM) / WITHOUT INTELLIGENT KEY

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK24MW-1Y

Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

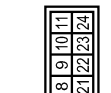
Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-1C

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
34	W/B	–[With A/T]
34	R/B	–[Except A/T]

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	YZK 7283-5691-40-F



Terminal No.	Color of Wire	Signal Name [Specification]
50	B/R	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS

Terminal No.	Color of Wire	Signal Name [Specification]
14	R/B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
28	L	–
29	P	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-L
84	L	CAN-H

Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

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NATS (NISSAN ANTI-THEFT SYSTEM) / WITHOUT INTELLIGENT KEY

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
51	P	–
52	L	–
76	Y	–

Connector No.	E121
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L(BODY)
100	L	MAIN CAN-H(BODY)

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK24FW-1Y

Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

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

Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	F21
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	RK08FG

Terminal No.	Color of Wire	Signal Name [Specification]
6	W/B	–
7	R/B	–

Connector No.	F22
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	YDX06FB-HS4

Terminal No.	Color of Wire	Signal Name [Specification]
7	R/B	–
10	W/B	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	P	–
3	B	–
4	LG	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
28	SB	SECURITY

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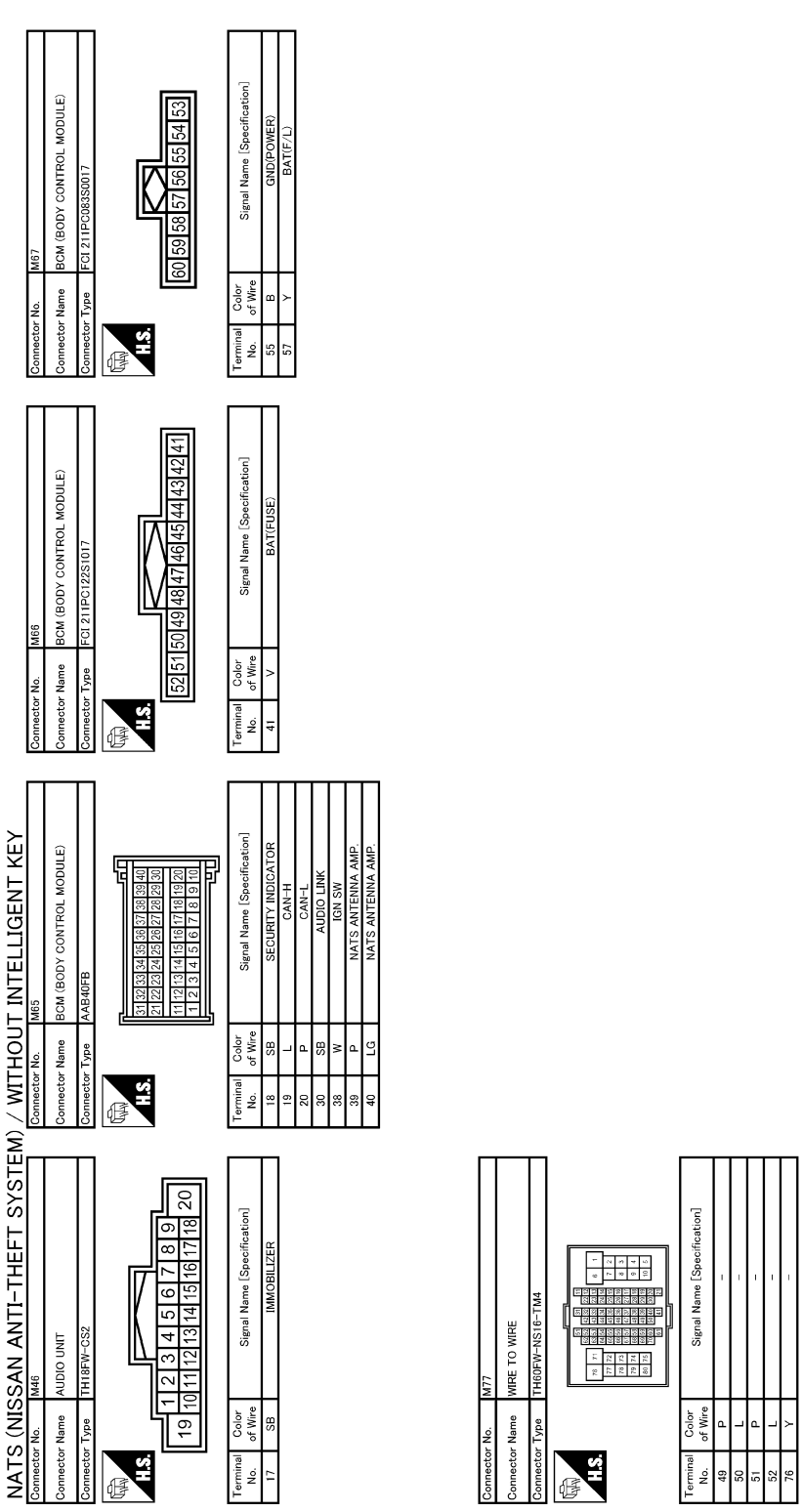

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Fail Safe

INFOID:0000000001184777

Fail-safe index

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

Display contents of CONSULT	Fail-safe	Cancellation
B2190: NATS ANTENNA AMP	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2191: DIFFERENCE OF KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2192: ID DISCORD BCM-ECM	Fuel cut (ECM)	Erase DTC
B2193: CHAIN OF BCM-ECM	Fuel cut (ECM)	Erase DTC
B2194: DISCORD BCM-I-KEY	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2195: ANTI SCANNING	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC
B2196: DONGLE NG	• Inhibits engine cranking • Inhibits steering lock unlocking (Intelligent Key unit) • Fuel cut (ECM)	Erase DTC

REAR WIPER CONTROL

BCM detects a rear wiper stopping position according to a rear wiper auto stop signal.
When a rear wiper auto stop signal is in the condition listed below, BCM stops power supply to rear wiper after rear wiper is activated for five seconds.

Ignition switch	Rear wiper switch	Rear wiper auto stop signal
ON	OFF	The rear wiper auto stop signal (stop position) cannot be input for 5 seconds.
	ON	The rear wiper auto stop signal does not change for 5 seconds.

NOTE:
The above operation is repeated when operating the rear wiper switch one minute after the stop of the rear wiper caused by Fail-safe.

TURN SIGNAL LAMP CONTROL

BCM detects the turn signal lamp circuit status from the terminal voltage.
BCM increases the turn signal lamp blinking speed if the bulb or harness open is detected with the turn signal lamp operating.

NOTE:
The blinking speed is normal while activating the hazard warning lamp.

LIGHT & RAIN SENSOR MALFUNCTION DETECTION FUNCTION

BCM controls the following items when LIGHT & RAIN sensor has a malfunction.

Auto Light Control
Headlamp is turned ON.

Front Wiper Control
The condition just before the activation of Fail-safe is maintained until the front wiper switch is turned OFF.

DTC Inspection Priority Chart

INFOID:0000000001184778

Priority	DTC
1	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
2	• B2190: NATS ANTENNA AMP • B2191: DIFFERNCE OF KEY • B2192: ID DISCORD BCM-ECM • B2193: CHAIN OF BCM-ECM • B2194: DISCORD BCM-I-KEY • B2195: ANTI SCANNING • B2196: DONGLE NG

DTC Index

INFOID:0000000001184779

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.
- PAST: Displays when there is a malfunction that is detected in the past and stored.
- 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	TIME		Fail-safe	Refer to
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	0	1 - 39	—	BCS-33
U1010: CONTROL UNIT (CAN)	0	1 - 39	—	BCS-34
B2190: NATS ANTENNA AMP	CRNT	PAST	×	• With Intelligent Key system SEC-45 • Without Intelligent Key system SEC-194
B2191: DIFFERENCE OF KEY	CRNT	PAST	×	• With Intelligent Key system SEC-47 • Without Intelligent Key system SEC-196
B2192: ID DISCORD BCM-ECM	CRNT	PAST	×	• With Intelligent Key system SEC-48 • Without Intelligent Key system SEC-197
B2193: CHAIN OF BCM-ECM	CRNT	PAST	×	• With Intelligent Key system SEC-50 • Without Intelligent Key system SEC-199
B2194: DISCORD BCM-I-KEY	CRNT	PAST	×	SEC-51
B2195: ANTI SCANNING	CRNT	PAST	×	• With Intelligent Key system SEC-52 • Without Intelligent Key system SEC-200
B2196: DONGLE NG	CRNT	PAST	×	• With Intelligent Key system SEC-53 • Without Intelligent Key system SEC-201

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

Reference Value

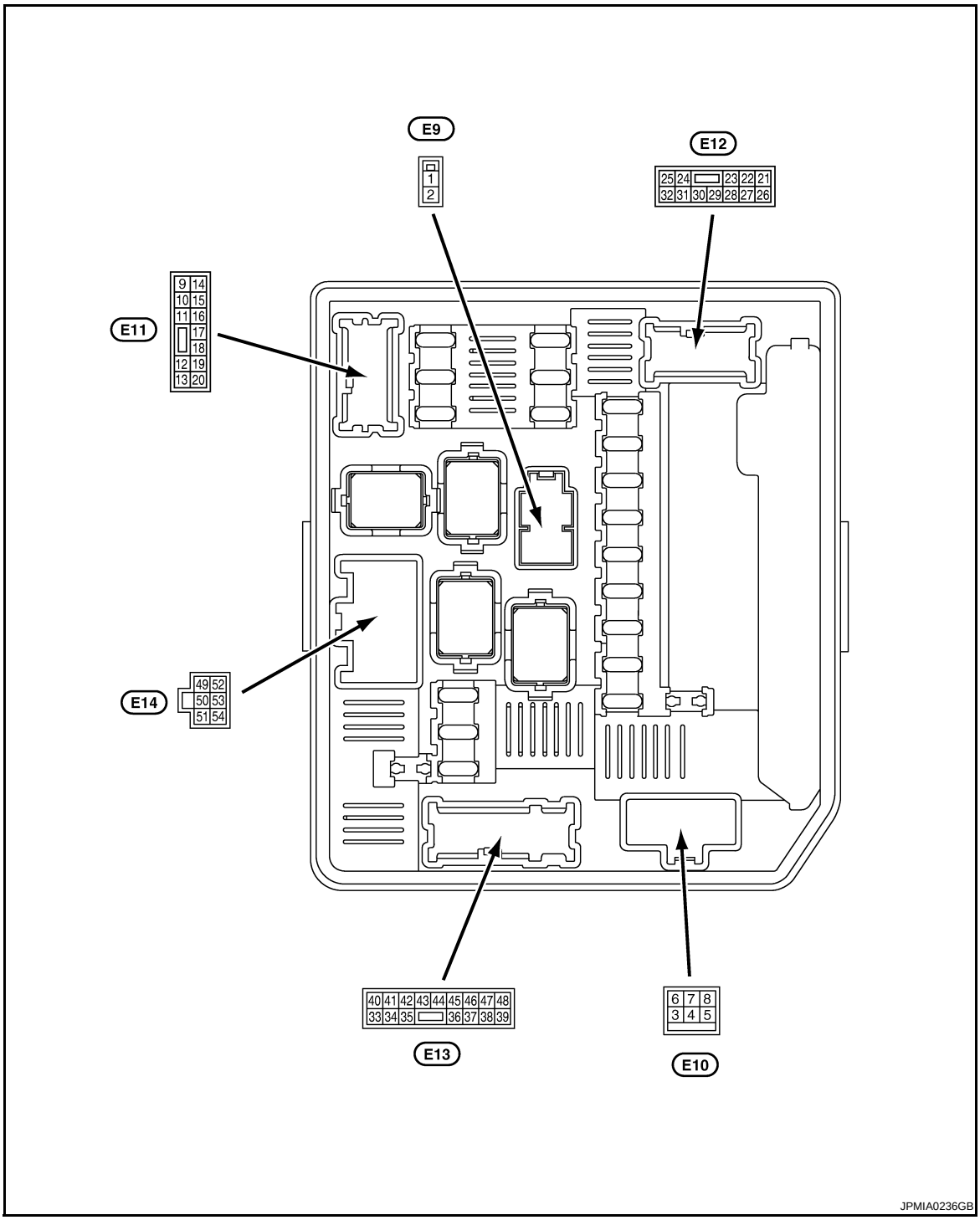
INFOID:0000000001559569

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 - 3
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, 2ND or AUTO (Light is illuminated)		On
HL LO REQ	Lighting switch OFF		Off
	Lighting switch 2ND or AUTO (Light is illuminated)		On
HL HI REQ	Lighting switch OFF		Off
	Lighting switch HI (Light is illuminated)		On
FR FOG REQ	Lighting switch 2ND or AUTO (Light is illuminated)	Front fog lamp switch OFF	Off
		Front fog lamp switch ON	On
HL WASHER REQ	Ignition switch ON, and low beam headlamp is ON	Front washer switch OFF	Off
		Front washer switch ON (When headlamp washer is operating)	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 due to fail-safe operation (cut-out 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

Monitor Item	Condition	Value/Status
REV SW	Except selector lever R position	Off
	Selector lever R position	On
HOOD SW **NOTE:** This item is monitored only on the vehicle with the Vehicle Security (Theft Warning) system.	Close the hood	Off
	Open the hood	On
THFT HRN REQ **NOTE:** This item is monitored only on the vehicle with the Vehicle Security (Theft Warning) system.	Not operation	Off
	Horn is activated with Vehicle Security (Theft Warning) system.	On
HORN CHIRP	**NOTE:** This item is indicated, but not monitored.	Off
IGN ON SW	Ignition switch OFF or ACC	Off
	Ignition switch ON	On

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
		Signal name	Input/ Output		
+	–				
1 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
2 (R)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
5 (B)	Ground	Ground	—	Ignition switch ON	0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
6 (B)	Ground	Ground	—	Ignition switch ON		0 V
7 (Y)	Ground	Front wiper LO	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch LO	Battery voltage
8 (Y/R)	Ground	Front wiper HI	Output	Ignition switch ON	Front wiper switch OFF	0 V
					Front wiper switch HI	Battery voltage
9 (G)	Ground	ECM relay power supply	Output	Ignition switch ON		Battery voltage
10*1 (L/R)	Ground	ECM relay power supply	Output	Ignition switch ON		Battery voltage
11*2 (O)	Ground	PTC heater 1 relay control	Output	PTC heater OFF		Battery voltage
				PTC heater ON		0 V
12*2 (G/Y)	Ground	PTC heater 2 relay control	Output	PTC heater OFF		Battery voltage
				PTC heater ON		0 V
14 (R/B)	Ground	Ignition power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
15 (Y/L)*1 (B/R)*2	Ground	ECM relay control	Input	• Engine running • Ignition switch OFF (For a few seconds after turning ignition switch OFF)		0 - 1.0 V*1
						0.6 V*2
				Ignition switch OFF or ACC (More than a few seconds after turning ignition switch OFF)		Battery voltage
16*3 (Y/R)	Ground	Ignition relay power supply	Output	Ignition switch ON		Battery voltage
				Ignition switch OFF or ACC		0 V
19*1 (R/O)	Ground	Ignition relay power supply	Output	Ignition switch ON		Battery voltage
				Ignition switch OFF or ACC		0 V
21*4 (GR)	Ground	Hood switch	Input	Close the hood		0 V → Battery voltage → 0 V
				Open the hood		0 V
22 (Y/G)	Ground	Reverse switch	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON	• Selector lever “R” (Except M/T models) • M/T control lever “R” (M/T models)	Battery voltage
					• Selector lever in any position other than “R” (Except M/T models) • M/T control lever in any position other than “R” (M/T models)	0 V
23 (Y/B)	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
24 (R/Y)	Ground	Headlamp LO (RH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
25*1 (G/L)	Ground	ETC relay control	Input	Ignition switch OFF or ACC		Battery voltage
				Ignition switch ON		0 - 1.0 V
26 (O)	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
27 (W)	Ground	Oil pressure switch	Input	Engine stopped		0 V
				Engine running		Battery voltage
28 (L)	—	CAN-H	Input/ Output	—		—
29 (P)	—	CAN-L	Input/ Output	—		—
30*4 (L)	Ground	Horn relay control	Output	The horn is not activated		Battery voltage
				The horn is activated		0 V
31 (R)	Ground	Headlamp LO (sensor)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
32*1 (R/Y)	Ground	ETC relay power supply	Output	Ignition switch ON		Battery voltage
33*1 (B/O)	Ground	Fuel pump relay control	Input	• Engine running • Ignition switch ON (For 1 second after turning ignition switch ON)		0 - 1.0 V
				Ignition switch ON (More than 1 second after turning ignition switch ON)		Battery voltage
34 (R/B)	Ground	Starter relay power supply	Input	Ignition switch ON (Except M/T models)	Selector lever “P” or “N”	Battery voltage
					Selector lever in any position other than “P” or “N”	0 V
				Ignition switch ON (M/T models)		Battery voltage
35 (W/L)	Ground	Ignition switch ON	Input	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
36 (W)	Ground	Front fog lamp (RH)	Output	Lighting switch 1ST	Front fog lamp switch ON	Battery voltage
					Front fog lamp switch OFF	0 V
37 (R/W)	Ground	Parking lamp (RH)	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
38 (R/L)	Ground	Tail, license plate lamps and illuminations	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
39 (GR)	Ground	Headlamp washer relay control	Output	Ignition switch ON	When headlamp washer is operating	0 V
					When headlamp washer is not operating	Battery voltage
40*1 (BR/Y)*5 (SB)*6	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage
41 (P)	Ground	Ignition relay power supply	Output	Ignition switch OFF or ACC		0 V
				Ignition switch ON		Battery voltage

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
42*1 (B/Y)	Ground	Fuel pump relay power supply	Output	• Ignition switch OFF or ACC • Approximately 1 second or more after turning the ignition switch ON		0 V
				• Approximately 1 second after turning the ignition switch ON • Engine running		Battery voltage
43 (W/B)	Ground	Front fog lamp (LH)	Output	Lighting switch 1ST	Front fog lamp switch ON	Battery voltage
					Front fog lamp switch OFF	0 V
44 (L)	Ground	Headlamp LO (LH)	Output	Lighting switch OFF		0 V
				Lighting switch 2ND		Battery voltage
45 (L/W)	Ground	Headlamp HI (RH)	Output	• Lighting switch 2ND and HI • lighting switch PASS		Battery voltage
				Lighting switch OFF		0 V
46 (G)	Ground	Headlamp HI (LH)	Output	• Lighting switch 2ND and HI • Lighting switch PASS		Battery voltage
				Lighting switch OFF		0 V
47 (R/L)	Ground	Parking lamp (LH)	Output	Lighting switch 1ST		Battery voltage
				Lighting switch OFF		0 V
48*7 (Y)	Ground	Cooling fan relay-3 control	Output	When cooling fan does HI operation		0 V
				When cooling fan does OFF or LO operation		Battery voltage
49 (B)	Ground	Rear window defogger relay power supply	Output	Ignition switch ON	Rear window defogger switch ON	Battery voltage
					Rear window defogger switch OFF	0 V
50 (B/R)	Ground	Starter relay power supply	Output	When engine is cranking		Battery voltage
				When engine is not cranking		0 V
51 (P)	Ground	Ignition switch START	Input	Ignition switch START		Battery voltage
				Ignition switch OFF, ACC or ON		0 V
52 (W)	Ground	Cooling fan relay-1 power supply	Output	When cooling fan does LO or HI operation		Battery voltage
				When cooling fan does OFF operation		0 V
53 (W/B)	Ground	Battery power supply (Cooling fan relay)	Input	Ignition switch OFF		Battery voltage
54*5 (R)	Ground	Cooling fan relay-2 power supply	Input	When cooling fan does HI operation		Battery voltage
				When cooling fan does OFF or LO operation		0 V

*1: HR engine and MR engine models

*2: K9K engine and M9R engine models

*3: Except M/T models only

*4: With vehicle security (theft warning) system

*5: HR engine models

*6: MR engine models

*7: MR engine, K9K engine and M9R engine models

Wiring Diagram - THEFT WARNING SYSTEM -

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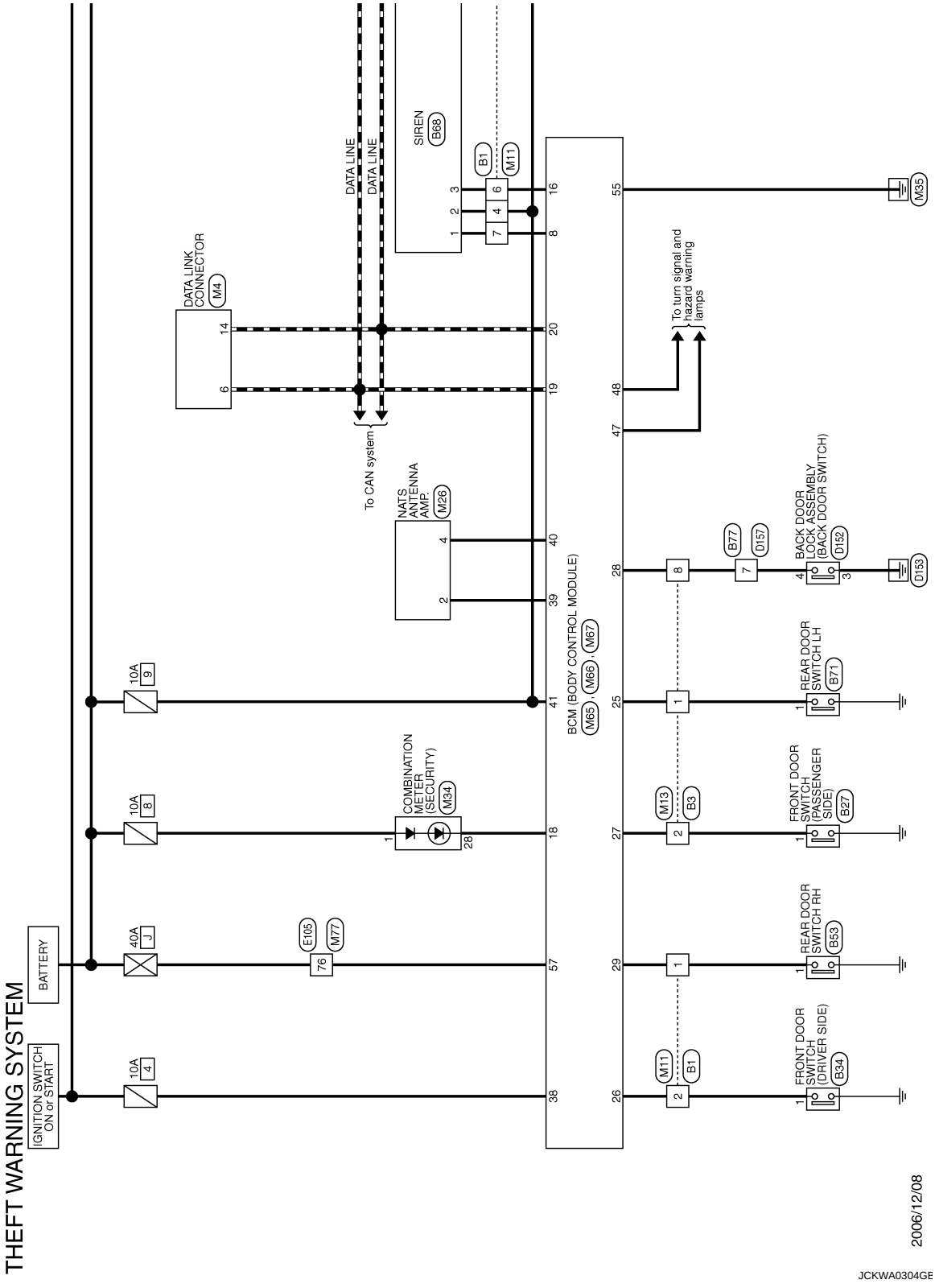
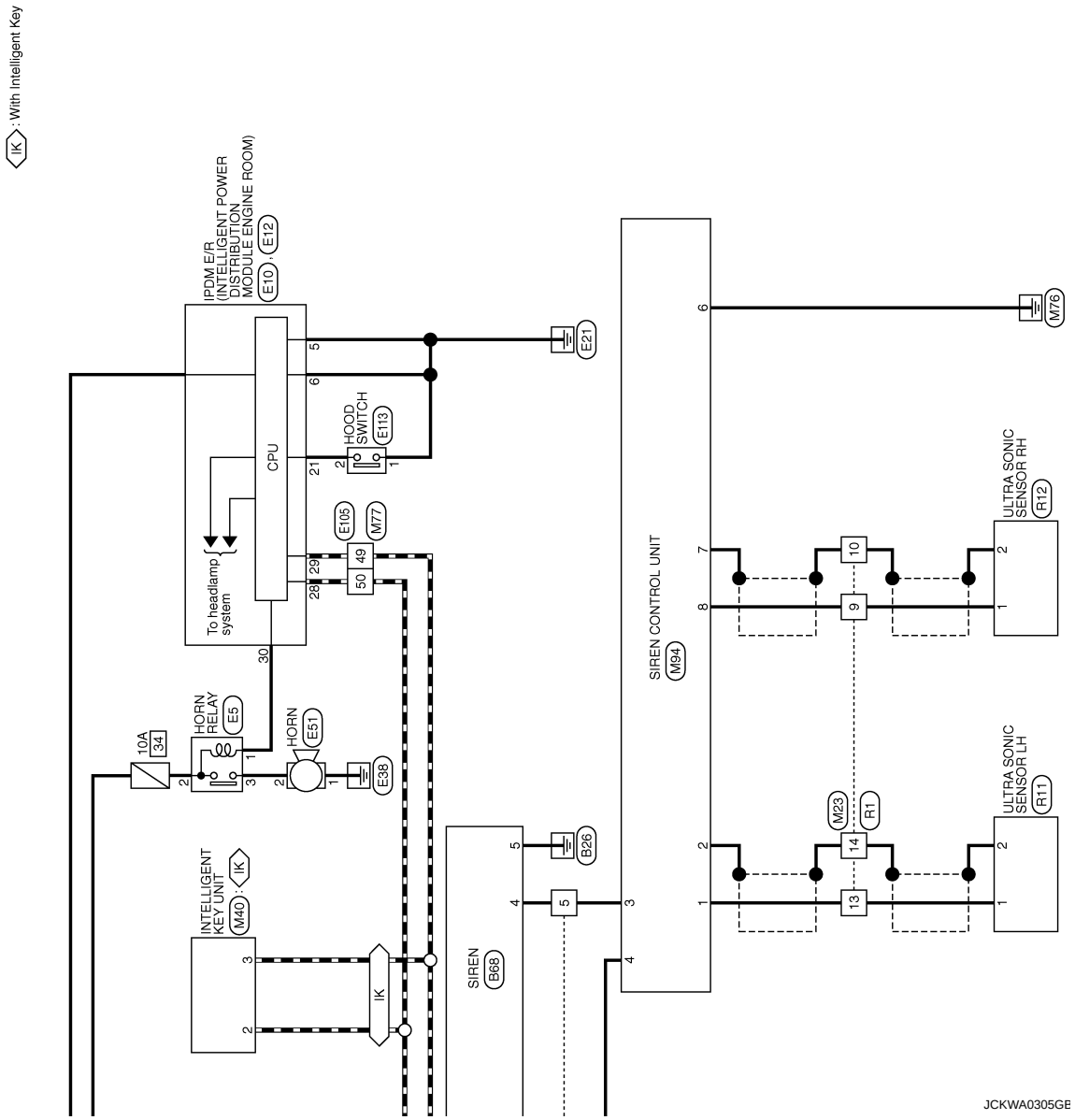



IK : With Intelligent Key
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 , E12
CPU
To headlamp system
HOOD SWITCH
E113
E105
M77
E21
10A
34
HORN RELAY
E5
HORN
E51
E38
INTELLIGENT KEY UNIT
M40 : IK
IK
SIREN
B68
B26
SIREN CONTROL UNIT
M94
M76
ULTRA SONIC SENSOR RH
R12
ULTRA SONIC SENSOR LH
R11
M23
R1
JCKWA0305GE

THEFT WARNING SYSTEM

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R/W	–[RHD models]
4	V	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	B3
Connector Name	WIRE TO WIRE
Connector Type	TH24MW

H.S.

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

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

Connector No.	B27
Connector Name	FRONT DOOR SWITCH (PASSENGER SIDE)
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	BR	–

Connector No.	B34
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	R/W	–

Connector No.	B53
Connector Name	REAR DOOR SWITCH RH
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–

Connector No.	B68
Connector Name	SIREN
Connector Type	RH06FB

H.S.

1	2	3	4	5	6

Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	HAZARD REQ
2	V	B+
3	GR	COMMON LINK
4	Y	U/S LINK
5	B	GND

Connector No.	B71
Connector Name	REAR DOOR SWITCH LH
Connector Type	A03FW

H.S.

1
2
3

Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–

Connector No.	B77
Connector Name	WIRE TO WIRE
Connector Type	TH08FW

H.S.

4	3	2	1
8	7	6	5

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

JCKWA0543GE

THEFT WARNING SYSTEM

Connector No.	D152
Connector Name	BACK DOOR LOCK ASSEMBLY
Connector Type	CINCH 49309 EV 4M9

Terminal No.	Color of Wire	Signal Name [Specification]
3	B	–
4	G	–

Connector No.	D157
Connector Name	WIRE TO WIRE
Connector Type	TH08MW

Terminal No.	Color of Wire	Signal Name [Specification]
7	G	–

Connector No.	E5
Connector Name	HORN RELAY
Connector Type	–

Terminal No.	Color of Wire	Signal Name [Specification]
1	L	–
2	GR/L	–
3	G	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC

Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

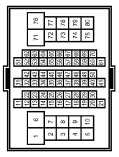
Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
21	GR	–
28	L	–
29	P	–
30	L	–

Connector No.	E51
Connector Name	HORN
Connector Type	DELPHI 15419715

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	G	–

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4



Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

Connector No.	E113
Connector Name	HOOD SWITCH
Connector Type	W02FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	B	–
2	GR	–

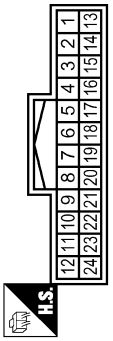
JCKWA0544GE

THEFT WARNING SYSTEM

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

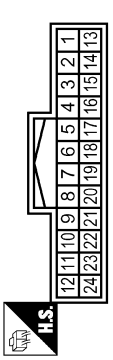
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



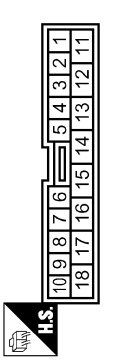
Terminal No.	Color of Wire	Signal Name [Specification]
1	LG	–
2	R	–[RHD models]
4	R	–
5	Y	–
6	GR	–
7	LG	–

Connector No.	M13
Connector Name	WIRE TO WIRE
Connector Type	TH24FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	GR	–
2	BR	–[RHD models]
8	G	–

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TK10FW-NS8



Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	P	–
4	LG	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
28	SB	SECURITY

Connector No.	M40
Connector Name	INTELLIGENT KEY UNIT
Connector Type	TH40FW

Terminal No.	Color of Wire	Signal Name [Specification]
2	L	CAN-H
3	P	CAN-L

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THEFT WARNING SYSTEM

Connector No.	M65
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	AAB40FB

Terminal No.	Color of Wire	Signal Name [Specification]
8	LG	HAZARD SW
16	GR	ALARM LINK
18	SB	SECURITY INDICATOR
19	L	CAN-H
20	P	CAN-L
25	GR	DOOR SW (RL)
26	R	DOOR SW (DR)
27	BR	DOOR SW (AS)
28	G	DOOR SW (BACK)
29	LG	DOOR SW (RR)
38	W	IGN SW

Connector No.	M77
Connector Name	WIRE TO WIRE
Connector Type	TH60FW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
76	Y	–

39	P	NATS ANTENNA AMP
40	LG	NATS ANTENNA AMP

Connector No.	M94
Connector Name	SIREN CONTROL UNIT
Connector Type	A08FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	U/S LEFT (TX)
2	SHIELD	SHIELD
3	Y	U/S LINK
4	R	B+
6	B	GND
7	SHIELD	SHIELD
8	W	U/S RIGHT (RX)

Connector No.	M66
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC122S1017

Terminal No.	Color of Wire	Signal Name [Specification]
41	V	BAT(FUSE)
47	G/Y	FLASHER OUTPUT (LEFT)
48	G/B	FLASHER OUTPUT (RIGHT)

Connector No.	M67
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FCI 211PC083S0017

Terminal No.	Color of Wire	Signal Name [Specification]
55	B	GND(POWER)
57	Y	BAT(F/L)

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TK10MW-NS8

Terminal No.	Color of Wire	Signal Name [Specification]
9	W	–
10	SHIELD	–
13	G	–
14	SHIELD	–

Connector No.	R11
Connector Name	ULTRA SONIC SENSOR LH
Connector Type	A02MW

Terminal No.	Color of Wire	Signal Name [Specification]
1	G	SIG
2	SHIELD	SHIELD

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THEFT WARNING SYSTEM

Connector No.	R12
Connector Name	ULTRA SONIC SENSOR RH
Connector Type	A02FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	W	SIG
2	SHIELD	SHIELD

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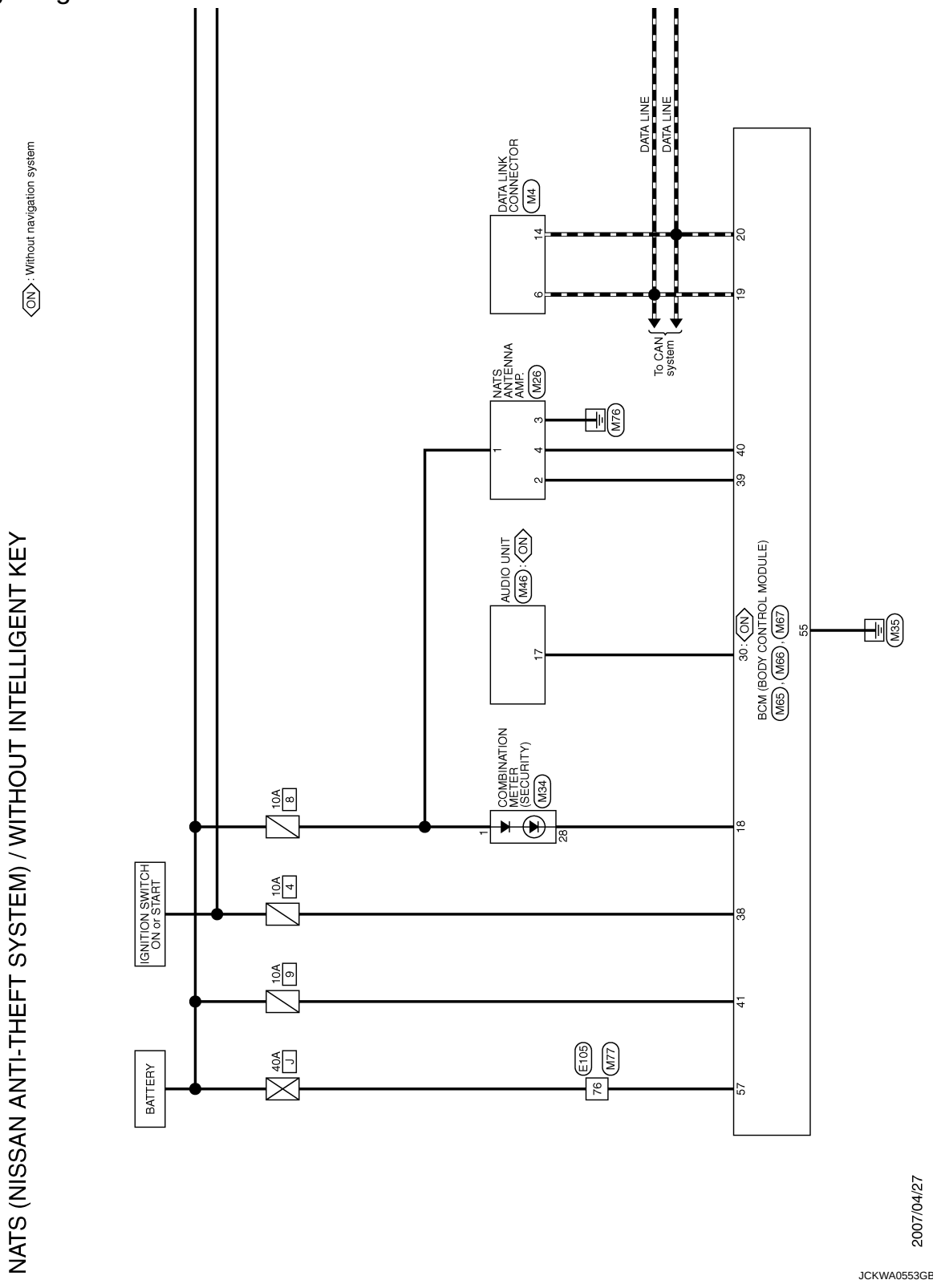
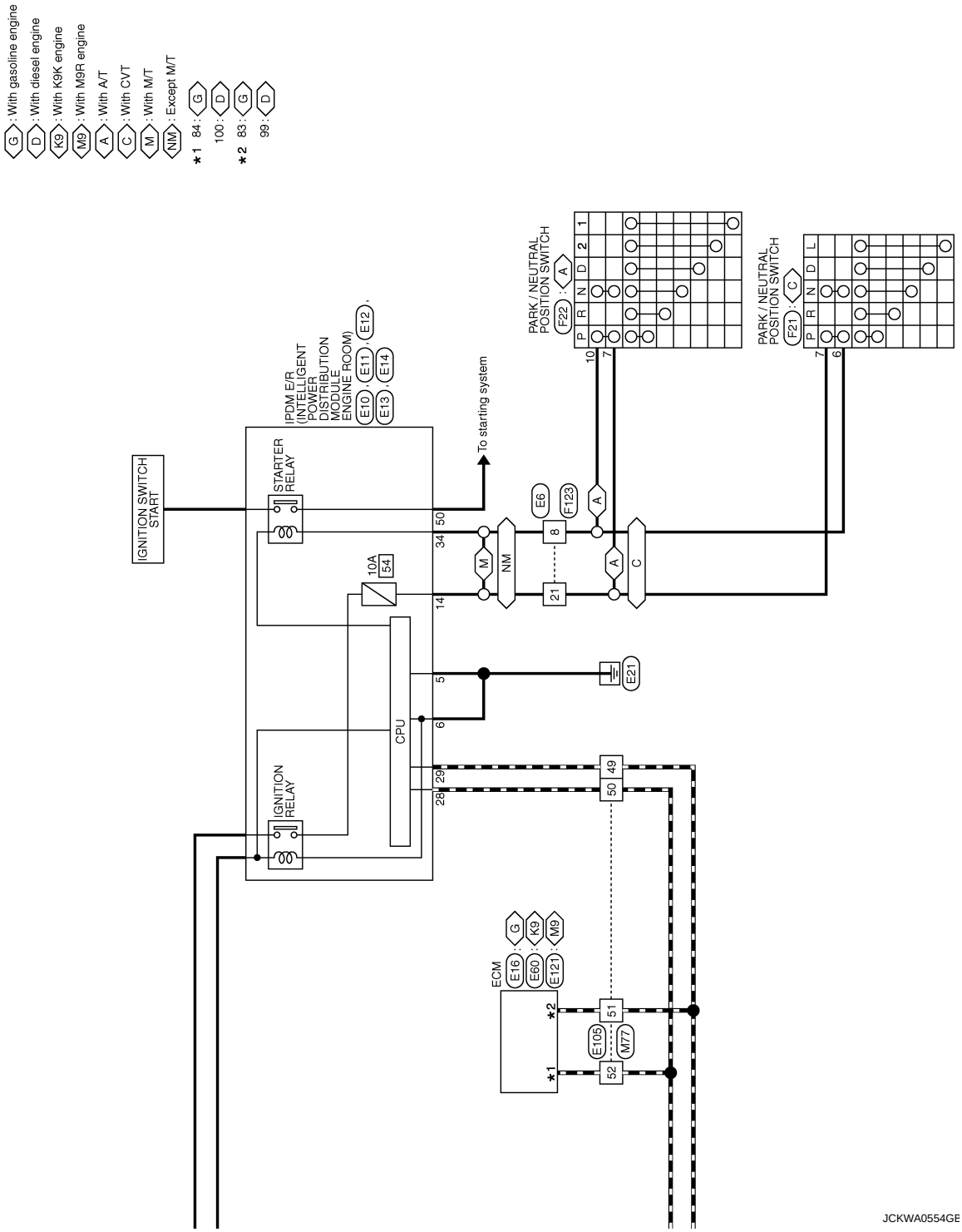
Wiring Diagram - NATS -

INFOID:0000000001609213



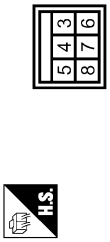

G : With gasoline engine
D : With diesel engine
K9 : With K9K engine
M9 : With M9R engine
A : With A/T
C : With CVT
M : With M/T
NM : Except M/T
*1 84 : G
100 : D
*2 83 : G
99 : D
PARK / NEUTRAL POSITION SWITCH
F22 : A
P R N D 2 1
10 7
PARK / NEUTRAL POSITION SWITCH
F21 : C
P R N D L
7 6
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E10 , E11 , E12 , E13 , E14
To starting system
IGNITION SWITCH START
STARTER RELAY
10A 54
IGNITION RELAY
CPU
M
NM
E6
F123
8
21
A
C
34 50
14
5
6
29
28
E21
49
50
ECM
G
K9
M9
E16
E60
E121
*2
*1
51
52
E105
M77
JCKWA0554GE

NATS (NISSAN ANTI-THEFT SYSTEM) / WITHOUT INTELLIGENT KEY

Connector No.	E6
Connector Name	WIRE TO WIRE
Connector Type	TK24MW-1Y

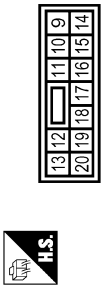
Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

Connector No.	E10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	M06FB-LC



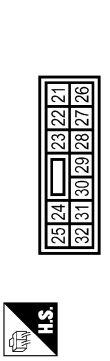
Terminal No.	Color of Wire	Signal Name [Specification]
5	B	–
6	B	–

Connector No.	E11
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FBR-CS



Terminal No.	Color of Wire	Signal Name [Specification]
14	R/B	–

Connector No.	E12
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS12FW-CS



Terminal No.	Color of Wire	Signal Name [Specification]
28	L	–
29	P	–

Connector No.	E13
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS

Terminal No.	Color of Wire	Signal Name [Specification]
34	W/B	–[With A/T]
34	R/B	–[Except A/T]

Connector No.	E14
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	YZK 7283-5691-40-F

Terminal No.	Color of Wire	Signal Name [Specification]
50	B/R	–

Connector No.	E16
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
83	P	CAN-L
84	L	CAN-H

Connector No.	E60
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L (BODY)
100	L	MAIN CAN-H (BODY)

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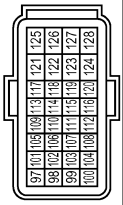
NATS (NISSAN ANTI-THEFT SYSTEM) / WITHOUT INTELLIGENT KEY

Connector No.	E105
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-NS16-TM4

Terminal No.	Color of Wire	Signal Name [Specification]
49	P	–
50	L	–
51	P	–
52	L	–
76	Y	–

Connector No.	E121
Connector Name	ECM
Connector Type	MAA24FB-MEA8-LH

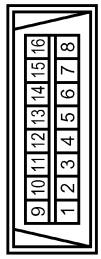


Terminal No.	Color of Wire	Signal Name [Specification]
99	P	MAIN CAN-L(BODY)
100	L	MAIN CAN-H(BODY)

Connector No.	F123
Connector Name	WIRE TO WIRE
Connector Type	TK24FW-1Y

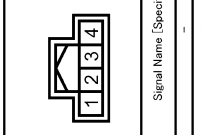
Terminal No.	Color of Wire	Signal Name [Specification]
8	W/B	–
21	R/B	–

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



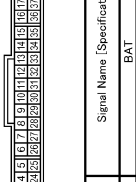
Terminal No.	Color of Wire	Signal Name [Specification]
6	L	–
14	P	–

Connector No.	F21
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	RK08FG



Terminal No.	Color of Wire	Signal Name [Specification]
6	W/B	–
7	R/B	–

Connector No.	F22
Connector Name	PARK/NEUTRAL POSITION SWITCH
Connector Type	YDX06FB-HS4

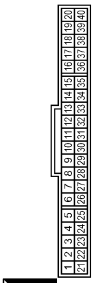


Terminal No.	Color of Wire	Signal Name [Specification]
7	R/B	–
10	W/B	–

Connector No.	M26
Connector Name	NATS ANTENNA AMP.
Connector Type	TH04FW

Terminal No.	Color of Wire	Signal Name [Specification]
1	V	–
2	P	–
3	B	–
4	LG	–

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	SAB40FW



Terminal No.	Color of Wire	Signal Name [Specification]
1	Y	BAT
28	SB	SECURITY

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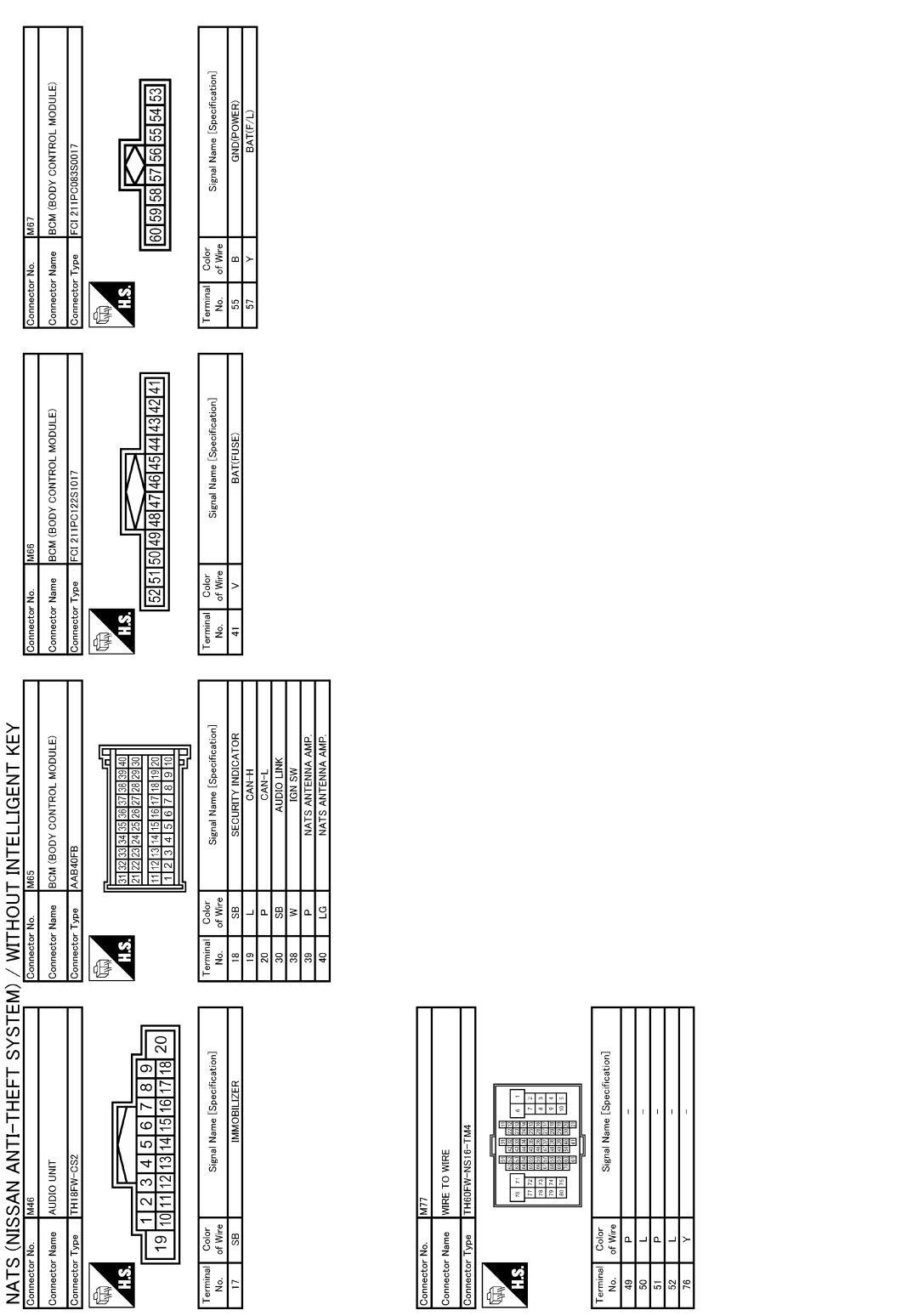

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Fail Safe

INFOID:0000000001559566

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-2*1 or the cooling fan relay-3*2 turns ON when the ignition switch is turned ON • Turns off the fan motor low relay when the ignition switch is turned OFF
A/C compressor	A/C relay OFF

*1: HR engine models

*2: MR engine, K9K engine and M9R engine models

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 turns ON when the ignition switch is turned ON • The tail lamp relay turns 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
Headlamp washer	Headlamp washer relay OFF
PTC heater	PTC heater relay OFF

Ignition relay malfunction detection function

- The CPU integrated IPDM E/R monitors the voltage at the contact circuit of the ignition relay inside it.
- IPDM E/R judges the ignition relay error if the ignition relay condition is different from the ignition switch ON signal.
- If the ignition relay cannot turn OFF due to contact seizure, it activates the tail lamp relay for 10 minutes to alert the user to the ignition relay malfunction when the ignition switch is turned OFF.

DTC	Ignition switch	Ignition relay	Tail lamp relay
—	ON	ON	—
—	OFF	OFF	—
—	OFF	ON	ON (10 minutes)
B2099: IGN RLY OFF	ON	OFF	—

NOTE:

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

Front wiper control

IPDM E/R detects the front wiper stop position with the front wiper auto stop signal.
When the front wiper auto stop signal is in the conditions listed below, IPDM E/R repeats a front wiper 10 seconds operation and 20 seconds stop until ignition switch is turned OFF.

Ignition switch	Front wiper switch	Front wiper auto stop signal
ON	OFF	The front wiper auto stop signal (stop position) cannot be input for 10 seconds.
	ON	The front wiper auto stop 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:0000000001559567

CONSULT display	Fail-safe	Timing[NOTE]		Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	×	CRNT	PAST	PCS-14
B2099: IGN RELAY OFF	—	CRNT	PAST	PCS-15
B209A: RAM ERROR	—	CRNT	PAST	PCS-16
B209B: ROM ERROR	—	CRNT	PAST	PCS-17
B2100: EEPROM	—	CRNT	PAST	PCS-18

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

VEHICLE SECURITY SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000001184785

Procedure	Symptom		Diagnostic procedure	Refer to page
1	Vehicle security system cannot be set by ····	Door switch	Check door switch	DLK-83
		Hood switch	Check hood switch	SEC-65
		Back door switch	Check back door switch	SEC-65
		Keyfob	Check keyfob.	DLK-609
		—	Check Intermittent Incident	GI-39
	Security indicator does not turn ON.		Check vehicle security indicator	SEC-208
			Check Intermittent Incident	GI-39
2	* Vehicle security system does not sound alarm when ····	Any door is opened.	Check door switch	DLK-83
			Check Intermittent Incident	GI-39
3	Vehicle security alarm does not activate.	Horn alarm	Check horn switch	—
			Check Intermittent Incident	GI-39
		Siren control unit alarm	Check siren control unit power supply and ground circuit	SEC-202
			Check siren power supply and ground circuit	SEC-202
			Check siren control unit	SEC-210
			Check Intermittent Incident	GI-39
4	Vehicle security system cannot be canceled by ····	Keyfob	Check multi remote control system.	DLK-549
			Check Intermittent Incident	GI-39

*: Check the system is in the armed phase.

NATS (NISSAN ANTI-THEFT SYSTEM) SYMPTOMS

Symptom Table

INFOID:0000000001184786

NOTE:
- Before performing the diagnosis in the following table, check “SEC-167, "Work Flow"”.
- Check that vehicle is under the condition shown in “Conditions of vehicle” before starting diagnosis, and check each symptom.
- If the following symptoms are detected, check systems shown in the “Diagnosis/service procedure” column in this order.

CONDITIONS OF VEHICLE (OPERATING CONDITIONS)

- Ignition key is not inserted into key cylinder.

Symptom	Diagnosis/service procedure	Reference page
Security indicator does not turn ON or flash	1. Check vehicle security indicator	SEC-208
	2. Check Intermittent Incident	GI-39

PRECAUTION

PRECAUTIONS

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

INFOID:0000000001583057

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 AIRBAG” and “SEAT BELT” of this Service Manual.

WARNING:

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

ON-VEHICLE MAINTENANCE

PRE-INSPECTION FOR DIAGNOSTIC

Basic Inspection

INFOID:0000000001184787

1.INSPECTION START

Turn ignition switch “OFF” and pull out ignition key from key cylinder.
NOTE:
Before starting operation check, open front windows.

>> GO TO 2.

2.CHECK SECURITY INDICATOR LAMP

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

Security indicator lamp should illuminate.

OK >> GO TO 3.
NG >> Perform diagnosis and repair. Refer to SEC-262, "Symptom Table".

3.CHECK ALARM FUNCTION

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

Do alarm function properly.

OK >> GO TO 4.
NG >> Check the following.
- The vehicle security system does not phase in alarm mode. Refer to SEC-262, "Symptom Table".
- Alarm do not operate. Refer to SEC-262, "Symptom Table".

4.CHECK ALARM CANCEL OPERATION

Unlock any door or open back door using keyfob.

Alarm (horn and siren) should stop.

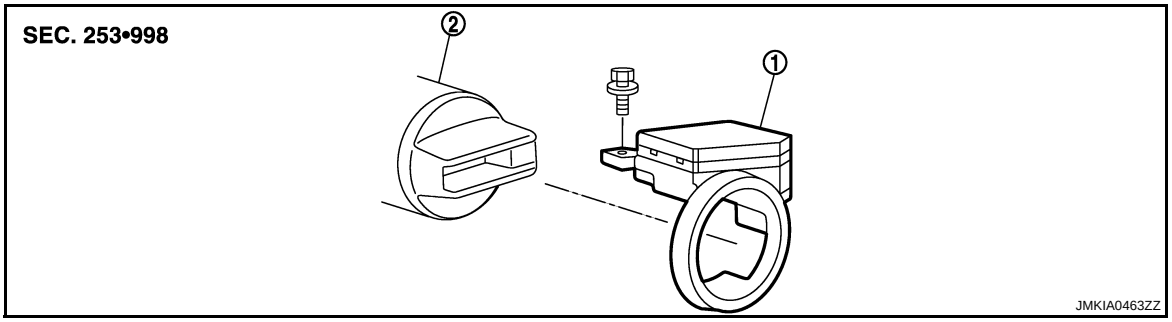
OK >> INSPECTION END.
NG >> Check door lock function. Refer to DLK-642, "KEYFOB : Symptom Table".

ON-VEHICLE REPAIR

NATS ANTENNA AMP.

Exploded View

INFOID:0000000001184788



1. NATS antenna amp.
2. Steering lock assembly

Refer to SEC-266, "Removal and Installation".

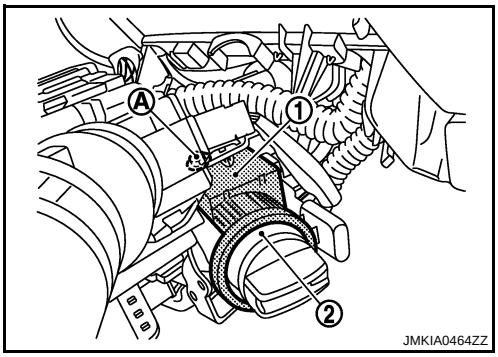
NOTE:
An illustration is an object for Intelligent Key system.

Removal and Installation

INFOID:0000000001184789

REMOVAL

1. Remove the steering column cover.
   Refer to IP-11, "Exploded View" and IP-12, "Removal and Installation".
2. Remove the NATS antenna amp. mounting screw (A), and then remove NATS antenna amp. (1) from steering lock assembly (2).
   NOTE:
   An illustration is an object for Intelligent Key system.



INSTALLATION

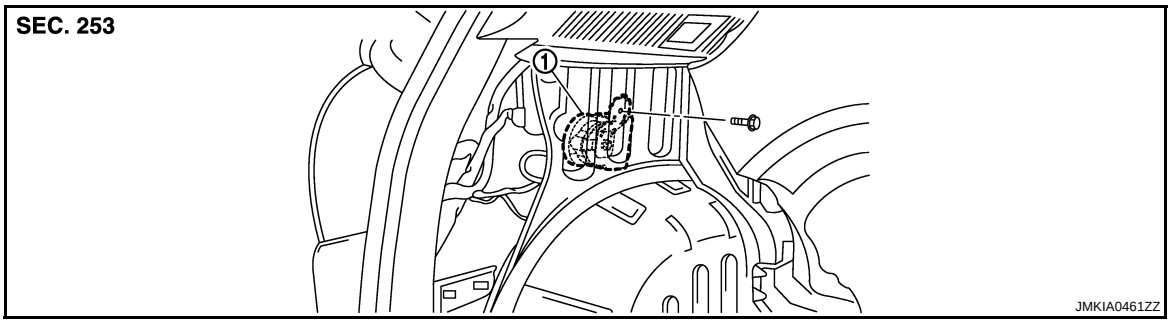
Install in the reverse order of removal.

SIREN

Exploded View

INFOID:0000000001184790

SIREN



1. Siren

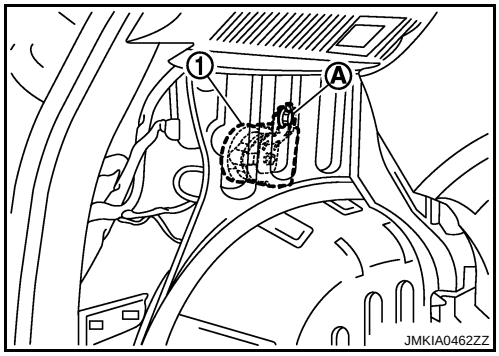
Refer to SEC-267, "Removal and Installation".

Removal and Installation

INFOID:0000000001184791

REMOVAL

1. Remove the luggage side lower finisher (LH).
   Refer to INT-24, "Exploded View" and INT-24, "Removal and Installation".
2. Remove the siren mounting bolt (A), and then remove siren (1).



INSTALLATION

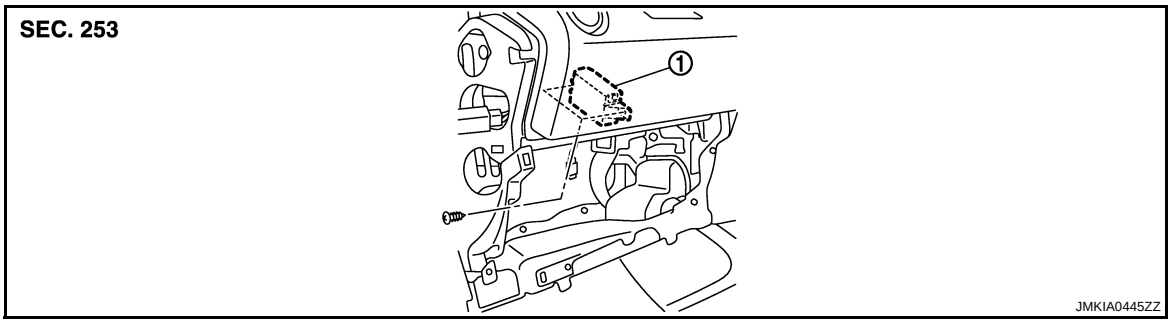
Install in the reverse order of removal.

SIREN CONTROL UNIT

Exploded View

INFOID:0000000001184792

SIREN CONTROL UNIT



1. Siren control unit

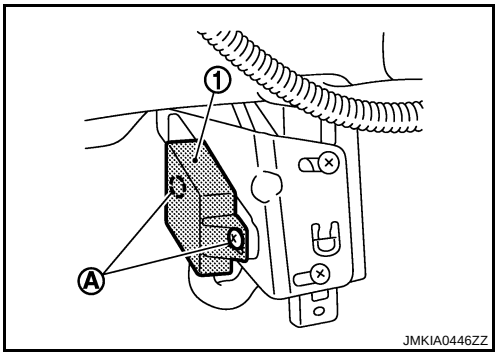
Refer to SEC-268, "Removal and Installation".

Removal and Installation

INFOID:0000000001184793

REMOVAL

1. Remove the glove box.
   Refer to IP-11, "Exploded View" and IP-12, "Removal and Installation".
2. Remove the siren control unit mounting screw (A), and then remove siren control unit (1).



INSTALLATION

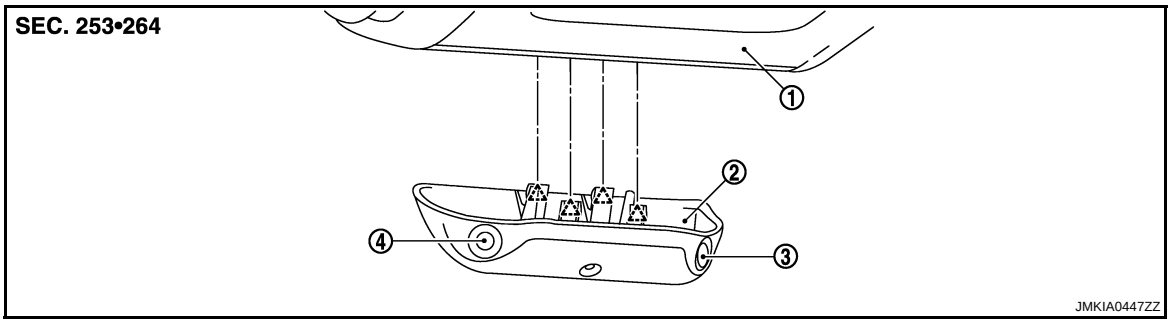
Install in the reverse order of removal.

ULTRA SONIC SENSOR

Exploded View

INFOID:0000000001184794

ULTRA SONIC SENSOR



1. Headlining
2. Ultra sonic sensor finisher
3. Ultra sonic sensor RH
4. Ultra sonic sensor LH
- Pawl

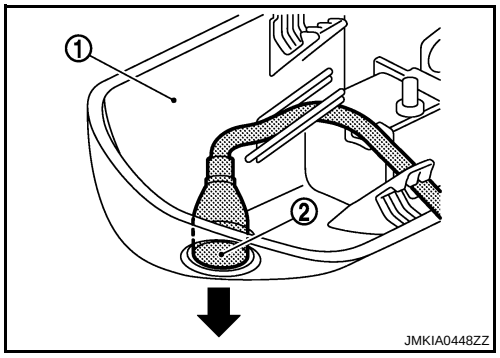
Refer to SEC-269, "Removal and Installation".

Removal and Installation

INFOID:0000000001184795

REMOVAL

1. Remove the ultra sonic sensor finisher.
   Refer to SEC-269, "Exploded View".
2. Remove the ultra sonic sensor (2) from ultra sonic sensor finisher (1).



INSTALLATION

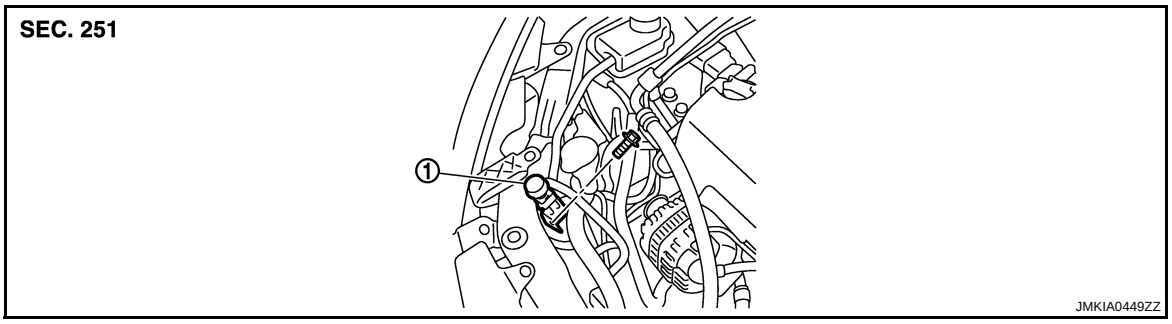
Install in the reverse order of removal.

HOOD SWITCH

Exploded View

INFOID:0000000001184796

HOOD SWITCH



1. Hood switch

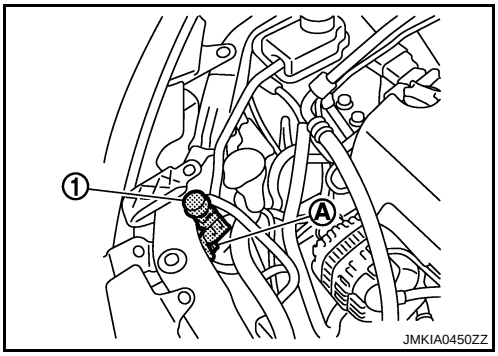
Refer to SEC-270, "Removal and Installation".

Removal and Installation

INFOID:0000000001184797

REMOVAL

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



INSTALLATION

Install in the reverse order of removal.